

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section and
Mong Kok East to Hung Hom Section**

Monthly EM&A Report No. 28

[Period from 1 to 31 December 2014]

(January 2015)

Certified by: Richard Kwan 

Position: Environmental Team Leader

Date: 13 January 2015

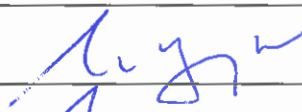
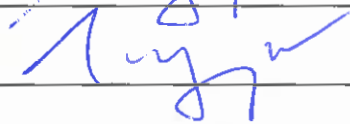
MTR Corporation Limited

Consultancy Agreements
No. C11033 & C11033B

**Shatin to Central Link - Tai Wai to Hung
Hom Section and Mong Kok East
to Hung Hom Section**

Monthly EM&A Report No. 28

[Period from 1 to 31 December 2014]

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Version: A Date: 13 January 2015

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1 INTRODUCTION

1.1 Background

- 1.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai to Hung Hom via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH) and Stabling Sidings at Hung Hom Freight Yard (HHS); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).
- 1.1.2 Shatin to Central Link – Tai Wai to Hung Hom Section [SCL (TAW-HUH)] and Shatin to Central Link – Mong Kok East to Hung Hom Section [SCL (MKK-HUH) (hereafter referred to as “the Project”) are parts of the SCL. Shatin to Central Link – Stabling Sidings at Hung Hom Freight Yard [SCL (HHS)] is a proposed stabling sidings option for SCL (TAW – HUH) at the former freight yard in Hung Hom.
- 1.1.3 The Environmental Impact Assessment (EIA) Reports for SCL (TAW-HUH) (Register No.: AEIAR-167/2012), SCL (MKK-HUH) (Register No.: AEIAR-165/2012) and SCL (HHS) (Register No.: AEIAR-164/2012) were approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Reports, two Environmental Permits (EPs) were granted on 22 March 2012, one covers SCL (TAW-HUH) and SCL (HHS) (EP No: EP-438/2012) and the other covers SCL (MKK-HUH) and SCL (HHS) (EP No.: EP-437/2012), for their construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-438/2012 and the latest Environmental Permit (EP No: EP-438/2012/H) was issued by Director of Environmental Protection (DEP) on 10 September 2014.

1.2 Project Programme

- 1.2.1 Ten civil construction works contracts of the Project have been awarded since July 2012. The construction of the Project commenced in September 2012 and is expected to complete in 2018. **Table 1.1** summarises the information of the awarded Works Contracts.

Table 1.1 Summary of Awarded Works Contracts

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1101	Ma On Shan Line Modification Works ⁽¹⁾	December 2012	Sun Fook Kong Joint Venture (SFKJV)	ANewR Consulting Ltd. (ANewR)
1102	Hin Keng Station and Approach Structures	October 2013	Penta-Ocean Construction Co. Ltd.	Cinotech Consultants Ltd. (Cinotech)
1103	Hin Keng to Diamond Hill Tunnels	February 2013	Vinci Construction Grands Projets	Ove Arup & Partners Hong Kong Ltd.
1106	Diamond Hill Station	March 2013	Sembawang – Leader Joint Venture	Cinotech Consultants Ltd. (Cinotech)
1107	Diamond Hill to Kai Tak Tunnels	May 2013	Chun Wo - SELI Joint Venture	Cinotech Consultants Ltd. (Cinotech)
1108	Kai Tak Station and Associated Tunnels	June 2013	Kaden -Chun Wo Joint Venture	Environmental Pioneers & Solutions Ltd.
1108A	Kai Tak Barging Point Facilities	September 2012	Concentric – Hong Kong River Joint Venture (CCL-HKR JV)	Cinotech Consultants Ltd. (Cinotech)

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1109	Stations and Tunnels of Kowloon City Section	September 2012	Samsung-Hsin Chong JV (SSHCJV)	ERM-Hong Kong Limited (ERM)
1111	Hung Hom North Approach Tunnels	January 2013	Gammon-Kaden SCL1111 JV	AECOM Asia Co. Ltd.
1112	Hung Hom Station and Stabling Sidings	June 2013	Leighton Contractors (Asia) Limited	SMEC Asia Ltd., HK

Note:

(1) Only the EM&A works for works areas at Tai Wai Mei Tin Road and the offsite temporary storage areas are included in this Report.

1.3 Purpose of the Report

1.3.1 The Environmental Monitoring and Audit (EM&A) programme for the Project commenced in September 2012. This is the twenty eighth EM&A Report for the Project which summarises the EM&A works undertaken by the respective Contractor's ETs during the period from 1 to 31 December 2014.

2 ENVIRONMENTAL MONITORING AND AUDIT

2.1.1 The construction of SCL has been divided into different civil construction works contracts which are covered by EP No. EP-437/2012 and/or EP-438/2012/H. As per the EP Conditions, EM&A Reports for the works contracts as shown in the table below have been prepared by the respective Contractor's ETs.

Works Contract	Contract Title	Works Covered in Environmental Permit No.
1101	Ma On Shan Modification Works	EP-438/2012/H
1102	Hin Keng Station and Approach Structures	EP-438/2012/H
1103	Hin Keng to Diamond Hill Tunnels	EP-438/2012/H
1106	Diamond Hill Station	EP-438/2012/H
1107	Diamond Hill to Kai Tak Tunnels	EP-438/2012/H
1108	Kai Tak Station and Associated Tunnels	EP-438/2012/H
1108A	Kai Tak Barging Point Facilities	EP-438/2012/H
1109	Stations and Tunnels of Kowloon City Section	EP-438/2012/H
1111	Hung Hom North Approach Tunnels	EP-437/2012 & EP-438/2012/H
1112	Hung Hom Station and Stabling Sidings	EP-437/2012 & EP-438/2012/H

2.1.2 The EM&A Reports for Works Contracts 1108A, 1109, 1101, 1111, 1103, 1106, 1107, 1112, 1108 and 1102 prepared by the respective Contractor's ETs are provided in **Appendices A to J**, respectively. The EM&A Reports provide details of the project information, EM&A requirements, impact monitoring and audit results for the corresponding Contracts.

2.1.3 A summary of the major construction activities undertaken by the respective Contractors of various Works Contracts during the reporting period are presented in **Table 2.1**.

Table 2.1 Summary of Major Construction Activities in the Reporting Period

Works Contract	Site	Construction Activities
1101 ⁽¹⁾	Tai Wai Mei Tin Road	<ul style="list-style-type: none"> • N/A
1102	Hin Keng Station and Approach Structures	<ul style="list-style-type: none"> • Slope improvement works; • Bored Piling; • Pipe Pile Wall; • Pile Cap Excavation; • Superstructure Construction; and • Modification of Retaining Wall.
1103	Diamond Hill Area	<ul style="list-style-type: none"> • Tunnel Boring Machine (TBM) tunneling and machinery site assembly.
	Hin Keng Area	<ul style="list-style-type: none"> • Pipe Piling, grouting and tunnel blasting
	Fung Tak Area	<ul style="list-style-type: none"> • Shaft Excavation and ELS and sheet piling for retaining wall.
	Ma Chai Hang Area	<ul style="list-style-type: none"> • Shaft Excavation and ELS.
1106	Diamond Hill Station Area	<ul style="list-style-type: none"> • Interchange Adit- pre-bored socketed H-piling works, installation of observation, recharge and pump wells for stage 1; • Entrance A1- ground treatment works and installation of pump well; • Excavation and ELS works; • West Unpaid Adit- pre-bored socketed H-pile, installation of observation, recharge and pump wells for stage 1; and • Structural works- form base and binding layer; base slab waterproofing and formworks.
1107	Tunnel section next to Kai Tak Station	<ul style="list-style-type: none"> • Site investigation works; • Investigation and removal of old foundation works; • Shaft excavation and tunnels construction; • Site preparation works; • Grouting works; and • TBM excavation.
1108	Kai Tak Station	<ul style="list-style-type: none"> • Shotcreting to excavated slop down to formation level at open cut tunnel; • Formwork erection at access shaft base; • Station structure: concreting; • HPP at launching shaft; • Waler construction at receiving shaft; and • Backfilling.
1108A	Kai Tak Barging Point Facilities	<ul style="list-style-type: none"> • Daily operation and maintenance of the Barging Point Facilities; • Loading and disposal of excavated marine sediments to designated dumping facilities; • Marine transportation of received spoil to receptor sites for beneficial reuse; and • Decommissioning of floating jetty (BPF#4) and the associated ancillary facilities.
1109	Ma Tau Wai (MTW) Works Area	<ul style="list-style-type: none"> • TKW/MTW Road Garden – Operation of bentonite plant and Pier 15 underpinning works; and • Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.
	To Kwa Wan (TKW) Works	<ul style="list-style-type: none"> • Olympic Garden – Underpinning works and

Works Contract	Site	Construction Activities
	Area	installation of pipe pile; • TKW Station – Pump installation, shaft excavation, and TBM and STP setup; and • Nam Kok Road – Installation of pipe pile.
1111	Mong Kok Freight Terminal	• Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.
	Hung Hom Area	• Excavation work, site clearance, site formation, slope work, cable detection, road diversion, excavation lateral support; • Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access; • Trial pit, trial trench, pre-drilling, piling works, pre-grouting, grouting, post-grouting, backfilling, abutment works; • Erection of hoarding, temporary bridge, scaffolding platform; • Trimming of retaining wall, tie back installation, foul water diversion; • Removal of pipe, demolition of drawpit, dismantling of scaffolding walkway; and • Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.
1112	Hong Hom (HUH and HHS) Works Area	• Piling for HUH, NAT and SAT; • Diaphragm wall construction at HUH; • Initial excavation at HUH and HHS; • Barging point operation at Hung Hom Freight Pier; • Operation of Material Receiving Hopper at Hung Hom Freight Pier; • Marine transportation and disposal of spoil to designated dumping ground(s); • Underpinning works at HUH; • Reconstruction of Cheong Wan Road Viaduct; and • Demolition of International Mail Centre and Freight Operations Building.

Note:

(1) Construction works were completed.

N/A Not applicable

2.1.4 Impact monitoring for air quality and construction noise were conducted in accordance with the EM&A Manual in the reporting period. Under Works Contracts 1109 and 1111, continuous noise monitoring was conducted according to the Continuous Noise Monitoring Plan (CNMP) in the reporting period. The air quality, construction noise and continuous noise monitoring results for this reporting month are summarised in **Tables 2.2 to 2.4**. Details of the monitoring requirements, locations, equipment, methodology and QA/QC procedures are presented in the EM&A Reports as provided in **Appendices A to J**.

2.1.5 The monitoring results indicated that no exceedance of the Action/Limit Levels of 24-hr TSP and construction noise. Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3 (A) on 1, 23, 27, 29 and 30 December 2014; at MTW-12-11 (A) on 1 December 2014 and at MTW-16-1 on 1, 16, 23, 27, 29 and 30 December

2014 under Works Contract 1109. Investigation reports for the exceedances recorded on 29 and 30 December 2014 are under process. They will be reported in next reporting period.

- 2.1.6 Water quality monitoring was not carried out during this reporting period since no dredging activity was conducted in the reporting month.
- 2.1.7 No environmental complaints, notification of summons, and successful prosecutions were received in the reporting period. Log for environmental complaints, notification of summons and successful prosecutions are provided in **Table 2.5**.
- 2.1.8 Regular site inspections were conducted by the respective Contractor's ETs on a weekly basis to check the implementation of environmental pollution control and mitigation measures for the Project. No non-conformance was identified in the reporting period.

Table 2.2 Summary of 24-Hour TSP Monitoring Results in the Reporting Period

Monitoring Station ID	Location	TSP Concentration ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)	Exceedance due to the Project Construction (Yes/No)
Works Contract 1101 ⁽⁵⁾					
Works Contract 1102 and 1103					
DMS-1	C.U.H.K.A.A. Thomas Cheung School	20.5 – 146.0	148.7	260	No
Works Contract 1103					
DMS-2	Price Memorial Catholic Primary School	17.7 – 138.7	167.4	260	No
Works Contracts 1103 and 1106					
DMS-3	Hong Kong S.K.H Nursing Home ⁽¹⁾	23.7 – 145.7	159.1	260	No
Works Contract 1106 and 1107					
DMS-4	Block 1, Rhythm Garden	48.9 – 116.3	160.4	260	No
Works Contract 1108 ⁽⁵⁾					
Works Contract 1108A ⁽⁵⁾					
Works Contract 1109					
DMS-6	Katherine Building ⁽²⁾	68.0 – 94.0	156.8	260	No
DMS-7	Parc 22 ⁽³⁾	54.0 – 85.0	166.7	260	No
DMS-8	SKH Good Shepherd Primary School	41.0 – 70.0	152.2	260	No
DMS-9	No. 12 Pau Chung Street ⁽⁴⁾⁽⁹⁾	47.0 – 68.0	160.9	260	No
DMS-10	Chat Ma Mansion	49.0 – 65.0	170.4	260	No
Works Contract 1111					
AM1 ⁽⁶⁾	No. 234 – 238 Chatham Road North ⁽⁷⁾	46.8 – 77.7	183.9	260	No
Works Contract 1112					
AM2	Site Boundary of Finger Pier Adjacent To Harbourfront Horizon ⁽⁸⁾	54.4 – 125.4	182	260	No

Note:

- (1) Alternative monitoring location to Shek On House
- (2) Alternative monitoring location to Prosperity House
- (3) Alternative monitoring location to Skytower Tower 2
- (4) Alternative monitoring location to Lucky Building
- (5) No TSP monitoring is required under this contract
- (6) AM1 named as HUH-1-3 in SCL(TAW-HUH) and SCL(HHS) EIA Reports.
- (7) Alternative monitoring location to Wing Fung Building
- (8) Alternative monitoring location to Harbourfront Horizon
- (9) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road (alternative location of Lucky Building) has been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring was resumed on 12 June 2014.

Table 2.3 Summary of Construction Noise Monitoring Results in the Reporting Period

Monitoring Station ID	Location	Noise Level (L _{Aeq,30mins} , dB(A))			Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
		Measured	Baseline	Corrected ⁽⁷⁾		
Works Contract 1101 ⁽⁶⁾						
Works Contract 1102 and 1103						
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School	57.4 – 60.7	57.0	<baseline – 58.3	70 (65 during examination period)	No
Works Contract 1103						
NMS-CA-2	Price Memorial Catholic Primary School	66.7 – 68.5	66.0	58.4 – 64.9	70 (65 during examination period)	No
Works Contracts 1103 and 1106						
NMS-CA-3	Hong Kong S.K.H Nursing Home ⁽¹⁾	67.7 – 72.1	73.0	<baseline	70	No
Works Contract 1106 and 1107						
NMS-CA-4	Block 1, Rhythm Garden (north-eastern façade)	69.9 – 72.9	71.0	<baseline – 68.4	75	No
NMS-CA-5	Block 1, Rhythm Garden (northern façade) ⁽²⁾	70.1 – 71.7	74.0	<baseline	70 (65 during examination period)	No
Works Contract 1108 ⁽⁶⁾						
Works Contract 1108A ⁽⁶⁾						
Works Contract 1109						
NMS-CA-6	No. 16-23 Nam Kok Road ⁽³⁾	66.2 – 73.9	76.1	<baseline	75	No
NMS-CA-7	Skytower Tower 2	66.4 – 67.9	70.0	<baseline	75	No
NMS-CA-8	SKH Good Shepherd Primary School	75.3 – 79.5	75.4	<baseline – 77.4	70 (65 during examination period) (79 during the period of conducting the continuous noise monitoring) ⁽⁸⁾	No
NMS-CA-9	Kong Yiu Mansion ⁽⁴⁾	73.1 – 74.6	69.2	70.8 – 73.1	75	No
NMS-CA-10	Chat Ma Mansion	76.3 – 76.8	76.6	<baseline – 63.3	75	No
Works Contract 1111						

Monitoring Station ID	Location	Noise Level ($L_{Aeq,30mins}$, dB(A))			Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
		Measured	Baseline	Corrected ⁽⁷⁾		
NM1	Carmel Secondary School (South Block)	67.9 – 69.6	68.0	<baseline – 64.5	70 (65 during examination period) (68 during the period of conducting the continuous noise monitoring) ⁽⁹⁾	No
NM2	No. 234 – 238 Chatham Road North ⁽⁵⁾	72.3 – 74.1	79.0	<baseline	75 (77) ⁽¹⁰⁾	No
Works Contract 1112 ⁽⁶⁾						

Note:

- (1) Alternative monitoring location to Shek On House.
- (2) Alternative monitoring location to Canossa Primary School (San Po Kong).
- (3) Alternative monitoring location to Prosperity House.
- (4) Alternative monitoring location to Lucky Building.
- (5) Alternative monitoring location to Wing Fung Building.
- (6) No construction noise monitoring is required under this contract.
- (7) The measured noise levels are corrected against the corresponding baseline noise levels.
- (8) The Limit Level of 79 dB(A) was updated on 22 Aug 2013 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP) which were approved by EPD.
- (9) The Limit of 68 dB(A) was updated on 20 Jan 2014 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP) which were approved by EPD.
- (10) Daytime noise Limit Level of 77 dB(A) applies during the continuous noise monitoring period which was conducted from 1 to 31 December 2014.

Table 2.4 Summary of Continuous Noise Monitoring Results in the Reporting Period

NSR ID	NSR Description	Continuous Noise Monitoring Location	Noise Level (L _{Aeq,30mins} , dB(A))			Action/Limit Level ⁽³⁾ dB(A)	Exceedance due to the Project Construction (Yes/No)
			Measured	Baseline	Corrected ⁽²⁾		
Works Contract 1101 ⁽¹⁾							
Works Contract 1102 ⁽¹⁾							
Works Contract 1103							
TAW-6-7	C.U.H.K.A.A. Thomas Cheung School	TAW-6-7 (C.U.H.K.A.A. Thomas Cheung School)	(4)	(4)	(4)	66 ⁽⁷⁾	(4)
Works Contract 1103 & 1106							
DIH-9-1 ⁽¹⁾	Shek On Building	N/A	N/A	N/A	N/A	N/A	N/A
DIH-13-1 ⁽¹⁾	Canossa Primary School	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1106 & 1107							
DIH-14-1 ⁽¹⁾	Rhythm Garden Block 2	N/A	N/A	N/A	N/A	N/A	N/A
DIH-14-5 ⁽¹⁾	Rhythm Garden Block 1	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1103, 1106 & 1107							
DIH-14-4 ⁽¹⁾	Canossa Primary School (San Po Kong)	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1108 ⁽¹⁾							
Works Contract 1108A ⁽¹⁾							
Works Contract 1109							
TKW-1-1 ⁽¹⁾	Parc 22	N/A	N/A	N/A	N/A	N/A	N/A
TKW-2-2 ⁽¹⁾	Skytower Tower 2	N/A	N/A	N/A	N/A	N/A	N/A
TKW-3-2	Prosperity House	TKW-3-2(B) (Hing Fu Building)	59.9 - 84.3	76.1	<baseline – 83.6	80	No
MTW-12-3	Lucky Mansion	MTW-12-3(A) (SKH Good Shepherd Primary School)	68.1 – 84.5	75.4	<baseline – 83.9	80	(9)
MTW-12-4	352-354 Ma Tau Wai Rd (East Façade)	MTW-12-4(A) (Kong Yiu Mansion)	65.8 – 82.4	69.2	<baseline – 82.2	80	No
MTW-12-4-1	352-354 Ma Tau Wai Rd (North Façade)	MTW-12-4-1(A) (59 Maidstone Road)	62.1 – 78.6	75.4	<baseline – 75.7	82	No

NSR ID	NSR Description	Continuous Noise Monitoring Location	Noise Level ($L_{Aeq,30mins}$, dB(A))			Action/Limit Level ⁽³⁾ dB(A)	Exceedance due to the Project Construction (Yes/No)
			Measured	Baseline	Corrected ⁽²⁾		
MTW-12-10	Lucky Building (South Façade)	MTW-12-10 (Lucky Building (South Façade))	(4)	(4)	(4)	84	(4)
MTW-12-10-1	Lucky Building (East Façade)	MTW-12-10-1 (Lucky Building (East Façade))	67.7 – 77.0	69.2	<baseline – 76.2	80	No
MTW-12-11	Jing Ming Building	MTW-12-11(A) (SKH Good Shepherd Primary School)	68.1 – 84.5	75.4	<baseline – 83.9	81	Yes
MTW-16-1	SKH Good Shepherd Primary School	MTW-16-1 (SKH Good Shepherd Primary School)	68.1 – 84.5	75.4	<baseline – 83.9	79	(9)
MTW-18-2 ⁽⁸⁾	No. 2 Kowloon City Road	N/A	N/A	N/A	N/A	N/A	N/A
HOM-2-1--A ⁽¹⁾	Faerie Court (East Façade)	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1111							
OM4a	Carmel Secondary School (South Block)	NM1 (Carmel Secondary School (South Block))	(4)	(4)	(4)	69 ⁽⁷⁾	(4)
HH2 ⁽⁶⁾	Wing Fung Building	NM2 (No. 234-238 Chatham Road North ⁽⁵⁾)	68.3 – 76.8	79	<baseline	77	No
Works Contract 1112 ⁽¹⁾							

Note:

- (1) No continuous noise monitoring is required under this contract.
 - (2) Measured noise level (above the baseline noise level) was corrected against the corresponding baseline level.
 - (3) Reference to the predicted maximum noise level as contained in the corresponding CNMMP.
 - (4) According to the CNMMP and CNMP, continuous noise monitoring is not required during this reporting month.
 - (5) Alternative monitoring location to Wing Fung Building.
 - (6) HH2 named as HUH-1-3 in SCL (TAW-HUH) and SCL(HHS) EIA Reports.
 - (7) Action/Limit level will only be applicable during the examination period.
 - (8) The building at MTW-18-2 has been demolished. During the period of residual noise impact exceeding criteria predicted in the corresponding CNMMP, there will be no NSR occupied at this location. It is therefore not necessary carry out continuous noise monitoring at this location.
 - (9) Investigations for some exceedances are being conducted and detail investigation results will be provided in next reporting month.
- N/A Not applicable

Table 2.5 Log for Environmental Complaints, Notification of Summons and Successful Prosecutions for the Reporting Month

Works Contract	Environmental Complaints	Notification of Summons	Successful Prosecutions
1101	0	0	0
1102	0	0	0
1103	2	0	0
1106	0	0	0
1107	0	0	0
1108	0	0	0
1108A	0	0	0
1109	0	0	0
1111	0	0	0
1112	0	0	0

3 IMPLEMENTATION STATUS ON THE ENVIRONMENTAL PROTECTION REQUIREMENTS

3.1.1 The respective Contractors have implemented all mitigation measures and requirements as stated in the EIA Reports, EM&A Manuals and EP (EP-438/2012/H and EP-437/2012). The status of required submissions under the EPs as of the reporting period are summarised in **Tables 3.1** and **3.2**.

Table 3.1 Summary of Status of Required Submissions for EP-438/2012/H

EP Condition (EP-438/2012/H)	Submission	Submission date
Condition 1.12	Notification of Commencement Date of Construction of the Project	1 Aug 2012
Condition 2.3	Notification of Information of Community Liaison Groups	13 Jul 2012 (1 st submission) 31 Aug 2012 (2 nd submission) 30 Nov 2012 (3 rd submission)
Condition 2.7	Management Organisation of Main Construction Companies	27 Jul 2012 (1 st submission) 21 Aug 2012 (2 nd submission) 19 Dec 2012 (3 rd submission) 22 Jan 2013 (4 th submission) 30 Apr 2013 (5 th submission) 21 May 2013 (6 th submission)
Condition 2.8	Construction Programme and EP Submission Schedule	27 Jul 2012
Condition 2.9	Construction Noise Mitigation Measures Plan (CNMMP)	1 Aug 2012 (1 st submission) 28 Sep 2012 (2 nd submission) 30 Nov 2012 (3 rd submission) 11 Jan 2013 (4 th submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5 th submission) 26 Apr 2013 (6 th submission) 11 Jun 2013 (7 th submission) 12 July 2013 (Approved) 26 July 2013 (8 th submission) 22 Aug 2013 (Approved) 23 Aug 2013 (9 th submission) 13 Sept 2013 (Approved) 20 Jan 2014 (10 th submission) 26 Feb 2014 (Approved)
Condition 2.10	Continuous Noise Monitoring Plan (CNMP)	1 Aug 2012 (1 st submission) 28 Sep 2012 (2 nd submission) 30 Nov 2012 (3 rd submission) 11 Jan 2013 (4 th submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5 th submission) 26 Apr 2013 (6 th submission) 11 Jun 2013 (7 th submission) 12 July 2013 (Approved) 26 July 2013 (8 th submission) 22 Aug 2013 (Approved) 23 Aug 2013 (9 th submission) 13 Sept 2013 (Approved) 20 Jan 2014 (10 th submission) 26 Feb 2014 (Approved) 7 Oct 2014 (11 th submission) 23 Oct 2014 (Approved)
Condition 2.11	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 10 Oct 2012 (Approved)
Condition 2.12	Sediment Management Plan	6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 5 Oct 2012 (3 rd submission) 10 Oct 2012 (Approved)

EP Condition (EP-438/2012/H)	Submission	Submission date
		4 Mar 2013 (4 th submission) 9 May 2013 (5 th submission) 24 July 2013 (6 th submission) 26 July 2013 (Approved)
Condition 2.13	Visual, Landscape, Tree Planting & Tree Protection Plan	6 Jul 2012 (1 st submission) 30 Aug 2012 (2 nd submission) 3 Oct 2012 (3 rd submission) 13 Nov 2012 (Approved for Contracts 1101, 1106 and 1109) 14 Nov 2012 (4 th submission) 8 Feb 2013 (5 th submission) 18 Mar 2013 (6 th submission) 18 June 2013 (7 th submission) 12 July 2013 (Approved)
Condition 2.14	Transplantation Proposal for Plant Species of Conservation Importance	22 Aug 2012 (1 st submission) 5 Oct 2012 (2 nd submission) 26 Nov 2012 (3 rd submission) 4 Dec 2012 (Approved)
Condition 2.15	Conservation Plan	31 Jan 2013 (1 st submission) 18 Mar 2013 (2 nd submission) 24 Apr 2013 (Approved)
Condition 2.16	Archaeological Action Plan(s) (AAP(s)) for Works Contract 1109	10 Aug 2012 (1 st submission) 3 Sep 2012 (2 nd submission) 21 Sep 2012 (Approved) 11 Oct 2013 (3 rd submission) 1 Nov 2013 (Approved)
Condition 2.16	Archaeological Action Plan(s) (AAP(s)) for Works Contract 1106	29 Jan 2013 (1 st submission) 19 Mar 2013 (2 nd submission) 8 Apr 2013 (Approved)
Condition 2.23	Supplementary Contamination Assessment Report for New Territories South Animal Centre	28 Sep 2012 25 Oct 2012 (Approved)
Condition 3.3	Baseline Monitoring Report (Works Contract 1109 - Stations and Tunnels of Kowloon City Section)	27 Jul 2012
Condition 3.3	Baseline Monitoring Report (Works Contract 1108A – Kai Tak Barging Point Facilities)	31 Jul 2012
Condition 3.3	Baseline Monitoring Report (Works Contracts 1103, 1106 and 1111 – Hin Keng to Diamond Hill Tunnels, Diamond Hill Station, and Hung Hom North Approach Tunnels)	19 Oct 2012
Condition 3.4	Monthly EM&A Reports No. 1 - 26 Monthly EM&A Report No. 27	Reported in previous Monthly EM&A Reports 12 December 2014

Table 3.2 Summary of Status of Required Submissions for EP-437/2012

EP Condition (EP-437/2012)	Submission	Submission date
Condition 1.11	Notification of Commencement Date of Construction of the Project	30 Nov 2012
Condition 2.3	Notification of Information of Community Liaison Groups	30 Nov 2012
Condition 2.5	Management Organisation of Main Construction Companies	19 Dec 2012 (1 st submission) 30 Apr 2013 (2 nd submission)
Condition 2.6	Construction Programme and EP Submission Schedule	19 Dec 2012
Condition 2.7	Construction Noise Mitigation Measures Plan (CNMMP)	30 Nov 2012 (1 st submission) 8 Feb 2013 (Approved for Contract 1111) 26 Apr 2013 (2 nd submission) 11 Jun 2013 (3 rd submission) 27 Aug 2013 (Approved) 20 Jan 2014 (4 th submission)
Condition 2.8	Continuous Noise Monitoring Plan (CNMP)	30 Nov 2012 (1 st submission) 11 Jan 2013 (2 nd submission) 8 Feb 2013 (Approved for Contract 1111) 20 Jan 2014 (3 rd submission)
Condition 2.9	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 15 Oct 2012 (Approved)
Condition 2.10	Sediment Management Plan	6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 5 Oct 2012 (3 rd submission) 15 Oct 2012 (Approved)
Condition 2.11	Visual, Landscape, Tree Planting & Tree Protection Plan	14 Nov 2012 (1 st submission) 8 Feb 2013 (2 nd submission)
Condition 3.3	Baseline Monitoring Report (Works Contracts 1103, 1106 and 1111 – Hin Keng to Diamond Hill Tunnels, Diamond Hill Station, and Hung Hom North Approach Tunnels)	19 Oct 2012
Condition 3.4	Monthly EM&A Reports No. 5 - 26 Monthly EM&A Report No. 27	Reported in previous Monthly EM&A Reports 12 December 2014

Appendix A

**28th EM&A Report for Works Contract 1108A –
Kai Tak Barging Point Facilities**

MTR Corporation Limited

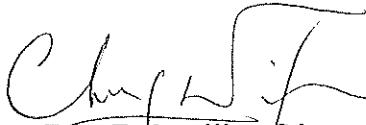
**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No.28

[Period from 1 to 31 December 2014]

Works Contract 1108A – Kai Tak Barging Point
Facilities

(January 2015)

Certified by: 
_____ Dr. Priscilla Choy

Position: Environmental Team Leader


Date: 12th January 2015

Concentric – Hong Kong River Joint Venture

**Shatin to Central Link –
Contract 1108A
Kai Tak Barging Point Facilities**

**Monthly Environmental
Monitoring and Audit Report
for December 2014**

(Version 2.0)

Certified By 
(Contractor's Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY

Introduction

1. This is the 28th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for MTR Contract no. 1108A “Shatin to Central Link - Kai Tak Barging Point Facilities”. This report documents the findings of EM&A Works conducted in December 2014.

Summary of Site Activities undertaken during Reporting Month

2. The major site activities undertaken in the reporting month included:
 - Daily operation and maintenance of the Barging Point Facilities.
 - Loading and disposal of excavated marine sediments to designated dumping facilities.
 - Marine transportation of received spoil to receptor sites for beneficial reuse.
 - Decommissioning of floating jetty (BPF#4) and the associated ancillary facilities.

Environmental Monitoring and Audit Progress

3. A summary of the monitoring activities in this reporting period is listed below:
 - Water Quality Monitoring at each monitoring station.....Nil
 - Environmental Site Inspection.....5 times

Water Quality

4. No water quality monitoring was carried out as no dredging activity was conducted during the reporting month.

Waste Management

5. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. No inert C&D materials were generated, and 5 m³ of non-inert C&D materials were generated during the reporting period. Non-inert C&D materials are made up of general refuse, steel materials and paper/cardboard packaging materials.

Environmental Site Inspection

6. A monthly joint environmental site inspection was carried out by the representatives of the Contractor, the IEC and the ET. Details of the audit findings and implementation status are presented in Section 6.

Ecology/Landscape and Visual

7. Details of the audit findings and implementation status on Ecology/Landscape and Visual are presented in Section 6.

Environmental Exceedance/Non-conformance/Complaint/Summons and Prosecution

8. Summary of the events and action taken and key information in the reporting month is tabulated in **Table I** and **Table II** respectively.

Table I Summary Table for Events Recorded in the Reporting Month

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
Water Quality Monitoring	N/A	N/A	N/A

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Notifications of any summons & prosecutions	0	---	N/A	N/A	---

Future Key Issues

9. Major site activities for the coming reporting month will include:
- Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by Designated and Interfacing Contracts.
 - Marine transportation of received spoil to receptor sites for beneficial reuse.
 - Removal of ancillary facilities for decommissioned floating jetty BPF#4 and re-provisioning of temporary stockpiling area.

1 INTRODUCTION

- 1.1 Cinotech Consultants Limited (Cinotech) was appointed by Concentric – Hong Kong River JV as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link Works Contract 1108A – Kai Tak Barging Point Facilities (hereafter referred to the Project).

Purpose of the report

- 1.2 This is the 28th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 December to 31 December 2014.

Structure of the report

- 1.3 The structure of the report is as follows:

Section 1: **Introduction** - details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement** - summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Protection Requirements** - summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection** - summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance** - summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues** - summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

- 2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).
- 2.2 The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts. In addition to the temporary work site in the vicinity of the tunnel and station structures, there are some off-site temporary works sites/areas to facilitate the construction process. This Works Contract 1108A is one of the off-site temporary works sites covers the construction and operation of barging facilities.

General Site Description

- 2.3 The site layout plan is presented in **Figure 1**.

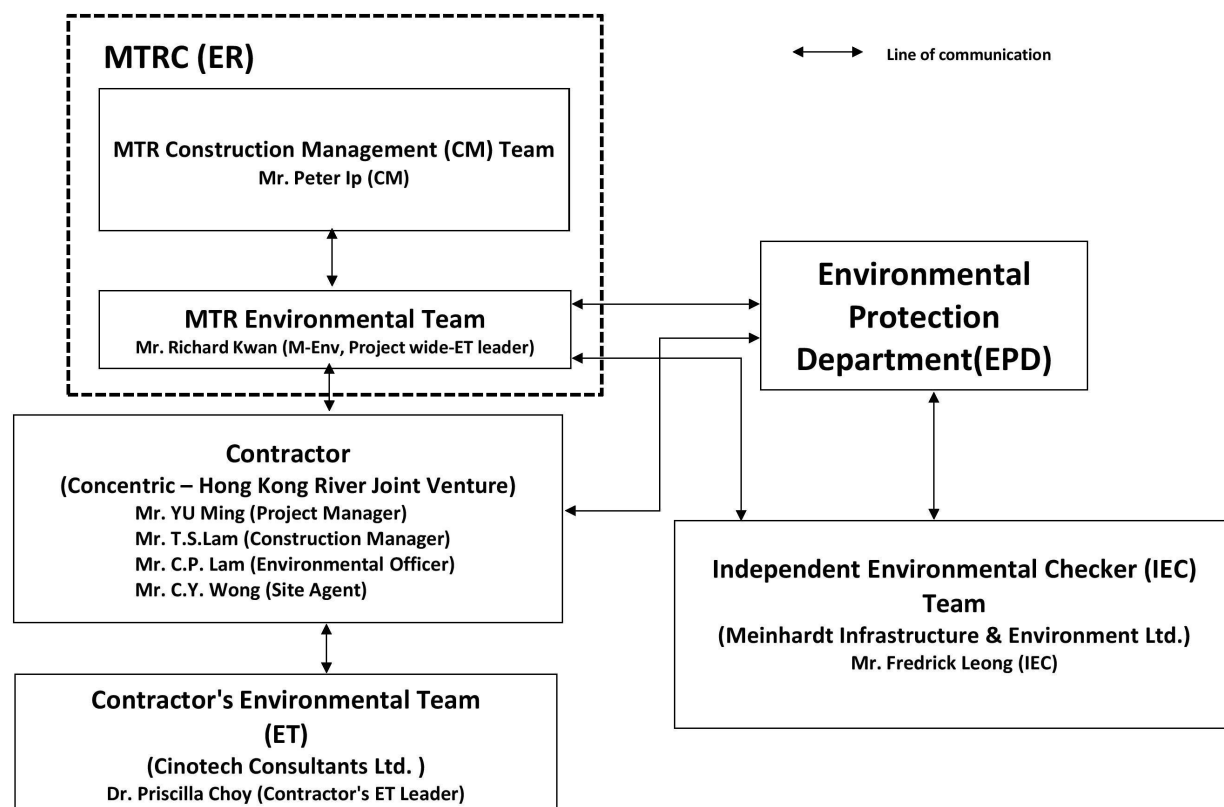
Construction Programme and Activities

- 2.4 A summary of the major site activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix H**.
- Daily operation and maintenance of the Barging Point Facilities.
 - Loading and disposal of excavated marine sediments to designated dumping facilities.
 - Marine transportation of received spoil to receptor sites for beneficial reuse.
 - Decommissioning of floating jetty (BPF#4) and the associated ancillary facilities.

Project Organisation

- 2.5 Different parties with different levels of involvement in the project organization include:
- Engineer or Engineer's Representative (ER) – MTR Corporation (MTRC)
 - Contractor's Environmental Team (ET) – Cinotech Consultants Ltd. (Cinotech)
 - Independent Environmental Checker (IEC) – Meinhardt Infrastructure & Environment Ltd. (Meinhardt)
 - Contractor – Concentric – Hong Kong River Joint Venture (CCL-HKR JV)
- 2.6 The responsibilities of respective parties are detailed in Section 3 of the SCL (TAW-HUH) EM&A Manual.

2.7 The project organisation chart is shown as follows:



2.8 The key contacts of the Project are shown in **Table 2.1**.

Table 2.1 Key Contacts of the Project

Party	Role	Name	Position	Phone No.	Fax No.
MTRC	ER	Mr. Peter IP	Construction Manager	3507 6889	2334 0323
	Environmental Team	Mr. Richard KWAN	SCL Project Environmental Team Leader	2688 1283	2993 7577
Cinotech	Contractor's Environmental Team	Dr. Priscilla CHOY	Contractor's ET Leader	2151 2089	3107 1388
		Ms. Ivy TAM	Project Coordinator and Audit Team Leader	2151 2090	
Meinhardt	Independent Environmental Checker	Mr. Fredrick LEONG	Independent Environmental Checker	2858 0738	2540 1580
CCL-HKR JV	Contractor	Mr. T.S. LAM	Construction Manager	9655 5486	2398 8301
		Mr. C.P. LAM	Environmental Officer	9212 9417	
		Mr. C.Y. WONG	Site Agent	9199 3188	

Status of Environmental Licences, Notification and Permits

- 2.9 The Environmental Permit (EP-438/2012) of SCL (Tai Wai to Hung Hom Section) was first issued on 22 March 2012 and it was updated throughout the Project. The latest Environmental Permit (EP No. EP-438/2012/H) was granted on 10th September 2014.
- 2.10 The disposal of Type 1 (dedicated site) / Type 2 excavated sediment was completed on 13th December 2014 for which EPD has been notified accordingly. All dumping operations of marine sediment under the Contract have thus been completed.
- 2.11 The summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.2**.

Table 2.2 Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012	22/3/2012	11/07/2012	Superseded by EP-438/2012/A
EP-438/2012/A	12/07/2012	25/10/2012	Superseded by EP-438/2012/B
EP-438/2012/B	26/10/2012	29/04/2013	Superseded by EP-438/2012/C
EP-438/2012/C	30/04/2013	12/09/2013	Superseded by EP-438/2012/D
EP-438/2012/D	13/09/2013	03/04/2014	Superseded by EP-438/2012/E
EP-438/2012/E	04/04/2014	14/07/2014	Superseded by EP-438/2012/F
EP-438/2012/F	15/07/2014	13/08/2014	Superseded by EP-438/2012/G
EP-438/2012/G	14/08/2014	09/09/2014	Superseded by EP-438/2012/H
EP-438/2012/H	10/09/2014	N/A	Valid
Construction Noise Permit (CNP)			
GW-RE0754-12	24/09/2012	23/03/2013	Expired
GW-RE0272-13	26/03/2013	23/09/2013	Expired
GW-RE0969-13	24/09/2013	23/03/2014	Expired
GW-RE0321-14	29/03/2014	28/09/2014	Expired
GW-RE1017-14	29/09/2014	28/03/2015	Valid
Marine Dumping Permits			
EP/MD/13-074	26/10/2012	25/11/2012	Expired
EP/MD/13-075	10/10/2012	09/11/2012	Expired
EP/MD/14-077	27/11/2013	26/05/2014	Expired
EP/MD/14-083	16/12/2013	15/01/2014	Expired
EP/MD/14-117	24/02/2014	23/03/2014	Expired
EP/MD/14-158	25/03/2014	24/04/2014	Expired
EP/MD/14-168	10/04/2014	30/04/2014	Expired

Permit / License No.	Valid Period		Status
	From	To	
EP/MD/15-003	25/04/2014	24/05/2014	Expired
EP/MD/15-021	27/05/2014	26/11/2014	Expired
EP/MD/15-073	14/08/2014	13/09/2014	Expired
EP/MD/15-118	13/10/2014	12/11/2014	Expired
EP/MD/15-144	19/11/2014	18/12/2014	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
EPD reference no. 348913	22/08/2012	N/A	Receipt acknowledged by EPD
Billing Account for Construction Waste Disposal			
A/C# 7015860	29/08/2012	N/A	Valid
Registration of Chemical Waste Producer			
WPN5213-286-C3752-01	17/09/2012	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00014328-2012	07/11/2012	30/11/2017	Valid

Summary of EM&A Requirements

- 2.12 The EM&A programme under 1108A require construction phase water quality monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event / Action Plans;
 - Environmental mitigation measures, as recommended in the project EIA study final report; and
 - Environmental requirements in contract documents.
- 2.13 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 2.14 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely water quality as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Water Quality Monitoring

Monitoring Location

- 3.1 In accordance with the EM&A Manual, marine water quality monitoring should be carried out while dredging activities are conducting. The water quality monitoring stations and control stations of Project are shown in **Figure 2**. The co-ordinates of the proposed monitoring stations (construction phase – dredging activities) are listed in **Table 3.1**. As shown in **Figure 2**, the proposed locations are classified as Impact Station and Control Station according to their functions.

Table 3.1 Water Quality Monitoring Stations

Station	Description	East	North	Parameters to be measured
IS-1 ⁽¹⁾	Impact Station for Dredging Activities	838499	819333	DO, Turbidity, SS
CS-1	Control Station for IS-1	838170	818903	DO, Turbidity, SS
CS-2	Control Station for IS-1	838912	818997	DO, Turbidity, SS

Note: (1) As per Baseline Monitoring Report under consultancy agreement No. NEX/2213, there was a slight adjustment for the monitoring station IS-1 due to the site constraint as the original monitoring location (Easting: 838450, Northing: 819399) has been occupied by barges/dredgers of other projects.

Monitoring Parameters, Frequency and Programme

- 3.2 Water quality monitoring was conducted in accordance with the requirements stipulated in the approved SCL (TAW-HUH) EM&A Manual. **Table 3.2** summarized the monitoring frequency and water quality parameters for the impact monitoring.

Table 3.2 Water Quality Impact Monitoring Programme

	Impact Monitoring
Monitoring Period	During dredging period
Monitoring Frequency	3 Days in a Week, at mid-flood and mid-ebb tides
Monitoring Locations	IS-1, CS-1, CS-2
Monitoring Parameters	DO, temperature, turbidity, pH, salinity and SS
Intervals between 2 Sets of Monitoring	Not less than 36 hours
Tide Range	Individual flood and ebb tides not less than 0.5m

Monitoring Equipment and Methodology

Dissolved Oxygen and Temperature Measuring Equipment

- 3.3 The instrument should be portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment should be capable of measuring:
- DO level in the range of 0 - 20 mg/ L and 0 - 200% saturation; and
 - Temperature of 0 - 45 degree Celsius.
- 3.4 The equipment should have a membrane electrode with automatic temperature compensation complete with a cable.

- 3.5 Should salinity compensation not be built-in to the DO equipment, in-situ salinity should be measured to calibrate the DO equipment prior to each DO measurement.

Turbidity Measurement Instrument

- 3.6 The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU (for example, Hach model 2100P or an approved similar instrument).

Water Sampler

- 3.7 A water sampler is required for SS monitoring. It should comprise a PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (for example, Kahlsico Water Sampler or an approved similar instrument).

Water Depth Detector

- 3.8 A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. This unit can either be hand held or affixed to the bottom of the work boat, if the same vessel is to be used throughout the monitoring programme.

Salinity Measuring Equipment

- 3.9 A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.

pH Measuring Equipment

- 3.10 A portable pH meter capable of measuring a range between 0.0 and 14.0 shall be provided to measure pH under the specified conditions (e.g., Orion Model 250A or an approved similar instrument).

Sample Containers and Storage

- 3.11 Water samples for SS determinations should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and shipment to the testing laboratory. The samples shall be delivered to the laboratory within 24 hours of collection and be analysed as soon as possible after collection.

Position Equipment

- 3.12 A hand-held or boat-fixed type digital Differential Global Positioning System (DGPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message 'screen pop-up' facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office), or other equipment instrument of similar accuracy, should be provided and used during marine water monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Calibration of In-Situ Instruments

- 3.13 The pH meter, DO meter and turbidimeter shall be checked and calibrated before use. DO meter and turbidimeter shall be certified by a laboratory accredited under HOKLAS

or any other international accreditation scheme, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

Back-up Equipment and Vessels

- 3.14 Sufficient stocks of spare parts shall be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, malfunction, etc.
- 3.15 The water quality monitoring will involve three monitoring stations and measurements should be conducted within the prescribed tidal conditions in order to ensure the measurement/samples are representative. A multi-probe monitoring equipment set integrated with water sampler(s) is highly recommended to improve the monitoring efficiency. Depending on the actually operation, more than one field survey vessels might be required simultaneously to ensure the monitoring are conducted within the acceptable monitoring period. The ET shall also consider the use of unattended automatic sampling/monitoring devices at fixed stations where monitoring are required throughout the construction period. The use of such unattended automatic devices, however, shall be subject to the approval of the ER, IEC and EPD.

Laboratory Measurement / Analysis

- 3.16 At least 3 replicate samples from each independent sampling event are required for the suspended solids measurement which shall be carried in a HOKLAS or international accredited laboratory. Sufficient water samples shall be collected at the monitoring stations for carrying out the laboratory measurement and analysis. The laboratory determination work shall start within 24 hours after collection of the water samples. The analysis for SS is summarized in **Table 3.3**.

Table 3.3 Laboratory analysis for SS

Parameters	Analytical Method	Reporting Limit
Suspended Solid (SS)	APHA 2540-D	0.1 mg/L

Action and Limit Levels

- 3.17 The action and limit levels for water quality monitoring are presented in **Appendix A**.

Event and Action Plan

- 3.18 Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan in **Appendix D** shall be carried out.

Cultural Heritage

- 3.19 According to the location of the Project and EIA report, there are no terrestrial archaeological resources and built heritage resources in vicinity of the Project. Archaeological monitoring works and the implementation of mitigation measures during the construction and operation phases of the Project is, therefore, not required.
- 3.20 However, the Contractor shall allow a 25m separation distance between the proposed dredging area and the Kowloon Rock as specified in the approved SCL(TAW-HUH) EIA Report.

Landscape and Visual

- 3.21 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is summarised in **Table 6.1** of Section 6.

Ecology

- 3.22 In accordance with the EM&A Manual, weekly site audits should be conducted by the ET during construction phase of the Project to check the recommended mitigation measures should be properly implemented.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix E**. Status of required submissions under the Environmental Permit (EP) during the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Status of submissions under EP	1	Monthly EM&A Report (November 2014)	Submitted to EPD on 12 th December 2014 (EP Condition 3.4)	N/A	---

5 MONITORING RESULTS

Water Quality

- 5.1 No water quality monitoring was carried out at the monitoring stations during this reporting period as the dredging activity was completed on 11 November 2012.
- 5.2 Action and Limit Levels for water quality monitoring were established in the baseline water quality monitoring conducted by MTR between 16 June 2012 and 14 July 2012 under consultancy agreement no. NEX/2213. Action and Limit Levels for water quality is summarised in **Appendix A**.

Waste Management

- 5.3 Waste potentially generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and dredging materials. Non-inert C&D materials are made up of general refuse, steel and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.1**. No paper/cardboard packaging, plastics and steel material were generated during the reporting period.
- 5.4 Detail of waste management data is presented in **Appendix F**.

Table 5.1 Quantities of Waste Generated from the Project

Reporting Month	Quantity						
	C&D Materials (inert) ^(a)	C&D Materials (non-inert) ^(b)	Dredging Quantity (in bulk volume)	Chemical Waste	Recycled materials		
					Paper/cardboard	Plastics	Metals
December 2014	0 m ³	5 m ³	0 m ³	0 kg	0 kg	0 kg	0 kg

Notes:

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

(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

Landscape and Visual

- 5.5 No observations and recommendations were made during the audit sessions.

Ecology

- 5.6 No observations and recommendations were made during the audit sessions.

6 ENVIRONMENTAL SITE INSPECTION

Site Audits

- 6.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix C**.
- 6.2 Site audits were conducted on 2, 11, 16, 23 and 30 December 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 11 December 2014. The details of observations during site audit can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

- 6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the EMIS is provided in **Appendix E**.
- 6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	2 December 2014	<u>Observation:</u> Soil accumulated on the platform under the conveyor belt no.1 should be cleared.	This item was observed improved/rectified by Contractor during the site inspection on 11 December 2014.
	2 December 2014	<u>Reminder:</u> Small amount of muddy water was observed flowing from the site to the road outside the entrance, and the mud was observed accumulated on the road. Contractor was reminded to clear it.	This item was observed improved/rectified by Contractor during the site inspection on 11 December 2014.
	16 December 2014	<u>Reminder:</u> Clear the mud accumulated in the U-channel and the pit near Conveyor Belt no.1.	The mud accumulated in the U-channel was observed to be cleared, while the mud accumulated in the pit was not properly cleared during the site inspection on 23 December 2014. Follow up action will be reported in the next reporting period.
	23 December 2014 30 December 2014	<u>Reminder:</u> Clear the mud accumulated in the pit near Conveyor Belt no.1.	
	23 December 2014	<u>Reminder:</u> Clear the sand under the Conveyor Belt No.2.	This item was observed improved/rectified by Contractor during the site inspection on 30 December 2014.
	23 December 2014	<u>Reminder:</u> Small amount of muddy water was observed flowing from the site to the road outside the entrance, and small amount of mud was observed	This item was observed improved/rectified by Contractor during the site inspection on 30 December 2014.

Parameters	Date	Observations and Recommendations	Follow-up
		accumulated on the road. Contractor was reminded to clear it.	
<i>Noise</i>	N/A	N/A	N/A
<i>Ecology/ Landscape and Visual</i>	N/A	N/A	N/A
<i>Air Quality</i>	18 November 2014	<u>Reminder:</u> Dust curtain of floating jetty no.3 was observed damaged while the jetty was not in operation. Contractor was reminded to repair it.	The holes on tipping hall were covered with tarpaulin sheet, while the dust curtain was still observed damaged during the site inspection on 11 December 2014. Follow up action will be reported in the next reporting period.
	27 November 2014	<u>Observation:</u> Holes were observed on tipping hall of floating jetty no.3 and its dust curtain was observed damaged while the jetty was in operation. Contractor was reminded to repair it.	
	2 December 2014		
	11 December 2014	<u>Observation:</u> Dust curtain of floating jetty no.3 was observed damaged while the jetty was in operation. Contractor was reminded to repair it.	
	16 December 2014		
	23 December 2014		
	30 December 2014		
	16 December 2014 23 December 2014	<u>Observation:</u> Crack were observed on the tipping hall of floating jetty no.3 while the jetty was in operation. Contractor was reminded to repair it.	This item was observed improved/rectified by Contractor during the site inspection on 30 December 2014.
	30 December 2014	<u>Reminder:</u> Properly provide water spraying for the stockpile of dusty materials.	Follow up action will be reported in the next reporting period.
<i>Waste / Chemical Management</i>	27 November 2014	<u>Reminder:</u> A chemical was found placing wrongly into the chemical waste storage area. Contractor was reminded to place it into the chemical storage area.	This item was observed improved/rectified by Contractor during the site inspection on 2 December 2014.
	2 December 2014	<u>Reminder:</u> Oil was observed leaking from the excavator to the hard-paved ground near the conveyor belt no.2. Contractor was reminded to clear it.	This item was observed improved/rectified by Contractor during the site inspection on 11 December 2014.
	16 December 2014	<u>Reminder:</u> Dried oil stain was observed in the hard-paved ground under the excavator	This item was observed improved/rectified by Contractor during the site

Parameters	Date	Observations and Recommendations	Follow-up
		near Conveyor Belt no.2. Contractor was reminded to clear it.	inspection on 23 December 2014.
	23 December 2014	<u>Reminder:</u>	Follow up action will be reported in the next reporting period.
	30 December 2014	Properly remove the oil in drip tray near the chemical waste storage area.	
<i>Permits / Licenses</i>	N/A	N/A	N/A

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

- 7.1 No impact monitoring was conducted in the reporting month. The summary of exceedance is provided in **Appendix B**.

Summary of Environmental Non-Compliance

- 7.2 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

- 7.3 No environmental related complaint, prosecution or notification of summons was received in the reporting month. The Complaint Log is presented in **Appendix G**.

Summary of Environmental Summon and Successful Prosecution

- 7.4 There was no environmental complaint, prosecution or notification of summons received since the Project commencement.

8 FUTURE KEY ISSUES

Key Issues in the Coming Month

8.1 Key issues to be considered in the coming month include:

- Potential dust and noise impacts arising from unloading and temporary stockpiling of C&D material during full operation of the Barging Point Facilities.
- Potential water pollution problem due to the discharge of site runoff during rainfall events.
- Potential environmental impacts arising from unloading and handling of C&D material to the barge, including splashing of spoils into surrounding seawater at the discharge points.
- Potential dust emission and deposition of materials on haul road during delivery of C&D material by Designated and Interfacing Contracts to the Barging Point Facilities.

Site Activities for the Next Month

8.2 A tentative construction programme is provided in **Appendix H**. The major site activities in the coming month will include:

- Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by Designated and Interfacing Contracts.
- Marine transportation of received spoil to receptor sites for beneficial reuse.
- Removal of ancillary facilities for decommissioned floating jetty BPF#4 and re-provisioning of temporary stockpiling area.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 December 2014 to 31 December 2014 in accordance with EM&A Manual and the requirement under EP-438/2012/H.
- 9.2 No impact monitoring was conducted in the reporting month.
- 9.3 There was no environmental complaint, prosecution or notification of summons received.
- 9.4 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- Mitigation measure should be provided for the conveyor belt to prevent spoil falling from the conveyor belt to the underneath.
- The drainage system should be well maintained and free from sediment.
- Sand bags should be maintained and used whenever necessary to prevent muddy surface runoff throwing to road outside the site entrance, and accumulated mud on the ground near the site entrance should be cleared to prevent the generation of muddy surface off.

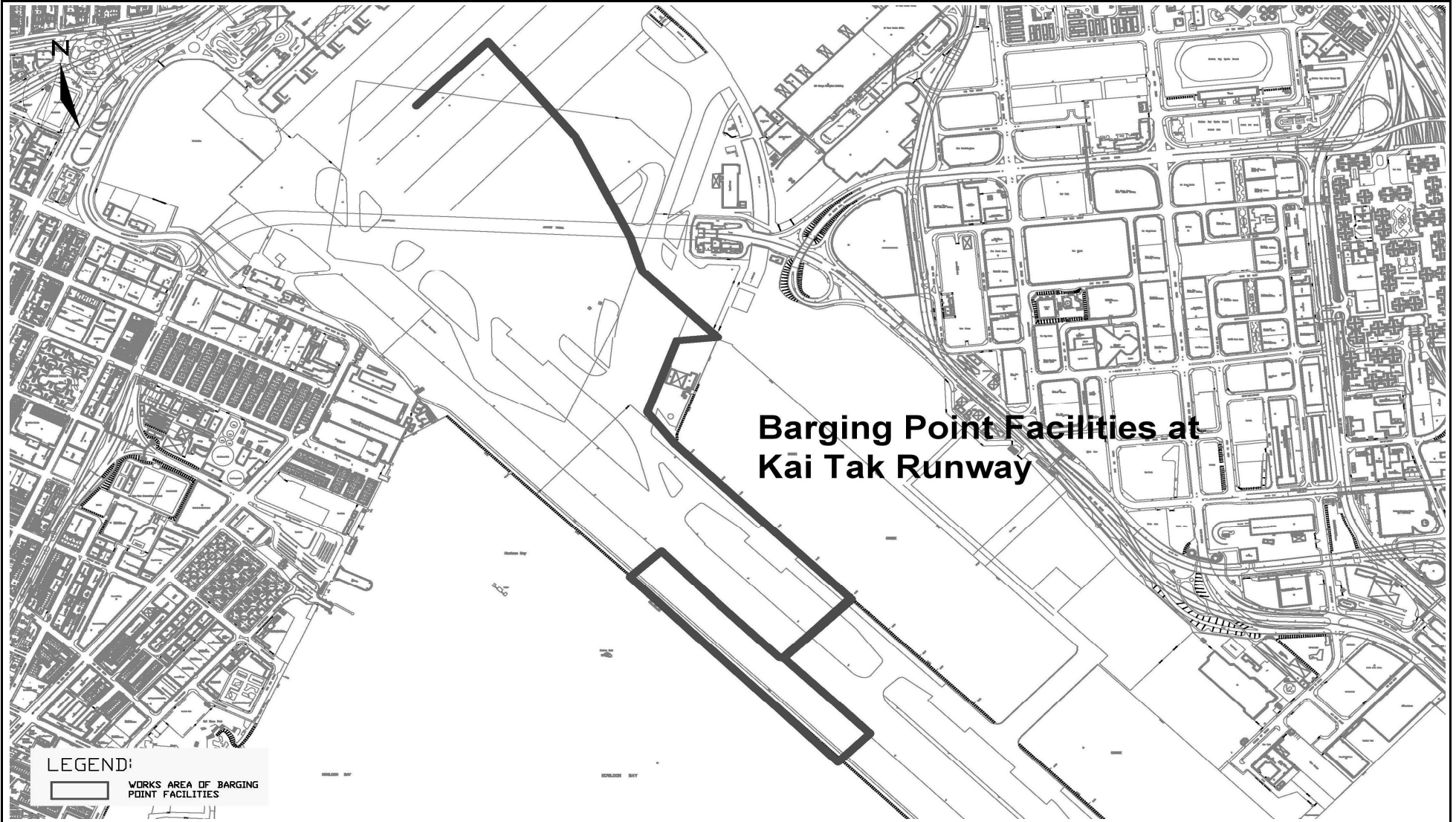
Air Quality

- The dust curtain and tipping hall of floating jetty should be properly maintained.
- Water spray should be provided to the stockpiles and the road, and the spoil and mud on the road should be cleared regularly for dust suppression.

Waste/Chemical Management

- Oil should be removed as chemical waste, and plants and equipment should be maintained to prevent oil leakage.
- Drip trays for oil containers should be provided with adequate capacity and well maintained.

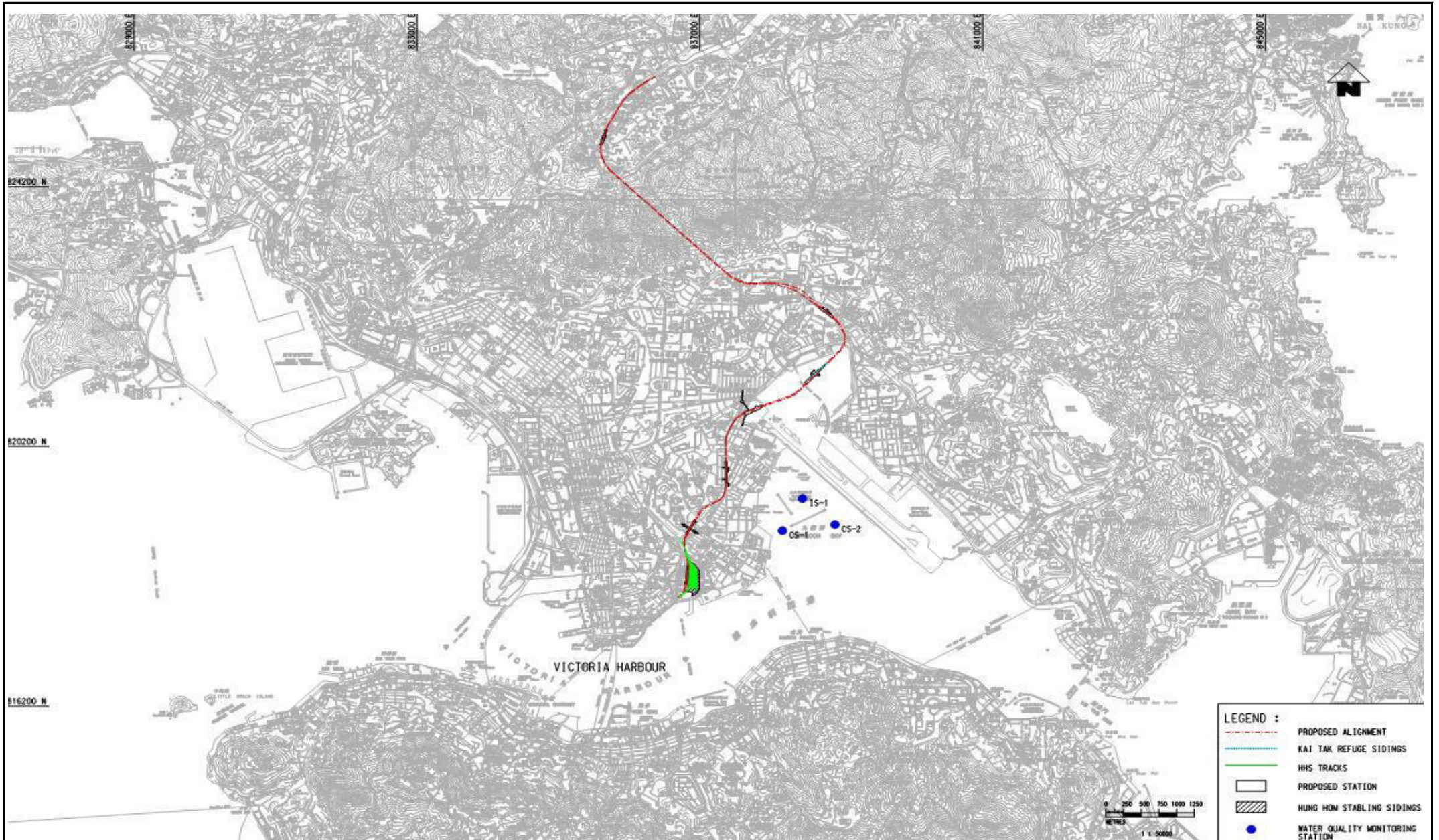
FIGURES



LEGEND:
 [Thick black outline symbol] WORKS AREA OF BARGING POINT FACILITIES

Title	SCL Contract 1108A The Shatin to Central Link - Kai Tak Barging Point Facilities Site Layout Plan		Scale	Project No.
			N.T.S	MA12028
			Date	Figure
			Apr-14	1





Title

SCL Contract 1108A
The Shatin to Central Link -
Kai Tak Barging Point Facilities

Location of Water Monitoring Station and Control Stations

Scale

N.T.S

Date

Oct-12

Propose

No. MA12028

Figure

2



**APPENDIX A
ACTION AND LIMIT LEVELS**

APPENDIX A – Action and Limit Levels

Action and Limit Levels for Water Quality

Parameter	Action	Limit
DO in mg/L	<p><u>Surface & Middle:</u> 4.6 (5 percentile of baseline data)</p> <p><u>Bottom:</u> 3.9 (5 percentile of baseline data)</p>	<p><u>Surface & Middle:</u> 4</p> <p><u>Bottom:</u> 2</p>
SS in mg/L	<p>6.1 (95 percentile of baseline data)</p> <p>or</p> <p>120% of upstream control station's SS at the same tide of the same day</p>	<p>6.3 (99 percentile of baseline data)</p> <p>or</p> <p>130% of upstream control station's SS at the same tide of the same day</p>
Turbidity in NTU	<p>4.8 (95 percentile of baseline data)</p> <p>or</p> <p>120% of upstream control station's Turbidity at the same tide of the same day</p>	<p>5.0 (99 percentile of baseline data)</p> <p>or</p> <p>130% of upstream control station's Turbidity at the same tide of the same day</p>

APPENDIX B
SUMMARY OF EXCEEDANCE

APPENDIX B – SUMMARY OF EXCEEDANCE

Reporting Month: December 2014

a) Exceedance Report for Water Quality Monitoring (NIL)

**APPENDIX C
SITE AUDIT SUMMARY**

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141202
Date	2 December 2014 (Tuesday)
Time	15:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
141202-O01 141202-R04	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> • Soil accumulated on the platform under the conveyor belt no.1 should be cleared. • Small amount of muddy water was observed flowing from the site to the road outside the entrance, and the mud was observed accumulated on the road. Contractor was reminded to clear it. 	B 25 B 13
141202-O02	<p>Part C - Ecology/Others</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. <p>Part D - Air Quality</p> <ul style="list-style-type: none"> • Holes were observed on tipping hall of floating jetty no.3 and its dust curtain was observed damaged while the jetty was in operation. Contractor was reminded to repair it. <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. 	D 18
141202-R03	<p>Part F - Waste/Chemical Management</p> <ul style="list-style-type: none"> • Oil was observed leaking from the excavator to the hard-paved ground near the conveyor belt no.2. Contractor was reminded to clear it. <p>Part G - Permit / Licenses</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection <p>Others</p> <ul style="list-style-type: none"> • Follow-up on previous audit section (Ref. No.:141127). Follow-up action is required for item 141127-O01 which was remarked as 141202-O02. 	F 8

	Name	Signature	Date
Recorded by	Harris Wong		2 December 2014
Checked by	Dr. Priscilla Choy		2 December 2014

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141211
Date	11 December 2014 (Thursday)
Time	13:30 – 14:30

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

Ref. No.	Remarks/Observations	Related Item No.
141211-001	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C - Ecology/Others</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> Dust curtain of floating jetty no.3 was observed damaged while the jetty was in operation. Contractor was reminded to repair it. <p>Part E – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection <p>Part G - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection <p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:141202). Follow-up action is required for item 141202-O02 which was remarked as 141211-O01. 	D 18

	Name	Signature	Date
Recorded by	Harris Wong		11 December 2014
Checked by	Dr. Priscilla Choy		11 December 2014

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141216
Date	16 December 2014 (Tuesday)
Time	15:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
141216-R03	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> Clear the mud accumulated in the U-channel and the pit near Conveyor Belt no.1. 	B 7
	<p>Part C - Ecology/Others</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
141216-O01	<p>Part D - Air Quality</p> <ul style="list-style-type: none"> Dust curtain of floating jetty no.3 was observed damaged while the jetty was in operation. Contractor was reminded to repair it. 	D 18
141216-O02	<ul style="list-style-type: none"> Cracks were observed on the tipping hall of floating jetty no.3 while the jetty was in operation. Contractor was reminded to repair it. 	D 18
	<p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
141216-R04	<p>Part F - Waste/Chemical Management</p> <ul style="list-style-type: none"> Dried oil stain was observed on the hard-paved ground under the excavator near Conveyor Belt no.2. Contractor was reminded to clear it. 	F 8
	<p>Part G - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection 	
	<p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:141211). Follow-up action is required for item 141211-O01 which was remarked as 141216-O01. 	

	Name	Signature	Date
Recorded by	Harris Wong		16 December 2014
Checked by	Dr. Priscilla Choy		16 December 2014

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141223
Date	23 December 2014 (Tuesday)
Time	15:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
141223-R03 141223-R05 141223-R06	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> • Clear the mud accumulated in the pit near Conveyor Belt No.1. • Clear the sand under the Conveyor Belt No.2. • Small amount of muddy water was observed flowing from the site to the road outside the entrance, and small amount of mud was observed accumulated on the road. Contractor was reminded to clear it. 	B 7 B 25 B 13
	<p>Part C - Ecology/Others</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. 	
141223-O01	<p>Part D - Air Quality</p> <ul style="list-style-type: none"> • Dust curtain of floating jetty no.3 was observed damaged while the jetty was in operation. Contractor was reminded to repair it. 	D 18
141223-O02	<ul style="list-style-type: none"> • Cracks were observed on the tipping hall of floating jetty no.3 while the jetty was in operation. Contractor was reminded to repair it. 	D 18
	<p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. 	
141216-R04	<p>Part F - Waste/Chemical Management</p> <ul style="list-style-type: none"> • Properly remove the oil in drip tray near the chemical waste storage area. 	F 9
	<p>Part G - Permit / Licenses</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection 	
	<p>Others</p> <ul style="list-style-type: none"> • Follow-up on previous audit section (Ref. No.:141216). Follow-up action is required for item 141216-O01, 141216-O02 and 141216-R03 which was remarked as 141223-O01, 141223-O02 and 141223-R03. 	

	Name	Signature	Date
Recorded by	KC Chung		23 December 2014
Checked by	Dr. Priscilla Choy		23 December 2014

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141230
Date	30 December 2014 (Tuesday)
Time	15:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
141230-R03	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> • Clear the mud accumulated in the pit near Conveyor Belt No.1. 	B 7
141230-O01	<p>Part C - Ecology/Others</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> • Dust curtain of floating jetty no.3 was observed damaged while the jetty was in operation. Contractor was reminded to repair it. 	D 18
141230-R04	<ul style="list-style-type: none"> • Properly provide water spraying for the stockpile of dusty materials. <p>Part E – Construction Noise Impact</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. 	D 7
141230-R02	<p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> • Properly remove the oil in drip tray near the chemical waste storage area. <p>Part G - Permit / Licenses</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection <p>Others</p> <ul style="list-style-type: none"> • Follow-up on previous audit section (Ref. No.:141223). Follow-up action is required for item 141223-O01, 141223-R03 and 141223-R04 which was remarked as 141230-O01, 141230-R03 and 141230-R02. 	F 9

	Name	Signature	Date
Recorded by	KC Chung		30 December 2014
Checked by	Dr. Priscilla Choy		30 December 2014

APPENDIX D
EVENT AND ACTION PLANS

Event and Action Plan for Water Quality

Event	ET	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Inform IEC, contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; and 3. Discuss remedial measures with IEC and Contractor and ER 	<ol style="list-style-type: none"> 1. Discuss with ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the implemented mitigation measures; and 2. Make agreement on the remedial measures to be implemented. 3. Supervise the implementation of agreed remedial measures 	<ol style="list-style-type: none"> 1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with ER, ET and IEC and propose remedial measures to IEC and ER; and 7. Implement the agreed mitigation measures.
Action level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> 1. Repeat in-situ measurement on next day of exceedance to confirm findings; 2. Inform IEC, contractor and ER; 3. Check monitoring data, all plant, equipment and Contractor's working methods; 4. Discuss remedial measures with IEC, contractor and ER 5. Ensure remedial measures are implemented 	<ol style="list-style-type: none"> 1. Discuss with ET Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with ET, IEC and Contractor on the proposed mitigation measures; 2. Make agreement on the remedial measures to be implemented; and 3. Discuss with ET IEC and Contractor on the effectiveness of the implemented remedial measures. 	<ol style="list-style-type: none"> 1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and 6. Implement the agreed mitigation measures.
Limit level being	<ol style="list-style-type: none"> 1. Repeat measurement on next day 	<ol style="list-style-type: none"> 1. Discuss with ET , Contractor and 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and 	<ol style="list-style-type: none"> 1. Identify source(s) of impact;

Event	ET	IEC	ER	Contractor
<p>exceeded by one sampling day</p>	<p>of exceedance to confirm findings; 2. Inform IEC, contractor and ER; 3. Rectify unacceptable practice; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Consider changes of working methods 6. Discuss mitigation measures with IEC, ER and Contractor; and 7. Ensure the agreed remedial measures are implemented;</p>	<p>ER on possible remedial actions; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.</p>	<p>Contractor on the implemented remedial measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; and 4. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.</p>	<p>2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER within 3 working days of notification; and 6. Implement the agreed remedial measures.</p>
<p>Limit level being exceeded by more than one consecutive sampling days</p>	<p>1. Inform IEC, contractor, ER and EPD 2. Check monitoring data, all plant, equipment and Contractor's working methods; 3. Discuss mitigation measures with IEC, ER and Contractor; and 4. Ensure mitigation measures are implemented; and 5. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.</p>	<p>1. Discuss with ET, ER and Contractor on possible remedial actions; 2. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.</p>	<p>1. Discuss with IEC, ET and Contractor on the implemented mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; 4. Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the dredging activities until no exceedance of Limit level.</p>	<p>1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; 6. Implement the agreed mitigation measures. 7. As directed by the ER, to slow down or to stop all or part of the dredging activities until no exceedance of Limit level.</p>

Event and Action Plan for Landscape and Visual during Construction Stage

Event	ET	IEC	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity implement remedial measures 2. Amend working methods agreed with the ER as appropriate 3. Rectify damage and undertake any necessary replacement. 4. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer/Engineer’s Representative

**APPENDIX E
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Ecology (Pre-Construction Phase)								
S5.7	E3	<p><u>Tree felling and vegetation removal</u></p> <p>Precautionary checks of the vegetation for the presence of nesting bird species of conservation interest should be carried out before vegetation clearance by an ecologist.</p>	Minimize ecological impacts to breeding bird species of conservation interest	Contractor	Works sites Kai Tak Barging Point	Prior to site clearance	• AFCD's requirements	^
Ecology (Construction Phase)								
S5.7	E5	<p><u>Good Site Practices</u></p> <p>Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses in particular the Tei Lung Hau stream; 	Minimise ecological impacts	Contractor	All construction sites	During Construction	• ProPECC PN 1/94	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream; Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value. No on-site burning of waste; Waste and refuse in appropriate receptacles. 						<p>^</p> <p>^</p> <p>^</p> <p>^</p>
S5.7	E6	<p><u>Sediment Removal</u></p> <ul style="list-style-type: none"> Use closed grab in dredging works. Install silt curtain during the dredging. 	<ul style="list-style-type: none"> Reduce indirect impacts of suspended solids on sessile benthic and intertidal fauna Minimize marine water quality impacts 	Contractor	Dredging Area	During Dredging	•TM-Water	<p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p>
Landscape & Visual (Construction Phase)								
S6.9.3	LV1	<p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> For soil conservation, existing topsoil shall be re-used where 	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	•TM-EIAO	<p>N/A⁽²⁾</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary.</p> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. 						<p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites. 						^
S6.12	LV2	<p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. 	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and construction stage	<ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006 	^ N/A ⁽¹⁾
Air Quality (Construction Phase)								
/	A1	<p><u>Emission from Vehicles and Plants</u></p> <ul style="list-style-type: none"> All vehicles shall be shut down in intermittent use. Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD). 	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> APCO To control the air quality to meet HKAQO and TM-EIA criteria 	^

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/	A2	Open burning shall be prohibited.	Reduce air pollution emission from work site.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the air quality to meet HKAQO and TM-EIA criteria 	^
Construction Dust Impact								
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	*
S7.6.5	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m ² to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S7.6.5	D3	<ul style="list-style-type: none"> • Proper watering of exposed spoil should be undertaken throughout the construction phase; • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	^ * ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A⁽²⁾</p> <p style="text-align: center;">N/A⁽²⁾</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</p> <ul style="list-style-type: none"> • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverized 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; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 						<p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S7.6.5	D4	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: <ul style="list-style-type: none"> • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points 	Control construction dust	Contractor	Kai Tak Barging Point	Construction stage	• Air Pollution Control (Construction Dust) Regulation	^ ^ ^ ^
S7.6.5	D5	<ul style="list-style-type: none"> • For the unloading of spoil from trucks at barging point, installation of 3-sided screen with top tipping hall and operating water spraying and flexible dust curtains at the discharge point for dust suppression 	Minimize dust impact at the nearby sensitive receivers	Contractor	Barging Points	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria • EP Condition 2.18 (c)	*
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	N/A ⁽¹⁾

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Construction Noise (Airborne)								
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) 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, where possible, be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^ ^ ^ N/A ⁽²⁾ ^ N/A ⁽²⁾
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	N/A ⁽¹⁾
S8.3.6	N4	Use “Quiet plants”	Reduce the noise levels of plant items	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	N/A ⁽¹⁾
S8.3.6	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	•TM-EIA	N/A ⁽¹⁾

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Water Quality (Construction Phase)								
S10.7.1	W1	<p>In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following:</p> <p><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated 	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	<p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>in the permanent drainage channels to enhance deposition rates.</p> <p>The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5 m³/s the basin would be 150 m³. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

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		<p>weather and the reduction of surface sheet flows.</p> <ul style="list-style-type: none"> • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. • Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage 						<p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A⁽¹⁾</p> <p style="text-align: center;">^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>system and storm runoff being directed into foul sewers</p> <ul style="list-style-type: none"> • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors 						<p>^</p> <p>^</p> <p>^</p>

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		<p>should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.</p> <ul style="list-style-type: none"> • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices. 						<p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">N/A⁽²⁾</p> <p style="text-align: center;">*</p>
S10.7.1	W3	<p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. 	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water 	^

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S10.7.1	W4	<p><u>Groundwater from Contaminated Area:</u></p> <ul style="list-style-type: none"> No direct discharge of groundwater from contaminated areas should be adopted. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed with reference to the site investigation data in this EIA report for compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-Water) and the existence of prohibited substance should be confirmed. 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, the contaminated groundwater should be either properly treated in compliance with the requirements of the TM-Water or properly recharged into the ground. If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. TPH) to undetectable range. All treated effluent from wastewater treatment 	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found.	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-water TM-EIAO 	<p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>plant shall meet the requirements as stated in TM-Water and should be discharged into the foul sewers</p> <ul style="list-style-type: none"> If groundwater recharging wells are deployed, 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 the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH 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. 						N/A ⁽¹⁾

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S10.7.1	W5	<p><u>Dredging Works</u></p> <p>The following good practice shall apply for the dredging works:</p> <ul style="list-style-type: none"> • Install efficient silt curtains at the point of seawall dredging to control the dispersion of SS; • Implement water quality monitoring to ensure effective control of water pollution and recommend additional mitigation measures required; • The decent speed of grabs should be controlled to minimize the seabed impact and to reduce the volume of over-dredging; and • 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 minimize sediment suspension during dredging	Contractor	Kai Tak Barging Point during dredging works	Dredging period	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-EIAO 	<p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p>
S10.7.1	W6	<p><u>Operation of Barging Facilities</u></p> <p>The following good practice shall apply for the barging facilities operations:</p> <ul style="list-style-type: none"> • All barges should be fitted with tight bottom seals to prevent leakage of materials during transport; • Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or 	To minimize water quality impact from operation of barging facility	Contractor	All barging facilities	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-EIA 	<p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		transportation; <ul style="list-style-type: none"> 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; Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water; and Mitigation measures as outlined in W1 should be applied to minimise water quality impacts from site runoff and open stockpile spoils at the proposed barging facilities where appropriate. 						^ ^ ^
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended: <ul style="list-style-type: none"> All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S10.7.1	W8	Implement a marine water quality monitoring programme	Monitor marine water quality prior to and during dredging period	Contractor	At identified monitoring location	Prior to and during dredging period	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water • EIA-TM 	^
Waste Management (Construction Waste)								
S11.4.1.1	WM1	<p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site 	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • DEVB TC(W) No. 6/2010 	N/A ⁽²⁾

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.						
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; Carry out on-site sorting; Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005 	<p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation 						^
S11.5.1	WM3	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication should be used as far as practicable in order to minimize the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No.19/2005 	^ N/A ⁽²⁾

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S11.5.1	WM4	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	^ ^ ^
S11.5.1	WM6	<p><u>Land-based and Marine-based Sediment</u></p> <ul style="list-style-type: none"> All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited 	To control pollution due to marine sediment	Contractor	Within Project Site Area	Construction Stage	• ETWB TCW No. 34/2002	N/A ⁽¹⁾

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>in the locations other than designated location;</p> <ul style="list-style-type: none"> • All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • Before moving the vessels which are used for transporting dredged material, excess material shall be cleaned from the decks and exposed fittings of vessels and the excess materials shall never be dumped into the sea except at the approved locations; • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. • The Contractors shall monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers; • The Contractors shall comply with the conditions in the dumping licence. • All bottom dumping vessels (Hopper barges) shall be fitted with 						<p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>tight fittings seals to their bottom openings to prevent leakage of material;</p> <ul style="list-style-type: none"> • The material shall be placed into the disposal pit by bottom dumping; • Contaminated marine mud shall be transported by spit barge of not less than 750m³ capacity and capable of rapid opening and discharge at the disposal site; • Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Material adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. • For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping into designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfilling the requirements for fully confined mud disposal. 						<p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S11.5.1	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All Construction Sites	Construction Stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	<p>*</p> <p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD. 						^

Remarks: ^ Compliance of mitigation measure X Non-compliance of mitigation measure

- Non-compliance but rectified by the contractor

* Recommendation was made during site audit but improved/rectified by the contractor.

N/A⁽¹⁾ Not Applicable

N/A⁽²⁾ Not Applicable at this stage

**APPENDIX F
WASTE GENERATION IN THE
REPORTING MONTH**

**APPENDIX G
COMPLAINT LOG**

Appendix G - Complaint Log

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
--	--	--	--	--	--

**APPENDIX H
TENTATIVE CONSTRUCTION
PROGRAMME**

Act ID	Description	Orig Dur	Early Start	Early Finish	%	2014												2015															
						NOV				DEC				JAN				FEB				MAR				APR				MAY			
						03	10	17	24	01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06	13	20	27	04	
COMMENCEMENT & COMPLETION																																	
Time for Completion																																	
1108ADC04C	Completion of The Whole of the Works	1477	13AUG12 A	28AUG16	59																												
MILESTONES SCHEDULE																																	
Milestones for Cost Centre A																																	
1108AMSA70	Satisfactory Impl'n of Safety & Env req'ts.	0		29MAR15	0																												
Milestones for Cost Centre B																																	
1108AMSB60	Mgt., Maint., & Operation of BPF	0		29DEC14 A	100																												
Cost Centre A																																	
Preliminaries																																	
1108AA7010	Satisfactory Impl'n of Safety & Env req'ts.	963	13AUG12 A	29MAR15	91																												
Addition of Floating Landing Barge in WA3																																	
1108AVE391	Operation of Additional Floating Jetty	359	06JAN14 A	30NOV14 A	100																												
Cost Centre B																																	
Kai Tak BPF - Mgt., Maintenance & Operation																																	
1108AB6010	Manage, Maintain & Operate the BPF	182	30JUN14 A	29DEC14 A	100																												
1108AB7010	Manage, Maintain & Operate the BPF	182	30DEC14 A	28JUN15	1																												

Start date	10AUG12
Finish date	28AUG16
Data date	31DEC14
Run date	05JAN15
Page number	1A
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MTR SCL 1108A
KAI TAK BARGING POINT FACILITIES

Concentric - Hong Kong River Joint Venture

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

Appendix B

**28th EM&A Report for Works Contract 1109 –
Stations and Tunnels of Kowloon City Section**

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 28

[Period from 1 to 31 December 2014]

Works Contract 1109 - Stations and Tunnels of
Kowloon City Section

(13 January 2015)

Certified by: 
_____ Winnie Ko _____

Position: Environmental Team Leader

Date: 13 January 2015

Samsung-Hsin Chong JV

Shatin to Central Link (SCL) - Tai
Wai to Hung Hom Section:
Works Contract 1109 – Stations and
Tunnels of Kowloon City Section
Monthly EM&A Report No.28

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Monthly EM&A Report No.28

December 2014

Reference 0171181

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed:



Position: Partner

Date: 13 January 2015

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EXECUTIVE SUMMARY

The construction works of **MTR Shatin to Central Link Works Contract 1109 – Stations and Tunnels of Kowloon City Section** commenced on 1 September 2012. This is the twenty-eighth monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 December 2014 to 31 December 2014 in accordance with the EM&A Manual.

Summary of the Construction Works undertaken during the Reporting Month

The major construction works undertaken during the reporting month include:

Construction Activities undertaken

Works in Ma Tau Wai (MTW)

- TKW/MTW Road Garden – Operation of bentonite plant and Pier 15 underpinning works; and
- Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.

Works in To Kwa Wan (TKW)

- Olympic Garden – Underpinning works and installation of pipe piles;
 - TKW Station – Pump installation, shaft excavation, and TBM and STP setup; and
 - Nam Kok Road – Installation of pipe pile.
-

Regular Construction Noise and Construction Dust Monitoring

A summary of the monitoring activities in this reporting period is listed below:

- Regular construction noise monitoring during normal working hours
 - NMS-CA-6 *5 times*
 - NMS-CA-7 *5 times*
 - NMS-CA-8 *5 times*
 - NMS-CA-9 *5 times*
 - NMS-CA-10 *5 times*
- Construction dust (24-hour TSP) monitoring
 - DMS-6 *6 times*
 - DMS-7 *6 times*
 - DMS-8 *6 times*
 - DMS-9 *6 times*
 - DMS-10 *6 times*

Continuous Noise Monitoring

Continuous noise monitoring is required at TKW-3-2(B), MTW-12-3(A), MTW-12-4(A), MTW-12-11(A), MTW-16-1, MTW-12-4-1 (A) and MTW-12-10-1 during this reporting month, according to the schedule presented in the latest approved CNMP.

Cultural Heritage

A License to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance has been obtained from Antiquities and Monuments Office (AMO) on 29 October 2012. The archaeological survey-cum-excavation and additional investigation at the Sacred Hill (North) commenced on 1 November 2012 and was conducted in accordance with the License and the approved Archaeological Action Plan (AAP). An updated AAP was submitted to AMO for renewal of the 1 year archaeological license. The license was renewed and granted by AMO on 24 October 2013. The updated AAP was submitted to EPD for approval on 11 October 2013 and it was approved on 1 November 2013. The fieldworks of the archaeological survey-cum-excavation and additional investigation were completed on 27 December 2013. The Interim Archaeological Report was provided to AMO in April 2014.

Vibration monitoring was conducted at Hong Kong Aviation Club during the reporting period, no non-compliance was recorded.

Waste Management

Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 44,771 m³ of inert C&D materials were generated from the Project, which were sent to 1108A Kai Tai Barging Facilities during the reporting month. 284 kg of plastics was generated and sent to recyclers for recycling during the reporting period. About 103 m³ of non-recyclable non-inert C&D materials, such as general refuse, were disposed of at NENT Landfill. No metal waste was generated during this reporting month. 90 kg of paper/cardboard packaging was generated and sent to recyclers for recycling during the reporting period. 400kg of chemical waste was generated during this reporting month.

Landscape and Visual

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 1, 15 and 29 December 2014. No audit findings were observed during the reporting month. The implementation status is presented in *Section 5*.

Environmental Site Inspection

Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 1, 8, 15, 22 and 29 December 2014. The representative of the IEC joined the site inspection on 8 December 2014. Details of the audit findings and implementation status are presented in *Section 6*.

Environmental Exceedance/Non-conformance/Compliant/Summons and Prosecution

No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period.

Following up on the exceedances of the Action and Limit Levels of the continuous noise monitoring recorded on 18 and 26 November 2014; 1, 16, 23 and 27 December 2014, investigation of the exceedances have been completed and the investigation reports are presented in Annex L.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3 (A) on 1, 23, 27, 29 and 30 December 2014; at MTW-12-11 (A) on 1 December 2014 and at MTW-16-1 on 1, 16, 23, 27, 29 and 30 December 2014.

The exceedances recorded on 29 and 30 December 2014 are still under investigation and the findings will be reported in the next reporting period.

No complaint was reported during the reporting month.

No summon or prosecution was received in this reporting period.

Future Key Issues

The major construction works to be undertaken in the next reporting month include:

Construction Activities to be undertaken

Work in Ma Tau Wai (MTW)

- TKW/MTW Road Garden – Operation of bentonite plant and pier 15 underpinning works; and
- Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.

Work in To Kwa Wan (TKW)

- Olympic Garden – Underpinning works and installation of pipe pile and TTMS preparation;
 - Olympic Playground – TTMS preparation;
 - TKW Station – Pump installation, shaft excavation and TBM & STP site setup; and
 - Nam Kok Road – Installation of pipe pile.
-

ERM-Hong Kong, Limited (ERM) was appointed by Samsung-Hsin Chong JV (SSHCJV) as the Environmental Team (Contractor's ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during the construction phase of the **MTR Shatin to Central Link (SCL) Works Contract 1109 – Stations and Tunnels of Kowloon City Section** (the Project).

1.1 *PURPOSE OF THE REPORT*

This is the twenty-eighth EM&A report which summarises the monitoring results and audit findings during the reporting period from 1 December to 31 December 2014.

1.2 *STRUCTURE OF THE REPORT*

Section 1 : Introduction

It details the purpose and structure of the report.

Section 2 : Project Information

It summarises the background and scope of the project, site description, project organisation and contact details, construction programme, construction works undertaken and status of the Environmental Permits/Licenses during the reporting period.

Section 3 : Environmental Monitoring Requirement

It summarises the monitoring parameters, programmes, methodologies, frequency, locations, Action and Limit Levels, Event / Action Plans.

Section 4 : Implementation Status of the Environmental Protection Requirements

It summarises the implementation of environmental protection measures during the reporting period.

Section 5 : Monitoring Results

It summarises the monitoring results obtained in the reporting period.

Section 6 : Environmental Site Inspection

It summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7 : Environmental Non-conformance

It summarises any monitoring exceedance, environmental complaints and summons within the reporting period.

Section 8 : **Future Key Issues**

It summarises the forecast of environmental impact and monitoring schedule for the next three months.

Section 9 : **Conclusions**

2 PROJECT INFORMATION

2.1 BACKGROUND

The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an extension of the Ma On Shan Line and is approximately 11 km long. It links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the *Environmental Impact Assessment Ordinance* (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts and this Works Contract 1109 covers the construction of stations in To Kwa Wan (TKW) and Ma Tau Wai (MTW), and the tunnels between the TKW station and Ho Man Tin station (HOM).

2.2 GENERAL SITE DESCRIPTION

For the Works Contract 1109, the alignment runs from TKW station below Ma Tau Chung Road/Ma Tau Wai Road towards the west, reaching the MTW station. After leaving MTW station, the alignment passes Ko Shan Road and joins the HOM station at the intersection of Fat Kwong Street and Shun Yung Street. The underground sections of the alignment between TKW and HOM stations will be constructed by bored tunneling. Both the TKW and MTW stations will be constructed by cut-and-cover method.

The alignment and works area for the Works Contract 1109 are shown in *Annex A*.

2.3 CONSTRUCTION PROGRAMME AND ACTIVITIES

A summary of the major construction activities undertaken in this reporting period is shown in *Table 2.1*. The construction programme is presented in *Annex B*.

Table 2.1 *Summary of the Construction Activities Undertaken during the Reporting Month*

Construction Activities undertaken	
<u>Works in Ma Tau Wai (MTW)</u>	
•	TKW/MTW Road Garden – Operation of bentonite plant and Pier 15 underpinning works; and
•	Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.
<u>Works in To Kwa Wan (TKW)</u>	
•	Olympic Garden – Underpinning works and installation of pipe pile;
•	TKW Station – Pump installation, shaft excavation, and TBM and STP setup; and
•	Nam Kok Road – Installation of pipe pile.

2.4 PROJECT ORGANISATION

The project organisational chart and contact details are shown in *Annex C*.

2.5 STATUS OF ENVIRONMENTAL LICENCES, NOTIFICATION AND PERMITS

A summary of the valid permits, licences, and/or notifications on environmental protection for this Project is presented in *Table 2.2*.

Table 2.2 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-438/2012/H	Throughout the Contract	Permit granted on 10 September 2014
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	348516	13 August 2012 – 30 April 2017	-
Notification of Construction Works under Air Pollution Control (Construction Dust) Regulation (Form NB)	351125	16 October 2012 – 30 April 2017	-
Wastewater Discharge Licence			
Site at TKW	WT00019555-2014	30-September-2017	-
Site at MTW	WT00019556-2014	30-September-2017	-
Chemical Waste Producer Registration			
Site at TKW	5213-286-S3682-01	Throughout the Contract	-
Site at MTW	5213-242-S3682-02	Throughout the Contract	-
Construction Noise Permit			
- PME on Tam Kung Road	GW-RE1075-14	30 September 2014 - 25 March 2015	-
- PME in Pier 15 works area and EEP	GW-RE1076-14	30 September 2014 - 24 March 2015	-
- PME at Kai Tak New Land 2	GW-RE0827-14	25 July 2014 - 23 January 2015	-
- PME in TKW/MTW Garden	GW-RE0914-14	21 August 2014 – 31 January 2015	-
- PME on Kowloon City Road	GW-RE1131-14	6 October 2014 – 5 April 2015	-
- PME at Kai Tak New Land	GW-RE1218-14	28 October 2014 – 12 April 2015	-
- PME at Olympic Garden load transfer	GW-RE1257-14	25 November 2014 - 10 Dec 2014	Expired
- PME ar To Kwa Wan Lok Shan Road	GW-RE1268-14	16 November 2014 - 14 December 2014	Expired
- PME at SUW Playground and	GW-RE1340-14	26 November 2014 - 20 May 2015	-

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
<i>Olympic Avenue</i>			
- <i>PME at SUW works area</i>	<i>GW-RE1339-14</i>	<i>27 November 2014 - 26 May 2015</i>	-
- <i>PME at MTW Road North Bound & E3-E6 works areas</i>	<i>GW-RE1332-14</i>	<i>27 November 2014 - 19 May 2015</i>	-
Billing Account for Disposal of Construction Waste	7015758	Throughout the Contract	-

3.1 REGULAR CONSTRUCTION NOISE MONITORING

3.1.1 Monitoring Location

In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was either rejected or unavailable; alternative locations were proposed and agreed by the ER (Engineer's Representative), IEC (Independent Environmental Checker) and EPD (Environmental Protection Department). The construction noise monitoring locations are listed in *Table 3.1* and shown in *Annex D*. The noise sensitive receivers (NSRs) related to this Works Contract are also shown in *Annex D*.

Table 3.1 Regular Construction Noise Monitoring Location

Proposed Regular Construction Noise Monitoring Location	Description	Type of Measurement
NMS-CA-6 (a)	No.16-23 Nam Kok Road	Façade
NMS-CA-7	Skytower Tower 2	Façade
NMS-CA-8	SKH Good Shepherd Primary School	Façade
NMS-CA-9 (b)	Kong Yiu Mansion	Façade
NMS-CA-10	Chat Ma Mansion	Façade

Notes:

(a) Access to the monitoring location at Prosperity House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. Furthermore, the alternative location, No. 420 Prince Edward Road West, used in the baseline monitoring was also not available as access permission was rejected by the owner of the building. An alternative location (No.16-23 Nam Kok Road) was proposed and approved by the ER and agreed by the IEC and EPD.

(b) As the Incorporated Owners Association of the monitoring location at Lucky Building (originally proposed in the approved EM&A Manual) did not reply to our request for access to their premise, an alternative location, Kong Yiu Mansion, was proposed and approved by the ER and agreed by the IEC and EPD.

3.1.2 Monitoring Parameter and Frequency

Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period is shown in *Annex E*.

The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). $L_{Aeq(30min)}$ was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays. The measured noise levels were logged every 5 minutes throughout the monitoring period.

3.1.3 *Monitoring Equipment and Methodology*

Construction noise measurements were conducted in accordance with the calibration and measurement procedures as stated in *Annex – General Calibration and Measurement Procedures of Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM)* issued under the *Noise Control Ordinance (NCO)* (Cap 400).

The sound level meters and calibrator used for the noise measurement, as listed in *Table 3.2*, compile with the IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in *Annex F*.

Table 3.2 *Noise Monitoring Equipment*

Monitoring Stations	Monitoring Equipment (Sound Level Meter and Calibrator)
NMS-CA-6	Calibrator: NC 73 (Serial No. 10786708) Sopund Level Meter: NL-52 (Serial No. 00131628)
NMS-CA-7, NMS-CA-9 and NMS-CA-10	Calibrator: NC 73 (Serial No. 10997142) Sound Level Meter: NL 18 (Serial No. 00360030)
NMS-CA-8	Calibrator: NC-73 (Serial No. 10997142) Sound Level Meter: NL-31 (Serial No. 00320533)

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency.

Measurements were accepted when the calibration level from before and after the noise measurement agreed to be within 1.0 dB(A).

3.1.4 *Action and Limit Levels*

The Action and Limit Levels are presented in *Table 3.3* and the Event / Action Plan (EAP) for noise monitoring is presented in *Annex G*.

Table 3.3 Action and Limit Levels for Noise Monitoring

Time Period	Regular Noise Monitoring Location	Action Level	Limit Level
0700 - 1900 hours on normal weekdays	NMS- CA-6	When one documented valid complaint is received	75 dB(A)
	NMS- CA-7	When one documented valid complaint is received	75 dB(A)
	NMS- CA-8	When one documented valid complaint is received	70 dB(A) 65 dB(A) during examination periods 79 dB(A) ^(b) during the period of conducting the continuous noise monitoring
	NMS- CA-9	When one documented valid complaint is received	75 dB(A)
	NMS- CA-10	When one documented valid complaint is received	75 dB(A)

Notes:

(a) If works are to be carried out during restricted hours (ie, outside 0700 – 1900 from Monday to Saturday), the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

(b) The Limit Level of 79 dB(A) was updated on 22 August 2013 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP), which were approved by EPD.

3.2 CONTINUOUS NOISE MONITORING

3.2.1 Monitoring Locations

With reference to the Continuous Noise Monitoring Plan (CNMP) and EP Condition 2.10, continuous noise monitoring should be conducted during the construction of the SCL (TAW-HUH) under Works Contract 1109 at eight noise sensitive receivers (NSRs), where the predicted residual air-borne construction noise impacts exceed the relevant noise criteria. The proposed continuous noise monitoring locations are presented in *Table 3.4* and shown in *Annex D*.

Table 3.4 Proposed Continuous Noise Monitoring Locations

Continuous Noise Monitoring Location ^(a)	Description
TKW-3-2(B)	Hing Fu Building
MTW-12-3 (A)	SKH Good Shepherd Primary School
MTW-12-4 (A)	Kong Yiu Mansion
MTW-12-4-1(A)	59 Maidstone Road
MTW-12-10	Lucky Building (South Façade)
MTW-12-10-1	Lucky Building (East Façade)
MTW-12-11 (A)	SKH Good Shepherd Primary School
MTW-16-1	SKH Good Shepherd Primary School

Note:

(a) Subject to the latest Continuous Noise Monitoring Plan approved in October 2014.

3.2.2 *Monitoring Parameter and Frequency*

Continuous monitoring of $L_{Aeq(30min)}$ noise levels are required to be carried out at the eight proposed continuous noise monitoring locations identified in *Table 3.4* during the normal construction working hours (0700 – 1900 Monday to Saturday) in the period that presented in the CNMP. The recommended measurement period for the continuous noise monitoring programme in the CNMP are presented in *Table 3.6*. If works are to be carried out during restricted hours (ie, outside 0700 – 1900 from Monday to Saturday), the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

3.2.3 *Monitoring Equipment and Methodology*

In accordance to the Technical Memorandum (TM) issued under the *Noise Control Ordinance* (NCO), sound level meters in compliance with the *International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1)* specifications will be used for carrying out the noise monitoring. The sound level meter and calibrator used for continuous noise measurement are listed in *Table 3.5*.

Table 3.5 **Continuous Noise Monitoring Equipment**

Monitoring Station	Monitoring Equipment (Sound Level Meter and Calibrator)
TKW-3-2 (B)	Calibrator: NC-73 (Serial No. 10786708) Sound Level Meter: NL-52 (Serial No. 00131628)
MTW-12-3(A), MTW-12-11 (A) and MTW-16-1,	Calibrator: NC-73 (Serial No. 10997142) Sound Level Meter: NL-31 (Serial No. 00320533)
MTW-12-4(A)	Calibrator: NC-73 (Serial No. 10786708) Sound Level Meter: NL-52 (Serial No. 00643040)
MTW-12-4-1 (A)	Calibrator: NC-73 (Serial No. 10786708) Sound Level Meter: NL-52 (Serial No. 00643039)
MTW-12-10-1	Calibrator: NC- (Serial No. 10786708) Sound Level Meter: NL- (Serial No. 00983400)

Immediately prior to the noise measurement, the accuracy of the sound level meter will be checked using an acoustic calibrator, which generated a known sound pressure level at a known frequency. The accuracy of the sound level meter will also be checked on an annual-basis. Measurements will be accepted as valid only if the calibration level before and after the noise measurement agrees to be within 1.0 dB(A). Noise measurements will be made in accordance with standard acoustical principles and practices in relation to weather conditions.

3.2.4 *Action and Limit Levels*

The Action/Limit Levels for the continuous noise monitoring programme recommended in the latest CNMP are presented in *Table 3.6*.

Table 3.6 Action/Limit Levels for Continuous Noise Monitoring ^(a)

Proposed Continuous Noise Monitoring Stations	Description	Action / Limit Level ^(a)	Measurement Period ^(a)
TKW-3-2(B)	Hing Fu Building	80	September 2014 – December 2014 ^(b)
MTW-12-3 (A)	SKH Good Shepherd Primary School	80	August 2014 – January 2015 ^(b) , March 2015 – June 2015
MTW-12-4 (A)	Kong Yiu Mansion	80	August 2014 – June 2015 ^(b)
MTW-12-4-1(A)	59 Maidstone Road	82	October 2014, December 2014 – June 2015
MTW-12-10	Lucky Building (South Façade)	84	March 2015 – April 2015, September 2015 – January 2016
MTW-12-10-1	Lucky Building (East Façade)	80	December 2014 – May 2015, September 2015 – January 2016
MTW-12-11 (A)	SKH Good Shepherd Primary School	81	September 2014 – June 2015 ^(b)
MTW-16-1	SKH Good Shepherd Primary School	78	December 2012 – January 2013; April 2013 – 21 August 2013, 22 August 2013 – December 2013, August 2014 – March 2016

Notes:

- (a) The A/L Levels and Measurement Periods will be subject to the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP).
- (b) The latest CNMP was approved by EPD in October 2014. Continuous noise monitoring at TKW-3-2 (B), MTW-12-3 (A), MTW-12-4 (A) and MTW-12-11 (A) commenced in October 2014.
- (c) The A/L Level of 79 dB(A) was updated on 22 August 2013 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP) which were approved by EPD.

The Event/ Action Plan (EAP) of the latest CNMP for continuous noise monitoring is presented in *Annex G*.

3.3 CONSTRUCTION DUST MONITORING

3.3.1 Monitoring Location

The proposed dust monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are listed in *Table 3.7* and shown in *Annex D*. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.7 Construction Dust Monitoring Location

Proposed Construction Dust Monitoring Location	Description
DMS-6 (a)	Katherine Building
DMS-7	Parc 22
DMS-8	SKH Good Shepherd Primary School
DMS-9 (b)	No. 12 Pau Chung Street
DMS-10	Chat Ma Mansion

Notes:

(a) Access to the monitoring location at Prosperity House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. Furthermore, the alternative location at No. 420 Prince Edward Road West, which was used in the baseline monitoring, was also not available as access permission was not granted by the owner of the building. An alternative location, Katherine Building, was proposed and had been approved by the ER and agreed by the IEC and EPD.

(b) As the Incorporated Owners Association of the originally proposed monitoring location at Lucky Building did not reply to our request for access to their premise, an alternative location, No. 26 Kowloon City Road, was proposed and had been approved by the ER and agreed by the IEC and EPD. However, 24-hour averaged dust monitoring had been suspended at DMS-9 No. 26 Kowloon City Road since March 2014 due to denied access by the occupant of the premise. No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring at No. 12 Pau Chung Street commenced on 12 June 2014.

3.3.2 Monitoring Parameter and Frequency

The construction dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 24-hour TSP levels were monitored at the frequency and duration stated in *Table 3.8*. The TSP monitoring was conducted as per the schedule presented in *Annex E*.

Table 3.8 Construction Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Dust Monitoring	Throughout the construction period of the Project	24-hour TSP	Once per 6 days

3.3.3 Monitoring Equipment

24-hour averaged TSP monitoring was performed at designated monitoring stations using High Volume Samplers (HVS) with the appropriate sampling inlets installed. The performance specification of HVS complied with the standard method “*Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*” as stipulated in *US EPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50 Appendix B)*. *Table 3.9* summarises the equipment that was deployed for the 24-hour averaged monitoring.

Table 3.9 Construction Dust Monitoring Equipment

Monitoring Location	Monitoring Equipment (HVS and Calibrator)
DMS-6	TE-5170 (Serial No. 0107), CM-AIR-43 (Orifice ID 2454)
DMS-7	TE-5170 (Serial No. 3574), CM-AIR-43 (Orifice ID 2454)
DMS-8	TE-5170 (Serial No. 3572), CM-AIR-43 (Orifice ID 2454)
DMS-9 (a)	TE-5170 (Serial No. 0814), CM-AIR-43 (Orifice ID 2454)
DMS-10	TE-5170 (Serial No. 3573), CM-AIR-43 (Orifice ID 2454)

Note:
 (a) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road had been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring at No. 12 Pau Chung Street commenced on 12 June 2014.

3.3.4 Monitoring Methodology

All HVSs were free-standing with no obstruction.

The following criteria were considered in the installation of the HVSs:

- appropriate support to secure the samplers against gusty wind needed to be provided at the monitoring stations;
- a minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues was nearby;
- airflow around the sampler was unrestricted; and
- permission could be obtained to set up the samplers and gain access to the monitoring stations.

Preparation of Filter Papers

- glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected;
- all filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25°C and not varied by more than $\pm 3^\circ\text{C}$; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implemented comprehensive quality assurance and quality control programmes on the filters.

Field Monitoring

- the power supply was checked to ensure that the HVSs were working properly;

- the filter holder and area surrounding the filter were cleaned;
- the filter holder was removed by loosening the foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- the filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- the swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- the shelter lid was closed and secured with an aluminium strip;
- the HVS was warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flow rate record sheet was inserted into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 - 1.37 m³min⁻¹, which was within the range specified in the EM&A Manual (i.e. 0.6 – 1.7 m³min⁻¹);
- the programmable timer was set for a sampling period of 24 hours ± 1 hour, and the starting time, weather condition and filter number were recorded;
- the initial elapsed time was recorded;
- at the end of sampling, the sampled filter was removed carefully and folded in half so that only surfaces with collected particulate matter were in contact;
- the filter paper was placed in a clean plastic envelope and sealed;
- all monitoring information was recorded on a standard data sheet; and
- the filters were sent to SGS Hong Kong Ltd for analysis.

Maintenance and Calibration

- the HVSs and their accessories were maintained in a good working condition. For example, motor brushes were replaced routinely and electrical wiring was checked to ensure a continuous power supply; and
- the flow rate of each HVS with mass flow controller was calibrated using an orifice calibrator. Initial calibrations of the dust monitoring equipment were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVSs using CM-AIR-43 Calibration Kit. HVSs are calibrated every six-month. The calibration records for the HVSs are given in *Annex F*.

Wind Data Monitoring

- Average wind data (wind speed and direction) at the Kai Tak meteorological station during the monitoring period were obtained from the Hong Kong Observatory (HKO) and presented in *Annex J*.

3.3.5 Action and Limit Levels

The Action and Limit levels have been established and are presented in *Table 3.10*.

Table 3.10 Action and Limit Levels for Dust Monitoring

Parameters	Dust Monitoring Station	Action Level ($\mu\text{g m}^{-3}$) ^(a)	Limit Level ($\mu\text{g m}^{-3}$) ^(a)
24-hour TSP	DMS-6	156.8	260
	DMS-7	166.7	260
	DMS-8	152.2	260
	DMS-9 ^(c)	160.9	260
	DMS-10	170.4	260
1-hour TSP ^(b)	DMS-6	288.8	500
	DMS-7	289.7	500
	DMS-8	300.0	500
	DMS-9 ^(c)	303.0	500
	DMS-10	294.7	500

Notes:

- (a) Reference to the Baseline Monitoring Report submitted in July 2012.
- (b) Action and Limit Levels for 1-hour TSP will only be used when 1-hour TSP is required to be monitored when a valid complaint is received.
- (c) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road had been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring at No. 12 Pau Chung Street commenced on 12 June 2014.

The Event/Action Plan (EAP) for dust monitoring is presented in *Annex G*.

3.4 CULTURAL HERITAGE

A License to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance was obtained from the Antiquities and Monuments Office (AMO) on 29 October 2012. The archaeological survey-cum-excavation and additional investigation at the Sacred Hill (North) commenced on 1 November 2012 and was conducted in accordance with the Licence and the approved Archaeological Action Plan (AAP). An updated AAP was submitted to AMO for renewal of the 1 year archaeological license. The license was renewed and granted by AMO on 24 October 2013. The updated AAP was submitted to EPD for approval on 11 October 2013 and it was approved on 1 November 2013. The fieldworks of the archaeological survey-cum-excavation and additional investigation were completed on 27 December 2013. The Interim Archaeological Report was provided to AMO in April 2014.

In accordance with the EM&A Manual, appropriate vibration monitoring on the identified built heritage will be agreed with the Building Department (BD)/Geotechnical Engineering Office (GEO) under the requirement of Buildings Ordinance and/or Blasting Permit as appropriate. Vibration levels will be controlled to appropriate levels. Vibration monitoring will be carried out by the Contractor. The structures requiring vibration monitoring during the relevant tunneling work for this Works Contract include S.K.H. Holy Trinity Church and Old Fast East Flying Training School.

3.5

LANDSCAPE AND VISUAL MITIGATION MEASURES

In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is given in *Annex H*.

IMPLEMENTATION STATUS OF THE ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented all the environmental mitigation measures and requirements as stated in the EIA Report, Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures for this Works Contract during the reporting period is summarised in *Annex H*. The status of the required submissions under the EP for this Works Contract during this reporting month is presented in *Table 4.1*.

Table 4.1 *Status of Required Submission under Works Contract 1109*

EP Condition	Submission	Submission Date
Condition 3.4	Twenty-seventh Monthly EM&A Report	12 December 2014

5 MONITORING RESULTS

5.1 REGULAR CONSTRUCTION NOISE MONITORING

A total of 25 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays of the reporting period. The noise level recorded at all five monitoring locations during the whole reporting period are below baseline level or below limit level after baseline-level correction.

The monitoring results together with their graphical presentations are presented in *Annex I-1*.

5.2 CONTINUOUS NOISE MONITORING

Continuous noise monitoring is required at TKW-3-2(B), MTW-12-3(A), MTW-12-4(A), MTW-12-11(A), MTW-16-1, MTW-12-4-1 (A) and MTW-12-10-1 during the reporting month, according to the schedule presented in latest approved CNMP.

Continuous noise data at monitoring location TKW-3-2 (B) Hing Fu Building between 09:57 on 24 December 2014 to 13:04 on 29 December 2014 could not be acquired due to a SD card failure. The SD card has been replaced to avoid future issues.

Continuous noise data at monitoring location MTW-12-4 (A) Kong Yiu between 1 and 3 December 2014 (ending on 13:14) could not be obtained due to external disruption.

For the CNM location MTW-12-10-1, the equipment installation and monitoring was carried out and commenced on 5 December 2014, after the liaison with the Incorporated Owners and the Management Office of Lucky Building.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3 (A) on 1, 23, 27, 29 and 30 December 2014; at MTW-12-11 (A) on 1 December 2014 and at MTW-16-1 on 1, 16, 23, 27, 29 and 30 December 2014.

Investigation of exceedances on 18 and 26 November 2014; 1, 16, 23 and 27 December 2014 had been completed and the investigation reports are presented in *Annex L*.

The monitoring results are presented in *Annex I-2*.

A total of 30 sets of 24-hr TSP monitorings were carried out at the designated monitoring stations during normal weekdays of the reporting period. The monitoring results together with their graphical presentations are presented in *Annex J* and a summary of the dust monitoring results in this reporting month is given in *Table 5.1*.

Table 5.1 *Summary of the Dust Monitoring Results in this Reporting Month*

Monitoring Station	24-hour TSP Monitoring Results measured, μgm^{-3} (a)		Action Level, μgm^{-3}	Limit Level, μgm^{-3}
	Average	Range		
DMS-6	79	68 – 94	156.8	260
DMS-7	67	54 - 85	166.7	260
DMS-8	59	41 – 70	152.2	260
DMS-9 (a)	57	47 – 68	160.9	260
DMS-10	57	49 - 65	170.4	260

Note:
(a) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road has been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was approved by EPD. 24-hour averaged dust monitoring commenced on 12 June 2014.

No exceedance of the Action and Limit Levels of the 24-hr TSP was recorded during the reporting period.

A License to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance was obtained from Antiquities and Monuments Office (AMO) on 29 October 2012. The archaeological survey-cum-excavation and additional investigation at the Sacred Hill (North) commenced on 1 November 2012 and was conducted in accordance with the License and the approved Archaeological Action Plan (AAP). An updated AAP was submitted to AMO for renewal of the 1 year archaeological license. The license was renewed and granted by AMO on 24 October 2013. The updated AAP was submitted to EPD for approval on 11 October 2013 and it was approved on 1 November 2013. The fieldworks of the archaeological survey-cum-excavation and additional investigation were completed on 27 December 2013. The Interim Archaeological Report was provided to AMO in April 2014.

Vibration monitoring was conducted at Hong Kong Aviation Club during the reporting period, no non-compliance was recorded.

5.5 WASTE MANAGEMENT

The waste generated from this Project includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in *Table 5.2*. Details of waste management data are presented in *Annex K*.

Table 5.2 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	Inert C&D Materials (a) (b)	Chemical Waste	Non-inert C&D Materials			
			General Refuse/Vegetative Waste	Paper/cardboard	Plastics	Metals
December 2014	44,771 m ³	400 kg	103 m ³	90 kg	284 kg	0 kg

Notes:

(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil.

(b) About 44,771 m³ of inert C&D materials were generated from the Project, and sent to 1108A Kai Tai Barging Facilities during the reporting month.

(c) Chemical waste includes waste oil. It is assumed density of waste oil to be 0.8 kg/L.

5.6 LANDSCAPE AND VISUAL MITIGATION MEASURES

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 1, 15 and 29 December 2014. Most of the mitigation measures given in *Annex H* have been implemented. Required Actions that were found are listed below:

1 December 2014

- No observation was reported during the site inspection.

15 December 2014

- No observation was reported during the site inspection.

29 December 2014

- No observation was reported during the site inspection.

Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 1, 8, 15, 22 and 29 December 2014. The representatives of the IEC joined the site inspection on 8 December 2014. No non-compliance was recorded during the site inspections.

Findings and recommendations for the site inspection in this reporting month are summarised as follows:

1 December 2014

- There was no major observation during the site inspection.

8 December 2014

- There was no major observation during the site inspection.

15 December 2014

- A material delivery truck was observed leaving the W6 works area of MTW without wheel washing, while the Contractor had already provided sufficient personnel and wheel washing facilities on site. The Contractor was reminded to reinforce training/education on wheel washing for drivers of site vehicles.

22 December 2014

- There was no major observation during the site inspection.

29 December 2014

- There was no major observation during the site inspection.

All follow-up actions requested by Contractor's ET and IEC during the site inspections were undertaken as reported by the Contractor. The abovementioned environmental issues had been addressed and mitigated during the reporting period.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 SUMMARY OF MONITORING EXCEEDANCE

No exceedance of the Action and Limit Levels of the regular construction noise and 24-hour TSP monitoring was recorded during the reporting month.

Following up on the exceedances of the Action and Limit Levels of the continuous noise monitoring recorded on 18 and 26 November 2014; 1, 16, 23 and 27 December 2014, investigation of the exceedances have been completed and the investigation reports are presented in *Annex L*.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3 (A) on 1, 23, 27, 29 and 30 December 2014; at MTW-12-11 (A) on 1 December 2014 and at MTW-16-1 on 1, 16, 23, 27, 29 and 30 December 2014.

The exceedances recorded on 29 and 30 December 2014 are still under investigation and the findings will be reported in the next reporting period.

7.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

No non-compliance event was recorded during the reporting month.

7.3 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaint was reported during the reporting month. The cumulative environmental complaint log is shown in *Annex M*.

7.4 SUMMARY OF ENVIRONMENTAL SUMMON AND SUCCESSFUL PROSECUTION

No summon was received during the reporting month. The cumulative summon/prosecution log is shown in *Annex M*.

8.1 KEY ISSUES FOR THE COMING MONTH

Works to be undertaken in the next reporting month are summarised in *Table 8.1*.

Table 8.1 Construction Works to be undertaken in the Next Reporting Month

Construction Activities to be undertaken	
<i>Work in Ma Tau Wai (MTW)</i>	
•	TKW/MTW Road Garden – Operation of bentonite plant and pier 15 underpinning works; and
•	Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.
<i>Work in To Kwa Wan (TKW)</i>	
•	Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation;
•	Olympic Playground – TTMS preparation;
•	TKW Station – Pump installation, shaft excavation and TBM & STP site setup; and
•	Nam Kok Road – Installation of pipe pile.

Potential environmental impacts arising from the above construction activities are mainly associated with dust, construction noise and waste management.

8.2 MONITORING SCHEDULE FOR THE NEXT MONTH

The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring in the next reporting period is presented in *Annex E*. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

8.3 CONSTRUCTION PROGRAMME FOR THE NEXT MONTH

The construction programme for the Project for the next reporting month is presented in *Annex B*.

This 28th monthly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 December 2014 to 31 December 2014 in accordance with the EM&A Manual and the requirement under EP-438/2012/H.

No exceedance of the Action and Limit Levels of the regular construction noise and 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting period.

Following up on the exceedances of the Action and Limit Levels of the continuous noise monitoring recorded on 18 and 26 November 2014; 1, 16, 23 and 27 December 2014, investigation of the exceedances have been completed and the investigation reports are presented in *Annex L*.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3 (A) on 1, 23, 27, 29 and 30 December 2014; at MTW-12-11 (A) on 1 December 2014 and at MTW-16-1 on 1, 16, 23, 27, 29 and 30 December 2014.

The exceedances recorded on 29 and 30 December 2014 are still under investigation and the findings will be reported in the next reporting period.

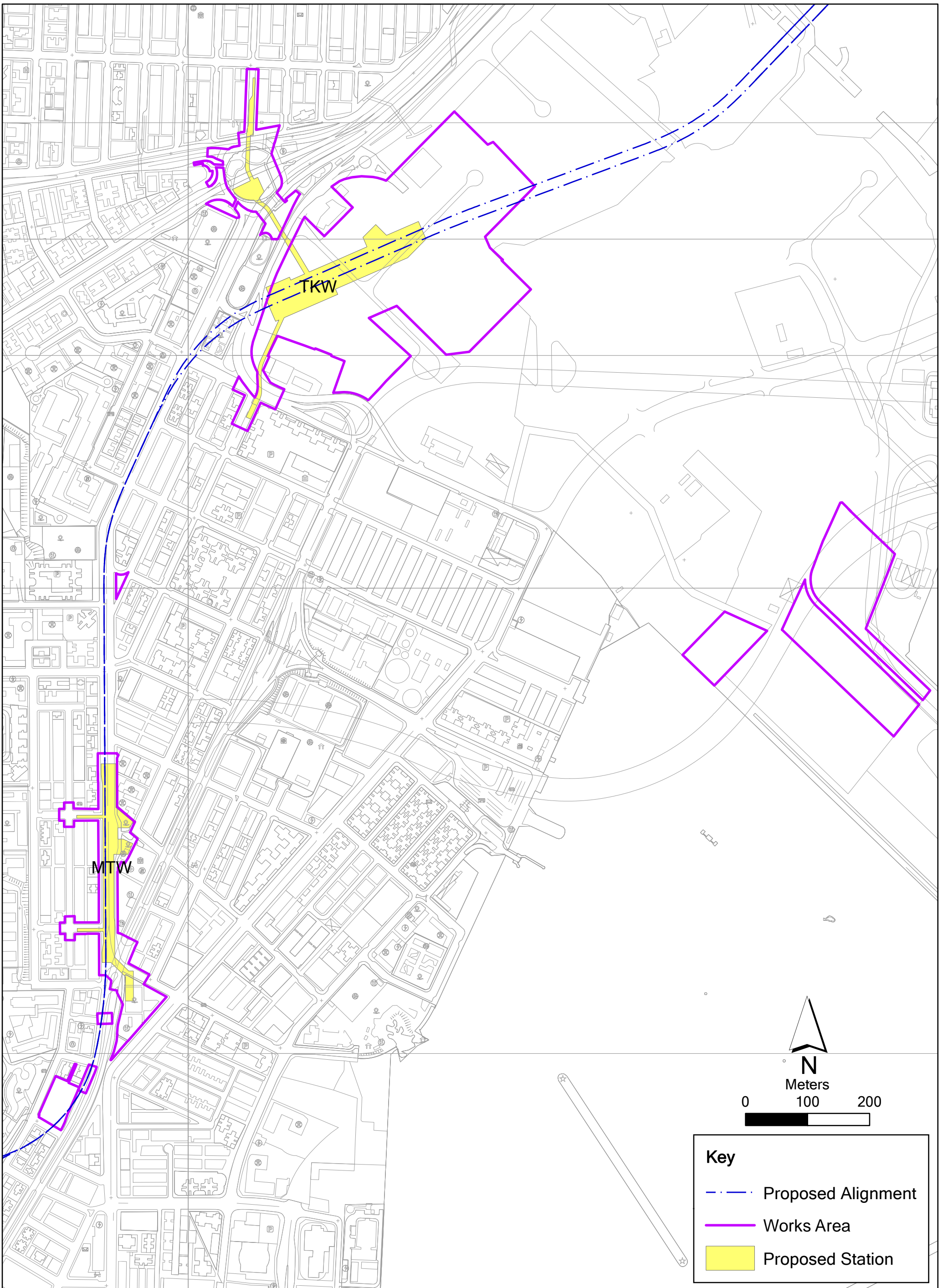
No complaint was reported during the reporting month.

No summon or prosecution was received during the reporting period.

The Contractor has implemented possible and feasible mitigation measures to mitigate the potential environmental impacts during construction. The Contractor's ET will continue to keep track of the EM&A programme to ensure compliance of environmental requirements and the effectiveness and efficiency of the mitigation measures implemented. If necessary, the Contractor will provide more mitigation measures to further alleviate the impacts.

Annex A

The Alignment and Works Area for Works Contract



Annex A

Alignment, Stations and Works Area of SCL Works Contract 1109

Name: 0171181_Works_Area_Annex.mxd
Date: 12/08/2014

Environmental
Resources
Management



Annex B

Construction Programme for the Reporting Month and the Coming Month ⁽¹⁾

(1) Sung Wong Toi and To Kwa Wan Stations in the programme mean To Kwa Wan and Ma Tau Wai Stations in the Monthly EM&A Report respectively.

THREE MONTH ROLLING PROGRAMME - DECEMBER 2014

Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
					Dec	Jan	Feb	Mar	
1109 - SUW & TKW Stations and Tunnels DECEMBER 14 (UWP R5)									
PROJECT DATES									
Specified Milestone Dates									
CC-A Milestones									
01109.MSA10	A10 - Engr's confirmation of satisfact implementation of quality reqmts as per approved spec. Plans(1).(Wk02/15;11Jan15)	0%		11-Jan-15*					
CC-B Milestones									
01109.MSB08ii	B8ii-Pump test complete & accepted by the Engineer & ready for open cut excavation at SUW. (Revised IPS 19 Oct 14)	0%		26-Dec-14					
CC-C Milestones									
01109.MSC08	C8 - Prel Permanent Wrks Mat Control Schedules (in accor w/ Clause G14.16.1 of Gen.Specs) appr by Engr(Wk46/14; 16Nov14)	0%		26-Dec-14*					
01109.MSC08a	C8a - 10% by plan area of roof slab bet. gridline 1 to 28 complete (Wk52/14; 28Dec14)	0%		22-Jan-15*					
01109.MSC09ii	C9(ii)-All works complete to facilitate driving through of Down Track TBM at station box.(Wk7/15;15Feb15)	0%		09-Mar-15					
01109.MSC09a	C3(ii)-30% by plan area of roof slab between gridlines 1 to 28 complete.(Wk16/15;19Apr15)	0%		12-Mar-15					
CC-D Milestones									
01109.MSD06ii	D6(ii)-Grd treatment @Chatham Rd North for TBM tunnels btn TKW & Shansi St comp/accepted byEng.(Revised IPS 28 Dec14)	0%		28-Dec-14*					
01109.MSD09i	D9(i)-Manufacturing of pre-cast tunnel lining segments 60% by number complete.(Revised IPS 16 Aug 15)	0%		09-Feb-15					
01109.MSD010av	D10a(v)-Excavation at TKA 50% by volume complete.(Revised IPS 15 Nov 15)	0%		17-Feb-15					
CC-A - PRELIMINARIES AND GENERAL REQUIREMENTS									
Design and Approvals									
Temporary Traffic Arrangements									
TKW Station, Entrances and Adits									
TTMS Design & Approval									
01109.PDA1190	TKW - Stage 2 Phase 2 - TTM Design & Approval by SLG	0%	19-Feb-15	21-Mar-15					
01109.PDA1200	TKW - Stage 2C - TTM Design & Approval by SLG	0%	21-Mar-15	20-Apr-15					
SUW Station, Entrances and Adits									
TTMS Design & Approval									
01109.PDA1340	SUW - Sung Wong Toi & Pak Tai St - TTM Stage 1 - Design & Approval by SLG	90%	04-Dec-13 A	01-Feb-15					
01109.PDA1320	SUW - TTM for Kln City Interchange - Design & Approval by SLG	95%	26-Apr-14 A	30-Dec-14					
01109.PDA1360	SUW - Nam Kok Rd - TTM Stage 2 Phase 1 - Design & Approval by SLG	0%	26-Dec-14	24-Jan-15*					
01109.PDA1390	SUW - Nam Kok Rd - TTM Stage 2 Phase 2 - Design & Approval by SLG	0%	25-Jan-15	23-Feb-15					
01109.PDA1380	SUW - Sung Wong Toi & Pak Tai St - TTM Stage 2 - Design & Approval by SLG	0%	04-Mar-15	02-May-15					
TTMS Gazette Notice									



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Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
						Dec	Jan	Feb	Mar
01109.PDA1450	SUW - TTM for Kin City Interchange - Gazette Notice	0%	31-Dec-14	18-Feb-15					
01109.PDA1470	SUW - Nam Kok Rd - TTM Stage 2 Phase 1 - Gazette Notice	0%	25-Jan-15	23-Feb-15					
01109.PDA1480	SUW - Nam Kok Rd - TTM Stage 2 Phase 2 - Gazette Notice	0%	24-Feb-15	25-Mar-15					
Design									
Permanent Works Design & Approval									
Tunnel Lining within stub tunnels near HOM									
01109.PDA1860	Stub Tunnel near HOM Permanent lining design & ICE approval	95%	01-Oct-12 A	14-Jan-15					
01109.PDA1870	Draft Detailed Design submission for Engineer's Approval.	0%		14-Jan-15					
01109.PDA1880	Engineer Approves Draft Detailed Design	0%	15-Jan-15	13-Feb-15					
01109.PDA1890	Draft Detailed design to Government Dept/ICC	0%	14-Feb-15						
01109.PDA1900	Government/ICC Approve Design	0%	14-Feb-15	15-Mar-15					
01109.PDA1910	Issue of Working Drawings for Construction	0%		15-Mar-15					
ABWF Works (complete design)									
01109.PDA1920	Complete remaining design of ABWF Works & ICE approval	0%	16-Mar-15	14-May-15					
Temporary Works Design									
SUW Station - Design & Submit									
01109.PDA2190	SUW - ELS design for Subway KS33 and KS34	95%	08-Jul-13 A	21-Jan-15					
SUW Station - Review & Approve									
01109.PDA2290	SUW - ELS design for Subway KS33 and KS34	0%	22-Jan-15	26-Feb-15					
TKW Station - Design & Submit									
01109.PDA2380	TKW - Up Track Temporary Platform TBM Support system	30%	15-Jan-13 A	05-Feb-15					
01109.PDA2410	TKW - ELS for Entrance B & C	50%	14-Nov-13 A	11-Feb-15					
01109.PDA2390	TKW - Up Track Drag Through Design	0%	06-Feb-15	06-Apr-15					
TKW Station - Review & Approve									
01109.PDA2460	TKW - ELS for Entrance B & C	50%	27-Jan-14 A	01-Jan-15					
01109.PDA2430	TKW - Up Track Temporary Platform TBM Support system	0%	06-Feb-15	19-Feb-15					
TBM Tunnel - Design & Submit									
01109.PDA2540	Temporary drainage design to Tunnels (P30.7)	30%	06-Dec-13 A	03-Feb-15					
TBM Tunnel - Review & Approve									
01109.PDA2570	TKA Adit Tunnel design - Temp Ground support	90%	13-Mar-13 A	21-Jan-15					
01109.PDA2560	TKA Shaft Review & Approve Temporary ELS design	90%	26-Apr-13 A	13-Jan-15					
01109.PDA2640	Sump Pit between TKW and HOM - Temp Ground Support design	50%	02-Aug-13 A	01-Jan-15					
01109.PDA2590	Pier 15 - Ground Treatment design	0%	26-Dec-14	08-Jan-15					
01109.PDA2630	Temporary drainage design to Tunnels (P30.7)	0%	04-Feb-15	17-Feb-15					



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Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
					Dec	Jan	Feb	Mar	
Procurement									
Concrete Construction Materials									
Precast supplies									
01109.PDA4020	Precast concrete segment manufacture (2nd and subsequent batches)	30%	25-Jan-14 A	20-Mar-16					
CC-B - SUW STATION, ENTRANCES AND ADITS									
Implementation of TTA at SUW									
01109.PDB1601	SUW - Sung Wong Toi & Pak Tai St - Implement TTM Stage 1	0%	02-Feb-15*	14-Feb-15					
01109.PDB1651	SUW - Implement TTM for KIn City Interchange	0%	23-Feb-15	07-Mar-15					
01109.PDB1571	SUW - Nam Kok Rd - Implement TTM Stage 2 (Phase 1)	0%	17-Mar-15	30-Mar-15					
SUW Station Construction Works									
Site Preparation									
Archaeological Survey									
01109.PDB14459A	AMO Approval Period on AWB Open Cut (EI 67)	95%	15-Sep-14 A	31-Dec-14					
01109.PDB14458A	MTR Instruction (Assume Date on AWB Areas (EI 67) Release for Construction)	0%		31-Dec-14					
Station - Excavation and Foundation									
Pre-bored H- Piling for Permanent Works									
Additional Prebored H Piles and Pipe Piles									
01109.PDB4161A	Additional Pipe Piles (EI??)	0%	12-Dec-14 A	09-May-15					
01109.PDB20061A	Additional Prebored H Piles (EI??)	0%	30-Dec-14*	23-Jun-15					
TBM Launch Shaft Works									
Excavation TBM Shaft Area									
Excavation and lateral Support - TBM Shaft									
01109.PDB20070A	TBM Launch shaft - Excavate -10mPD to -15mPD - Part 3	100%	14-Nov-14 A	08-Dec-14 A					
01109.PDB19431A	TBM Launch Shaft - S3 (GL5-7.5 Area F1-F2) - Part 2	100%	22-Nov-14 A	28-Nov-14 A					
01109.PDB19481B	TBM Launch shaft - TemporaryBase Slab - (GL 1-3) - Part 1	100%	04-Dec-14 A	18-Dec-14 A					
01109.PDB20080A	TBM Launch shaft - Excavate -10mPD to -15mPD - Part 4	100%	09-Dec-14 A	27-Dec-14					
01109.PDB19490B	TBM Launch shaft - TemporaryBase Slab - (GL 3-4.5) - Part 1	100%	15-Dec-14 A	24-Dec-14 A					
01109.PDB19482B	TBM Launch shaft - TemporaryBase Slab - (GL 1-3) - Part 2	100%	18-Dec-14 A	20-Dec-14 A					
01109.PDB19491B	TBM Launch shaft - TemporaryBase Slab - (GL 4.5-6) - Part 1	0%	19-Dec-14 A	06-Jan-15					
01109.PDB19500B	TBM Launch shaft - TemporaryBase Slab - (GL 6-7.5) - Part 1	0%	19-Dec-14 A	13-Jan-15					
01109.PDB19492B	TBM Launch shaft - TemporaryBase Slab - (GL 3-4.5) - Part 2	0%	24-Dec-14 A	03-Jan-15					
01109.PDB3090	EI?? Confirmation of Removal of T1 Well	0%	02-Jan-15*						
01109.PDB20050	EI?? Removal and Excavate T1 to -5.9mPD	0%	02-Jan-15	04-Mar-15					
01109.PDB19493B	TBM Launch shaft - TemporaryBase Slab - (GL 4.5-6) - Part 2	0%	07-Jan-15	09-Jan-15					



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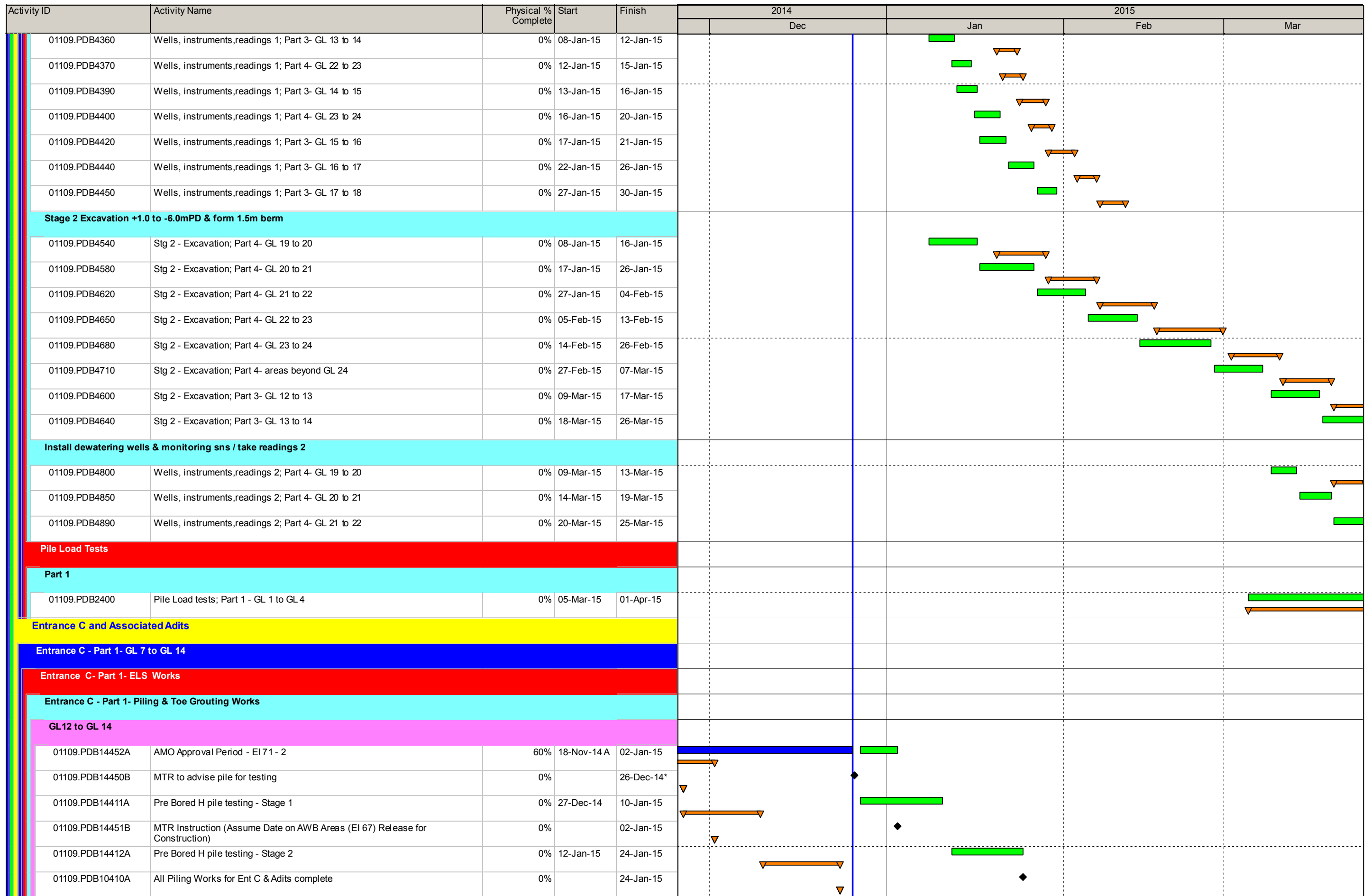
Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
					Dec	Jan	Feb	Mar	
01109.PDB19506B	Removal of S4 & S5 Struts Between GL1-4.5	0%	12-Jan-15	17-Jan-15					
01109.PDB19502B	TBM Launch shaft - Temporary Base Slab - (GL6-7.5) - Part 2	0%	14-Jan-15	17-Jan-15					
01109.PDB19507B	Removal of S4 & S5 Struts Between GL4.5-7.5	0%	26-Jan-15	31-Jan-15					
01109.PDB3070	TBM Launch shaft - Pile testing	0%	05-Mar-15	29-Apr-15					
Earthworks									
Curtain Grout Works									
01109.PDB3480	Grout Curtain complete	0%		13-Jan-15					
North of SUW									
01109.PDB3240A	Grout Curtain; Part 3- GL 10 to 11	0%	02-Jan-15	13-Jan-15					
01109.PDB3430A	Grout Curtain; Part 2- GL 9 to 10	0%	02-Jan-15	13-Jan-15					
01109.PDB19360B	Grout Curtain completed on North of Station	0%		13-Jan-15					
Pumping Tests (To Phase 1 Only)									
01109.PDB3850	Pumping Test Works Stage 3b (Revised Layout) - EI??	100%	21-Nov-14 A	08-Dec-14 A					
01109.PDB3810	Pumping Test Works Stage 1b (Revised Layout) - EI??	100%	21-Nov-14 A	08-Dec-14 A					
01109.PDB3830	Pumping Test Works Stage 2b (Revised Layout) - EI??	100%	21-Nov-14 A	08-Dec-14 A					
Stage 1 Excavation EGL to + 1.0mPD & form 1.5m berm									
01109.PDB4110	Stg 1 - Excavation; Part 4- GL 23 to 24	100%	08-Dec-14 A	22-Dec-14 A					
01109.PDB4130	Stg 1 - Remaining Excavation; Part 3- GL 15 to 16	100%	09-Dec-14 A	16-Dec-14 A					
01109.PDB4010	Stg 1 - Remaining Excavation; Part 4- GL 20 to 21	100%	09-Dec-14 A	16-Dec-14 A					
01109.PDB4150	Stg 1 - Remaining Excavation; Part 3- GL 16 to 17	100%	16-Dec-14 A	23-Dec-14 A					
01109.PDB4050	Stg 1 - Remaining Excavation; Part 4- GL 21 to 22	100%	16-Dec-14 A	23-Dec-14 A					
01109.PDB4140	Stg 1 - Excavation; Part 4- areas beyond GL 24	0%	22-Dec-14 A	02-Jan-15					
01109.PDB19080	Stg 1 - Remaining Excavation; Part 3- GL 18 to 19	0%	23-Dec-14 A	29-Dec-14					
01109.PDB4080	Stg 1 - Remaining Excavation; Part 4- GL 22 to 23	0%	23-Dec-14 A	03-Jan-15					
01109.PDB4030	Stg 1 - Remaining Excavation; Part 3- GL 12 to 13	0%	27-Dec-14	29-Dec-14					
01109.PDB4070	Stg 1 - Remaining Excavation; Part 3- GL 13 to 14	0%	30-Dec-14	31-Dec-14					
01109.PDB3970	Stg 1 - Remaining Excavation; Part 4- GL 19 to 20	0%	30-Dec-14	31-Dec-14					
01109.PDB4100	Stg 1 - Remaining Excavation; Part 3- GL 14 to 15	0%	02-Jan-15	03-Jan-15					
Install dewatering wells & monitoring ins / take readings 1									
01109.PDB4250	Wells, instruments, readings 1; Part 4- GL 19 to 20	0%	27-Dec-14	31-Dec-14					
01109.PDB4280	Wells, instruments, readings 1; Part 4- GL 20 to 21	0%	02-Jan-15	06-Jan-15					
01109.PDB4310	Wells, instruments, readings 1; Part 3- GL 12 to 13	0%	03-Jan-15	07-Jan-15					
01109.PDB4430	Wells, instruments, readings 1; Part 4- areas beyond GL 24	0%	03-Jan-15	07-Jan-15					
01109.PDB4320	Wells, instruments, readings 1; Part 4- GL 21 to 22	0%	07-Jan-15	10-Jan-15					



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Activity ID	Activity Name	Physical % Complete	Start	Finish	2014				2015					
					Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
01109.PDB14420A	Pump Test	0%	26-Jan-15	05-Feb-15										
Entrance C - Part 1-Excavation Works														
01109.PDB19660A	Excavation & Lateral Support Works; GL C14 to C12 - 1	0%	06-Feb-15	23-Feb-15										
01109.PDB19670A	Excavation & Lateral Support Works; GL C14 to C12 - 2	0%	24-Feb-15	05-Mar-15										
01109.PDB10460	ELS Works; GL C7 to C14; complete	0%		05-Mar-15										
GL 7 to GL 12														
01109.PDB19680A	Excavation & Lateral Support Works; GL C7 to C9 - 1	100%	21-Mar-14 A	03-Jan-15										
01109.PDB19710A	Excavation & Lateral Support Works; GL C9 to C12 - 1	100%	02-Apr-14 A	03-Jan-15										
01109.PDB19690A	Excavation & Lateral Support Works; GL C7 to C9 - 2	0%	03-Jan-15	16-Jan-15										
01109.PDB19720A	Excavation & Lateral Support Works; GL C9 to C12 - 2	0%	03-Jan-15	16-Jan-15										
01109.PDB19700A	Excavation & Lateral Support Works; GL C7 to C9 - 3	0%	17-Jan-15	27-Jan-15										
01109.PDB19730A	Excavation & Lateral Support Works; GL C9 to C12 - 3	0%	17-Jan-15	27-Jan-15										
Entrance C - Part 1- Concrete Structure Works														
01109.PDB19740A	Concrete Structure GL C12 to C11 - 1	0%	28-Jan-15	10-Feb-15										
01109.PDB19750A	Concrete Structure GL C12 to C11 - 2	0%	11-Feb-15	27-Feb-15										
01109.PDB19770A	Concrete Structure GL C11 to C10 - 1	0%	28-Feb-15	13-Mar-15										
01109.PDB19760A	Concrete Structure GL C12 to C11 - 3	0%	28-Feb-15	06-Mar-15										
01109.PDB10470	Prepare area for concrete Works	0%	06-Mar-15	13-Mar-15										
01109.PDB19780	Concrete Structure GL C11 to C10 - 2	0%	14-Mar-15	27-Mar-15										
01109.PDB10490	Concrete Structure GL C14 to C13	0%	14-Mar-15	22-Apr-15										
01109.PDB10500	Concrete Structure GL C13 to C12	0%	23-Mar-15	30-Apr-15										
Entrance C - Part 2- GL 3 to GL 7														
Entrance C - Part 2- GL 3 to GL 7; Segment 1														
Entrance C - Part 2- Seg 1; ELS Works														
Entrance C - Part 2- Seg 1; Sheet Piling & Toe Grouting Works														
01109.PDB19350	TTMS for completion of UU diversion	0%		02-Feb-15*										
01109.PDB10730	Sheet Piling & Toe grouting Works; GL C5 to C7; Segment 1; East Side	0%	02-Feb-15	09-Mar-15										
01109.PDB10740	Sheet Piling & Toe grouting Works; GL C5 to C7; Segment 1; West Side	0%	10-Mar-15	15-Apr-15										
Entrance B and Associated Adits														
Entrance B - Olympic Avenue and SUW playground Works														
Stage 1														
01109.PDB19800A	Sheet piling & Toe grouting Works;GL B1 to B5 (2x24m sheetpiles) - 1	100%	22-Feb-14 A	03-Jan-15										
01109.PDB14455A	AMO Approval Period - EI 71	80%	30-Sep-14 A	02-Jan-15										
01109.PDB14451C	MTR Instruction (Assume Date on AWB Areas (EI 67) Release for Construction)	0%		02-Jan-15										



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Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
					Dec	Jan	Feb	Mar	
01109.PDB19810A	Sheet piling & Toe grouting Works;GL B1 to B5 (2x24m sheetpiles) - 2	0%	03-Jan-15	16-Jan-15					
01109.PDB19820A	Sheet piling & Toe grouting Works;GL B1 to B5 (2x24m sheetpiles) - 3	0%	17-Jan-15	26-Jan-15					
01109.PDB11790	Load test according to drawing number 1109/T/302/OAP/C19/201	0%	27-Jan-15	11-Feb-15					
01109.PDB19830A	Sheet piling & Toe grouting Works;GL B5 to B7 (South bound lane areas)(2x18m sheetpiles) - 1	0%	12-Feb-15	28-Feb-15					
01109.PDB19840	Sheet piling & Toe grouting Works;GL B5 to B7 (South bound lane areas)(2x18m sheetpiles) - 2	0%	02-Mar-15	11-Mar-15					
01109.PDB11820	Pumping test	0%	12-Mar-15	25-Mar-15					
Stage 2									
01109.PDB19880A	Construct the Adit structure - 4	100%	12-Nov-14 A	29-Nov-14 A					
01109.PDB19890A	Construct the Adit structure - 5	100%	01-Dec-14 A	12-Dec-14 A					
01109.PDB12000	Waterproof and Backfill to ground level	100%	13-Dec-14 A	03-Jan-15					
01109.PDB12010	Remove sheet pile wall	0%	05-Jan-15	10-Jan-15					
01109.PDB12020	Reinstate the carriageway ready for the next TTMS	0%	12-Jan-15	15-Jan-15					
01109.PDB12030	Modify the dewatering system for next stage	0%		15-Jan-15					
Entrance B - Kowloon City Interchange									
Entrance B - Underpinning of KNEC Piers									
Pier P75									
01109.PDB13090	Dismantle temporary steel frame	0%	17-Jan-15	23-Jan-15					
01109.PDB13100	Backfill & remove codfferdam wall	0%	24-Jan-15	04-Feb-15					
Pier P76									
01109.PDB13250	Dismantle temporary steel frame	0%	17-Jan-15	23-Jan-15					
01109.PDB13260	Backfill & remove codfferdam wall	0%	24-Jan-15	04-Feb-15					
Pier P46									
01109.PDB12660C	P46 - Pre-bored socket H- Piles 609 Dia P1	0%	05-Feb-15	11-Feb-15					
01109.PDB19420C	P46 - Pre-bored socket H- Piles 609 Dia P2	0%	12-Feb-15	18-Feb-15					
01109.PDB12670	Install sheet pile cofferdam wall	0%	23-Feb-15	27-Feb-15					
01109.PDB12680	Excavation to waling beam level	0%	28-Feb-15	02-Mar-15					
01109.PDB12690	Install waling beam	0%	03-Mar-15	03-Mar-15					
01109.PDB12700	Excavation to final formation level	0%	04-Mar-15	05-Mar-15					
01109.PDB12710	Construct pile cap	0%	09-Mar-15	28-Mar-15					
Pier P74									
01109.PDB12930	Dismantle temporary steel frame	0%	17-Jan-15*	23-Jan-15					
01109.PDB12940	Backfill & remove codfferdam wall	0%	24-Jan-15	04-Feb-15					
Entrance B - Pipe Piling & Toe Grouting Works									
01109.PDB19910A	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 2	100%	01-Nov-14 A	23-Dec-14 A					



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					Dec	Jan	Feb	Mar	
01109.PDB19920A	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 3	0%	23-Dec-14 A	03-Jan-15					
01109.PDB19930A	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 4	0%	05-Jan-15	17-Jan-15					
01109.PDB19940A	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 5	0%	19-Jan-15	31-Jan-15					
01109.PDB19950	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 6	0%	02-Feb-15	14-Feb-15					
01109.PDB19960	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 7	0%	16-Feb-15	27-May-15					
Entrance B - Excavation Works									
01109.PDB19970A	Excavation & Lateral Support Works; GL B14 to B20 - Part 1 of 3 - 1	0%	12-Feb-15	03-Mar-15					
01109.PDB19980A	Excavation & Lateral Support Works; GL B14 to B20 - Part 1 of 3 - 2	0%	04-Mar-15	17-Mar-15					
01109.PDB19990A	Excavation & Lateral Support Works; GL B14 to B20 - Part 1 of 3 - 3	0%	18-Mar-15	31-Mar-15					
Entrance B - Nam Kok Road Works - (Detailed Programme)									
Entrance B - Nam Kok Road Works (Portion 3)									
Nam Kok Road - TTMS - Stage 1 and 2									
TTMS - Stage 1 (Phase 2)									
01109.PDB19215A	Install grout curtain - 5	0%	13-Nov-14 A	27-Dec-14					
01109.PDB15135A	Install 410mm dia pipe pile wall. 105nr (assume 3 piles/2 days). 1PR - 5	0%	18-Nov-14 A	02-Jan-15					
01109.PDB19216A	Install grout curtain - 6	0%	29-Dec-14	12-Jan-15					
01109.PDB15136A	Install 410mm dia pipe pile wall. 105nr (assume 3 piles/2 days). 1PR - 6	0%	03-Jan-15	16-Jan-15					
01109.PDB19217A	Install grout curtain - 7	0%	13-Jan-15	26-Jan-15					
01109.PDB15137A	Install 410mm dia pipe pile wall. 105nr (assume 3 piles/2 days). 1PR - 7	0%	17-Jan-15	30-Jan-15					
01109.PDB19210A80	Install grout curtain - 8	0%	27-Jan-15	09-Feb-15					
01109.PDB19210A90	Install grout curtain - 9	0%	10-Feb-15	26-Feb-15					
01109.PDB15140A	Excavate approx 1m below ground level (volume 120m3) (assume 60m3/day)	0%	27-Feb-15	14-Mar-15					
01109.PDB15180A	Install sumi decking	0%	16-Mar-15	28-Mar-15					
TTMS - Stage 2 (Phase 1)									
01109.PDB15250A	Implement the Stage 2 (Phase 1) TTM Scheme on drawing	0%	16-Mar-15	16-Mar-15					
01109.PDB15260A	Relocate car parking spaces (29 numbers in total)	0%	16-Mar-15	17-Mar-15					
CC-C - TKW STATION, ENTRANCES AND ADITS									
Implementation of TTA at TKW									
Revised TTMS Schemes									
01109.PDC2814x10	Stage 2 - Phase 4 - TTM for Partial Wks Area in W6 & E6	0%	27-Dec-14	27-Dec-14					
01109.PDC29357A	Stage 2 - Phase 6 - TTM for Ent D Dwall Works	0%		05-Jan-15*					
01109.PDC2814A	Stage 2 - Phase 7 - Hybrid TTMS (Work Area At E1, W2, W3 & E6)	0%	24-Mar-15	26-Mar-15					
TKW Station									
Diaphragm Wall Stage 2 Phase 1 TTMS (W1-W3 + Ent D)									



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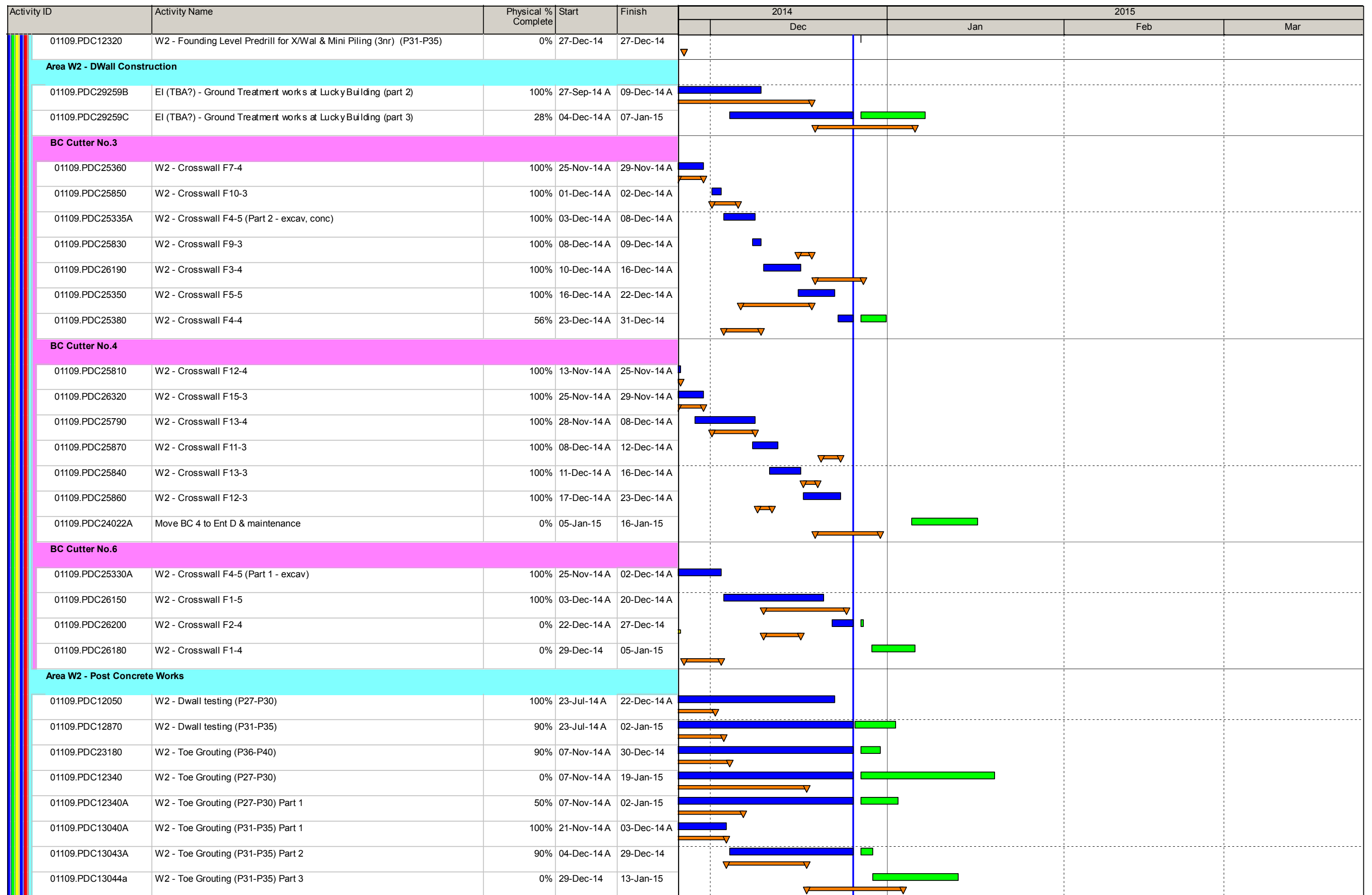
Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015				
					Dec	Jan	Feb	Mar			
Ent D											
Area E1 (Ent D) - BC Cutter No 4											
01109.PDC26660	E1 (Ent D) - Dwall works - P144	0%	17-Jan-15	27-Jan-15							
01109.PDC26610	Stg 3 Ent D - Dwall works - P147	0%	28-Jan-15	06-Feb-15							
01109.PDC26680	Stg 3 Ent D - Dwall works - P145	0%	07-Feb-15	14-Feb-15							
01109.PDC26700	Stg 3 Ent D - Dwall works - P146	0%	16-Feb-15	26-Feb-15							
01109.PDC26690	Stg 3 Ent D - Dwall works - P148	0%	27-Feb-15	06-Mar-15							
01109.PDC26620	Stg 3 Ent D - Dwall works - P151	0%	07-Mar-15	16-Mar-15							
01109.PDC26650	Stg 3 Ent D - Dwall works - P150	0%	17-Mar-15	23-Mar-15							
01109.PDC26670	Stg 3 Ent D - Dwall works - P149	0%	24-Mar-15	01-Apr-15							
Area W1											
Area W1 - Founding Level Predrill											
01109.PDC11020	W1 - Founding Level Predrill for X/Wal & Mini Pile (3nr) 1PR (P22-P26)	0%	27-Dec-14	27-Dec-14							
01109.PDC10220	W1 - Founding Level Predrill for X/Wal & Mini Pile (3nr) 3PR	0%	27-Dec-14	27-Dec-14							
Area W1 - DWall Construction											
BC Cutter No.2											
01109.PDC25660A	W1 - Crosswall D4-4 (Part 2 - excav, conc)	100%	17-Nov-14 A	26-Nov-14 A							
01109.PDC25700	W1 - Crosswall D4-3	100%	28-Nov-14 A	03-Dec-14 A							
01109.PDC24021A	Dismantle BC2 and demobilize	100%	04-Dec-14 A	10-Dec-14 A							
Area W1 - Post Concrete Works											
01109.PDC23160	W1 - Toe Grouting (P22-P26)	60%	21-Oct-14 A	06-Jan-15							
01109.PDC26991A	W1 - Grouting to TBM/D/Wall interface zone (Part 1)	100%	20-Nov-14 A	04-Dec-14 A							
01109.PDC26992A	W1 - Grouting to TBM/D/Wall interface zone (Part 2)	100%	05-Dec-14 A	23-Dec-14 A							
01109.PDC26993A	W1 - Grouting to TBM/D/Wall interface zone (Part 3)	14%	23-Dec-14 A	09-Jan-15							
01109.PDC26995A	W1 - Grouting to TBM/D/Wall interface zone (Part 4)	0%	09-Jan-15	23-Jan-15							
01109.PDC26996A	W1 - Grouting to TBM/D/Wall interface zone (Part 5)	0%	23-Jan-15	06-Feb-15							
01109.PDC26997A	W1 - Grouting to TBM/D/Wall interface zone (Part 6)	0%	06-Feb-15	24-Feb-15							
01109.PDC26998A	W1 - Grouting to TBM/D/Wall interface zone (Part 7)	0%	24-Feb-15	02-Mar-15							
01109.PDC26994A	W1 - Grouting to TBM/D/Wall interface zone (Part 8)	0%	02-Mar-15	02-Mar-15							
01109.PDC26999A	W1 - TGE Verification Core and testing	0%	02-Mar-15	08-Mar-15							
Area W2											
Area W2 - Founding Level Predrill											
01109.PDC11670	W2 - Founding Level Predrill for X/Wal & Mini Piling (3nr) 2PR (P27-P30)	0%	27-Dec-14	27-Dec-14							
01109.PDC13070	W2 - Founding Level Predrill for X/Wal & Mini Piling (P36-P40)	0%	27-Dec-14	27-Dec-14							



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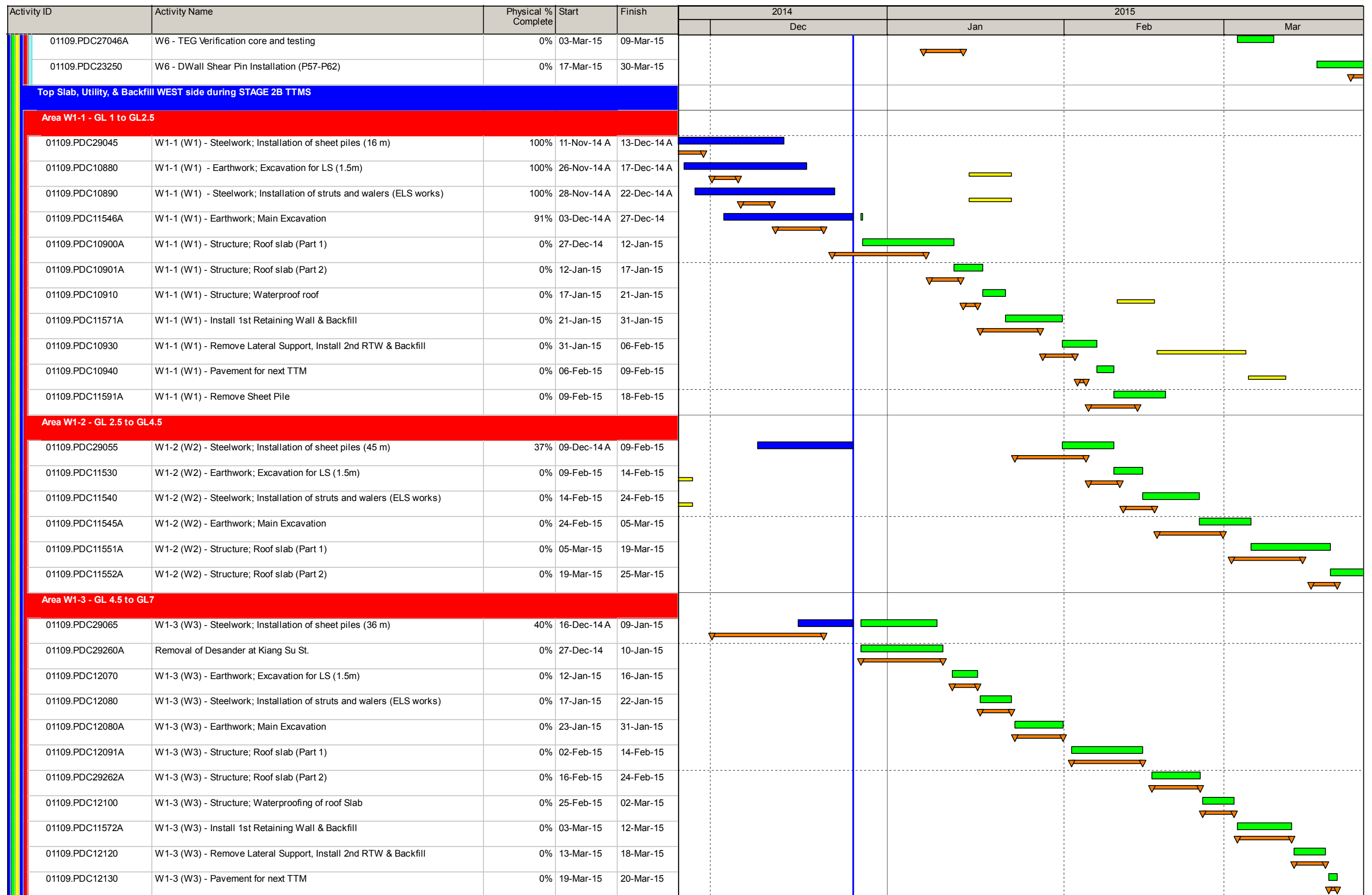
Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
					Dec	Jan	Feb	Mar	
01109.PDC23170	W2 - Dwall Shear Pin Installation (P36-40)	0%	31-Dec-14	31-Dec-14					
01109.PDC12345A	W2 - Toe Grouting (P27-P30) Part 2	0%	09-Jan-15	19-Jan-15					
01109.PDC13041A	W2 - Toe Grouting (P31-P35) Part 4	0%	13-Jan-15	27-Jan-15					
01109.PDC12350	W2 - Dwall Shear Pin Installation (P27-30)	0%	20-Jan-15	20-Jan-15					
01109.PDC13030	W2 - Dwall Shear Pin Installation (P31-35)	0%	27-Jan-15	27-Jan-15					
Area W3									
Area W3 - Post Concrete Works									
01109.PDC23310	W3 - Toe Grouting (P54-P56)	100%	20-Aug-14 A	09-Dec-14 A					
01109.PDC23220	W3 - Toe Grouting (P41-P45)	80%	10-Sep-14 A	30-Dec-14					
01109.PDC23190	W3 - Dwall Shear Pin Installation (P46-P49)	0%	27-Dec-14	27-Dec-14					
01109.PDC23300	W3 - Dwall Shear Pin Installation (P54-P57)	0%	27-Dec-14	27-Dec-14					
01109.PDC23230	W3 - Dwall Shear Pin Installation (P50-P53)	0%	27-Dec-14	27-Dec-14					
01109.PDC23210	W3 - Dwall Shear Pin Installation (P41-P45)	0%	30-Dec-14	30-Dec-14					
Diaphragm Wall STAGE 2 Phase 2 (West Side + Ent D) TTMS									
Area W6									
Area W6 - Advance Works									
01109.PDC16380	W6 - Excavation and construction of Guide Walls (P57-P62)	100%	04-Jul-14 A	09-Dec-14 A					
Area W6 - DWall Construction									
BC Cutter No. 1									
01109.PDC25570	W6 - Dwall works P61A	100%	14-Nov-14 A	25-Nov-14 A					
01109.PDC26420	W6 - Crosswall G11-5	100%	24-Nov-14 A	26-Nov-14 A					
01109.PDC26460	W6 - Crosswall G11-4	100%	27-Nov-14 A	03-Dec-14 A					
01109.PDC26400A	Diversion of drain pipe & GW construction	100%	04-Dec-14 A	09-Dec-14 A					
01109.PDC26400	W6 - Dwall works P58	100%	11-Dec-14 A	23-Dec-14 A					
Area W6 - Post Concrete Works									
01109.PDC16660	W6 - Dwall testing (P57-P62)	42%	22-Sep-14 A	12-Jan-15					
01109.PDC27040A	W6 - Grouting to TBM-D/Wall interface zone (46 nos) part 2	63%	21-Nov-14 A	31-Jan-15					
01109.PDC23260	W6 - Toe Grouting (P57-P62)	5%	23-Dec-14 A	12-Jan-15					
01109.PDC23290	W6 - Toe Grouting (P68-P74)	0%	20-Jan-15	02-Feb-15					
01109.PDC23280	W6 - Toe Grouting (P63-P67)	0%	20-Jan-15	02-Feb-15					
01109.PDC27045A	W6 - Grouting to TBM-D/Wall interface zone (46 nos) part 3	0%	02-Feb-15	14-Feb-15					
01109.PDC23270	W6 - DWall Shear Pin Installation (P63-P67)	0%	03-Feb-15	16-Feb-15					
01109.PDC27040	W6 - Grouting to TBM-D/Wall interface zone (45 nos) part 4	0%	16-Feb-15	02-Mar-15					
01109.PDC23270A	W6 - DWall Shear Pin Installation (P68-P74)	0%	17-Feb-15	05-Mar-15					



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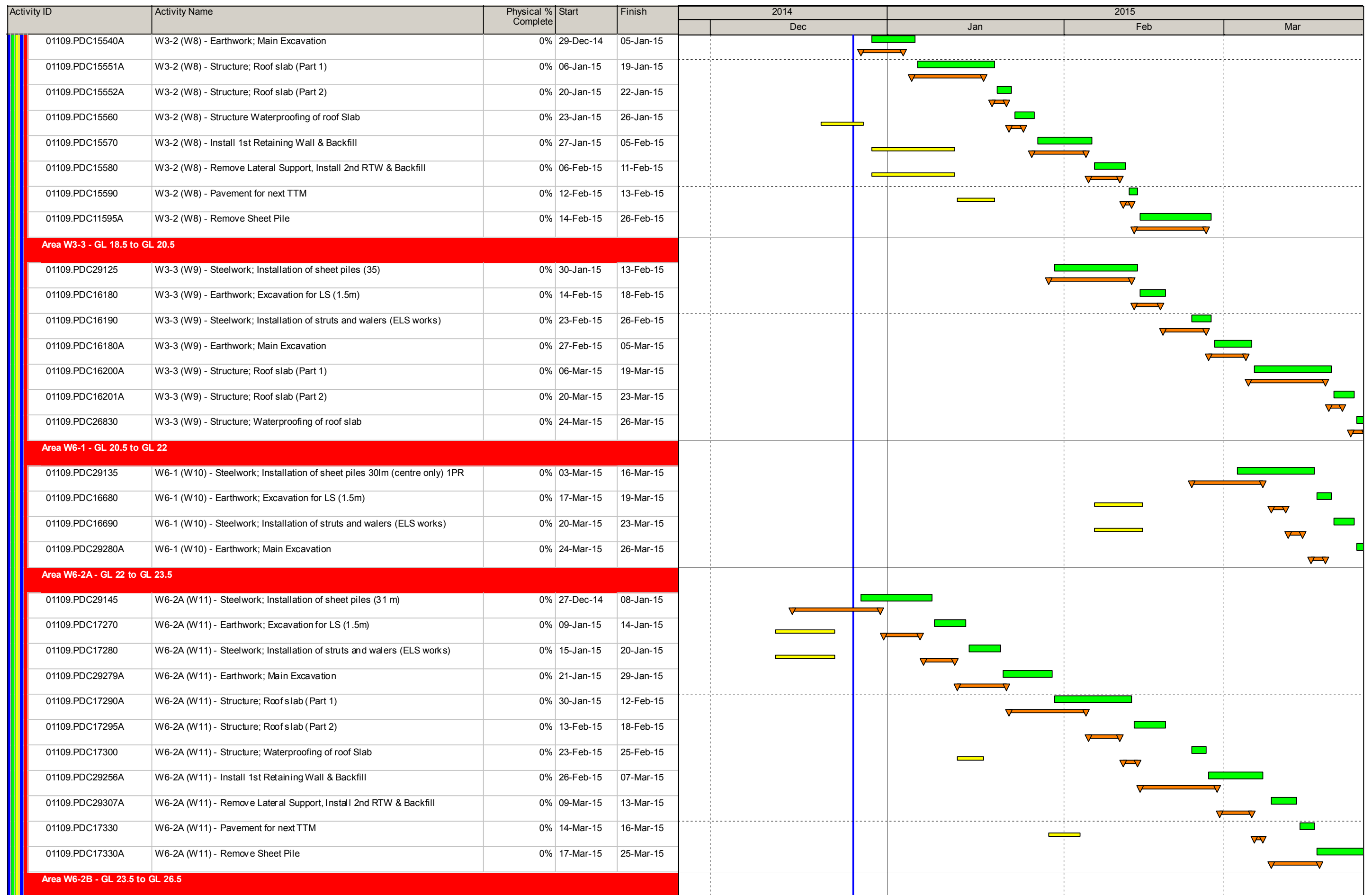
Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
					Dec	Jan	Feb	Mar	
01109.PDC11592A	W1-3 (W3) - Remove Sheet Pile	0%	21-Mar-15	30-Mar-15					
Area W2-1 - GL 7 to GL 9.5									
01109.PDC29075	W2-1 (W4) - Steelwork; Installation of sheet piles (38 m)	0%	27-Dec-14	20-Jan-15					
01109.PDC12890	W2-1 (W4) - Earthwork; Excavation for LS (1.5m)	0%	27-Jan-15	31-Jan-15					
01109.PDC12900	W2-1 (W4) - Steelwork; Installation of struts and walers (ELS works)	0%	03-Feb-15	07-Feb-15					
01109.PDC14321A	W2-1 (W4) - Earthwork; Main Excavation	0%	07-Feb-15	14-Feb-15					
01109.PDC12910A	W2-1 (W4) - Structure; Roof slab (Part 1)	0%	14-Feb-15	04-Mar-15					
01109.PDC12911A	W2-1 (W4) - Structure; Roof slab (Part 2)	0%	04-Mar-15	07-Mar-15					
01109.PDC12920	W2-1 (W4) - Structure; Waterproofing of roof Slab	0%	07-Mar-15	11-Mar-15					
01109.PDC11570A10	W2-1 (W4) - Install 1st Retaining Wall & Backfill	0%	11-Mar-15	21-Mar-15					
01109.PDC12940	W2-1 (W4) - Remove Lateral Support, Install 2nd RTW & Backfill	0%	21-Mar-15	27-Mar-15					
Area W2-2 - GL 9.5 to 11.5									
01109.PDC29085	W2-2 (W5) - Steelwork; Installation of sheet piles 30m (centre only) 1PR	17%	17-Dec-14 A	08-Jan-15					
Area W2-3 - GL 11.5 to 14.5									
01109.PDC29095	W2-3 (W6) - Steelwork; Installation of sheet piles (32 m)	26%	09-Dec-14 A	20-Jan-15					
01109.PDC14310	W2-3 (W6) - Earthwork; Excavation for LS (1.5m)	0%	27-Jan-15	02-Feb-15					
01109.PDC14320	W2-3 (W6) - Steelwork; Installation of struts and walers (ELS works)	0%	02-Feb-15	07-Feb-15					
01109.PDC14320A	W2-3 (W6) - Earthwork; Main Excavation	0%	07-Feb-15	17-Feb-15					
01109.PDC14331A	W2-3 (W6) - Structure; Roof slab (Part 1)	0%	17-Feb-15	06-Mar-15					
01109.PDC14332A	W2-3 (W6) - Structure; Roof slab (Part 2)	0%	06-Mar-15	12-Mar-15					
01109.PDC14340	W2-3 (W6) - Structure Waterproofing of roof Slab	0%	12-Mar-15	16-Mar-15					
01109.PDC14360A	W2-3 (W6) - Install 1st Retaining Wall & Backfill	0%	16-Mar-15	26-Mar-15					
Area W3-1 - GL 14.5 to 15.5									
01109.PDC29105	W3-1 (W7) - Steelwork; Installation of sheet piles 30m (centre only) 1PR	0%	31-Jan-15	13-Feb-15					
01109.PDC14930	W3-1 (W7) - Earthwork; Excavation for LS (1.5m)	0%	14-Feb-15	23-Feb-15					
01109.PDC14940	W3-1 (W7) - Steelwork; Installation of struts and walers (ELS works)	0%	24-Feb-15	28-Feb-15					
01109.PDC15541A	W3-1 (W7) - Earthwork; Main Excavation	0%	02-Mar-15	10-Mar-15					
01109.PDC14950A	W3-1 (W7) - Structure; Roof slab (Part 1)	0%	11-Mar-15	24-Mar-15					
Area W3-2 - GL 15.5 to 18.5									
01109.PDC29117A	W3-2 (W8) - Steelwork; Installation of sheet piles (9.6 m installed and extracted)	100%	01-Nov-14 A	26-Nov-14 A					
01109.PDC15530	W3-2 (W8) - Earthwork; Excavation for LS (1.5m)	50%	21-Nov-14 A	29-Dec-14					
01109.PDC29116A	W3-2 (W8) - Steelwork; Installation of sheet piles (30 m) Part 1	100%	28-Nov-14 A	09-Dec-14 A					
01109.PDC29267A	W3-2 (W8) - Steelwork; Installation of sheet piles (30 m) Part 2	100%	09-Dec-14 A	09-Dec-14 A					
01109.PDC15540	W3-2 (W8) - Steelwork; Installation of struts and walers (ELS works)	57%	11-Dec-14 A	31-Dec-14					



MTR Corporation Limited
Shatin to Central Link Contract 1109

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- Actual Work
- Remaining Work
- Master Programme Rev.1
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- Milestone
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- Nov 2014 Milestone



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Activity ID	Activity Name	Physical % Complete	Start	Finish	2014				2015					
					Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
01109.PDC29286A	W6-2B (W11) - Structure; Roof slab (Part 1)	100%	17-Nov-14 A	29-Nov-14 A										
01109.PDC29287A	W6-2B (W11) - Structure; Roof slab (Part 2)	100%	01-Dec-14 A	03-Dec-14 A										
01109.PDC29295A	W6-2B (W11) - Structure; Waterproofing of roof Slab	100%	04-Dec-14 A	06-Dec-14 A										
01109.PDC29317A	W6-2B (W11) - Remove Lateral Support	100%	08-Dec-14 A	08-Dec-14 A										
01109.PDC29359A	W6-2B (W11) - Install Retaining Wall	100%	08-Dec-14 A	17-Dec-14 A										
01109.PDC29359A10	W6-2B (W11) - Backfill	50%	12-Dec-14 A	02-Jan-15										
01109.PDC29254A	W6-2B (W11) - Install 1st Retaining Wall & Backfill	0%	27-Dec-14	07-Jan-15										
01109.PDC29305A	W6-2B (W11) - Remove Lateral Support, Install 2nd RTW & Backfill	0%	27-Dec-14	02-Jan-15										
01109.PDC29315A	W6-2B (W11) - Pavement for next TTM	0%	02-Jan-15	05-Jan-15										
01109.PDC29306A	W6-2B (W11) - Remove Sheet Pile	0%	05-Jan-15	14-Jan-15										
Area W6-3 - GL 26.5 to GL 28														
01109.PDC17950	W6-3 (W12) - Earthwork; Excavation for LS (1.5m)	100%	01-Dec-14 A	03-Dec-14 A										
01109.PDC29035	W6-3 (W12) - Steelwork; Installation of struts and walers (ELS works)	100%	03-Dec-14 A	06-Dec-14 A										
01109.PDC29278A20	W6-3 (W12) - Earthwork; Main Excavation	100%	08-Dec-14 A	11-Dec-14 A										
01109.PDC17960A	W6-3 (W12) - Structure; Roof slab (Part 1)	100%	12-Dec-14 A	24-Dec-14 A										
01109.PDC17965A	W6-3 (W12) - Structure; Roof slab (Part 2)	100%	24-Dec-14 A	24-Dec-14 A										
01109.PDC17970	W6-3 (W12) - Structure; Waterproofing of roof Slab	0%	27-Dec-14	30-Dec-14										
01109.PDC17970A	W6-3 (W12) - Install 1st Retaining Wall & Backfill	0%	31-Dec-14	10-Jan-15										
01109.PDC17990	W6-3 (W12) - Remove Lateral Support, Install 2nd RTW & Backfill	0%	12-Jan-15	16-Jan-15										
01109.PDC18000	W6-3 (W12) - Pavement for next TTM	0%	17-Jan-15	19-Jan-15										
01109.PDC18000A	W6-3 (W12) - Remove Sheet Pile	0%	20-Jan-15	28-Jan-15										
Entrance A & Vent Shaft A														
Vent Shaft A														
Foundation														
01109.PDC27310	Vent Shaft A- Trial Pits	0%	27-Dec-14	10-Jan-15										
01109.PDC27290	Vent Shaft A- Founding Level predrill & verify founding levels	0%	13-Jan-15	26-Jan-15										
01109.PDC27320	Vent Shaft A- Install Pipe Piles clockwise from next to P97 to P102 (79nr 2d/pile 1PR)	0%	27-Jan-15	15-Aug-15										
CC-D - BORED TUNNELS FROM SUW STATION TO HOM STATION														
Bored Tunnel Down Track (D99+583 to D101+514)														
Tunnel through TKW (D100+432 to D100+755)														
TBM														
01109.PDD1450	TKW D/Wall Stage 2 & Cross Wall complete ready for tunnel drive	0%		26-Dec-14										
Underpinning of EKW Pier 15 and Foundation Removal														
TTA Stage 1: Phase 3														



MTR Corporation Limited
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- Actual Work
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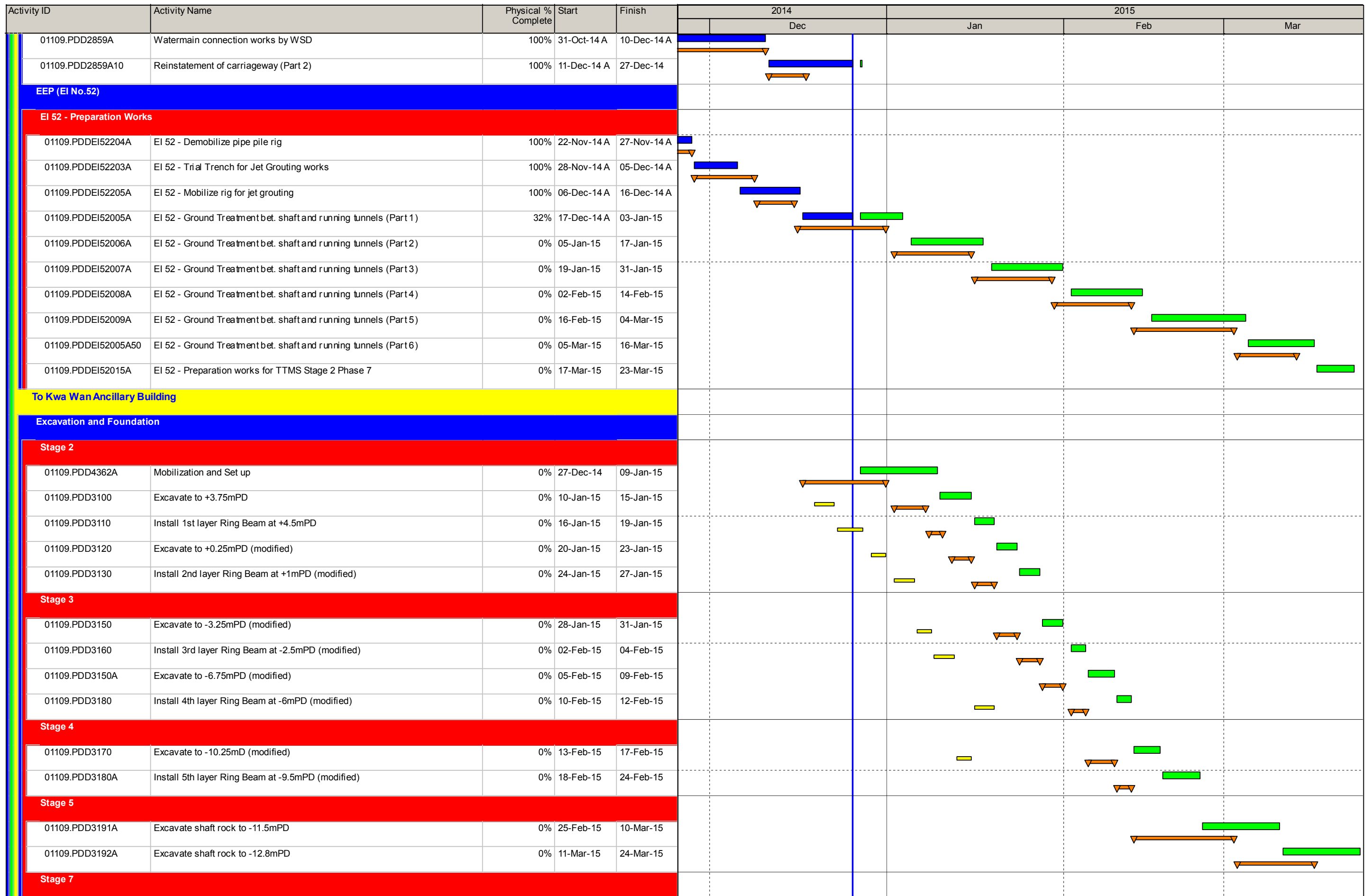
Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
					Dec	Jan	Feb	Mar	
Bored Pile Removal									
Presplitting									
01109.PDD2693A	Presplitting at P7 (4 nr)	0%	27-Dec-14	27-Dec-14					
01109.PDD2694A	Presplitting at P11 (4 nr)	0%	27-Dec-14	27-Dec-14					
01109.PDD2695A	Presplitting at P10 (5 nr)	0%	27-Dec-14	27-Dec-14					
01109.PDD2696A	Presplitting at P8 (4 nr)	0%	27-Dec-14	27-Dec-14					
01109.PDD2697A	Presplitting at P9 (7 nr)	0%	27-Dec-14	27-Dec-14					
Group 1 (Machine 1)									
01109.PDD2801A	Concrete mix Bored Pile MBP5	100%	24-Nov-14 A	25-Nov-14 A					
01109.PDD2802A	Concrete mix Bored Pile MBP4	100%	26-Nov-14 A	26-Nov-14 A					
01109.PDD2807A	Concrete mix Bored Pile MBP3	100%	27-Nov-14 A	28-Nov-14 A					
01109.PDD2600A	Existing Bored Pile B18 - 1.5m dia - Remove bored pile in way of tunnel (Part 1)	100%	02-Dec-14 A	15-Dec-14 A					
01109.PDD2601A	Existing Bored Pile B18 - 1.5m dia - Remove bored pile in way of tunnel (Part 2)	100%	16-Dec-14 A	29-Dec-14					
01109.PDD2602A	Existing Bored Pile B18 - 1.5m dia - Remove bored pile in way of tunnel (Part 3)	0%	30-Dec-14	30-Dec-14					
01109.PDD2603A	Existing Bored Pile B18 - 1.5m dia - Remove bored pile in way of tunnel (Part 4)	0%	30-Dec-14	30-Dec-14					
01109.PDD2604A	Existing Bored Pile B18 - 1.5m dia - Remove bored pile in way of tunnel (Part 5)	0%	30-Dec-14	30-Dec-14					
01109.PDD2605A	Existing Bored Pile B18 - 1.5m dia - Remove bored pile in way of tunnel (Part 6)	0%	30-Dec-14	30-Dec-14					
01109.PDD2771A	Existing Bored Pile B19 - 1.5m dia - Remove bored pile in way of tunnel (Part 1)	0%	30-Dec-14	13-Jan-15					
01109.PDD2772A	Existing Bored Pile B19 - 1.5m dia - Remove bored pile in way of tunnel (Part 2)	0%	14-Jan-15	27-Jan-15					
01109.PDD2773A	Existing Bored Pile B19 - 1.5m dia - Remove bored pile in way of tunnel (Part 3)	0%	28-Jan-15	03-Feb-15					
01109.PDD2774A	Existing Bored Pile B19 - 1.5m dia - Remove bored pile in way of tunnel (Part 4)	0%	04-Feb-15	04-Feb-15					
01109.PDD2775A	Existing Bored Pile B19 - 1.5m dia - Remove bored pile in way of tunnel (Part 5)	0%	04-Feb-15	04-Feb-15					
01109.PDD2776A	Existing Bored Pile B19 - 1.5m dia - Remove bored pile in way of tunnel (Part 6)	0%	04-Feb-15	04-Feb-15					
01109.PDD2710A	Existing Bored Pile B10 - 1.0m dia - Remove bored pile in way of tunnel (Part 1)	0%	04-Feb-15	14-Feb-15					
01109.PDD2715A	Existing Bored Pile B10 - 1.0m dia - Remove bored pile in way of tunnel (Part 2)	0%	16-Feb-15	02-Mar-15					
01109.PDD2730	Existing Bored Pile B09 - 1.0m dia - Remove bored pile in way of tunnel	0%	03-Mar-15	25-Mar-15					
01109.PDD2730A	Existing Bored Pile B09 - 1.0m dia - Remove bored pile in way of tunnel (Part 1)	0%	03-Mar-15	13-Mar-15					
01109.PDD2735A	Existing Bored Pile B09 - 1.0m dia - Remove bored pile in way of tunnel (Part 2)	0%	14-Mar-15	25-Mar-15					
Group 2 (Machine 2)									
01109.PDD2690A	Existing Bored Pile B11 - 1.0m dia - Remove bored pile in way of tunnel (Part 1)	100%	26-Nov-14 A	09-Dec-14 A					
01109.PDD2645A	Existing Bored Pile B11 - 1.0m dia - Remove bored pile in way of tunnel (Part 2)	100%	10-Dec-14 A	22-Dec-14 A					
01109.PDD2646A	Demobilize Bored Pile Rig No. 2	40%	23-Dec-14 A	30-Dec-14					
Chatham Road North									
Ground Treatment between TKW and Shansi Street									



MTR Corporation Limited
Shatin to Central Link Contract 1109

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MTR Corporation Limited
Shatin to Central Link Contract 1109

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- Actual Work
- Remaining Work
- Master Programme Rev.1
- ▶ Last Month Update (Nov 2014)
- ◆ Milestone
- MP Rev.1 Milestone
- ▼ Nov 2014 Milestone

Activity ID	Activity Name	Physical % Complete	Start	Finish	2014		2015		
						Dec	Jan	Feb	Mar
01109.PDD3270	Install working platform to shaft at -5.5mPD	0%	02-Feb-15	14-Feb-15					
CC-F - ABWF WORKS INSIDE HOM SCL STATION									
CC-F Submissions, Approvals & Procurement									
01109.PDF1000	Prepare & submit Perm Wks Mtrl control schedule (G4.16.1)	0%	26-Dec-14	23-Feb-15					
01109.PDF1010	Prepare and submit all shop dwgs, and material submissions	0%	26-Dec-14	23-Feb-15					



MTR Corporation Limited
Shatin to Central Link Contract 1109

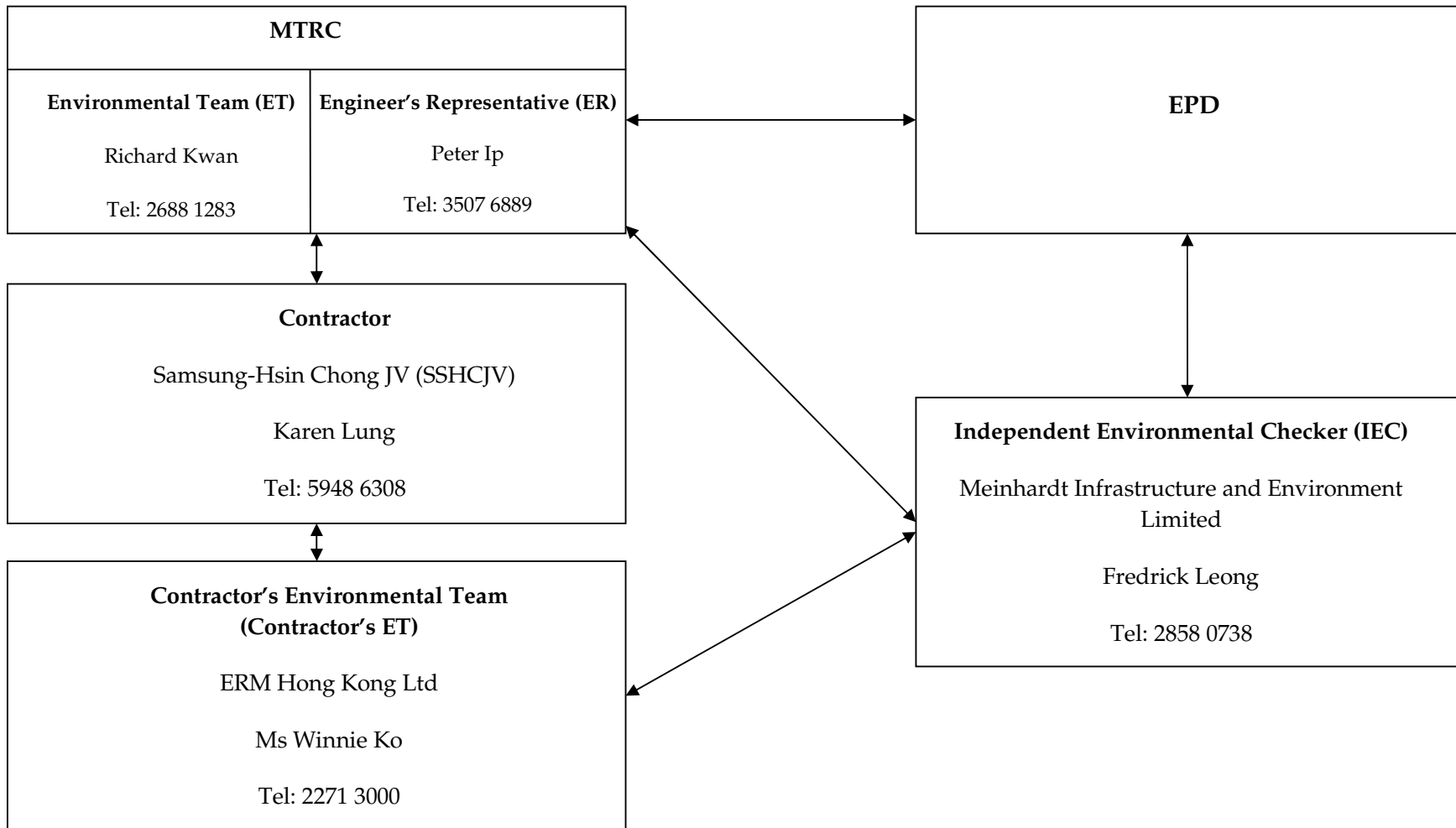
1109-UWP-5T-3, Page 18 of 18
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 Dates, MTRC 1109 - 3MRP.
 Printed:08-Jan-15

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- Nov 2014 Milestone

Annex C

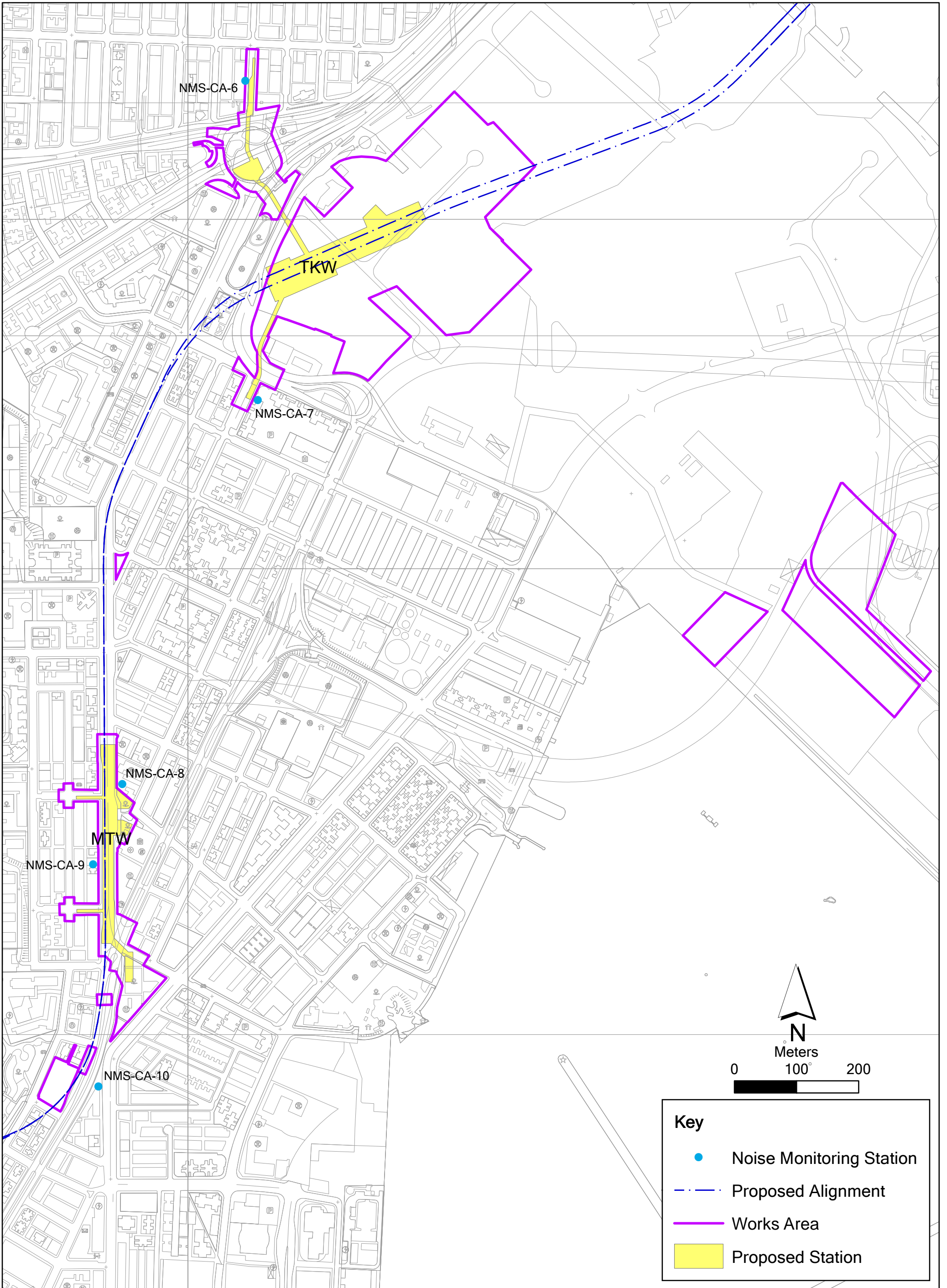
Project Organization Chart and Contact Detail

Annex C Project Organization of SCL Works Contract 1109



Annex D

Locations of Noise and Dust Monitoring Stations



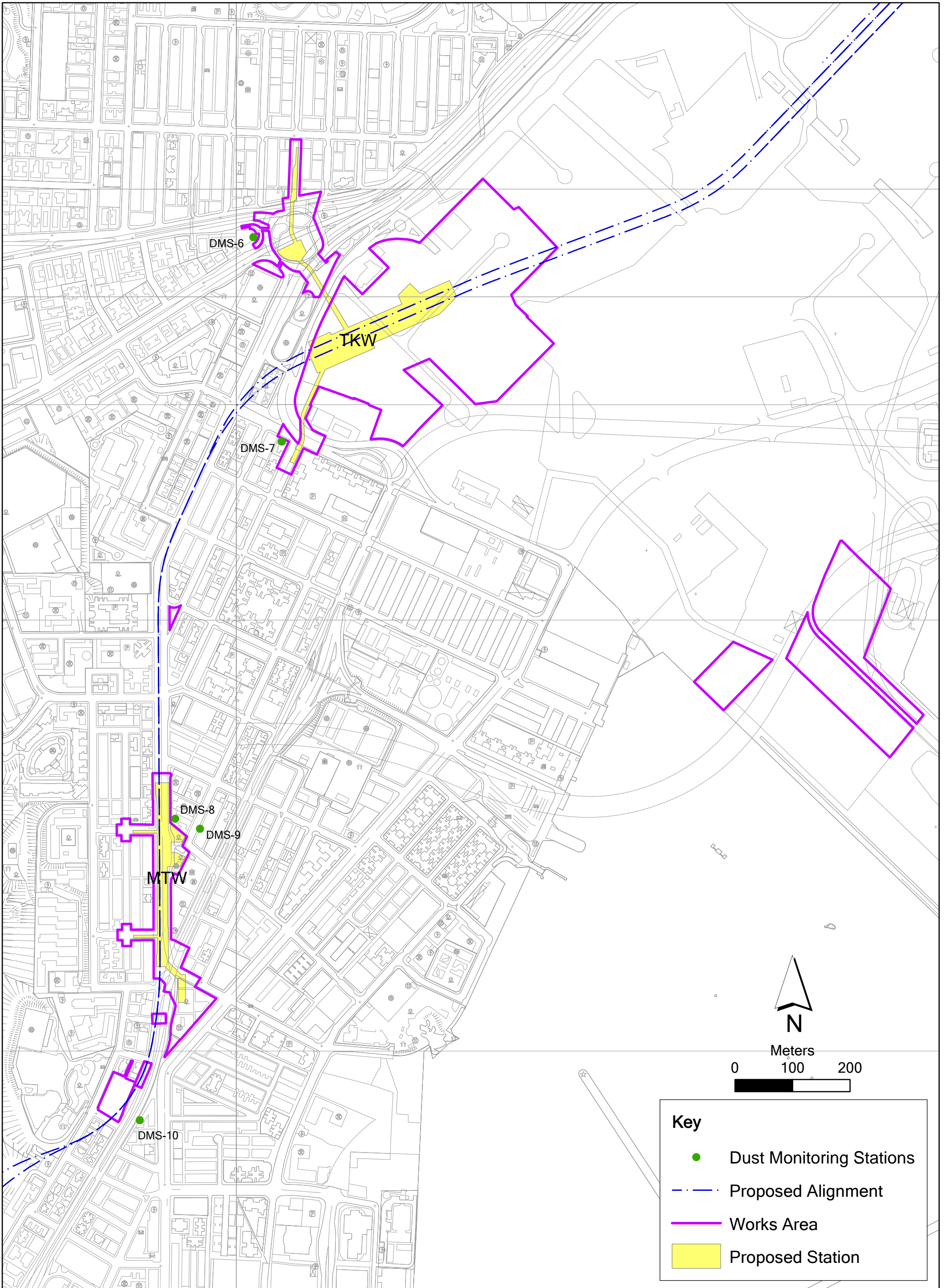
Annex D1

Location of Regular Construction Noise Monitoring Stations

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Date: 12/08/2014

Environmental
Resources
Management





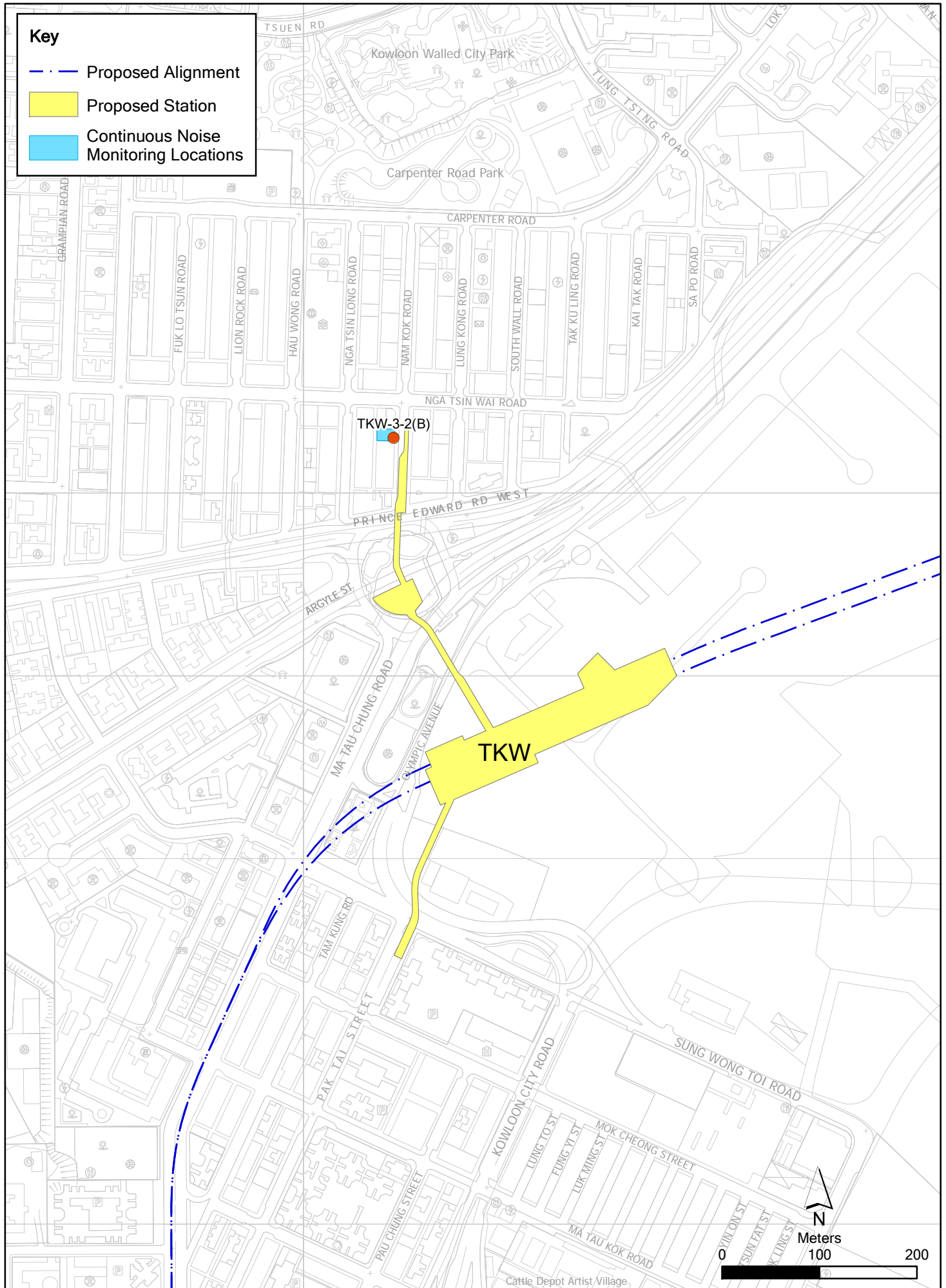


Figure 2.2a

Continuous Noise Monitoring Locations

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 Date: 5/11/2014

Environmental
 Resources
 Management



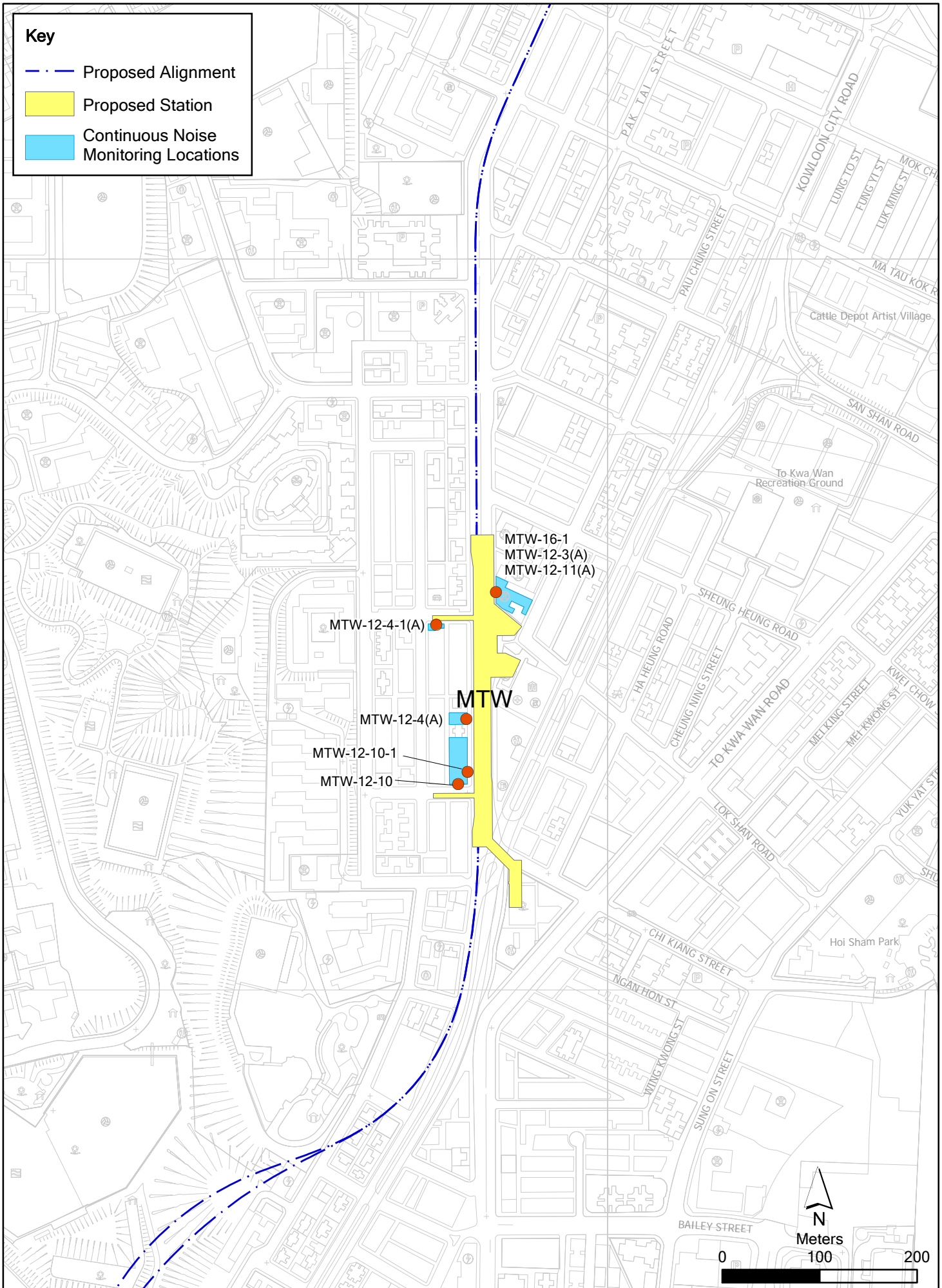


Figure 2.2b

Continuous Noise Monitoring Locations

Annex E

Monitoring Schedule of the Reporting Period and the Next Month

**Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Noise Monitoring Schedule**

**Noise Monitoring Stations:
NMS-CA-6, NMS-CA-7, NMS-CA-8, NMS-CA-9 and NMS-CA-10
Monitoring Month : December 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec
			Noise Monitoring			
07-Dec	08-Dec	09-Dec	10-Dec	11-Dec	12-Dec	13-Dec
		Noise Monitoring				
14-Dec	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec
	Noise Monitoring					
21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec
			Noise Monitoring	Public Holiday	Public Holiday	
28-Dec	29-Dec	30-Dec	31-Dec			
		Noise Monitoring				

**Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Noise Monitoring Schedule**

**Noise Monitoring Stations:
NMS-CA-6, NMS-CA-7, NMS-CA-8, NMS-CA-9 and NMS-CA-10
Monitoring Month : January 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				01-Jan	02-Jan	03-Jan
				Public Holiday		
04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan
	Noise Monitoring					
11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
					Noise Monitoring	
18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan
				Noise Monitoring		
25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
			Noise Monitoring			

**Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Dust Monitoring Schedule**

**24-hr TSP Monitoring Stations:
DMS-6, DMS-7, DMS-8, DMS-9 and DMS-10
Monitoring Month: December 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec
			24-hr TSP Monitoring			
07-Dec	08-Dec	09-Dec	10-Dec	11-Dec	12-Dec	13-Dec
		24-hr TSP Monitoring				
14-Dec	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec
	24-hr TSP Monitoring					24-hr TSP Monitoring
21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec
			24-hr TSP Monitoring	Public Holiday	Public Holiday	
28-Dec	29-Dec	30-Dec	31-Dec			
		24-hr TSP Monitoring				

**Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Dust Monitoring Schedule**

**24-hr TSP Monitoring Stations:
DMS-6, DMS-7, DMS-8, DMS-9 and DMS-10
Monitoring Month: January 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				01-Jan	02-Jan	03-Jan
				Public Holiday		
04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan
	24-hr TSP Monitoring					24-hr TSP Monitoring
11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
					24-hr TSP Monitoring	
18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan
				24-hr TSP Monitoring		
25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
			24-hr TSP Monitoring			

Annex F

Calibration Reports

Annex F Calibration Reports

Dust Monitoring Equipment

Monitoring Station ID	Location	Monitoring Equipment		Last Calibration Date	Next Calibration Date
<i>24-hr TSP</i>		HVS	Calibrator		
DMS-6	Katherine Building	TE-5170 (S/N 0107)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-7	Parc 22	TE-5170 (S/N 3574)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-8	SHK Good Shepherd Primary School	TE-5170 (S/N 3572)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-9	No. 12 Pau Chung Street	TE-5170 (S/N 0814)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-10	Chat Ma Mansion	TE-5170 (S/N 3573)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015

Noise Monitoring Equipment

Monitoring Station ID	Monitoring Equipment	Model & Serial No.	Last Calibration Date	Next Calibration Date
NMS-CA-7, NMS-CA-9 and NMS-CA-10	Calibrator	Rion NC-73 (S/N 10997142)	28 June 2014	28 June 2015
	Sound Level Meter	Rion NL-18 (S/N 00360030)	19 July 2014	19 July 2015
NMS-CA-8, MTW-16-1, MTW-12-3 (A) and MTW-12-11 (A)	Calibrator	Rion NC-73 (S/N 10997142)	28 June 2014	28 June 2015
	Sound Level Meter	Rion NL-31 (S/N 00320533)	28 June 2014	28 June 2015
NMS-CA-6, TKW-3-2(B)	Calibrator	Rion NC-73 (S/N 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL-52 (S/N 00131628)	5 July 2014	5 July 2015
MTW-12-4(A)	Calibrator	Rion NC-73 (S/N 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL-52 (S/N 00643040)	9 July 2014	9 July 2015
MTW-12-4-1 (A)	Calibrator	Rion NC-73 (S/N. 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL-52 (S/N 00643039)	9 July 2014	9 July 2015
MTW-12-10-1	Calibrator	Rion NC-73 (S/N. 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL- (S/N 00983400)	6 August 2014	6 August 2015

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-6 (Katherine Building)
Calibrated by : K.T.Ho
Date : 05/09/2014

Sampler

Model : TE-5170
Serial Number : S/N 0107

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
Service Date : 24 Mar 2014
Slope (m) : 2.07593
Intercept (b) : -0.00102
Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1007
Ta(K) : 305

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.6	3.498	1.686	54	53.22
2 13 holes	9.6	3.054	1.471	46	45.33
3 10 holes	7.4	2.681	1.292	40	39.42
4 7 holes	4.4	2.067	0.996	30	29.57
5 5 holes	2.8	1.649	0.795	22	21.68

Sampler Calibration Relationship (Linear Regression)

Slope(m): 34.916 Intercept(b): -5.732 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan

Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-7 (Parc 22)
Calibrated by : K.T.Ho
Date : 05/09/2014

Sampler

Model : TE-5170
Serial Number : S/N 3574

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
Service Date : 24 Mar 2014
Slope (m) : 2.07593
Intercept (b) : -0.00102
Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1007
Ta(K) : 305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.2	3.442	1.659	63	62.09
2	13 holes	9.6	3.054	1.471	56	55.19
3	10 holes	7.2	2.644	1.274	50	49.28
4	7 holes	4.6	2.114	1.019	42	41.39
5	5 holes	2.8	1.649	0.795	35	34.49

Sampler Calibration Relationship (Linear Regression)

Slope(m): 31.592 Intercept(b): 9.200 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan

Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-8 (SHK Good Shepherd Primary School)
Calibrated by : K.T.Ho
Date : 05/09/2014

Sampler

Model : TE-5170
Serial Number : S/N 3572

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
Service Date : 24 Mar 2014
Slope (m) : 2.07593
Intercept (b) : -0.00102
Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1007
Ta(K) : 305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.2	3.442	1.659	63	62.09
2	13 holes	9.8	3.085	1.487	56	55.19
3	10 holes	7.8	2.752	1.326	50	49.28
4	7 holes	4.8	2.159	1.041	39	38.44
5	5 holes	3.0	1.707	0.823	30	29.57

Sampler Calibration Relationship (Linear Regression)

Slope(m): 38.625 Intercept(b): -2.027 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan

Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-9(No. 12 Pau Chung Street)
Calibrated by : K.T.Ho
Date : 05/09/2014

Sampler

Model : TE-5170
Serial Number : S/N 0814

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
Service Date : 24 Mar 2014
Slope (m) : 2.07593
Intercept (b) : -0.00102
Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1007
Ta(K) : 305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.6	3.498	1.686	68	67.02
2	13 holes	9.8	3.085	1.487	58	57.16
3	10 holes	7.6	2.717	1.309	50	49.28
4	7 holes	4.6	2.114	1.019	38	37.45
5	5 holes	2.8	1.649	0.795	28	27.59

Sampler Calibration Relationship (Linear Regression)

Slope(m): 43.703 Intercept(b): -7.324 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan

Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-10 (Chat Ma Mansion)
 Calibrated by : K.T.Ho
 Date : 05/09/2014

Sampler

Model : TE-5170
 Serial Number : S/N 3573

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 24 Mar 2014
 Slope (m) : 2.07593
 Intercept (b) : -0.00102
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1007
 Ta(K) : 305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	11.6	3.357	1.617	60	59.13
2	13 holes	9.4	3.022	1.456	54	53.22
3	10 holes	7.4	2.681	1.292	48	47.31
4	7 holes	4.8	2.159	1.041	40	39.42
5	5 holes	2.5	1.558	0.751	30	29.57

Sampler Calibration Relationship (Linear Regression)

Slope(m): 33.854 Intercept(b): -4.041 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan

Date: 08/09/14



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELAND, OH
 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2014 Rootsmeter S/N 0438320 Ta (K) - 293
 Operator Tisch Orifice I.D. - 2454 Pa (mm) - 758.19

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4740	3.2	2.00
2	NA	NA	1.00	1.0340	6.4	4.00
3	NA	NA	1.00	0.9240	7.9	5.00
4	NA	NA	1.00	0.8820	8.8	5.50
5	NA	NA	1.00	0.7270	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0103	0.6854	1.4245	0.9958	0.6755	0.8791
1.0061	0.9730	2.0146	0.9916	0.9590	1.2433
1.0040	1.0866	2.2524	0.9895	1.0709	1.3900
1.0028	1.1370	2.3623	0.9884	1.1206	1.4579
0.9976	1.3722	2.8491	0.9832	1.3524	1.7583
Qstd slope (m) = 2.07593			Qa slope (m) = 1.29991		
intercept (b) = -0.00102			intercept (b) = -0.00063		
coefficient (r) = 0.99996			coefficient (r) = 0.99996		
y axis = $\text{SQRT}[\text{H2O}(\text{Pa}/760)(298/\text{Ta})]$			y axis = $\text{SQRT}[\text{H2O}(\text{Ta}/\text{Pa})]$		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C143980

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1497)

Date of Receipt / 收件日期 : 23 June 2014

Description / 儀器名稱 : Sound Level Calibrator

Manufacturer / 製造商 : Rion

Model No. / 型號 : NC-73

Serial No. / 編號 : 10997142

Supplied By / 委託者 : Envirotech Services Co.

Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 28 June 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification.

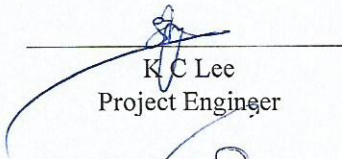
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

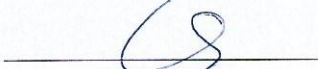
Tested By :

測試


K C Lee
Project Engineer

Certified By :

核證


K M Wu
Engineer

Date of Issue :

簽發日期

2 July 2014

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606

Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com



Certificate of Calibration 校正證書

Certificate No. : C143980
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

- Test procedure : MA100N.

- Results :

- 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.7	± 0.5	± 0.2

- 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.987	1 kHz ± 2 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C144281

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1719)

Date of Receipt / 收件日期 : 11 July 2014

Description / 儀器名稱 : Precision Integrating Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-18

Serial No. / 編號 : 00360030

Supplied By / 委託者 : Envirotech Services Co.

Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 : $(55 \pm 20)\%$

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 July 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

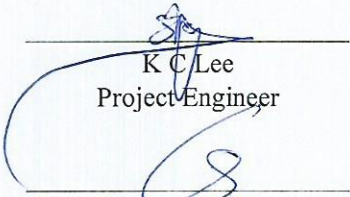
All results are within manufacturer's specification.

The results are detailed in the subsequent page(s).


The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By
測試


K C Lee
Project Engineer

Certified By
核證


K M Wu
Engineer

Date of Issue
簽發日期

23 July 2014

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited - Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

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Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C144281

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	94.1	± 0.7

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
60 - 120	LA	A	Fast	94.00	1	94.2 (Ref.)
				104.00		104.2
				114.00		114.2

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

- 6.2 Time Weighting

- 6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	94.1	Ref.
			Slow			94.1	

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Certificate of Calibration

校正證書

Certificate No. : C144281

證書編號

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
50 - 110	LA	A	Fast	106.00	Continuous	106.0	Ref.
	LAmx				200 ms	105.1	-1.0 ± 1.0
	LA		Slow		Continuous	106.0	Ref.
	LAmx				500 ms	102.5	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LA	A	Fast	94.00	31.5 Hz	54.4	-39.4 ± 1.5
					63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	95.3	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.0	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LC	C	Fast	94.00	31.5 Hz	90.9	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	94.0	-0.2 ± 1.0
					250 Hz	94.1	0.0 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.3	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

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Certificate No. : C144281

證書編號

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
50 - 110	LAeq	A	10 sec.	4	1	1/10	110	100	99.9	± 0.5
						1/10 ²		90	± 0.5	
			60 sec.			1/10 ³		80	± 1.0 [*]	
			5 min.			1/10 ⁴		70	± 1.0	

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307435

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
	Burst equivalent level	: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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輝創工程有限公司 - 校正及檢測實驗室

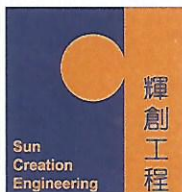
c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel 電話: 2927 2606

Fax 傳真: 2744 8986

E-mail 電郵: callab@suncreation.com

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C143981

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1497)

Date of Receipt / 收件日期 : 23 June 2014

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-31

Serial No. / 編號 : 00320533

Supplied By / 委託者 : Envirotech Services Co.

Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 28 June 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification.


The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA


Tested By :

測試


K C Lee
Project Engineer

Certified By :

核證


K M Wu
Engineer

Date of Issue :

簽發日期

2 July 2014

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E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C143981

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	93.7	± 0.7

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L _A	A	Fast	94.00	1	93.7 (Ref.)
				104.00		103.7
				114.00		113.7

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

- 6.2 Time Weighting

- 6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	93.7	Ref.
			Slow			93.6	± 0.1

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C143981

證書編號

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
20 -110	L _A	A	Fast	106.00	Continuous	106.0	Ref.
	L _{Amax}				200 ms	105.0	-1.0 ± 1.0
	L _A		Slow		Continuous	106.0	Ref.
	L _{Amax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _A	A	Fast	94.00	31.5 Hz	54.2	-39.4 ± 1.5
					63 Hz	67.5	-26.2 ± 1.5
					125 Hz	77.5	-16.1 ± 1.0
					250 Hz	85.0	-8.6 ± 1.0
					500 Hz	90.4	-3.2 ± 1.0
					1 kHz	93.7	Ref.
					2 kHz	94.9	+1.2 ± 1.0
					4 kHz	94.8	+1.0 ± 1.0
					8 kHz	92.6	-1.1 (+1.5; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _C	C	Fast	94.00	31.5 Hz	90.5	-3.0 ± 1.5
					63 Hz	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.0
					250 Hz	93.6	0.0 ± 1.0
					500 Hz	93.7	0.0 ± 1.0
					1 kHz	93.7	Ref.
					2 kHz	93.6	-0.2 ± 1.0
					4 kHz	93.0	-0.8 ± 1.0
					8 kHz	90.7	-3.0 (+1.5; -3.0)
					12.5 kHz	87.9	-6.2 (+3.0; -6.0)

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Certificate of Calibration

校正證書

Certificate No. : C143981

證書編號

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
20 - 110	L _{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
			60 sec.					90	90.0	± 0.5
			5 min.					80	80.0	± 1.0
								70	70.0	± 1.0

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 320128

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C144068
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1633) Date of Receipt / 收件日期 : 27 June 2014

Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00131628
Supplied By / 委託者 : Envirotech Services Co.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 5 July 2014

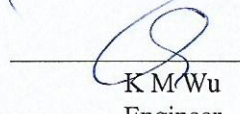
TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By : 
測試 : K C Lee
Project Engineer

Certified By : 
核證 : K M Wu
Engineer

Date of Issue : 7 July 2014
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606

Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C144068

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L _A	A	Fast	94.00	1	93.4	± 1.1

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L _A	A	Fast	94.00	1	93.4 (Ref.)
				104.00		103.4
				114.00		113.4

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

- 6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L _A	A	Fast	94.00	1	93.4	Ref.
			Slow				

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C144068

證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L _A	A	Fast	94.00	63 Hz	67.1	-26.2 ± 1.5
					125 Hz	77.2	-16.1 ± 1.5
					250 Hz	84.7	-8.6 ± 1.4
					500 Hz	90.1	-3.2 ± 1.4
					1 kHz	93.4	Ref.
					2 kHz	94.6	+1.2 ± 1.6
					4 kHz	94.4	+1.0 ± 1.6
					8 kHz	92.3	-1.1 (+2.1 ; -3.1)
					12.5 kHz	88.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L _C	C	Fast	94.00	63 Hz	92.5	-0.8 ± 1.5
					125 Hz	93.2	-0.2 ± 1.5
					250 Hz	93.4	0.0 ± 1.4
					500 Hz	93.4	0.0 ± 1.4
					1 kHz	93.3	Ref.
					2 kHz	93.2	-0.2 ± 1.6
					4 kHz	92.6	-0.8 ± 1.6
					8 kHz	90.4	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.0	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 04664

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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TEST REPORT
for
PRECISION
SOUND LEVEL METER
(NX-42EX installed)

Model : N L - 5 2

Serial No. : 00643039

Microphone No. : 06819

Preamplifier No. : 43067

Condition : Temperature 26 °C

Humidity 59 %RH

Date : July, 09, 2014

Signature : *Y. Kitajima*

1. Frequency weightings (Fig. 1)

Pass

- Frequency weighting A
- Frequency weighting C
- Frequency weighting Z

2. Level linearity error (dB)

Reference signal level (Ref.) : 94.0 dB (at 1 kHz, 8 kHz), 74.0 dB (at 31.5 Hz)

Frequency weighting : A

Frequency	Indicated value	Difference with Reference signal level (dB)					
		25.0	74.0	94.0	98.0	114.0	136.0
31.5 Hz	-0.1	Ref.	—	-0.1	—	—	—
1 kHz	-0.1	—	Ref.	—	0.0	—	-0.1
8 kHz	0.1	—	Ref.	—	—	0.0	—
Tolerance limit	±0.3	—	—	±0.3	±0.2	±0.3	±0.3

3. Toneburst response (Time weighted sound level)

Input signal level : 127 dB

Toneburst : Frequency : 4 kHz, duration : 0.25 ms

Frequency weighting : A, Time-weighting : F

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
100.0	99.9	-0.1	±1.0

4. Time weighting I (impulse)

Input signal level : 120 dB

Toneburst : Frequency : 4 kHz, duration : 5 ms, period : 500 ms

Frequency weighting : A

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
111.2	110.3	-0.9	±2.0

*When the optional Extended Function Program NX-42EX is installed, time weighting I(impulse) can be selected in only sub-channel.

5. Peak sound level (dB)

Frequency weighting : C

Frequency (Hz)	Number of cycles in test signal	(dB)				
		Input signal level	Design goal	Indicated value	Difference	Tolerance limit
			L_c	L_{cpeak}		
31.5	1 cycle	137.0	136.5	137.3	0.8	±2.0
500	Positive half cycle	137.0	139.4	139.2	-0.2	±1.0
	Negative half cycle	137.0	139.4	139.2	-0.2	±1.0

6. Response to repeated toneburst

Input signal level : 130.0 dB + 8 dB

Frequency weighting : A, Time-weighting : S

Toneburst : Frequency : 2 kHz, duration : 5 ms, period : 25 ms

(dB)				
Peak-to-rms ratio	Design goal	Indicated value	Difference	Tolerance limit
3.16	131.0	130.9	-0.1	±0.5

7. Inherent noise level (dB)

(dB)		
Frequency weighting	Indicated value	Tolerance limit
A	11.9	17 or less
C	16.3	25 or less
Z	22.3	30 or less

8. Instrumental error

84.0 dB ± 0.7 dB

0.1 dB

Applicable standards

JIS C 1509-1 : 2005 Class 1

IEC 61672-1 : 2002 Class 1

ANSI S1.4-1983 Type 1

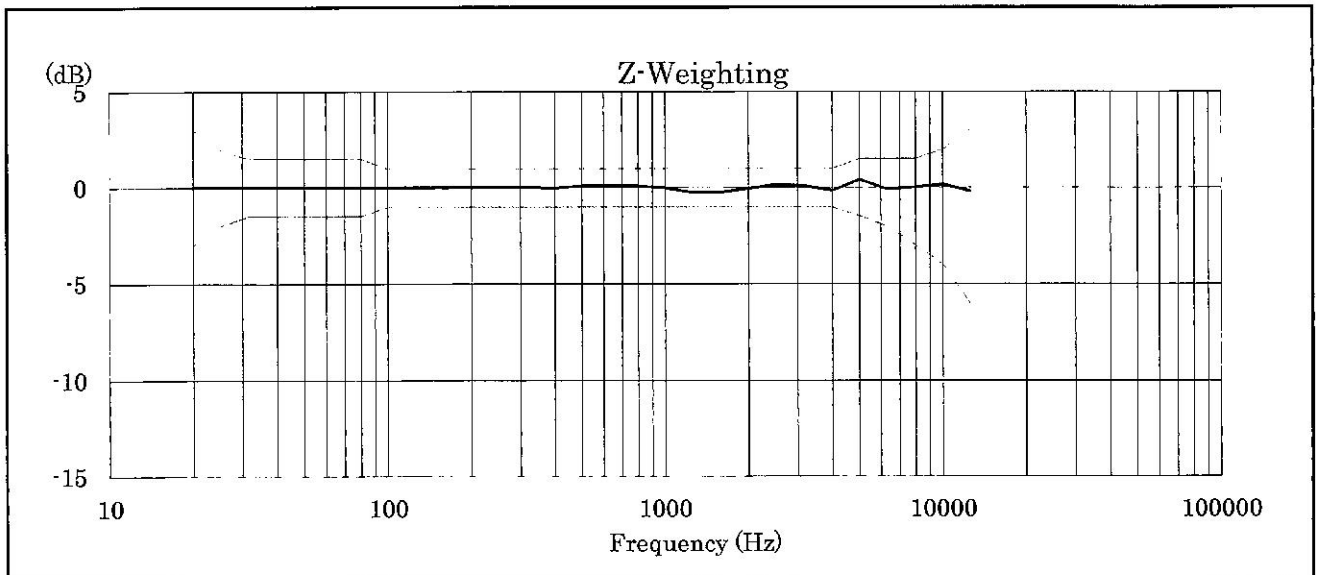
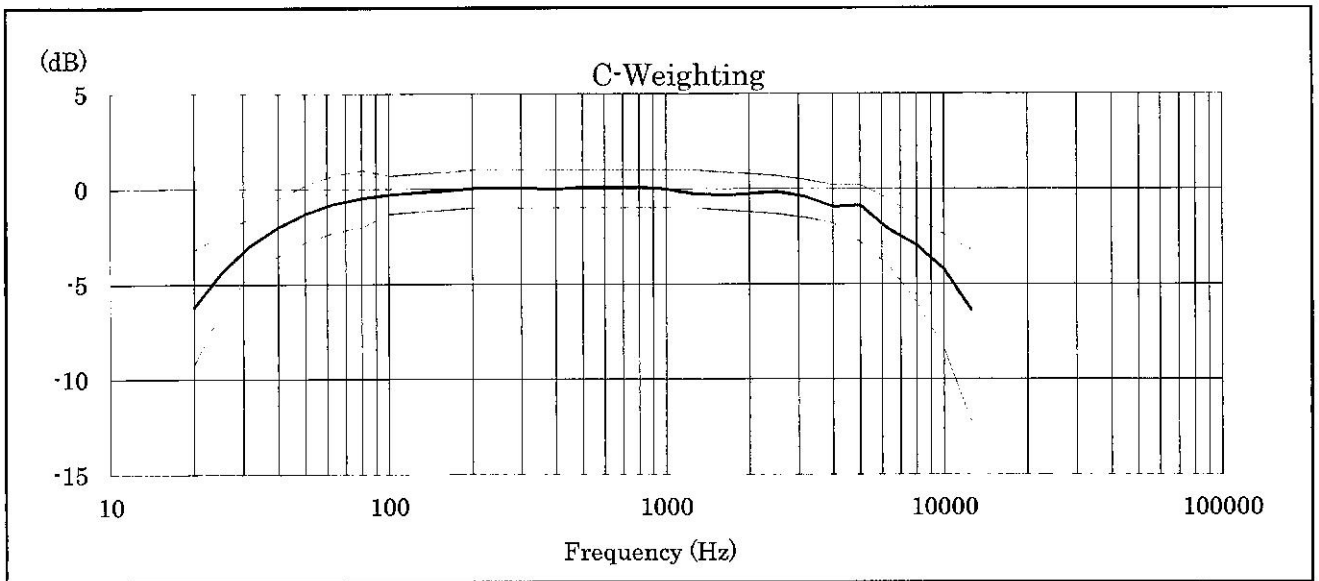
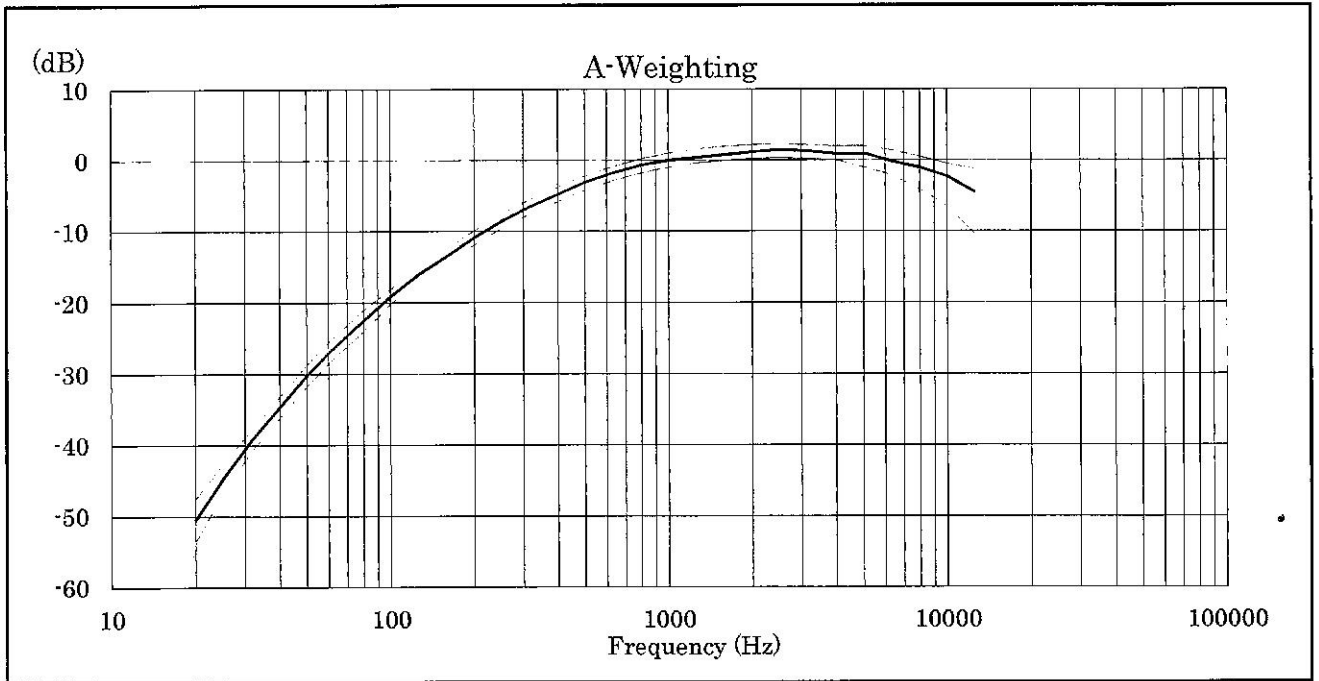
ANSI S1.43-1997 Type 1

CE marking (EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC)

WEEE Directive (2002/96/EC)

Chinese RoHS

Relative free field frequency response



TEST REPORT
for
PRECISION
SOUND LEVEL METER
(NX-42EX installed)

Model : N L - 5 2

Serial No. : 00643040

Microphone No. : 06820

Preamplifier No. : 43068

Condition : Temperature 26 °C

Humidity 59 %RH

Date : July, 09, 2014

Signature : *Y. Kitajima*

Pass

1. Frequency weightings (Fig. 1)

- Frequency weighting A
- Frequency weighting C
- Frequency weighting Z

2. Level linearity error (dB)

Reference signal level (Ref.) : 94.0 dB (at 1 kHz, 8 kHz), 74.0 dB (at 31.5 Hz)

Frequency weighting : A

Indicated Frequency value	Difference with Reference signal level (dB)						
	25.0	74.0	94.0	98.0	114.0	136.0	138.0
31.5 Hz	-0.2	Ref.	—	-0.1	—	—	—
1 kHz	0.2	—	Ref.	—	0.0	—	0.0
8 kHz	0.1	—	Ref.	—	—	0.0	—
Tolerance limit	±0.3	—	—	±0.3	±0.2	±0.3	±0.3

3. Toneburst response (Time weighted sound level)

Input signal level : 127 dB

Toneburst : Frequency : 4 kHz, duration : 0.25 ms

Frequency weighting : A, Time-weighting : F

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
100.0	99.9	-0.1	±1.0

4. Time weighting I (impulse)

Input signal level : 120 dB

Toneburst : Frequency : 4 kHz, duration : 5 ms, period : 500 ms

Frequency weighting : A

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
111.2	110.2	-1.0	±2.0

*When the optional Extended Function Program NX-42EX is installed, time weighting I(impulse) can be selected in only sub-channel.

5. Peak sound level (dB)

Frequency weighting : C

Frequency (Hz)	Number of cycles in test signal	(dB)				
		Input signal level	Design goal	Indicated value	Difference	Tolerance limit
			L_c	L_{cpeak}		
31.5	1 cycle	137.0	136.5	137.3	0.8	±2.0
500	Positive half cycle	137.0	139.4	139.2	-0.2	±1.0
	Negative half cycle	137.0	139.4	139.2	-0.2	±1.0

6. Response to repeated toneburst

Input signal level : 130.0 dB + 8 dB

Frequency weighting : A, Time-weighting : S

Toneburst : Frequency : 2 kHz, duration : 5 ms, period : 25 ms

(dB)				
Peak-to-rms ratio	Design goal	Indicated value	Difference	Tolerance limit
3.16	131.0	131.0	0.0	±0.5

7. Inherent noise level (dB)

(dB)		
Frequency weighting	Indicated value	Tolerance limit
A	11.6	17 or less
C	16.1	25 or less
Z	21.8	30 or less

8. Instrumental error

84.0 dB ± 0.7 dB

0.1 dB

Applicable standards

JIS C 1509-1 : 2005 Class 1

IEC 61672-1 : 2002 Class 1

ANSI S1.4-1983 Type 1

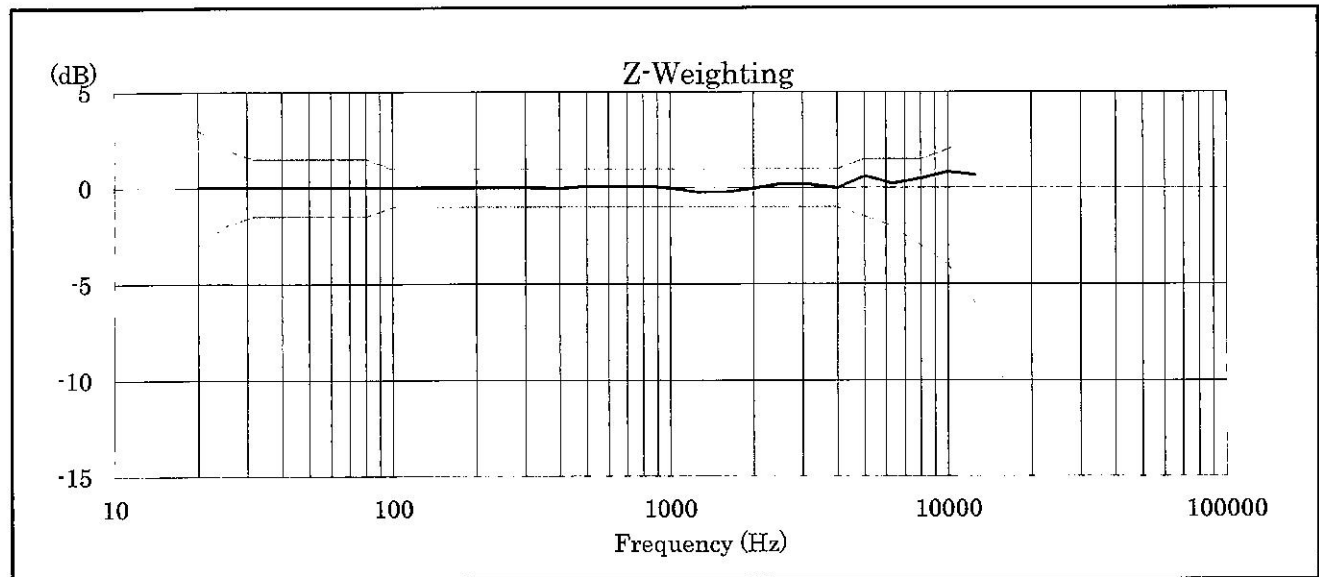
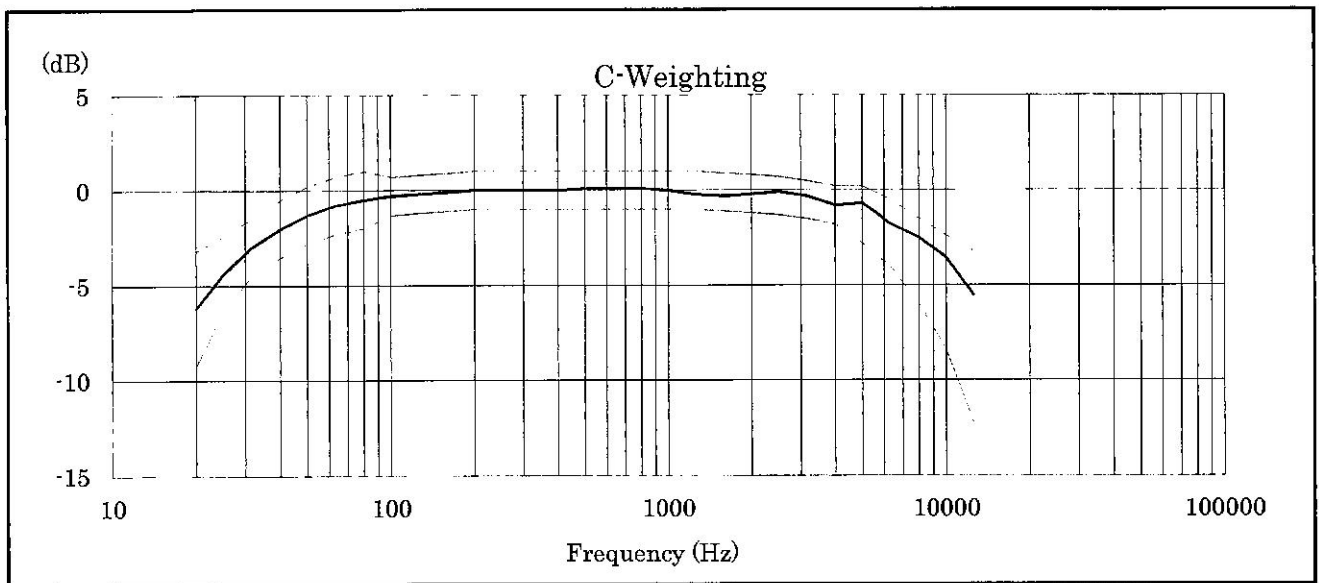
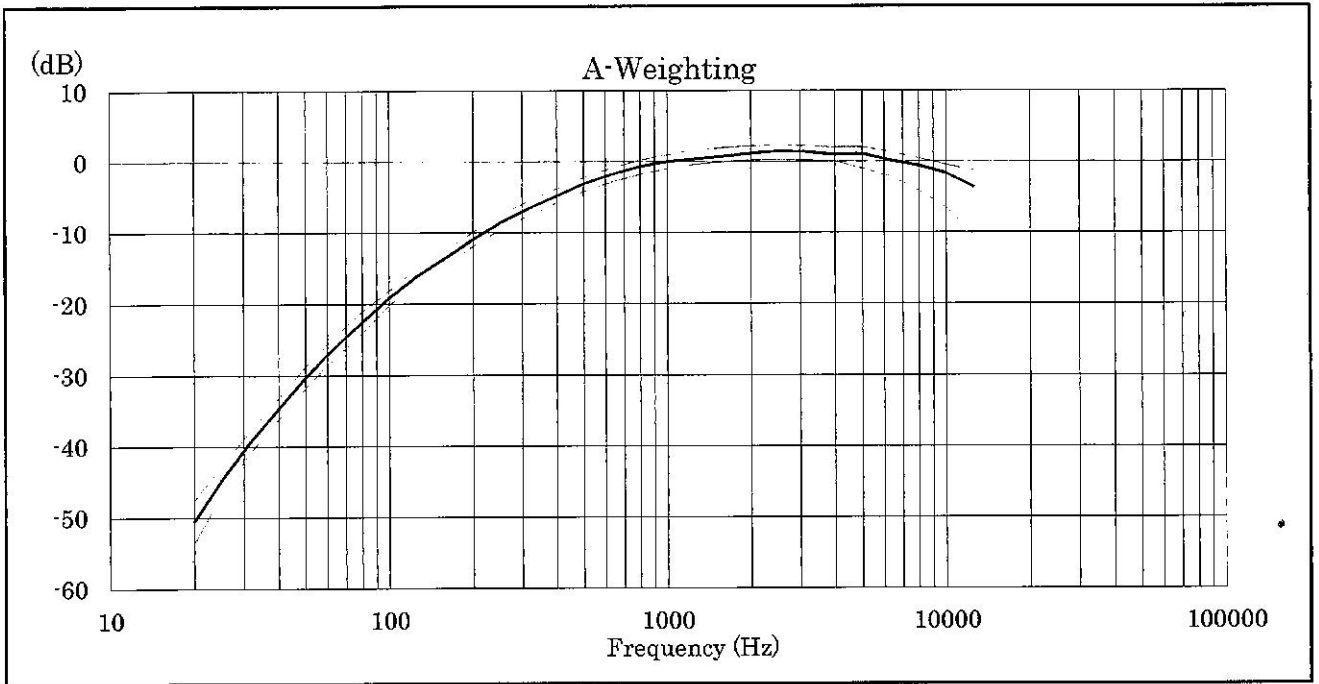
ANSI S1.43-1997 Type 1

CE marking (EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC)

WEEE Directive (2002/96/EC)

Chinese RoHS

Relative free field frequency response





輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C144214

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1719)

Date of Receipt / 收件日期 : 9 July 2014

Description / 儀器名稱 : Sound Level Calibrator

Manufacturer / 製造商 : Rion

Model No. / 型號 : NC-73

Serial No. / 編號 : 10786708

Supplied By / 委託者 : Envirotech Services Co.

Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 July 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification.

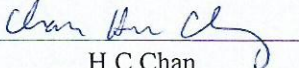
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA


Tested By

測試


H C Chan
Engineer

Certified By

核證


K K Wong
Engineer

Date of Issue

簽發日期

16 July 2014

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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c/o 香港新界屯門興安里一號青山灣機樓四樓

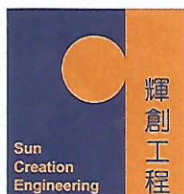
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E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Page 1 of 2



Certificate of Calibration

校正證書

Certificate No. : C144214
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.990	1 kHz ± 2 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C144808

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1960)

Date of Receipt / 收件日期 : 30 July 2014

Description / 儀器名稱 : Sound Level Meter

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-31

Serial No. / 編號 : 00983400

Supplied By / 委託者 : Envirotech Services Co.

Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 : $(55 \pm 20)\%$

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 6 August 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification. (after adjustment)

The results are detailed in the subsequent page(s).


The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By :
測試


K C Lee
Project Engineer

Certified By :
核證


K M Wu
Engineer

Date of Issue : 7 August 2014
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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E-mail/電郵: callab@suncreation.com

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Certificate of Calibration

校正證書

Certificate No. : C144808

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

- 6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	* 92.0	± 1.1

* Out of IEC 61672 Class Spec.

- 6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	94.0	± 1.1

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L _A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	94.0	Ref.
			Slow			93.9	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

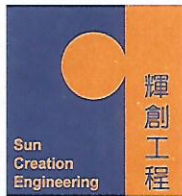
UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _A	A	Fast	94.00	63 Hz	67.6	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.2	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					12.5 kHz	90.1	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _C	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.1	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.4	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.3	-6.2 (+3.0 ; -6.0)

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C144808

證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307154

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value : 94 dB : 63 Hz - 125 Hz : ± 0.35 dB
250 Hz - 500 Hz : ± 0.30 dB
1 kHz : ± 0.20 dB
2 kHz - 4 kHz : ± 0.35 dB
8 kHz : ± 0.45 dB
12.5 kHz : ± 0.70 dB
104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Annex G

Summary of Event/ Action Plans

Annex G1 Event and Action Plan for Regular Construction Noise Monitoring

EVENT	Action			
	Contractor's Environmental Team (Contractor's ET)	Independent Environmental Checker (IEC)	Engineer Representative (ER)	The Contractor
Exceeding Action Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Increase the monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of complaint in writing ; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Investigate the complaint and propose remedial measures; 2. Report the results of investigation to the IEC, ET and ER; 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification; 4. Implement noise mitigation proposals.
Exceeding Limit Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase the monitoring frequency; 4. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform the IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess the effectiveness of the Contractor's remedial measures and keep the IEC, ER and EPD informed of the results 	<ol style="list-style-type: none"> 1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify reason(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem is still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Annex G2 Event and Action Plan for Continuous Noise Monitoring

Event	Action			
	Works Contract 1109 ET	IEC	ER	Contractor
Exceeding Action/Limit Level	<ol style="list-style-type: none"> 1. Identify source 2. Repeat measurement. If two consecutive measurements exceed Action/Limit Level, the exceedance is then confirmed 3. If exceedance is confirmed, notify IEC, ER and Contractor 4. Investigate the cause of exceedance and check Contractor’s working procedures to determine possible mitigation to be implemented 5. Discuss jointly with the IEC, ER and Contractor and formulate remedial measures 6. Assess effectiveness of Contractor’s remedial actions and keep IEC and ER informed of the results 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the Works Contract 1109 ET 2. Check the Contractor’s working method 3. Discuss with the ER, Works Contract 1109 ET and Contractor on the potential remedial measures 4. Review and advise the Works Contract 1109 ET and ER on the effectiveness of the remedial measures proposed by the Contractor 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor and IEC 3. In consultation with the Works Contract 1109 ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Ensure the proper implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	<ol style="list-style-type: none"> 1. Identify source with Works Contract 1109 ET 2. If exceedance is confirmed, investigate the cause of exceedance and take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET of notification 4. Implement the agreed proposals 5. Liaise with ER to optimize the effectiveness of the agreed mitigation 6. Revise and resubmit proposals if problem still not under control 7. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Annex G3 Event and Action Plan for Construction Dust Monitoring

Event	Action			
	Contractor's Environmental Team (Contractor's ET)	Independent Environmental Checker (IEC)	Engineer Representative (ER)	The Contractor
Action Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase the monitoring frequency 	<ol style="list-style-type: none"> 1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notifications of exceedance in writing; 	<ol style="list-style-type: none"> 1. Identify reason(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods and agree them with the ER as appropriate.
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase the monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, the monitoring frequency will resume normal. 	<ol style="list-style-type: none"> 1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise the Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify reasons and investigate the causes of exceedance; 2. Submit proposals of remedial measures to the ER with a copy to the ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend the proposal as appropriate.

Event	Action			
	Contractor's Environmental Team (Contractor's ET)	Independent Environmental Checker (IEC)	Engineer Representative (ER)	The Contractor
Limit Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase the monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness. 	<ol style="list-style-type: none"> 1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify reason(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals of remedial measures to ER with a copy to the ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase the monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep the IEC, EPD and ER informed of the results; 7. If exceedance stops, the monitoring frequency will return to normal. 	<ol style="list-style-type: none"> 1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify reason(s) and investigate the causes of exceedance; 2. Take immediate actions to avoid further exceedance; 3. Submit proposals of remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Annex G4 Event and Action Plan for Landscape and Visual Impacts during the Construction Phase

Event	Action			
	Contractor's Environmental Team (Contractor's ET)	Independent Environmental Checker (IEC)	Engineer Representative (ER)	The Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, the IEC and the ER. 2. Discuss remedial actions with the IEC, ER and Contractor. 3. Monitor remedial actions until rectification has been completed. 	<ol style="list-style-type: none"> 1. Check the inspection report. 2. Check the Contractor's working method. 3. Discuss with the ET, ER and Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notifications of nonconformity in writing. 2. Review and agree on the remedial measures proposed by the Contractor. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify reasons and investigate the non-conformity. 2. Implement remedial measures 3. Amend working methods and agree them with the ER as appropriate. 4. Rectify the damage and undertake any necessary replacement.
Repeated Nonconformity	<ol style="list-style-type: none"> 1. Identify Reasons. 2. Inform the Contractor, IEC and ER. 3. Increase the inspection frequency. 4. Discuss remedial actions with the IEC, ER and Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If non-conformity stops, the inspection frequency return to normal (ie., Once every two weeks) 	<ol style="list-style-type: none"> 1. Check the inspection report. 2. Check the Contractor's working method. 3. Discuss with the ET and Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Notify the Contractor. 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify Reasons and investigate the non-conformity. 2. Implement remedial measures. 3. Amend working methods and agree them with the ER as appropriate. 4. Rectify the damage and undertake any necessary replacement. 5. Stop relevant works as determined by the ER until the non-conformity is abated.

Annex H

Summary of Implementation Status of Environmental Mitigation

Annex H Environmental Mitigation Implementation Status – SCL Works Contract 1109 (Stations and Tunnels of Kowloon City Section)

Note:

- * Reference has been made to the approved SCL (TAW-HUH) EM&A Manual.
- ✓ Compliance of Mitigation Measures
- <> Compliance of Mitigation but need improvement
- x Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Samsung-Hsin Chong JV
- △ Deficiency of Mitigation Measures but rectified by Samsung-Hsin Chong JV
- N/A Not Applicable in Reporting Period

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
Cultural Heritage Impact							
S4.9	CH3	<u>Submit an Archaeological Action Plan</u> Conduct survey-cum-excavation and additional boreholes/trenches investigation at the Sacred Hill (North) Study Area prior to construction.	Salvage cultural remains at the Sacred Hill (North) Study Area	Contractor	Sacred Hill (North) Area	Prior to the Construction Phase of TKW and associated tunnels	✓
Ecology (Construction Phase)							
S5.7	E5	<u>Good Site Practices</u> Impact on any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal.	Minimise ecological impacts	Contractor	All construction sites	Construction Stage	✓

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> • Erection of temporary geotextile silt or sediment fences/oil traps around earth-moving works to trap sediments and prevent them from entering watercourses; • Avoidance of soil storage against trees or close to water bodies; • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. tunnel on hill at top of slope stabilisation works; • No on-site burning of waste; • Store waste and refuse in appropriate receptacles. 					
Landscape & Visual (Construction Phase)							
S6.9.3	LV1	<p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing 	Minimize visual & landscape impact	Contractor	Within Project Site	Construction Stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		ground may be set up on-site as necessary.					
		<p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> To maximize protection to existing trees, ground vegetation and associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing . The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. 					
		<p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> All retained trees including trees in contractor’s works sites should be recorded and photographed at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifies the tree protection requirement, submission and approval system, and the tree monitoring system. The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including 					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
S6.12	LV2	<p>trees in Contractor's works sites.</p> <p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> Erection of decorative screen in visual and landscape sensitive areas during the construction stage to screen off undesirable views of the construction site. Hoarding should be designed to be compatible with the existing urban context. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> To provide proper management of the on-site facilities, control the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent Visual Sensitive Receivers (VSRs). <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> Trees of high to medium survival rates that would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including the final locations for the transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006. 	Minimize visual & landscape impact	Contractor	Within Project Site	Construction Stage	√
Construction Dust							
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
S7.6.5	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul roads in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 l/m ² to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	✓
S7.6.5	D3	<ul style="list-style-type: none"> • Proper watering of exposed spoil should be undertaken throughout the construction phase; • Any excavated or stockpile of dusty material should be covered entirely by an impervious sheeting or sprayed with water to maintain an entirely wet surface and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile has been removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty materials should not be extended beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by an impervious 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	<>

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>sheeting to ensure that the dusty materials do not leak from the vehicle;</p> <ul style="list-style-type: none"> • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road which leads only to construction site and is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operations take place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or 					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain an entirely wet surface</p> <ul style="list-style-type: none"> • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building upward, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by an impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by an impervious sheeting or placed in an area sheltered on the top and 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; 					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		and <ul style="list-style-type: none"> Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	✓
EP Condition 2.18(a)	D7	Watering once every working hour for active works areas, exposed areas and paved haul roads shall be provided in Kowloon area to keep these active works areas, exposed areas and paved haul roads wet.	Minimize construction dust impact	Contractor	All construction sites	Construction stage	✓
EP Condition 2.19	D8	All diesel fuelled construction plant, including marine vessels if possible, used by the contractors within the works areas of the Project shall be powered by ultra low sulphur diesel fuel.	Minimize aerial emissions of sulphur dioxide from construction plant	Contractor	All construction sites	Construction stage	✓
Construction Noise (Airborne)							
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work 	Control construction airborne noise	Contractor	All construction sites	Construction stage	✓

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>periods or should be throttled down to a minimum;</p> <ul style="list-style-type: none"> • plant known to emit noise strongly in one direction, where possible, should be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the period of construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 					
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	✓
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	✓
S8.3.6	N4	Use "Quiet plants"	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	✓
S8.3.6	N5	Sequencing operation of construction plants	Operate sequentially within	Contractor	Contractor All	Construction stage	✓

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		where practicable.	the same work site to reduce the construction airborne noise		construction sites where practicable		
S8.3.6	N6	Implement noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	√
Water Quality							
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoffs and Site Drainage</u> <ul style="list-style-type: none"> At the start of the site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction. The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to 	To minimise water quality impact from construction site runoffs and general construction activities	Contractor	All construction sites where practicable	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates.</p> <ul style="list-style-type: none"> • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m³/s, a sedimentation basin of 30m³ would be required and for a flow rate of 0.5 m³/s the basin would be 150 m³. The detailed design of the sand/silt traps shall be undertaken by the Contractor prior to the commencement of construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, and definitely, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by 					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>coarse stone ballast. An additional advantage from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows.</p> <ul style="list-style-type: none"> • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operations at all times and particularly following rainstorms. Deposited silts and grits should be removed regularly and disposed of by spreading them evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, trenches should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed 					

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		<p>ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</p> <ul style="list-style-type: none"> • Precautions should be taken at any time of year when rainstorms are likely. Actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoffs during storm events, especially for areas located near steep slopes. • All vehicles and plant should be cleaned before leaving a construction site to ensure that no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and 					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>silty water to public roads and drains.</p> <ul style="list-style-type: none"> Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. All fuel tanks and storage areas should be provided with locks and sited in sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching nearby water sensitive receivers. All the earth works should be conducted sequentially to limit the amount of construction runoffs generated from exposed areas during the wet season (April to September) as far as practicable. Adopt best management practices 					
S10.7.1	W2	<p><u>Tunnelling Works</u></p> <ul style="list-style-type: none"> Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge. The wastewater with a high concentration 	To minimize construction water quality impact from tunnelling works	Contractor	All tunnelling portion	Construction stage	N/A

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>of suspended solids should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove oil, lubricants and grease from the wastewater.</p> <ul style="list-style-type: none"> • Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. The slurry should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities have been completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. 					
S10.7.1	W3	<p><u>Sewage Effluent</u> Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for their appropriate disposal and maintenance.</p>	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	✓
S10.7.1	W4	<p><u>Groundwater from Contaminated Area in case contamination is found:</u></p> <ul style="list-style-type: none"> • No direct discharge of groundwater from 	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found.	Construction stage	N/A

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>contaminated areas is allowed. Prior to the excavation works within potentially contaminated areas, the groundwater quality should be reviewed with reference to the site investigation data in the EIA report for compliance and the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-Water). The existence of prohibited substance should be confirmed. The review results should be submitted to EPD for examination if the review results indicate that the groundwater to be generated from the excavation works would be contaminated. The contaminated groundwater should be either properly treated in compliance with the requirements of the TM-Water or properly recharged into the ground.</p> <ul style="list-style-type: none"> If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. total petroleum hydrocarbon (TPH)) to undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM Water and should be discharged into the foul sewers. 					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<ul style="list-style-type: none"> If groundwater recharging wells are deployed, 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 the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells. It is necessary to submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than the pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the Water Pollution Control Ordinance (WPCO) through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater. 					
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended:	To minimize water quality impact from accidental	Contractor	All construction sites where practicable	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<p>All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains.</p> <ul style="list-style-type: none"> The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	spillage				
Waste Management (Construction Waste)							
S11.4.1.1	WM1	<p><u>On-site sorting of C&D (Construction and Demolition) material</u></p> <ul style="list-style-type: none"> Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored in the designated stockpile areas avoiding delivering them to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from 	Separation of unsuitable rock from ending up at Concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		being ended up at concrete batching plants and turned into concrete for structural use. Details regarding control measures at source sites and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated. The traceability of delivery will be ensured via the implementation of Trip Ticket System and enforcement by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.					
S11.5.1	WM2	<p><u>Construction and Demolition (C&D) Material</u></p> <ul style="list-style-type: none"> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; 	Good site practice to minimize waste generation and recycle C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<ul style="list-style-type: none"> Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; Implement an enhanced Waste management Plan similar to ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and minimize waste generation during the course of construction. Disposal of the C&D materials to any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get his approval before implementation 					
S11.5.1	WM3	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used. Metal hoarding should be used to enhance the possibility of recycling. The purchase of construction materials will be carefully planned in order to avoid over ordering and wastage. The Contractor should recycle as much of the C&D materials as possible on-site. 	Good site practice to minimize waste generation and recycle C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
S11.5.1	WM4	<p>Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</p> <p><u>General Refuse</u></p> <ul style="list-style-type: none"> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme 	Minimize the production of general refuse and minimise odour, pest and litter impacts	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
S11.5.1	WM7	<p>should be considered by the Contractor.</p> <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> Chemical waste as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, that is produced should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed. They should have a capacity of less than 450 litres unless the specification has been approved by the EPD. A label in English and Chinese should be displayed in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides. It should also have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest. It should have adequate ventilation and be covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		<ul style="list-style-type: none"> Disposal of chemical waste should be via a licensed waste collector; to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre (which also offers a chemical waste collection service and can supply the necessary storage containers); or to a reuser of the waste, under the approval from the EPD. 					

Annex I - 1

Regular Noise Monitoring Results

Annex I-1 Regular Noise Monitoring Results

Station NMS-CA-6 No. 16-23 Nam Kok Road

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L _{Aeq} (30 min)	Baseline (dB(A)), L _{Aeq} (30 min)	Corrected LAeq(dBA) ^(a)	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Dec-14	14:40	15:10	Cloudy	73.9	76.1	-(b)	-	Traffic noise	19	0.5	NL-52 00131628	NC-73 10786708
09-Dec-14	14:34	15:04	Sunny	67.8	76.1	-(b)	-	Traffic noise	20	0.3	NL-52 00131628	NC-73 10786708
15-Dec-14	14:26	14:56	Cloudy	66.2	76.1	-(b)	-	Traffic noise	19	0.3	NL-52 00131628	NC-73 10786708
24-Dec-14	9:27	9:57	Cloudy	72.6	76.1	-(b)	-	Traffic noise	18	0.5	NL-52 00131628	NC-73 10786708
30-Dec-14	15:05	15:35	Sunny	67.2	76.1	-(b)	-	Traffic noise	16	0.5	NL-52 00131628	NC-73 10786708

Station NMS-CA-7 Skytower Tower 2

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L _{Aeq} (30 min)	Baseline (dB(A)), L _{Aeq} (30 min)	Corrected LAeq(dBA) ^(a)	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Dec-14	10:00	10:30	Cloudy	67.0	70.0	-(b)	-	Traffic noise	19	0.5	NL-18 00360030	NC-73 10997142
09-Dec-14	10:00	10:30	Sunny	67.3	70.0	-(b)	-	Traffic noise	20	0.5	NL-18 00360030	NC-73 10997142
15-Dec-14	10:00	10:30	Cloudy	67.9	70.0	-(b)	-	Traffic noise	19	0.5	NL-18 00360030	NC-73 10997142
24-Dec-14	10:00	10:30	Cloudy	66.4	70.0	-(b)	-	Traffic noise	18	0.5	NL-18 00360030	NC-73 10997142
30-Dec-14	10:00	10:30	Sunny	67.1	70.0	-(b)	-	Traffic noise	16	0.5	NL-18 00360030	NC-73 10997142

Station NMS-CA-8 SKH Good Shepherd Primary School

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L _{Aeq} (30 min)	Baseline (dB(A)), L _{Aeq} (30 min)	Corrected LAeq(dBA) ^(a)	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Dec-14	15:25	15:55	Cloudy	75.3	75.4	-(b)	-	Traffic noise	19	0.5	NL-31 00320533	NC-73 10997142
09-Dec-14	16:04	16:34	Sunny	75.3	75.4	-(b)	-	Traffic noise	20	0.5	NL-31 00320533	NC-73 10997142
15-Dec-14	16:25	16:55	Cloudy	79.5	75.4	77.4	-	Traffic noise	19	0.5	NL-31 00320533	NC-73 10997142
24-Dec-14	15:13	15:43	Cloudy	75.9	75.4	66.4	-	Traffic noise	18	0.3	NL-31 00320533	NC-73 10997142
30-Dec-14	17:04	17:34	Sunny	78.3	75.4	75.3	-	Traffic noise	16	0.3	NL-31 00320533	NC-73 10997142

Station NMS-CA-9 Kong Yiu Mansion

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L _{Aeq} (30 min)	Baseline (dB(A)), L _{Aeq} (30 min)	Corrected LAeq(dBA) ^(a)	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Dec-14	8:00	8:30	Cloudy	74.2	69.2	72.5	Crane operation	Traffic noise	19	0.5	NL-18 00360030	NC-73 10997142
09-Dec-14	8:00	8:30	Sunny	74.6	69.2	73.1	Crane operation	Traffic noise	20	0.5	NL-18 00360030	NC-73 10997142
15-Dec-14	8:00	8:30	Cloudy	74.5	69.2	73.0	Crane operation	Traffic noise	19	0.5	NL-18 00360030	NC-73 10997142
24-Dec-14	8:00	8:30	Cloudy	73.1	69.2	70.8	Crane operation	Traffic noise	18	0.5	NL-18 00360030	NC-73 10997142
30-Dec-14	8:00	8:30	Sunny	74.4	69.2	72.8	Crane operation	Traffic noise	16	0.5	NL-18 00360030	NC-73 10997142

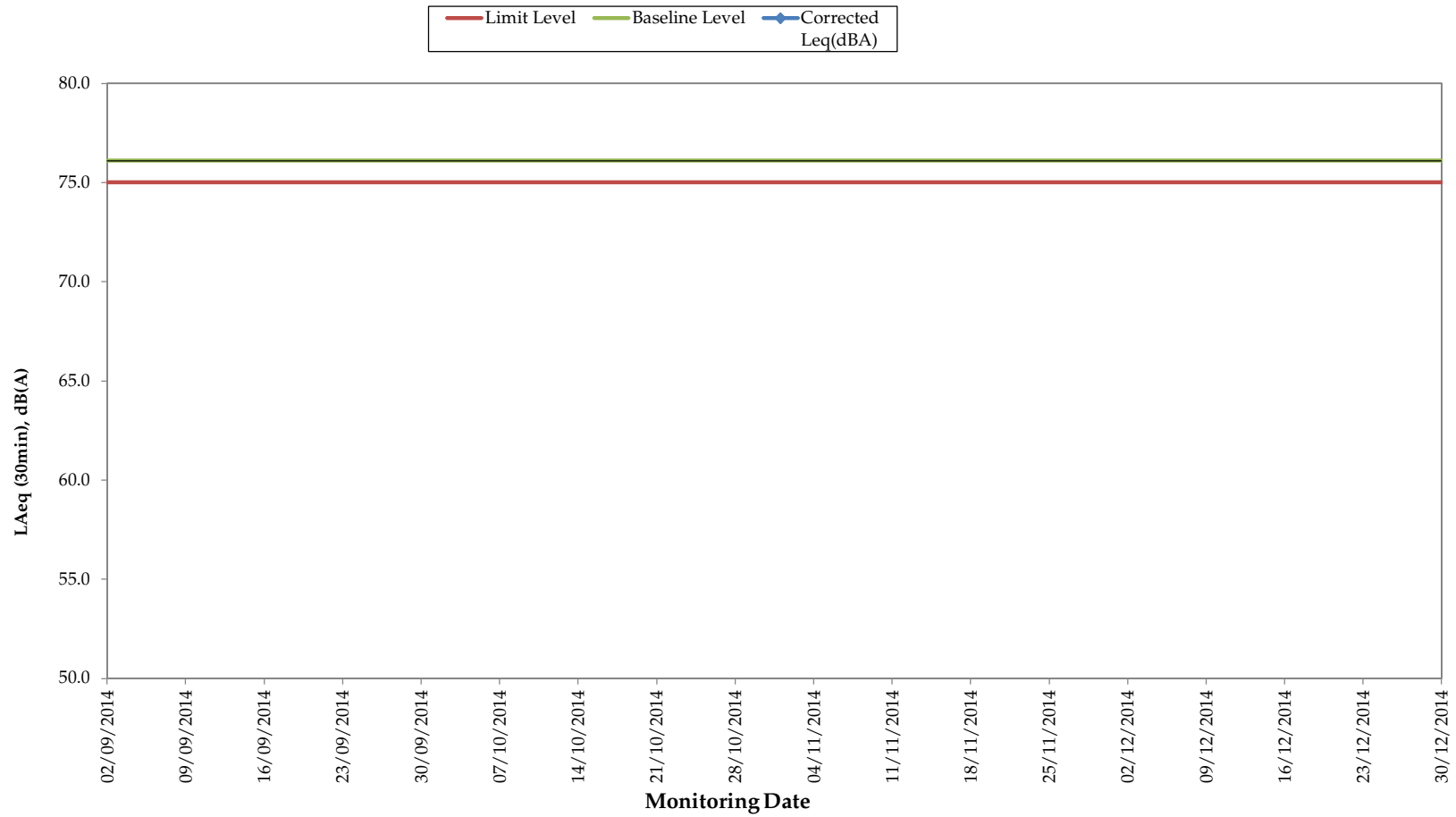
Station NMS-CA-10 Chat Ma Mansion

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L _{Aeq} (30 min) ^(c)	Baseline (dB(A)), L _{Aeq} (30 min)	Corrected LAeq(dBA) ^(a)	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Dec-14	8:40	9:10	Cloudy	76.5	76.6	-(b)	Backhoe	Traffic noise	19	0.5	NL-18 00360030	NC-73 10997142
09-Dec-14	8:40	9:10	Sunny	76.8	76.6	63.3	Backhoe	Traffic noise	20	0.5	NL-18 00360030	NC-73 10997142
15-Dec-14	8:40	9:10	Cloudy	76.5	76.6	-(b)	Backhoe	Traffic noise	19	0.5	NL-18 00360030	NC-73 10997142
24-Dec-14	8:40	9:10	Cloudy	76.3	76.6	-(b)	Backhoe	Traffic noise	18	0.5	NL-18 00360030	NC-73 10997142
30-Dec-14	8:40	9:10	Sunny	76.4	76.6	-(b)	Backhoe	Traffic noise	16	0.5	NL-18 00360030	NC-73 10997142

Remarks:

- (a) The Measured LAeq is corrected against the corresponding Baseline Level.
- (b) No correction was made as the measured noise levels were equal to or below the baseline noise levels.
- (c) The noise monitoring result carried out at NMS-CA-8 on 15 December 2014 is higher than the daytime construction noise criterion. Furthermore, the noise monitoring results undertaken at NMS-CA-10 on 3, 9, 15, 24 and 30 December 2014 are higher than the daytime construction noise criterion. However, those results are not considered as exceedances as they are below the limit level after deducting the baseline noise level.

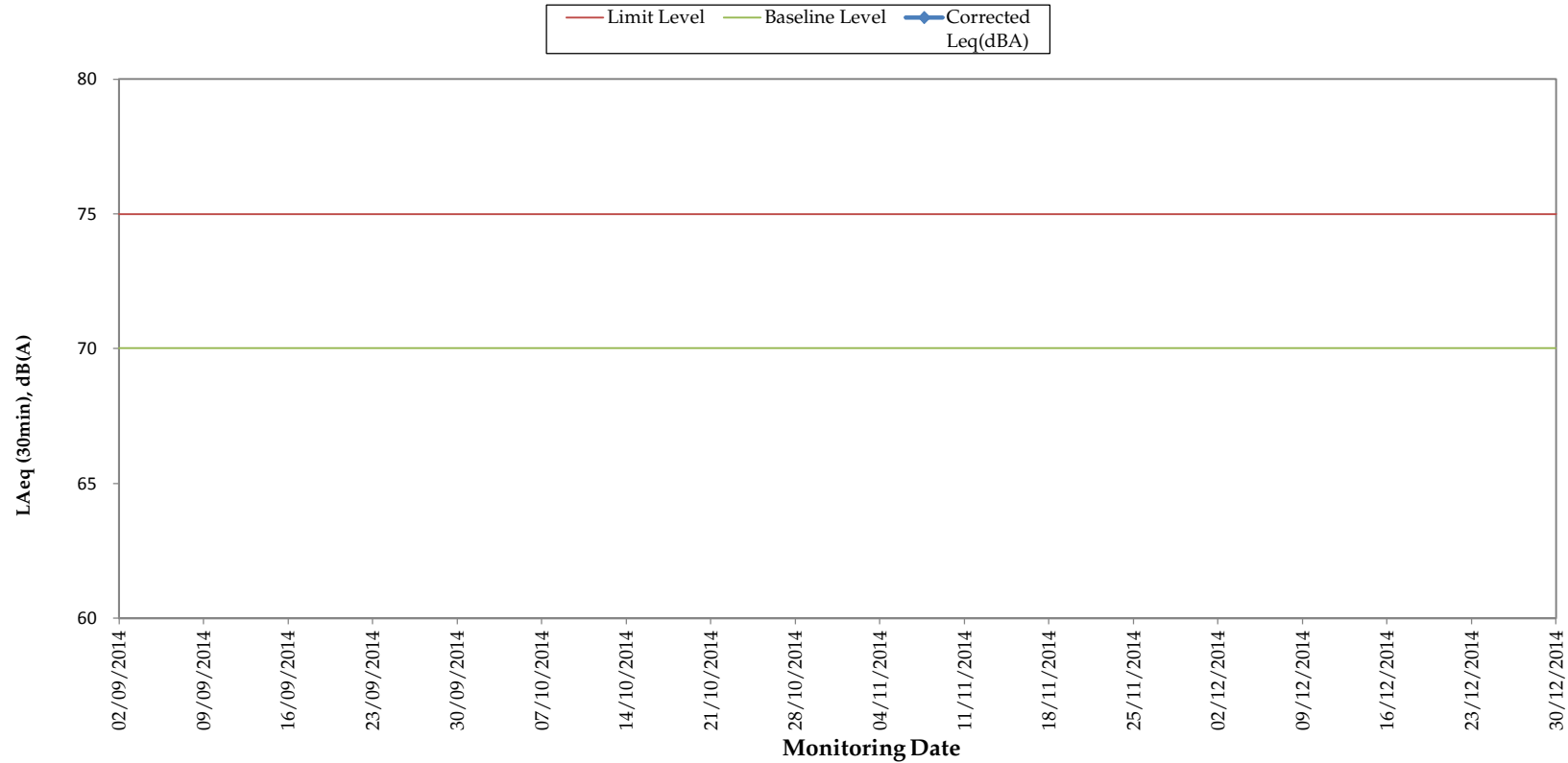
Regular Noise Monitoring Results at NMS-CA-6 (No. 16-23 Nam Kok Road) (LAeq, 30min) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

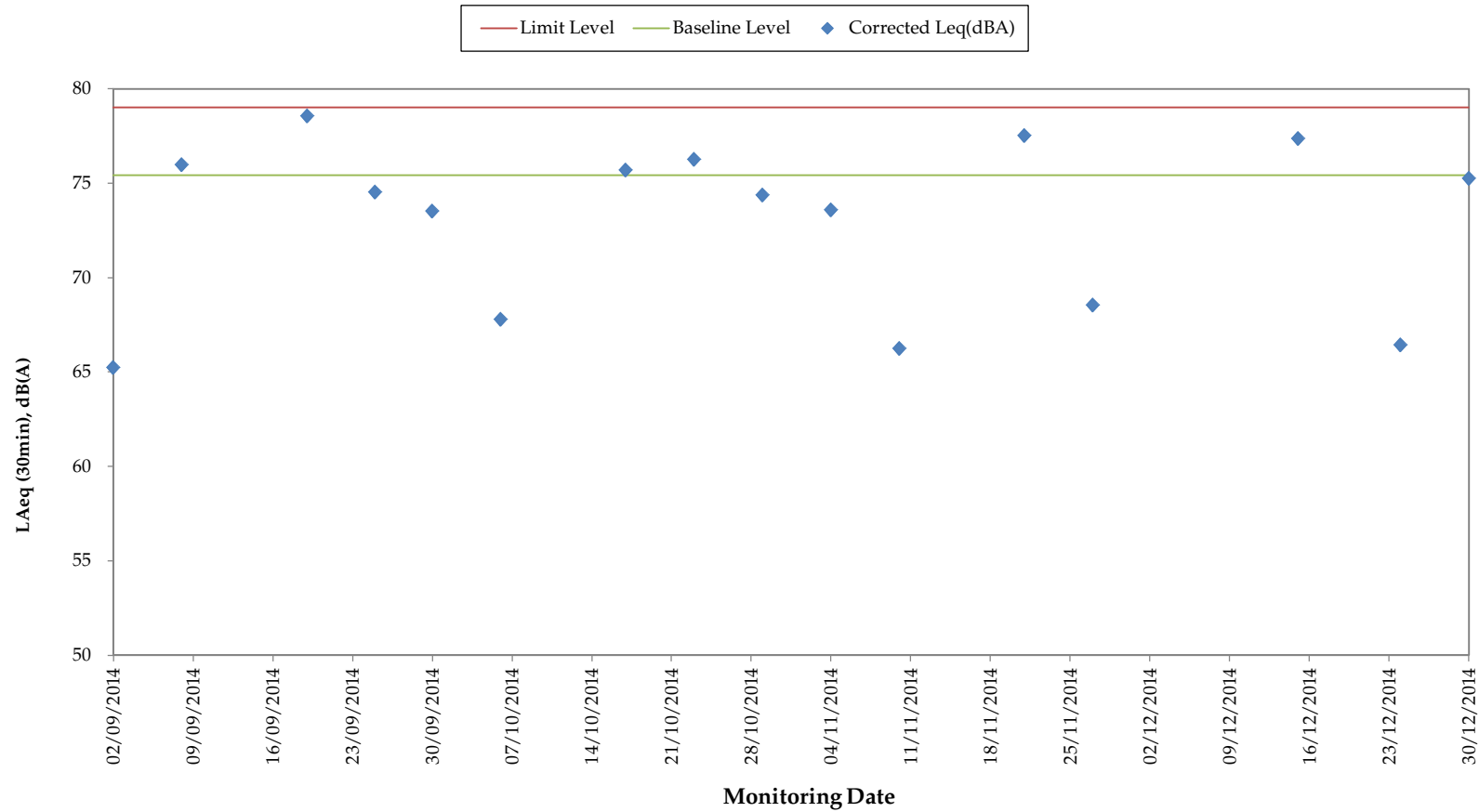
Regular Noise Monitoring Results at NMS-CA-7 (Skytower Tower 2) (LAeq, 30min) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

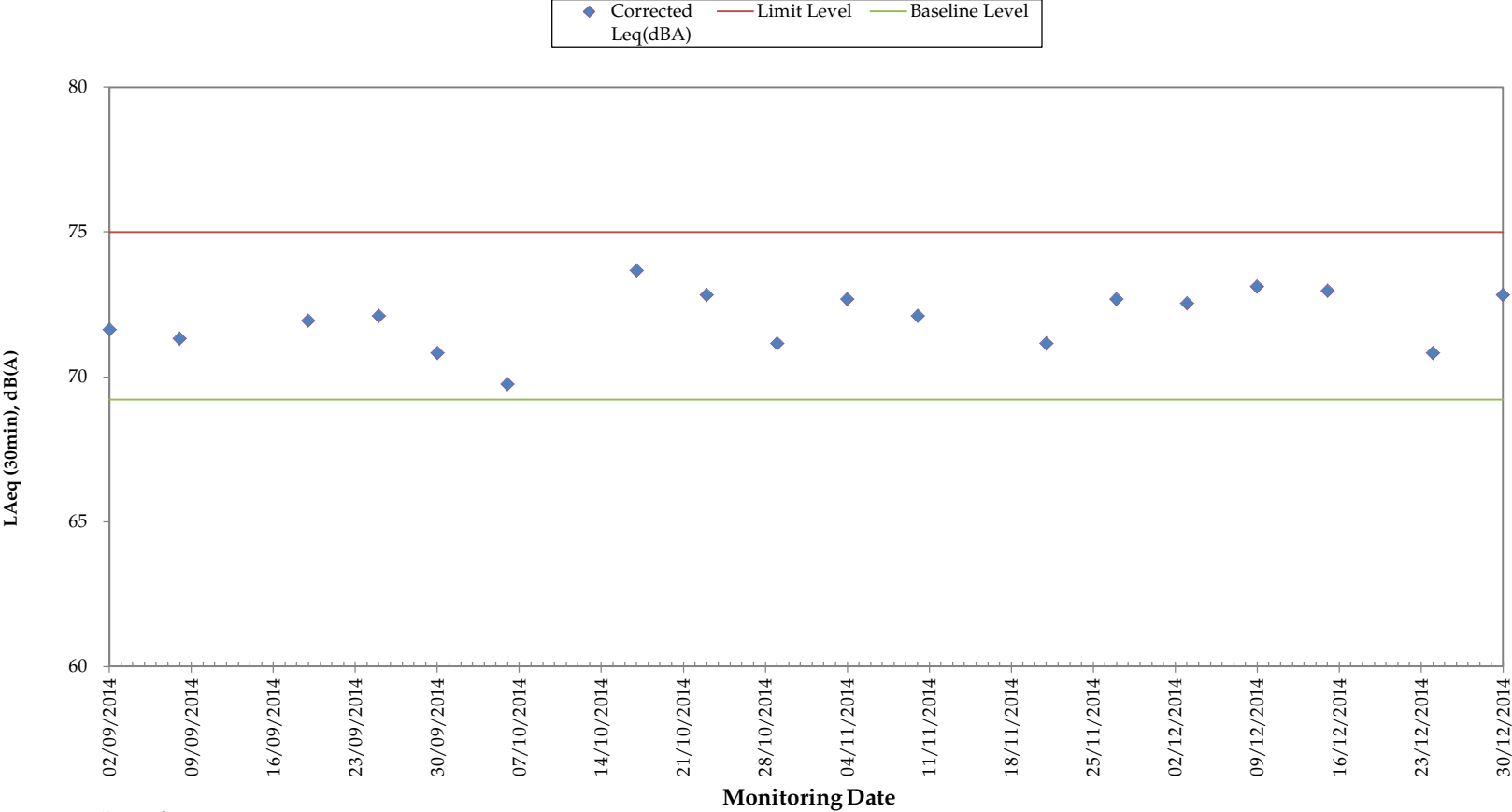
Regular Noise Monitoring Results at NMS-CA- 8 (SKH Good Shepherd Primary School) (LAeq, 30min) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.
- The limit level was updated from 78dB(A) to 79 dB(A) on 22 Aug 2013 as per the latest CNMP and CNMMP.

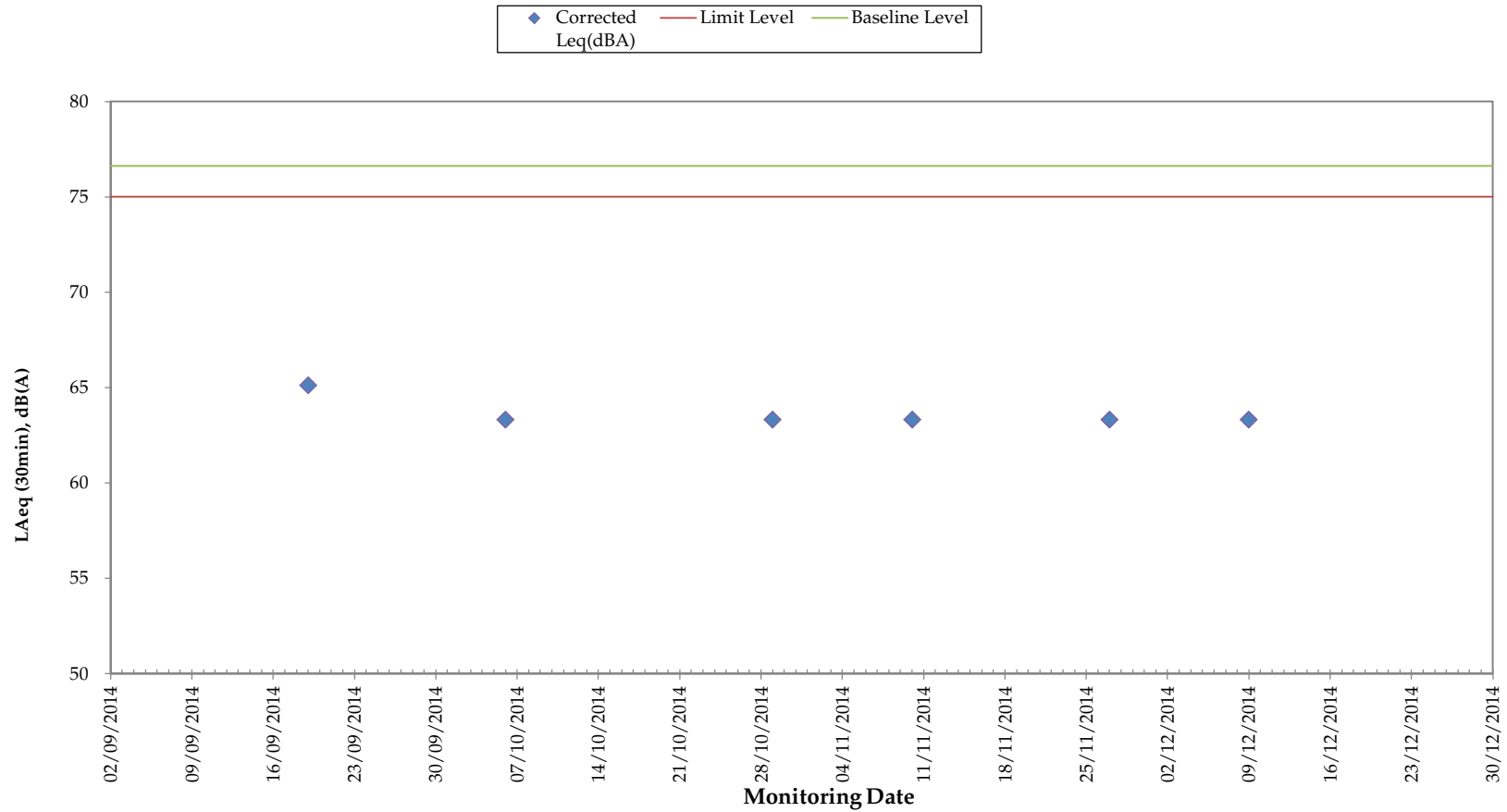
Regular Noise Monitoring Results at NMS-CA-9 (Kong Yiu Mansion) (LAeq, 30min)) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Regular Noise Monitoring Results at NMS-CA-10 (Chat Ma Mansion) (LAeq, 30min) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Annex I - 2

Continuous Noise Monitoring Results

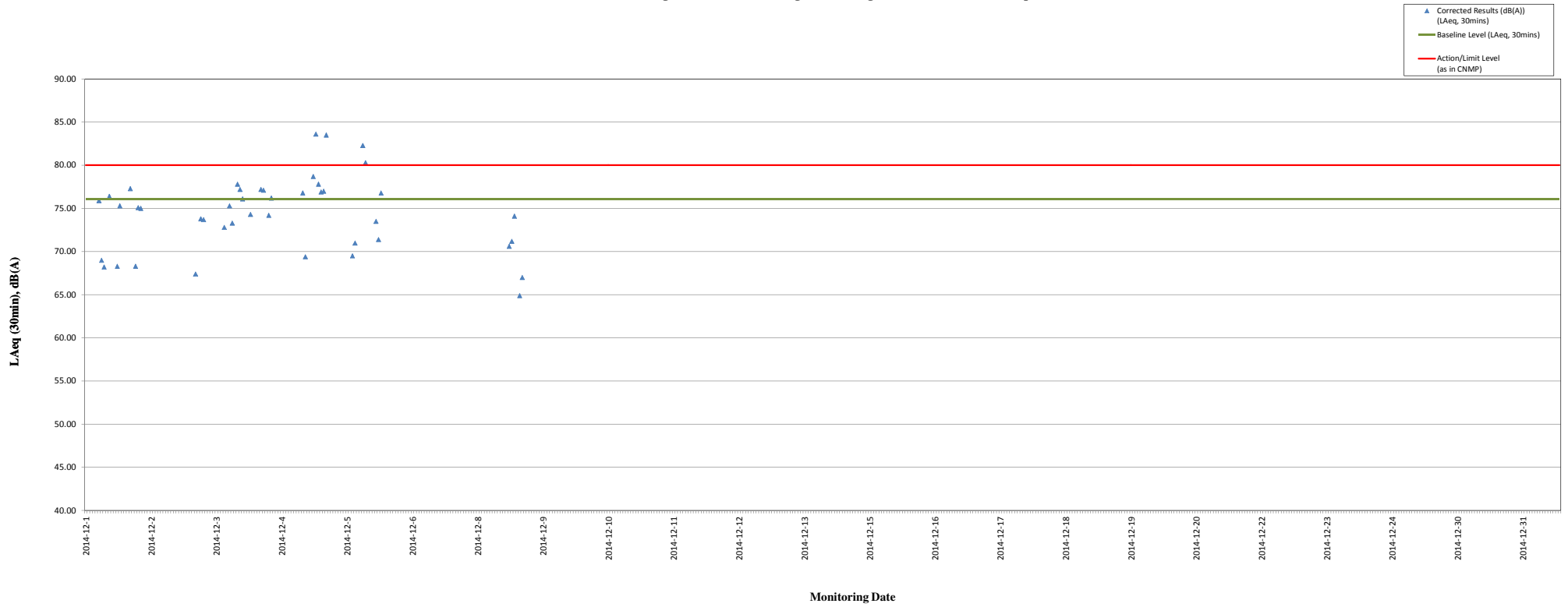
Location ID Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
TKW-3-2(B) Hing Fu Building	2014 12 1	6	33	61.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	7	3	63.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	7	33	64.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	8	3	71.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	8	33	68.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	9	3	79.0	76.1	75.9	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	9	33	76.9	76.1	69	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	10	3	76.8	76.1	68.2	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	10	33	75.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	11	3	79.3	76.1	76.4	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	11	33	69.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	12	3	67.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	12	40	76.8	76.1	68.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	13	10	78.7	76.1	75.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	13	40	68.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	14	10	73.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	14	40	74.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	15	10	79.7	76.1	77.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	15	40	74.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	16	10	76.8	76.1	68.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	16	40	78.7	76.1	75.1	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	17	10	78.6	76.1	75	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	17	40	66.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	18	10	64.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 1	18	40	64.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	6	40	61.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	7	10	62.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	7	40	63.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	8	10	70.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	8	40	65.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	9	10	66.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	9	40	72.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	10	10	68.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	10	40	67.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	11	10	66.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	11	40	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	12	10	63.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	12	40	65.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	13	10	72.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	13	40	72.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	14	10	72.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	14	40	72.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	15	10	76.6	76.1	67.4	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	15	40	75.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	16	10	78.1	76.1	73.8	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	16	40	78.1	76.1	73.7	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	17	10	64.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	17	40	65.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	18	10	63.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 2	18	40	64.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	6	40	62.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	7	10	63.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	7	40	69.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	8	10	77.8	76.1	72.8	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	8	40	69.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	9	10	78.7	76.1	75.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	9	40	77.9	76.1	73.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	10	10	74.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	10	40	80.1	76.1	77.8	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	11	10	79.7	76.1	77.2	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	11	40	79.1	76.1	76.1	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	12	10	73.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	12	40	72.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	13	10	78.3	76.1	74.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	13	40	70.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	14	10	69.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	14	40	73.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	15	10	79.7	76.1	77.2	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	15	40	79.6	76.1	77.1	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	16	10	73.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	16	40	78.3	76.1	74.2	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	17	10	79.2	76.1	76.2	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	17	40	67.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	18	10	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 3	18	40	64.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	6	40	62.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	7	10	64.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	7	40	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	8	10	65.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	8	40	63.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	9	10	66.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	9	40	75.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	10	10	69.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	10	40	79.5	76.1	76.8	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	11	10	76.9	76.1	69.4	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	11	40	74.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	12	10	67.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	13	15	80.6	76.1	78.7	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	13	45	84.3	76.1	83.6	80	Y
TKW-3-2(B) Hing Fu Building	2014 12 4	14	15	80.1	76.1	77.8	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	14	45	79.5	76.1	76.9	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	15	15	79.6	76.1	77	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	15	45	84.2	76.1	83.5	80	Y
TKW-3-2(B) Hing Fu Building	2014 12 4	16	15	73.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	16	45	68.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	17	15	65.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	17	45	64.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 4	18	15	63.6	76.1	<Baseline Level	80	N

Location ID Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
TKW-3-2(B) Hing Fu Building	2014 12 4	18	45	63.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	6	45	61.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	7	15	62.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	7	45	67.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	8	15	77.0	76.1	69.5	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	8	45	77.3	76.1	71	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	9	15	69.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	9	45	73.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	10	15	83.3	76.1	82.3	80	Y
TKW-3-2(B) Hing Fu Building	2014 12 5	10	45	81.7	76.1	80.3	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	11	15	72.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	11	45	75.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	12	15	65.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	12	45	78.0	76.1	73.5	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	13	15	77.4	76.1	71.4	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	13	45	79.5	76.1	76.8	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	14	15	75.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	14	45	75.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	15	15	74.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	15	45	72.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	16	15	73.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	16	45	67.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	17	15	66.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	17	45	64.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	18	15	62.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 5	18	45	63.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	6	45	60.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	7	15	61.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	7	45	63.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	8	15	71.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	8	45	72.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	9	15	66.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	9	45	66.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	10	15	66.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	10	45	70.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	11	15	71.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	11	45	65.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	12	15	64.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	12	45	68.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	13	15	69.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	13	45	69.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	14	15	66.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	14	45	66.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	15	15	66.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	15	45	66.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	16	15	67.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	16	45	65.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	17	15	64.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	17	45	64.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	18	15	64.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 6	18	45	64.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	6	45	61.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	7	15	63.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	8	4	65.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	8	34	63.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	9	4	65.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	9	34	68.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	10	4	71.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	10	34	70.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	11	4	66.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	11	34	64.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	12	4	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	12	34	64.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	13	4	75.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	13	34	77.2	76.1	70.6	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	14	4	77.3	76.1	71.2	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	14	34	78.2	76.1	74.1	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	15	4	75.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	15	34	76.4	76.1	64.9	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	16	4	76.6	76.1	67	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	16	34	73.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	17	4	66.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	17	34	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	18	4	63.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 8	18	34	63.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	6	34	60.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	7	4	62.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	7	34	62.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	8	4	65.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	8	34	65.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	9	4	66.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	9	34	73.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	10	4	74.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	10	34	66.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	11	4	67.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	11	34	65.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	12	4	65.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	12	34	65.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	13	4	72.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	13	34	71.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	14	4	72.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	14	34	67.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	15	4	70.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	15	34	69.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	16	4	69.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	16	34	72.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	17	4	68.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 9	17	34	65.1	76.1	<Baseline Level	80	N

Location ID Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
TKW-3-2(B) Hing Fu Building	2014 12 23 15		57	69.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 23 16		27	67.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 23 16		57	65.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 23 17		27	64.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 23 17		57	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 23 18		27	64.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 23 18		57	63.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 24 6		57	61.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 24 7		27	62.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 24 7		57	66.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 24 8		27	68.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 24 8		57	70.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 24 9		27	72.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 13		5	65.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 13		35	68.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 14		5	71.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 14		35	69.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 15		5	67.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 15		35	67.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 16		5	66.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 16		35	65.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 17		5	64.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 17		35	64.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 18		5	64.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 29 18		35	64.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 6		35	60.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 7		5	61.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 7		35	62.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 8		5	65.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 8		35	67.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 9		5	67.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 9		35	67.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 10		5	67.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 10		35	74.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 11		5	76.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 11		35	66.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 12		5	65.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 12		35	67.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 13		5	68.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 13		35	72.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 14		5	72.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 14		35	66.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 15		5	67.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 15		35	65.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 16		5	70.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 16		35	68.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 17		5	64.5	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 17		35	63.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 18		5	63.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 30 18		35	63.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 6		35	60.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 7		5	62.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 7		35	63.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 8		5	65.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 8		35	65.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 9		5	67.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 9		35	73.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 10		5	68.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 10		35	68.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 11		5	67.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 11		35	65.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 12		5	63.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 12		35	64.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 13		5	67.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 13		35	67.4	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 14		5	68.7	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 14		35	66.0	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 15		5	65.3	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 15		35	63.9	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 16		5	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 16		35	63.6	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 17		5	64.1	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 17		35	63.8	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 18		5	64.2	76.1	<Baseline Level	80	N
TKW-3-2(B) Hing Fu Building	2014 12 31 18		35	64.3	76.1	<Baseline Level	80	N

*Continuous noise data at monitoring location TKW-3-2 (B) Hing Fu Building between 09:57 on 24 December 2014 to 13:04 on 29 December 2014 could not be acquired due to SD card failure.

Continuous Noise Monitoring at TKW-3-2 (B) (Hing Fu Building in December 2014- (LAeq, 30min)

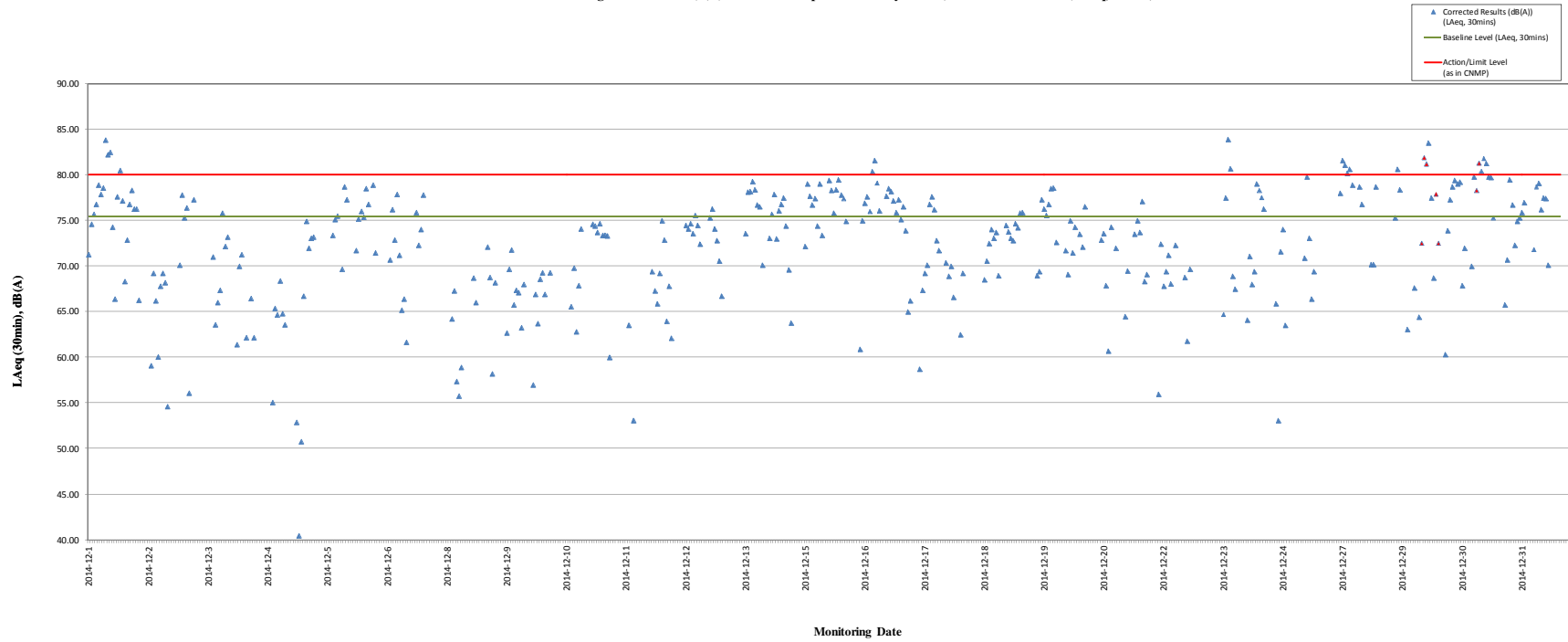


Remarks:
- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	15	17	25	75.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	15	17	55	73.8	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	15	18	25	73.4	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	15	18	55	73.1	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	6	55	74.1	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	7	25	75.5	75.4	60.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	7	55	78.2	75.4	75	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	8	25	79.2	75.4	76.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	8	55	79.6	75.4	77.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	9	25	78.7	75.4	76	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	9	55	81.6	75.4	80.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	10	25	82.6	75.4	81.6	80	Y
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	10	55	80.6	75.4	79.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	11	25	78.8	75.4	76.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	11	55	72.8	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	12	25	75.2	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	12	55	79.7	75.4	77.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	13	25	80.2	75.4	78.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	13	55	80.0	75.4	78.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	14	25	79.4	75.4	77.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	14	55	78.7	75.4	75.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	15	25	79.5	75.4	77.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	15	55	78.3	75.4	75.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	16	25	79.0	75.4	76.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	16	55	77.7	75.4	73.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	17	25	75.8	75.4	65	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	17	55	75.9	75.4	66.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	18	25	73.7	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	16	18	55	72.7	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	6	55	73.2	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	7	25	75.5	75.4	58.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	7	55	76.0	75.4	67.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	8	25	76.3	75.4	69.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	8	55	76.5	75.4	70.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	9	25	79.2	75.4	76.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	9	55	79.7	75.4	77.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	10	25	78.8	75.4	76.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	10	55	77.3	75.4	72.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	11	25	76.9	75.4	71.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	11	55	75.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	12	25	73.5	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	12	55	76.6	75.4	70.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	13	25	76.3	75.4	68.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	13	55	76.5	75.4	70	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	14	25	75.9	75.4	66.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	14	55	75.0	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	15	25	74.7	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	15	55	75.6	75.4	62.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	16	25	76.3	75.4	69.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	16	55	74.9	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	17	25	74.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	17	55	74.0	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	18	25	73.1	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	17	18	55	72.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	6	55	73.5	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	7	25	74.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	7	55	75.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	8	25	76.2	75.4	68.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	8	55	76.6	75.4	70.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	9	25	77.2	75.4	72.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	9	55	77.7	75.4	74	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	10	25	77.4	75.4	73.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	10	55	77.6	75.4	73.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	11	25	76.3	75.4	69	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	11	55	73.0	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	12	35	68.1	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	13	10	78.0	75.4	74.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	13	40	77.7	75.4	73.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	14	10	77.4	75.4	73.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	14	40	77.3	75.4	72.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	15	10	78.1	75.4	74.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	15	40	77.8	75.4	74.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	16	10	78.6	75.4	75.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	16	40	78.6	75.4	75.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	17	10	75.1	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	17	40	73.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	18	10	72.9	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	18	18	40	72.6	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	6	40	72.8	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	7	10	76.3	75.4	69	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	7	40	76.4	75.4	69.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	8	10	79.5	75.4	77.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	8	40	78.9	75.4	76.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	9	10	78.5	75.4	75.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	9	40	79.1	75.4	76.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	10	10	80.3	75.4	78.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	10	40	80.3	75.4	78.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	11	10	77.2	75.4	72.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	11	40	73.9	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	12	10	73.0	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	12	40	73.6	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	13	10	76.9	75.4	71.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	13	40	76.3	75.4	69.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	14	10	78.2	75.4	75	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	14	40	76.9	75.4	71.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	15	10	77.9	75.4	74.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	15	40	75.1	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	16	10	77.6	75.4	73.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	16	40	77.1	75.4	72.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	17	10	79.0	75.4	76.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	17	40	74.5	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	18	10	73.3	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	19	18	40	72.7	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	20	6	40	71.6	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	20	7	10	74.7	75.4	<Baseline Level	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	20	7	40	74.8	75.4	<Baseline Level	80	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	11	43	73.8	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	12	13	75.1	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	12	43	80.4	75.4	78.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	13	50	79.2	75.4	76.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	14	20	75.3	75.4	75.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	14	50	74.9	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	15	20	75.4	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	15	50	76.5	75.4	70.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	16	20	76.6	75.4	70.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	16	50	80.4	75.4	78.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	17	20	75.4	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	17	50	73.7	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	18	20	73.0	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	27	18	50	72.5	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	6	50	73.1	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	7	20	73.7	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	7	50	74.0	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	8	20	78.3	75.4	75.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	8	50	81.7	75.4	80.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	9	20	80.1	75.4	78.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	9	50	75.1	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	10	20	75.0	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	10	50	75.6	75.4	63.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	11	20	74.6	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	11	50	72.6	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	12	20	76.1	75.4	67.6	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	13	34	75.1	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	14	4	75.7	75.4	64.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	14	34	77.2	75.4	72.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	15	4	82.8	75.4	81.9	80	Y
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	15	34	82.2	75.4	81.2	80	Y
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	16	4	84.1	75.4	83.5	80	Y
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	16	34	79.6	75.4	77.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	17	4	76.2	75.4	68.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	17	34	79.8	75.4	77.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	18	4	77.2	75.4	72.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	29	18	34	73.2	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	6	34	72.1	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	7	4	75.5	75.4	60.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	7	34	77.7	75.4	73.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	8	4	79.5	75.4	77.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	8	34	80.4	75.4	78.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	9	4	80.9	75.4	79.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	9	34	80.6	75.4	79	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	10	4	80.7	75.4	79.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	10	34	76.1	75.4	67.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	11	4	77.0	75.4	72	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	11	34	75.1	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	12	4	72.8	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	12	34	76.5	75.4	70	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	13	4	81.2	75.4	79.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	13	34	80.1	75.4	78.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	14	4	82.3	75.4	81.3	80	Y
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	14	34	81.6	75.4	80.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	15	4	82.7	75.4	81.8	80	Y
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	15	34	82.3	75.4	81.3	80	Y
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	16	4	81.1	75.4	79.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	16	34	81.1	75.4	79.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	17	4	78.3	75.4	75.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	17	34	75.2	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	18	4	73.8	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	30	18	34	72.9	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	6	34	72.2	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	7	4	75.8	75.4	65.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	7	34	76.7	75.4	70.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	8	4	81.0	75.4	79.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	8	34	79.1	75.4	76.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	9	4	77.1	75.4	72.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	9	34	78.2	75.4	74.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	10	4	78.4	75.4	75.3	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	10	34	78.7	75.4	75.9	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	11	4	79.3	75.4	77	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	11	34	73.5	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	12	4	73.3	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	12	34	73.4	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	13	4	77.0	75.4	71.8	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	13	34	80.4	75.4	78.7	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	14	4	80.7	75.4	79.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	14	34	78.8	75.4	76.2	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	15	4	79.6	75.4	77.5	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	15	34	79.5	75.4	77.4	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	16	4	76.5	75.4	70.1	80	N
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	16	34	73.7	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	17	4	74.2	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	17	34	73.6	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	18	4	72.9	75.4	<Baseline Level 80	N	
MTW-12-3 (A) SKH Good Shepherd Primary School	2014	12	31	18	34	72.7	75.4	<Baseline Level 80	N	

Continuous Noise Monitoring at MTW-12-3 (A) (SKH Good Shepherd Primary School) in December 2014- (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	13	15	75.1	69.2	73.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	13	45	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	14	15	74.7	69.2	73.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	14	45	73.5	69.2	71.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	15	15	74.1	69.2	72.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	15	45	75.3	69.2	74.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	16	15	73.9	69.2	72.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	16	45	75.6	69.2	74.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	17	15	74.7	69.2	73.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	17	45	74.4	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	18	15	71.7	69.2	68.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 3	18	45	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	6	45	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	7	15	72.0	69.2	68.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	7	45	71.6	69.2	67.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	8	15	72.5	69.2	69.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	8	45	72.2	69.2	69.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	9	15	71.0	69.2	66.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	9	45	71.3	69.2	67	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	10	15	70.8	69.2	65.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	10	45	73.2	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	11	15	73.2	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	11	45	69.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	12	15	69.5	69.2	57.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	12	45	71.1	69.2	66.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	13	35	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	14	5	75.0	69.2	73.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	14	35	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	15	5	76.8	69.2	75.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	15	35	76.5	69.2	75.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	16	5	73.9	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	16	35	72.0	69.2	68.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	17	5	73.7	69.2	71.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	17	35	74.1	69.2	72.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	18	5	73.1	69.2	70.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 4	18	35	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	6	35	67.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	7	5	69.8	69.2	61.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	7	35	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	8	5	71.5	69.2	67.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	8	35	71.9	69.2	68.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	9	5	74.6	69.2	73.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	9	35	71.2	69.2	66.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	10	5	70.9	69.2	66.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	10	35	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	11	5	75.4	69.2	74.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	11	35	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	12	5	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	12	35	70.2	69.2	63.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	13	5	74.3	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	13	35	73.0	69.2	70.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	14	5	73.1	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	14	35	74.4	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	15	5	75.3	69.2	74	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	15	35	72.9	69.2	70.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	16	5	72.9	69.2	70.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	16	35	73.7	69.2	71.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	17	5	71.9	69.2	68.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	17	35	69.3	69.2	52.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	18	5	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 5	18	35	67.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	6	35	66.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	7	5	72.1	69.2	68.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	7	35	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	8	5	74.4	69.2	72.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	8	35	75.1	69.2	73.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	9	5	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	9	35	74.5	69.2	73	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	10	5	73.0	69.2	70.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	10	35	73.0	69.2	70.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	11	5	73.2	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	11	35	71.4	69.2	67.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	12	5	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	12	35	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	13	5	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	13	35	74.2	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	14	5	74.7	69.2	73.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	14	35	74.7	69.2	73.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	15	5	72.8	69.2	70.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	15	35	70.8	69.2	65.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	16	5	70.4	69.2	64.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	16	35	71.2	69.2	66.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	17	5	70.9	69.2	66	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	17	35	70.1	69.2	62.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	18	5	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 6	18	35	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	6	35	66.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	7	5	69.4	69.2	55.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	7	35	69.2	69.2	39.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	8	5	69.9	69.2	61.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	8	35	69.4	69.2	56.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	9	24	76.4	69.2	75.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	9	54	76.2	69.2	75.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	10	24	78.1	69.2	77.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	10	54	77.6	69.2	76.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	11	24	75.9	69.2	74.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	11	54	72.7	69.2	70.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	12	24	72.7	69.2	70.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	12	54	75.0	69.2	73.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	13	24	76.1	69.2	75.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	13	54	75.7	69.2	74.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	14	24	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	14	54	75.9	69.2	74.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	15	24	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	15	54	79.3	69.2	78.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	16	24	77.5	69.2	76.8	80	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	16	54	74.1	69.2	72.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	17	24	73.9	69.2	72.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	17	54	74.5	69.2	73	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	18	24	72.2	69.2	69.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 8	18	54	70.6	69.2	65.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	6	54	72.3	69.2	69.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	7	24	74.1	69.2	72.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	7	54	73.6	69.2	71.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	8	24	78.2	69.2	77.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	8	54	76.7	69.2	75.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	9	24	76.6	69.2	75.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	9	54	76.0	69.2	75	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	10	24	75.1	69.2	73.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	10	54	79.0	69.2	78.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	11	24	76.4	69.2	75.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	11	54	73.5	69.2	71.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	12	24	71.7	69.2	68	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	12	54	76.3	69.2	75.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	13	24	77.3	69.2	76.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	13	54	77.4	69.2	76.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	14	24	77.2	69.2	76.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	14	54	77.3	69.2	76.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	15	24	78.2	69.2	77.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	15	54	76.4	69.2	75.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	16	24	75.6	69.2	74.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	16	54	75.8	69.2	74.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	17	24	75.0	69.2	73.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	17	54	74.9	69.2	73.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	18	24	73.1	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 9	18	54	70.9	69.2	66.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	6	54	71.0	69.2	66.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	7	24	72.4	69.2	69.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	7	54	74.8	69.2	73.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	8	24	76.0	69.2	75	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	8	54	78.2	69.2	77.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	9	24	75.5	69.2	74.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	9	54	76.0	69.2	74.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	10	24	77.5	69.2	76.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	10	54	75.0	69.2	73.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	11	24	72.3	69.2	69.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	11	54	71.8	69.2	68.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	12	24	71.7	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	12	54	79.3	69.2	78.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	13	24	81.3	69.2	81	80	Y
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	13	54	80.7	69.2	80.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	14	24	82.4	69.2	82.2	80	Y
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	14	54	79.7	69.2	79.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	15	24	81.2	69.2	80.9	80	Y
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	15	54	80.4	69.2	80.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	16	24	76.8	69.2	75.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	16	54	75.2	69.2	74	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	17	24	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	17	54	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	18	24	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 10	18	54	71.0	69.2	66.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	6	54	70.9	69.2	66.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	7	24	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	7	54	77.0	69.2	76.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	8	24	76.2	69.2	75.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	8	54	77.6	69.2	76.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	9	24	75.2	69.2	73.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	9	54	73.8	69.2	72	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	10	24	73.9	69.2	72.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	10	54	73.3	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	11	24	72.5	69.2	69.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	11	54	71.3	69.2	67	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	12	24	71.2	69.2	66.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	12	54	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	13	25	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	13	55	74.6	69.2	73.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	14	25	71.1	69.2	66.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	14	55	71.8	69.2	68.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	15	25	74.9	69.2	73.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	15	55	78.0	69.2	77.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	16	25	72.3	69.2	69.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	16	55	73.5	69.2	71.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	17	25	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	17	55	72.8	69.2	70.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	18	25	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 11	18	55	67.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	6	55	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	7	25	72.7	69.2	70.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	7	55	73.4	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	8	25	72.2	69.2	69.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	8	55	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	9	25	73.5	69.2	71.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	9	55	75.1	69.2	73.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	10	25	73.2	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	10	55	71.5	69.2	67.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	11	25	69.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	11	55	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	12	25	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	12	55	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	13	25	75.2	69.2	73.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	13	55	75.2	69.2	73.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	14	25	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	14	55	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	15	25	76.2	69.2	75.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	15	55	77.1	69.2	76.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	16	25	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	16	55	73.5	69.2	71.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	17	25	70.1	69.2	62.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	17	55	72.1	69.2	69	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	18	25	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 12	18	55	67.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13	6	55	67.8	69.2	<Baseline Level	80	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 7	25	70.3	69.2	63.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 7	55	74.0	69.2	72.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 8	25	77.5	69.2	76.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 8	55	78.0	69.2	77.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 9	25	74.8	69.2	73.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 9	55	75.7	69.2	74.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 10	25	75.1	69.2	73.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 10	55	74.9	69.2	73.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 11	25	74.1	69.2	72.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 11	55	68.8	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 12	25	68.4	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 12	55	74.2	69.2	72.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 13	25	74.4	69.2	72.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 13	55	73.5	69.2	71.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 14	25	75.0	69.2	73.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 14	55	71.3	69.2	67.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 15	25	73.6	69.2	71.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 15	55	74.5	69.2	73	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 16	25	75.7	69.2	74.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 16	55	71.8	69.2	68.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 17	25	70.1	69.2	62.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 17	55	67.9	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 18	25	67.3	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 13 18	55	67.1	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 6	55	67.6	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 7	25	72.3	69.2	69.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 7	55	73.6	69.2	71.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 8	25	74.9	69.2	73.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 8	55	78.2	69.2	77.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 9	25	77.2	69.2	76.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 9	55	76.6	69.2	75.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 10	25	72.9	69.2	70.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 10	55	74.4	69.2	72.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 11	25	73.2	69.2	71	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 11	55	68.0	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 12	25	69.1	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 12	55	73.1	69.2	70.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 13	25	74.5	69.2	72.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 13	55	75.6	69.2	74.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 14	35	65.8	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 14	41	76.5	69.2	75.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 15	11	76.1	69.2	75.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 15	41	75.1	69.2	73.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 16	11	76.3	69.2	75.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 16	41	78.6	69.2	78.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 17	11	73.1	69.2	70.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 17	41	71.1	69.2	66.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 18	11	69.3	69.2	50.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 15 18	41	68.1	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 6	41	66.8	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 7	11	71.9	69.2	68.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 7	41	73.1	69.2	70.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 8	11	75.8	69.2	74.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 8	41	75.7	69.2	74.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 9	11	74.7	69.2	73.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 9	41	75.1	69.2	73.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 10	11	77.2	69.2	76.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 10	41	74.4	69.2	72.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 11	11	70.9	69.2	66.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 11	41	68.7	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 12	11	68.8	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 12	41	71.2	69.2	66.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 13	11	76.0	69.2	74.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 13	41	75.6	69.2	74.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 14	11	72.2	69.2	69.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 14	41	71.1	69.2	66.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 15	11	71.4	69.2	67.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 15	41	71.0	69.2	66.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 16	11	71.0	69.2	66.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 16	41	71.3	69.2	67.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 17	11	71.0	69.2	66.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 17	41	69.9	69.2	61.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 18	11	68.8	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 16 18	41	67.8	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 6	41	66.3	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 7	11	68.3	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 7	41	70.2	69.2	63.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 8	11	72.7	69.2	70.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 8	41	72.8	69.2	70.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 9	11	75.3	69.2	74.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 9	41	75.7	69.2	74.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 10	11	75.5	69.2	74.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 10	41	75.9	69.2	74.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 11	11	73.8	69.2	71.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 11	41	68.2	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 12	11	67.4	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 12	41	69.2	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 13	11	73.0	69.2	70.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 13	41	75.2	69.2	73.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 14	11	75.9	69.2	74.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 14	41	75.5	69.2	74.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 15	11	74.5	69.2	73	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 15	41	74.5	69.2	72.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 16	11	72.6	69.2	70	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 16	41	72.1	69.2	69	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 17	11	68.4	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 17	41	68.2	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 18	11	67.9	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 17 18	41	66.9	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18 6	41	66.6	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18 7	11	69.1	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18 7	41	69.9	69.2	61.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18 8	11	75.5	69.2	74.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18 8	41	75.8	69.2	74.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18 9	11	75.2	69.2	73.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18 9	41	76.9	69.2	76.1	80	N	

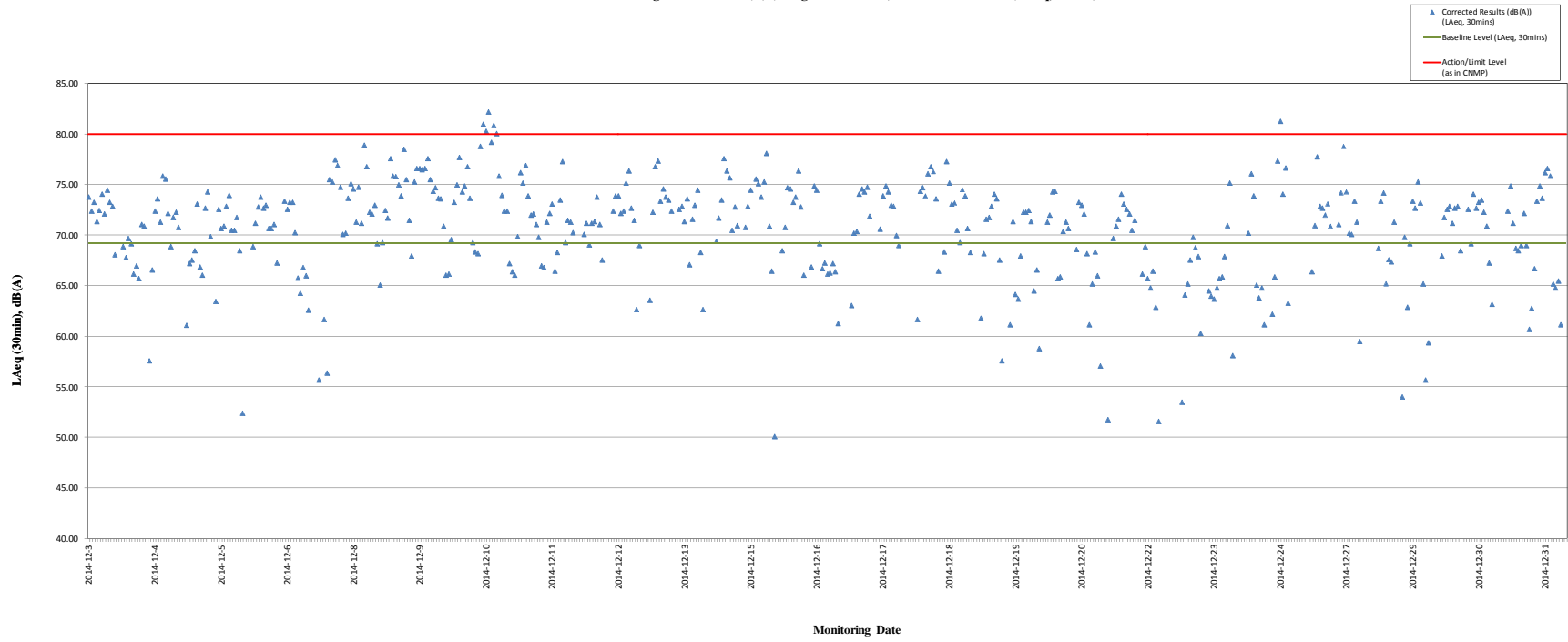
Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	10	11	77.5	69.2	76.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	10	41	77.1	69.2	76.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	11	11	75.0	69.2	73.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	11	41	71.1	69.2	66.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	12	11	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	12	41	71.8	69.2	68.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	13	20	77.9	69.2	77.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	13	50	76.1	69.2	75.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	14	20	74.6	69.2	73.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	14	50	74.7	69.2	73.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	15	20	72.9	69.2	70.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	15	50	72.3	69.2	69.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	16	20	75.7	69.2	74.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	16	50	75.2	69.2	73.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	17	20	73.0	69.2	70.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	17	50	71.8	69.2	68.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	18	20	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 18	18	50	67.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	6	50	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	7	20	69.9	69.2	61.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	7	50	71.7	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	8	20	73.6	69.2	71.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	8	50	73.7	69.2	71.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	9	20	74.4	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	9	50	75.3	69.2	74.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	10	20	74.9	69.2	73.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	10	50	71.5	69.2	67.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	11	20	69.5	69.2	57.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	11	50	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	12	20	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	12	50	69.8	69.2	61.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	13	20	73.4	69.2	71.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	13	50	70.4	69.2	64.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	14	20	70.3	69.2	63.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	14	50	71.7	69.2	68	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	15	20	74.0	69.2	72.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	15	50	74.0	69.2	72.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	16	20	74.2	69.2	72.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	16	50	73.5	69.2	71.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	17	20	70.5	69.2	64.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	17	50	71.1	69.2	66.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	18	20	69.6	69.2	58.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 19	18	50	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	6	50	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	7	20	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	7	50	73.8	69.2	72	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	8	20	75.5	69.2	74.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	8	50	75.5	69.2	74.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	9	20	70.8	69.2	65.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	9	50	70.9	69.2	65.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	10	20	72.9	69.2	70.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	10	50	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	11	20	73.0	69.2	70.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	11	50	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	12	20	69.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	12	50	71.9	69.2	68.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	13	20	74.8	69.2	73.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	13	50	74.5	69.2	73	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	14	20	73.9	69.2	72.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	14	50	71.7	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	15	20	69.8	69.2	61.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	15	50	70.6	69.2	65.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	16	20	71.8	69.2	68.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	16	50	70.9	69.2	66	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	17	20	69.5	69.2	57.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	17	50	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	18	20	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 20	18	50	69.3	69.2	51.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	6	50	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	7	20	72.5	69.2	69.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	7	50	73.1	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	8	20	73.6	69.2	71.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	8	50	75.4	69.2	74.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	9	20	74.6	69.2	73.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	9	50	74.3	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	10	20	73.9	69.2	72.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	10	50	72.9	69.2	70.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	11	20	73.5	69.2	71.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	11	50	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	12	20	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	12	50	71.0	69.2	66.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	13	20	72.1	69.2	68.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	13	50	70.8	69.2	65.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	14	23	70.6	69.2	64.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	14	53	71.1	69.2	66.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	15	23	70.1	69.2	62.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	15	53	69.3	69.2	51.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	16	23	68.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	16	53	69.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	17	23	69.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	17	53	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	18	23	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 22	18	53	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	6	53	67.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	7	23	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	7	53	69.3	69.2	53.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	8	23	70.4	69.2	64.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	8	53	70.7	69.2	65.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	9	23	71.5	69.2	67.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	9	53	72.5	69.2	69.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	10	23	72.0	69.2	68.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	10	53	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	11	23	69.7	69.2	60.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	11	53	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	12	23	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23	12	53	70.5	69.2	64.5	80	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 13	23	23	70.3	69.2	64	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 13	53	53	70.3	69.2	63.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 14	23	23	70.5	69.2	64.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 14	53	53	70.8	69.2	65.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 15	23	23	70.9	69.2	65.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 15	53	53	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 16	23	23	73.2	69.2	71	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 16	53	53	76.1	69.2	75.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 17	23	23	69.5	69.2	58.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 17	53	53	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 18	23	23	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 23 18	53	53	67.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 6	53	53	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 7	23	23	68.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 7	53	53	72.8	69.2	70.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 8	23	23	76.9	69.2	76.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 8	53	53	75.1	69.2	73.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 9	23	23	70.6	69.2	65.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 9	53	53	70.3	69.2	63.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 10	49	49	70.6	69.2	64.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 11	19	19	69.8	69.2	61.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 11	49	49	68.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 12	19	19	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 12	49	49	70.0	69.2	62.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 13	19	19	70.9	69.2	65.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 13	49	49	78.0	69.2	77.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 14	19	19	81.6	69.2	81.3	80	Y
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 14	49	49	75.3	69.2	74.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 15	19	19	77.4	69.2	76.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 15	49	49	70.2	69.2	63.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 16	19	19	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 16	49	49	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 17	19	19	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 17	49	49	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 18	19	19	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 24 18	49	49	67.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 6	49	49	66.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 7	19	19	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 7	49	49	71.0	69.2	66.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 8	19	19	73.2	69.2	71	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 8	49	49	78.4	69.2	77.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 9	19	19	74.4	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 9	49	49	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 10	19	19	73.8	69.2	72	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 10	49	49	74.6	69.2	73.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 11	19	19	73.1	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 11	49	49	69.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 12	19	19	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 12	49	49	73.2	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 13	19	19	75.4	69.2	74.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 14	7	7	79.3	69.2	78.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 14	37	37	75.4	69.2	74.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 15	7	7	72.7	69.2	70.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 15	37	37	72.7	69.2	70.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 16	7	7	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 16	37	37	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 17	7	7	69.6	69.2	59.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 17	37	37	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 18	7	7	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 27 18	37	37	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 6	37	37	66.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 7	7	7	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 7	37	37	68.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 8	7	7	72.0	69.2	68.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 8	37	37	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 9	7	7	75.4	69.2	74.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 9	37	37	70.7	69.2	65.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 10	7	7	71.5	69.2	67.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 10	37	37	71.4	69.2	67.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 11	7	7	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 11	37	37	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 12	7	7	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 12	37	37	69.3	69.2	54	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 13	7	7	72.5	69.2	69.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 13	52	52	70.1	69.2	62.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 14	22	22	72.2	69.2	69.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 14	52	52	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 15	22	22	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 15	52	52	76.3	69.2	75.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 16	22	22	74.6	69.2	73.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 16	52	52	70.7	69.2	65.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 17	22	22	69.4	69.2	55.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 17	52	52	69.6	69.2	59.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 18	22	22	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 29 18	52	52	67.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 6	52	52	67.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 7	22	22	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 7	52	52	71.7	69.2	68	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 8	22	22	73.7	69.2	71.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 8	52	52	74.2	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 9	22	22	74.5	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 9	52	52	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 10	22	22	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 10	52	52	74.5	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 11	22	22	71.9	69.2	68.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 11	52	52	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 12	22	22	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 12	52	52	74.2	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 13	22	22	72.2	69.2	69.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 13	52	52	75.4	69.2	74.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 14	22	22	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 14	52	52	74.7	69.2	73.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 15	22	22	74.9	69.2	73.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 15	52	52	74.0	69.2	72.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 16	22	22	73.2	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30 16	52	52	71.4	69.2	67.3	80	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30	17	22	70.2	69.2	63.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30	17	52	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30	18	22	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 30	18	52	67.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	6	52	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	7	22	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	7	52	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	8	22	75.9	69.2	74.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	8	52	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	9	22	72.0	69.2	68.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	9	52	71.9	69.2	68.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	10	22	72.1	69.2	69	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	10	52	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	11	22	72.1	69.2	69	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	11	52	69.8	69.2	60.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	12	22	70.1	69.2	62.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	12	52	71.2	69.2	66.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	13	22	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	13	52	75.9	69.2	74.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	14	22	75.1	69.2	73.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	14	52	77.0	69.2	76.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	15	22	77.3	69.2	76.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	15	52	76.8	69.2	75.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	16	22	70.7	69.2	65.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	16	52	70.5	69.2	64.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	17	22	70.7	69.2	65.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	17	52	69.8	69.2	61.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	18	22	67.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2014 12 31	18	52	67.5	69.2	<Baseline Level	80	N

*Continuous noise data at monitoring location MTW-12-4 (A) Kong Yiu between 1 and 3 December 2014 (ending on 13:14) could not be obtained due to external disruption.

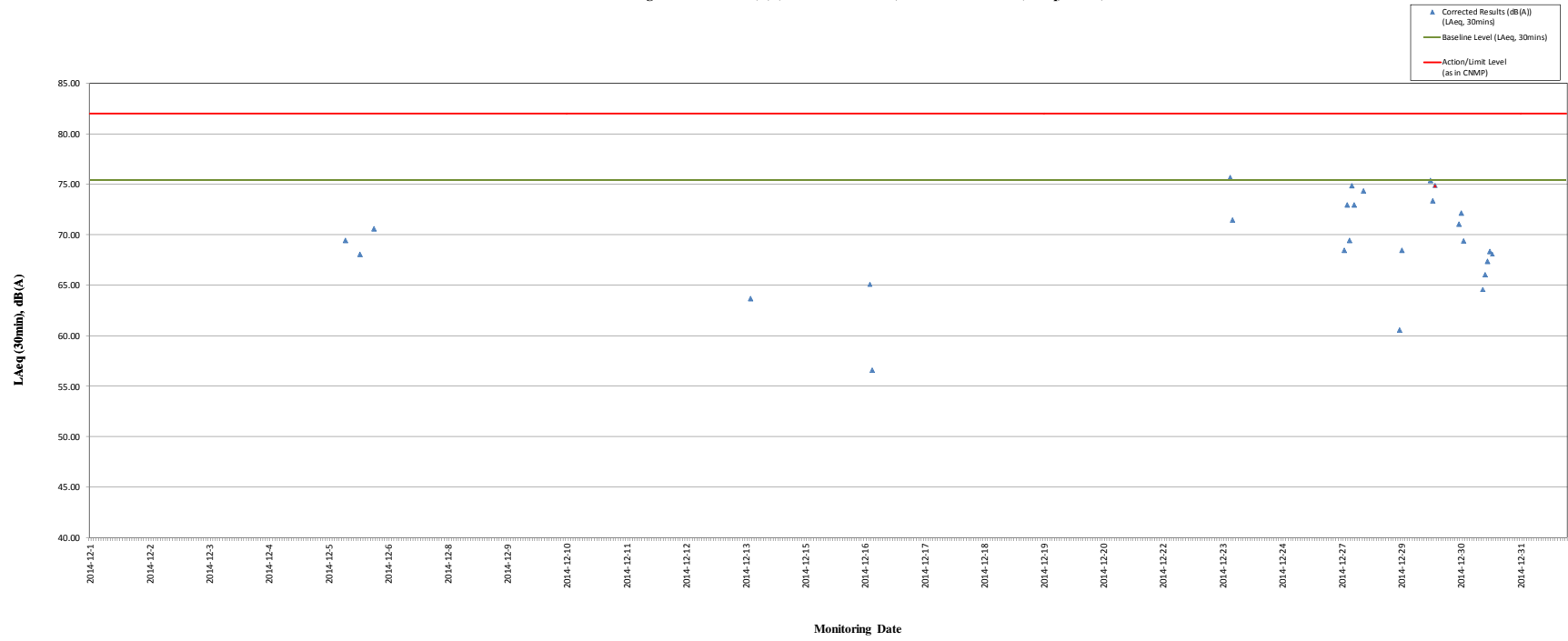
Continuous Noise Monitoring at MTW-12-4 (A) (Kong Yiu Mansion) in December 2014- (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 6		44	63.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 7		14	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 7		44	72.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 8		14	73.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 8		44	76.8	75.4	71.1	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 9		14	77.1	75.4	72.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 9		44	76.4	75.4	69.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 10		14	74.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 10		44	68.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 11		14	70.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 11		44	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 12		14	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 12		44	74.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 13		14	74.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 13		44	75.7	75.4	64.6	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 14		14	75.9	75.4	66.1	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 14		44	76.0	75.4	67.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 15		14	76.2	75.4	68.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 15		44	76.1	75.4	68.1	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 16		14	73.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 16		44	73.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 17		14	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 17		44	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 18		14	63.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 30 18		44	63.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 6		44	62.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 7		14	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 7		44	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 8		14	69.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 8		44	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 9		14	68.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 9		44	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 10		14	71.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 10		44	71.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 11		14	70.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 11		44	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 12		14	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 12		44	65.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 13		14	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 13		44	73.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 14		14	72.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 14		44	70.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 15		14	71.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 15		44	72.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 16		14	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 16		44	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 17		14	64.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 17		44	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 18		14	63.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2014 12 31 18		44	63.4	75.4	<Baseline Level	82	N

Continuous Noise Monitoring at MTW-12-4-1 (A) (59 Maidstone Road) in December 2014- (LAeq, 30min)

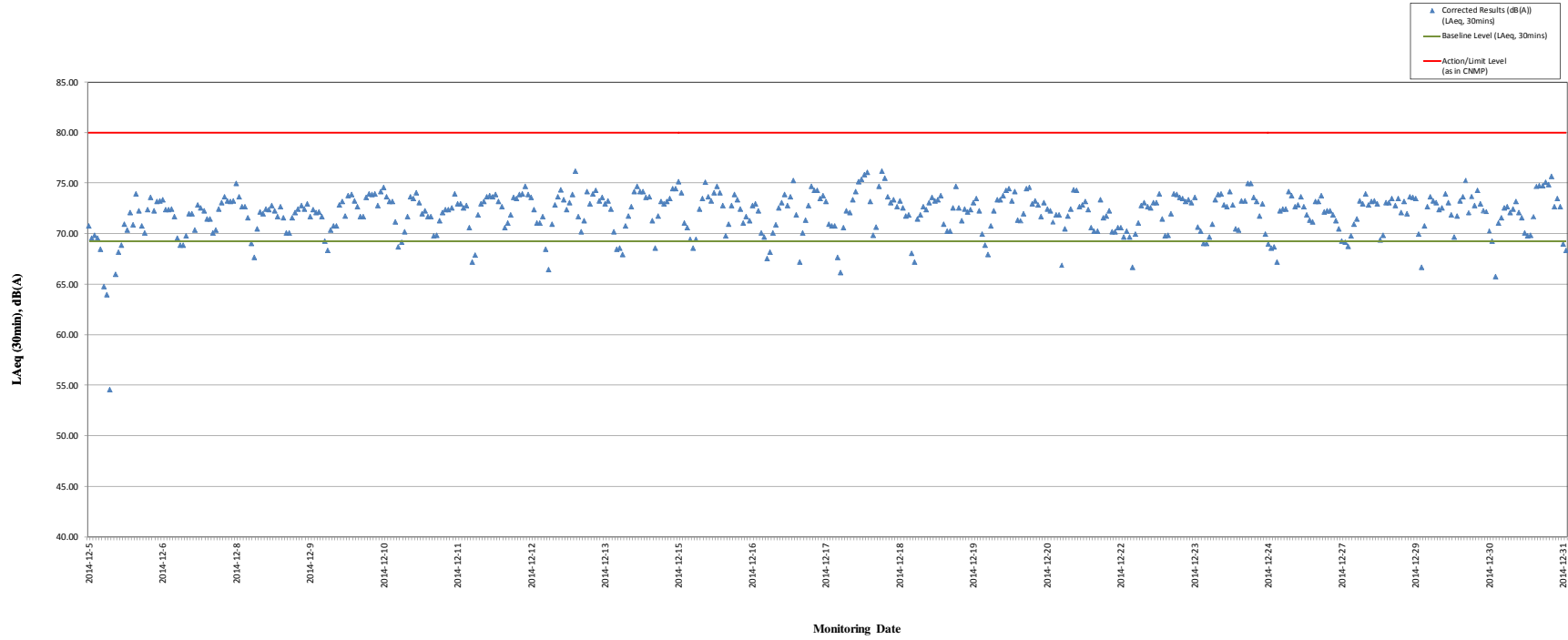


Remarks:
 - For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-10-1	Lucky Building (East Façade)	2014 12 30	18	33	72.3	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	6	33	70.8	69.2	65.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	7	3	73.3	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	7	33	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	8	3	74.2	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	8	33	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	9	3	73.9	69.2	72.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	9	33	74.2	69.2	72.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	10	3	74.6	69.2	73.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	10	33	73.9	69.2	72.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	11	3	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	11	33	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	12	3	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	12	33	72.6	69.2	69.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	13	3	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	13	33	75.7	69.2	74.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	14	3	75.9	69.2	74.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	14	33	75.9	69.2	74.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	15	3	76.1	69.2	75.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	15	33	75.9	69.2	74.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	16	3	76.6	69.2	75.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	16	33	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	17	3	74.9	69.2	73.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	17	33	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	18	3	72.1	69.2	69	80	N
MTW-12-10-1	Lucky Building (East Façade)	2014 12 31	18	33	71.8	69.2	68.4	80	N

*Equipment installation and monitoring was carried out and commenced on 5 December 2014, after the liaison with the Incorporated Owners and the Management Office of Lucky Building

Continuous Noise Monitoring at MTW-12-10-1 (Lucky Building (East Façade) in December 2014- (LAeq, 30min)

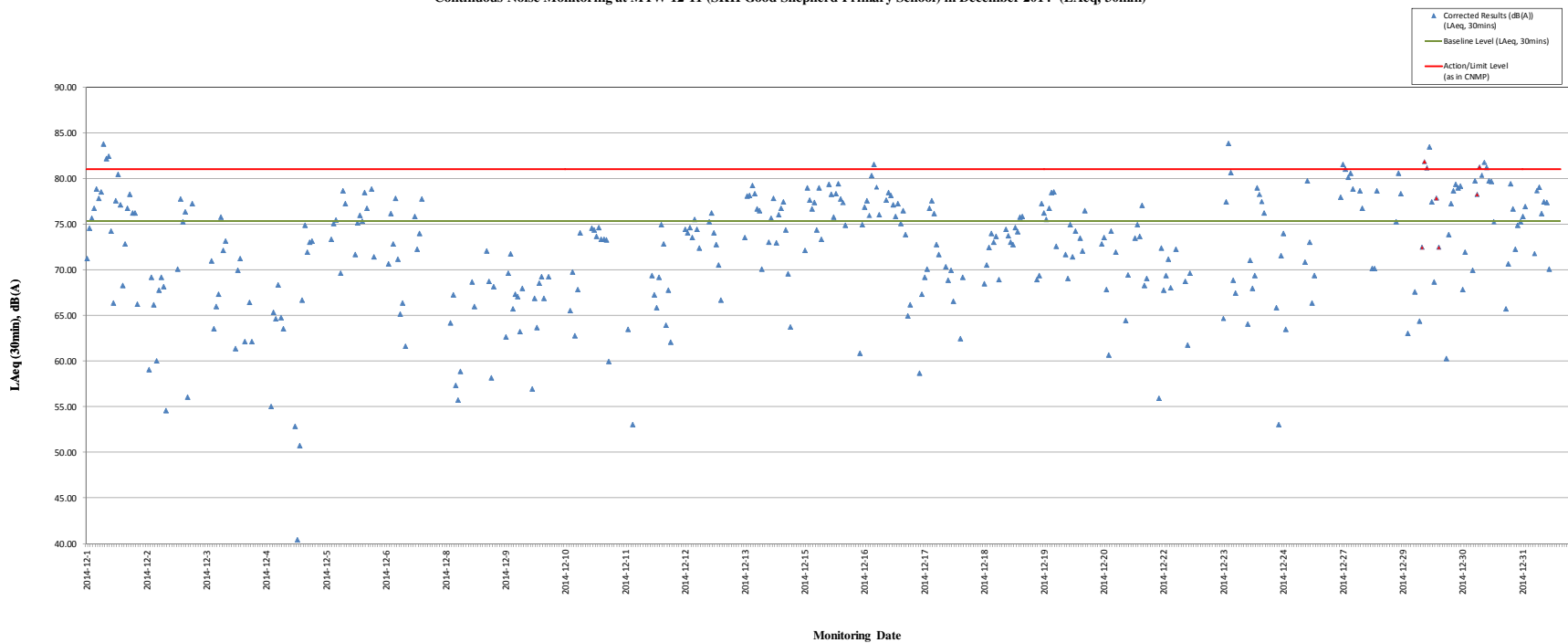


Remarks:
- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	11	43	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	12	13	75.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	12	43	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	13	50	79.2	75.4	76.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	14	20	75.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	14	50	74.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	15	20	75.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	15	50	76.5	75.4	70.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	16	20	76.6	75.4	70.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	16	50	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	17	20	75.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	17	50	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	18	20	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 27	18	50	72.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	6	50	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	7	20	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	7	50	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	8	20	78.3	75.4	75.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	8	50	81.7	75.4	80.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	9	20	80.1	75.4	78.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	9	50	75.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	10	20	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	10	50	75.6	75.4	63.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	11	20	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	11	50	72.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	12	20	76.1	75.4	67.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	13	34	75.1	75.4	<Baseline Level	81	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	14	4	75.7	75.4	64.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	14	34	77.2	75.4	72.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	15	4	82.8	75.4	81.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	15	34	82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	16	4	84.1	75.4	83.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	16	34	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	17	4	76.2	75.4	68.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	17	34	79.8	75.4	77.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	18	4	77.2	75.4	72.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 29	18	34	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	6	34	72.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	7	4	75.5	75.4	60.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	7	34	77.7	75.4	73.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	8	4	79.5	75.4	77.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	8	34	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	9	4	80.9	75.4	79.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	9	34	80.6	75.4	79	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	10	4	80.7	75.4	79.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	10	34	76.1	75.4	67.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	11	4	77.0	75.4	72	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	11	34	75.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	12	4	72.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	12	34	76.5	75.4	70	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	13	4	81.2	75.4	79.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	13	34	80.1	75.4	78.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	14	4	82.3	75.4	81.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	14	34	81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	15	4	82.7	75.4	81.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	15	34	82.3	75.4	81.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	16	4	81.1	75.4	79.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	16	34	81.1	75.4	79.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	17	4	78.3	75.4	75.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	17	34	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	18	4	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 30	18	34	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	6	34	72.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	7	4	75.8	75.4	65.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	7	34	76.7	75.4	70.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	8	4	81.0	75.4	79.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	8	34	79.1	75.4	76.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	9	4	77.1	75.4	72.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	9	34	78.2	75.4	74.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	10	4	78.4	75.4	75.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	10	34	78.7	75.4	75.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	11	4	79.3	75.4	77	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	11	34	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	12	4	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	12	34	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	13	4	77.0	75.4	71.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	13	34	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	14	4	80.7	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	14	34	78.8	75.4	76.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	15	4	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	15	34	79.5	75.4	77.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	16	4	76.5	75.4	70.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	16	34	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	17	4	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	17	34	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	18	4	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2014 12 31	18	34	72.7	75.4	<Baseline Level	81	N

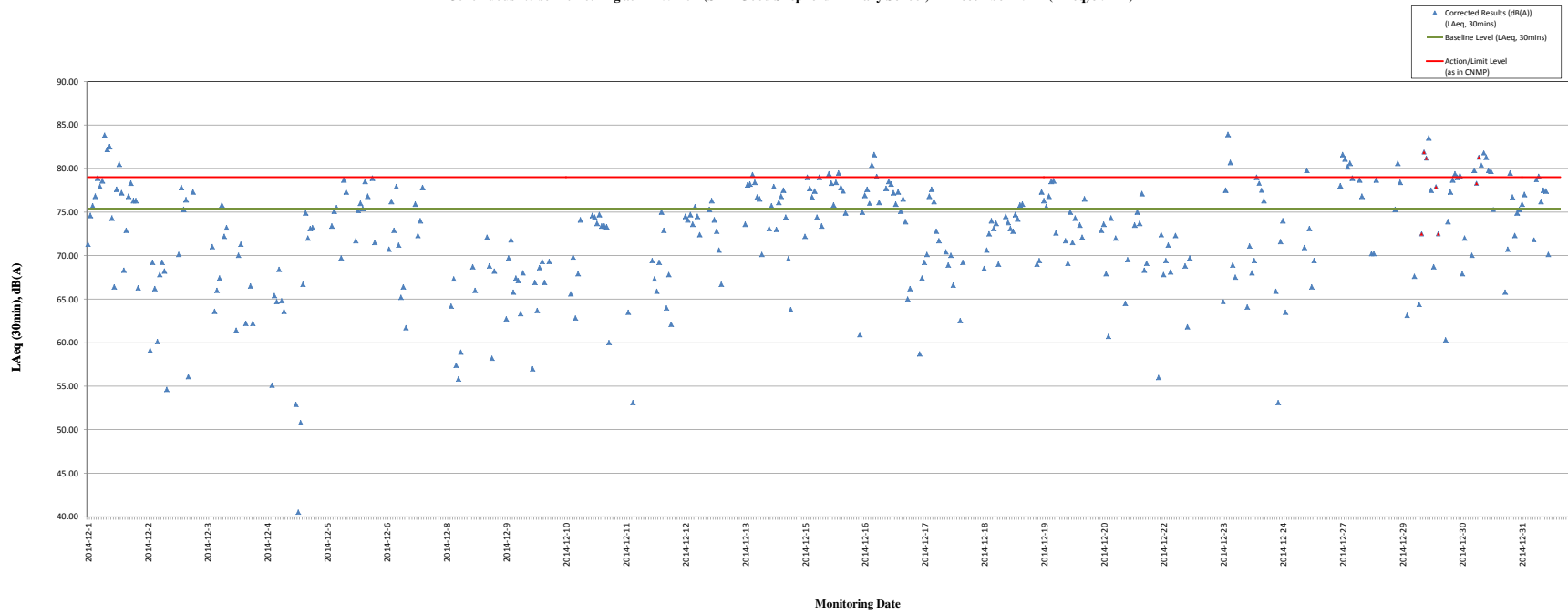
Continuous Noise Monitoring at MTW-12-11 (SKH Good Shepherd Primary School) in December 2014- (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance		
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	9	50	75.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	10	20	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	10	50	75.6	75.4	63.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	11	20	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	11	50	72.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	12	20	76.1	75.4	67.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	13	34	75.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	14	4	75.7	75.4	64.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	14	34	77.2	75.4	72.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	15	4	82.8	75.4	81.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	15	34	82.2	75.4	81.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	16	4	84.1	75.4	83.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	16	34	79.6	75.4	77.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	17	4	76.2	75.4	68.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	17	34	79.8	75.4	77.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	18	4	77.2	75.4	72.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	29	18	34	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	6	34	72.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	7	4	75.5	75.4	60.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	7	34	77.7	75.4	73.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	8	4	79.5	75.4	77.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	8	34	80.4	75.4	78.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	9	4	80.9	75.4	79.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	9	34	80.6	75.4	79	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	10	4	80.7	75.4	79.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	10	34	76.1	75.4	67.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	11	4	77.0	75.4	72	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	11	34	75.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	12	4	72.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	12	34	76.5	75.4	70	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	13	4	81.2	75.4	79.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	13	34	80.1	75.4	78.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	14	4	82.3	75.4	81.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	14	34	81.6	75.4	80.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	15	4	82.7	75.4	81.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	15	34	82.3	75.4	81.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	16	4	81.1	75.4	79.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	16	34	81.1	75.4	79.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	17	4	78.3	75.4	75.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	17	34	75.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	18	4	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	30	18	34	72.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	6	34	72.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	7	4	75.8	75.4	65.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	7	34	76.7	75.4	70.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	8	4	81.0	75.4	79.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	8	34	79.1	75.4	76.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	9	4	77.1	75.4	72.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	9	34	78.2	75.4	74.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	10	4	78.4	75.4	75.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	10	34	78.7	75.4	75.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	11	4	79.3	75.4	77	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	11	34	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	12	4	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	12	34	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	13	4	77.0	75.4	71.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	13	34	80.4	75.4	78.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	14	4	80.7	75.4	79.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	14	34	78.8	75.4	76.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	15	4	79.6	75.4	77.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	15	34	79.5	75.4	77.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	16	4	76.5	75.4	70.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	16	34	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	17	4	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	17	34	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	18	4	72.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2014	12	31	18	34	72.7	75.4	<Baseline Level	79	N

Continuous Noise Monitoring at MTW-16-1(SKH Good Shepherd Primary School) in December 2014- (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

Annex J

Construction Dust
Monitoring Results and
Wind Data Monitoring
Results

Annex J Construction Dust Monitoring Results

Station DMS-6 Katherine Building

Start Date	Time	Finish Date	Time	Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)		Average	TSP Conc.	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID
					Initial	Final	Initial	Final		Initial	Final		(µg/m ³)					
03-Dec-14	10:45	04-Dec-14	10:45	Cloudy	2.8940	3.0242	13520.30	13544.30	24.00	1.32	1.32	1.32	68	156.8	260	-	0107	4794
09-Dec-14	10:45	10-Dec-14	10:45	Sunny	2.8898	3.0480	13544.30	13568.30	24.00	1.32	1.32	1.32	83	156.8	260	-	0107	4941
15-Dec-14	10:45	16-Dec-14	10:45	Cloudy	2.8833	3.0392	13568.30	13592.30	24.00	1.32	1.32	1.32	82	156.8	260	-	0107	2496
20-Dec-14	8:50	21-Dec-14	8:50	Sunny	2.8783	3.0216	13592.30	13616.30	24.00	1.32	1.32	1.32	75	156.8	260	-	0107	2528
24-Dec-14	10:45	25-Dec-14	10:45	Cloudy	2.9020	3.0378	13616.30	13640.30	24.00	1.32	1.32	1.32	71	156.8	260	-	0107	3856
30-Dec-14	10:45	31-Dec-14	10:45	Sunny	2.9041	3.0834	13640.30	13664.30	24.00	1.32	1.32	1.32	94	156.8	260	-	0107	3875
													Minimum	68				
													Average	79				
													Maximum	94				

Station DMS-7 Parc 22

Start Date	Time	Finish Date	Time	Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)		Average	TSP Conc.	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID
					Initial	Final	Initial	Final		Initial	Final		(µg/m ³)					
03-Dec-14	9:45	04-Dec-14	9:45	Cloudy	2.8974	2.9945	3707.17	3731.17	24.00	1.24	1.24	1.24	54	166.7	260	-	3574	4793
09-Dec-14	9:47	10-Dec-14	9:47	Sunny	2.8912	3.0101	3731.17	3755.17	24.00	1.24	1.24	1.24	67	166.7	260	-	3574	4940
15-Dec-14	9:45	16-Dec-14	9:45	Cloudy	2.8846	3.0370	3755.17	3779.17	24.00	1.24	1.24	1.24	85	166.7	260	-	3574	2495
20-Dec-14	8:37	21-Dec-14	8:37	Sunny	2.8780	2.9992	3779.17	3803.17	24.00	1.24	1.24	1.24	68	166.7	260	-	3574	2527
24-Dec-14	9:45	25-Dec-14	9:45	Cloudy	2.8810	2.9979	3803.17	3827.17	24.00	1.24	1.24	1.24	65	166.7	260	-	3574	3855
30-Dec-14	9:45	31-Dec-14	9:45	Sunny	2.8885	3.0006	3824.17	3848.17	24.00	1.24	1.24	1.24	63	166.7	260	-	3574	3874
													Minimum	54				
													Average	67				
													Maximum	85				

Station DMS-8 SKH Good Shepherd Primary School

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)		Average	TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID			
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final										
03-Dec-14	9:30	04-Dec-14	9:30	Cloudy	2.9080	2.9804	3677.11	3701.11	24.00	1.23	1.23	1.23	41	152.2	260	-	3572	4792			
09-Dec-14	9:32	10-Dec-14	9:32	Sunny	2.8932	2.9955	3701.11	3725.11	24.00	1.23	1.23	1.23	58	152.2	260	-	3572	4939			
15-Dec-14	9:30	16-Dec-14	9:30	Cloudy	2.8679	2.9919	3725.11	3749.11	24.00	1.23	1.23	1.23	70	152.2	260	-	3572	2494			
20-Dec-14	8:22	21-Dec-14	8:22	Sunny	2.8813	2.9872	3749.11	3773.11	24.00	1.23	1.23	1.23	60	152.2	260	-	3572	2526			
24-Dec-14	9:30	25-Dec-14	9:30	Cloudy	2.8989	3.0104	3773.11	3797.11	24.00	1.23	1.23	1.23	63	152.2	260	-	3572	3854			
30-Dec-14	9:30	31-Dec-14	9:30	Sunny	2.8811	2.9934	3797.11	3821.11	24.00	1.23	1.23	1.23	63	152.2	260	-	3572	3873			
													Minimum	41							
													Average	59							
													Maximum	70							

Station DMS-9 No. 12 Pau Chung Street

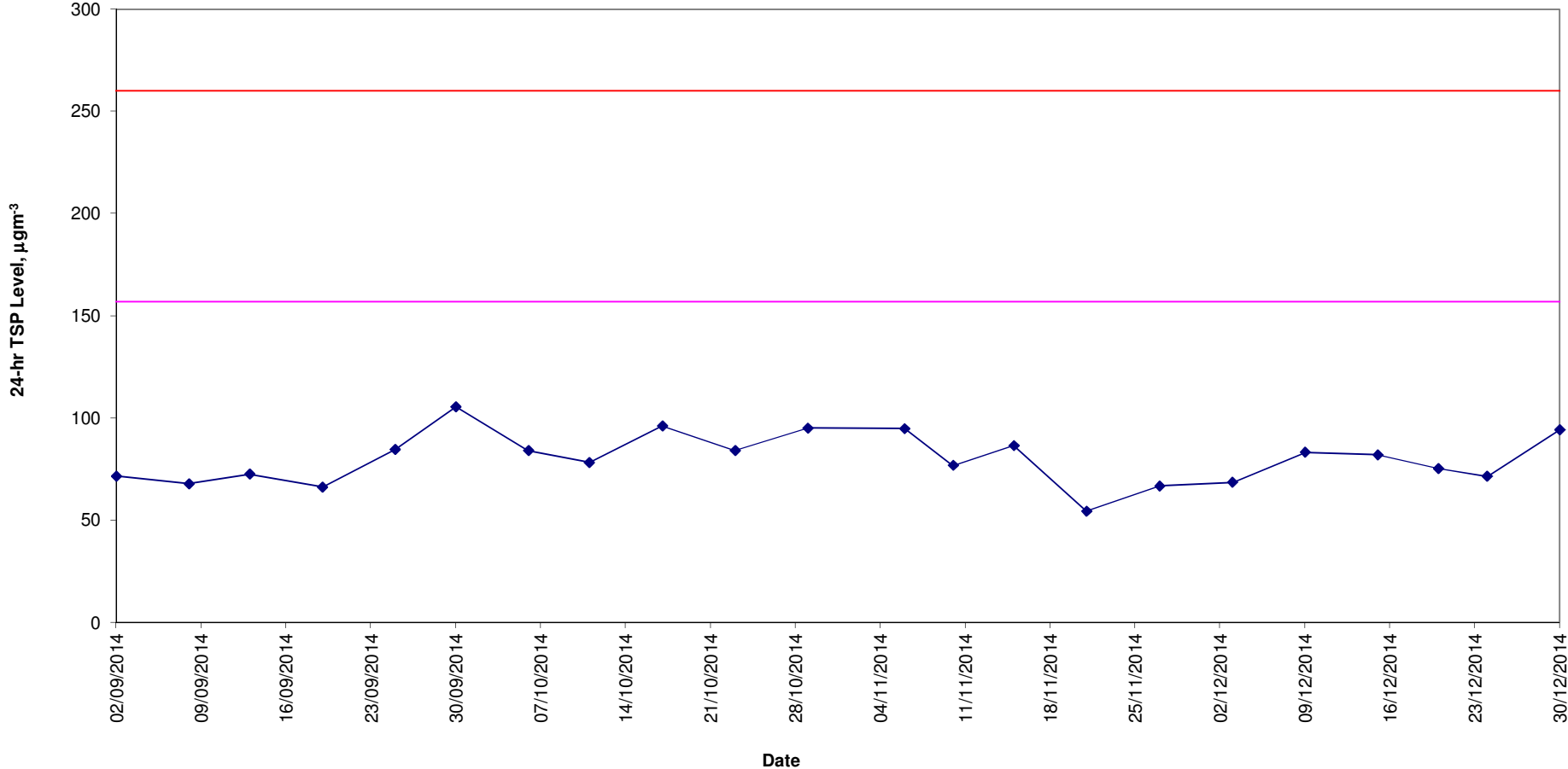
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)		Average	TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID			
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final										
03-Dec-14	9:20	04-Dec-14	9:20	Cloudy	2.9052	2.9882	13953.40	13977.40	24.00	1.23	1.23	1.23	47	160.9	260	-	0814	4791			
09-Dec-14	9:22	10-Dec-14	9:22	Sunny	2.8773	2.9654	13977.40	14001.40	24.00	1.23	1.23	1.23	50	160.9	260	-	0814	4938			
15-Dec-14	9:20	16-Dec-14	9:20	Cloudy	2.8789	2.9759	14001.40	14025.40	24.00	1.23	1.23	1.23	55	160.9	260	-	0814	2493			
20-Dec-14	8:12	21-Dec-14	8:12	Sunny	2.8772	2.9808	14025.40	14049.40	24.00	1.23	1.23	1.23	58	160.9	260	-	0814	2525			
24-Dec-14	9:20	25-Dec-14	9:20	Cloudy	2.9043	3.0221	14049.40	14073.40	24.00	1.23	1.23	1.23	67	160.9	260	-	0814	3853			
30-Dec-14	9:20	31-Dec-14	9:20	Sunny	2.8815	3.0012	14073.40	14097.40	24.00	1.23	1.23	1.23	68	160.9	260	-	0814	3872			
													Minimum	47							
													Average	57							
													Maximum	68							

Station DMS-10 Chat Ma Mansion

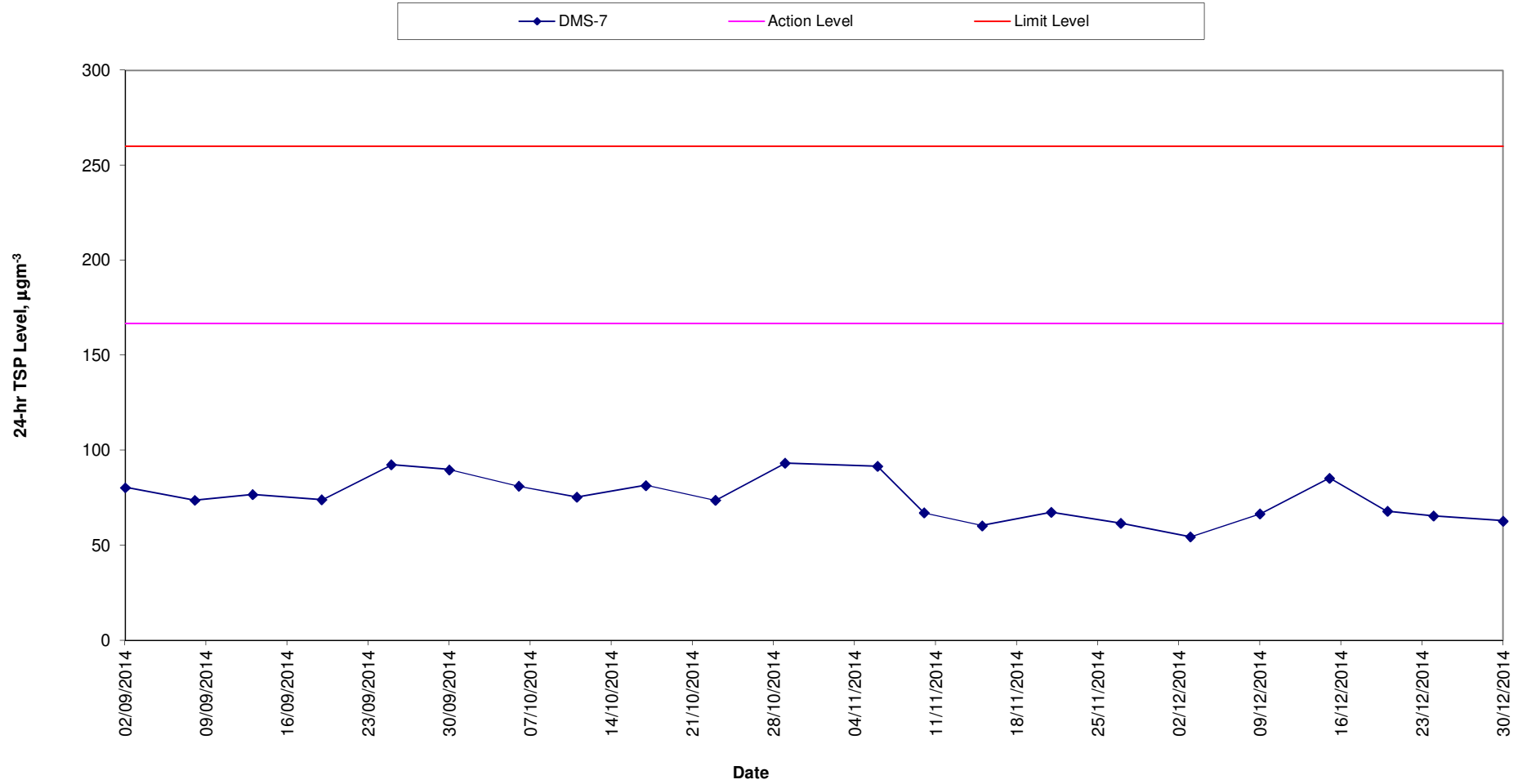
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)		Average	TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID			
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final										
03-Dec-14	8:45	04-Dec-14	8:45	Cloudy	2.8984	2.9844	4285.20	4309.20	24.00	1.23	1.23	1.23	49	170.4	260	-	3573	4790			
09-Dec-14	8:43	10-Dec-14	8:43	Sunny	2.8727	2.9883	4309.20	4333.20	24.00	1.23	1.23	1.23	65	170.4	260	-	3573	4937			
15-Dec-14	8:43	16-Dec-14	8:43	Cloudy	2.8885	2.9977	4333.20	4357.20	24.00	1.23	1.23	1.23	62	170.4	260	-	3573	2492			
20-Dec-14	8:00	21-Dec-14	8:00	Sunny	2.8610	2.9574	4357.20	4381.20	24.00	1.23	1.23	1.23	54	170.4	260	-	3573	2524			
24-Dec-14	8:43	25-Dec-14	8:43	Cloudy	2.8922	2.9959	4381.20	4405.20	24.00	1.23	1.23	1.23	59	170.4	260	-	3573	3852			
30-Dec-14	8:45	31-Dec-14	8:45	Sunny	2.9030	2.9987	4405.20	4429.20	24.00	1.23	1.23	1.23	54	170.4	260	-	3573	3871			
													Minimum	49							
													Average	57							
													Maximum	65							

Construction Dust Monitoring Results for the Past 4 Months
DMS-6 (Katherine Building)

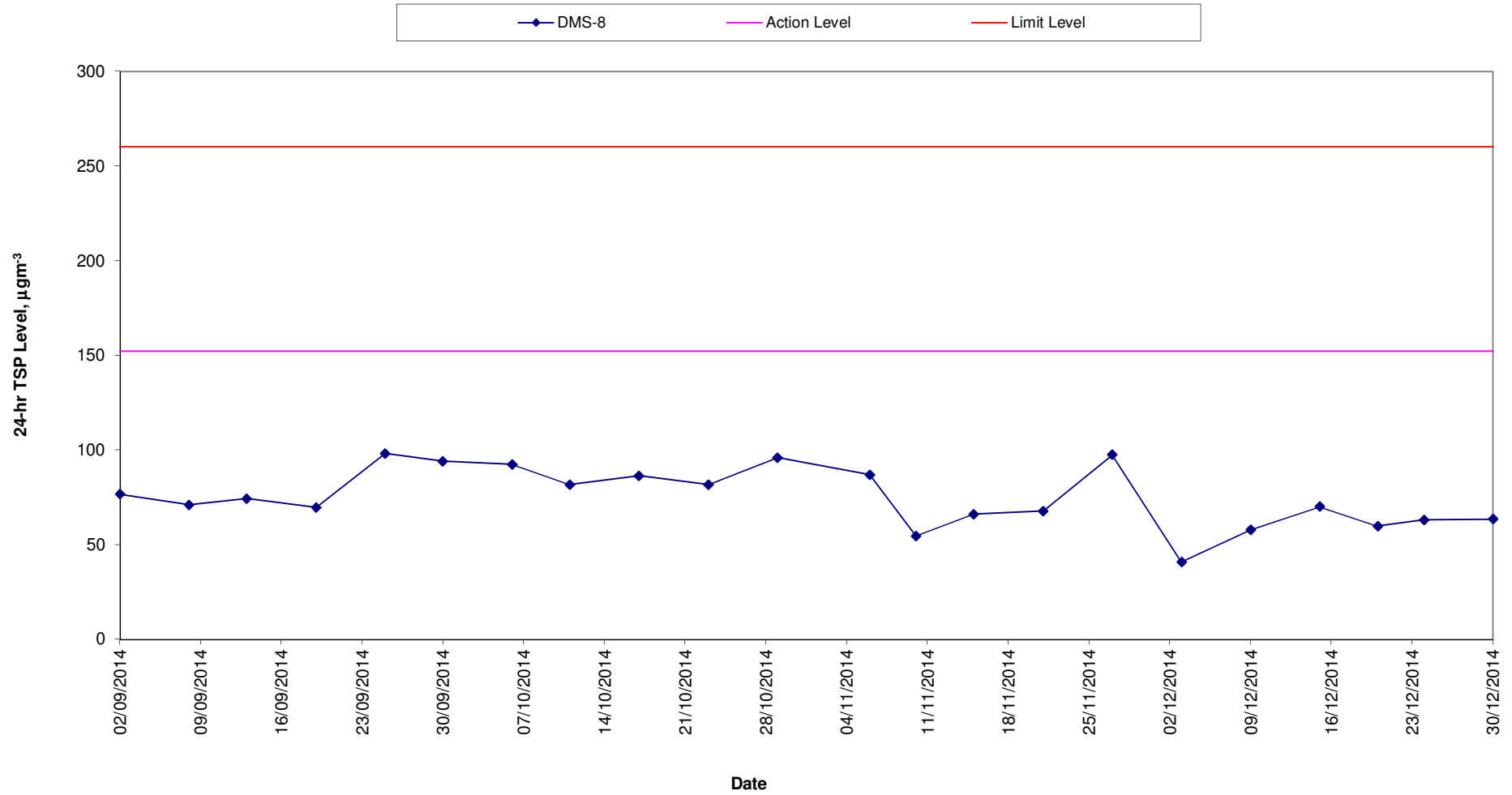
DMS-6 Action Level Limit Level



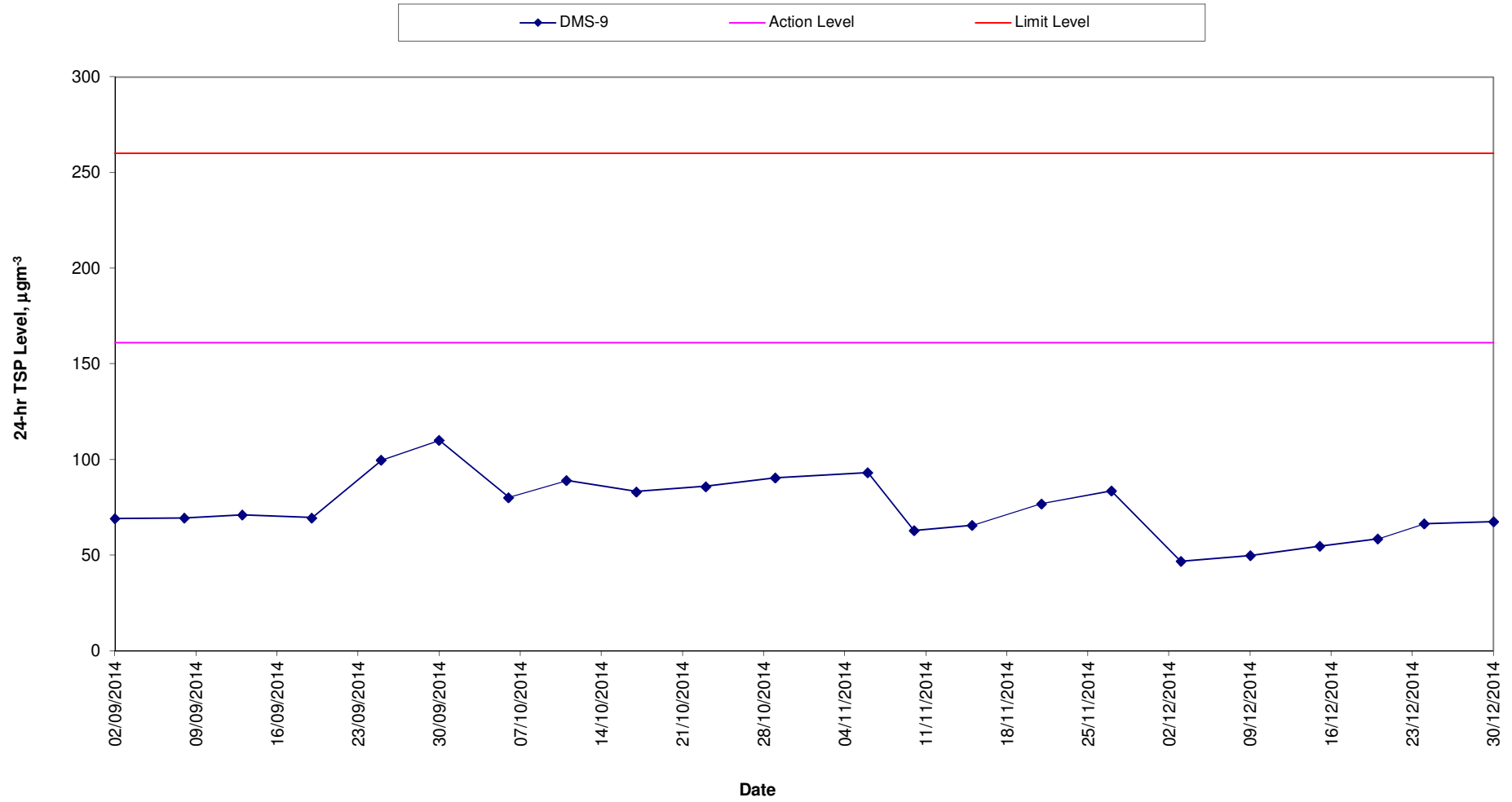
Construction Dust Monitoring Results for the Past 4 Months DMS- 7 (Parc 22)



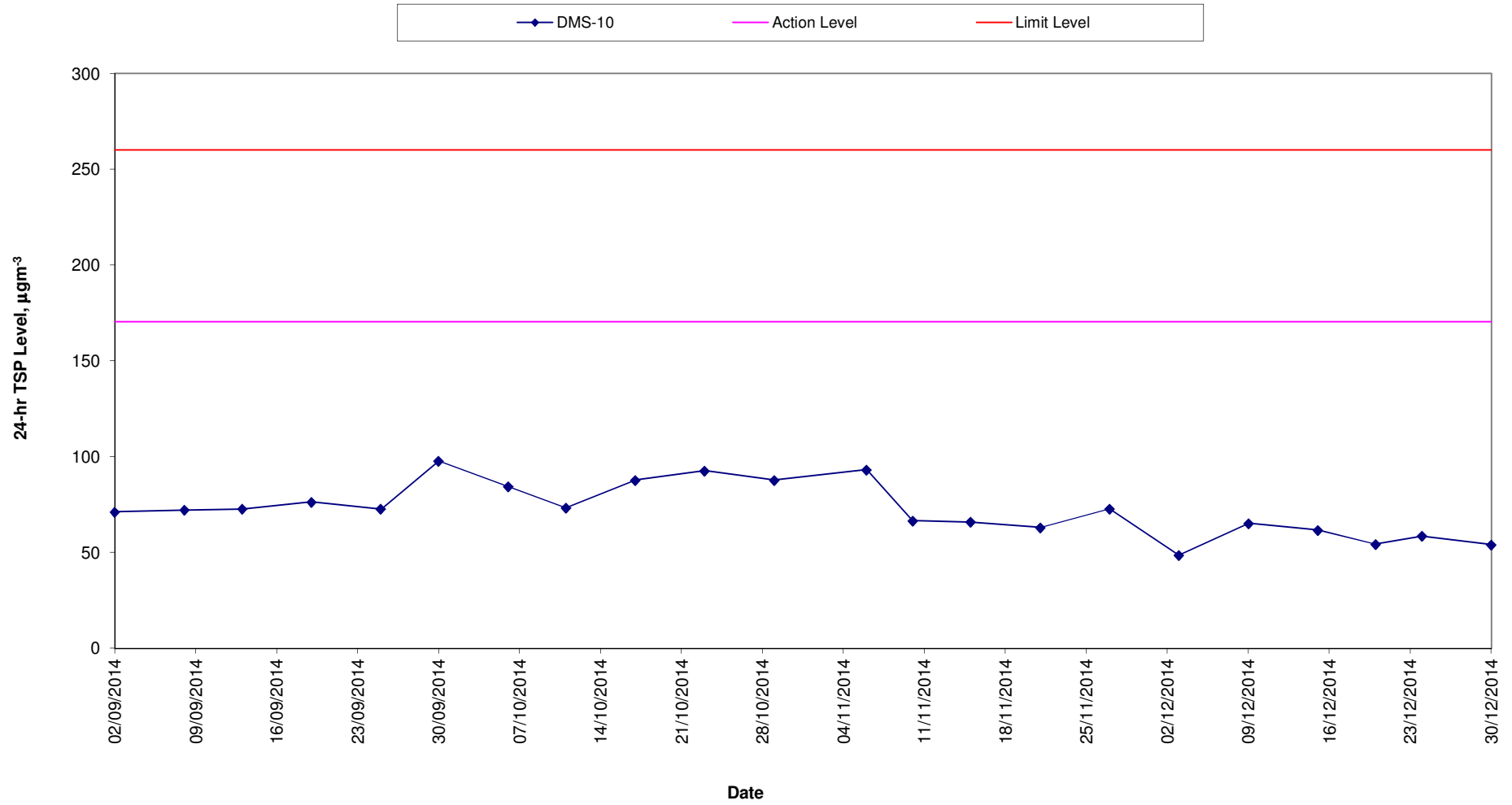
Construction Dust Monitoring Results for the Past 4 Months DMS-8 (SKH Good Shepherd Primary School)



**Construction Dust Monitoring Results for the Past 4 Months
DMS-9 (No.12 Pau Chung Street)**



Construction Dust Monitoring Results for the Past 4 Months DMS-10 (Chat Ma Mansion)

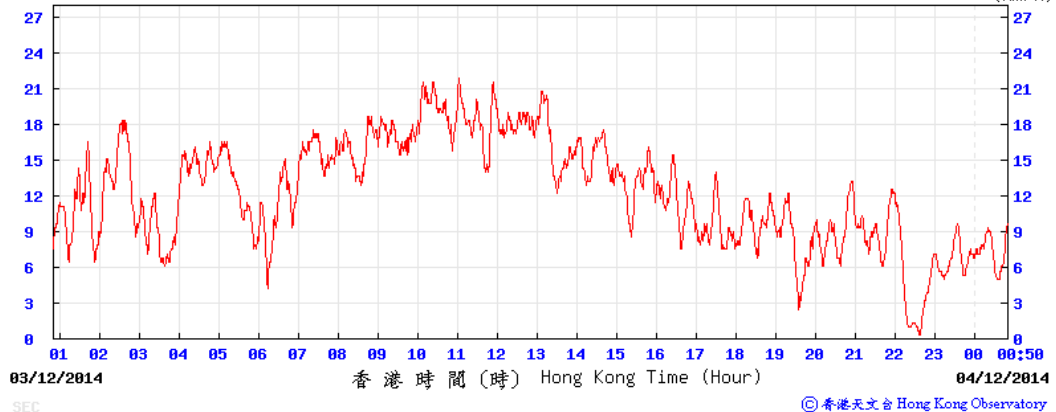


Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

3-4 December 2014

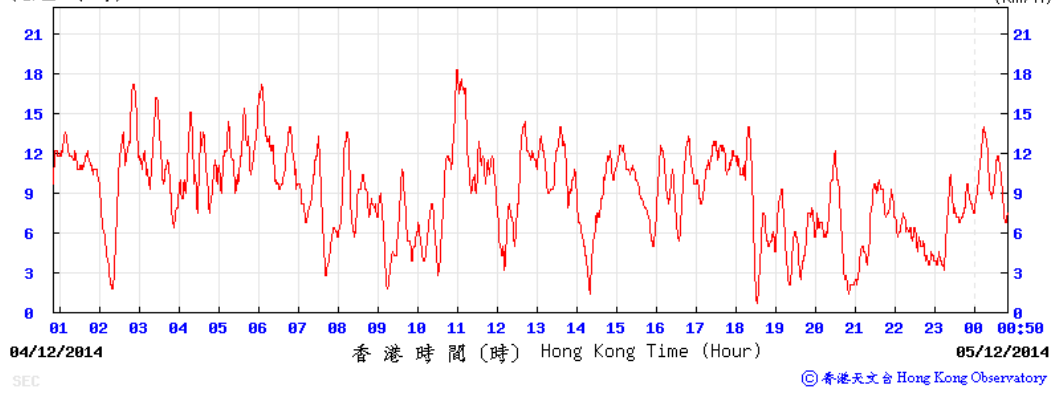
Wind Speed:

(公里/小時) (於香港時間 2014 年12月 4日 0時50分更新) (Updated at 00:50H on 4 Dec 2014) (km/h)



Wind Speed:

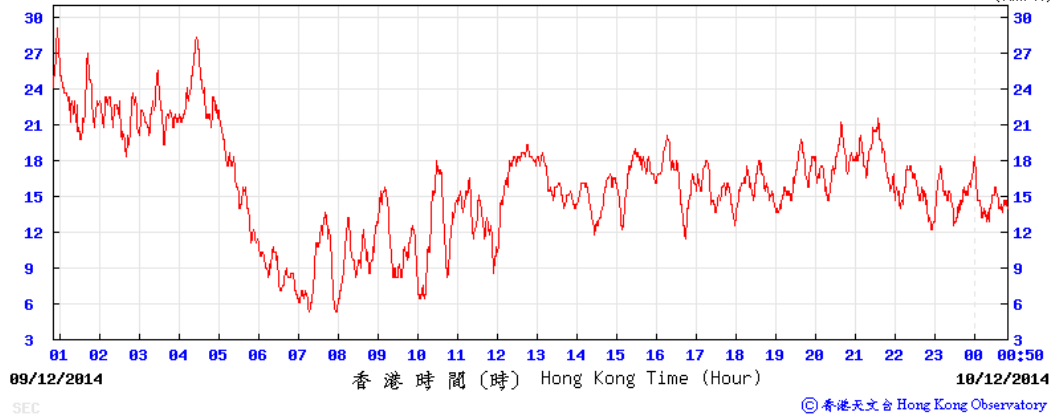
(公里/小時) (於香港時間 2014 年12月 5日 0時50分更新) (Updated at 00:50H on 5 Dec 2014) (km/h)



9-10 December 2014

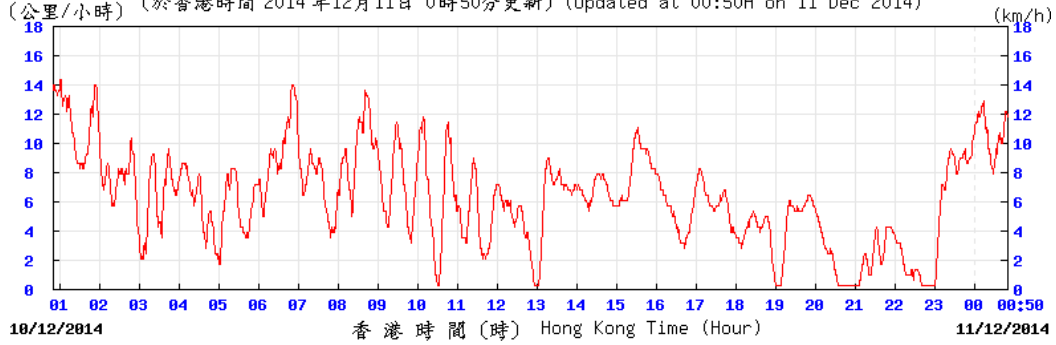
Wind Speed:

(公里/小時) (於香港時間 2014 年12月10日 0時50分更新) (Updated at 00:50H on 10 Dec 2014) (km/h)



Wind Speed:

(公里/小時) (於香港時間 2014 年12月11日 0時50分更新) (Updated at 00:50H on 11 Dec 2014)



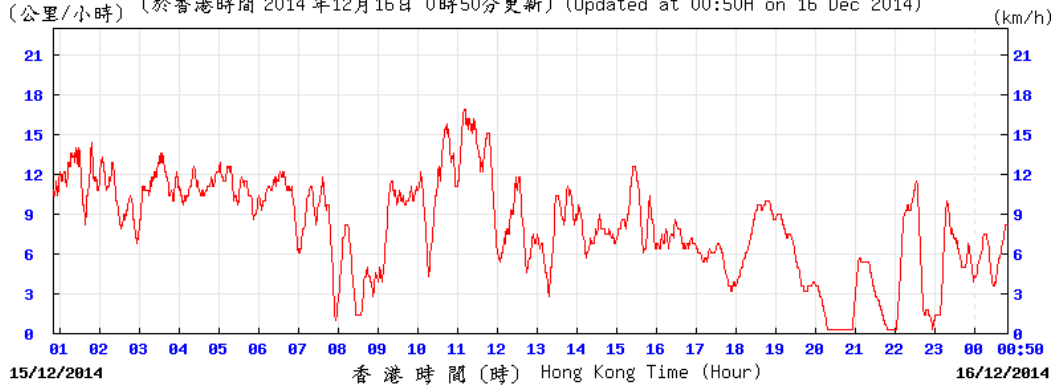
SEC

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15-16 December 2014

Wind Speed:

(公里/小時) (於香港時間 2014 年12月16日 0時50分更新) (Updated at 00:50H on 16 Dec 2014)

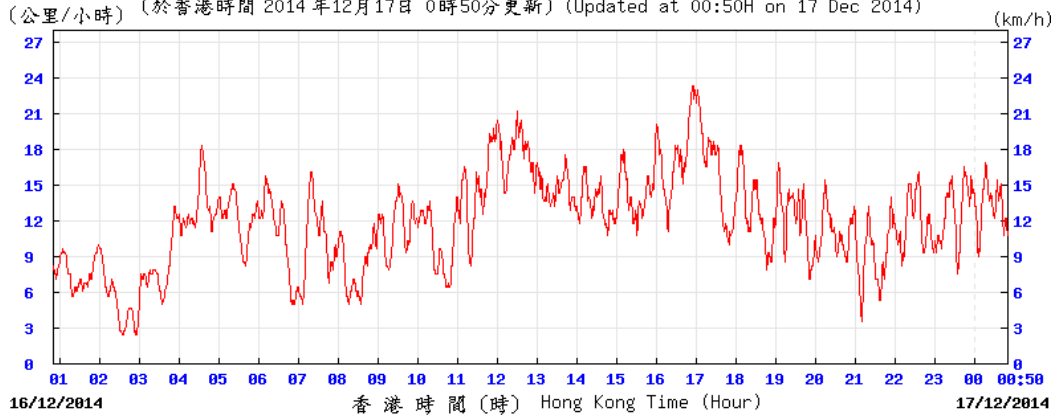


SEC

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Wind Speed:

(公里/小時) (於香港時間 2014 年12月17日 0時50分更新) (Updated at 00:50H on 17 Dec 2014)



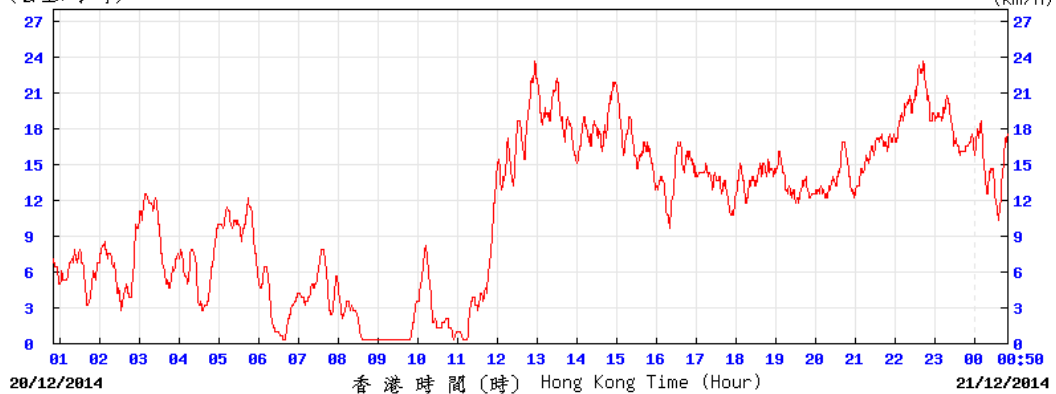
SEC

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20-21 December 2014

Wind Speed:

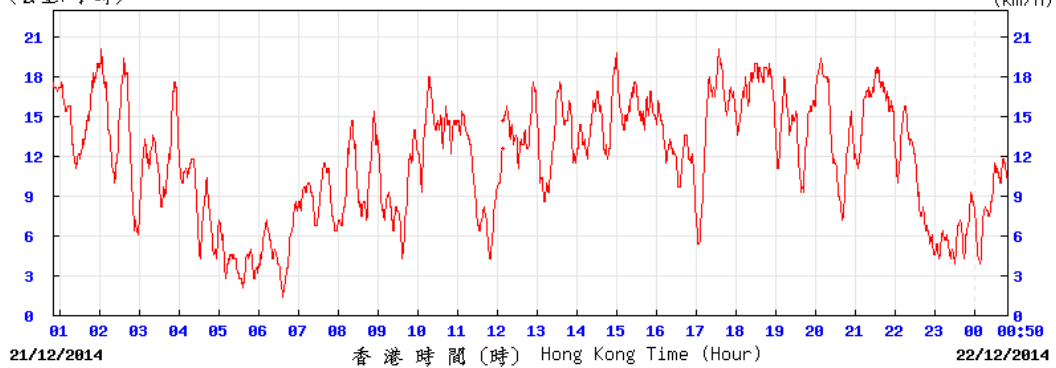
(公里/小時) (於香港時間 2014 年12月21日 0時50分更新) (Updated at 00:50H on 21 Dec 2014)



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Wind Speed:

(公里/小時) (於香港時間 2014 年12月22日 0時50分更新) (Updated at 00:50H on 22 Dec 2014)

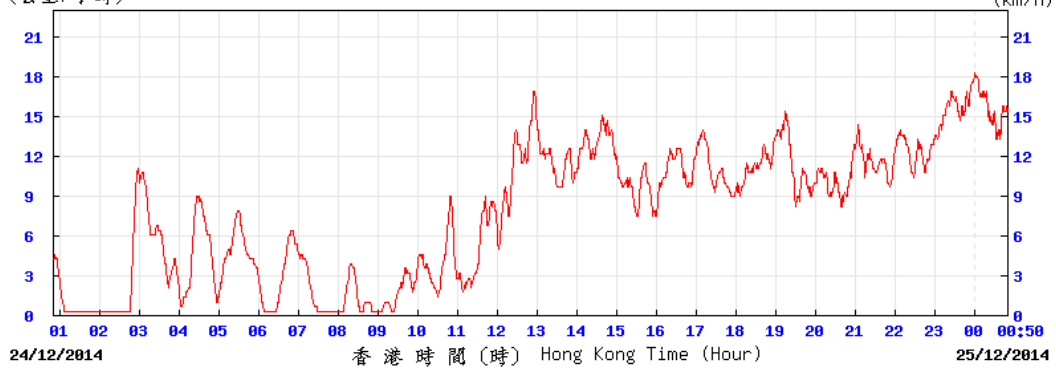


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24-25 December 2014

Wind Speed:

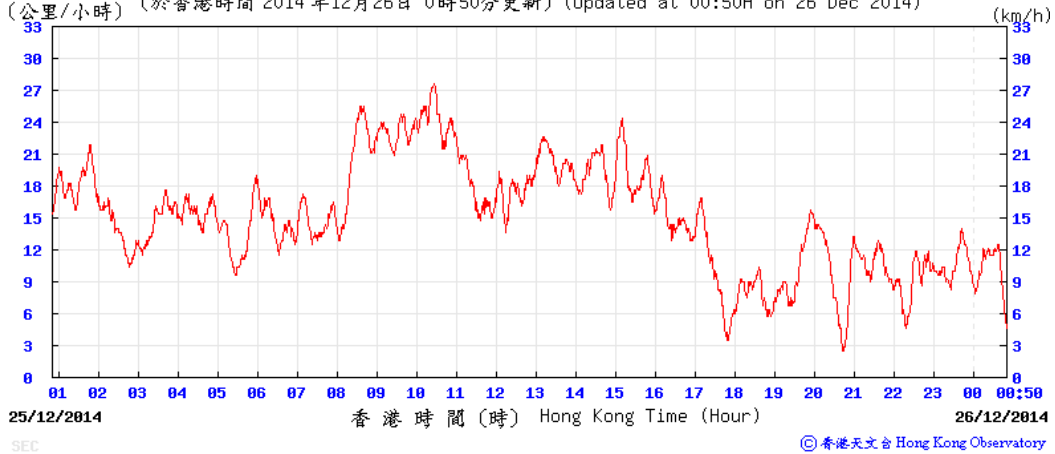
(公里/小時) (於香港時間 2014 年12月25日 0時50分更新) (Updated at 00:50H on 25 Dec 2014)



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Wind Speed:

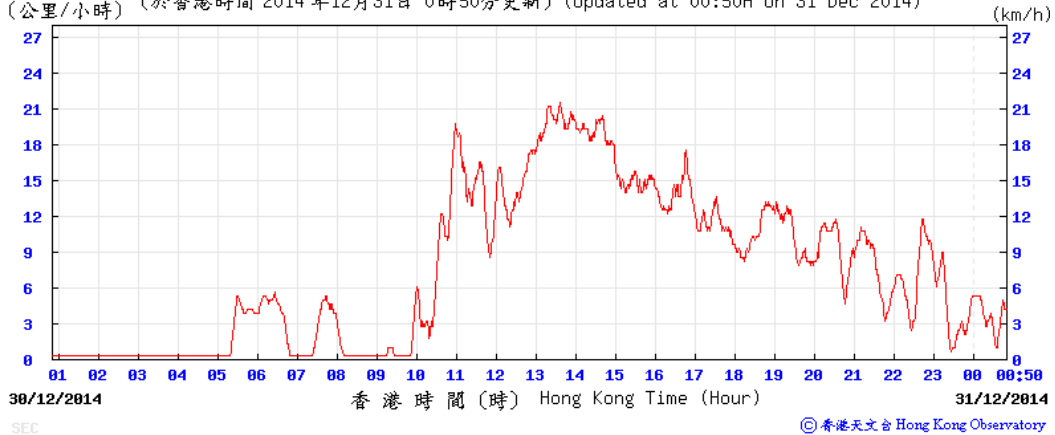
(公里/小時) (於香港時間 2014 年12月26日 0時50分更新) (Updated at 00:50H on 26 Dec 2014)



30-31 December 2014

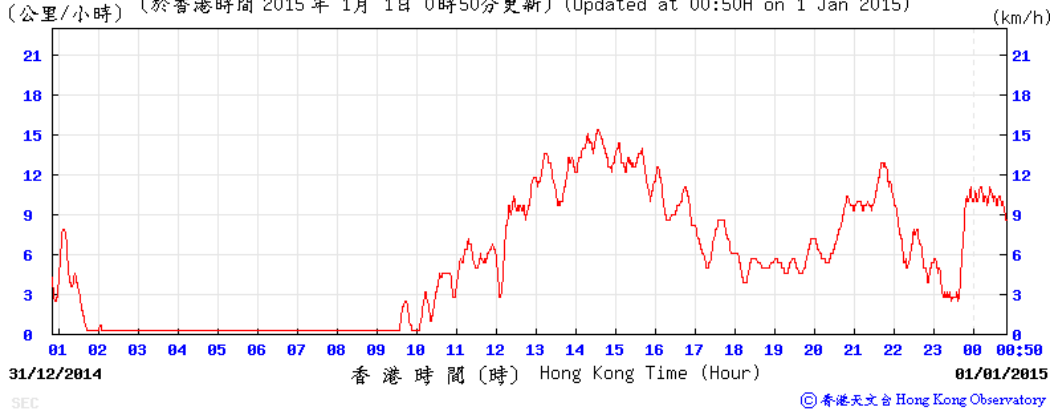
Wind Speed:

(公里/小時) (於香港時間 2014 年12月31日 0時50分更新) (Updated at 00:50H on 31 Dec 2014)



Wind Speed:

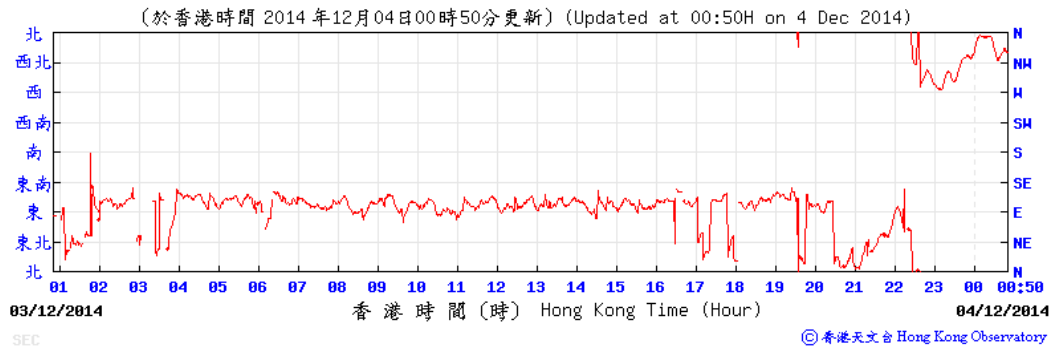
(公里/小時) (於香港時間 2015 年 1 月 1 日 0時50分更新) (Updated at 00:50H on 1 Jan 2015)



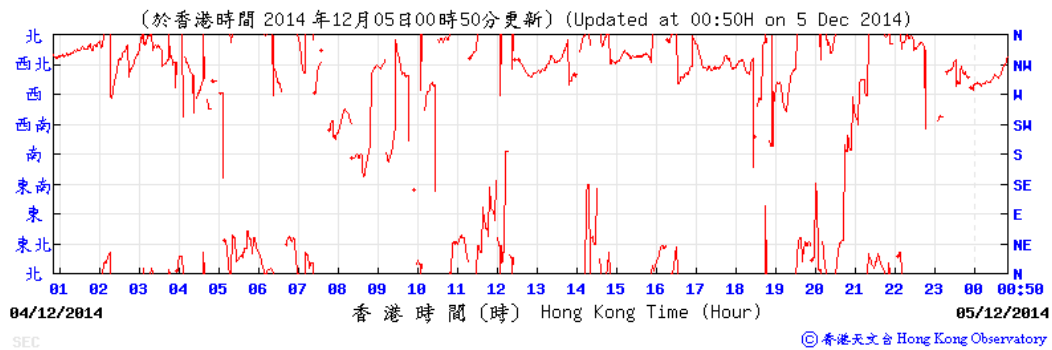
Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

3-4 December 2014

Wind Direction:

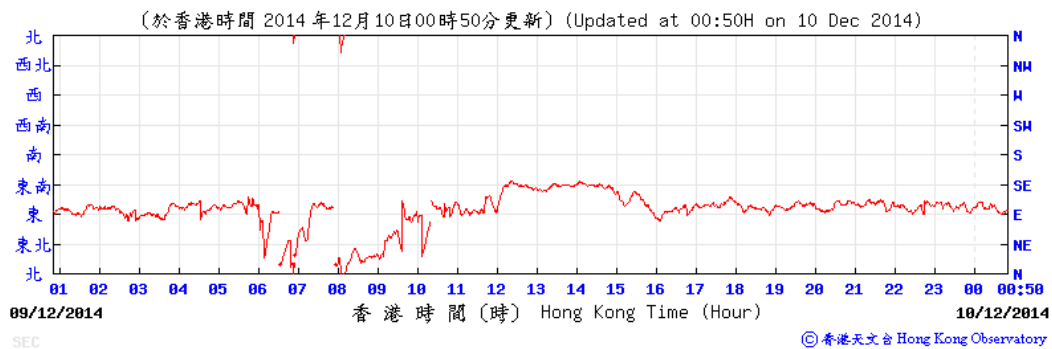


Wind Direction:

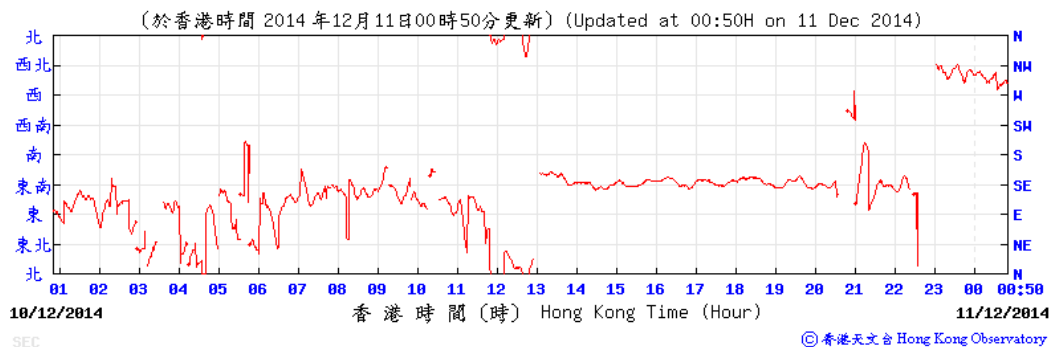


9-10 December 2014

Wind Direction:

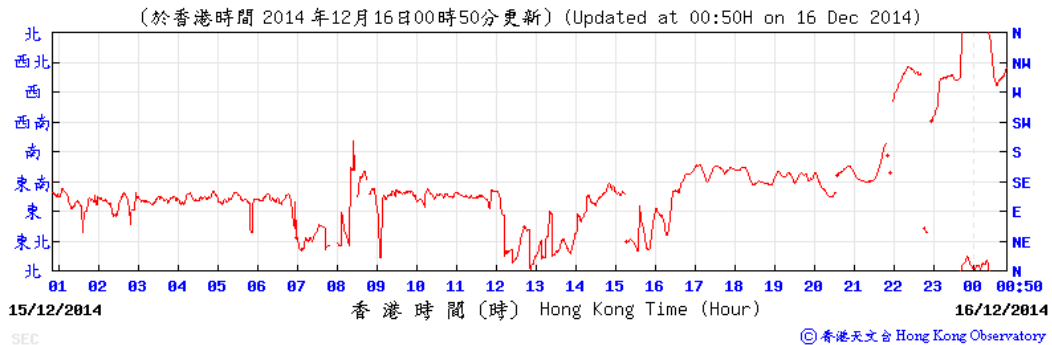


Wind Direction:

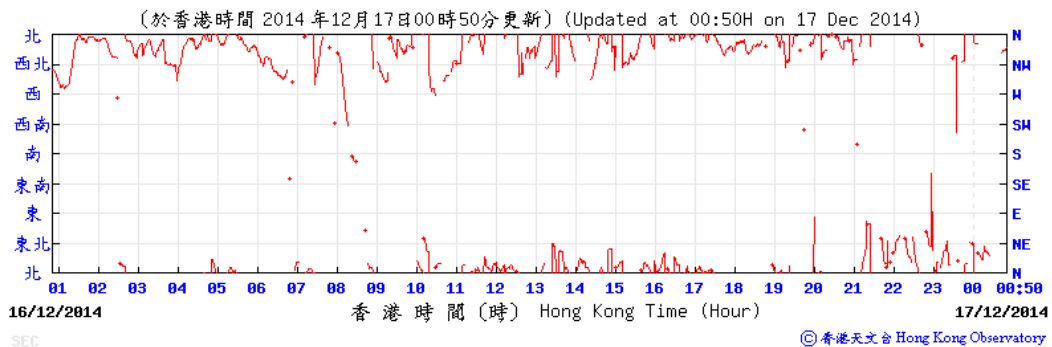


15-16 December 2014

Wind Direction:

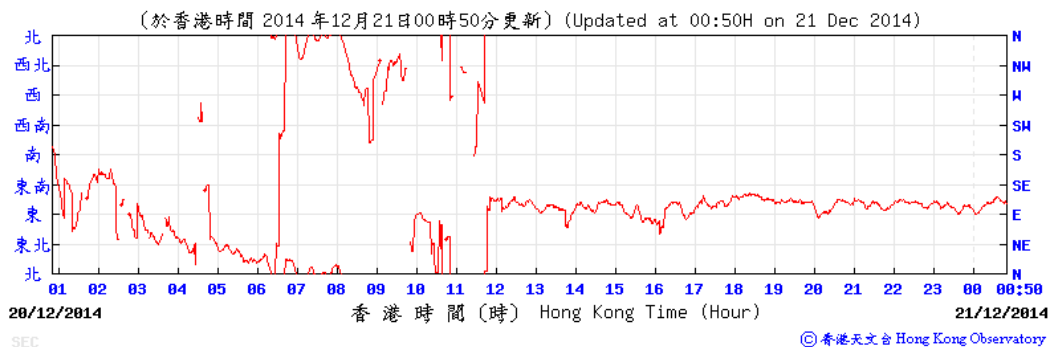


Wind Direction:

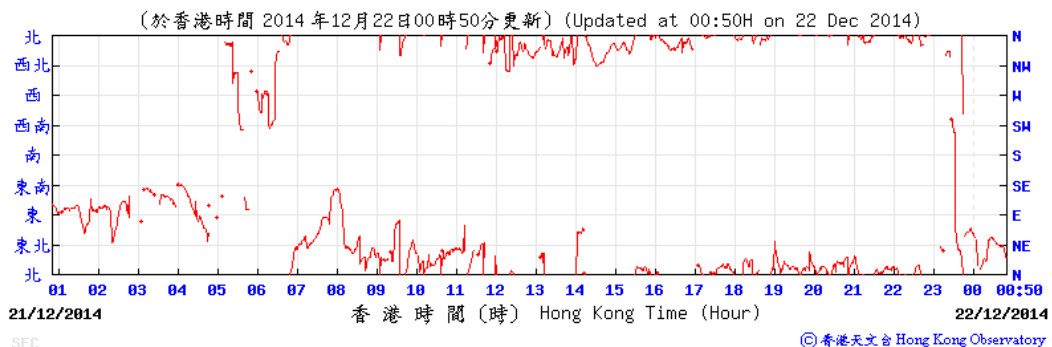


20-21 December 2014

Wind Direction:

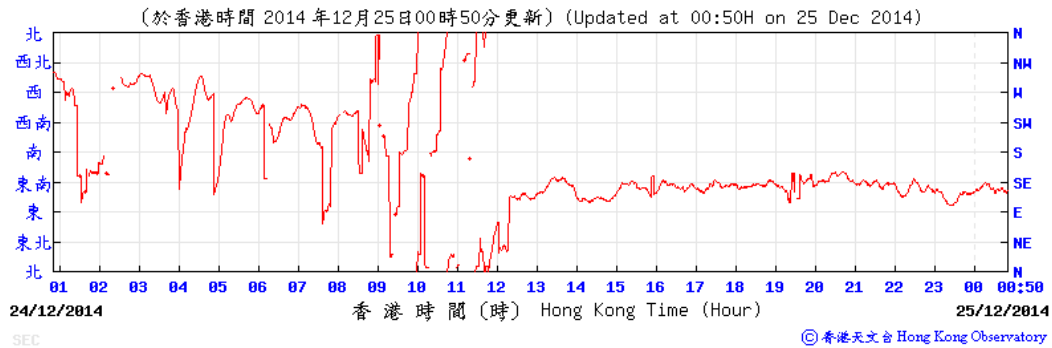


Wind Direction:

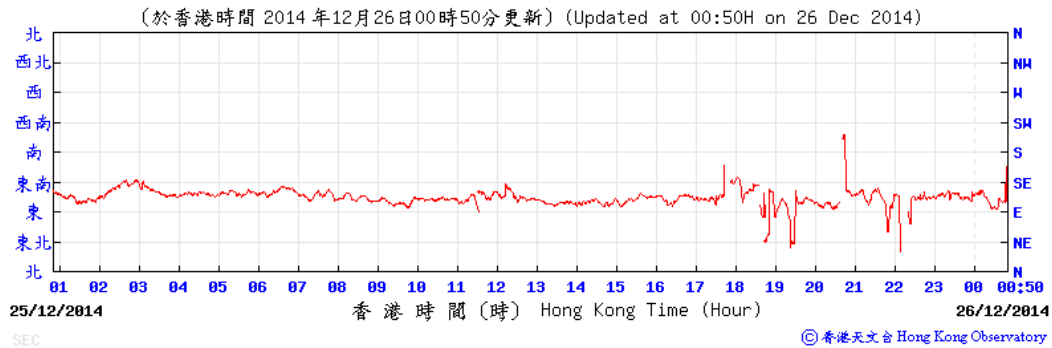


24-25 December 2014

Wind Direction:

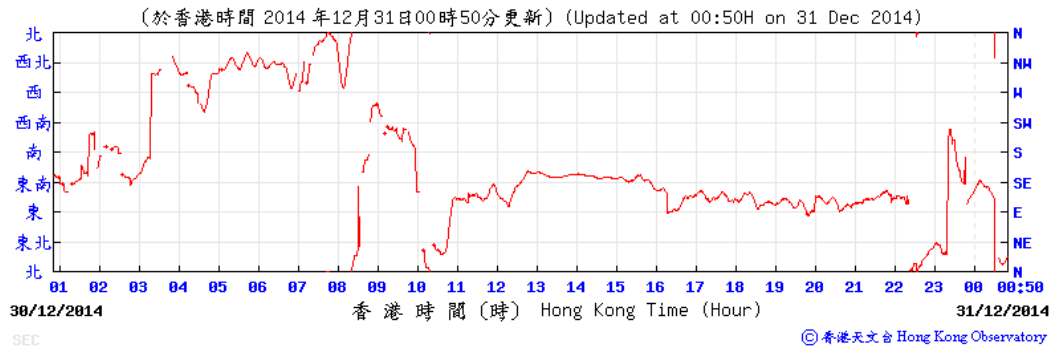


Wind Direction:

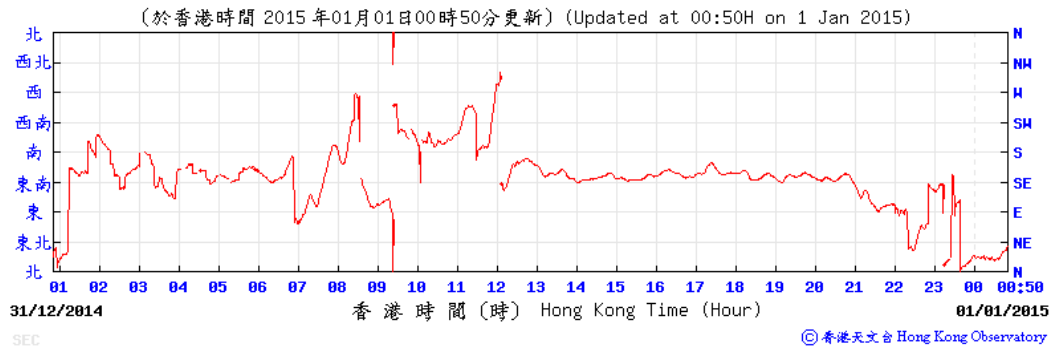


30-31 December 2014

Wind Direction:



Wind Direction:



Annex K – Waste Flow Table

Monthly Summary Waste Flow Table for the year 2012-2014

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly					Imported Fill (in '000m ³)
	Total Quantity Generated	Hard Rocks and Large Broken Concrete (See Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill (See Note 5)	Inert C&D Materials Delivered to 1108A Kai Tai Barging Facilities (See Note 6)	Metals	Paper/ cardboard packaging	Plastics (See Note 2)	Chemical Waste (See Note 10)	Others, e.g. general refuse (See Note 5)	
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	
Sep 2012	0.004	0.000	0.000	0.000	0.004	-	0.000	0.000	5.300	0.000	0.144	0.000
Oct 2012	0.000	0.000	0.000	0.000	0.000	-	12.800	0.242	0.013	0.000	0.514	0.000
Nov 2012	0.624	0.000	0.605	0.000	0.019	-	0.000	0.154	0.002	0.000	0.172	6.804
Dec 2012	16.844	0.000	0.000	0.000	0.005	16.839	0.000	0.000	0.000	0.000	0.057	0.000
Sub-total	17.472	0.000	0.605	0.000	0.028	16.839	12.800	0.396	5.315	0.000	0.887	6.804
Jan 2013	19.828	0.000	0.000	0.000	0.006	19.822	0.000	0.036 (See Note 7)	0.416	0.000	0.081 (See Note 8)	0.000
Feb 2013	8.372	0.000	0.000	0.000	0.005	8.366	0.000	0.036	0.443	0.000	0.021	0.000
Mar 2013	14.673	0.000	0.000	0.000	0.000	14.673	0.000	0.036	0.463	0.000	0.064 (See Note 9)	0.000
Apr 2013	13.557	0.000	0.000	0.000	0.025	13.533	0.000	0.036	0.148	0.000	0.086	0.000
May 2013	9.969	0.000	0.000	0.000	0.000	9.969	0.000	0.000	0.481	0.000	0.065	0.000
Jun 2013	5.538	0.000	0.000	0.000	0.000	5.538	0.000	0.045	0.784	0.32 (See Note 11)	0.065	0.000
Jul 2013	6.116	0.000	0.000	0.000	0.000	6.116	0.000	0.063	0.868	0.400	0.058	0.000
Aug 2013	11.537	0.000	0.000	0.000	0.000	11.537	0.000	0.068	0.464	0.000	0.071	0.000
Sep 2013	4.641	0.000	0.000	0.000	0.000	4.641	0.000	0.027	0.522	0.000	0.110	0.000
Oct 2013	9.708	0.000	0.000	0.000	0.000	9.708	0.000	0.036	0.348	0.000	0.086	0.000
Nov 2013	7.199	0.000	0.000	0.000	0.000	7.199	0.000	0.068	0.506	0.000	0.678	0.000
Dec 2013	6.973	0.000	0.000	0.000	0.000	6.973	0.000	0.090	0.383	0.000	1.344	0.000
Sub-total	118.111	0.000	0.000	0.000	0.036	118.075	0.000	0.541	5.826	0.720	2.729	0.000
Jan 2014	11.870	0.000	0.000	0.000	0.000	11.870	0.000	0.121	0.270	0.400	0.100	0.000
Feb 2014	15.316	0.000	0.000	0.000	0.000	15.316	0.000	0.067	0.396	0.000	0.095	0.000
Mar 2014	18.734	0.000	0.000	0.000	0.000	18.734	0.000	0.067	0.320	0.200	0.107	0.000
Apr 2014	23.539	0.000	0.000	0.000	0.000	23.539	0.000	0.000	0.344	0.415	0.064	0.000
May 2014	11.327	0.000	0.000	0.000	0.000	11.327	0.000	0.000	0.371	0.000	0.130	0.000
Jun 2014	10.440	0.000	0.000	0.000	0.000	10.440	0.000	0.090	0.332	0.000	0.164	0.000
Jul 2014	2.103	0.000	0.000	0.000	0.000	2.103	0.000	0.099	0.544	0.200	0.131	0.000
Aug 2014	1.446	0.000	0.000	0.000	0.000	1.446	0.000	0.189	0.584	0.000	0.129	0.000
Sep 2014	1.980	0.000	0.000	0.000	0.000	1.980	0.000	0.225	0.284	0.000	0.099	0.000
Oct 2014	16.902	0.000	0.000	0.000	0.000	16.902	0.000	0.050	0.492	1.120	0.109	0.000
Nov 2014	27.687	0.000	0.000	0.000	0.000	27.687	0.000	0.140	0.352	0.000	0.083	0.000
Dec 2014	44.771	0.000	0.000	0.000	0.000	44.771	0.000	0.090	0.284	0.400	0.103	0.000
Sub-total	186.115	0.000	0.000	0.000	0.000	186.115	0.000	1.048	4.573	2.335	1.211	0.000
Total	321.699	0.000	0.605	0.000	0.064	321.029	12.800	1.985	15.714	3.055	4.827	6.804

Notes:

- 1 The performance targets are given below:
 - All excavated materials to be sorted for recovering the inert portion of C&D materials, e.g. hard rocks, soil and broken concrete, for reuse on the Site or disposal to designated outlets;
 - All metallic waste to be recovered for collection by recycling contractors;
 - All cardboard and paper packaging (for plant, equipment and materials) to be recovered, properly stockpiled in dry and covered condition to prevent cross contamination;
 - All chemical wastes to be collected and properly disposed of by specialist contractors; and
 - All demolition debris to be stored to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware as well as other fitting / materials that have established recycling outlets.
- 2 Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- 3 Broken concrete for recycling into aggregates.
- 4 The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 5 Density Assumption: 1.6(kg/l) for Public Fill and 0.9(kg/l) for General Refuse
- 6 Inert C&D Material was delivered to contract 1108A from 10-Dec-2012.
- 7 The quantity of paper/ cardboard packaging generated in January 2013 was updated by the Contractor in March 2013.
- 8 The quantity of general refuse generated in January 2013 was updated by the Contractor in March 2013.
- 9 The quantity of general refuse generated in March 2013 was updated by the Contractor in April 2013.
- 10 Chemical waste includes waste oil. It is assumed density of waste oil to be 0.8 kg/L.
- 11 The quantity of chemical waste generated in June 2013 was updated by the Contractor in August 2013.

Annex L

Investigation Reports

Investigation Report of Environmental Quality Limit Exceedance

Date	18 November 2014
Time	09:30-10:00; 10:00-10:30; 11:00-11:30; 11:30-12:00.
Monitoring Location	TKW-3-2 (B) Hing Fu Building
Parameter	Noise, L_{Aeq} (30mins)
Action / Limit Levels	Limit level 80 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	81.8 dB(A) (09:30-10:00); 83.3 dB(A) (10:00-10:30); 83.6 dB(A) (11:00-11:30) and 83.6 dB(A) (11:30-12:00).
Possible reason	<p>Based on the site record on 18 November 2014, the potential noise sources from the Project works included curtain grouting and setting up of chemical grout.</p> <p>The construction equipment used during the exceedance period included 1 drill rig.</p> <p>The above-mentioned construction works were continuously operating on 18 November (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Besides, concurrent CLP trench works directly below the CNM location was taking place. Noise from the trench works was a significant noise source as the works were close to the monitoring station. Noise from renovation works at Mini Bangkok Thai Food Restaurant should also be regarded as a significant noise source due to its close proximity to the monitoring station.</p> <p>Having considered the above, the exceedances recorded are considered unlikely to be project-related.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> Noise fabrics as barrier had been erected on the site hoarding. Noise fabrics had been provided for grouting plant. Noise barrier mat had been installed along site boundary of pipe piling works.

	<p>4. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.</p> <p>5. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>6. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 4-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	18 November 2014
Time	10:25-10:55 and 10:55-11:25.
Monitoring Location	MTW-12-3 (A) SKH Good Shepherd Primary School
Parameter	Noise, L_{Aeq} (30mins)
Action / Limit Levels	Limit level 80 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	81.3 dB(A) (10:25-10:55); 81.8 dB(A) (10:55-11:25).
Possible reason	<p>Based on the site record on 18 November 2014, the potential noise sources from the Project works included toe grouting works, roof slab construction and temperate drainage construction in W3 works area; tunnel eye grouting, BC cutter trench excavation and roof slab construction in W6 works area; TTMS preparation works in E3 works area; and D-wall construction, desanding works and guide wall construction/ demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 9 backhoes, 1 BC cutter; 2 mobile cranes and 2 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 18 November 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is

	<p>needed.</p> <p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 4-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	18 November 2014
Time	08:55-09:25; 09:25-09:55; 10:25-10:55; 10:55-11:25; 13:25-13:55; 13:55-14:25; 15:55-16:25; 16:25-16:55 and 16:55-17:25.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq}(30mins)$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	81.4 dB(A) (08:55-09:25); 79.9 dB(A) (09:25-09:55); 81.3 dB(A) (10:25-10:55); 81.8 dB(A) (10:55-11:25); 80.7 dB(A) (13:25-13:55); 79.8 dB(A) (13:55-14:25); 82.8 dB(A) (15:55-16:25); 80.1 dB(A) (16:25-16:55) and 80.3 dB(A) (16:55-17:25).
Possible reason	<p>Based on the site record on 18 November 2014, the potential noise sources from the Project works included toe grouting works, roof slab construction and temperate drainage construction in W3 works area; tunnel eye grouting, BC cutter trench excavation and roof slab construction in W6 works area; TTMS preparation works in E3 works area; and D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 9 backhoes, 1 BC cutter; 2 mobile cranes and 2 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 18 November 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> Noise fabrics as barrier had been erected on the site hoarding. Noise fabrics had been provided for BC cutters.

	<p>3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.</p> <p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 4-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	26 November 2014
Time	15:36-16:06; 16:06-16:36 and 16:36-17:06.
Monitoring Location	MTW-12-3 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq(30mins)}$
Action / Limit Levels	Limit level 80 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.1 dB(A) (15:36-16:06); 83.1 dB(A) (16:06-16:36) and 81.4 dB(A) (16:36-17:06).
Possible reason	<p>Based on the site record on 26 November 2014, the potential noise sources from the Project works included D-wall construction, roof slab construction, pre-drilling and sheet piling extraction in W3 works area; tunnel eye grouting and roof slab construction in W6 works area; and D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 5 backhoes, 1 BC cutter, 2 crawler cranes, 1 mobile crane, 3 drill rigs and 1 silent piler.</p> <p>The above-mentioned construction works were continuously operating on 26 November 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is

	<p>needed.</p> <p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 4-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	26 November 2014
Time	15:36-16:06 and 16:06-16:36.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq(30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.1 dB(A) (15:36-16:06); 83.1 dB(A) (16:06-16:36).
Possible reason	<p>Based on the site record on 26 November 2014, the potential noise sources from the Project works included D-wall construction, roof slab construction, pre-drilling and sheet piling extraction in W3 works area; tunnel eye grouting and roof slab construction in W6 works area; and D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 5 backhoes, 1 BC cutter, 2 crawler cranes, 1 mobile crane, 3 drill rigs and 1 silent piler.</p> <p>The above-mentioned construction works were continuously operating on 26 November 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 4-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	26 November 2014
Time	15:36-16:06; 16:06-16:36 and 16:36-17:06.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, L_{Aeq} (30mins)
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.1 dB(A) (15:36-16:06); 83.1 dB(A) (16:06-16:36) and 81.4 dB(A) (16:36-17:06).
Possible reason	<p>Based on the site record on 26 November 2014, the potential noise sources from the Project works included D-wall construction, roof slab construction, pre-drilling and sheet piling extraction in W3 works area; tunnel eye grouting and roof slab construction in W6 works area; and D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 5 backhoes, 1 BC cutter, 2 crawler cranes, 1 mobile crane, 3 drill rigs and 1 silent piler.</p> <p>The above-mentioned construction works were continuously operating on 26 November 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 4-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	1 December 2014
Time	10:18-10:48; 10:48-11:18 and 11:18-11:48.
Monitoring Location	MTW-12-3 (A) SKH Good Shepherd Primary School
Parameter	Noise, L_{Aeq} (30mins)
Action / Limit Levels	Limit level 80 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.8 dB(A) (10:18-10:48); 82.2 dB(A) (10:48-11:18) and 82.5 dB(A) (11:18-11:48).
Possible reason	<p>Based on the site record on 1 December 2014, the potential noise sources from the Project works included sheet piling, toe grouting, roof-slab construction, pumping test and pre-drilling works in W3 works area; tunnel eye grouting and roof slab construction in W6 works area; and D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 4 backhoes, 1 BC cutter, 2 crawler cranes, 3 drill rigs and 1 silent piler.</p> <p>The above-mentioned construction works were continuously operating on 1 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is

	<p>needed.</p> <p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 18-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	1 December 2014
Time	10:18-10:48; 10:48-11:18 and 11:18-11:48.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq(30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.8 dB(A) (10:18-10:48); 82.2 dB(A) (10:48-11:18) and 82.5 dB(A) (11:18-11:48).
Possible reason	<p>Based on the site record on 1 December 2014, the potential noise sources from the Project works included sheet piling, toe grouting, roof-slab construction, pumping test and pre-drilling works in W3 works area; tunnel eye grouting and roof slab construction in W6 works area; and D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 4 backhoes, 1 BC cutter, 2 crawler cranes, 3 drill rigs and 1 silent piler.</p> <p>The above-mentioned construction works were continuously operating on 1 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is

	<p>needed.</p> <p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 18-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	1 December 2014
Time	10:18-10:48; 10:48-11:18 and 11:18-11:48.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, L_{Aeq} (30mins)
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.8 dB(A) (10:18-10:48); 82.2 dB(A) (10:48-11:18) and 82.5 dB(A) (11:18-11:48).
Possible reason	<p>Based on the site record on 1 December 2014, the potential noise sources from the Project works included sheet piling, toe grouting, roof-slab construction, pumping test and pre-drilling works in W3 works area; tunnel eye grouting and roof slab construction in W6 works area; and D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 4 backhoes, 1 BC cutter, 2 crawler cranes, 3 drill rigs and 1 silent piler.</p> <p>The above-mentioned construction works were continuously operating on 1 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> Noise fabrics as barrier had been erected on the site hoarding. Noise fabrics had been provided for BC cutters. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
 Date 18-December-2014

Investigation Report of Environmental Quality Limit Exceedance

Date	16 December 2014
Time	9:55-10:25 and 10:25-10:55.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq}(30mins)$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	80.4 dB(A) (09:55-10:25) and 81.6 dB(A) (10:25-10:55).
Possible reason	<p>Based on the site record on 16 December 2014, the potential noise sources from the Project works included roof-slab construction and trench excavation in W3 works area; tunnel eye grouting, roof slab construction and drilling works in W6 works area; trial trench excavation in E3 works area; as well as D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 8 backhoes, 1 BC cutter, 2 mobile cranes and 2 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 16 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> Noise fabrics as barrier had been erected on the site hoarding. Noise fabrics had been provided for BC cutters. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 2-January-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	23 December 2014
Time	9:45-10:15 and 10:15-10:45.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, L_{Aeq} (30mins)
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.9 dB(A) (09:45-10:15) and 80.7 dB(A) (10:15-10:45).
Possible reason	<p>Based on the site record on 23 December 2014, the potential noise sources from the Project works included roof-slab construction and D-wall construction in W3 works area; roof slab construction and drilling and grouting works in W6 works area; formwork erection and trial trench excavation in E3 works area; as well as D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 6 backhoes, 1 BC cutter, 2 mobile cranes and 3 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 23 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 5-January-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	23 December 2014
Time	9:45-10:15 and 10:15-10:45.
Monitoring Location	MTW-12-3 (A) SKH Good Shepherd Primary School
Parameter	Noise, L_{Aeq} (30mins)
Action / Limit Levels	Limit level 80 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.9 dB(A) (09:45-10:15) and 80.7 dB(A) (10:15-10:45).
Possible reason	<p>Based on the site record on 23 December 2014, the potential noise sources from the Project works included roof slab construction and D-wall construction in W3 works area; roof slab construction and drilling and grouting works in W6 works area; formwork erection and trial trench excavation in E3 works area; as well as D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 6 backhoes, 1 BC cutter, 2 mobile cranes and 3 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 23 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> Noise fabrics as barrier had been erected on the site hoarding. Noise fabrics had been provided for BC cutters. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 5-January-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	27 December 2014
Time	9:13-9:43; 9:43-10:13; 10:13-10:43 and 10:43-11:13.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq}(30mins)$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	81.6 dB(A) (9:13-9:43); 81.1 dB(A) (9:43-10:13); 80.2 dB(A) (10:13-10:43) and 80.6 dB(A) (10:43-11:13).
Possible reason	<p>Based on the site record on 27 December 2014, the potential noise sources from the Project works included roof-slab construction and D-wall construction in W3 works area; roof slab construction and drilling and grouting works in W6 works area; formwork erection and trial trench excavation in E3 works area; as well as D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 7 backhoes, 1 BC cutter, 2 mobile cranes and 3 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 27 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> Noise fabrics as barrier had been erected on the site hoarding. Noise fabrics had been provided for BC cutters. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 5-January-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	27 December 2014
Time	9:13-9:43 and 9:43-10:13.
Monitoring Location	MTW-12-3 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq(30mins)}$
Action / Limit Levels	Limit level 80 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	81.6 dB(A) (9:13-9:43); 81.1 dB(A) (9:43-10:13).
Possible reason	<p>Based on the site record on 27 December 2014, the potential noise sources from the Project works included roof-slab construction and D-wall construction in W3 works area; roof slab construction and drilling and grouting works in W6 works area; formwork erection and trial trench excavation in E3 works area; as well as D-wall construction, desanding works and guide wall construction/demolition along MTW Road.</p> <p>The construction equipment used during the exceedance period included 7 backhoes, 1 BC cutter, 2 mobile cranes and 3 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 27 December 2014 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> 1. Noise fabrics as barrier had been erected on the site hoarding. 2. Noise fabrics had been provided for BC cutters. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	<p>4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.</p> <p>5. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures.</p> <p>The Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to minimise the noise generation as far as possible and avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 5-January-2015

Annex M

Environmental Complaint,
Environmental Summon
and Prosecution

Annex M Environmental Complaint, Environmental Summon and Prosecution Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
September 2012	0	0
October 2012	0	0
November 2012	0	0
December 2012	0	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
June 2013	0	0
July 2013	0	0
August 2013	0	0
September 2013	0	0
October 2013	0	0
November 2013	0	0
December 2013	0	0

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
January 2014	0	0
February 2014	0	0
March 2014	0	0
April 2014	0	0
May 2014	0	0
June 2014	0	0
July 2014	0	0
August 2014	0	0
September 2014	1	0
October 2014	0	0
November 2014	0	0
December 2014	0	0
Overall Total	1	0

Appendix C

**25th EM&A Report for Works Contract 1101 –
Ma On Shan Line Modification Works**

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section**

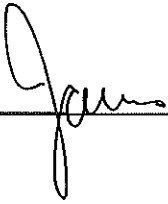
Monthly EM&A Report

[Period from 1 to 31 December 2014]

Works Contract 1101

Ma On Shan Modification Works

(January 2015)

Certified by: James Choi 

Position: Environmental Team Leader

Date: 14 January 2015

SCL Contract No. 1101

Ma On Shan Line Modification Works

Monthly EM&A Report (SCL) (December 2014)

for

Sun Fook Kong Joint Venture

Prepared By	Checked By	Approved for Issue
F So <i>Sai</i>	A Lee <i>AL</i>	J Choi <i>JChoi</i>
Version	0	Date
		3 January 2015

The information contained in this report is, to the best of our knowledge, correct at the time of printing. The interpretation and recommendations in the report are based on our experience, using reasonable professional skill and judgment, and based upon the information that was available to us. These interpretations and recommendations are not necessarily relevant to any aspect outside the restricted requirements of the brief. This report has been prepared for the sole and specific use of our client and ANWR Consulting Limited accepts no responsibility for its use by others.

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Appendix C	Organisation Chart of Environmental Management
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Appendix E	Waste Flow Table
Appendix F	Mitigation Measures Implementation Schedule for Construction Stage
Appendix G	Environmental Complaint Log

EXECUTIVE SUMMARY

Sun Fook Kong Joint Venture (SFKJV) was awarded the Shatin to Central Link (SCL) Contract No. 1101 Ma On Shan Line (MOL) Modification Works (this Project). ANewR Consulting Limited (ANewR) was commissioned by SFKJV as the Environmental Team (ET) for undertaking the Environmental Monitoring and Audit (EM&A) works during the construction period. The works areas under this Project covered by Environmental Permit (EP-438/2012/H) for the SCL Tai Wai to Hung Hom Section (TAW-HUH) included works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard of which EM&A programme according to the EM&A Manual of SCL (TAW-HUH) should be implemented.

Construction Activities

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

Air Quality and Noise Monitoring

According to the EM&A Manual of SCL (TAW-HUH), there is no designated monitoring stations for work sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard.

Environmental Auditing

Weekly site inspections were carried out by ET to ensure proper implementation of environmental mitigation measures and compliance with environmental legislation. During the reporting month, a total of 5 site inspections were conducted and the joint site inspection with IEC was conducted on 23 December 2014. All observations, which were recorded in inspection checklist and together with the ET's recommendations, were passed to the Contractor and ER for necessary corrective action.

Waste Disposal

No general refuse was disposed in the reporting month. No inert C&D materials were disposed in the reporting month. No chemical waste was disposed in the reporting month. 13.00 m³ non-inert C&D materials were recycled in the reporting month.

Complaint Log

No environmental complaint was received during the reporting month.

Notification of Summon and Successful Prosecution

No Notification of Summons or successful prosecution was received during the reporting month.

Future Key Issues

No construction activity is scheduled in the upcoming months.

Reporting Changes

No reporting change was observed during the reporting month.

1. INTRODUCTION

1.1 Background

The Shatin to Central Link - Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an extension of the Ma On Shan Line (MOL) and is approximately 11 km long. It links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts and this Works Contract 1101 covers the works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard of which EM&A programme according to the EM&A Manual of SCL (TAW-HUH) should be implemented.

ANewR Consulting Limited (ANewR) was commissioned by Sun Fook Kong Joint Venture (SFKJV), the main contractor as the Environmental Team (ET) during the construction phase of SCL(TAW-HUH) for Contract No. 1101.

1.2 Description of the Construction Works

The major works of Contract No. 1101 includes construction of noise cover over the viaduct at Tai Wai Mei Tin Road. The works was completed in September 2013.

The works areas including works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard are shown in *Appendix A* and the updated construction programme of the construction works is shown in *Appendix B*.

1.3 Purpose of this Report

This is the 25th monthly EM&A report summarising audit findings of the EM&A program carried out according to EM&A Manual for SCL (TAW-HUH) by ET during the reporting month in December 2014.

As there is no designated air quality, noise and water quality monitoring stations for works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard, this report mainly summarises the waste management details, site inspections findings, environmental complaint records and investigations, and any notification of summons, prosecutions and corrective actions in the reporting month. This monthly EM&A Report is organised as follows:

- Section 1 Introduction
- Section 2 Project Information
- Section 3 Waste Management
- Section 4 Site Inspection
- Section 5 Environmental Complaint
- Section 6 Summary of Notification of Summons, Successful Prosecutions and Corrective Actions
- Section 7 Future Key Issues

2. PROJECT INFORMATION

2.1 Project Organization and Management Structure

The organization chart, contact detail and lines of communication with respect to the environmental management are shown in *Appendix C*.

2.2 Construction Activities

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

Offsite works areas at To Shek Storage Yard and Shek Mun Storage Yard were only used for storage of construction materials and no construction activities were carried out.

2.3 Status of License, Permit and Submissions under Environmental Protection Requirements

A summary of relevant permits and licences related to environmental protection for the Construction Works and submission under EP-438/2012/H for contract no. 1101 is given in *Table 1* and *Table 2* in *Appendix D*.

3. WASTE MANAGEMENT

The status of waste management in the reporting month is summarized in the following table. Details of the quantities of waste materials generated during the reporting month are shown in the waste flow table given in *Appendix E*.

Table 3.1 Waste Generated in the Reporting Month

Waste Type	Quantity this month	Cumulative-to-Date
Inert C&D materials disposed	0	149.50 m ³
Inert C&D materials recycled	0	0
Non-inert C&D materials disposed	0	0
Non-inert C&D materials recycled	13.00 m ³	68.00 m ³
General waste disposed of to NENT Landfill	0	286.25 m ³
Chemical waste disposed of to CWTC or collected by licenced collector	0	1400.00 kg

4. SITE INSPECTION

Weekly site inspections were carried out at the sites on 4, 10, 17, 23 and 31 December 2014. The joint site inspection with IEC was carried out on 23 December 2014. All observations together with the appropriate recommended mitigation measures where necessary were recorded in the site inspection checklists that were passed to the Contractor. Major environmental deficiencies observed during the site inspection and recommendations made by the ET are given in **Table 4.1**.

Table 4.1 Summary of Major Environmental Deficiencies in the Reporting Month

Category	Date	ET's Observations and Recommendations	Follow-up Action
Waste Management	17 December 2014	At To Shek Storage Yard – Some drums of paint without drip tray were observed. The contractor was advised to provide drip tray for those chemical containers. (Remark was raised on 17.12.2014)	At To Shek Storage Yard – Drip tray was provided for drums of paint on 23.12.2014. Last observation raised on 17.12.2014 closed.
	17 December 2014	At To Shek Storage Yard – Numerous empty drums of paint were observed. The contractor should provide chemical storage area for empty drums. (Remark was raised on 17.12.2014)	At To Shek Storage Yard – Numerous of empty drums of paint were removed on 23.12.2014. Last observation raised on 17.12.2014 closed.
	17 December 2014	At To Shek Storage Yard – The contractor was reminded to clean the general waste on the ground of work area. (Reminder was raised on 17.12.2014)	At To Shek Storage Yard – General waste on the ground was cleaned on 23.12.2014. Last reminder raised on 17.12.2014 closed.
Landscape & Visual	17 December 2014	At To Shek Storage Yard – The contractor was reminder to maintain proper fencing for retained trees. (Reminder was raised on 17.12.2014)	At To Shek Storage Yard – Proper fencing for retained trees was provided on 23.12.2014. Last reminder raised on 17.12.2014 closed.

During site inspections in the reporting month, no non-conformance of implementation of environmental mitigation measures was identified. All relevant environmental mitigation measures for

construction stages as stated in the EM&A Manual of SCL (TAW-HUH) was carried out properly in the reporting month. The mitigation measures implementation schedule is shown in **Appendix F**.

5. ENVIRONMENTAL COMPLAINT

No complaint was received during the reporting month.

A log of environmental complaints is shown in *Appendix G*. Cumulative statistic of environmental complaints is shown in *Table 5.1*.

Table 5.1 Cumulative Statistic of Environmental Complaint

Complaint Received in the Reporting Month	Cumulative Number of Complaint
0	0

6. SUMMARY OF NOTIFICATION OF SUMMONS, SUCCESSFUL PROSECUTIONS AND CORRECTIVE ACTIONS

Neither Notification of Summons nor successful prosecution was received by the Contractor during the reporting month.

7. FUTURE KEY ISSUES

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

8. CONCLUSION

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

According to the EM&A Manual of SCL (TAW-HUH), there is no designated monitoring stations for work sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard.

No environmental complaint was recorded in the reporting month.

No notification of summons and successful prosecution was received in the reporting month.

5 numbers of environmental site inspections were carried out in December 2014.

Recommendations for follow-up actions were given to the Contractor for the deficiencies identified during the site audit as following:

Waste Management

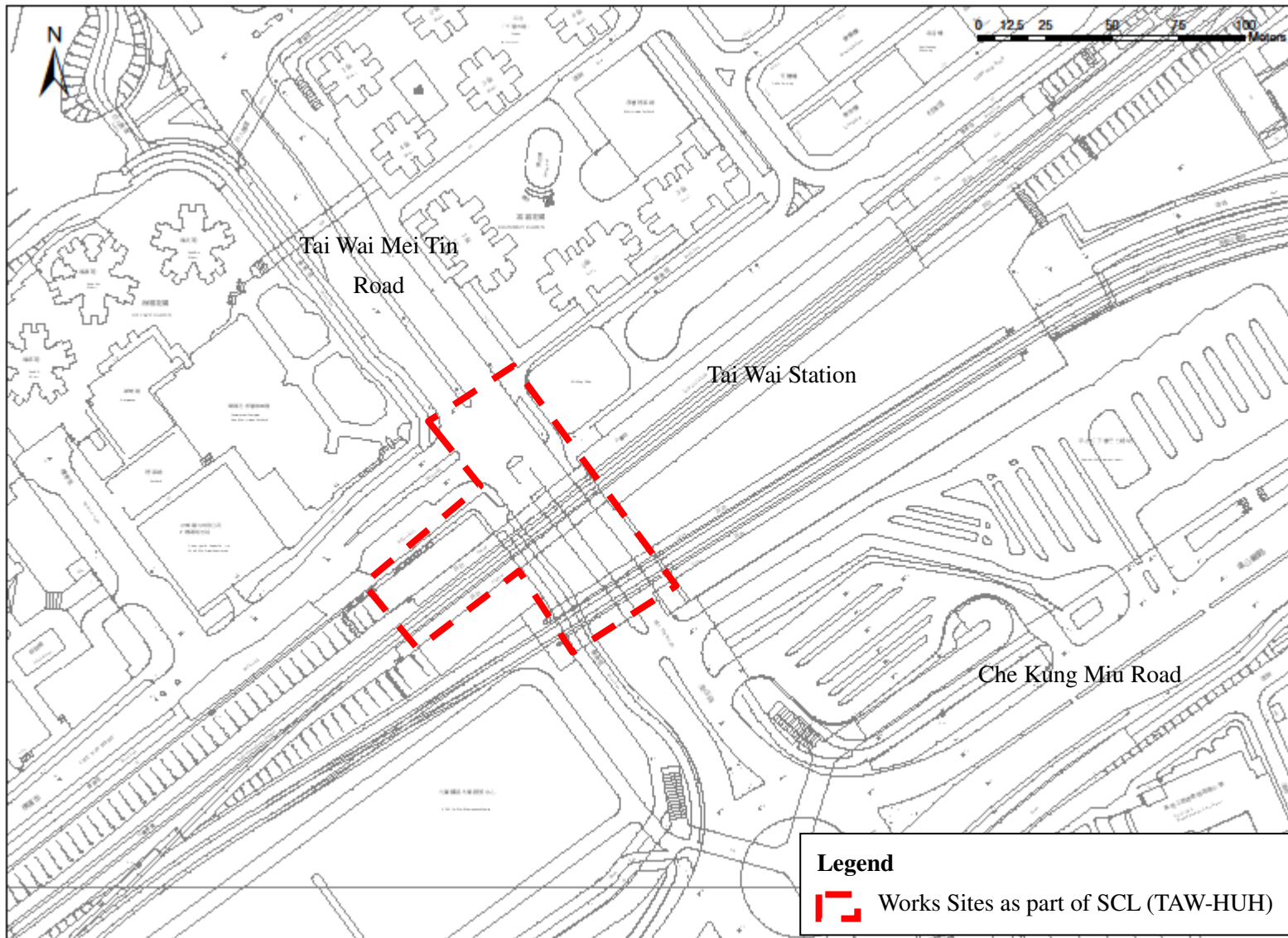
- Implement effective measures to enhance waste management.
- Implement proper mitigation measures to prevent Oil Leakage.

Ecology

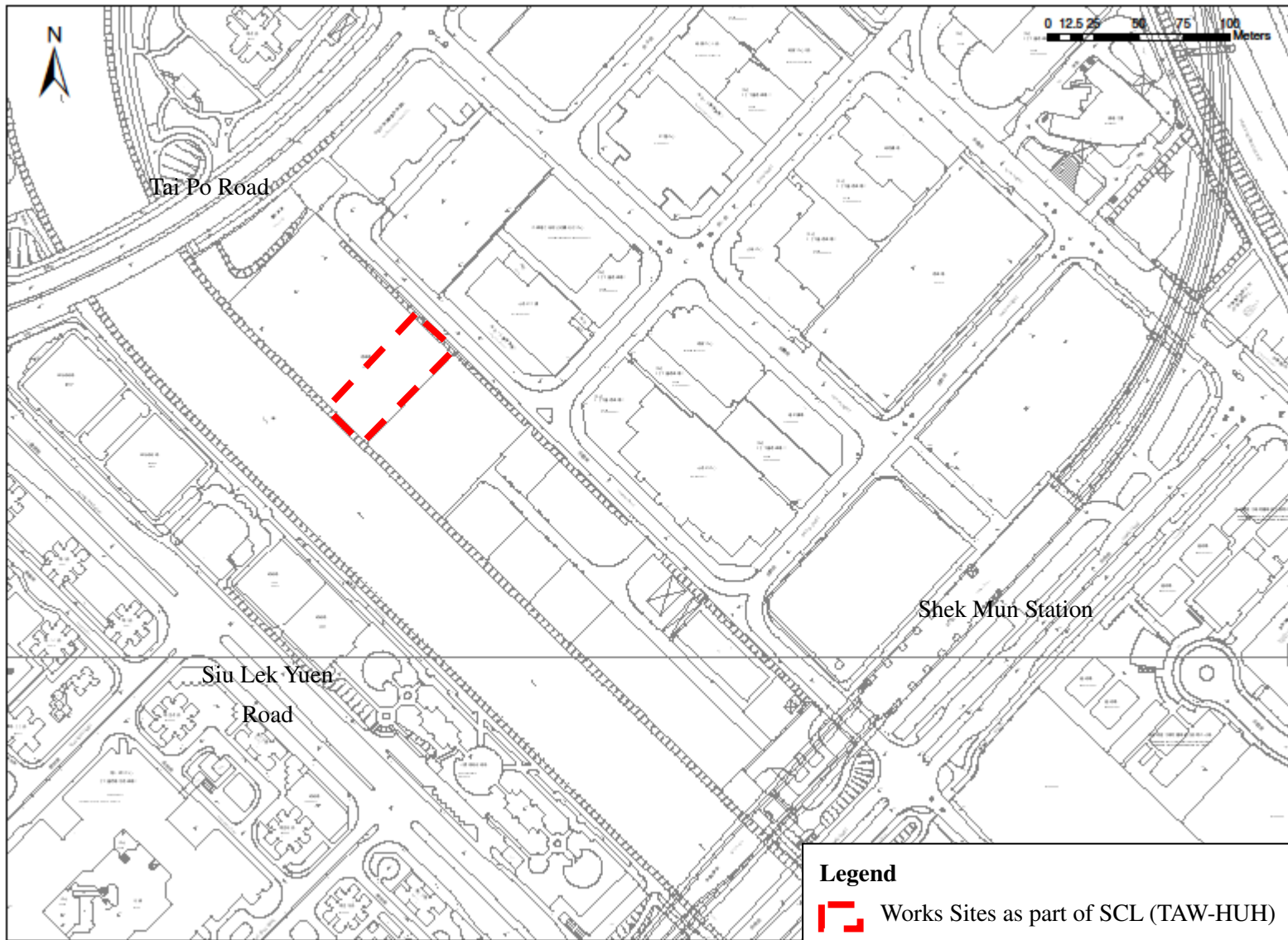
- Provide effective tree protection zone for retained trees.


APPENDIX A

LOCATION PLAN OF WORKS AREA AND STORAGE YARD

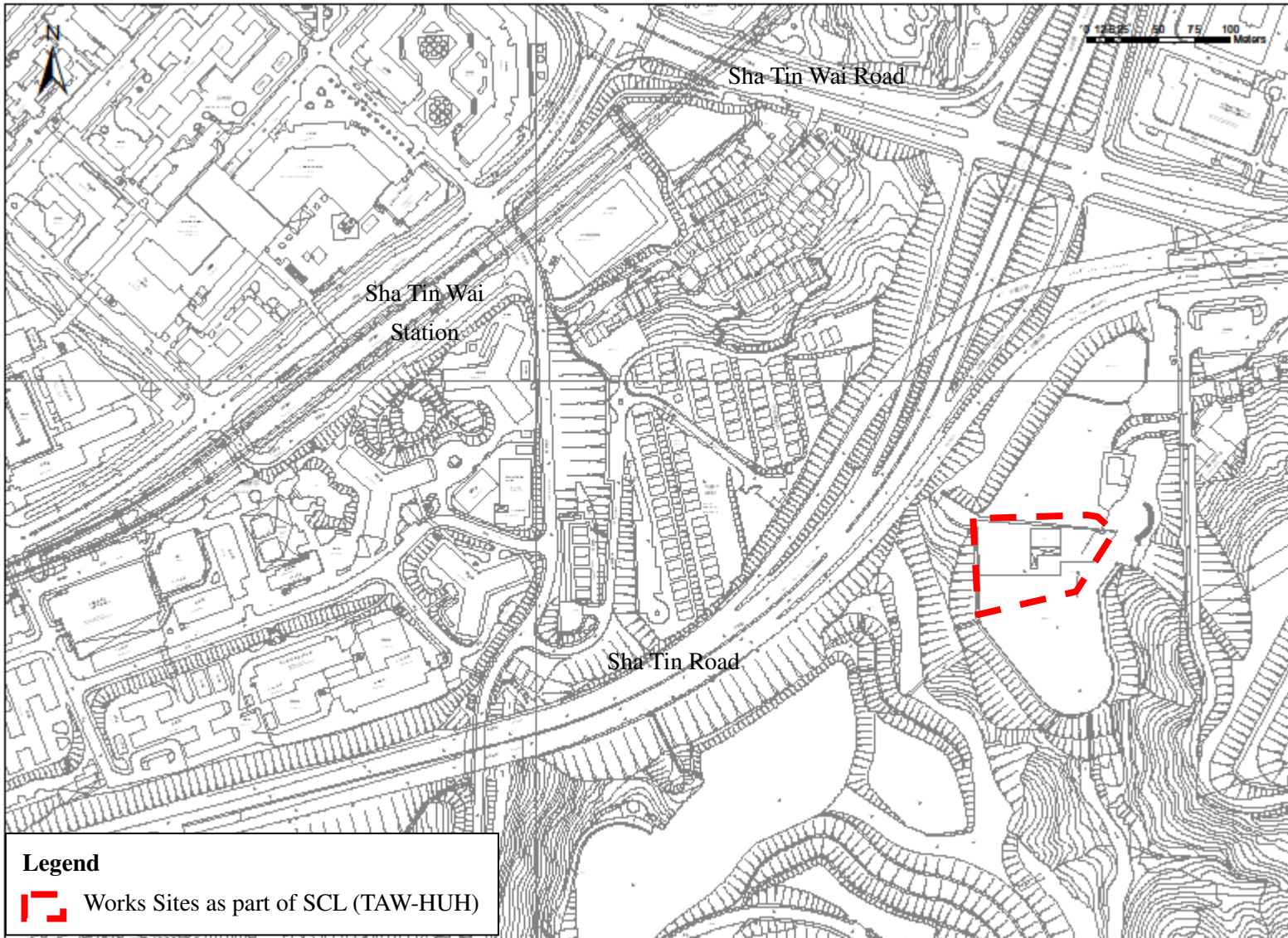


SCALE	N.T.S.	DATE	4 June 2013
CHECK	LYMA	DRAWN	YSWE
Ref.	FIGURE NO.		REV
SCL Contract No.1101	App A (Sheet 1 of 3)		1



Legend
 Works Sites as part of SCL (TAW-HUH)

SCALE	N.T.S.	DATE	4 June 2013
CHECK	LYMA	DRAWN	YSWE
Ref.	FIGURE NO.		REV
SCL Contract No.1101	App A (Sheet 2 of 3)		1



SCALE	N.T.S.	DATE	4 June 2013
CHECK	LYMA	DRAWN	YSWE
Ref.	FIGURE NO.		REV
SCL Contract No.1101	App A (Sheet 3 of 3)		1

APPENDIX B

UPDATED CONSTRUCTION PROGRAMME

Construction Programme (SCL)

Work site	Activities	2012				2013												2014												2015												2016						
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul												
Tai Wai Mei Tin Road	Noise Barrier Installation Work			I	I	I	I	I	I	I	I	I	I																																			

Note:

1. Abbreviation:

I Engineering Possession (2:00 to 4:00)

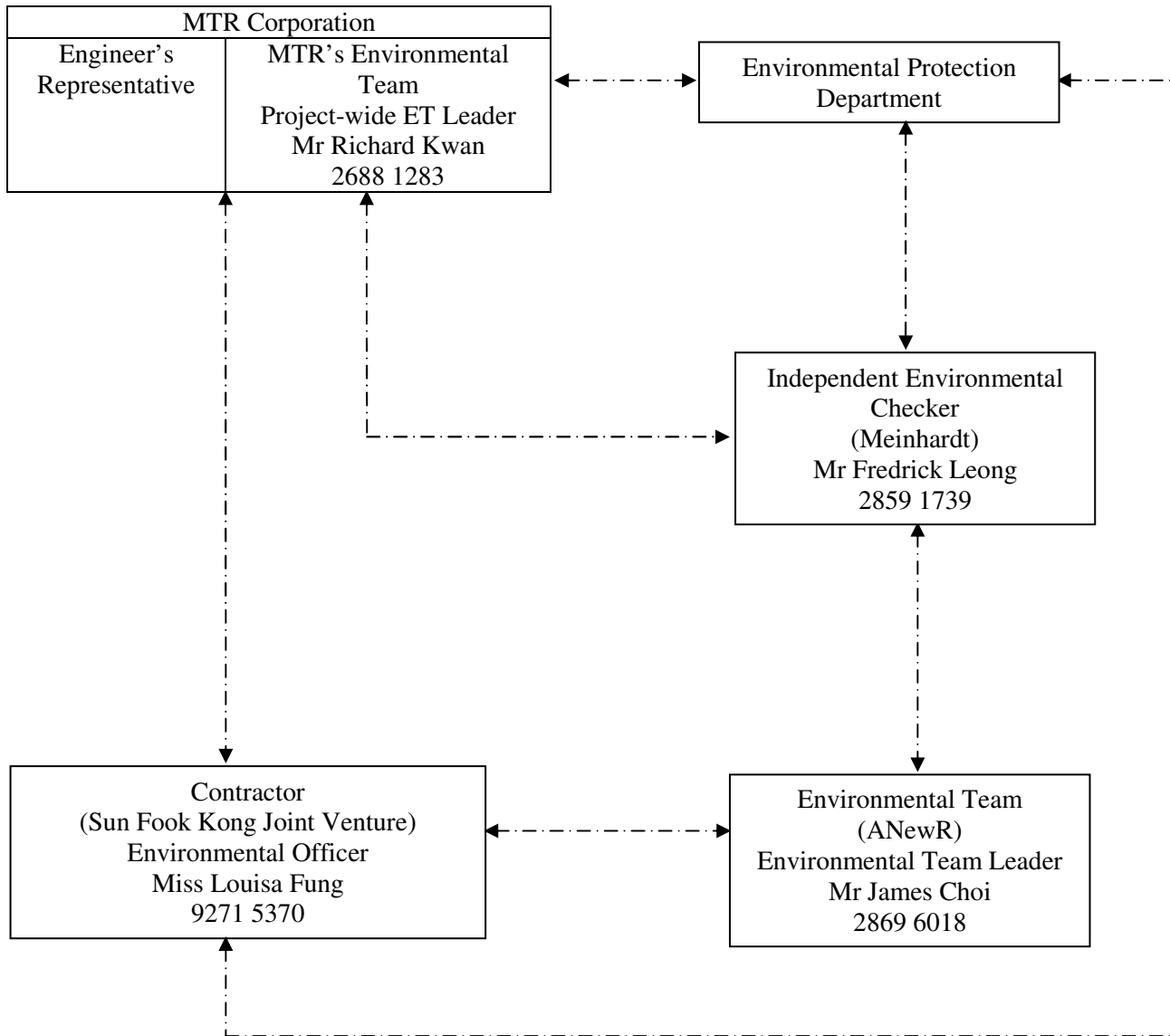
2 No construction activity had been carried out at To Shek Storage Yard and Shek Mun Storage Yard.

APPENDIX C

ORGANISATION CHART OF ENVIRONMENTAL MANAGEMENT

Appendix C Organisation Chart of Environmental Management

Project Organization Chart



----- Line of communication

APPENDIX D

STATUS OF LICENSE, PERMIT AND SUBMISSIONS UNDER ENVIRONMENTAL PROTECTION REQUIREMENTS

Appendix D Status of License, Permits and Submission under Environmental Protection Requirements

Table 1 Environmental Management Related Licenses and Permits

Subject	Reference No.	Application Date	Issued Date	Effective Date	Expired Date
Environmental Permit					
Shatin to Central Link (SCL) - Tai Wai to Hung Hom Section	EP-438/2012/H	26 August 2014	10 September 2014	10 September 2014	N/A
Construction Noise Permit					
Tai Wai Station (At Tai Wai Mei Tin Road)	GW-RN0379-14	10 June 2014	27 June 2014	18 August 2014	17 February 2015
To Shek Storage Yard	GW-RN0508-14	7 August 2014	25 August 2014	27 August 2014	26 February 2015
Chemical Waste Producer					
Tai Wai Station (At Tai Wai Mei Tin Road)	5213-757-S3683-02	6 September 2012	8 October 2012	8 October 2012	N/A
To Shek Storage Yard	5213-759-S3683-08	10 January 2013	14 February 2013	14 February 2013	N/A
Wastewater Discharge Licence					
Tai Wai Station (At Tai Wai Mei Tin Road)	WT00014550-2012	5 November 2012	19 November 2012	19 November 2012	30 November 2017
To Shek Storage Yard	WT00014628-2012	12 November 2012	12 December 2012	12 December 2012	31 December 2017

Note: Only include those valid or under application; “N/A” for non-applicable item(s).

Table 2 Summary of Submission Status under EP-438/2012/H

EP Condition	Submission	Date of Submission
Condition 3.4	Monthly EM&A Report (November 2014)	12 December 2014

APPENDIX E

WASTE FLOW TABLE

Waste Flow Table for 2012 (year) (in cu. meter) for SCL

Month	Total Quantity Generated	Actual Quantities of Inert C&D Materials Generated Monthly				Actual Quantities of Other C&D Wastes Generated Monthly		
		Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste (in kg)
January								
February								
March								
April								
May								
June								
Sub-total								
July								
August								
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
November	13.00	0.00	0.00	0.00	13.00	0.00	26.00	0.00
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Total	13.00	0.00	0.00	0.00	13.00	0.00	26.00	0.00

- Remark: - Waste Generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Yard and Tai Shui Hang Storage Yard.
 - 1 full loaded dumping truck is assumed equivalent to 6.5 m³ by volume from Archsd D/OL03/09.002
 - Inert waste is disposed of at Tseung Kwan O Area 137 Public Fill Bank while non-inert waste is disposed of at North East New Territories Landfill.

Waste Flow Table for 2013 (year) (in cu. meter) for SCL

Month	Total Quantity Generated	Actual Quantities of Inert C&D Materials Generated Monthly				Actual Quantities of Other C&D Wastes Generated Monthly		
		Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste (in kg)
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
February	0.00	0.00	0.00	0.00	0.00	0.00	3.50	
March	0.00	0.00	0.00	0.00	0.00	0.00	3.25	
April	0.00	0.00	0.00	0.00	0.00	3.00	16.25	
May	0.00	0.00	0.00	0.00	0.00	0.00	35.75	
June	0.00	0.00	0.00	0.00	0.00	0.00	22.75	
Sub-total	13.00	0.00	0.00	0.00	13.00	3.00	107.50	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	6.50	
August	0.00	0.00	0.00	0.00	0.00	0.00	3.25	
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
October	0.00	0.00	0.00	0.00	0.00	0.00	58.50	
November	19.50	0.00	0.00	0.00	19.50	0.00	48.75	
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Cumulative Total	32.50	0.00	0.00	0.00	32.50	3.00	224.50	0.00

- Remark: - Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Yard and Tai Shui Hang Storage Yard from January 2013 – April 2013.
- Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard and To Shek Storage Yard only from May 2013 onwards
 - Tai Shui Hang Storage Yard has been handed back to land owner on 15 April 2013
 - 1 full loaded dumping truck is assumed equivalent to 6.5 m³ by volume from Archsd D/OL03/09.002
 - Inert waste is disposed of at Tseung Kwan O Area 137 Public Fill Bank while non-inert waste is disposed of at North East New Territories Landfill.

Waste Flow Table for 2014 (year) (in cu. meter) for SCL

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Other C&D Wastes Generated Monthly		
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste (in kg)
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	0.00	0.00	0.00	0.00	0.00	0.00	0.00	120.00
April	0.00	0.00	0.00	0.00	0.00	0.00	0.00	120.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.00	0.00	0.00	0.00	0.00	0.00	6.50	270.00
Sub-total	32.50	0.00	0.00	0.00	32.50	3.00	231.00	510.00
July	19.50	0.00	0.00	0.00	19.50	0.00	19.50	0.00
August	71.50	0.00	0.00	0.00	71.50	26.00	6.50	500.00
September	6.50	0.00	0.00	0.00	6.50	19.50	0.00	345.00
October	6.50	0.00	0.00	0.00	6.50	0.00	29.25	45.00
November	13.00	0.00	0.00	0.00	13.00	6.50	0.00	0.00
December	0.00	0.00	0.00	0.00	0.00	13.00	0.00	0.00
Cumulative Total	149.50	0.00	0.00	0.00	149.50	68.00	286.25	1400.00

- Remark: - Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Yard and Tai Shui Hang Storage Yard from January 2013 – April 2013.
- Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard and To Shek Storage Yard only from May 2013 onwards
- Tai Shui Hang Storage Yard has been handed back to land owner on 15 April 2013
- 1 full loaded dumping truck is assumed equivalent to 6.5 m³ by volume from Archsd D/OL03/09.002
- Inert waste is disposed of at Tseung Kwan O Area 137 Public Fill Bank while non-inert waste is disposed of at North East New Territories Landfill.

APPENDIX F

MITIGATION MEASURES IMPLEMENTATION SCHEDULE FOR CONSTRUCTION STAGE

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
Ecology (Construction Phase)								
S5.7	E5	<p><u>Good Site Practices</u></p> <p>Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses in particular the Tei Lung Hau stream; Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream; Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. Tei Lung Hau Stream and the adjoining secondary woodland, tunnel on hill at top of slope stabilization works; 	Minimise ecological impacts	Contractor	All construction sites	During construction	• ProPECC PN 1/94	^ * ^

Remarks:

^ Implement mitigation measure in the reporting month

N/A Not Applicable in the reporting month

x Non-compliance of mitigation measure

* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> No on-site burning of waste; Waste and refuse in appropriate receptacles. 						^ *
Landscape & Visual (Construction Phase)								
S6.9.3	LV1	<p>The following good site practices and measures for minimization and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. <p><u>Protection of Retained Trees</u></p>	Minimize visual & landscape impact	Contractor	Within Project Site	Contraction stage	TM-EIAO	N/A *

Remarks:

^ Implement mitigation measure in the reporting month

N/A Not Applicable in the reporting month

x Non-compliance of mitigation measure

* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites. 						^
S6.12	LV2	<ul style="list-style-type: none"> <u>Decorative Hoarding</u> Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. <u>Management of facilities on work sites</u> To provide proper management of the facilities on the sites, give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. <u>Tree Transplanting</u> Trees of high to medium survival rate would be affected 	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and construction stage	EIAO-TM ETWB TCW 2/2004 ETWB TCW 3/2006	^ ^ N/A

Remarks:

^ Implement mitigation measure in the reporting month

N/A Not Applicable in the reporting month

x Non-compliance of mitigation measure

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.						
Construction Dust Impact								
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	^
S7.6.5	D2	<ul style="list-style-type: none"> • Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area and once per 1.5 hour at those in the Tai Wai area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m² to achieve the dust removal efficiency 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	^

Remarks:

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
S7.6.5	D3	<ul style="list-style-type: none"> Proper watering of exposed spoil should be undertaken throughout the construction phase; Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Where practices, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> APCO To control the dust impact to meet HKAQO and TM-EIA criteria 	<p>^</p> <p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p>

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		<ul style="list-style-type: none"> When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; Surface where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; Any skip hoist for material transport should be totally 						N/A
								^
								N/A
								N/A
								N/A
								N/A

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		<p>enclosed by impervious sheeting;</p> <ul style="list-style-type: none"> • Every stock of more than 20 bags of cement or by pulverized 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; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 						<p>^</p> <p>^</p> <p>N/A</p> <p>^</p>
Construction Noise (Airborne)								
S8.3.6	N1	<p>Implement the following good site practices:</p> <ul style="list-style-type: none"> • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; 	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^

Remarks:

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; Plant down to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; Mobile plant should be sited as far away from NSRs as possible and practicable; Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities. 						^ ^ N/A ^ ^
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoarding shall be properly maintained throughout the construction period.	Reduce the construction noise level at low-level zone of NSRs through partial screening	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	N/A

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S8.3.6	N4	Use “Quiet plants”	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N5	Sequencing operation of construction plants where practicable	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> <ul style="list-style-type: none"> At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by 	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	^

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		<p>the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilities the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediments/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5m³/s the basin would be 150m³. The detailed design of the sand/silt traps shall be undertaken by the constructor prior to the commencement of construction. All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surface should be covered by tarpaulin or other means. 						<p>^</p> <p>^</p> <p>^</p>

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		<ul style="list-style-type: none"> The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or 						^
								^
								^
								^

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>debris into any drainage system.</p> <ul style="list-style-type: none"> Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 or ProPECC PN 1/94. Particular attention should be paid to the control of silt surface runoff during storm events, especially for areas located near steep slopes. All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads 						<p>^</p> <p>^</p> <p>^</p>

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		<p>and drains.</p> <ul style="list-style-type: none"> Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. Adopt best management practices. 						<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
S10.7.1	W3	<p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor 	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-water 	^

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N/A Not Applicable in the reporting month * Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.						
S10.7.1	W7	<p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> All the tanks, containers, storage area should be bunded and the location should be locked as far as possible from the sensitive watercourse and stormwater drains. The Contractor should register as a chemical waste produce if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. Disposal of chemical waste should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	<p>*</p> <p>^</p> <p>^</p>
Waste Management (Construction Waste)								
S11.4.1.1	WM1	<p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke roke should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them 	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> DEVB TC(W) No.6/2010 	^

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Apilte Dyke rock, etc should also be explored.						
S11.5.1	WM2	<u>Construction and Demolition Material</u> <ul style="list-style-type: none"> Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; Carry out on-site sorting; Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; Adopt “Selective Demolition” technique to demolish the existing structures and facilities with a view to 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No.19/2005 	<p>N/A</p> <p>^</p> <p>N/A</p> <p>N/A</p>

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		<p>recovering broken concrete effectively for recycling purpose, where possible;</p> <ul style="list-style-type: none"> Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documents and verified; and Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction; In addition, disposal of the C&D materials onto ant sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation. 						<p>^</p> <p>^</p> <p>^</p>
S11.5.1	WM3	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No.19/2005 	N/A

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		<ul style="list-style-type: none"> The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 						N/A
S11.5.1	WM4	<u>General Refuse</u> <ul style="list-style-type: none"> General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labeled bins for their deposit should be provided if feasible. Office wastes can be reduced through the recycling of 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance 	<p>*</p> <p>*</p> <p>N/A</p> <p>^</p>

Remarks:

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		paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.						
S11.5.1	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	<p>*</p> <p>^</p> <p>*</p>

Remarks:

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		<p>incompatible materials are adequately separated;</p> <ul style="list-style-type: none"> Disposal of chemical waste should be via a licensed waste collector, be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD. 						^
EM&A Project								
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	MTR Corporation	All construction sites	Construction Stage	<ul style="list-style-type: none"> EIAO Guidance Note No.4/2010 TM-EIAO 	^
S14.2-14.4	EM2	<ol style="list-style-type: none"> An Environmental Team needs to be employed as per the EM&A Manual. Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with. 	Perform environmental monitoring & auditing	MTR Corporation/ Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> EIAO Guidance Note No. 4/2010 TM-EIAO 	^

Remarks:

^ Implement mitigation measure in the reporting month

N/A Not Applicable in the reporting month

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* Not satisfactory but rectified by the contractor

APPENDIX G

ENVIRONMENTAL COMPLAINT LOG

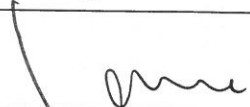
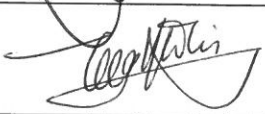
Appendix G Environmental Complaint Log

Complaint Log No.	Name of Complainant	Date Complaint Received	Complaint Date	Complaint Location	Details of Complaint	Date Complaint Received by ET	ET's Investigation Date	Investigation/Mitigation Measures	Validity To Project
Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

Appendix D

**24th EM&A Report for Works Contract 1111 –
Hung Hom North Approach Tunnel**

Gammon- Kaden SCL 1111 Joint Venture**Shatin to Central Link -
Tai Wai to Hung Hom Section and
Mong Kok East
to Hung Hom Section****Works Contract 1111 -
Hung Hom North Approach Tunnels****Monthly EM&A Report for
December 2014****January 2015**

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EXECUTIVE SUMMARY

Shatin to Central Link Contract 1111 – Hung Hom North Approach Tunnels (hereafter called “the Project”) covers part of the construction of the Shatin to Central Link (SCL) which aimed to convey a total of 17km extension of the existing Ma On Shan Line (MOL) through east Kowloon to West Rail Line and also East Rail Line (EAL) through Hung Hom across the harbour to Admiralty Station (ADM). The Project covers construction activities at Mong Kok Freight Terminal and part of the construction activities located at Hung Hom Area for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS).

The EM&A programme commenced in January 2013. The impact EM&A for the Project includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 31 December 2014. As informed by the Contractor, major activities in the reporting period were:

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, cable detection, road diversion, excavation lateral support
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, temporary bridge, scaffolding platform,
- Trimming of retaining wall, tie back installation, foul water diversion,
- Removal of pipe, demolition of drawpit, dismantling of scaffolding walkway,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level of 24-hour TSP monitoring was recorded at the monitoring location in the reporting month.

Breaches of Action and Limit Levels for Noise

Regular Noise Monitoring

No Action Level exceedance was recorded since no noise related complaint during 0700 to 1900 hours on normal weekdays was received in the reporting month.

No exceedance of Limit Level of noise was recorded in the reporting month.

Continuous Noise Monitoring

During the reporting month, continuous noise monitoring is only required at NM2 according to the schedule presented in CNMP.

No exceedance of Action and Limit Level of continuous noise monitoring was recorded at the monitoring location in the reporting month

Complaint, Notification of Summons and Successful Prosecution

No environmental complaint and no notification of summons and successful prosecution were received in the reporting month.

Future Key Issues

Key issues to be considered in the coming month included:

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, cable detection, road diversion, excavation lateral support
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, temporary bridge, scaffolding platform,
- Trimming of retaining wall, tie back installation, installation of temporary support for OB2, modification work for OB2, lifting of concrete blocks, preparation work for noise enclosure,
- Overhead line demolition and erection, removal of pipe, demolition of drawpit, foul water diversion, demolition of stair case,
- Reprovisioning of overhead line portal, dismantling of scaffolding walkway,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise and waste management.

1 INTRODUCTION

Gammon-Kaden SCL1111 Joint Venture (GKSCLJV) was commissioned by MTR as the Civil Contractor for Works Contract 1111. AECOM Asia Company Limited (AECOM) was appointed by GKSCLJV as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Project.

1.1 Purpose of the Report

1.1.1 This is the sixteenth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 to 31 December 2014.

1.2 Report Structure

1.2.1 This monthly EM&A Report is organised as follows:

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Environmental Monitoring Requirement
- Section 4: Implementation Status of Environmental Mitigation Measures
- Section 5: Monitoring Results
- Section 6: Environmental Site Inspection
- Section 7: Environmental Non-conformance
- Section 8: Future Key Issues
- Section 9: Conclusions and Recommendation

2 PROJECT INFORMATION

2.1 Background

- 2.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).
- 2.1.2 The Environmental Impact Assessment (EIA) Reports for SCL – Tai Wai to Hung Hom Section [SCL (TAW-HUH)] (Register No.: AEIAR-167/2012), SCL – Mong Kok East to Hung Hom Section [SCL (MKK-HUH)] (Register No.: AEIAR-165/2012) and SCL - Stabling Sidings at Hung Hom Freight Yard [SCL (HHS)] (Register No.: AEIAR-164/2012) were approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Reports, two Environmental Permits (EPs) were granted on 22 March 2012, one covers SCL (TAW-HUH) and SCL (HHS)(EP No: EP-438/2012) and the other covers SCL (MKK-HUH) and SCL (HHS) (EP No.: EP-437/2012), for their construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-438/2012 and the latest Environmental Permit (EP No: EP-438/2012/H) was issued by Director of Environmental Protection (DEP) on 10 September 2014.
- 2.1.3 The construction of the SCL is divided into different civil construction works contracts and Works Contract 1111 – Hung Hom North Approach Tunnels (hereafter referred to as “the Project”) covers construction activities at Mong Kok Freight Terminal and part of the construction activities located at Hung Hom under the two EPs.

2.2 Site Description

- 2.2.1 The major construction activities under Works Contract 1111 include:
- SCL (MKK-HUH) – (i) Construction of an realigned and modified railway from Portal 1A near Oi Man Estate to Hung Hom Station; (ii) Construction of Noise Enclosure at Portal 1A; (iii) modification works on the existing Homantin Siding; and (iv) new EVA near Hung Hom Station.
 - SCL (TAW-HUH) – Part of the railway tunnel from Ho Man Tin Station to Hung Hom.
 - SCL (HHS) – Construction of tracks and noise barrier of Hung Hom Stabling Sidings.
- 2.2.2 **Figure 1.1** shows the works areas for the Works Contract 1111.

2.3 Construction Programme and Activities

- 2.3.1 The major construction activities undertaken in the reporting month are summarised below:-

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, cable detection, road diversion, excavation lateral support
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, temporary bridge, scaffolding platform,
- Trimming of retaining wall, tie back installation, foul water diversion,
- Removal of pipe, demolition of drawpit, dismantling of scaffolding walkway,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

2.3.2 The construction programme is presented in **Appendix A**.

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
MTR	Residential Engineer (ER)	Construction Manager	Mr. Michael Fu	3127 6201	3124 6422
		SCL Project Environmental Team Leader	Mr. Richard Kwan	2688 1283	2993 7577
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Mr. Fredrick Leong	2859 1739	2540 1580
GKSCKJV	Contractor	Project Manager	Mr. Alan Yan	9855 0361	3904 9630
		Environmental Manager	Mr. Brian Kam	9456 9541	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y T Tang	3922 9393	2317 7609

2.5 Status of Environmental Licences, Notification and Permits

2.5.1 Relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 2.1**.

Table 2.1 Status of Environmental Licenses, Notifications and Permits

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
Environmental Permit				
EP-437/2012	22 Mar 2012	-	Valid	-
EP-438/2012/H	10 Sep 2014	-	Valid	-
Construction Noise Permit				
GW-RE0768-14	30 Jul 2014	29 Jan 2015	Valid	For General and Reprovisioning Works at Hung Hom Station
GW-RE0821-14	01 Aug 2014	31 Jan 2015	Valid	For E&M Works at Mong Kok East Station Concourse
GW-RE1011-14	10 Sep 2014	9 Mar 2015	Valid	For Grouting Station and Desendar at EWL8
GW-RE1002-14	10 Sep 2014	9 Mar 2015	Valid	For General Work at NSL 3-5
GW-RE1093-14	24 Sep 2014	21 Mar 2015	Valid	For General works for steel decking at EWL8
GW-RE1229-14	31 Oct 2014	31 Jan 2015	Valid	For TB1 & TB2 Installation at Chatham Road North
GW-RE1252-14	1 Nov 2014	31 Jan 2015	Valid	For Hoarding Erection at NSL3-5
GW-RE1294-14	18 Nov 2014	14 Mar 2015	Valid	For General Work at Oi Sen Path and Ho Man Tin Siding
GW-RE1279-14	30 Nov 2014	31 Jan 2015	Valid	For 6m Hoarding Erection in NSL6
GW-RE1323-14	1 Dec 2014	28 Feb 2015	Valid	For Cross Track Duct Installation in Ho Man Tin Maintenance Siding
GW-RE1280-14	2 Dec 2014	31 Jan 2015	Valid	For Scaffolding and 2.4m Hoarding Erection at Ho Man Tin and Oi Sen Path
GW-RE1317-14	2 Dec 2014	31 Jan 2015	Valid	For 6m Hoarding in NSL 9 and Demolition of Scaffolding Platform at Oi Sen Path
GW-RE1380-14	6 Dec 2014	10 Jan 2015	Valid	For Bar Fencing Erection near Railway Tracks Area at Ho Man Tin Sidings
GW-RE1392-14	16 Dec 2014	15 Jan 2015	Valid	For Loading Test Preparation at Oi Sen Path
Wastewater Discharge License				
WT00015148-2013	20 Feb 2013	28 Feb 2018	Valid	For Winslow Street Works
WT00015644-2013	16 Apr 2013	30 Apr 2018	Valid	For Homantin Sidings Works
WT00015606-2013	25 Apr 2013	30 Apr 2018	Valid	For Mong Kok Freight Terminal Works
WT00016090-2013	14 Jun 2013	30 Jun 2018	Valid	For Hung Hom Station Works
WT00016108-2013	14 Jun 2013	30 Jun 2018	Valid	For Slip Road Works from Chatham Road North and underneath Princess Margaret Road Link (Discharge Point near Hong Chong Road)
WT00015859-2013	14 May 2013	31 May 2018	Valid	For Works in EWL8 and Oi Sen Path Garden

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
WT00016447-2013	24 Jul 2013	31 Jul 2018	Valid	For Winslow Street Slope Works Between Chatham Road North and Wai Fung Street
WT00016435-2013	23 Jul 2013	31 Jul 2018	Valid	For Slip Road Works from Chatham Road North and underneath Princess Margaret Road Link (Discharge Point near Oi Sen Path)
WT00018688-2014	14 Apr 2014	30 Apr 2019	Valid	For Hung Hom Freight Terminal Works
WT00019068-2014	25 Jun 2014	30 Jun 2019	Valid	For Oi Sen Path Works
Chemical Waste Producer Registration				
5213-213-G2618-01	22 Mar 2013	-	Valid	For Winslow Street Works
5213-213-G2618-03	08 Apr 2013	-	Valid	For Hung Hom Station Re provisioning Works
5213-222-G2618-05	25 Apr 2013	-	Valid	For Mong Kok Freight Terminal Works
5213-213-G2618-06	16 Apr 2013	-	Valid	For Homantin Sidings Works
5213-236-G2618-10	14 Jun 2013	-	Valid	For Slip Road Works from Chatham Road North and underneath Princess Margaret Road Link
5213-236-G2618-11	27 May 2013	-	Valid	For Works near Chatham Road North
5213-213-G2618-12	14 Apr 2014	-	Valid	For Hung Hom Freight Terminal Works
5213-236-G2618-14	08 May 2014	-	Valid	For Oi Sen Path Works
Billing Account for Construction Waste Disposal				
7016658	24 Jan 2013	-	Account Active	-
Notification Under Air Pollution Control (Construction Dust) Regulation				
353991	02 Jan 2013	18 Apr 2018	Notified	-
Clinical Waste Producer Premises Code				
PC01/RE/00362644	30 Jan 2014	-	Valid	For Hung Hom Freight Yard Works

3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.1 Construction Dust Monitoring

Monitoring Requirements

- 3.1.1 In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level at the designated air quality monitoring station is required. Impact 24-hour TSP monitoring should be carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in **Appendix D**.

Monitoring Equipment

- 3.1.2 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the EM&A Manual. Brand and model of the equipment is given in **Table 3.1**.

Table 3.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
High Volume Sampler (24-hour TSP)	Andersen Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. GS 2310 (S/N:8259))
Calibration Kit	TISCH Environmental Orifice (Model TE-5025A (Orifice I.D.: 0988))

Monitoring Locations

- 3.1.3 One monitoring station was set up at the proposed location in accordance with the approved EM&A Manuals for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS) as well as the works areas of the Project. The location of the construction dust monitoring station is summarised in **Table 3.2** and shown in **Figure 2.1**.

Table 3.2 Locations of Construction Dust Monitoring Stations

ID	Location	Monitoring Station
AM1	No. 234 – 238 Chatham Road North	Roof top of the premises facing Chatham Road North

Note:

- (1) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location has been approved by IEC and EPD.

Monitoring Methodology

3.1.4 24-hour TSP Monitoring

- (a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS as far as practicable:-
- (i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
 - (ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
 - (iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
 - (iv) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
 - (v) No furnace or incinerator flues nearby.
 - (vi) Airflow around the sampler was unrestricted.
 - (vii) Permission was obtained to set up the samplers and access to the monitoring stations.
 - (viii) A secured supply of electricity was obtained to operate the samplers.

- (ix) The sampler was located more than 20 meters from any dripline.
 - (x) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
 - (xi) Flow control accuracy was kept within $\pm 2.5\%$ deviation over 24-hour sampling period.
- (b) Preparation of Filter Papers
- (i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
 - (ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than $\pm 5\%$. A convenient working RH was 40%.
 - (iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.
- (c) Field Monitoring
- (i) The power supply was checked to ensure the HVS works properly.
 - (ii) The filter holder and the area surrounding the filter were cleaned.
 - (iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
 - (iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
 - (v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
 - (vi) Then the shelter lid was closed and was secured with the aluminium strip.
 - (vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
 - (viii) A new flow rate record sheet was set into the flow recorder.
 - (ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.3 m³/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m³/min).
 - (x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
 - (xi) The initial elapsed time was recorded.
 - (xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
 - (xiii) The final elapsed time was recorded.
 - (xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
 - (xv) It was then placed in a clean envelope and sealed.
 - (xvi) All monitoring information was recorded on a standard data sheet.
 - (xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.
- (d) Maintenance and Calibration
- (i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
 - (ii) HVSs were calibrated using TE-5025A Calibration Kit upon installation and thereafter at bi-monthly intervals.
 - (iii) Calibration certificate of the TE-5025A Calibration Kit and the HVSs are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

3.1.5 The schedule for environmental monitoring in December 2014 is provided in **Appendix F**.

3.2 Regular Construction Noise Monitoring

Monitoring Requirements

- 3.2.1 In accordance with the EM&A Manuals, impact noise monitoring should be conducted for at least once a week during the construction phase of the Project. **Table 3.4** summarises the monitoring parameters, frequency and duration of impact noise monitoring. The Action and Limit level of the noise monitoring is provided in **Appendix D**.

Table 3.4 Noise Monitoring Parameters, Frequency and Duration

Parameter and Duration	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. Leq, L10 and L90 would be recorded.	At least once per week

Monitoring Equipment

- 3.2.2 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.5**.

Table 3.5 Noise Monitoring Equipment for Regular Noise Monitoring

Equipment	Brand and Model
Integrated Sound Level Meter	B&K (Model No. 2238 (S/N: 2285692), (S/N: 2800927) & (S/N: 2800930)) Rion (Model No. NL-31 (S/N: 00320528))
Acoustic Calibrator	Rion (Model No. NC-73 (S/N: 10307223))

Monitoring Locations

- 3.2.3 Two monitoring stations were set up at the proposed locations in accordance with the approved EM&A Manuals for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS) as well as the works areas of the Project. Locations of the noise monitoring stations are summarised in **Table 3.6** and shown in **Figure 3.1**.

Table 3.6 Locations of Regular Construction Noise Monitoring Stations

ID	Location	Monitoring Station	Type of Measurement
NM1	Carmel Secondary School (South Block)	1m from the exterior of the roof top façade of the premises facing Oi Sen Path	Façade
NM2	No. 234 – 238 Chatham Road North ⁽¹⁾	Free-field on the rooftop of the premise	Free Field

Note:

- (1) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location has been approved by IEC and EPD.

Monitoring Methodology

3.2.4 Monitoring Procedure

- (a) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at NM2. A correction of +3 dB(A) shall be made to the free field measurements.
- (b) Façade measurements were made at NM1.
- (c) The battery condition was checked to ensure the correct functioning of the meter.
- (d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - (i) frequency weighting: A
 - (ii) time weighting: Fast
 - (iii) time measurement: $L_{eq(30\text{-minutes})}$ during non-restricted hours i.e. 0700 – 1900 on normal weekdays.
- (e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94 dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- (f) During the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- (g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- (h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.2.5 Maintenance and Calibration

- (a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.
- (b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
- (c) Calibration certificates of the sound level meters and acoustic calibrators are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

- 3.2.6 The schedule for environmental monitoring in December 2014 is provided in **Appendix F**.

3.3 Continuous noise monitoring**Monitoring Requirements**

- 3.3.1 According to EP conditions under EP-437/2012 (Condition 2.8) and EP-438/2012/H (Condition 2.10), continuous noise monitoring should be conducted at the NSRs as identified by the Construction Noise Mitigation Measures Plan (CNMMP) to have residual air-borne noise impacts. A CNMMP and Continuous Noise Monitoring Plan (CNMP) were submitted to EPD on 20 January 2014.

Monitoring Locations

- 3.3.2 With reference to the CNMP, continuous noise monitoring should be conducted during period at which the predicted airborne construction noise levels exceed the relevant noise criteria at the respective NSRs. The proposed continuous noise monitoring locations are presented in **Table 3.7** and shown in **Figure 2.1**.

Table 3.7 Summary of Proposed Continuous Noise Monitoring Location

NSR ID	NSR Description	Uses	Proposed Continuous Noise Monitoring Location	Alternative Noise Monitoring Location
OM4a	Carmel Secondary School (South Block)	Educational	NM1	-
HH2	Wing Fung Building	Residential	NM2	No. 234-238 Chatham Road North ⁽¹⁾

Note:

(1) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location is considered as an appropriate alternative noise monitoring station in the CNMP.

Monitoring Equipment

- 3.3.3 Continuous noise monitoring will be performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator will be deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.8**.

Table 3.8 Noise Monitoring Equipment for Continuous Noise Monitoring

Equipment	Brand and Model
Integrated Sound Level Meter	B&K (Model No. 2238 (S/N: 2255677))
Acoustic Calibrator	Rion (Model No. NC-73 (S/N: 10307223))

Monitoring Parameters, Frequency and Duration

- 3.3.4 Continuous noise level will be measured in terms of the A-weighted equivalent continuous sound pressure level for 30 minutes ($L_{eq, 30 \text{ min}}$) for time period between 0700 and 1900 hours on normal working hours (i.e. Mondays to Saturdays) during the construction period that the predicted noise levels exceed the relevant noise criteria at the identified NSRs. The recommended measurement period for the continuous noise monitoring programme in the CNMP is summarised in **Table 3.9**.

Monitoring Methodology

- 3.3.5 Immediately prior to the noise measurement, the accuracy of the sound level meter will be checked using an acoustic calibrator, which generated a known sound pressure level at a known frequency. The accuracy of the sound level meter will also be checked on an annual-basis. Measurement will be accepted as valid only if the calibration level before and after the noise measurement agrees to within 1.0dB. Noise measurement will be made in accordance with standard acoustical principles and practices in relation to weather conditions.

Event and Action Plan

- 3.3.6 Summary of the proposed continuous noise monitoring programme are presented in **Table 3.9**. The Event and Action Plan for the continuous noise monitoring programme recommended in the CNMP is presented in **Appendix I**.

Table 3.9 Summary of Proposed Continuous Noise Monitoring Plan

Monitoring Location	NSR Description	Action/Limit Level, dB(A)	Measurement Period
NM1	Carmel Secondary School (South Block)	68 ⁽¹⁾	Feb and Jun 2014, Jan and Feb 2015 ⁽³⁾
NM2	No. 234-238 Chatham Road North ⁽²⁾	77	Sep to Dec of 2014 Jan / Mar to May 2015

Note:

- (1) Action/Limit level will only be applicable during the examination period.
 (2) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location is considered as an appropriate alternative noise monitoring station in the CNMP.
 (3) Based on 2014-2015 Calendar of Carmel Secondary School, the examination periods are scheduled in January and February 2015. The continuous noise monitoring would be conducted in January and February 2015.

3.4 Landscape and Visual

- 3.4.1 As per the EM&A Manuals, the landscape and visual mitigation measures should be implemented and site inspections should be undertaken once every two weeks during the construction period. A summary of the implementation status is presented in **Section 6**.

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EPs and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix C**. Status of required submissions under the EPs during the reporting period is summarised in **Table 4.1**.

Table 4.1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.4 (EP-437/2012) & Condition 3.4 (EP-438/2012/H)	Monthly EM&A Report for November 2014	12 December 2014

5 MONITORING RESULTS

5.1 Construction Dust Monitoring

5.1.1 The monitoring results for 24-hour TSP are summarised in **Table 5.1**. Detailed air quality monitoring results and wind monitoring data extracted from the nearest Automatic Weather Station are presented in **Appendix G**.

Table 5.1 Summary of 24-hour TSP Monitoring Results in the Reporting Period

ID	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1	61.5	46.8 – 77.7	183.9	260

5.1.2 No Action and Limit Level exceedance was recorded for 24-hour TSP monitoring at the monitoring location in the reporting month.

5.1.3 The event and action plan is annexed in **Appendix I**.

5.1.4 Major dust sources during the monitoring included construction dust from the Project site and other nearby construction sites and also nearby traffic emission.

5.2 Regular Construction Noise Monitoring

5.2.1 The monitoring results for noise are summarized in **Table 5.2** and the monitoring data is provided in **Appendix H**.

Table 5.2 Summary of Impact Noise Monitoring Results in the Reporting Period

ID	Range, dB(A), L_{eq} (30 mins)	Limit Level, dB(A), L_{eq} (30 mins)
NM 1 ⁽²⁾	<Baseline – 64.5	70 (65) ⁽¹⁾
NM 2 ⁽²⁾	<Baseline	75 (77) ⁽³⁾

Note:

(1) Daytime noise Limit Level of 70dB(A) applies to education institutions while 65dB(A) applies during school examination period.

(2) Baseline correction will be made to the measured L_{eq} when the measured noise level exceeded the corresponding baseline noise level and presented in the table. No correction was made to NM2 as all measured noise levels were below the baseline noise level.

(3) Daytime noise Limit Level of 77dB(A) applies during the continuous noise monitoring period which was conducted from 1 to 31 December 2014.

5.2.2 No noise complaint was received in the reporting month during 0700 to 1900 hours on normal weekdays; hence, no Action Level exceedance was recorded.

5.2.3 No Limit Level exceedance of noise was recorded at all monitoring stations in the reporting month.

5.2.4 The event and action plan is annexed in **Appendix I**.

5.2.5 Major noise sources during the monitoring included construction noise from the Project site and other nearby construction sites, nearby traffic noise and noise from school activities and the community.

5.3 Continuous Noise Monitoring

5.3.1 According to the prediction in the CNMP, continuous noise monitoring was only conducted at NM2 during the reporting month. No exceedance of the Action and Limit Levels of the continuous noise monitoring was recorded at NM2 during the monitoring period. The monitoring results are presented in **Appendix H**.

5.4 Waste Management

- 5.4.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 5.4.2 As advised by the Contractor, 6,058m³ of inert C&D material was generated. 2,173m³ and 2m³ was disposed as public fills at TKO137 and TM38 respectively. 3,715m³ of public fills was delivered to Hung Hom Barging Point and handled by other project. While 76,720kg of general refuse was disposed at NENT landfill in the reporting month. 98kg of paper/cardboard packaging material, no metals and plastic was collected by recycling contractor in the reporting month. 168m³ inert C&D materials were reused in other project. 166kg chemical waste was collected by licensed contractor in the reporting period. The waste flow table is annexed in **Appendix K**.
- 5.4.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.
- 5.4.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

5.5 Landscape and Visual

- 5.5.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted on 4 and 18 December 2014. A summary of the site inspection is provided in **Appendix C**. The observations and recommendations made during the site inspections are presented in **Table 6.1**.
- 5.5.2 The event and action plan is annexed in **Appendix I**.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the site inspection is provided in **Appendix C**.

6.1.2 In the reporting month, 4 site inspections were carried out on 4, 11, 18 and 24 December 2014. The one held on 18 December 2014 was a joint inspection with the IEC, ER, the Contractor and the ET. No site inspection was conducted by EPD during the reporting month. No non-compliance was recorded during the site inspections. Details of observations recorded during the site inspections are presented in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	11 Dec 2014	<ul style="list-style-type: none"> Some grit/sands accumulated inside the drainage channel were observed at Oi Sen Path. The Contractor should remove the grit/sand and cover the channel properly. 	The item was rectified by the Contractor on 17 Dec 2014.
Air Quality	N/A	N/A	N/A
Noise	N/A	N/A	N/A
Waste/ Chemical Management	11 Dec 2014	<ul style="list-style-type: none"> Oil stains were observed at NSL8. The Contractor should clear the oil stains and dispose of as chemical waste properly. 	The item was rectified by the Contractor on 17 Dec 2014.
		<ul style="list-style-type: none"> Water accumulated inside the drip trays were observed at EWL7 and NSL8. The Contractor should clear the water and dispose of as chemical waste properly. 	The item was rectified by the Contractor on 17 Dec 2014.
	18 Dec 2014	<ul style="list-style-type: none"> Some chemical wastes were not labelled properly at NSL3-5. The Contractor should label all chemical wastes properly. 	The item was rectified by the Contractor on 23 Dec 2014.
	24 Dec 2014	<ul style="list-style-type: none"> Oil stains were observed at EWL7 and NSL9. The Contractor should remove the oil stain and dispose of as chemical waste properly. 	The item was rectified by the Contractor on 31 Dec 2014.
<ul style="list-style-type: none"> Water accumulated inside the drip trays were observed at NSL3-5, EWL7 and NSL9. The Contractor should remove the water and dispose of as chemical waste properly. 		The item was rectified by the Contractor on 31 Dec 2014.	
Landscape & Visual	N/A	N/A	N/A
Permits/ Licenses	4 Dec 2014	<ul style="list-style-type: none"> No copy of chemical waste producer license was displayed on the chemical waste storage area at NSL9. The Contractor should display the license properly. 	The item was rectified by the Contractor on 10 Dec 2014.
	11 Dec 2014	<ul style="list-style-type: none"> No copy of chemical waste producer license was displayed at NSL3-5. The Contractor should display the license properly. 	The item was rectified by the Contractor on 17 Dec 2014.

6.1.3 All the follow-up actions requested by Contractor's ET and IEC during the site inspection were undertaken as reported by the Contractor and confirmed into the following weekly site inspection conducted during the reporting period.

6.1.4 The items of which their inspection for follow-up actions were outstanding as recorded in the last reporting month have already been rectified by the Contractor as confirmed by the ET during the reporting period.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

- 7.1.1 All 24-hour TSP results were below the Action and Limit level at all monitoring locations in the reporting month.
- 7.1.2 No noise complaint during 0700 to 1900 hours on normal weekdays was received in the reporting month; hence, no Action Level exceedance was recorded.
- 7.1.3 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.
- 7.1.4 According to the prediction in the CNMP, continuous noise monitoring was only conducted at NM2 during the reporting month. No exceedance of the Action and Limit Levels of the continuous noise monitoring was recorded at NM2 during the monitoring period.

7.2 Summary of Environmental Non-Compliance

- 7.2.1 No environmental non-compliance was recorded in the reporting month.

7.3 Summary of Environmental Complaints

- 7.3.1 No environmental related complaint was received in the reporting month. Cumulative statistics on environmental complaints is provided in **Appendix J**.

7.4 Summary of Environmental Summon and Successful Prosecutions

- 7.4.1 No environmental related prosecution or notification of summons was received in the reporting month. Cumulative statistics on notification of summons and successful prosecutions is provided in **Appendix J**.

8 FUTURE KEY ISSUES

8.1 Construction Programme for the Project

Construction Programme for the Next Two Month

8.1.1 The major construction works in January 2015 and February 2015 will be:

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, cable detection, road diversion, excavation lateral support
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, temporary bridge, scaffolding platform,
- Trimming of retaining wall, tie back installation, installation of temporary support for OB2, modification work for OB2, lifting of concrete blocks, preparation work for noise enclosure,
- Overhead line demolition and erection, removal of pipe, demolition of drawpit, foul water diversion, demolition of stair case,
- Reprovisioning of overhead line portal, dismantling of scaffolding walkway,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

8.2 Key Issues for the Coming Month

8.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water quality impact and waste management.

8.3 Monitoring Schedule for the Next Month

8.3.1 The tentative schedule for environmental monitoring in January 2015 is provided in **Appendix F**.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

- 9.1.1 24-hour TSP and noise monitoring were carried out in the reporting month.
- 9.1.2 All 24-hour TSP monitoring results complied with the Action / Limit Level at in the reporting month.
- 9.1.3 No noise complaint during 0700 to 1900 hours on normal weekdays was received in the reporting month; hence, no Action Level exceedance was recorded.
- 9.1.4 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.
- 9.1.5 According to the prediction in the CNMP, continuous noise monitoring was only conducted at NM2 during the reporting month. No exceedance of the Action and Limit Levels of the continuous noise monitoring was recorded at NM2 during the monitoring period.
- 9.1.6 4 nos. of environmental site inspections were carried out in December 2014. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.
- 9.1.7 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

9.2 Recommendations

- 9.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:-

Air Quality Impact

- No specific observation was identified in the reporting month.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- Implement effective measures to avoid surface runoff into the drainage.

Chemical and Waste Management

- Provide proper chemical and construction waste management.

Landscape and Visual Impact

- No specific observation was identified in the reporting month.

Permits/Licenses

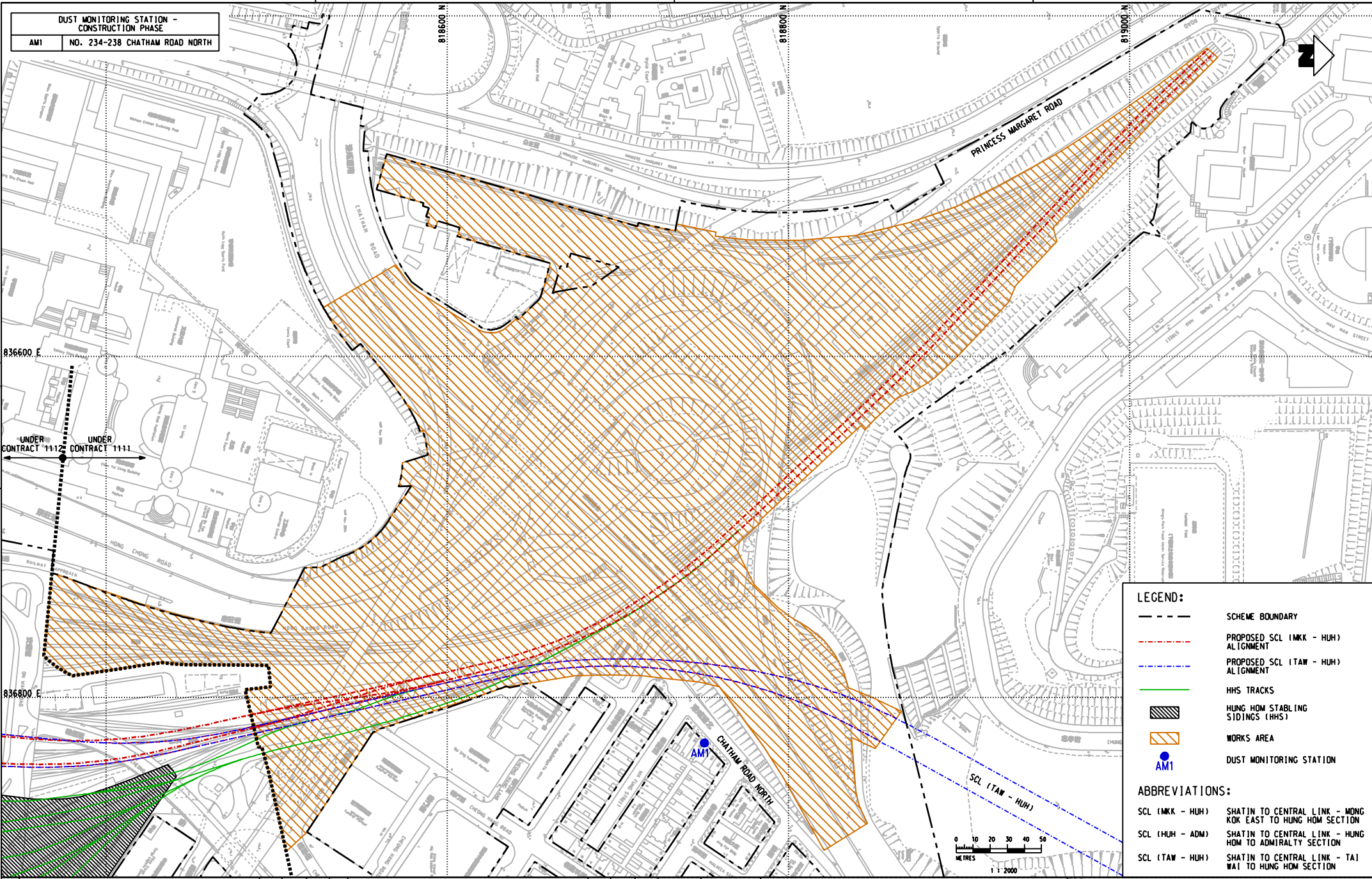
- Display all relevant licenses/permits on site.

FIGURES

DUST MONITORING STATION -
CONSTRUCTION PHASE
AM1 NO. 234-238 CHATHAM ROAD NORTH

Maps reproduced with permission of the Director of Lands, © Hong Kong Government

PLANNING AND DESIGN DIVISION, 11/F, 80, QUEEN'S ROAD CENTRAL, HONG KONG
DATE: 14/16
FILE NAME: H4-048



LEGEND:

- SCHEME BOUNDARY
- PROPOSED SCL (MKK - HUH) ALIGNMENT
- PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- HUNG HOM STABLING SIDINGS (HHS)
- WORKS AREA
- DUST MONITORING STATION

ABBREVIATIONS:

- SCL (MKK - HUH) SHATIN TO CENTRAL LINK - MONG KOK EAST TO HUNG HOM SECTION
- SCL (HUH - ADM) SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION
- SCL (TAW - HUH) SHATIN TO CENTRAL LINK - TAI WAI TO HUNG HOM SECTION

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

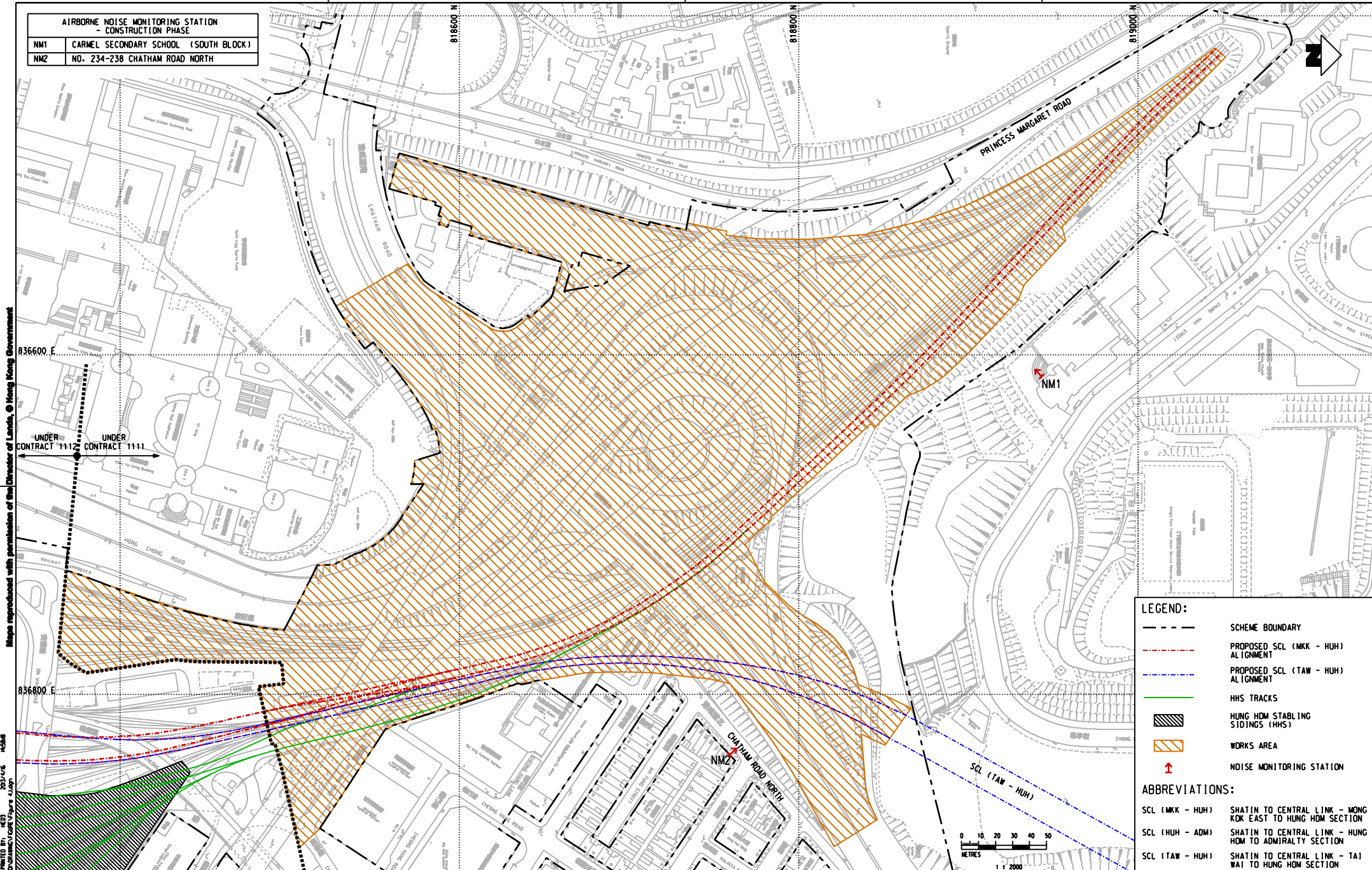
DRAWN: HD DESIGNED: L.C.L.L. CHECKED: L.C.L.L. APPROVED: (MNV) DATE: 08/JAN/2013 <small>NO PART SHALL BE REPRODUCED, EITHER WHOLLY OR PARTIALLY, WITHOUT THE WRITTEN PERMISSION OF THE CONTRACTOR. ANY REPRODUCTION OF THIS DRAWING IS STRICTLY PROHIBITED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES CONCERNED.</small>	 SHATIN TO CENTRAL LINK CONTRACTOR: Gammon Kaden Joint Venture <small>Gammon - Kaden SCL 1113 Joint Venture</small> ORIGINATOR: AECOM	TITLE: CONTRACT 1111 HUNG HOM NORTH APPROACH TUNNELS LOCATION OF AIR QUALITY MONITORING STATION SCALE: 1 : 2000 (A3) FIGURE NO.: FIGURE 2.1
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AIRBORNE NOISE MONITORING STATION
- CONSTRUCTION PHASE

NM1	CARMEL SECONDARY SCHOOL (SOUTH BLOCK)
NM2	NO. 234-238 CHATHAM ROAD NORTH

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PLOT DATA:
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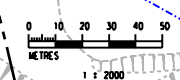


LEGEND:

- SCHEME BOUNDARY
- - - PROPOSED SCL (MKK - HUH) ALIGNMENT
- - - PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- ▨ HUNG HOM SIDINGS (HHS)
- ▨ WORKS AREA
- ↑ NOISE MONITORING STATION

ABBREVIATIONS:

SCL (MKK - HUH)	SHATIN TO CENTRAL LINK - MONG KOK EAST TO HUNG HOM SECTION
SCL (HUH - ADM)	SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION
SCL (TAW - HUH)	SHATIN TO CENTRAL LINK - TAI WAI TO HUNG HOM SECTION



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

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<small>CONTRACTOR</small>		<small>ORIGINATOR</small>	

TITLE
CONTRACT 1111
HUNG HOM NORTH APPROACH TUNNELS
LOCATION OF NOISE MONITORING STATION (CONSTRUCTION PHASE)

SCALE: 1 : 2000 (A3)

FIGURE NO. **FIGURE 3.1**

REV. -

APPENDIX A

Construction Programme

Activity Description	Start	Finish	2013												2014												2015												2016												2017																
			D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D
REPROVISIONING WORKS																																																																			
Commencement of Works	17/12/12																																																																		
Existing HUH Station Platform Level Works	14/01/13	26/01/14																																																																	
Mong Kok Freight Terminal Podium Level	14/01/13	25/08/13																																																																	
Poly U Railway Reserve & New Maintenance Sidings	01/04/13	26/01/14																																																																	
Inter City Crew Accomodation on HUH EWL Platform	14/01/13	24/08/14																																																																	
NSL/EWL TUNNEL																																																																			
NSL/EWL Area 3 Tunnel (early handover)	03/06/14*	04/09/15																																																																	
NSL/EWL Area 4 Tunnel	03/06/14*	22/02/16																																																																	
NSL/EWL Area 5 Tunnel	03/03/14*	20/01/16																																																																	
NSL/EWL Area 6 Tunnel	03/03/14*	07/03/16																																																																	
NSL TUNNEL																																																																			
NSL Area 7 Tunnel (inc CRN1 & Traffic Diversion)	30/05/14*	26/05/17																																																																	
NSL Area 8A Tunnel	04/06/13*	07/01/17																																																																	
TB1	13/05/13*	17/10/14																																																																	
TB2	04/06/13*	05/03/14																																																																	
NSL Area 8B Tunnel	13/06/14*	05/03/16																																																																	
NSL Area 9 Tunnel	01/12/14*	06/04/16																																																																	
Oi Sen Path Slope Works and Tunnel	14/02/13*	13/10/16																																																																	
Oi Sen Path Noise Enclosure	14/12/13*	09/03/16																																																																	
EWL TUNNEL																																																																			
EWL Area 6A Tunnel	15/02/13*	22/07/14																																																																	
EWL Areas 7&8 Tunnel	22/02/13*	27/02/16																																																																	
EWL Area 9 Tunnel (late possession)	15/06/15*	02/04/16																																																																	

Early Bar
 Progress Bar
 Critical Activity

**SCL 1111
SUMMARY PROGRAMME**

Date	Revision	Checked	Approved
19/09/12			

APPENDIX B

Project Organization Structure

APPENDIX C

**Implementation Schedule of Environmental Mitigation
Measures**

Appendix C - Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	Environmental Mitigation Measures	Location	Implementation Status	
Landscape and Visual Impact				
S6.9.3 (TAW-HUH) , S6.12 (HHS), S6.12 (TAW-HUH), Table 6.9 (HHS) & Table 4.9 (MKK-HUH)	Minimize visual & landscape impact	Existing topsoil shall be re-used where possible for new planting areas within the Project.	All construction sites	N/A
		Ground vegetation and the associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone.	All construction sites	N/A
		All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period.	All construction sites	V
		Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas.	All construction sites	V
		Giving control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	All construction sites	V
		Trees of medium to high survival rate that would be affected by the works shall be transplanted where possible and practicable.	All construction sites	N/A
		Compensatory tree & shrub planting shall be provided to compensate for the loss of shrub planting in amenity areas.	All construction sites	N/A
		Control of night-time lighting glare.	All construction sites	N/A
		All hard and soft landscape areas disturbed temporarily during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government Departments.	All construction sites	N/A

Construction Noise Impact				
8.3.6 (TAW-HUH) , S8.5.6 (HHS) & S6 (MKK-HUH)	To control construction airborne noise	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.	All construction sites	V
		Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All construction sites	V
		Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs.	All construction sites	V
		Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works.	All construction sites	V
		Mobile plant should be sited as far away from NSRs as possible and practicable.	All construction sites	V
		Material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	All construction sites	V
		The following quiet PME should be used: <ul style="list-style-type: none"> • Asphalt Paver (SWL=101dB(A)) • Backhoe (SWL=106dB(A)) • Backhoe with Hydraulic Breaker (SWL=110dB(A)) • Concrete lorry mixer (SWL=96dB(A)) • Concrete mixer truck (SWL=96dB(A)) • Concrete Pump (SWL=106dB(A)) • Concrete Pump Truck (SWL=106dB(A)) • Crane, mobile (SWL=94dB(A)) • Crawler Crane (SWL=102dB(A)) • Drill, hand-held (SWL=98dB(A)) 	Works areas where required	N/A

Construction Noise Impact				
		<ul style="list-style-type: none"> • Dump truck (SWL=104dB(A)) • Excavator (SWL=106dB(A)) • Flat Bed Lorry (SWL=102dB(A)) • Generator (SWL=95dB(A)) • Giken Piler and Power-pack (SWL=94dB(A)) • Hydraulic breaker (SWL=110dB(A)) • Hydraulic excavator (SWL=106dB(A)) • Lorry (SWL=102dB(A)) • Lorry with crane/ grab (SWL=94dB(A)) • Mini Piling Rig (SWL=112dB(A)) • Piling Rig (SWL=112dB(A)) • Poker, vibrator, hand-held (SWL=98dB(A)) • Road Roller (SWL=101dB(A)) • Rock Drill (SWL = 108dB(A)) • Roller (SWL = 101dB(A)) • Truck (SWL=103dB(A)) • Vibratory Hammer (SWL=118dB(A)) 		
		Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs.	All construction sites	V
		Install movable noise barriers, acoustic mat or full enclosure, screen the noisy plants	All construction sites	V
		Sequencing operation of construction plants where practicable.	All construction sites	V
		Particularly noisy construction activities will be scheduled to avoid school examination period as far as practicable.	Works areas near the Carmel Secondary School	V

Construction Air Quality Impact				
S7.6.5 (TAW-HUH) , S7.6.6 (HHS), S5.50, 5.51 &5.57 (MKK-HUH)	Minimize dust impact at nearby sensitive receivers	Watering once per hour on exposed worksites and haul road should be conducted to achieve dust removal efficiencies of 91.7%.	All construction sites	V
		Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet.	All construction sites	V
		Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads	All construction sites	V
		A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones.	All construction sites	V
		The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle	All construction sites	N/A
		Vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point.	All construction sites	V
		The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	All construction sites	V
		When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided.	All construction sites	V
		The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials.	All construction sites	V
		Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously.	All construction sites	V

Construction Air Quality Impact				
		Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet.	All construction sites	N/A
		Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building.	All construction sites	V
		Any skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	N/A
		Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.	All construction sites	N/A
/	/	Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	All construction sites	N/A
		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.	All construction sites	N/A
		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.	All construction sites	N/A
		Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site.	All construction sites	N/A
		Imposition of speed controls for vehicles on site haul roads.	All construction sites	N/A
		Open burning shall be prohibited.	All construction sites	N/A

Construction Air Quality Impact				
/	Emission from Vehicles and Plants	All vehicles shall be shut down in intermittent use.	All construction sites	V
		Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke.	All construction sites	V
		All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD).	All construction sites	V

Construction Water Quality Impact				
S10.7.1 (TAW-HUH) , S10.7.1 (HHS) & S8 (MKK-HUH)	To minimize construction water quality impactt	Construction Site Drainage should be implemented to control site run-off and drainage as well as any site effluents generated from the works areas, and to prevent run-off and construction wastes from entering nearby water environment.	Site drainage system	V
		Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins.	Site drainage system	V
		Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities.	All works area	V
		Perimeter channels at site boundaries should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site.	All works area	V
		Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly.	All construction sites	@
		Construction works should be programmed to minimize soil excavation works in rainy seasons.	All construction sites	N/A
		Temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds.	All construction sites	V
		Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms.	All construction sites	N/A

Construction Water Quality Impact				
		Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	All construction sites	V
		Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All construction sites	V
		Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All construction sites	V
		Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area.	All construction sites	V
		All vehicles and plant should be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads.	All construction sites	V
		Bentonite slurries used in diaphragm wall construction should be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry should either be dewatered or mixed with inert fill material for disposal to a public filling area.	All construction sites	V
		A cofferdam wall should be built as necessary to limit groundwater inflow to the excavation works areas.	Excavation works areas	N/A

Construction Water Quality Impact				
		Wastewater generated should not be discharged into the stormwater drainage system.	All construction sites	V
		Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers.	All construction sites	N/A
		Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site.	All construction sites	V
		The Contractor should apply for a discharge license under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.	All construction sites where practicable	N/A
		Appropriate measures will be deployed to minimize the intrusion of groundwater into excavation works areas.	All construction sites	N/A
		Measures should be put in place in order to mitigate any drawdown effects to the groundwater table during the operation of the temporary dewatering works.	All construction sites	N/A

Waste Management				
S11.5.1(TAW-HUH), S11.5.1(HHS) & S9 (MKK-HUH)	Good site practice to minimize the generation and impact of the waste.	Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement.	All construction sites	N/A
		Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions.	All construction sites	V
		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.	All construction sites	V
		Proper storage and site practices to minimize the potential for damage or contamination of construction materials.	All construction sites	@
		Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	All construction sites	N/A
		Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution.	All construction sites	V
		Maintain and clean storage areas routinely.	All construction sites	V
		Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away.	All construction sites	V
		Waste should be removed in timely manner.	All construction sites	V
		Waste collectors should only collect wastes prescribed by their permits.	All construction sites	V
		Waste should be disposed of at licensed waste disposal facilities.	All construction sites	V
		Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.	All construction sites	V

Waste Management				
		Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	All construction sites	V
		The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides.	All construction sites	@
		The Contractor should register as a chemical waste producer if chemical wastes would be generated.	All construction sites	V
		Disposal of chemical waste should be via a licensed waste collector.	All construction sites	V
		Stockpiling of contaminated sediments should be avoided as far as possible.	All construction sites	N/A
		All storage of asbestos waste should be carried out properly in a secure place isolated from other substances so as to prevent any possible release of asbestos fibres into the atmosphere and contamination of other substances. The storage area should bear warning panels to alert people of the presence of asbestos waste. Collection, transportation and disposal of asbestos waste should follow the trip-ticket system. Licensed asbestos waste collectors should be appointed to collect the asbestos waste and deliver to the designated landfill for disposal.	All construction sites	V

Contaminated Land				
S10.24– 10.34 (MKK-HUH)	To act as a general precautionary measure to screen soils for the presence of contamination during construction.	Precautionary measures such as visual inspection are recommended to be undertaken during construction activities that disturb soil.	Within Project Boundary where signs of contamination is identified	N/A
		If soil discolouration or the presence of oil/unnatural odour is noted during visual inspection, sampling and testing should also be undertaken to verify the presence of contamination.		N/A
	To remediate contaminated soil	If land contamination is identified, CAR and RAP detailing the proposed remediation works should be prepared. RR should then be prepared and submitted to EPD to demonstrate that the decontamination work is adequate and has been carried out in accordance with the endorsed CAR and RAP.		N/A

Legend: V = implemented;
 x = not implemented;
 @ = partially implemented;
 N/A = not applicable

APPENDIX D

Summary of Action and Limit Levels

Appendix D – Summary of Action and Limit Levels**Table 1 Action and Limit Levels for 24-hour TSP**

ID	Location	Action Level	Limit Level
AM1	No. 234 – 238 Chatham Road North	183.9 $\mu\text{g}/\text{m}^3$	260.0 $\mu\text{g}/\text{m}^3$

Table 2 Action and Limit Levels for Regular Construction Noise (0700 – 1900 hrs of normal weekdays)

ID	Location	Action Level	Limit Level
NM1	Carmel Secondary School (South Block)	When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers.	65 / 70 dB(A) ⁽¹⁾
NM2	No. 234 – 238 Chatham Road North		75 / 77 dB(A) ⁽²⁾

Note:

- (1) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.
- (2) Daytime noise Limit Level of 77dB(A) applies during the continuous noise monitoring period which was conducted from 1 to 31 December 2014.

Table 3 Action and Limit Levels for Continuous Noise

ID	Location	Action/Limit Level
NM1	Carmel Secondary School (South Block)	68 dB(A) ⁽¹⁾
NM2	No. 234-238 Chatham Road North	77 dB(A)

Note:

- (1) Action/Limit level will only be applicable during the examination period.

APPENDIX E

Calibration Certificates of Equipments

AECOM Asia Company Limited

TSP High Volume Sampler

Field Calibration Report

Station 234 - 238 Chatham Road North; SCL - DMS - 11 Operator: Shum Kam Yuen
 Cal. Date: 30-Oct-14 Next Due Date: 30-Dec-14
 Equipment No.: --- Serial No. 8259

Ambient Condition			
Temperature, Ta (K)	300	Pressure, Pa (mmHg)	760.6

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-May-15				

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	8.0	2.82	1.43	44.0	43.87
13	6.5	2.54	1.29	38.0	37.89
10	5.3	2.30	1.17	32.0	31.91
7	4.0	1.99	1.01	26.0	25.92
5	2.8	1.67	0.85	20.0	19.94

By Linear Regression of Y on X

Slope, mw = 41.3340 Intercept, bw = -15.6817

Correlation Coefficient* = 0.9974

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]^{1/2} = 38.16

Remarks: _____

QC Reviewer: Yu Fy

Signature: [Signature]

Date: 30-Oct-14



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELAND, OH
 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 28, 2014 Rootsmeter S/N 0438320 Ta (K) - 296
 Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3790	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8260	8.8	5.50
5	NA	NA	1.00	0.6830	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9917	0.7191	1.4113	0.9957	0.7221	0.8874
0.9875	1.0159	1.9959	0.9915	1.0201	1.2549
0.9854	1.1339	2.2315	0.9894	1.1385	1.4030
0.9843	1.1916	2.3405	0.9883	1.1965	1.4715
0.9790	1.4333	2.8227	0.9829	1.4392	1.7747
Qstd slope (m) = 1.97518			Qa slope (m) = 1.23683		
intercept (b) = -0.01001			intercept (b) = -0.00630		
coefficient (r) = 0.99998			coefficient (r) = 0.99998		
y axis = $\text{SQRT}[\text{H2O}(\text{Pa}/760)(298/\text{Ta})]$			y axis = $\text{SQRT}[\text{H2O}(\text{Ta}/\text{Pa})]$		

CALCULATIONS

$V_{std} = \text{Diff. Vol} [(\text{Pa} - \text{Diff. Hg}) / 760] (298 / \text{Ta})$
 $Q_{std} = V_{std} / \text{Time}$

$V_a = \text{Diff Vol} [(\text{Pa} - \text{Diff Hg}) / \text{Pa}]$
 $Q_a = V_a / \text{Time}$

For subsequent flow rate calculations:

$Q_{std} = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Pa}/760)(298/\text{Ta}))] - b \}$
 $Q_a = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Ta}/\text{Pa}))] - b \}$



CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0709 04 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2255677 / N.009.02	,	2791214
Adaptors used:	-	,	-

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 09-Jul-2014

Date of test: 11-Jul-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature: 21 ± 1 °C
Relative humidity: 60 ± 10 %
Air pressure: 1000 ± 10 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsiveness of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 12-Jul-2014

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA0709 04 Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
			Pass	0.3
Linearity range for SPL Frequency weightings	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Date:

Fung Chi Yip
11-Jul-2014

- End -

Checked by:

Date:

Lam Tze Wai
12-Jul-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0305 06-01 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2285692	2250420
Adaptors used:	-	-

Item submitted by

Customer Name: AECOM ASIA CO. LTD.
Address of Customer: -
Request No.: -
Date of receipt: 05-Mar-2014

Date of test: 07-Mar-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2014	CIGISMEC
Signal generator	DS 360	33873	15-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 60 ± 10 %
Air pressure: 1000 ± 10 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responses of the Sound Level Meter.

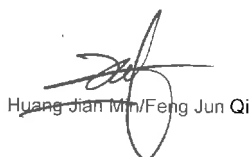
Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 12-Mar-2014

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA0305 06-01 Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	2.1
	C	Pass	1.0	
	Lin	Pass	2.0	
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	2.2
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Frequency weightings			
Time weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Peak response	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
R.M.S. accuracy	Single 100µs rectangular pulse	Pass	0.3	
	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
	Sound exposure level	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Date:

Fung Chi Yip

07-Mar-2014

- End -

Checked by:

Date:

Lam Tze Wai

12-Mar-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0702 01-01 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2800927 / N.009.06	2791211
Adaptors used:	-	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	02-Jul-2014

Date of test: 03-Jul-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responses of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 04-Jul-2014

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA0702 01-01 Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Frequency weightings			
Time weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Peak response	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
R.M.S. accuracy	Single 100 μ s rectangular pulse	Pass	0.3	
	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
	Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.



Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

<p>Calibrated by:  Date: 03-Jul-2014</p>	<p>Checked by:  Date: 04-Jul-2014</p>
---	--

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0702 01-02 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2800930 / N.009.07	2250455
Adaptors used:	-	-

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 02-Jul-2014

Date of test: 03-Jul-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature: 21 ± 1 °C
Relative humidity: 60 ± 10 %
Air pressure: 1000 ± 10 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of $\pm 20\%$.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responses of the Sound Level Meter.

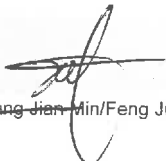
Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 04-Jul-2014

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA0702 01-02 Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	2.1
	C	Pass	1.0	
	Lin	Pass	2.0	
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	2.2
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
Linearity range for SPL	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	Pass	0.3	
	Crest factor of 3	Pass	0.3	
R.M.S. accuracy	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time weighting I	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Date:

Fung Chi Yip
03-Jul-2014

- End -

Checked by:

Date:

Lam Tze Wai
04-Jul-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-01 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	90565
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	15-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure response of the Sound Level Meter.

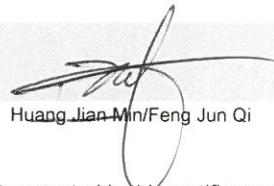
Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:



Huang Jian Min/Feng Jun Qi

Date: 08-Nov-2014

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA1106 04-01 Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Frequency weightings			
Time weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Peak response	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
R.M.S. accuracy	Single 100µs rectangular pulse	Pass	0.3	
Time weighting I	Crest factor of 3	Pass	0.3	
	Single burst 5 ms at 2000 Hz	N/A	N/A	
Time averaging	Repeated at frequency of 100 Hz	N/A	N/A	
	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
Pulse range	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by:

Date: 07-Nov-2014

Fung Chi Yip

Checked by:

Date: 08-Nov-2014

Lam Tze Wai

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-02

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10307223 / N.004.08
Adaptors used: -

Item submitted by

Customer: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	13-May-2015	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 65 ± 10 %
Air pressure: 1010 ± 10 hPa

Test specifications

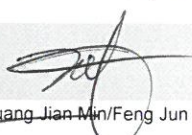
- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:


Huang Jian-Min/Feng Jun Qi

Date: 08-Nov-2014

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA1106 04-02 Page: 2 of 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	(Output level in dB re 20 μ Pa)
			Estimated Expanded Uncertainty dB
1000	94.00	94.02	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.002 dB**
Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 988.9 Hz**
Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 1.3 %**
Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Date: 07-Nov-2014

Fung Chi Yip

- End -

Checked by:

Date: 08-Nov-2014

Lam Tze Wai

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

APPENDIX F

EM&A Monitoring Schedules

**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Impact Monitoring Schedule for December 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec
	Continuous noise monitoring (NM2)					
			24-hour TSP (AM1)	Noise (NM1, NM2)		
7-Dec	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec
	Continuous noise monitoring (NM2)					
		24-hour TSP (AM1)	Noise (NM1, NM2)			
14-Dec	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec
	Continuous noise monitoring (NM2)					
	24-hour TSP (AM1)	Noise (NM1, NM2)				24-hour TSP (AM1)
21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec
	Continuous noise monitoring (NM2)					
		Noise (NM1, NM2)	24-hour TSP (AM1)			
28-Dec	29-Dec	30-Dec	31-Dec			
	Continuous noise monitoring (NM2)					
		24-hour TSP (AM1)	Noise (NM1, NM2)			

**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Tentative Impact Monitoring Schedule for January 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Jan	2-Jan	3-Jan
				Continuous noise monitoring (NM2)		
4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan
	Continuous noise monitoring (NM2)					
	24-hour TSP (AM1)	Noise (NM1, NM2)				24-hour TSP (AM1)
11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
	Continuous noise monitoring (NM2)					
	Continuous noise monitoring (NM1)					
		Noise (NM1, NM2)			24-hour TSP (AM1)	
18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan
	Continuous noise monitoring (NM2)					
	Continuous noise monitoring (NM1)					
				24-hour TSP (AM1)	Noise (NM1, NM2)	
25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
	Continuous noise monitoring (NM2)					
			24-hour TSP (AM1)	Continuous noise monitoring (NM1)		
				Noise (NM1, NM2)		

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

APPENDIX G

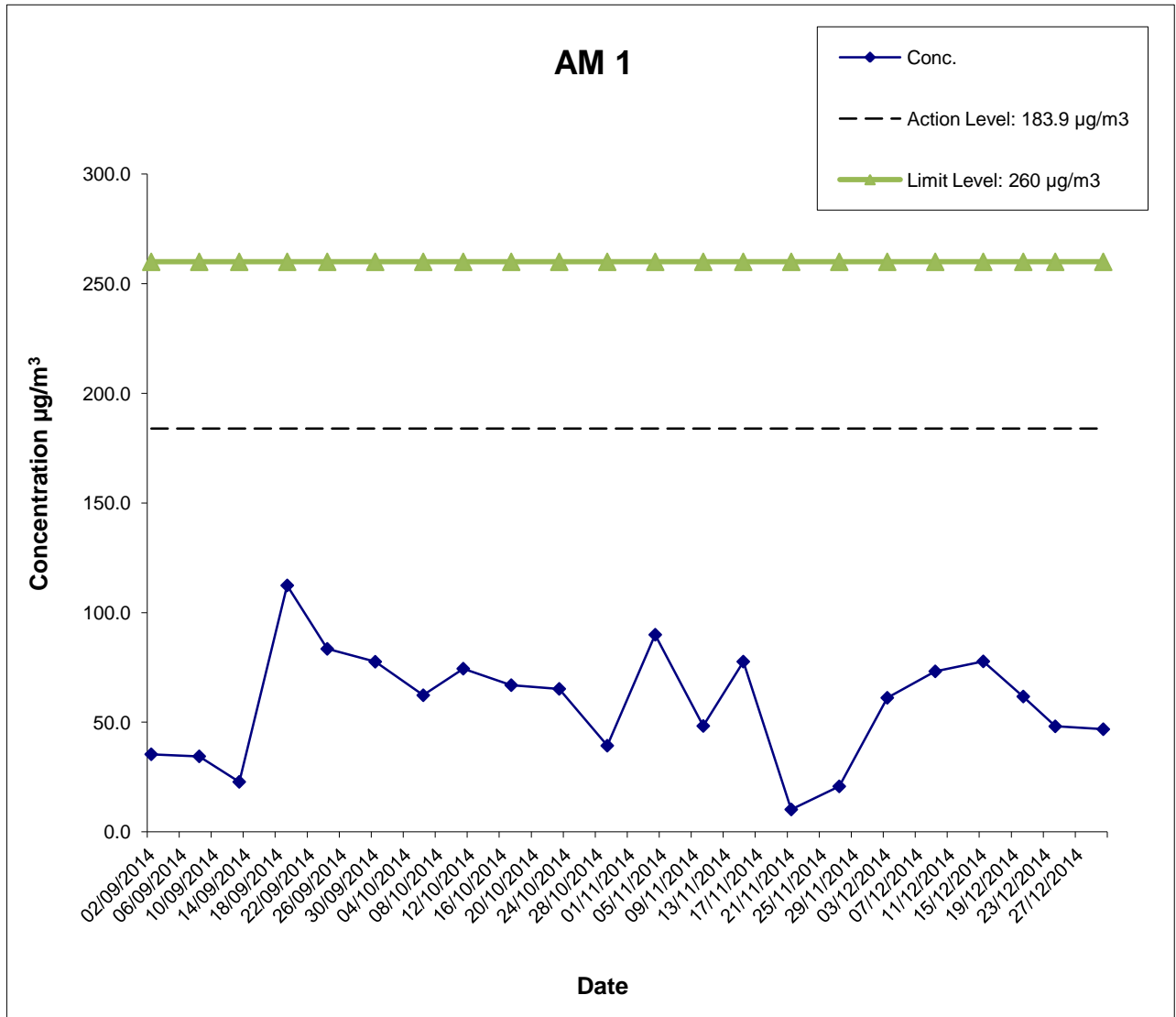
**Air Quality Monitoring Results and
their Graphical Presentations**

**Appendix G
Air Quality Monitoring Results**

24-hour TSP Monitoring Results at Station AM1 (No. 234 – 238 Chatham Road North)

Start		End		Weather Condition	Air Temp. (°C)	Atmospheric Pressure (hPa)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)
Date	Time	Date	Time				Initial	Final			Initial	Final		Initial	Final		
3-Dec-14	0:00	4-Dec-14	0:00	Cloudy	18.3	1017.4	1.31	1.31	1.31	1890.7	2.7801	2.8957	0.1156	9544.06	9568.06	24.00	61.1
9-Dec-14	0:00	10-Dec-14	0:00	Cloudy	19.4	1021.5	1.31	1.31	1.31	1890.7	2.7156	2.8540	0.1384	9568.06	9592.06	24.00	73.2
15-Dec-14	0:00	16-Dec-14	0:00	Fine	18.6	1020.9	1.31	1.31	1.31	1890.7	2.7124	2.8594	0.1470	9592.06	9616.06	24.00	77.7
20-Dec-14	0:00	21-Dec-14	0:00	Sunny	14.7	1020.8	1.31	1.31	1.31	1890.7	2.7256	2.8423	0.1167	9616.06	9640.06	24.00	61.7
24-Dec-14	0:00	25-Dec-14	0:00	Cloudy	18.7	1021.4	1.31	1.31	1.31	1890.7	2.7366	2.8276	0.0910	9640.06	9664.06	24.00	48.1
30-Dec-14	0:00	31-Dec-14	0:00	Fine	14.9	1019.8	1.31	1.31	1.31	1890.7	2.7028	2.7913	0.0885	9640.06	9664.06	24.00	46.8
Average																61.5	
Minimum																46.8	
Maximum																77.7	

Appendix G Air Quality Monitoring Results

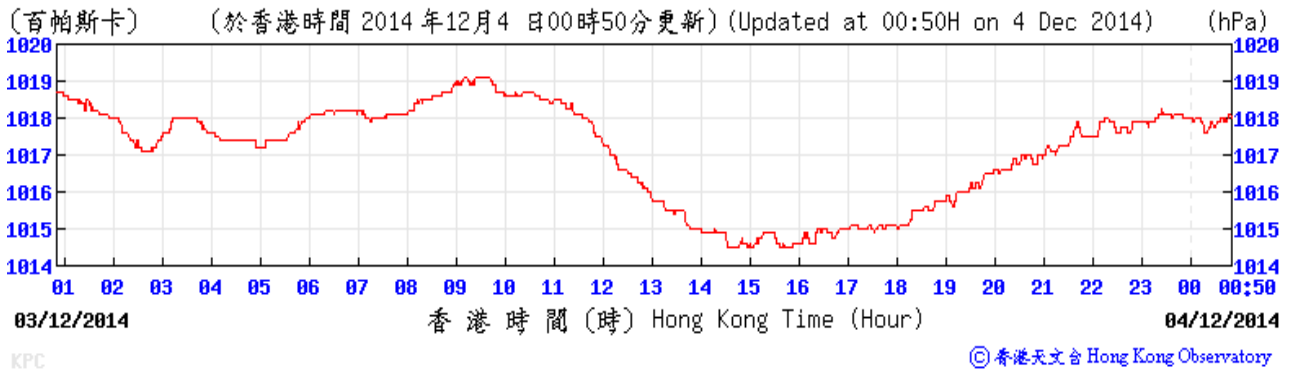


	Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels	SCALE	N.T.S.	DATE	Jan-15
		CHECK	TYUT	DRAWN	LLMC
	Graphical Presentations of Impact 24-hour TSP Monitoring Results	JOB NO.	60284101	APPENDIX No. G	Rev. -

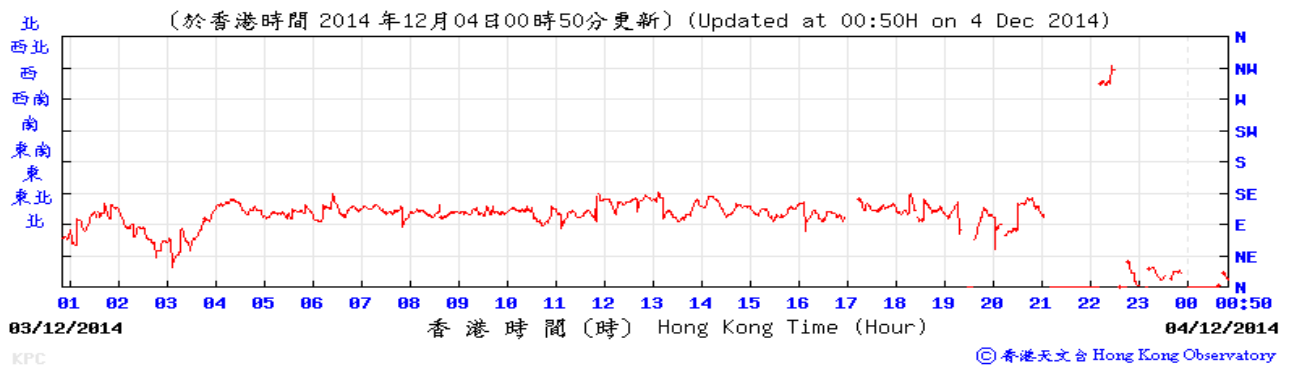
Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, December 2014

3-Dec-14

Pressure:

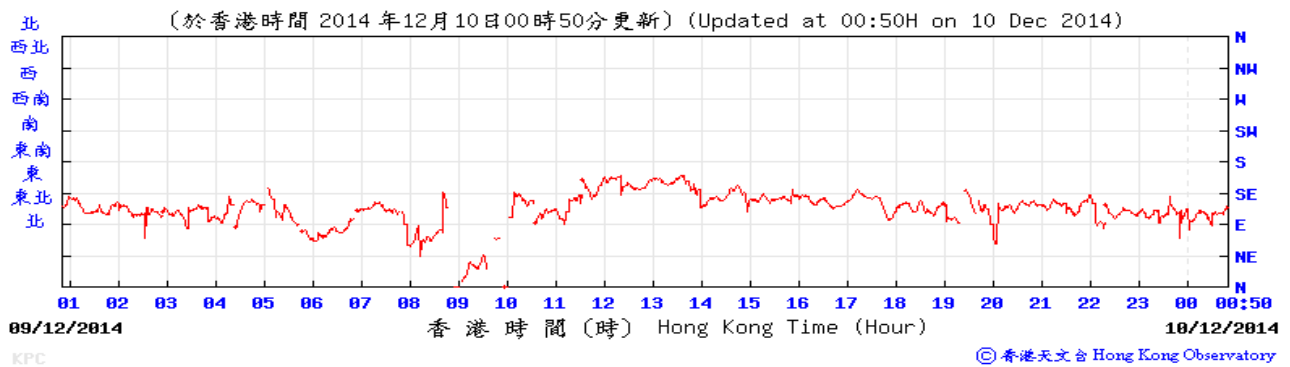


Wind Direction:

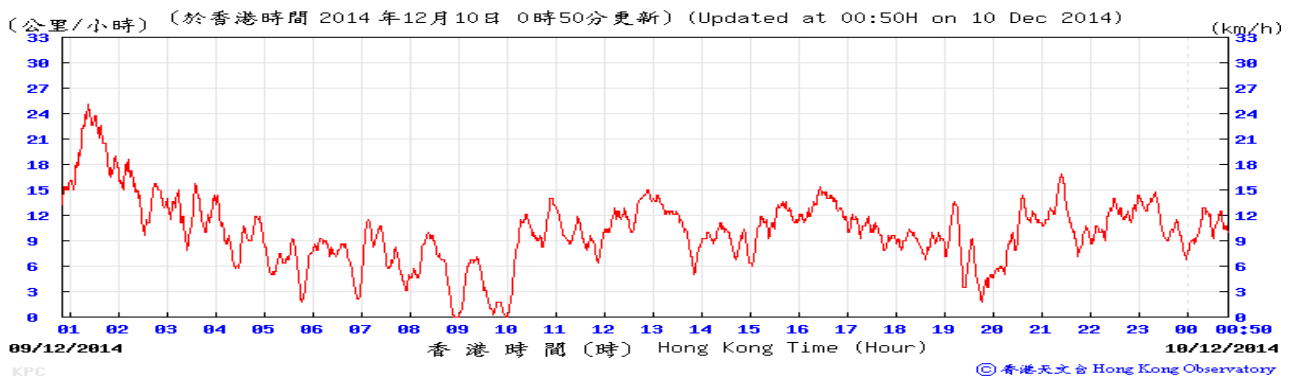


9-Dec-14

Pressure:



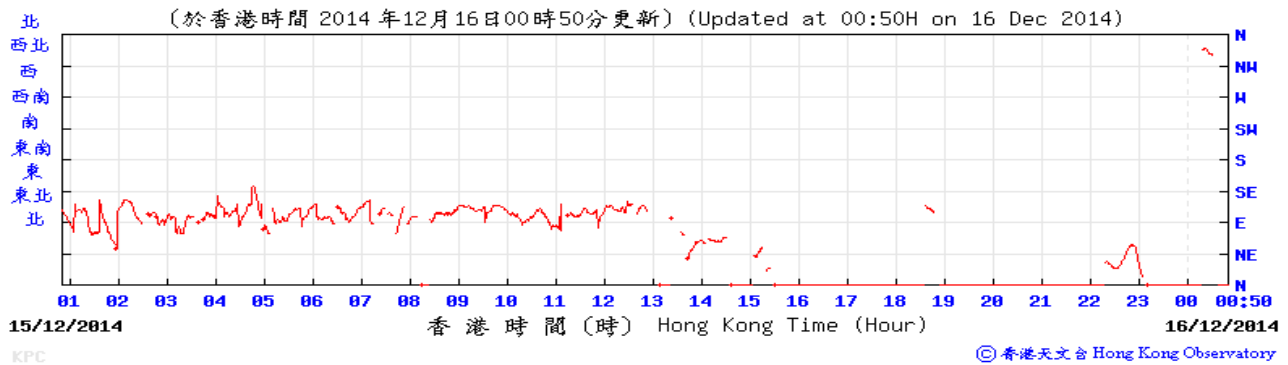
Wind Direction:



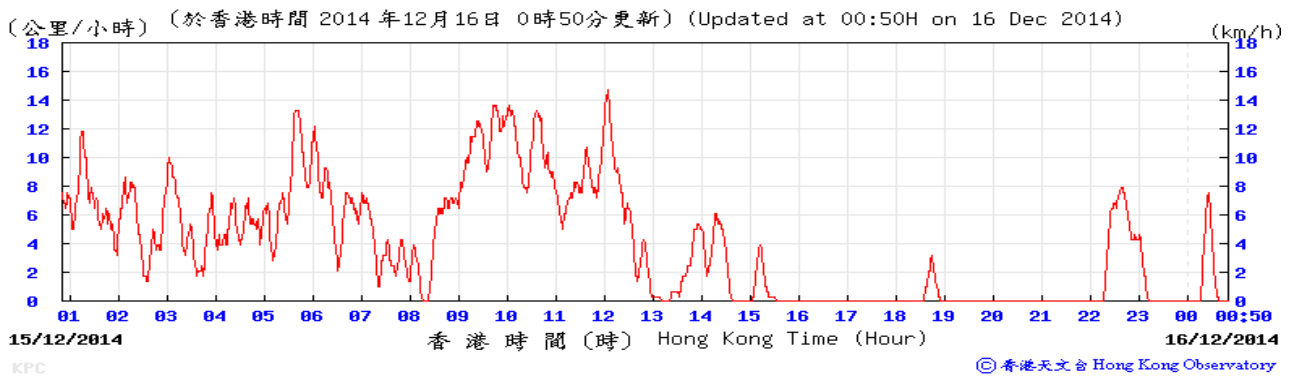
Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, December 2014

15-Dec-14

Pressure:

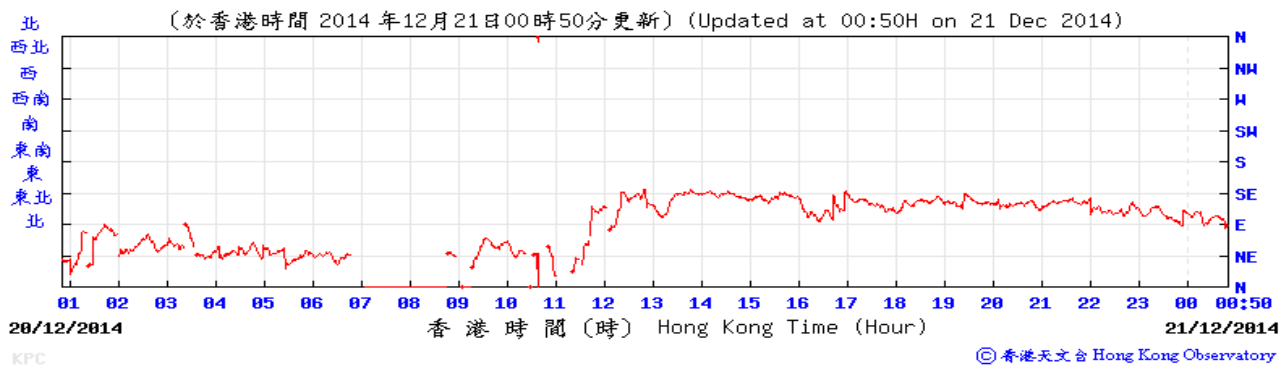


Wind Direction:

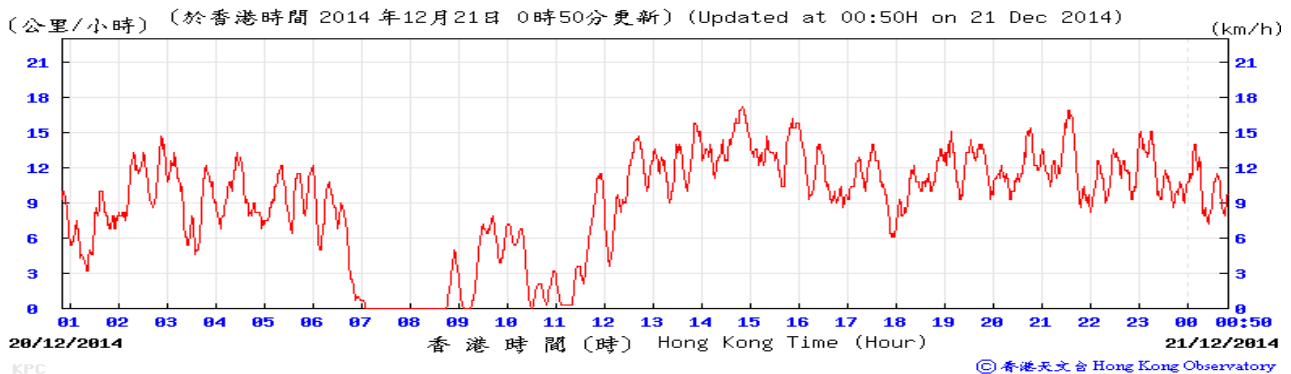


20-Dec-14

Pressure:



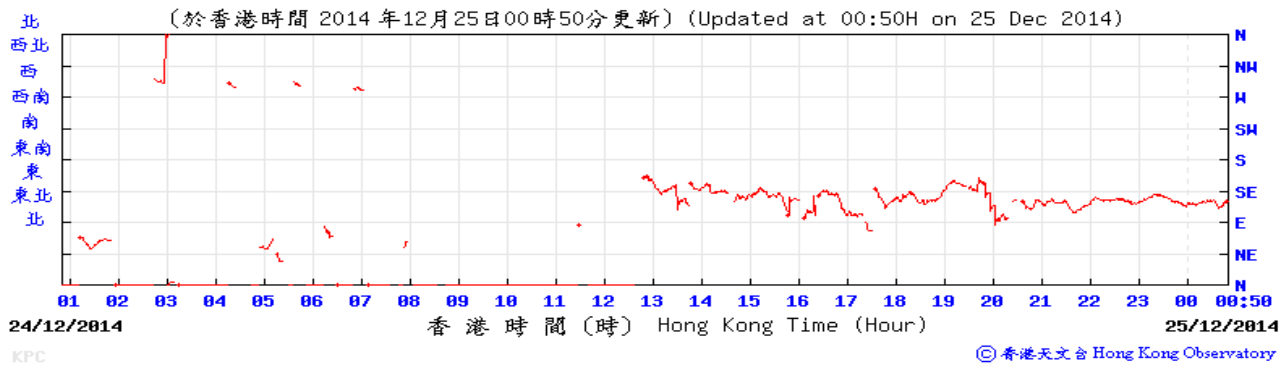
Wind Direction:



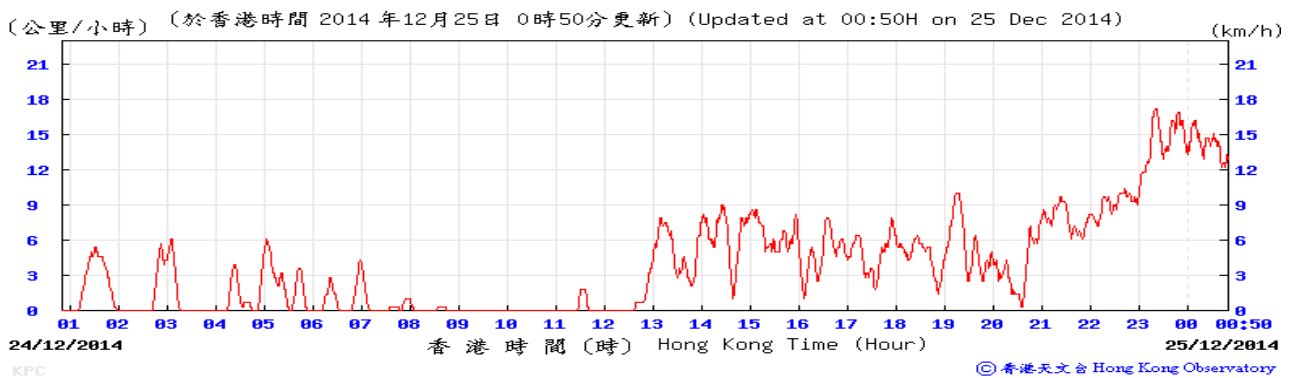
Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, December 2014

24-Dec-14

Pressure:

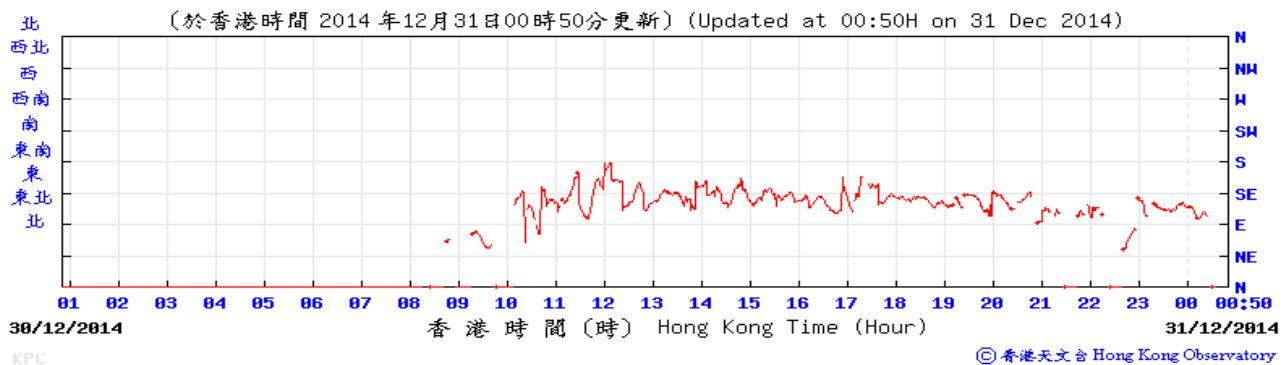


Wind Direction:

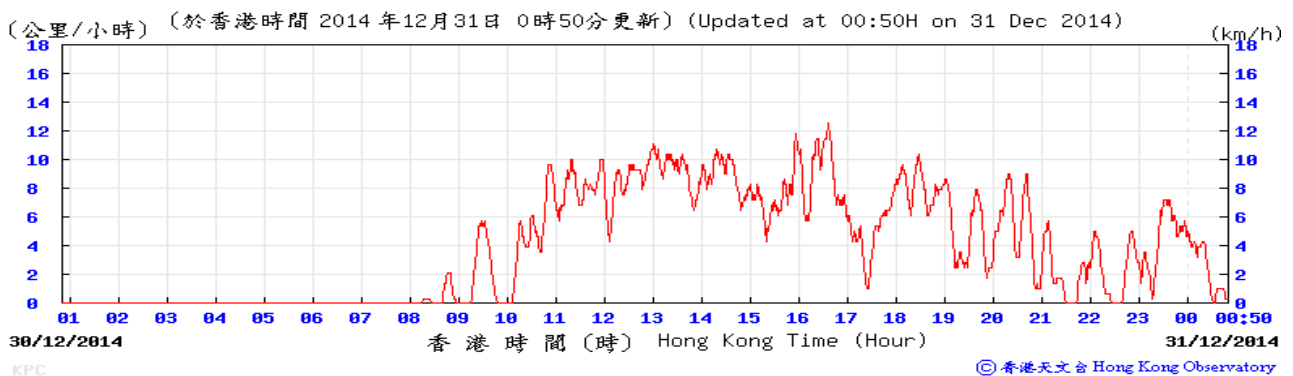


30-Dec-14

Pressure:



Wind Direction:



APPENDIX H

**Noise Monitoring Results and
their Graphical Presentations**

Appendix H Regular Construction Noise Monitoring Results

Daytime Noise Monitoring Results at Station NM 1 (Carmel Secondary School (South Block))

Date	Weather Condition	Noise Level for 30-min, dB(A) ⁺				Baseline Corrected	Baseline Noise Level, dB(A)	Limit Level*, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
4-Dec-14	Cloudy	9:20	65.5	70.4	68.7	60.4	68.0	70	N
10-Dec-14	Fine	10:05	66.0	71.0	69.6	64.5	68.0	70	N
16-Dec-14	Fine	14:29	64.8	69.5	67.9	<Baseline	68.0	70	N
23-Dec-14	Sunny	10:00	66.5	71.5	69.6	64.5	68.0	70	N
31-Dec-14	Fine	14:21	66.5	70.1	68.7	60.4	68.0	70	N

Daytime Noise Monitoring Results at Station NM 2 (No. 234 – 238 Chatham Road North)

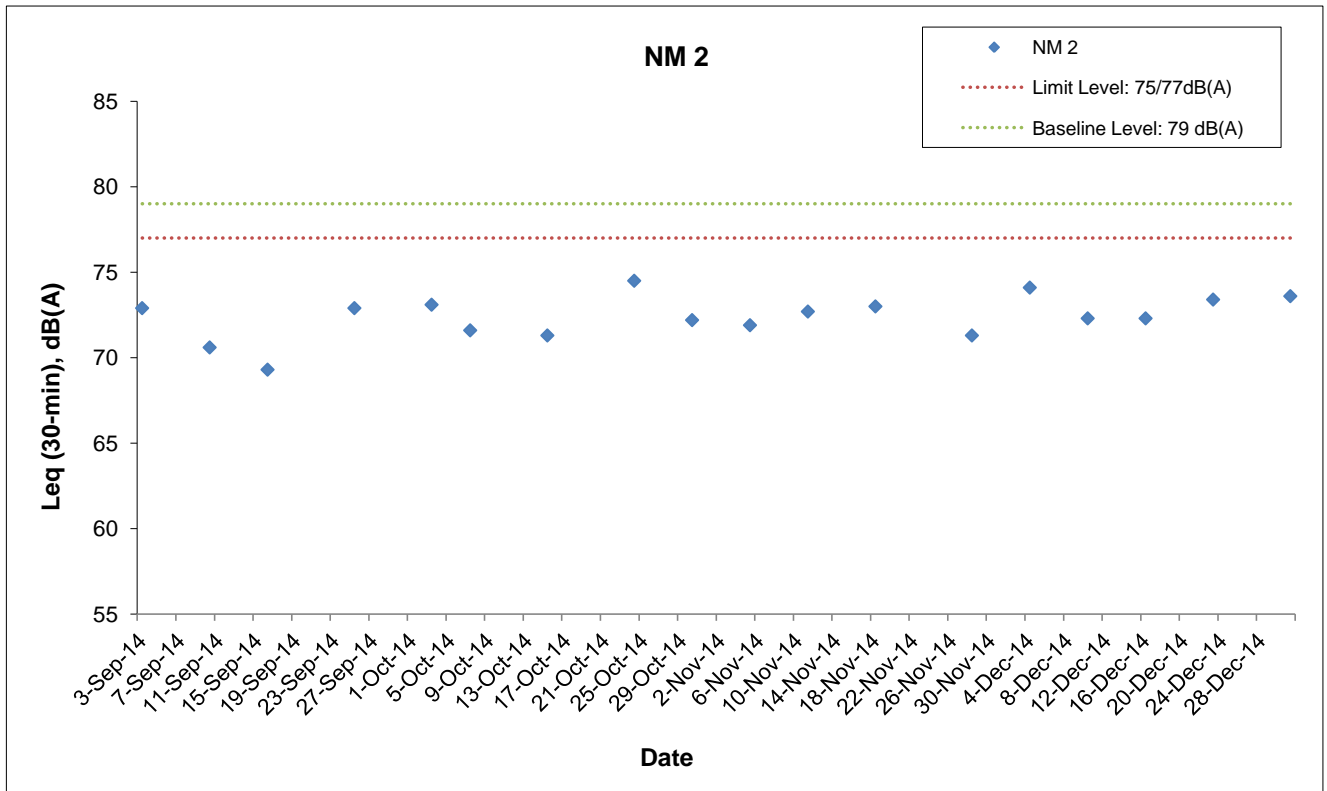
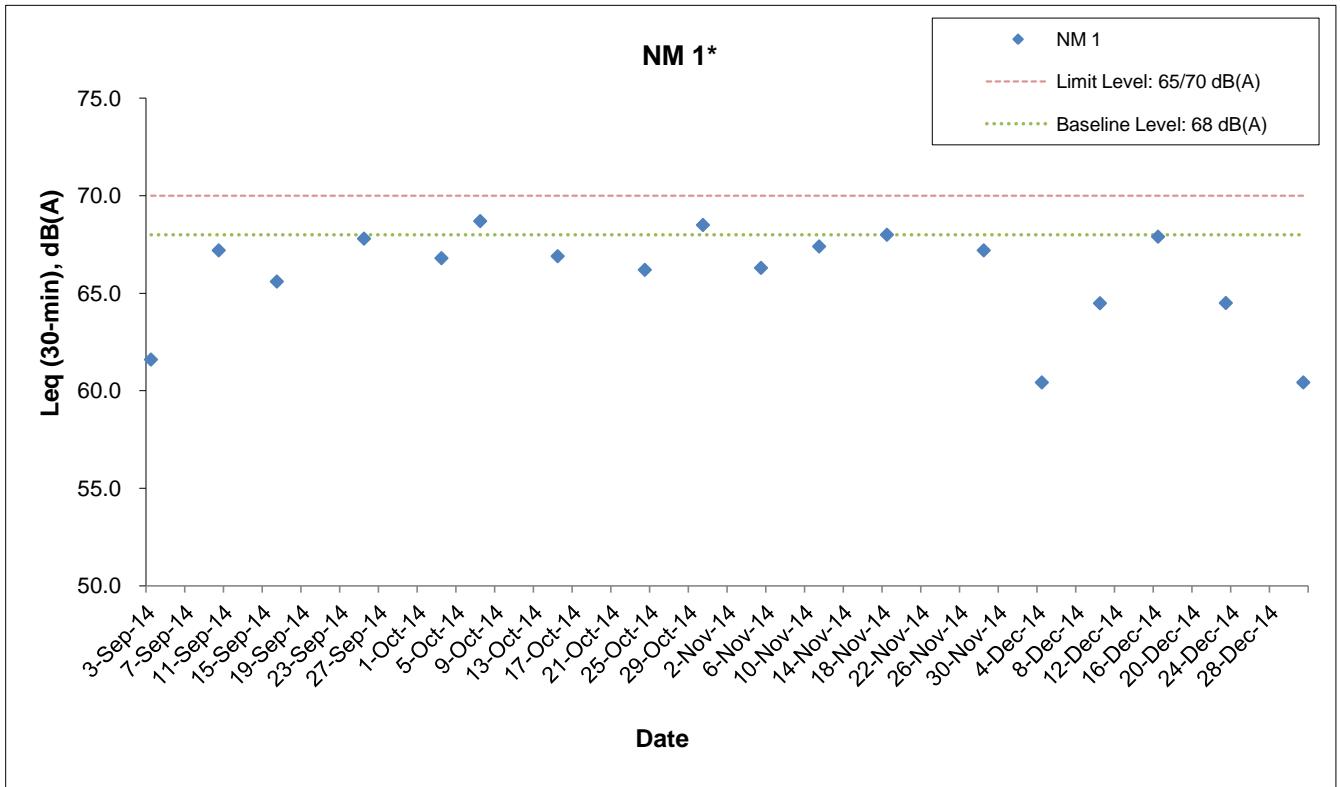
Date	Weather Condition	Noise Level for 30-min, dB(A) ⁺⁺				Baseline Corrected	Baseline Noise Level, dB(A)	Limit Level**, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
4-Dec-14	Cloudy	10:00	71.9	75.2	74.1	<Baseline	79.0	77	N
10-Dec-14	Fine	11:00	70.8	73.4	72.3	<Baseline	79.0	77	N
16-Dec-14	Fine	15:30	71.2	74.3	72.3	<Baseline	79.0	77	N
23-Dec-14	Sunny	11:00	71.8	74.6	73.4	<Baseline	79.0	77	N
31-Dec-14	Fine	15:00	72.2	74.5	73.6	<Baseline	79.0	77	N

⁺⁺ - Free field measurement

* - Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

** - Limit Level of 77dB(A) applies during continuous noise monitoring period from 1 to 31 December 2014.

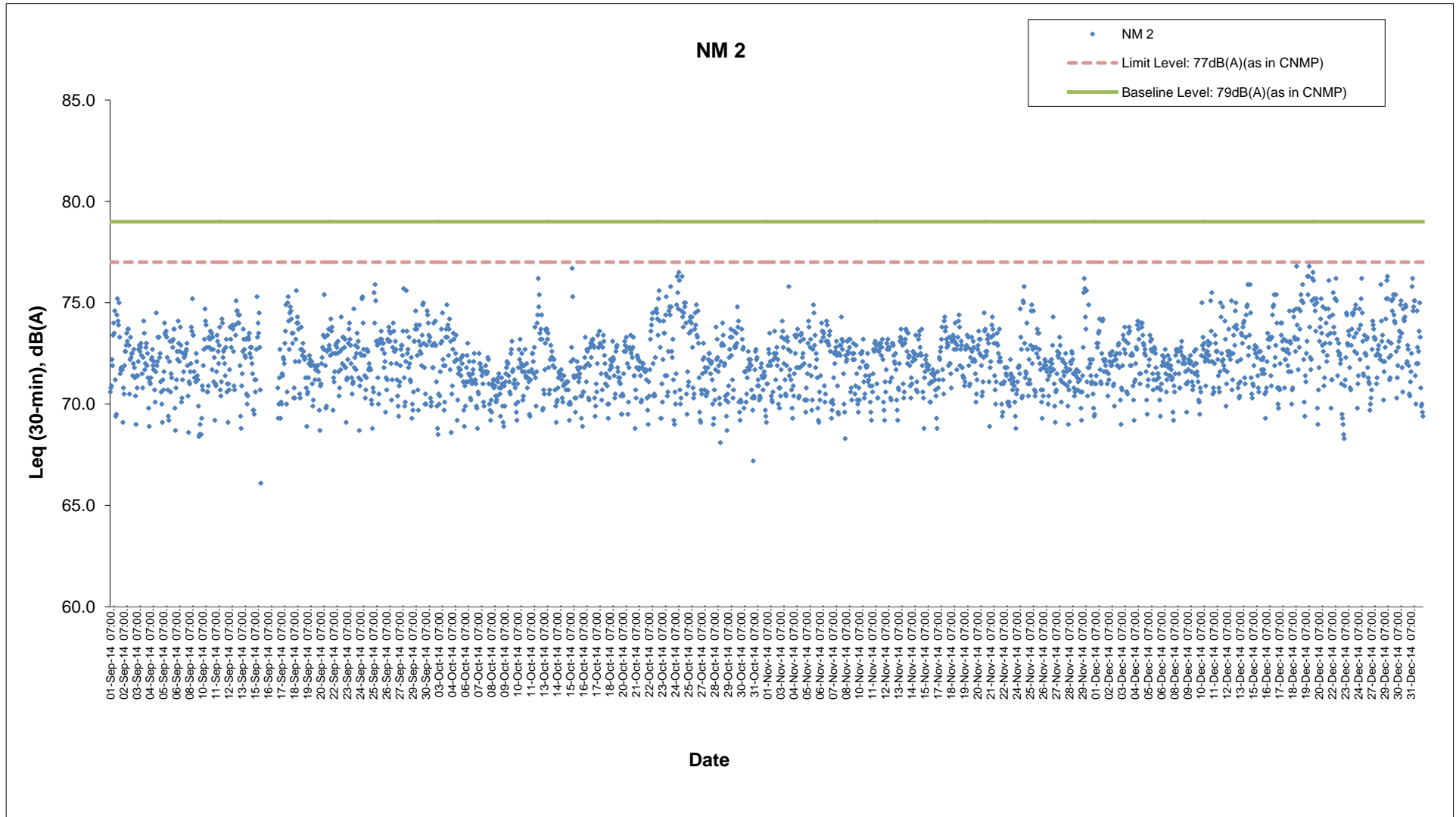
Appendix H Regular Construction Noise Monitoring Results



* - The noise monitoring results of the measurements are higher than the daytime construction noise criterion. However, the results are not considered as exceedance if they are either below the baseline level or below the limit level after deducting the baseline noise level.

AECOM	Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels	SCALE	N.T.S.	DATE	Jan-15
	Graphical Presentations of Noise Monitoring Results	CHECK	TYUT	DRAWN	LLMC
		JOB NO.	60284101	APPENDIX	H

Appendix H Continuous Noise Monitoring Results



* Continuous noise monitoring at NM2 on 15-16 September 2014 was cancelled due to typhoon signal was hoisted by Hong Kong Observatory.

	Shatin to Central Link Works Contract 1111- Hung Hom North Approach	SCALE	N.T.S.	DATE	Jan-15
	Tunnels	CHECK	TYUT	DRAWN	LLMC
	Graphical Presentations of Continuous Noise Monitoring Results	JOB NO.	60284101	APPENDIX	H

APPENDIX I

Event Action Plan

Appendix I – Event and Action Plan

Event / Action Plan for Construction Dust

EVENT	ACTION			
	ET	IEC	ER	Contractor
ACTION LEVEL				
1. Exceedance for one sample	1. Inform the Contractor, IEC and ER; 2. Discuss with the Contractor and IEC on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing.	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.

EVENT	ACTION			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	1. Inform the Contractor, IEC and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

EVENT	ACTION			
	ET	IEC	ER	Contractor
LIMIT LEVEL				
1. Exceedance for one sample	1. Inform the Contractor, IEC, EPD and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	1. Notify Contractor, IEC, EPD and ER ; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Regular Construction Noise

EVENT	ACTION			
	ET	IEC	ER	Contractor
Exceedance of Action Level	1. Notify the Contractor, IEC and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; and 3. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the contractor; and 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of complaint in writing; 2. Review and agree on the remedial measures proposed by the Contractor; and 3. Supervise implementation of remedial measures.	1. Investigate the complaint and propose remedial measures; 2. Report the results of investigation to the IEC, ET and ER; 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification; and 4. Implement noise mitigation proposals.

EVENT	ACTION			
	ET	IEC	ER	Contractor
Exceedance of Limit Level	1. Notify the Contractor, IEC, EPD and ER ; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Review the effectiveness of Contractor's remedial measures and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures; and 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of failure in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; and 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Continuous Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action/Limit Level	<p>1. Identify source ;</p> <p>2. Repeat measurement. If two consecutive measurements exceed Action/Limit Level, the exceedance is then confirmed;</p> <p>3. If exceedance is confirmed, notify IEC, ER and Contractor;</p> <p>4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented;</p> <p>5. Discuss jointly with the IEC, ER and Contractor and formulate remedial measures; and</p> <p>6. Assess effectiveness of Contractor's remedial actions and keep IEC and ER informed of the results.</p>	<p>1. Check monitoring data submitted by the Works Contract 1111 ET;</p> <p>2. Check the Contractor's working method;</p> <p>3. Discuss with the ER, Works Contract 1111 ET and Contractor on the potential remedial measures; and</p> <p>4. Review and advise the Works Contract 1111 ET and ER on the effectiveness of the remedial measures proposed by the Contractor.</p>	<p>1. Confirm receipt of notification of exceedance in writing;</p> <p>2. In consultation with the Works Contract 1111 ET and IEC, agree with the Contractor on the remedial measures to be implemented;</p> <p>3. Ensure the proper implementation of remedial measures; and</p> <p>4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>1. Identify source with the Works Contract 1111 ET;</p> <p>2. If exceedance is confirmed, investigation the cause of exceedance and take immediate action to avoid further exceedance;</p> <p>3. Submit proposals for remedial measures to the ER with copy to the IEC and ET of notification;</p> <p>4. Implement the agreed proposals;</p> <p>5. Liaise with ER to optimize the effectiveness of the agreed mitigation;</p> <p>6. Revise and resubmit proposals if problem still not under control; and</p> <p>7. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

Event / Action Plan for Landscape and Visual during Construction Stage

EVENT	ET	IEC	ER	Contractor
ACTION LEVEL				
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

APPENDIX J

**Cumulative Statistics of Complaints, Notification of Summons
and Successful Prosecutions**

Appendix J**Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions**

	Date Received	Subject	Status	Total no. received in this month	Total no. received since project commencement
Environmental complaints	-	-	-	0	1
Notification of summons	-	-	-	0	0
Successful Prosecutions	-	-	-	0	0

APPENDIX K

Waste Flow Table

Appendix K Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly (Note 1)													Actual Quantities of Non-inert C&D Materials (i.e. C&D Wastes) Generated Monthly					
	Generated					Disposed				Reused				Recycled			Disposed		
	Fill Material	Artificial Material			Total Quantity Generated	Disposed as Public Fills at TKO137	Disposed as Public Fills at TM38	Disposed as Public Fills at CWPFBP	Total Quantity Disposal	Reused in the Contract	Reused in other Projects		Delivered to HH Barging Point (Note 5)	Total Quantity Reused	Metals	Paper/ cardboard packaging (Note 3)	Plastics	Chemical Waste	General Refuse (Note 2)
		Soil and Rock	Broken Concrete	Asphalt							Building Debris	Tolo							
Unit	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	
Jan	1.210	0.016	0.004	0.000	1.230	0.000	1.037	0.004	1.041	0.021	0.000	0.168	0.000	0.189	10.210	1.305	0.000	0.000	139.090
Feb	1.645	0.011	0.000	0.000	1.656	0.000	1.496	0.000	1.496	0.035	0.017	0.108	0.000	0.159	15.640	0.245	0.002	0.000	96.430
Mar	1.485	0.050	0.000	0.000	1.535	0.001	1.384	0.000	1.386	0.075	0.046	0.029	0.000	0.149	7.240	0.287	0.002	0.000	191.550
Apr	1.156	0.023	0.000	0.000	1.179	0.197	0.982	0.000	1.179	0.000	0.000	0.000	0.000	0.000	0.000	0.187	0.000	0.000	107.290
May	2.370	0.020	0.000	0.000	2.390	0.257	1.587	0.000	1.844	0.030	0.000	0.000	0.516	0.546	0.000	0.123	0.002	0.000	110.180
Jun	1.721	0.386	0.040	0.571	2.718	0.174	2.075	0.000	2.249	0.000	0.000	0.000	0.469	0.469	0.000	0.184	0.000	0.000	93.970
SUB-TOTAL	9.586	0.506	0.044	0.571	10.707	0.629	8.562	0.004	9.195	0.161	0.062	0.304	0.985	1.512	33.090	2.331	0.006	0.000	738.510
Jul	1.778	0.010	0.038	0.004	1.830	0.575	0.415	0.000	0.990	0.005	0.497	0.000	0.339	0.840	0.000	0.368	0.014	0.040	92.460
Aug	2.257	0.000	0.014	0.000	2.271	1.678	0.003	0.000	1.681	0.000	0.366	0.000	0.195	0.561	0.000	0.120	0.000	0.000	58.660
Sep	2.038	0.007	0.000	0.000	2.045	1.548	0.011	0.000	1.559	0.000	0.254	0.000	0.232	0.486	0.000	0.154	0.000	0.000	58.700
Oct	2.371	0.003	0.031	0.004	2.409	1.641	0.026	0.000	1.667	0.040	0.141	0.000	0.538	0.719	0.000	0.130	0.000	0.000	78.700
Nov	3.154	0.009	0.000	0.008	3.171	2.001	0.022	0.000	2.023	0.000	0.223	0.000	0.926	1.148	0.000	0.091	0.000	0.000	51.100
Dec	6.058	0.000	0.000	0.000	6.058	2.173	0.002	0.000	2.175	0.000	0.168	0.000	3.715	3.883	0.000	0.098	0.000	0.166	76.720
TOTAL	27.242	0.535	0.127	0.586	28.491	10.245	9.041	0.004	19.290	0.206	1.709	0.304	6.928	9.148	33.090	3.292	0.020	0.206	1154.850

Note:

1. Assume the density of fill is 2 ton/m³.
2. Refuses disposed of at North East New Territories (NENT) Landfill.
3. Assume the weight of recycled papers is 7 kg/bag.

4. Public fills disposed of at Tseung Kwan O Area 137 Fill Bank (TKO137), Tuen Mun Area 38 Fill Bank (TM38) and Chai Wan Public Fill Barging Point (CWPFBP).

5. Public fills was delivered to Hung Hom Barging Point and handled by the Contractor of SCL1112.

Appendix E

**23rd EM&A Report for Works Contract 1103 –
Hin Keng to Diamond Hill**

MTR Corporation Limited

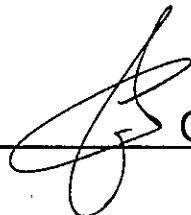
**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 23

[Period from 1 to 31 December 2014]

Works Contract 1103 – Hin Keng to Diamond Hill Tunnels

(January 2015)

Certified by:  Coleman Ng _____

Position: Environmental Team Leader

Date: 13/01/2015

MTR Corporation Limited

**SCL1103 Hin Keng to Diamond
Hill Tunnels Construction Stage -
Environmental Services**

Monthly Environmental Monitoring
and Audit Report – December 2014

228105-27

January 2015

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 228105-27

Ove Arup & Partners Hong Kong Ltd

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ARUP

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- Figure 1.3: Locations of Project Works Areas – Site layout Plan of Fung Tak EAP/EEP (Sheet 3 of 6)
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- Appendix A: Construction programme
- Appendix B: Environmental Monitoring Programme in the Reporting Month
- Appendix C: Environmental Mitigation Implementation Schedule (EMIS)
- Appendix D: Calibration Certificates for Air Monitoring Equipment
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- Appendix J: Monthly Waste Flow Table
- Appendix K: Environmental Monitoring Programme for Coming Month
- Appendix L: Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Executive Summary

This is the twenty-third monthly Environmental Monitoring and Audit (EM&A) report prepared by Ove Arup & Partners Hong Kong Limited (Arup), the designated Environmental Team (ET), for the Project “SCL1103 Hin Keng to Diamond Hill Tunnels”. Construction works of this works contract commenced on 14 February 2013 and this report presents the results of EM&A works conducted in the month of November 2014 (1 to 31 December 2014).

In the reporting month, the following activities took place for the Project:

- Tunnel Boring Machine (TBM) tunneling and machinery site assembly at Diamond Hill;
- Pipe Piling, grouting and tunnel blasting at Hin Keng;
- Shaft Excavation and ELS and sheet piling for retaining wall at Fung Tak; and
- Shaft Excavation and ELS at Ma Chai Hang.

Air Quality and noise monitoring were performed and the results were checked and reviewed. Site audits were conducted on weekly basis. The implementation of the environmental mitigation measures, Event and Action Plans and environmental complaint handling procedures were checked.

Impact monitoring was carried out at 3 air quality and 3 noise monitoring stations during the reporting month.

Environmental Monitoring Works – Breaches of Action and Limit Levels

Air Quality

All measured 24-hour TSP concentrations in the reporting month were below the Action and Limit Levels.

Noise

There was an Action Level exceedance recorded due to the receipt of a complaint during the reporting month.

No exceedance of Limit Level of regular construction noise was recorded during the reporting month.

Landscape and Visual Audit

Landscape and visual site audits in accordance with the requirements stipulated in the EM&A manual were conducted in the reporting month. Based on the site inspections, no substantial change of Landscape Resources, Landscape Character Areas and Visual Sensitive Receivers was noted.

Waste Disposal

Inert C&D Materials with an actual amount of 24,958m³ were generated and disposed of at public fill in TKO137FB and Kai Tak Barging Point Facility (Contract 1108A). 124m³ of general refuse was generated and disposed of at NENT landfill. 175kg of paper / cardboard was generated.

Environmental Auditing

A total of 5 environmental site audits were conducted on a weekly basis in the reporting month. The first site inspection was on 3 December 2014 and the final was undertaken on 31 December 2014. An IEC joint site audit was undertaken on 17 December 2014. No non-conformance to the environmental requirements was identified during the reporting period.

Complaint Log

EPD referred two public complaints on 11 and 15 December 2014, respectively, regarding noise nuisance from blasting at midnight. Investigation had been carried out by ET as per EM&A programme and an investigation report was submitted to EPD

Notifications of Summons and Successful Prosecutions

No summons or prosecution related to the environmental issues were made against the Project in the reporting period.

Reporting Changes

There were no reporting changes during the reporting month.

Future Key Issues

Waste management is a key environmental issue. The waste management plan should be strictly followed in accordance with the requirements described in the EIA report.

Water Quality impact is also a key environmental issue. The drainage system should be well maintained. All wastewater generated within the site shall be collected and treated prior to discharge.

Construction noise is also a key environmental issue. The implemented construction noise mitigation measures should also be maintained and improved as necessary. Especially in restricted hours, the conditions stipulated in the CNPs should be strictly followed when the construction works were carried out during restricted hours.

Construction dust is also key environmental issue. The implemented construction dust mitigation measures including covering of exposed slope / soil with tarpaulin sheet etc., should be maintained and improved as necessary. Adequate water spraying should be provided for the unpaved area to minimize dust disturbance.

1 Environmental Status

1.1 Project Background

The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an extension of the Ma On Shan Line and is approximately 11 km long. It links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts and this Works Contract 1103 covers the construction of the tunnels between Diamond Hill (DIH) and Hin Keng (HIK).

1.2 Construction Programme

An up-to-date rolling construction programme is attached in **Appendix A**.

1.3 Work Undertaken During the Reporting Month

The major construction activities carried out by the Contractor in the reporting month are summarized in **Table 1.1**. Location of the works area is indicated in **Figures 1.1** to **1.6**. The structure of the project organisation in relation to the environmental management is shown in **Figure 1.7**. Contacts of key environmental staff of the Project are shown in **Table 1.2**.

Table 1.1 Construction Activities in the Reporting Month

Locations	Major Works Undertaken
Diamond Hill	Tunnel Boring Machine (TBM) tunneling and machinery site assembly.
Hin Keng	Pipe Piling, grouting and tunnel blasting.
Fung Tak	Shaft Excavation and ELS and sheet piling for retaining wall.
Ma Chai Hang	Shaft Excavation and ELS.

1.4 Project Organization

Contacts of key environmental staff of the Project and are shown in **Table 1.2**.

Table 1.2 Contacts of Key Environmental Staff

Organisation	Name	Telephone
Project Proponent: MTRC Engineer's Representative SCL Project-wide Environmental Team Leader	Thomas Barrett Richard Kwan	2163 6181 2688 1283
Independent Environmental Checker: Meinhardt Infrastructure & Environment Ltd. Independent Environmental Checker	Fredrick Leong	2859 1739
Contractor: VINCI Constructions Grand Projects Project Director IMS Manager	Francois Dudouit L K Mak	3765 5610 3765 5635
Contractor's Environmental Team: Ove Arup & Partners Hong Kong Ltd. Designated Environmental Team Leader for Works Contract 1103	Coleman Ng	2268 3097

1.5 Project Area and Environmental Monitoring locations

The Project area is shown in **Figures 1.1** to **1.6**, while **Table 1.3** and **Figures 1.8** to **1.13** show the names and locations of the monitoring stations.

Table 1.3 Summary of Air Quality and Noise Monitoring Stations

ID	Premise
Air Quality	
DMS-1	C.U.H.K.A.A. Thomas Cheung School
DMS-2	Price Memorial Catholic Primary School
DMS-3 ^(Note 2) / DMS-4 ^(Note 3)	Hong Kong Sheng Kung Hui Nursing Home ^(Note 1)
Noise	
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School
NMS-CA-2	Price Memorial Catholic Primary School
NMS-CA-3 ^(Note 2) / NMS-CA-4 ^(Note 3)	Hong Kong Sheng Kung Hui Nursing Home

Note:

Note 1: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On House.

Note 2: Station ID as identified in approved EM&A Manual / EIA Report for SCL (TAW - HUH).

Note 3: Station ID as identified in approved EM&A Manual / EIA Report for SCL (HHS).

1.6 Impact Monitoring Schedule

Environmental monitoring and audit was carried out in accordance with the requirements stipulated in the EM&A Manual. Air quality and noise monitoring as well as weekly site audit schedule for the reporting month with respect to the construction programme is shown in **Appendix B**.

1.7 Status of Environmental Licensing and Permitting

All permits/licences for the reporting month are summarised in **Table 1.4**. They are all properly kept by the contactor at their site office.

Table 1.4 Summary of Environmental Licensing Status

Types of Permits / Licenses	Reference No.	Site	Valid from	Valid to
Environmental Permit	EP-438/2012	All	22 Mar 2012	Superseded
	EP-438/2012A	All	12 July 2012	Superseded
	EP-438/2012/B	All	26 Oct 2012	Superseded
	EP-438/2012/C	All	30 Apr 2013	Superseded
	EP-438/2012/D	All	13 Sept 2013	Superseded
	EP-438/2012/E	All	4 April 2014	Superseded
	EP-438/2012/F	All	15 July 2014	Superseded
	EP-438/2012/G	All	14 Aug 2014	Superseded
	EP-438/2012/H	All	10 Sept 2014	Throughout the Contract
Discharge License under WPCO	WT00014697-2012	Diamond Hill	30 Nov 2012	30 Nov 2017
	WT00014650-2012	Hin Keng	10 Dec 2012	31 Dec 2017
	WT00014648-2012	Hin Keng	10 Dec 2012	31 Dec 2017
	WT00015145-2013	Shui Chuen O	21 Feb 2013	28 Feb 2018
	WT00015513-2013	Ma Chai Hang	2 Apr 2013	30 Apr 2018
	WT00015430-2013	Fung Tak	18 Mar 2013	31 Mar 2018
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation	351345	All	22 Oct 2012	15 Apr 2018
Construction Noise Permit (CNP)	GW-RE1232-14	Ma Chai Hang	11 Nov 2014	Superseded
	GW-RE1346-14	Ma Chai Hang	2 Dec 2014	31 May 2015
	GW-RE1349-14	Fung Tak	8 Dec 2014	7 Jan 2015
	GW-RE1251-14	Fung Tak	11 Nov 2014	4 Mar 2015
	GW-RN0660-14	Hin Keng	28 Oct 2014	31 Jan 2015
	GW-RN0658-14	Hin Keng	28 Oct 2014	31 Jan 2015

Types of Permits / Licenses	Reference No.	Site	Valid from	Valid to
	GW-RN0705-14	Hin Keng	26 Nov 2014	25 May 2015
	GW-RE1214-14	Diamond Hill	8 Nov 2014	7 Apr 2015
Chemical Waste Producer Registration	5213-759-V2179-01	Hin Keng	13 Dec 2012	Throughout the Contract
	5213-281-V2180-01	Diamond Hill	12 Dec 2012	Throughout the Contract
	5213-281-V2179-03	Fung Tak	5 Mar 2013	Throughout the Contract
	5213-282-V2180-02	Ma Chai Hang	18 Mar 2013	Throughout the Contract
Billing Account for Disposal of Construction Waste	7016250	All	2 Nov 2012	Throughout the Contract

1.8 Purpose of the Report

The purpose of this monthly EM&A report is to provide the information on monitoring methodology, monitoring results, environmental permit status, site audit findings, recommendations and conclusions during the construction of this works contract for the EM&A conducted during the construction period. This is the twenty-third monthly EM&A report summarising the monitoring methodology, locations, periods, frequencies, results and any observation from the air quality, noise, ecology, waste management, landscape and visual monitoring and environmental site audit from 1 to 31 December 2014.

2 Implementation Status

2.1 Implementation Status of Mitigation Measures

During weekly site inspections, the environmental protection, and pollution control/mitigation measures in accordance with the requirements stipulated in the EIA were observed. The key observations and ET's corresponding recommendations while the Contractor's response and follow-up status are described in **Section 7.1**.

2.2 Updated Implementation Schedule

According to the Environmental Permit, the mitigation measures detailed in the permits are required to be implemented. The Implementation Schedule of Mitigation Measures was inspected during the weekly site inspections in reporting month. The details of the findings/observations are described in **Section 7.1**. An updated summary of the Implementation Schedule of Mitigation Measures is presented in **Appendix C**. The status of the required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 2.1**.

Table 2.1 Status of Required Submissions under the EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (November 2014)	12 December 2014

3 Air Quality Monitoring

3.1 Air Quality Monitoring Requirements

Monitoring Parameters

Regular 24-hour TSP levels shall be monitored during the construction stage while 1-hour TSP levels shall be required to monitor in case of complaints received.

Monitoring Frequency

The monitoring frequency is summarised in **Table 3.1**.

Table 3.1 Air quality monitoring parameters and frequency

Parameters	Monitoring Frequency
24-hour TSP	Once every 6 days
1-hour TSP	3 times every 6 days (as required in case of complaints)

Monitoring Locations

In accordance with the EM&A Manual and the subsequent Baseline Monitoring Report, three air quality monitoring locations during construction stage are required. The locations of the three air quality monitoring stations are shown below in **Table 3.2**:

Table 3.2 Air Quality Monitoring Locations

ID	Premise
DMS -1	C.U.H.K.A.A. Thomas Cheung School
DMS -2	Price Memorial Catholic Primary School
DMS-3 ^(Note 2) / DMS-4 ^(Note 3)	Hong Kong Sheng Kung Hui Nursing Home ^(Note 1)

Note:

Note 1: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On House.

Note 2: Station ID as identified in approved EM&A Manual / EIA Report for SCL (TAW - HUH).

Note 3: Station ID as identified in approved EM&A Manual / EIA Report for SCL (HHS).

Wind Monitoring

Wind monitoring data including wind speed and wind directions shall be collected from Hong Kong Observatory – Kai Tak and Sha Tin Meteorological Stations and shown in **Appendix F**.

Environmental /Quality Performance Limits

The monitoring results will be checked against the Action and Limit levels described in the Baseline Monitoring Report, of which they are excerpted and summarised in **Tables 3.3** and **3.4**.

Table 3.3 Action and Limit Level for Air Quality Monitoring of 24-hour TSP level

Level	Air Monitoring Stations		
	DMS-1	DMS-2	DMS-3 / DMS-4
Action Level, $\mu\text{g}/\text{m}^3$	148.7	167.4	159.1
Limit Level, $\mu\text{g}/\text{m}^3$	260		

Table 3.4 Action and Limit Level for Air Quality Monitoring of 1-hour TSP level

Level	Air Monitoring Stations		
	DMS-1	DMS-2	DMS-3 / DMS-4
Action Level, $\mu\text{g}/\text{m}^3$	283.9	276.2	278.4
Limit Level, $\mu\text{g}/\text{m}^3$	500		

Note:

Note 1: 1-hr TSP monitoring would be required in case of receiving complaints.

3.2 Air Quality Monitoring Methodology

3.2.1 Monitoring Equipment

High Volume Sampler (HVS) was used to monitor the 24-hour TSP. **Table 3.5** shows the equipment used for the air quality monitoring.

Table 3.5 Air Quality Equipment List for Impact Air Quality Monitoring

Equipment	Manufacturer & Model No	Measurement Parameter	Serial No.
High Volume Sampler	TE-5170	24-hour TSP	3761, 3762, 3763
Fibreglass Filter	G810		-
HVS Calibration Kit	TE-5025A		2421

3.2.2 Maintenance and Calibration

High Volume Sampler

The HVSs and their accessories were frequently checked and maintained in accordance with the manufacturer's operation and maintenance manual. The maintenance included checking of supporting screen and gasket, as well as routine replacement of motor carbon brushes for the blower motor. The power cords and power supply were checked each time before sampling to ensure proper operation.

The HVSs were calibrated at 2-month intervals using GMW-2535 calibration kit which is re-calibrated by the manufacturer after one year of use. The calibration spreadsheets of the HVSs and calibration certificate of the calibration kit are provided in **Appendix D**.

3.2.3 Monitoring Procedures

High Volume Sampler

Specifications of the HVS are as follows:

- 0.6 – 1.7 m^3/min (20 – 60SCFM);

- Equipped with a timing/control device with +/- 5 minutes accuracy for 24 hour operation;
- Installed with elapsed time meter with +/- 2 minutes accuracy for 24 hour operation;
- Capable of providing a minimum exposed area of 406 cm² (63in²);
- Flow control accuracy: +/-2.5% deviation over 24-hour sampling period;
- Equipped with a shelter to protect the filter and sampler;
- Incorporated with an electronic mass flow rate controller or other equivalent devices;
- Equipped with a flow recorder for continuous monitoring;
- Provided with a peaked roof inlet;
- Incorporated with a manometer;
- Able to hold and seal the filter paper to the sampler housing at horizontal position;
- Easy to change the filter; and
- Capable of operating continuously for 24-hour period.

The HVSs were equipped with an electronic mass flow controller and calibrated against a traceable standard at regular intervals. All equipment, calibration kit and filter papers were clearly labelled.

The relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and other special phenomena observed and work progress of the concerned site were recorded.

A HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd (HOKLAS no.: 066)), in accordance with their standard QA/QC procedures, with constant temperature and humidity control as well as equipped with necessary measuring and conditioning instruments to handle the 24-hour TSP samples was employed for sample analysis, and equipment calibration and maintenance. Filter papers of size 8"x10" were labelled before sampling. They were inspected clean with no pin holes and conditioned in a humidity controlled chamber for over 24-hour and be pre-weighed before use for the sampling.

The 24-hour TSP levels were measured by following the standard High Volume Method for Total Suspended Particulates as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B. TSP was sampled by drawing air through a conditioned, pre-weighted filter paper inside the HVS at a controlled air flow rate. After 24-hour sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag, and then returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1 mg. All the collected samples shall be kept in a good condition for 6 months before disposal.

3.3 Monitoring Results and Observations

3.3.1 Weather Condition

December 2014 was characterised at times by gloomy and rainy conditions associated with low pressure.

Mild and dry weather associated with the north east monsoon conditions were also persistent throughout the month.

3.3.2 Air Quality Monitoring Results

Monitoring of 24-hour TSP was conducted on 4, 10, 16, 22, 27 and 31 December 2014. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix E** and are summarised in **Table 3.6**. The graphical presentations of the monitoring results are provided in **Appendix E**. Wind data obtained from the Hong Kong Observatory – Kai Tak and Sha Tin stations during the reporting period are presented in **Appendix F**.

Table 3.6 Summary of Impact Air Quality Monitoring Results

Monitoring Station	24- hour TSP Monitoring Results ($\mu\text{g}/\text{m}^3$)		Action Level	Limit Level
	Average	Range		
DMS-1	86.1	125.5	148.7	260
DMS-2	69.2	121.0	167.4	260
DMS-3 / DMS-4	83.5	122.0	159.1	260

All 24-hour TSP measurements during the reporting month were below the Action/Limit Level. No exceedance of action and limit level was found.

The event and action plan is provided in **Appendix I**.

3.3.3 General Observations

Major construction works including Tunnel Boring Machine (TBM) tunneling and machinery site assembly at Diamond Hill; Pipe Piling, grouting and tunnel blasting at Hin Keng; Shaft Excavation and ELS and Sheet piling for retaining wall at Fung Tak and Shaft Excavation and ELS at Ma Chai Hang.

4 Noise Monitoring

4.1 Noise Monitoring Requirements

4.1.1 Impact Monitoring

Monitoring Parameters

Construction noise shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). L_{10} and L_{90} shall also be recorded as supplementary reference information for data auditing.

Monitoring Frequency

Noise measurements shall be conducted on a weekly basis. The monitoring time periods, monitoring parameters and frequency are summarised in **Table 4.1**.

Table 4.1 Construction Noise Monitoring Parameters and Frequency

Time Period (when construction activity is found)	Parameters	Monitoring Frequency
Between 0700-1900 hours on normal weekdays	$L_{eq}(30 \text{ min})$	Once per week

Monitoring Location

In accordance with the EM&A Manual and the subsequent Baseline Monitoring Report, three noise monitoring locations during the construction stage are required, namely:

Table 4.2 Noise Monitoring Locations

ID	Premise
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School
NMS-CA-2	Price Memorial Catholic Primary School
NMS-CA-3 ^(Note 2) / NMS-CA-4 ^(Note 3)	Hong Kong Sheng Kung Hui Nursing Home ^(Note 1)

Notes:

Note 1: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On house.

Note 2: Station ID as identified in approved EM&A Manual / EIA Report for SCL (TAW - HUH).

Note 3: Station ID as identified in approved EM&A Manual / EIA Report for SCL (HHS).

Environmental /Quality Performance Limits

The monitoring results will be checked against the Action and Limit levels described in the Baseline Monitoring Report, of which they are excerpted and summarised in **Tables 4.3**.

Table 4.3 Action and Limit Levels of construction noise

Location ^(Note 1)	Time Period ^(note 3)	Action Level	Limit Level dB(A)
NMS-CA-1 & NMS-CA-2	0700 - 1900 hours on normal weekdays	When one documented complaint is received	70/65 ^(Note 2)
NMS-CA-3 / NMS-CA-4			70

Notes:

1. The detail of monitoring locations was presented in Table 1.3.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.
3. If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

4.1.2 Continuous Noise Monitoring

With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared and submitted under EP Condition 2.10, continuous noise monitoring was conducted in April 2013 at C.U.H.K.A.A. Thomas Cheung School only due to the prediction of residual air-borne construction noise impacts exceeding the relevant noise criteria. No continuous noise monitoring is required during the reporting month as per the CNMP.

4.2 Noise Monitoring Methodology

4.2.1 Monitoring Equipment

Noise level was measured by a Sound Level Meter (SLM) in terms of A-weighted equivalent continuous sound pressure level. L_{eq} , L_{10} and L_{90} were recorded as supplementary information for data auditing. **Table 4.4** shows the equipment list of the noise monitoring.

Table 4.4 Noise Equipment List for Impact Noise Monitoring

Equipment	Manufacturer & Model No.	Serial No.	Precision Grade
Integrated SLM	Brüel & Kjær 2238	2320694	IEC 651 Type 1 IEC 804 Type 1
Sound level calibrator	Brüel & Kjær 4231	2713427	IEC 942 Type 1

4.2.2 Maintenance and Calibration

The SLM and calibrator in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specifications according to the EM&A manual.

SLM complying with the standards of IEC 651 (Fast, Slow, Impulse rms detector tests) and IEC 804 (L_{eq} functions) and acoustical calibrator complying with IEC 942 were adopted for the noise measurement. All equipments are calibrated

externally. The calibration certificates for the noise equipment are given in **Appendix G**.

4.2.3 Monitoring Procedures

- The SLM and battery were checked to ensure that they are in proper condition. The SLM was set on a tripod at 1.2m above ground and at least 1m from the exterior of the building façade;
- Before conducting the measurement, the SLM was calibrated by an acoustical calibrator;
- Measurement parameter was set to A-weighted sound pressure level. The time weighting was set in fast response and the time period of measurement at 30 minutes;
- Wind speed was checked during noise monitoring to ensure the steady wind speed does not exceed 5m/s, or wind with gusts does not exceed 10m/s;
- Any abnormal conditions that generated intrusive noise during the measurement was recorded on the field record sheet;
- After each measurement, the equivalent continuous sound pressure level (L_{eq}), L_{10} and L_{90} were recorded on the field record sheet;
- After conducting the measurement, the SLM was calibrated by an sound level calibrator; and
- The SLM was re-calibrated by the sound level calibrator to confirm that there is no significant drift of reading. Measurements shall be accepted as valid only if the calibration levels before and after the noise measurement agrees to within 1.0 dB.

4.3 Monitoring Results and Observations

4.3.1 Weather Condition

December 2014 was characterised at times by gloomy and rainy conditions associated with low pressure.

Mild and dry weather associated with the north east monsoon conditions were also persistent throughout the month.

4.3.2 Noise Monitoring Results

Impact Monitoring

Monitoring of the construction noise level was conducted on 5, 11, 17, 23 and 29 December 2014. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix H** and are summarised in **Tables 4.5 - 4.7**. The graphical presentations of the monitoring results are provided in **Appendix H**.

Table 4.5 Summary of Impact Noise Monitoring at Location NMS-CA-1

Date	Time	Measured Noise Level, dB(A)	Baseline Noise Level, dB(A)	Construction Noise Level(Note1), dB(A)	Limit Level (Note 2)
		Leq (30min)	Leq (30min)	Leq (30min)	dB(A)
5 Dec 14	11:50-12:20	58.6	57.0	53.5	70/65
11 Dec 14	12:05-12:35	59.2		55.2	
17 Dec 14	12:20-12:50	57.4		< Baseline Level	
23 Dec 14	10:40-11:10	57.8		50.1	
29 Dec 14	10:30-11:00	60.7		58.3	

Notes:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.

Table 4.6 Summary of Impact Noise Monitoring at Location NMS-CA-2

Date	Time	Measured Noise Level, dB(A)	Baseline Noise Level, dB(A)	Construction Noise Level(Note1), dB(A)	Limit Level (Note 2)
		Leq (30min)	Leq (30min)	Leq (30min)	dB(A)
5 Dec 14	09:15-09:45	66.7	66.0	58.4	70/65
11 Dec 14	09:20-09:50	68.5		64.9	
17 Dec 14	09:20-09:50	67.6		62.5	
23 Dec 14	11:35-12:05	68.4		64.7	
29 Dec 14	08:30-09:00	67.9		63.4	

Notes:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.

Table 4.7 Summary of Impact Noise Monitoring at Location NMS-CA-3/NMS-CA-4

Date	Time	Measured Noise Level, dB(A)	Baseline Noise Level, dB(A)	Construction Noise Level(Note1), dB(A)	Limit Level (Note 2)
		Leq (30min)	Leq (30min)	Leq (30min)	dB(A)
5 Dec 14	10:20-10:50	71.3	73.0	< Baseline Level	70/65
11 Dec 14	10:30-11:00	72.1		< Baseline Level	
17 Dec 14	10:45-11:15	67.7		< Baseline Level	
23 Dec 14	13:00-13:30	71.5		< Baseline Level	
29 Dec 14	13:00-13:30	71.7		< Baseline Level	

Notes:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.

4.3.3 Exceedance of Limit and Action Levels for Construction Noise

An Action Level exceedance was recorded due to the receipt of two noise related complaints at Hin Keng during the reporting month.

No exceedance of Limit Level of regular construction noise was recorded during the reporting month.

The event and action plan is provided in **Appendix I**.

4.3.4 General Observations

The construction site has been under normal operation during the noise monitoring period and no unusual operation was observed.

5 Landscape and Visual Monitoring

5.1 Introduction

In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The event and action plan is provided in **Appendix I**.

5.2 Mitigation Measures

Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting month on 3, 17 and 31 December 2014. No adverse impacts were identified with regards to landscape and visual.

6 Waste Disposal

The actual amounts of different types of waste generated by the activities of the Project during the reporting month are shown in **Table 6.1**. The monthly waste summary flow table is provided in **Appendix J**.

Table 6.1 Amount of Waste Generated

Waste Type	Amount	Disposal Locations
Inert C&D Materials	24,958m ³	TKO137FB and Kai Tak Barging Point Facility (1108A)
Chemical Waste	0kg	Disposed of by a licensed collector
Paper / cardboard packaging	175kg	-
Plastic	0kg	
Metal	0kg	
General Refuse	124m ³	NENT Landfill

7 Cultural Heritage

In accordance with the EM&A Manual, appropriate vibration monitoring on the identified built heritage will be agreed with the Building Department (BD)/Geotechnical Engineering Office (GEO) under the requirement of Buildings Ordinance and/or Blasting Permit as appropriate. Vibration levels will be controlled to appropriate levels. Vibration monitoring will be carried out by the Contractor. The structures requiring vibration monitoring during the relevant tunneling work for this Works Contract include Wong Tai Sin Temple.

8 Environmental Performance

8.1 Environmental Site Inspection

Environmental site inspections were carried out on a weekly basis, with the IEC joint site inspection being carried out on 17 December 2014, to monitor environmental issues on the construction sites to ensure that all mitigation measures were implemented timely and properly. A summary of the site inspections in the reporting month is presented in **Table 8.1**.

Table 8.1 Key Findings of Weekly Environmental Site Audit

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
Noise				
3 December 2014	Ma Chai Hang	The contractor is reminded to enhance the noise mitigation measures for pipe piling works under the shaft.	Agreed with ET's Advice.	The contractor ensured and checked that all mitigations measures are in place. Closed 10 December 2014
10 December 2014	Ma Chai Hang	Although noise barriers are provided on site, the contractor is reminded to enhance the noise barrier for air compressor.	Agreed with ET's Advice.	The contractor ensured and checked that all mitigations measures are in place. Closed 17 December 2014
Air				
17 December 2014	Ma Chai Hang	The contractor is reminded to ensure that the dusty stockpile is properly covered.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that the dusty stockpile was properly covered. Closed 24 December 2014.
17 December 2014	Hin Keng	Dusty smog was observed from the shaft during the construction of drill & blast tunnel. The contractor is reminded to implement sufficient and proper mitigation measures to minimise the air nuisance.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that the dust was cleared. Closed 24 December 2014.
31 December	Ma Chai Hang	The contractor is reminded to enhance the dust mitigation	Agreed with ET's Advice.	The status will be reported by

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
2014		measure for pipe piling works.		the ET in the next reporting month.
Waste				
26 November 2014	All sites	The contractor is reminded to improve the chemical store by sealing up the gap between the wall and the drip tray for enhancement.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that the gap was sealed. Closed 3 December 2014.
17 December 2014	Fung Tak and Hin Keng	The contractor is reminded to ensure that all chemical containers are placed in drip trays.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that all chemical containers had drip trays. Closed 24 December 2014.
24 December 2014	Diamond Hill and Fung Tak	The contractor is reminded to ensure that chemical containers are returned to the chemical store after use.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that all chemical containers were returned. Closed 31 December 2014.

8.2 Summary of Environmental Complaint

Two environmental complaints regarding noise was recorded in the reporting month. The updated statistical summary of complaint is presented in **Table 8.2**. The updated complaint logs for the Project in the reporting month is shown in **Appendix L**.

Table 8.2 Summary of Complaints

Reporting Period	Complaint Statistics		Area of Concern	Status
	Number	Cumulative		
01/12/14–31/12/14	2	3	Hin Keng	Closed

8.3 Summary of Environmental Non-Compliance

There was no non-compliance identified during the reporting month so review of the non-compliance was not required.

8.4 Summary of Environmental Summon and Successful Prosecution

No summons of prosecutions related to environmental issues were received or made against the project in the reporting month. Please refer to **Appendix L** for a Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions.

9 Future Key Issues

9.1 Key Issues for the Coming Month

Works to be undertaken in the coming reporting month are summarised in **Table 9.1** below.

Table 9.1 Tentative Programme of Construction Works for the Coming Month

Locations	Major Works Undertaken
Diamond Hill	Tunnel Boring Machine (TBM) tunneling and machinery site assembly.
Hin Keng	Pipe Piling, grouting and tunnel blasting.
Fung Tak	Shaft Excavation and ELS and Sheet piling for retaining wall.
Ma Chai Hang	Shaft Excavation and ELS.

9.2 Environmental Monitoring Program for the Coming Month

Environmental monitoring and audit will be carried out in accordance with the requirements stipulated in the EM&A manual. Tentative air and noise monitoring as well as weekly site audit schedule for the coming month with respect to the construction programme is shown in **Appendix K**.

9.3 Construction Program for the Coming Month

The construction programme for the coming month is shown in **Appendix A**.

10 Conclusions and Recommendations

10.1 Conclusions

The construction phase of the project commenced on 14 February 2013. The EM&A programme has since been implemented, including air quality, noise and environmental site audits. Four environmental site audits were conducted in the reporting month.

There were two Action Level exceedances of regular construction noise recorded due to the receipt of two complaints during the reporting month.

No exceedance of Limit Level of regular construction noise was recorded during the reporting month.

No exceedance of the Action and Limit Levels of 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting period.

No non-compliance event was recorded during the reporting period.

Two complaints and no summons/prosecution was received during the reporting period.

The Contractor's ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

10.2 Recommendations

Impact monitoring will continue to be carried out in the following month and will follow the requirements stipulated in the EM&A manual. Attention will be paid to the environmental issues identified in the EIA report and weekly site audit. Mitigation measures recommended in EIA report and Implementation Schedule of Mitigation Measure will be fully implemented.

Waste management is a key environmental issue. The waste management plan should be strictly followed in accordance with the requirements described in the EIA report.

Water Quality impact is also a key environmental issue. The drainage system should be well maintained. All wastewater generated within the site shall be collected and treated prior to discharge.

Construction noise is also a key environmental issue. The implemented construction noise mitigation measures should also be maintained and improved as necessary. Especially in restricted hours, the conditions stipulated in the CNPs should be strictly followed when the construction works were carried out during restricted hours.

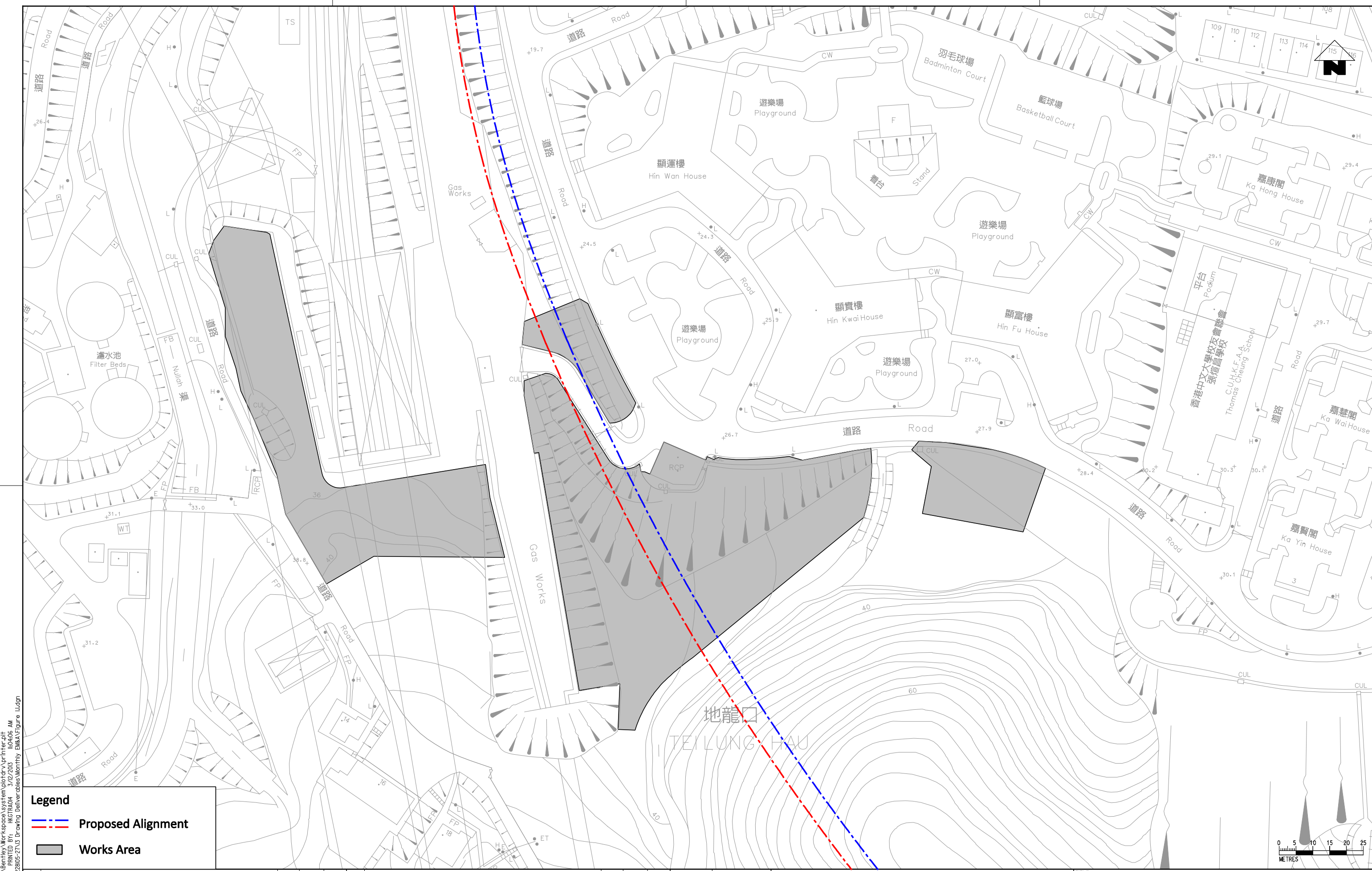
Construction dust is also key environmental issue. The implemented construction dust mitigation measures including covering of exposed slope / soil with tarpaulin sheet

etc., should be maintained and improved as necessary. Adequate water spraying should be provided for the unpaved area to minimize dust disturbance.

11 Reference

- (1) MTR Corporation Limited. SCL – NEX/2206 EIA Study for Tai Wai to Hung Hom Section. Final Environmental Impact Assessment Report. October 2011.
- (2) MTR Corporation Limited. SCL – NEX/2206 EIA Study for Tai Wai to Hung Hom Section. Environmental Monitoring and Audit Manual. October 2011.
- (3) MTR Corporation Limited. SCL – NEX/2206 EIA Study for Stabling Sidings at Hung Hom Freight Yard. Final Environmental Impact Assessment Report. October 2011.
- (4) MTR Corporation Limited. SCL - NEX/2206 EIA Study for Stabling Sidings at Hung Hom Freight Yard. Environmental Monitoring and Audit Manual. October 2011.

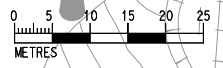
Figures



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Legend

- - - Proposed Alignment
- Works Area



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED
A	FIRST ISSUE	GL	12/12	ST					

DRAWN	GL
DESIGNED	GL
CHECKED	CN
APPROVED	ST
DATE	12/12

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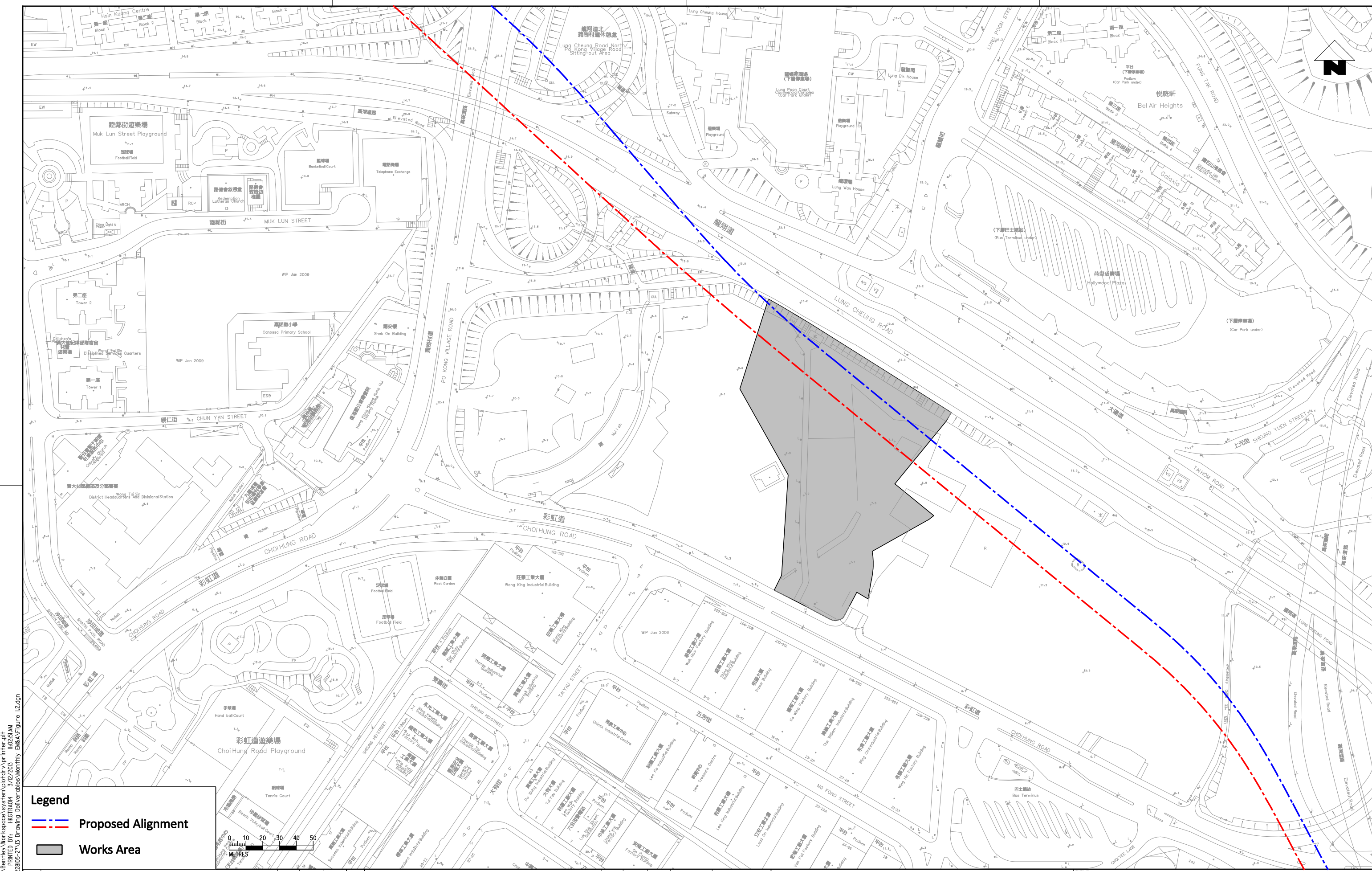
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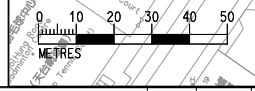
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Legend

- --- Proposed Alignment
- Works Area



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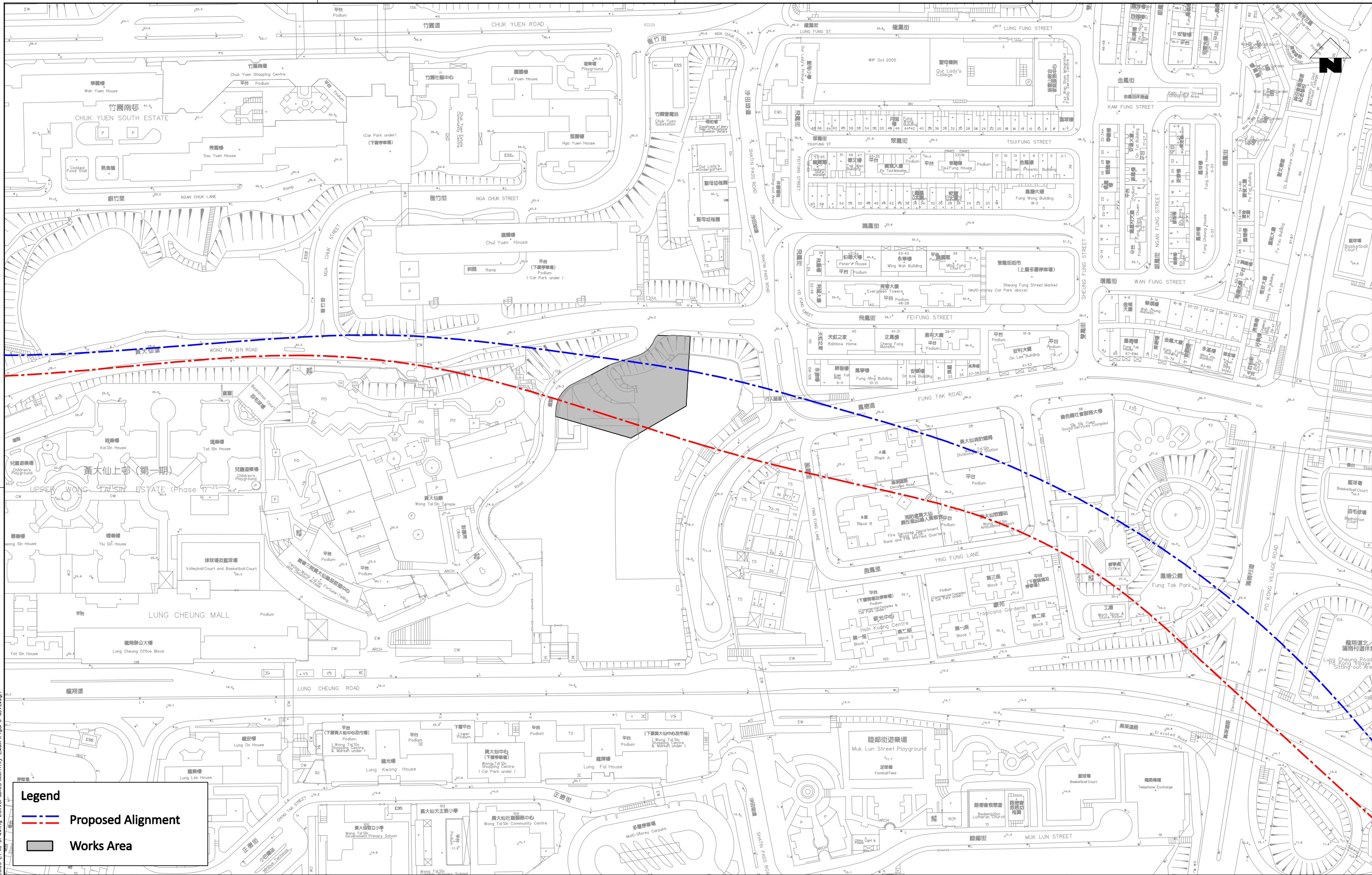
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Legend

- - - Proposed Alignment
- Works Area

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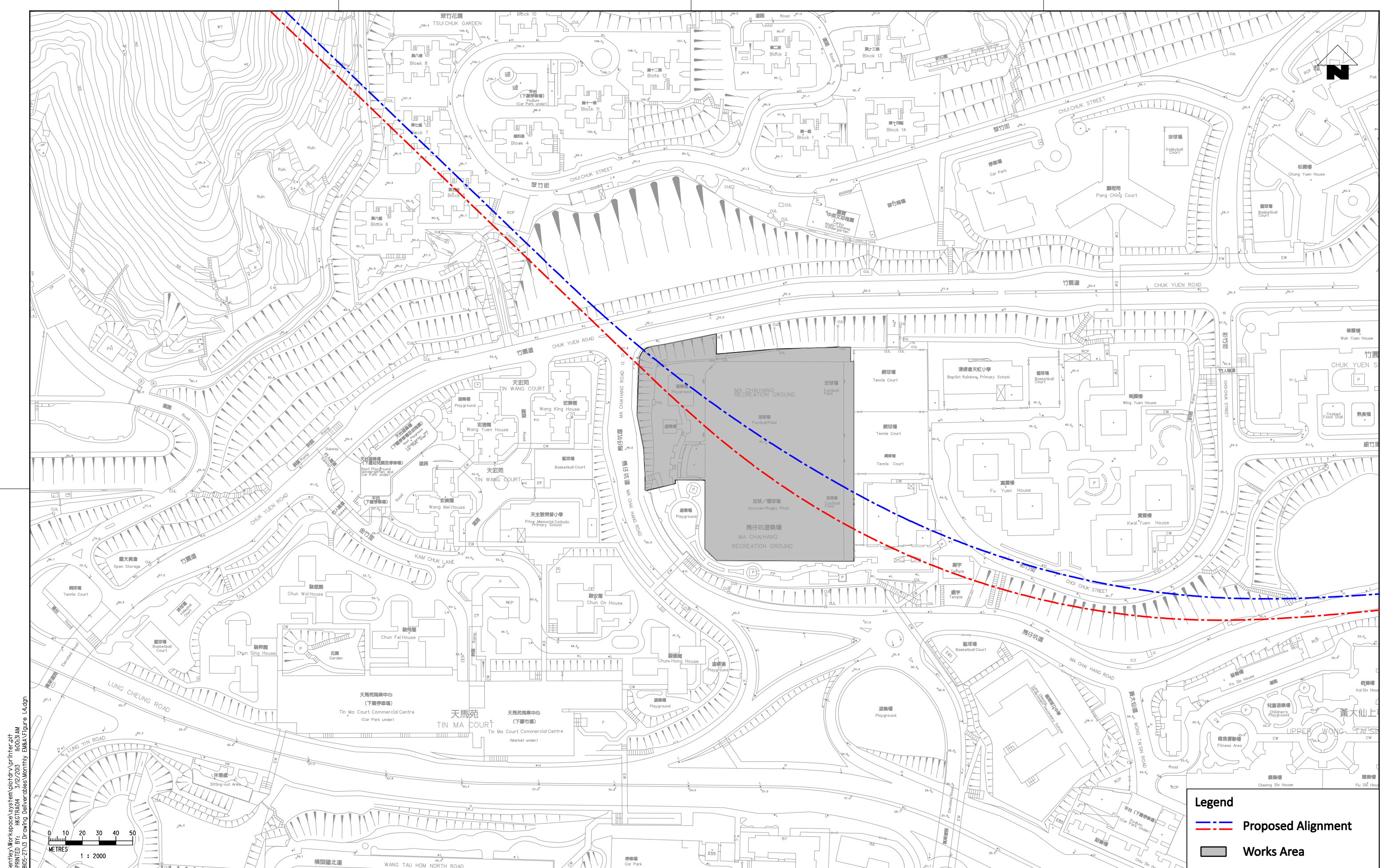
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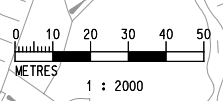
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Legend

- --- Proposed Alignment
- Works Area

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CONTRACT 1103
 HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Project Works Areas
 - Site Layout Plan of Ma Chai Hang Shaft
 (Sheet 4 of 6)

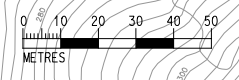
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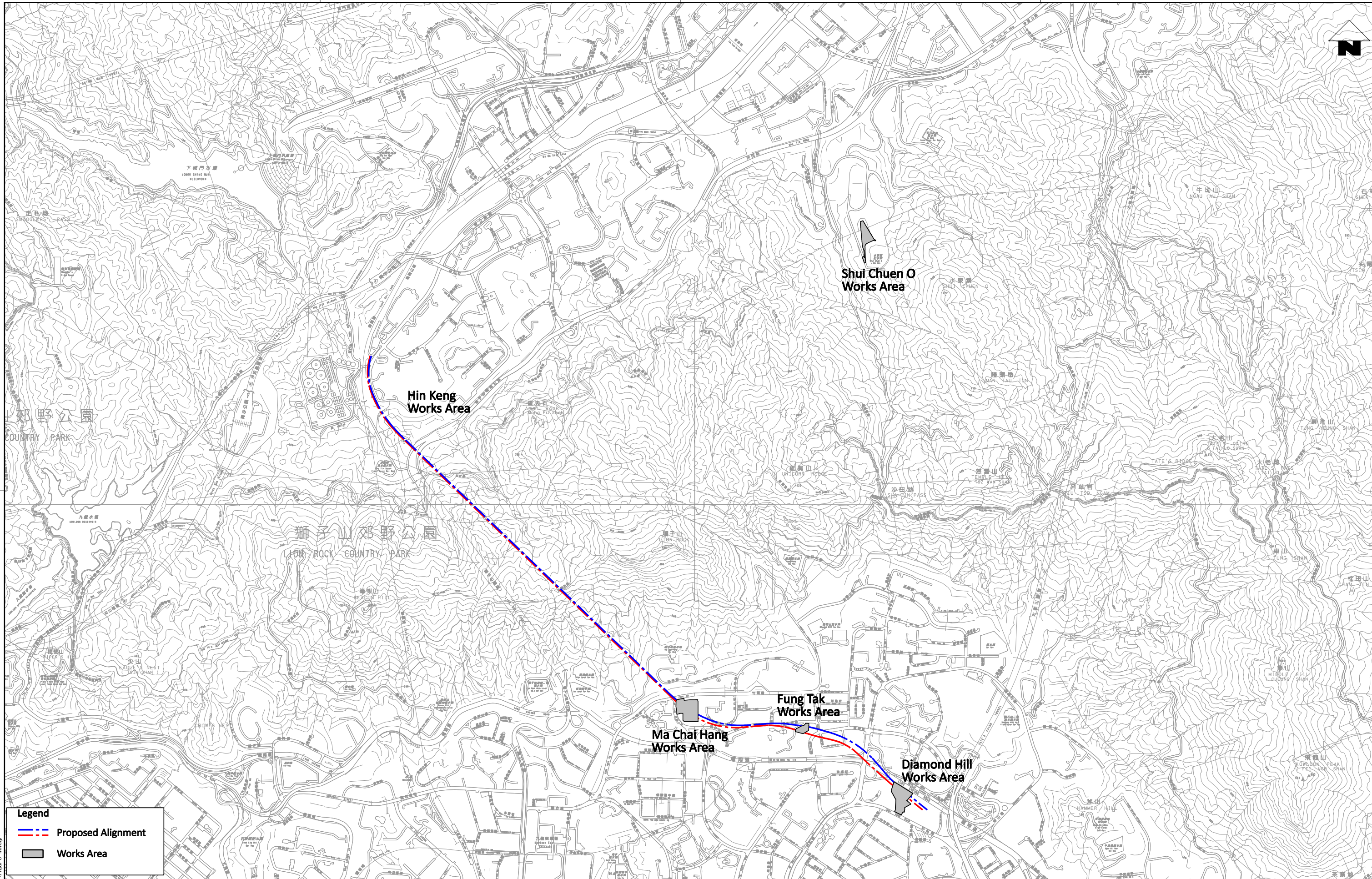
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Legend

Works Area



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				<small>DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. © MTR CORPORATION LIMITED 2008. COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.</small>			ORIGINATOR Ove Arup & Partners Hong Kong Limited			
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Legend

- --- Proposed Alignment
- Works Area

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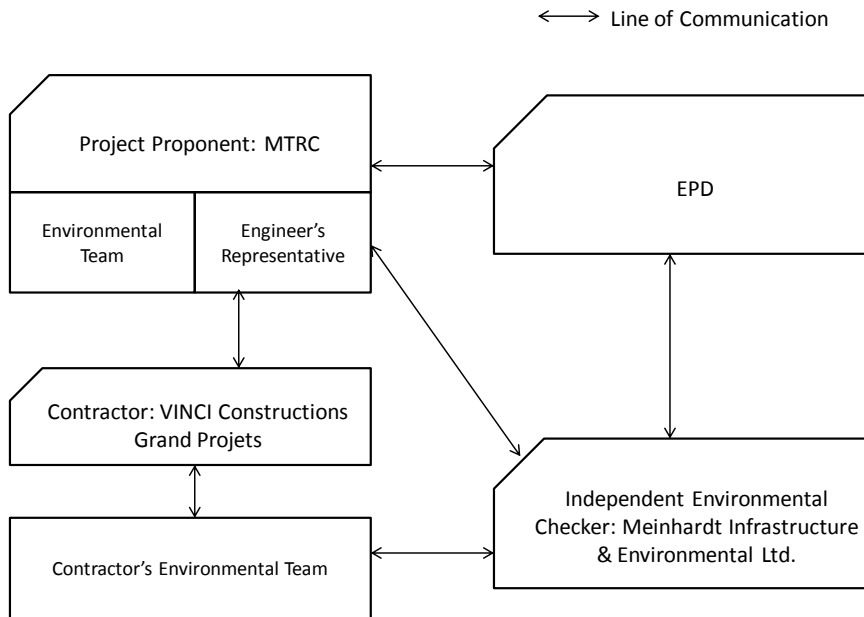
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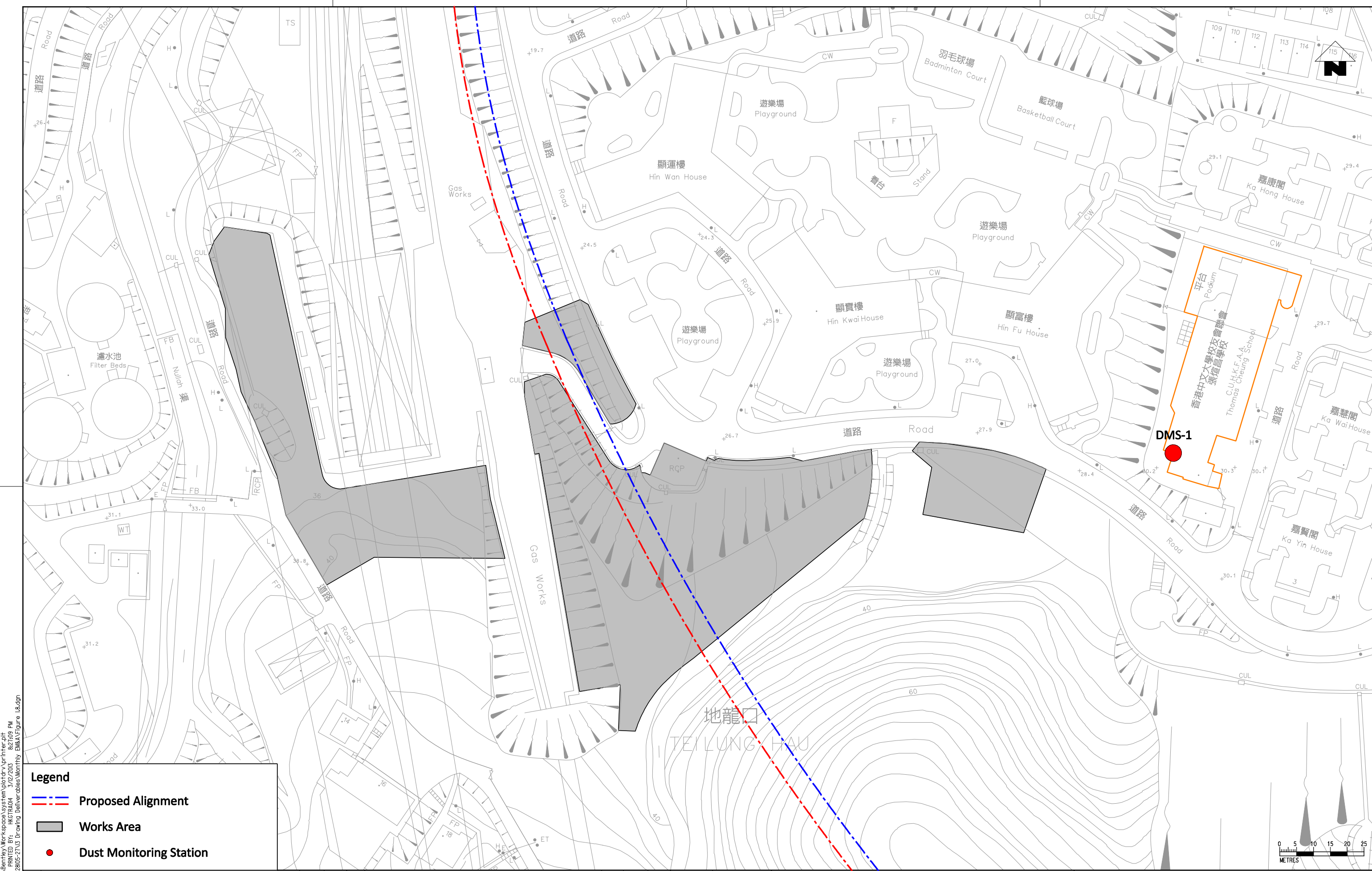
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TITLE CONTRACT 1103 HIN KENG TO DIAMOND HILL TUNNELS Locations of Project Works Areas - General Alignment of Contract 1103 (Sheet 6 of 6)	
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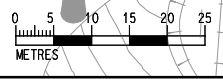
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- Legend**
- Proposed Alignment
 - Works Area
 - Dust Monitoring Station



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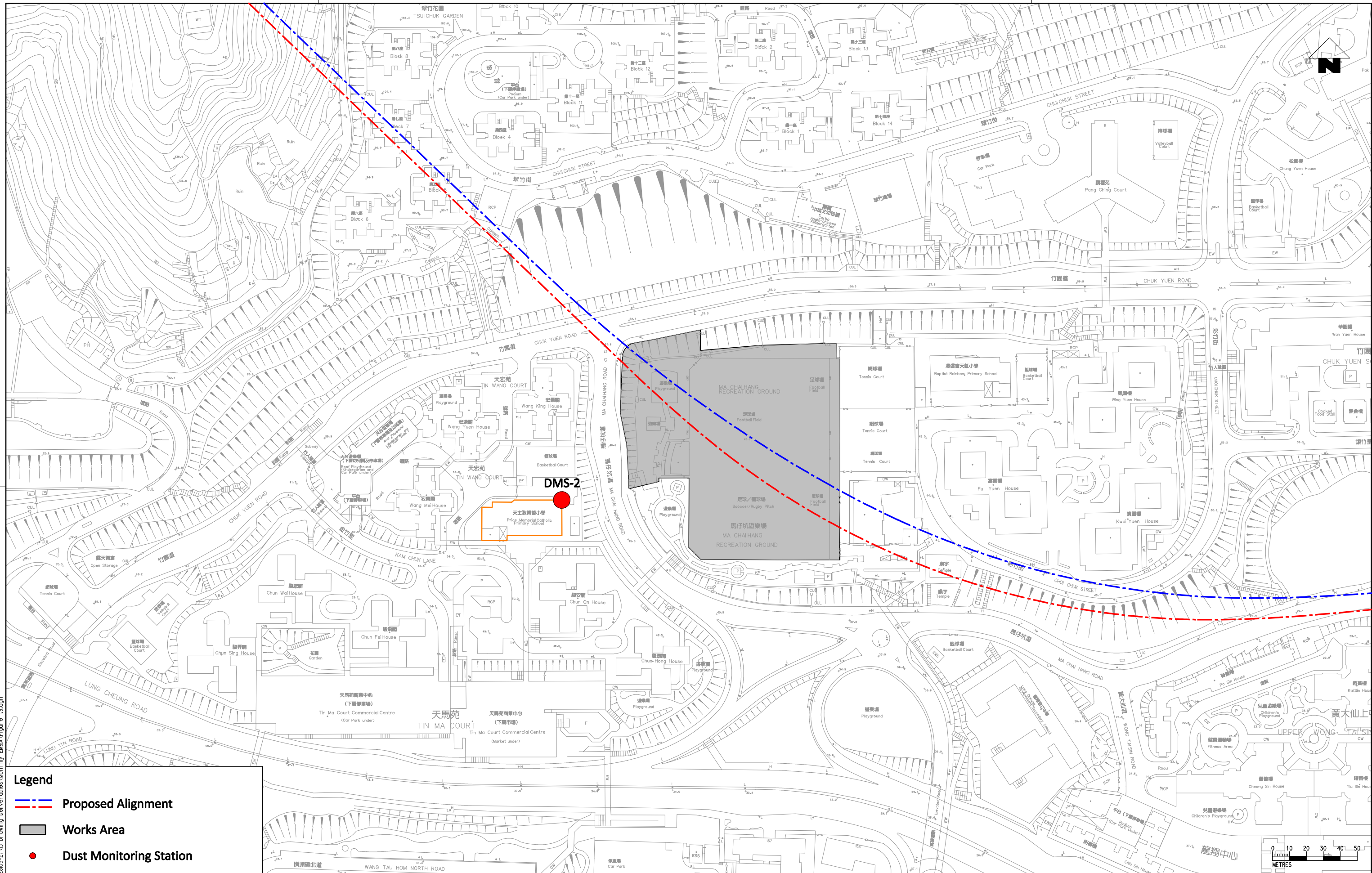
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		HIN KENG TO DIAMOND HILL TUNNELS	
		Locations of Proposed Dust Monitoring Stations	
		(Sheet 1 of 3)	
SCALE	DRAWING NO.	REV.	
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- Legend**
- - - Proposed Alignment
 - Works Area
 - Dust Monitoring Station

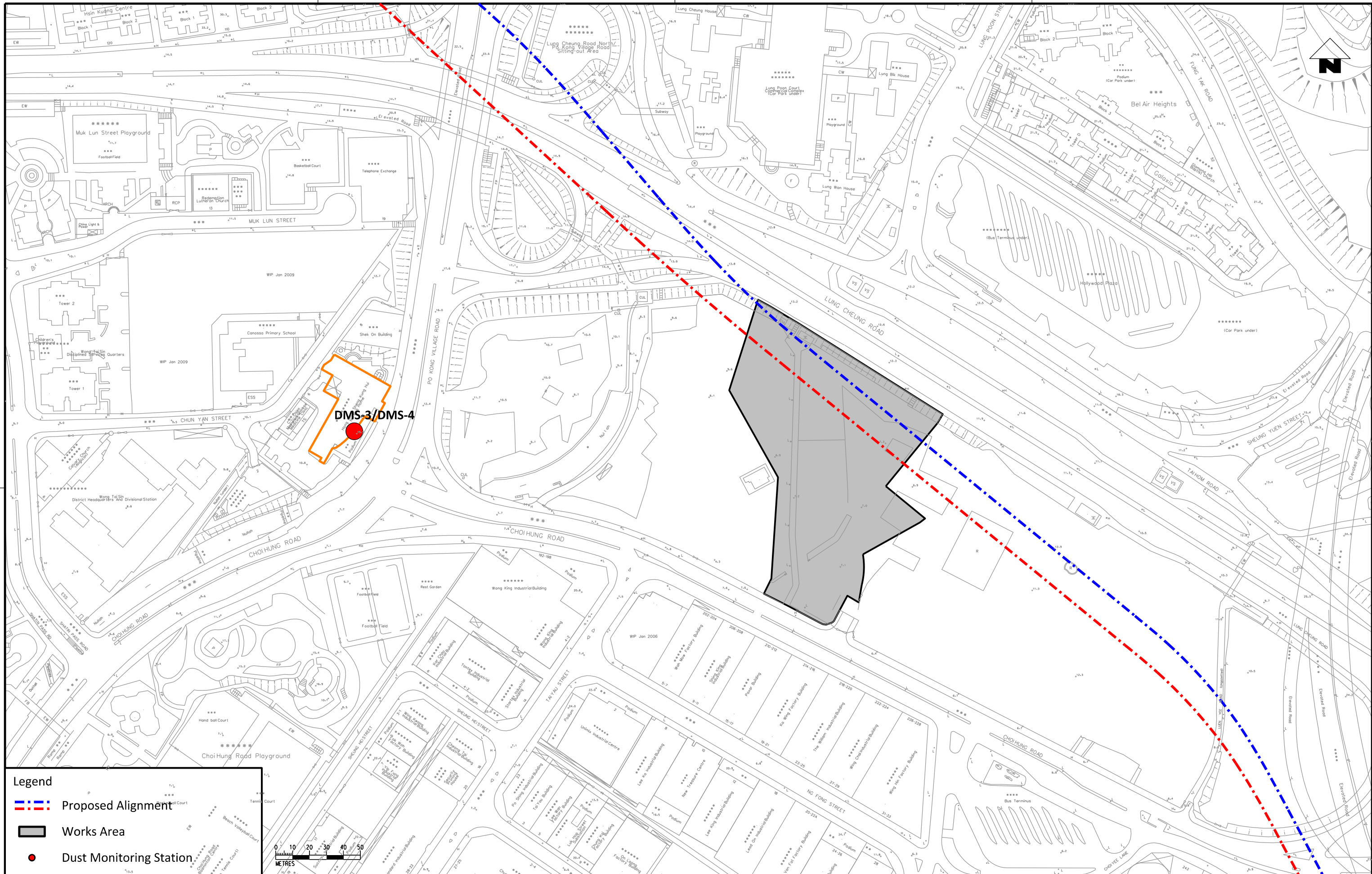
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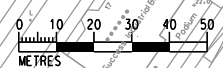
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DMS-3/DMS-4

Legend

- - - Proposed Alignment
- Works Area
- Dust Monitoring Station



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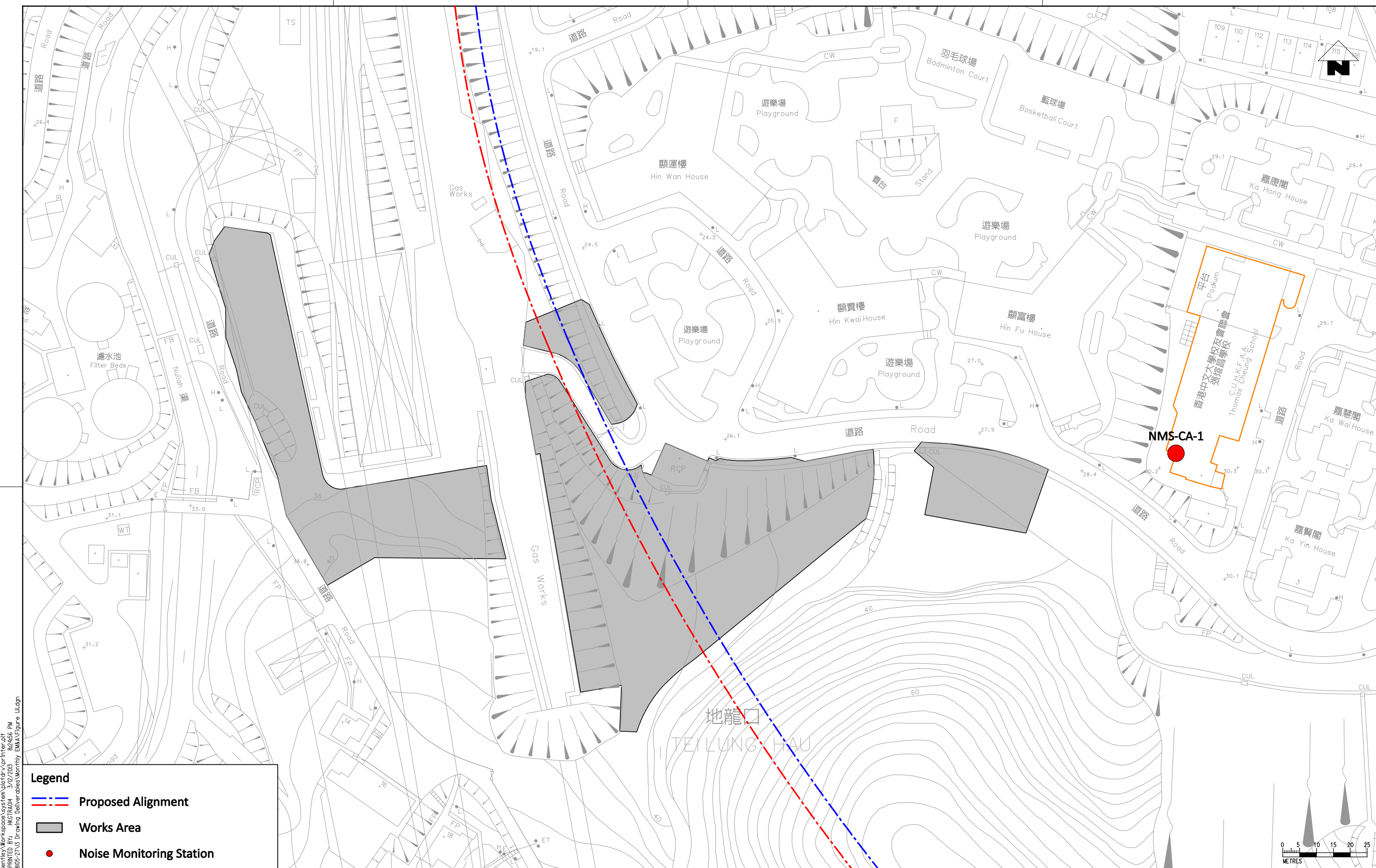
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CONTRACT 1103 HIN KENG TO DIAMOND HILL TUNNELS Locations of Proposed Dust Monitoring Stations (Sheet 3 of 3)	
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- --- **Proposed Alignment**
- Works Area**
- **Noise Monitoring Station**

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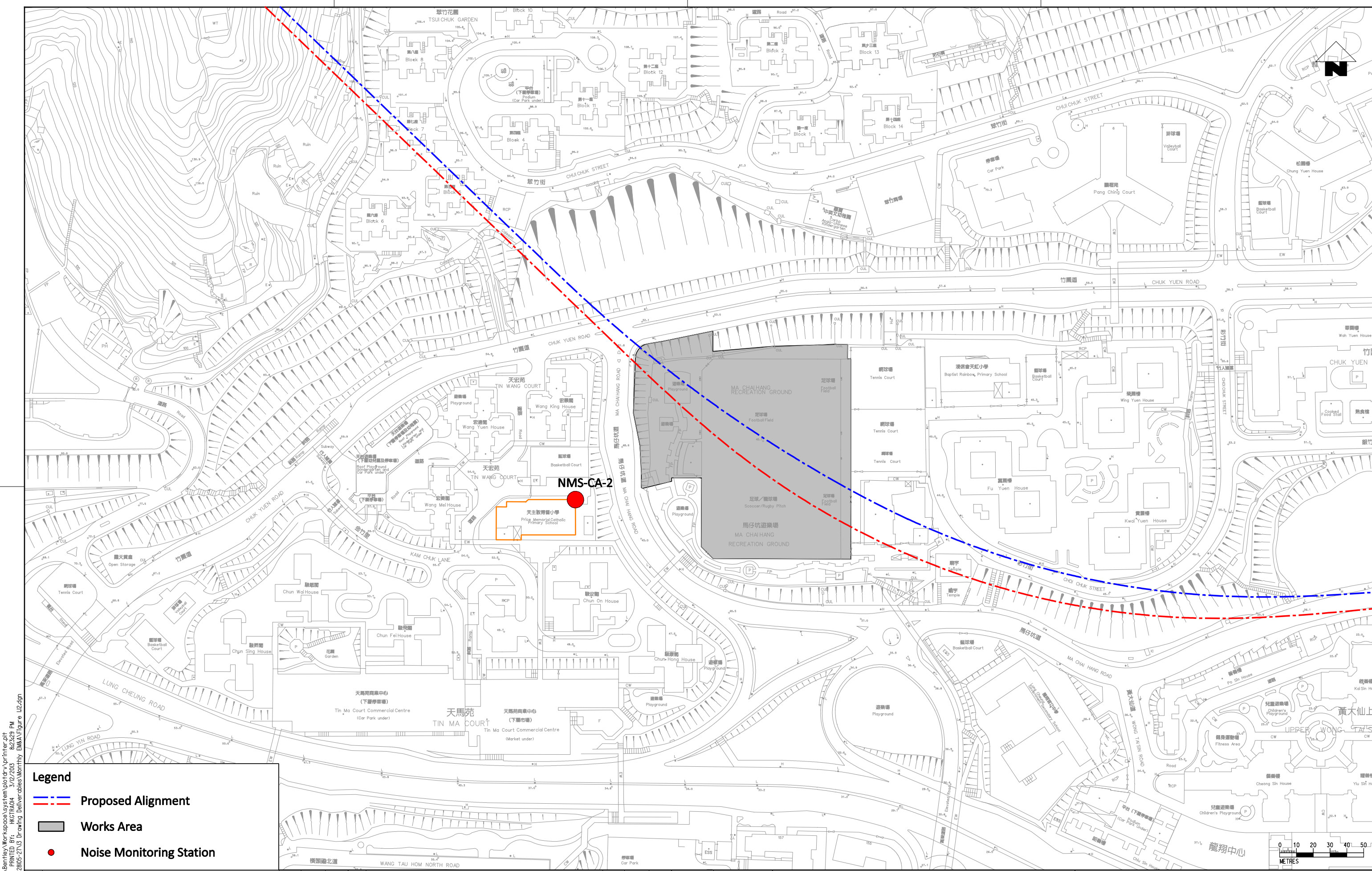
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TITLE
 CONTRACT 1103
 HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Noise Monitoring Stations
 (Construction Airborne Noise)
 (Sheet 1 of 3)

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- Legend**
- --- Proposed Alignment
 - Works Area
 - Noise Monitoring Station

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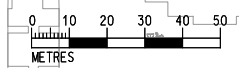
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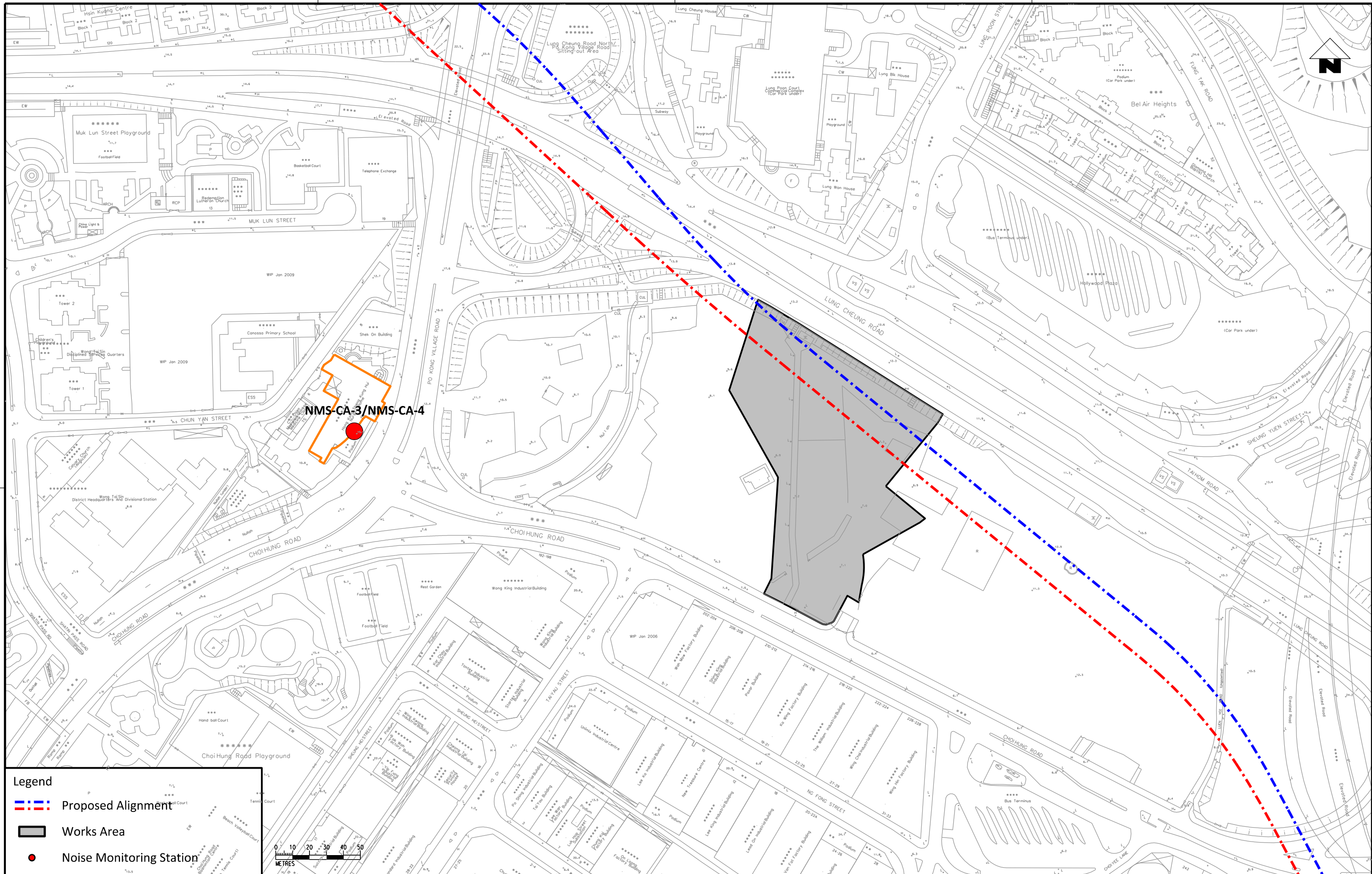
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		(Construction Airborne Noise)	
		(Sheet 2 of 3)	
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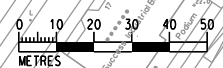




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- - - - Proposed Alignment
- Works Area
- Noise Monitoring Station



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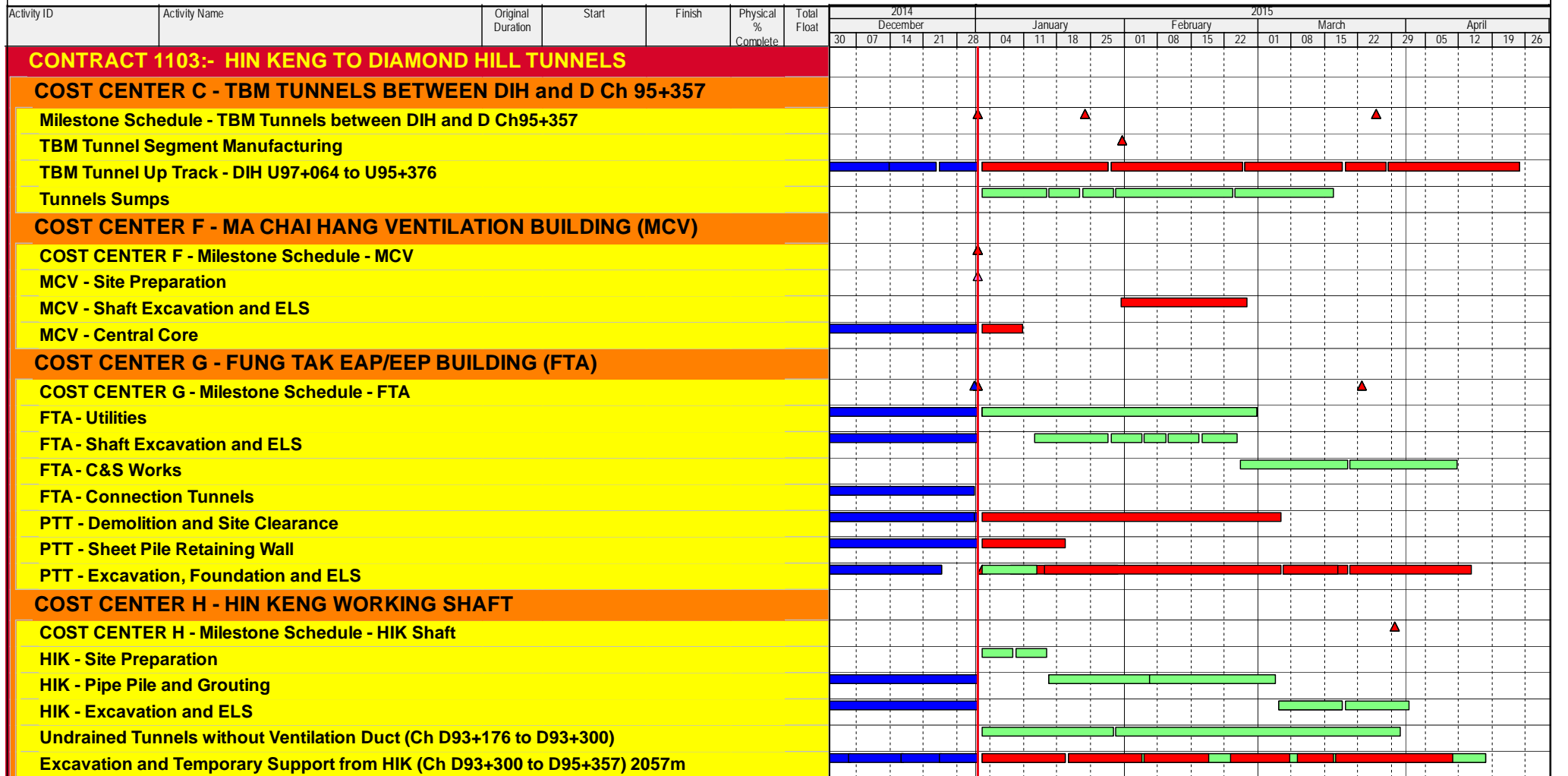
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CONTRACT 1103 HIN KENG TO DIAMOND HILL TUNNELS Locations of Noise Monitoring Stations (Construction Airborne Noise) (Sheet 3 of 3)		SCALE 1:2000 (A3)	DRAWING NO. Figure 1.13	REV. A
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Appendix A

Construction Programme



GRANDS PROJETS

**Three Month Rolling Programme
As of 1-Jan-2015**

Date	Revision	Checked	Approved
5-Jan-15	Submission for MTR Information	QT	EC

Appendix B

Environmental
Monitoring
Programme in
Reporting Month

**SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels
Impact Monitoring Schedule - December 2014**

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L _{Aeq} , 30 min	
01-Dec-14	Mon		
02-Dec-14	Tues		
03-Dec-14	Wed		
04-Dec-14	Thu		
05-Dec-14	Fri		
06-Dec-14	Sat		
07-Dec-14	Sun		
08-Dec-14	Mon		
09-Dec-14	Tue		
10-Dec-14	Wed		
11-Dec-14	Thu		
12-Dec-14	Fri		
13-Dec-14	Sat		
14-Dec-14	Sun		
15-Dec-14	Mon		
16-Dec-14	Tue		
17-Dec-14	Wed		
18-Dec-14	Thu		
19-Dec-14	Fri		
20-Dec-14	Sat		
21-Dec-14	Sun		
22-Dec-14	Mon		
23-Dec-14	Tue		
24-Dec-14	Wed		
25-Dec-14	Thu		
26-Dec-14	Fri		
27-Dec-14	Sat		
28-Dec-14	Sun		
29-Dec-14	Mon		
30-Dec-14	Tue		
31-Dec-14	Wed		

	Public Holiday
	Monitoring Day

Monitoring Details

Monitoring	Locations	Parameters
Air Quality	DMS-1 - C.U.H.K.A.A Thomas Cheung School, DMS-2 - Price Memorial Catholic Primary School and DMS-3 / DMS-4 - Hong Kong Sheng Kung Hui Nursing Home	24-hour TSP
Noise	NMS-CA-1 - C.U.H.K.A.A Thomas Cheung School, NMS-CA-2 - Price Memorial Catholic Primary School and NMS-CA-3 /NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home	L _{Aeq} (30 min), L ₁₀ , L ₉₀

Appendix C

Environmental
Mitigation
Implementation
Schedule (EMIS)

Environmental Mitigation Implementation Schedule – Works Contract 1103

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report for the reporting month. Chapters 15 & 16 describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Pre-Construction Phase)							
S5.4	E1	Engineering works should not encroach into country park boundary, Tei Lung Hau Stream and secondary woodland near the portal at Hin Keng	Minimize ecological impacts	Lion Rock Country Park, Tei Lung Hau Stream	Detailed design and construction stage	<ul style="list-style-type: none"> •AFCD's requirements •EIAO •Country Parks Ordinance 	✓
	E2	<p><u>Habitat Loss</u></p> <p>A detailed vegetation survey should be conducted in the Hin Keng Portal area to locate and enumerate individuals of <i>Aquilaria sinensis</i> which will potentially be affected by construction and operation of the Portal.</p> <p>A suitable site for transplanting all affected individuals within the footprint area should be identified and assessed for its suitability. A transplantation plan should then be drawn up and details of the transplantation methodologies and programme along with post-transplantation monitoring should be included.</p>	Minimize ecological impacts on important species	Hin Keng Portal areas	Prior to site clearance	<ul style="list-style-type: none"> •AFCD's requirements 	✓
S5.7	E3	<p><u>Tree felling and vegetation removal</u></p> <p>Precautionary checks of the vegetation for the presence of nesting bird species of conservation interest should be carried out before vegetation clearance by an ecologist.</p>	Minimize ecological impacts to breeding bird species of conservation interest	Works sites for DIH	Prior to site clearance	<ul style="list-style-type: none"> •AFCD's requirements 	N/A

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Construction Phase)							
S5.7	E5	<p><u>Good Site Practices</u></p> <p>Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> • Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses in particular the Tei Lung Hau stream; • Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream; • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. Tei Lung Hau Stream and the adjoining secondary woodland, tunnel on hill at top of slope stabilisation works; • No on-site burning of waste; • Waste and refuse in appropriate receptacles. 	Minimize ecological impacts	All construction sites	Construction stage		<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.7	E7	<p><u>Water Quality and Hydrology</u></p> <ul style="list-style-type: none"> Implement water control measures (ETWB TCW No. 5/2005, Protection of natural streams/ rivers from adverse impacts arising from construction works to avoid direct or indirect impacts on the Tei Lung Hau Stream) and good site practices. Canopy tubes should be installed from the shaft structure and extend the full width of the stream. These canopy tubes with sieves along its length should be grouted and form a stable and low permeable 'umbrella' for further mining works to be carried out in stages. The canopy tubes beneath the stream area are within Completely Decomposed Granite (CDG) stratum. 	<ul style="list-style-type: none"> Avoid indirect water impact to any wetland habitats or wetland fauna Minimize the drawdown of water table 	Works area in Hin Keng	Construction stage	<ul style="list-style-type: none"> TCW No. 5/2005 	<p align="center">✓</p> <p align="center">✓</p>

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
<i>Landscape and Visual (Construction Phase)</i>							
S6.9.3	LV1	<p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees 	Minimize visual & landscape impact	Within Project Site	Construction stage	TM-EIAO	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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		prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.					✓
S6.12	LV2	<ul style="list-style-type: none"> <li data-bbox="353 464 1037 635">• <u>Decorative Hoarding</u> Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. <li data-bbox="353 659 1037 826">• <u>Management of facilities on work sites</u> To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. <li data-bbox="353 850 1037 1082">• <u>Tree Transplanting</u> Trees of high to medium survival rate would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006. 	Minimize visual & landscape impact	Within Project Site	Detailed design and construction stage	EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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Air Quality (Construction Phase)							
-	A1	Emission from Vehicles and Plants <ul style="list-style-type: none"> • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and • plant should be serviced regularly to avoid emission of • black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra-low sulphur diesel fuel (ULSD) 	Reduce air pollution emission from construction vehicles and plants	All construction sites	Construction stage	• APCO	✓
		Open burning shall be prohibited	Reduce air pollution emission from work site	All construction sites	Construction stage	• APCO	✓
Construction Dust Impact							
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	Obs
S7.6.5	D2	<ul style="list-style-type: none"> • Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area and once per 1.5 hour at those in the Tai Wai area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to 	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	Rdr

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		maintain an equivalent intensity of no less than 1.8 L/m ² to achieve the dust removal efficiency					
S7.6.5	D3	<ul style="list-style-type: none"> • Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction 	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	<p align="center">✓</p> <p align="center">Rdr</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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		<p>period;</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • 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; 					<p align="center">✓</p> <p align="center">✓</p> <p align="center">N/A</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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		<ul style="list-style-type: none"> • 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; and • Exposed earth should be properly treated by compaction, turving, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					<p align="center">✓</p> <p align="center">✓</p> <p align="center">N/A</p>
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Selected representative dust monitoring station	Construction stage	• TM-EIA	<p align="center">✓</p>

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Construction Noise (Airborne)							
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) 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, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise	All construction sites	Construction stage	• Annex 5, TM-EIA	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	All construction sites	Construction stage	• Annex 5, TM-EIA	<p align="center">✓</p>
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and	Screen the noisy plant items to be used at all construction sites	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	Rdr

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		saw.					
S8.3.6	N4	Use “Quiet plants”	Reduce the noise levels of plant items	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	✓
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	✓
S8.3.6	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Selected representative noise monitoring station	Construction stage	• TM-EIA	✓

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Water Quality (Construction Phase)							
S10.7.1	W1	<p>In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following:</p> <p><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5 m³/s the basin would be 150 m³. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the 	To minimize water quality impact from construction site runoff and general construction activities	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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		<p>commencement of construction.</p> <ul style="list-style-type: none"> • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be 					<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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		<p>adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</p> <ul style="list-style-type: none"> • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks 					<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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		<p>and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby.</p> <ul style="list-style-type: none"> All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. Adopt best management practices 					<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>
S10.7.1	W2	<p><u>Tunnelling Works</u></p> <ul style="list-style-type: none"> Cut-&-cover/ open cut tunnelling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. 	To minimize construction water quality impact from tunneling works	All tunneling portion	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN 1/94 TM-water TM-EIAO 	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>
S10.7.1	W3	<u>Sewage Effluent</u>	To minimize water quality	All construction sites	Construction	<ul style="list-style-type: none"> Water Pollution 	

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		<ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. 	from sewage effluent	where practicable	stage	Control Ordinance <ul style="list-style-type: none"> TM-water 	✓
S10.7.1	W4	<p><u>Groundwater from Contaminated Area:</u></p> <ul style="list-style-type: none"> No direct discharge of groundwater from contaminated areas should be adopted. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed with reference to the site investigation data in this EIA report for compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-Water) and the existence of prohibited substance should be confirmed. 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, the contaminated groundwater should be either properly treated in compliance with the requirements of the TM-Water or properly recharged into the ground. If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. TPH) to undetectable range. All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-Water and should be discharged into the foul sewers. If groundwater recharging wells are deployed, 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 	To minimize groundwater quality impact from contaminated area	Excavation areas where contamination is found.	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-water TM-EIAO 	N/A
							N/A
							N/A

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		<p>will not be affected by the recharge operation as indicated in the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH 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.</p>					
S10.7.1	W7	<p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	To minimize water quality impact from accidental spillage	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water 	<p align="center">Rdr</p> <p align="center">✓</p> <p align="center">✓</p>

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Waste Management (Construction Phase)							
S11.4.1.1	WM1	<p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored. 	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	All construction sites	Construction stage	<ul style="list-style-type: none"> DEVB TC(W) No. 6/2010 	✓
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; Carry out on-site sorting; Make provisions in the Contract documents to allow and 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance 	✓ ✓

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		<p>promote the use of recycled aggregates where appropriate;</p> <ul style="list-style-type: none"> • Adopt ‘Selective Demolition’ technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation 				<ul style="list-style-type: none"> • ETWB TCW No. 19/2005 	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>
S11.5.1	WM3	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Construction stage	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 	<p align="center">✓</p> <p align="center">✓</p>

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EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.					
S11.5.1	WM4	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	All construction sites	Construction stage	• Waste Disposal Ordinance	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>
S11.5.1	WM5	<p><u>Excavated Contaminated Soils</u></p> <p>Details of the mitigation measures on handling of the contaminated soil shall be referred to Section on Land Contamination below.</p>	To remediate contaminated soil	Site L4 (Former Tai Hom Village)	Site remediation	• Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boat yards and Car Repair/Dismantling Workshop.	

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S11.5.1	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD. 	Control the chemical waste and ensure proper storage, handling and disposal.	All construction sites	Construction stage	<ul style="list-style-type: none"> • Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	<p align="center">✓</p> <p align="center">Rdr</p> <p align="center">Rdr</p> <p align="center">✓</p>

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	All construction sites	Construction stage	<ul style="list-style-type: none"> • EIAO Guidance Note No.4/2010 • TM-EIAO 	✓
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual.	Perform environmental monitoring & auditing	All construction sites	Construction stage	<ul style="list-style-type: none"> • EIAO Guidance Note No.4/2010 • TM-EIAO 	✓
		2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.					✓
		3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.					✓

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Chapter 13.13	A13A.1 0.2.1 and A13A.1 0.2.4	The truck design should comply with the Requirements for Approval of an Explosives Delivery Vehicle (CEDD 2) and limit the amount of combustibles in the cabin. This should be combined with monthly vehicle inspection	To meet the ALARP requirement.	Explosive Magazine	Construction phase		✓
Chapter 13.13	A13A.1 0.2.2	Blasting activities including storage, transport and use 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, transport and use would not be unacceptable	Works areas at which explosives would be stored and/or used.	Construction phase	•Dangerous Goods Ordinance	✓
Chapter 13.13	A13A.1 0.2.1 and A13A.1 0.2.5	Only the required quantity of explosives for a particular blast should be transported to avoid the return of unused explosives to the temporary magazines. The number of return trips to the magazine should be minimized. 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.	Works areas at which explosives would be stored and/ or used.	Construction phase		✓
Chapter 13.13	A13A.1 0.2.1	A minimum headway between two consecutive truck conveys of at least 10 min is recommended.	To ensure that the risk from the proposed explosives transport would not be unacceptable	Along explosives transport route.	Construction phase.		✓
Chapter 13.13	A13A.1 0.2.1	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.	-	Construction phase		✓
Chapter 13.13	A13A.1 0.2.1	The explosive truck fire involvement frequency should be minimized by implementing a better emergency response and training to make	To meet the ALARP requirement.	-	Construction phase		

Notes (*): ✓ - Compliance; N/A – Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C – Non Compliance

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		sure the adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible. All explosive vehicles should also be equipped with the required amount and type of fire extinguishers and shall be agreed with Mines Division.					✓
Chapter 13.13	A13A.1 0.2.1	The contractor should as far as practicable combine the explosive deliveries for a given work area.	To meet the ALARP requirement.	-	Construction phase		✓
Chapter 13.13	A13A.1 0.2.1	The Contractor should as far as practicable use the preferred transport route.	To ensure that the risk from the proposed explosives transport would not be unacceptable	Along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.1 0.2.1	The Contractor should coordinate explosives deliveries with the delivery of chlorine to Shatin Water Treatment Works in order to avoid overlapping.	To ensure that the risk from the proposed explosives transport would not be unacceptable	Along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.1 0.2.4	Use only experienced driver(s) with good safety record for explosive vehicle(s). Training should be provided to ensure it covers all major safety subjects.	To ensure safe transport of explosives	At suitable location	Construction phase		✓
Chapter 13.13	A13A.1 0.2.4	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 not be unacceptable	Explosive magazine	Construction phase		✓
Chapter 13.13	A13A.1 0.2.3	Delivery vehicles shall not be permitted to remain unattended within the magazine site (or appropriately wheel-locked).	To reduce the risk of fire within the magazine	Explosive Magazine	Construction phase		✓

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Chapter 13.13	A13A.1 0.2.3	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	Explosive Magazine	Construction phase		✓
Chapter 13.13	A13A.1 0.2.4	Detonators shall not be transported in the same vehicle with other Class 1 explosives	To reduce the risk of explosion during the transport of cartridged emulsion	-	Construction phase		✓
Chapter 13.13	A13A.1 0.2.2	Emergency plan (ie magazine operational manual) shall be developed to address uncontrolled fire in magazine area. 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	Explosive Magazine and along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.1 0.2.2	The magazine storage quantities need to be reported on a monthly basis to ensure that the two day storage capacity is not exceeded.	To reduce the risk within the magazine	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.1 0.2.2	Adverse weather working guideline should be developed to clearly define procedure for transport explosives during thunderstorm.	To ensure safe transport of explosives	Along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.1 0.2.4	During transport of the explosives within the tunnel, hot work should not be permitted	To ensure safe transport of explosives	Along explosives transport route.	Construction phase		✓

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Chapter 13.13	A13A.1 0.2.4	Ensure that packaging of detonators remains intact until handed over at blasting site.	To reduce the risk of explosion during the transport of detonator	-	Construction phase		✓
Chapter 13.13	A13A.1 0.2.4	Steel vehicle tray welded to a steel vertical fire screen should be 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.	-	Construction phase		✓
Chapter 13.13	A13A.1 0.2.5	Ensure 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	-	Construction phase		✓
Chapter 13.13	A13A.1 0.2.3	Traffic Management should be implemented within the temporary magazine site, to ensure that no more than 1 vehicle will be loaded at any time, in order to avoid accidents involving multiple vehicles within the site boundary. Based on the construction programme, considering that 6 trucks could be loaded over a peak 2 hour period, this is considered feasible.	To ensure that the risks from the proposed explosives storage and transport would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.1 0.2.3	The design of the fill slope close to the temporary magazine site should consider potential washout failures and incorporate engineering measures to prevent a washout causing damage to the temporary magazine stores	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.1 0.2.2	The security plan should address different alert security level to reduce opportunity for arson / deliberate initiation of explosives. The corresponding security procedure should be implemented with respect to prevailing security alert status announced by the	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓

Notes (*): ✓ - Compliance; N/A – Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C – Non Compliance

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		Government.					
Chapter 13.13	A13A.1 0.2.3	A suitable work control system should be introduced, such as an operational manual including Permit-to-Work system.	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.1 0.2.3	The magazine building shall be regularly checked for water seepage through the roof, walls or floor.	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13B.7 .2	Blast charge weight (MIC) should be within the maximum MIC as specified for the given section.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	Temporary mitigation measures such as blast doors or heavy duty blast curtains should be installed at the access adits, shafts/ portals and at suitable locations underground to prevent flyrock and control the air overpressure.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	Blasting from multiple faces as well as different locations will be carried out for this project. Good communication and control will need to be adopted in ensuring that the works are carried out safely.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	It is intended that complete evacuation of the underground tunnels need not be carried out and secure refuge areas should be identified to workers in the area.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	A Chief Shotfirer and a Blasting Coordinator shall be employed in addition to the normal blasting personnel to ensure that the works are safe and coordinated between blasting areas and between	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓

Notes (*): ✓ - Compliance; N/A – Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C – Non Compliance

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		adjacent contracts.					
Chapter 13.13	A13B.7 .2	Shotfirer to be provided with a lightning detector, and appropriate control measures should be in place.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	A speed limit for the diesel vehicle truck and bulk emulsion truck in the tunnel should be enforced. The truck may be escorted while underground to ensure route is clear from hazards and obstructions.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	Hot work should be suspended during passage of the diesel vehicle truck and bulk emulsion truck in the tunnel.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	For any construction works related to use of explosives near gas facilities and gas pipes, the requirements of the Code of Practice on Avoiding Danger from Gas Pipes must be respected, in particular, to ensure liaison/coordination with HKCG with sufficient notice of planned works and to follow prescribed emergency procedures in case of leaks.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7 .2	A detailed liaison between the contractor and HKCG should be established. HKCG should be notified about the blasting schedule in written format within a reasonable period of time prior to blasting in order to ensure the gas safety during the construction period. Also, liaison should be made with HKCG to develop an emergency plan.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13C.8	Installation of on-site gas monitors in all relevant SCL construction/operation areas;	To reduce the risks to the SCL staff, construction workers and passengers	-	Construction and operation phases		N/A

Environmental Mitigation Implementation Schedule – Works Contract 1103

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Chapter 13.13	A13C.8	Establishment of emergency response and evacuation plans (co-operation of various parties/departments required. For the operational phase the emergency plan should also include adequate procedures for controlling the tunnel ventilation system and stopping of the SCL train traffic in order to prevent the trains moving into the affected areas.)	To reduce the risks to the SCL staff, construction workers and passengers	-	Construction and operation phases		✓
Chapter 13.13	A13C.8	Safety/emergency response/evacuation training and drills for all personnel	To reduce the risks to the SCL staff, construction workers and passengers	-	Construction and operation phases		✓

Appendix D

Calibration
Certificates for Air
Monitoring
Equipment

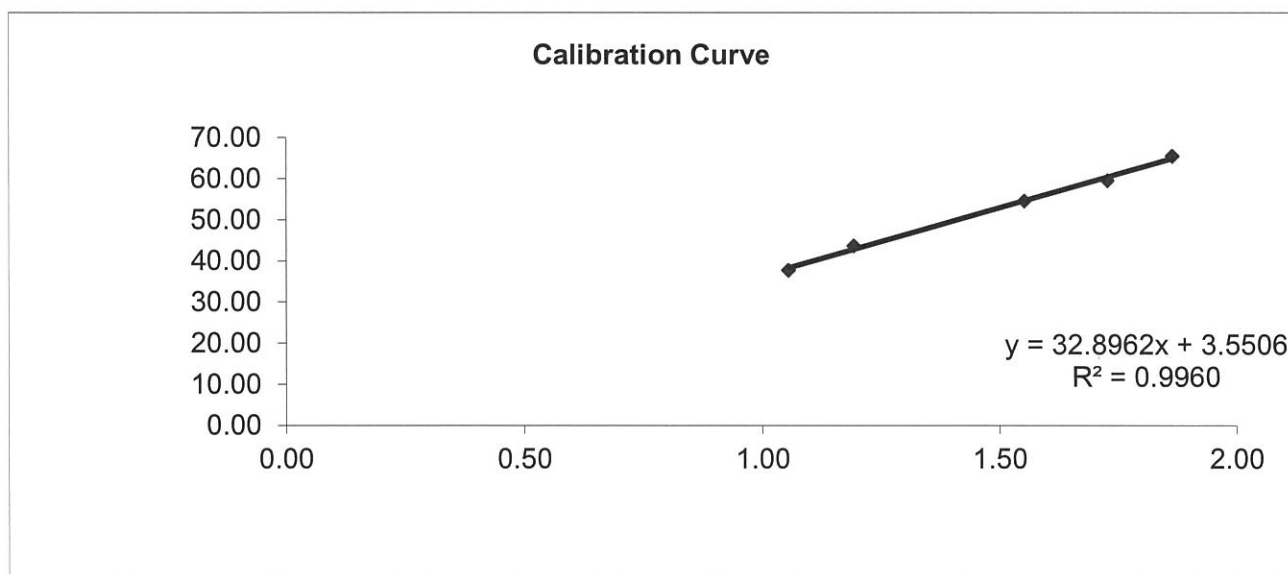
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	24-Oct-14	Barometric pressure	755 mm Hg
Next Calibration date	23-Dec-14	Temperature (°C)	28 °C
Sampler location	DMS1 - Thomas Cheung School	Temperature (K)	301 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	3763	T _{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m _s	2.06238
Intercept of the standard curve, b _s	-0.2415

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.80	38.00	1.05	37.69
7	5.00	44.00	1.19	43.64
10	8.90	55.00	1.55	54.54
13	11.20	60.00	1.73	59.50
18	13.20	66.00	1.86	65.45



Linear Regression

Sampler slope (m) : **32.8962**
 Sampler intercept (b) : **3.5506**
 Correlation coefficient (R²) : **0.9960**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: *Cong*

Date: 31-10-2014

Checked by: *J. Rollins*

Date: 31-10-2014

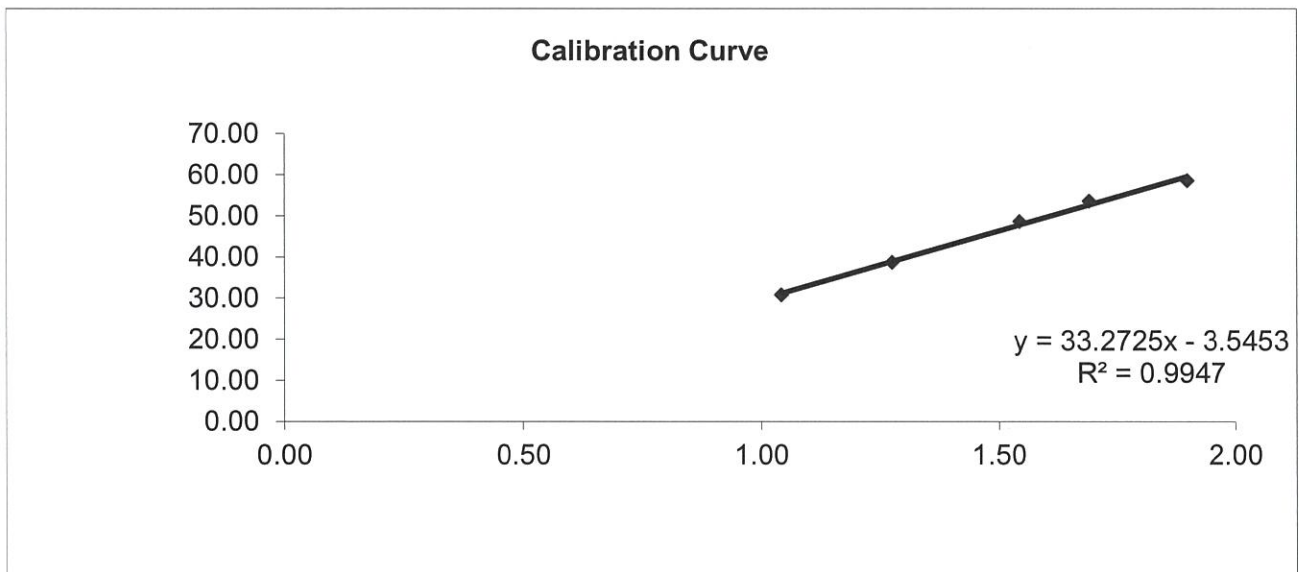
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	31-Oct-14	Barometric pressure	755 mm Hg
Next Calibration date	30-Dec-14	Temperature (°C)	28 °C
Sampler location	DMS2 - Price Memorial Catholic Pri	Temperature (K)	301 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	3761	T _{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m _s	2.06238
Intercept of the standard curve, b _s	-0.2415

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.70	31.00	1.04	30.74
7	5.80	39.00	1.28	38.68
10	8.80	49.00	1.54	48.59
13	10.70	54.00	1.69	53.55
18	13.70	59.00	1.90	58.51



Linear Regression

Sampler slope (m) :	33.2725
Sampler intercept (b) :	-3.5453
Correlation coefficient (R ²) :	0.9947

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: *Cary*

Date: *30-31-10-2014*

Checked by: *J. Gallen*

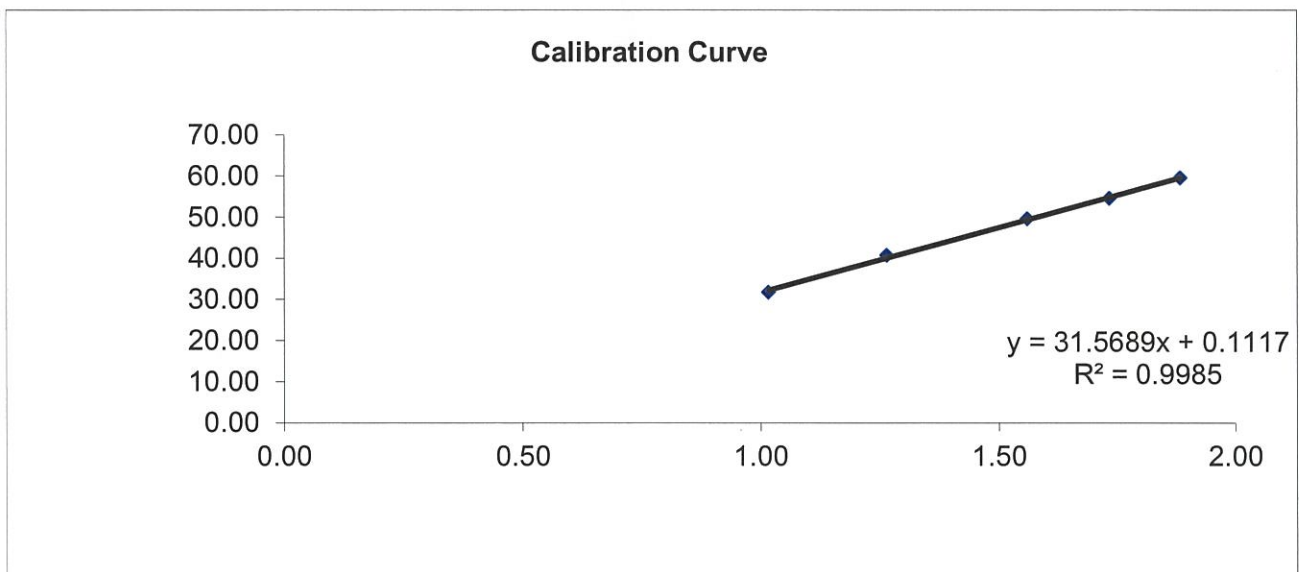
Date: *31-10-2014*

Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	31-Oct-14	Barometric pressure	755 mm Hg
Next Calibration date	30-Dec-14	Temperature (°C)	28 °C
Sampler location	DMS3 - Sheng Kung Hui Nursing Home	Temperature (K)	301 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	3762	T _{std}	298 K
Calibrator model	GMW-2535		
Calibrator serial number	2421		
Slope of the standard curve, m _s	2.06238		
Intercept of the standard curve, b _s	-0.2415		

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.50	32.00	1.02	31.74
7	5.70	41.00	1.27	40.66
10	9.00	50.00	1.56	49.59
13	11.30	55.00	1.73	54.54
18	13.50	60.00	1.88	59.50



Linear Regression

Sampler slope (m) : **31.5689**
 Sampler intercept (b) : **0.1117**
 Correlation coefficient (R²) : **0.9985**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: *Cery*

Date: 31-10-2014

Checked by: *J. Johnson*

Date: 31-10-2014

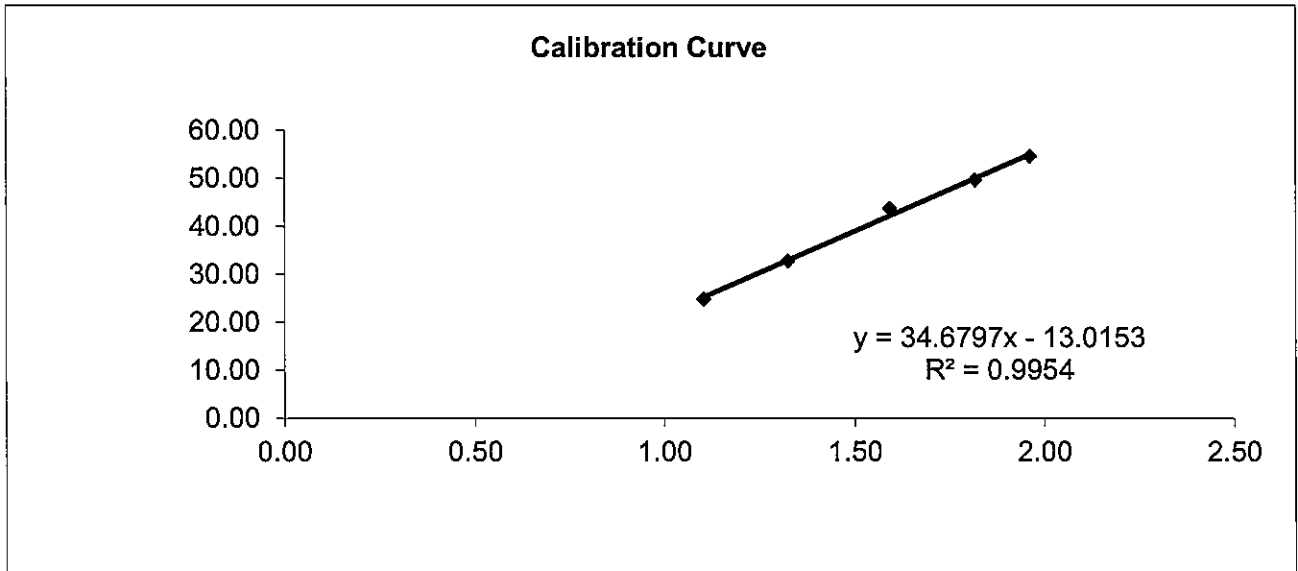
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	23-Dec-14	Barometric pressure	755 mm Hg
Next Calibration date	21-Feb-15	Temperature (°C)	28 °C
Sampler location	DMS1 - Thomas Cheung School	Temperature (K)	301 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	3763	T _{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m _s	2.06238
Intercept of the standard curve, b _s	-0.2415

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	4.20	25.00	1.10	24.79
7	6.30	33.00	1.32	32.73
10	9.40	44.00	1.59	43.64
13	12.50	50.00	1.82	49.59
18	14.70	55.00	1.96	54.54



Linear Regression

Sampler slope (m) :	34.6797
Sampler intercept (b) :	-13.0153
Correlation coefficient (R ²) :	0.9954

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: *Cary*

Checked by: *A. Holliman*

Date: 23/12/2014

Date: 23/12/2014

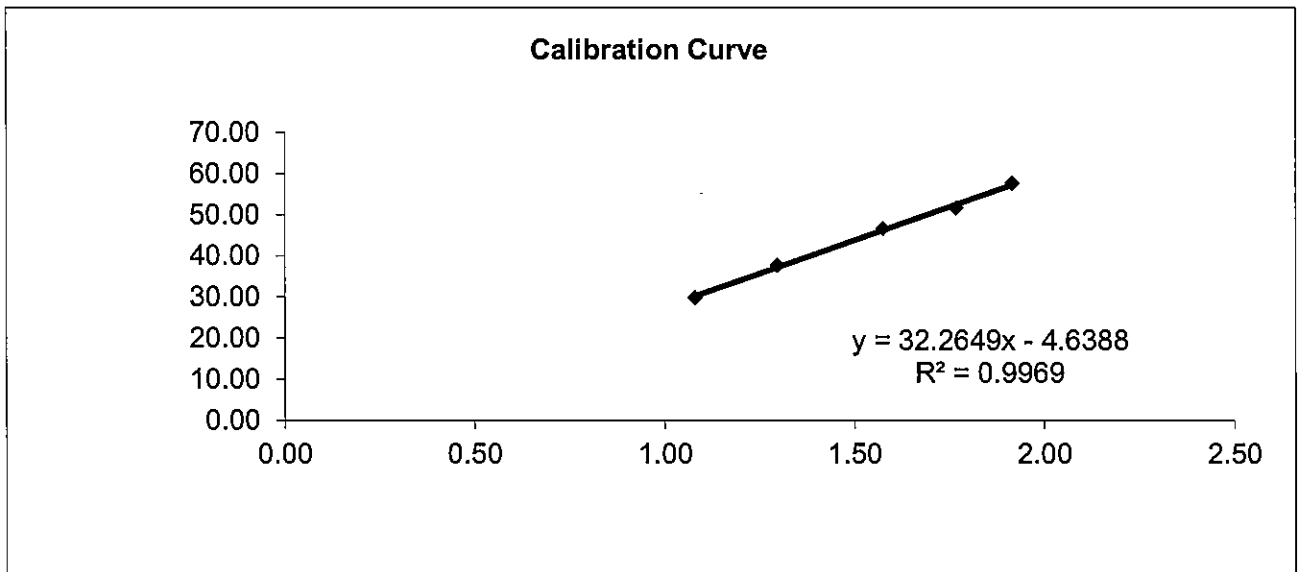
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	23-Dec-14	Barometric pressure	755 mm Hg
Next Calibration date	21-Feb-15	Temperature (°C)	28 °C
Sampler location	DMS2 - Price Memorial Catholic Pri	Temperature (K)	301 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	3761	T _{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m _s	2.06238
Intercept of the standard curve, b _s	-0.2415

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	4.00	30.00	1.08	29.75
7	6.00	38.00	1.29	37.69
10	9.20	47.00	1.58	46.61
13	11.80	52.00	1.77	51.57
18	14.00	58.00	1.92	57.52



Linear Regression

Sampler slope (m) : **32.2649**
 Sampler intercept (b) : **-4.6388**
 Correlation coefficient (R²) : **0.9969**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: *Cany*

Date: 23 / 12 / 2014

Checked by: *A. Holliman*

Date: 23 / 12 / 2014

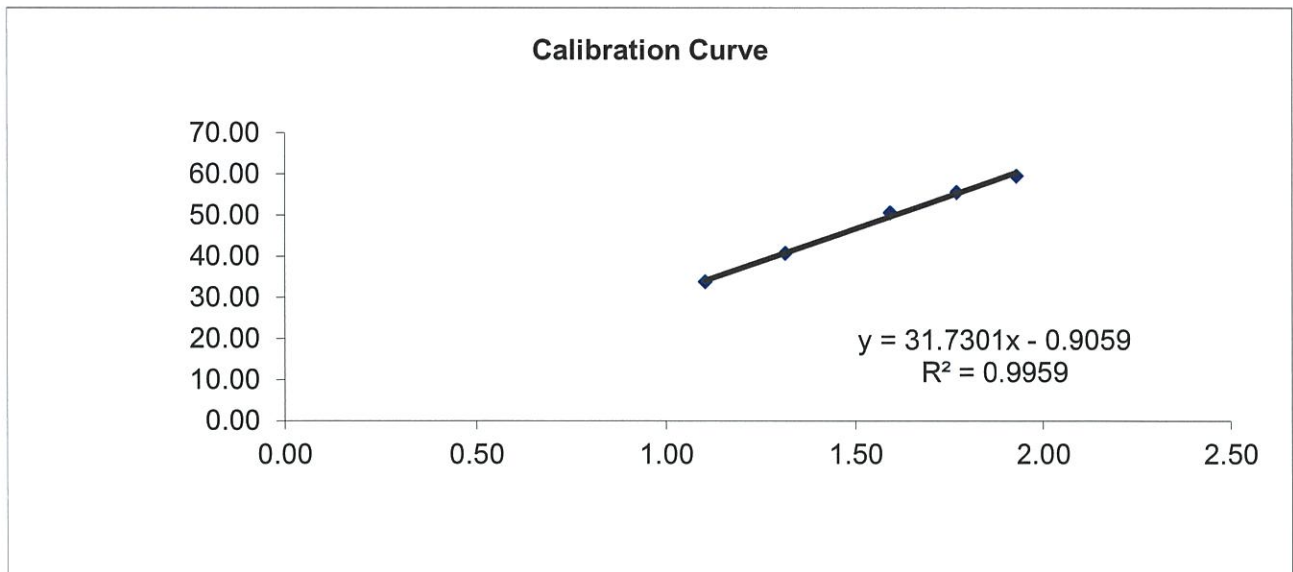
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	23-Dec-14	Barometric pressure	755 mm Hg
Next Calibration date	21-Feb-15	Temperature (°C)	28 °C
Sampler location	DMS3 - Sheng Kung Hui Nursing Home	Temperature (K)	301 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	3762	T _{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	1
Slope of the standard curve, m _s	2.06238
Intercept of the standard curve, b _s	-0.2415

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	4.20	34.00	1.10	33.72
7	6.20	41.00	1.31	40.66
10	9.40	51.00	1.59	50.58
13	11.80	56.00	1.77	55.54
18	14.20	60.00	1.93	59.50



Linear Regression
 Sampler slope (m) : **31.7301**
 Sampler intercept (b) : **-0.9059**
 Correlation coefficient (R²) : **0.9959**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by:

Date:

Checked by:

Date:



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELAND, OH
 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jan 27, 2014 Rootmeter S/N 0438320 Ta (K) - 293
 Operator Tisch Orifice I.D. - 2421 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.4360	3.2	2.00
2	NA	NA	1.00	1.0120	6.4	4.00
3	NA	NA	1.00	0.9090	7.9	5.00
4	NA	NA	1.00	0.8650	8.8	5.50
5	NA	NA	1.00	0.7140	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0052	0.7000	1.4209	0.9957	0.6934	0.8814
1.0010	0.9891	2.0095	0.9915	0.9798	1.2464
0.9989	1.0989	2.2467	0.9894	1.0885	1.3936
0.9977	1.1535	2.3564	0.9883	1.1426	1.4616
0.9925	1.3901	2.8419	0.9831	1.3769	1.7627
Qstd slope (m) = 2.06238			Qa slope (m) = 1.29142		
intercept (b) = -0.02415			intercept (b) = -0.01498		
coefficient (r) = 0.99994			coefficient (r) = 0.99994		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

$$Vstd = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

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

$$Qa = 1/m \{ [\text{SQRT} H2O(Ta/Pa)] - b \}$$

Appendix E

Dust Results

Location: DMS-1 - C.U.H.K.A.A. Thomas Cheung School

Details of 24-Hour TSP Monitoring

Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m ³)	24-hour TSP Level (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Start	Finish								
103154	Dec-14	4-Dec-14	00:00	00:00	DMS1	Fine	Normal Operation	765.0	765.0	19.1	19.0	36.0	36.0	2.8356	2.8708	0.0352	1.1907	1.1908	1.1908	2557.75	2581.75	1440.00	1714.68	20.5	148.7	260.0
103157	Dec-14	10-Dec-14	00:00	00:00	DMS1	Fine	Normal Operation	765.0	765.0	18.7	18.7	36.0	36.0	2.8263	2.9790	0.1527	1.1914	1.1914	1.1914	2581.75	2605.75	1440.00	1715.62	89.0	148.7	260.0
103160	Dec-14	16-Dec-14	00:00	00:00	DMS1	Fine	Normal Operation	765.8	765.8	17.5	17.5	42.0	42.0	2.8373	3.1252	0.2879	1.3694	1.3694	1.3694	2605.75	2629.75	1440.00	1971.94	146.0	148.7	260.0
103163	Dec-14	22-Dec-14	00:00	00:00	DMS1	Fine	Normal Operation	765.8	765.8	17.2	17.2	38.0	38.0	2.8113	2.9713	0.1600	1.2531	1.2531	1.2531	2629.75	2653.75	1440.00	1804.46	88.7	148.7	260.0
103166	Dec-14	27-Dec-14	00:00	00:00	DMS1	Fine	Normal Operation	765.8	765.0	17.0	16.9	35.0	35.0	2.8257	2.9084	0.0827	1.1657	1.1654	1.1656	2653.76	2677.76	1440.00	1678.39	49.3	148.7	260.0
103169	Dec-14	31-Dec-14	00:00	00:00	DMS1	Fine	Normal Operation	765.8	765.0	17.9	17.0	34.0	34.0	2.8296	2.9515	0.1219	1.1349	1.1360	1.1355	2677.75	2701.75	1440.00	1635.05	74.6	148.7	260.0

Average (µg/m3)	86.1
Max (µg/m3)	146.0
Min (µg/m3)	20.5

Location: DMS-2 Price Memorial Catholic Primary School

Details of 24-Hour TSP Monitoring

Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m ³)	24-hour TSP Level (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Start	Finish								
103155	Dec-14	4-Dec-14	00:00	00:00	DMS2	Fine	Normal Operation	765.0	765.0	19.1	19.0	42.0	42.0	2.8410	2.8771	0.0361	1.4127	1.4128	1.4128	2016.1	2040.1	1440.00	2034.4	17.7	167.4	260.0
103158	Dec-14	10-Dec-14	00:00	00:00	DMS2	Fine	Normal Operation	765.0	765.0	18.7	18.7	36.0	36.0	2.8108	2.9779	0.1671	1.2303	1.2303	1.2303	2040.1	2064.1	1440.00	1771.6	94.3	167.4	260.0
103161	Dec-14	16-Dec-14	00:00	00:00	DMS2	Fine	Normal Operation	765.8	765.8	17.7	17.5	41.0	41.0	2.8342	3.1111	0.2769	1.3858	1.3862	1.3860	2064.12	2088.12	1440.00	1995.84	138.7	167.4	260.0
103164	Dec-14	22-Dec-14	00:00	00:00	DMS2	Fine	Normal Operation	765.8	765.8	17.2	17.2	41.0	41.0	2.8251	3.0023	0.1772	1.3869	1.3869	1.3869	2088.11	2112.11	1440.00	1997.14	88.7	167.4	260.0
103167	Dec-14	27-Dec-14	00:00	00:00	DMS2	Fine	Normal Operation	765.8	765.0	17.0	16.9	38.0	38.0	2.8315	2.8926	0.0611	1.2954	1.2949	1.2952	2112.11	2136.11	1440.00	1865.02	32.8	167.4	260.0
103170	Dec-14	31-Dec-14	00:00	00:00	DMS2	Fine	Normal Operation	765.8	765.0	17.9	17.0	40.0	40.0	2.8284	2.9126	0.0842	1.3547	1.3560	1.3554	2136.11	2160.11	1440.00	1951.70	43.1	167.4	260.0

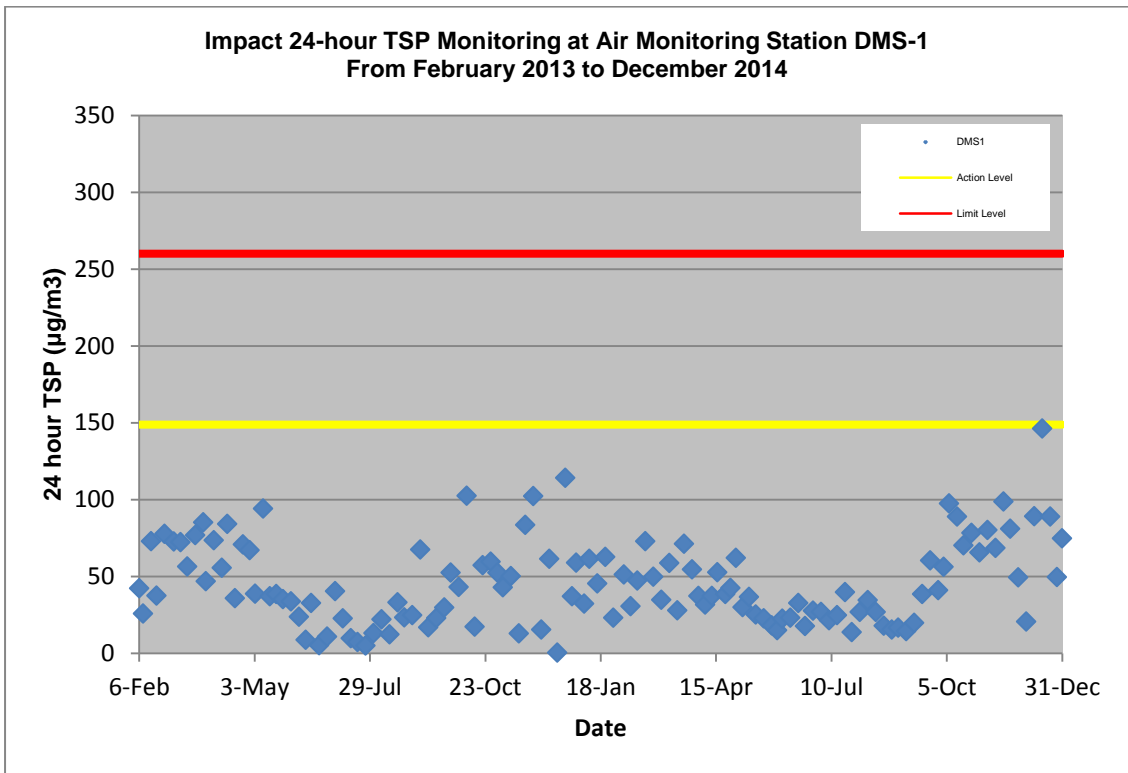
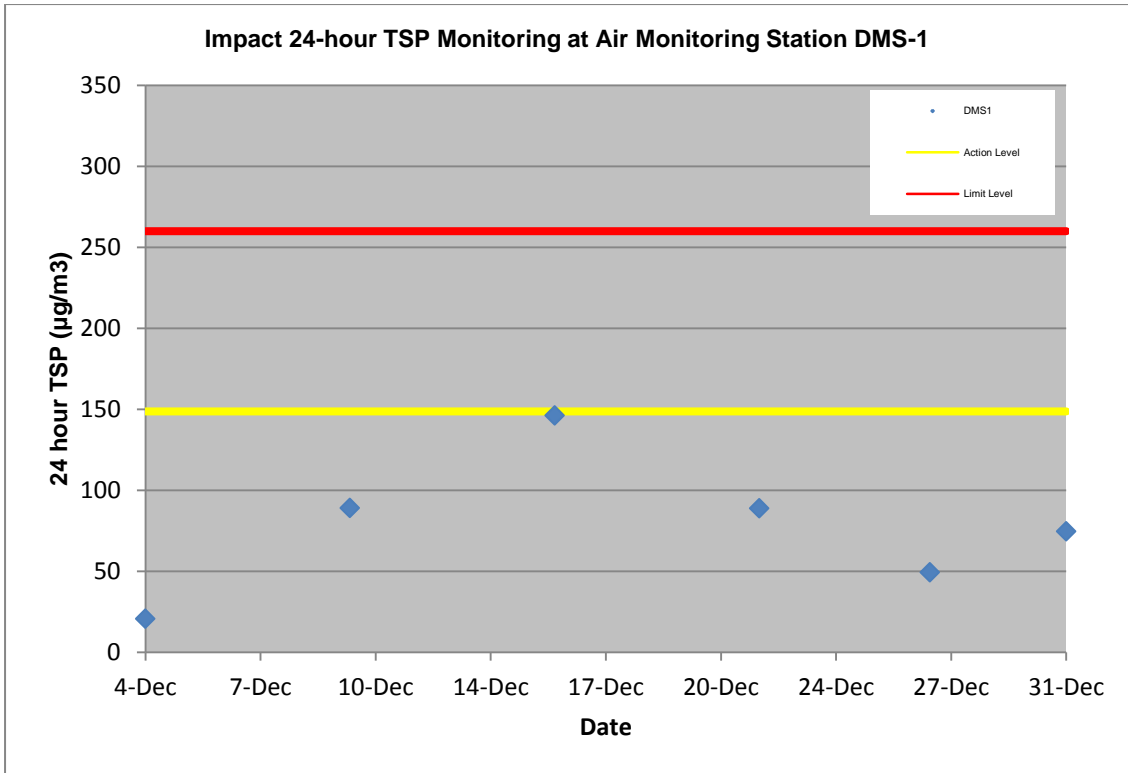
Average (µg/m3)	69.2
Max (µg/m3)	138.7
Min (µg/m3)	17.7

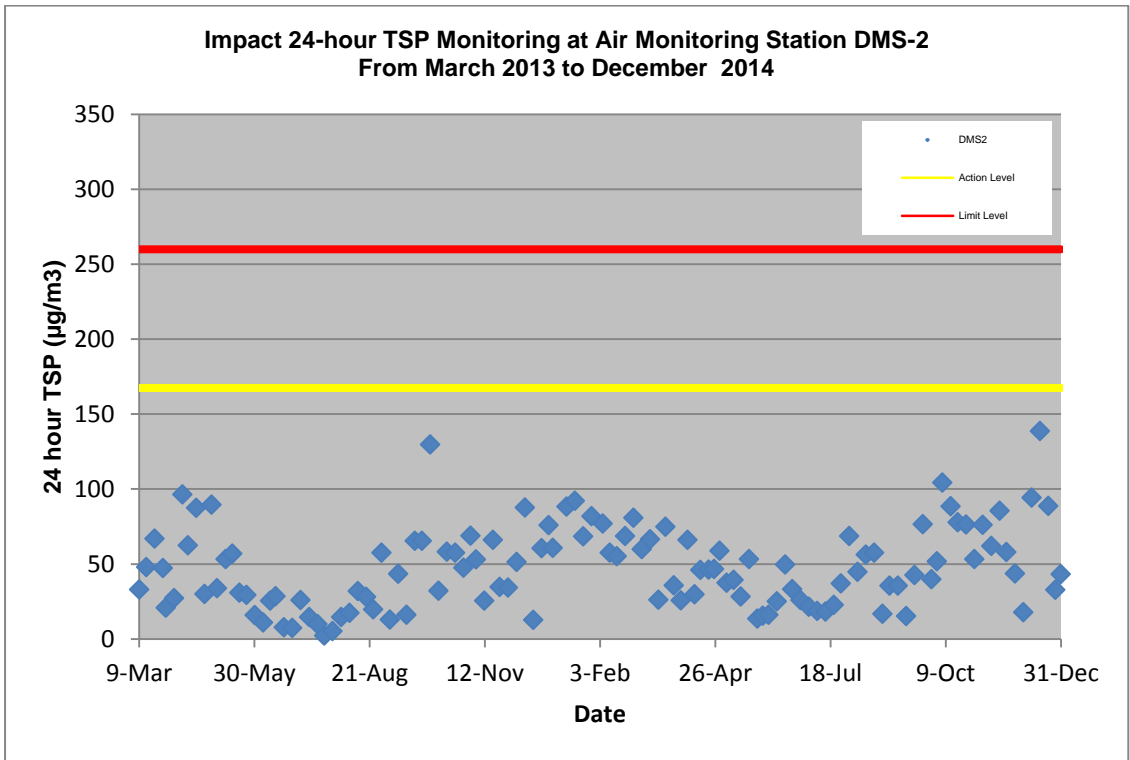
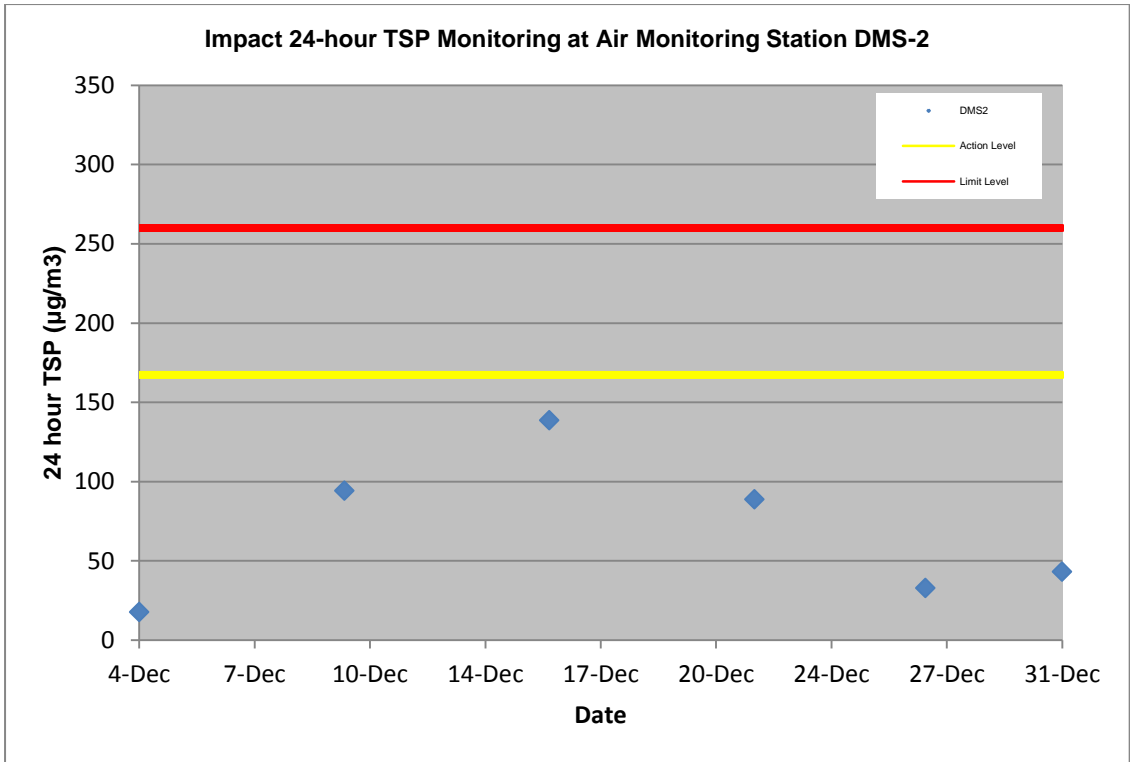
Location: DMS-3/DMS-4 - Hong Kong Sheng Kung Hui Nursing Home

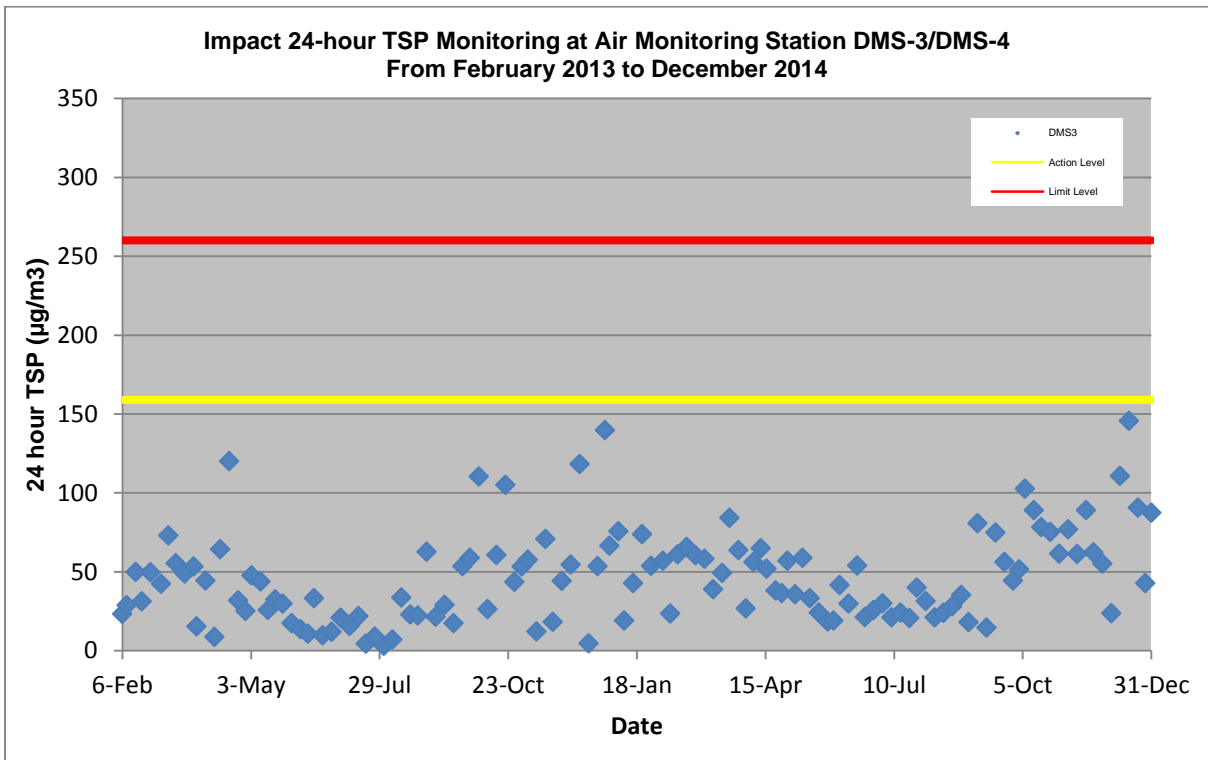
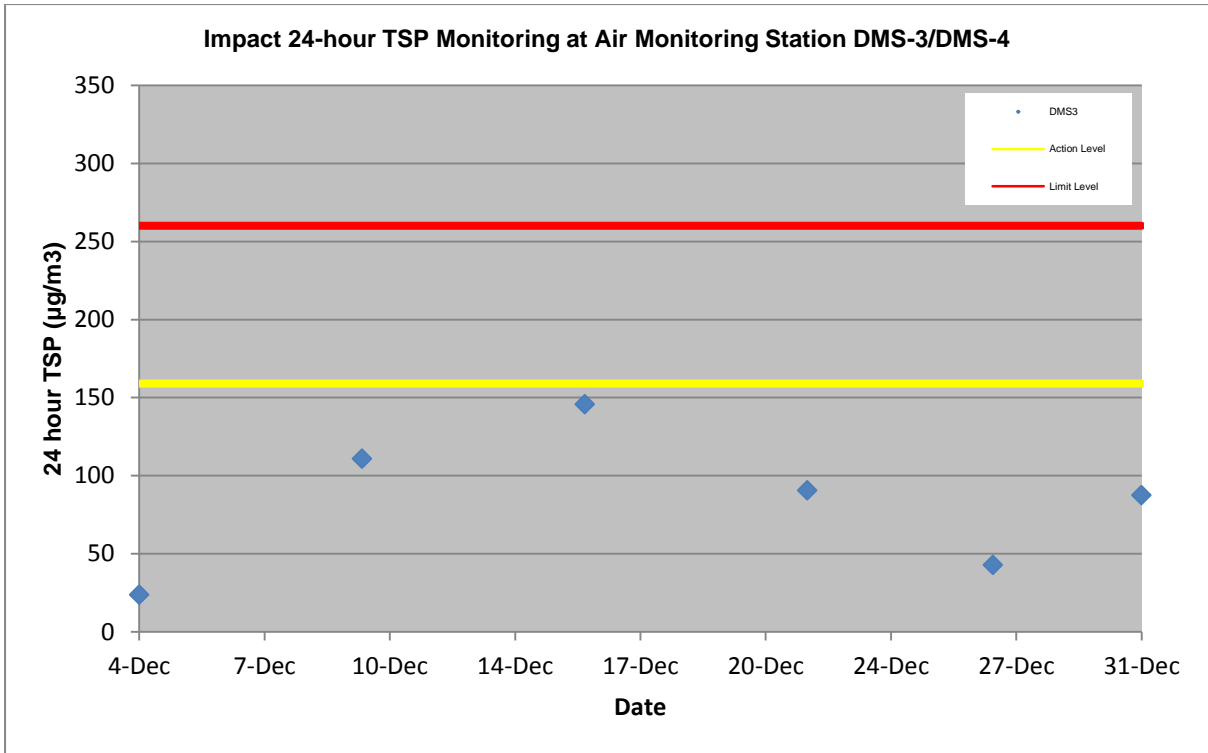
Details of 24-Hour TSP Monitoring

Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m ³)	24-hour TSP Level (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Start	Finish								
103156	Dec-14	4-Dec-14	00:00	00:00	DMS3	Fine	Normal Operation	765.0	765.0	19.1	19.0	45.0	45.0	2.8351	2.8878	0.0527	1.5418	1.5421	1.5420	2072.56	2096.56	1440.00	2220.41	23.7	159.1	260.0
103159	Dec-14	10-Dec-14	00:00	00:00	DMS3	Fine	Normal Operation	765.0	765.0	18.7	18.7	36.0	36.0	2.8255	3.0083	0.1828	1.1456	1.1456	1.1456	2096.56	2120.56	1440.00	1649.66	110.8	159.1	260.0
103162	Dec-14	16-Dec-14	00:00	00:00	DMS3	Fine	Normal Operation	765.8	765.8	17.7	17.5	43.0	43.0	2.8423	3.1484	0.3061	1.4590	1.4596	1.4593	2120.56	2144.56	1440.00	2101.39	145.7	159.1	260.0
103165	Dec-14	22-Dec-14	00:00	00:00	DMS3	Fine	Normal Operation	765.8	765.8	17.2	17.2	44.0	44.0	2.8174	3.0138	0.1964	1.5050	1.5050	1.5050	2144.56	2168.56	1440.00	2167.20	90.6	159.1	260.0
103168	Dec-14	27-Dec-14	00:00	00:00	DMS3	Fine	Normal Operation	765.8	765.0	17.0	16.9	44.0	44.0	2.8200	2.9125	0.0925	1.5056	1.5050	1.5053	2168.56	2192.56	1440.00	2167.63	42.7	159.1	260.0
103171	Dec-14	31-Dec-14	00:00	00:00	DMS3	Fine	Normal Operation	765.8	765.0	17.9	17.0	42.0	42.0	2.8103	2.9884	0.1781	1.4141	1.4161	1.4151	2192.56	2216.56	1440.00	2037.74	87.4	159.1	260.0

Average (µg/m3)	83.5
Max (µg/m3)	145.7
Min (µg/m3)	23.7





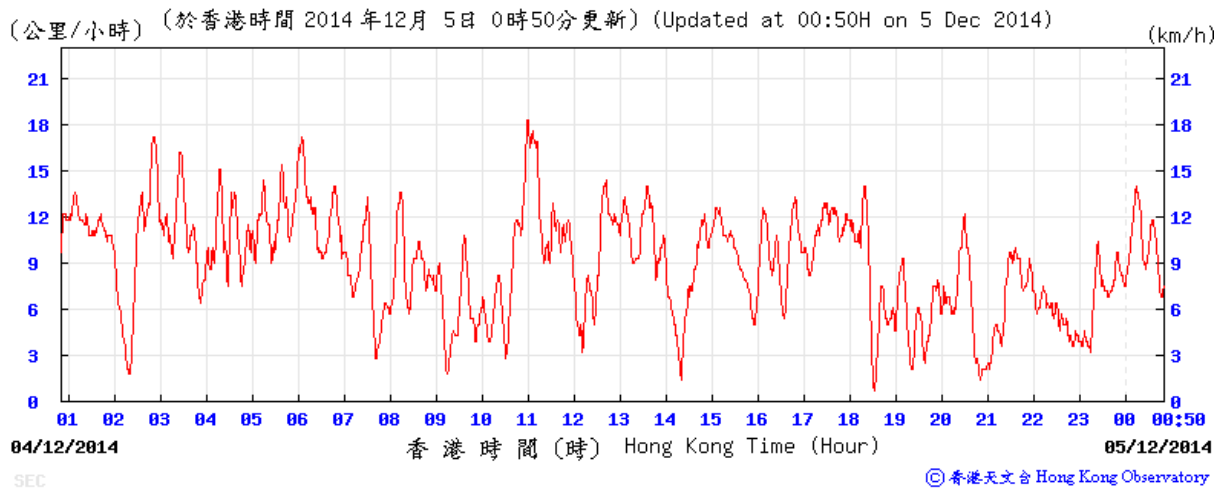


Appendix F

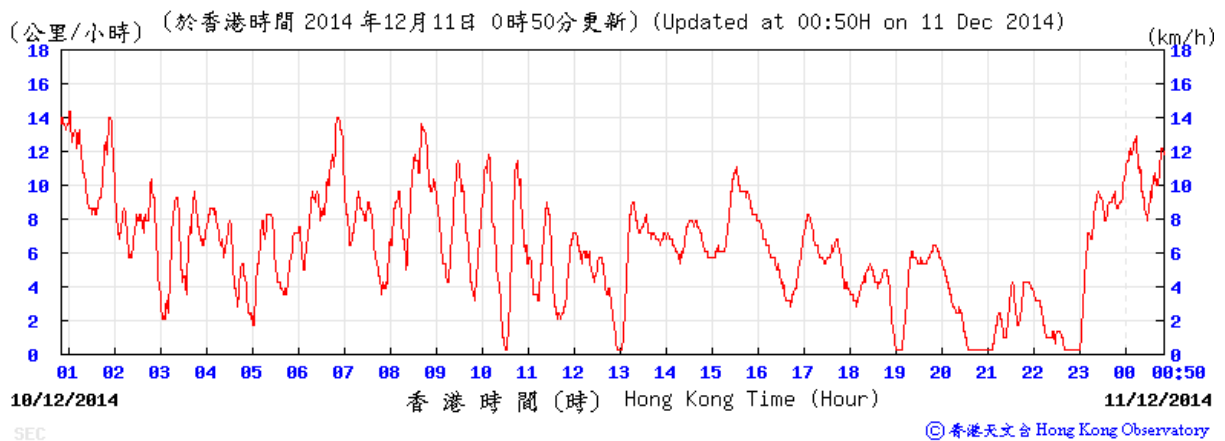
Wind data

Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

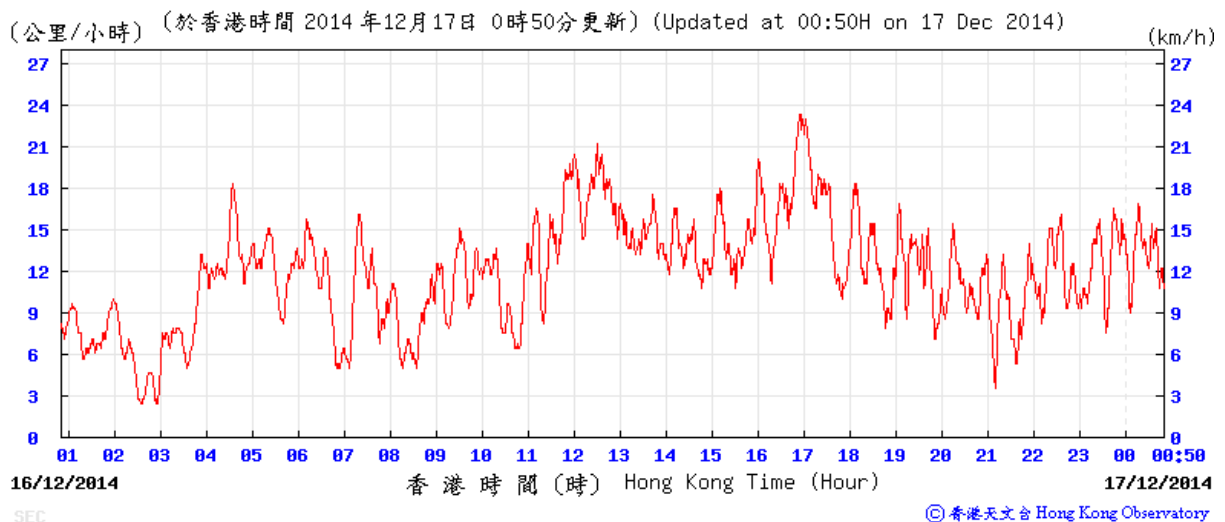
4 December 2014



10 December 2014

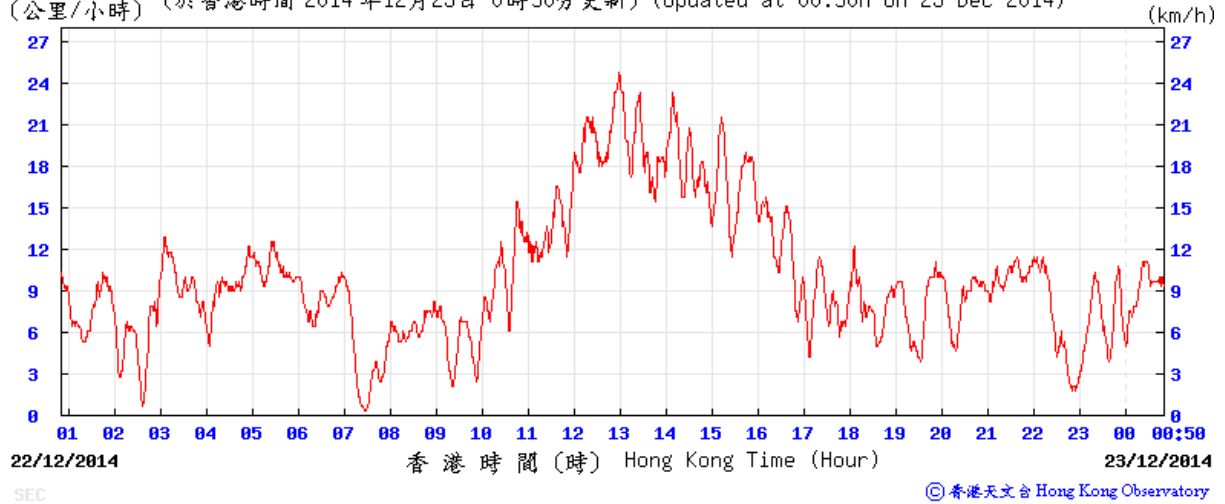


16 December 2014



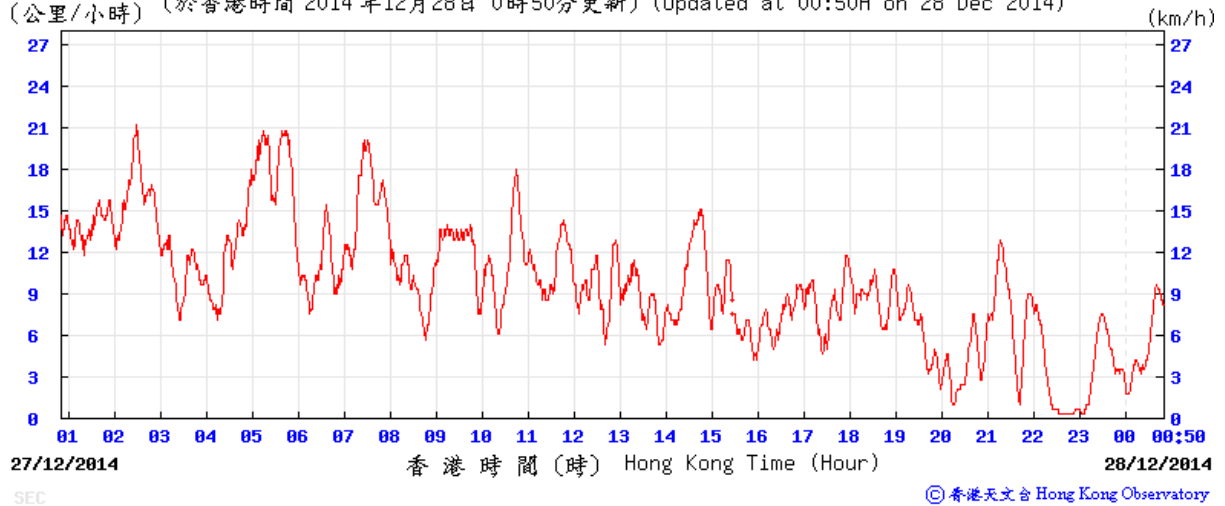
22 December 2014

(公里/小時) (於香港時間 2014 年12月23日 0時50分更新) (Updated at 00:50H on 23 Dec 2014)



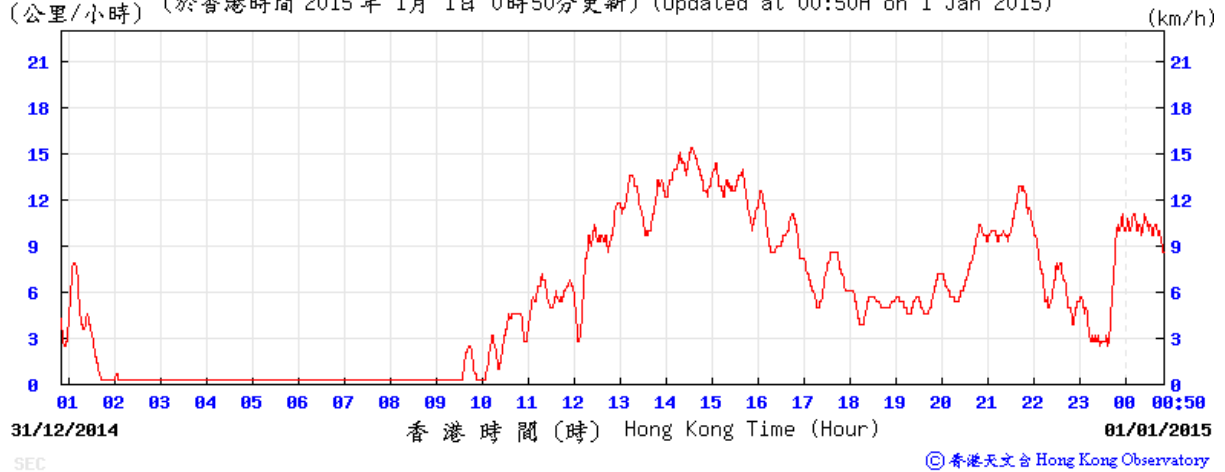
27 December 2014

(公里/小時) (於香港時間 2014 年12月28日 0時50分更新) (Updated at 00:50H on 28 Dec 2014)



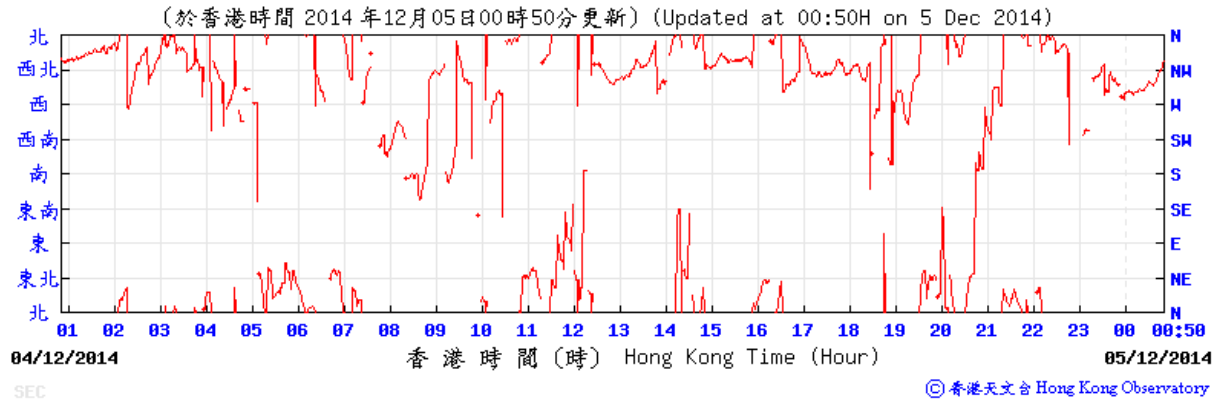
31 December 2014

(公里/小時) (於香港時間 2015 年 1月 1日 0時50分更新) (Updated at 00:50H on 1 Jan 2015)

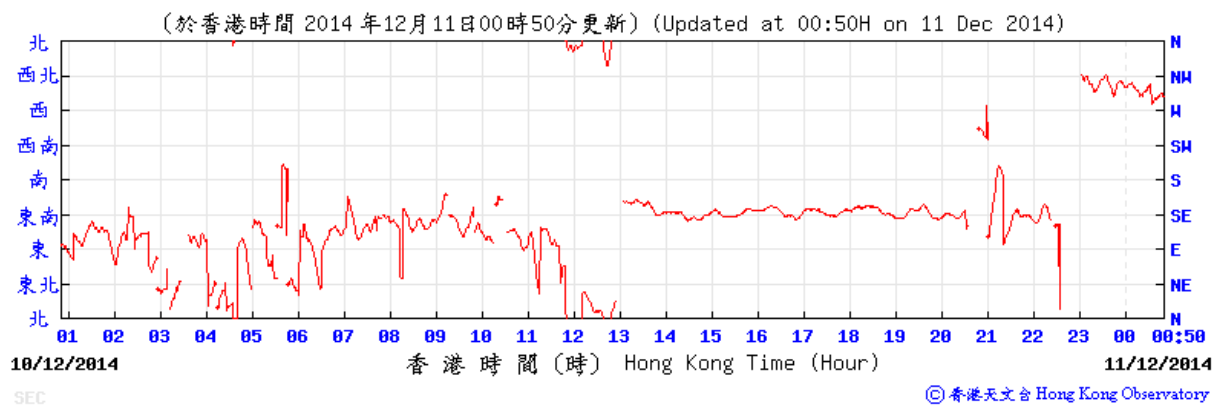


Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

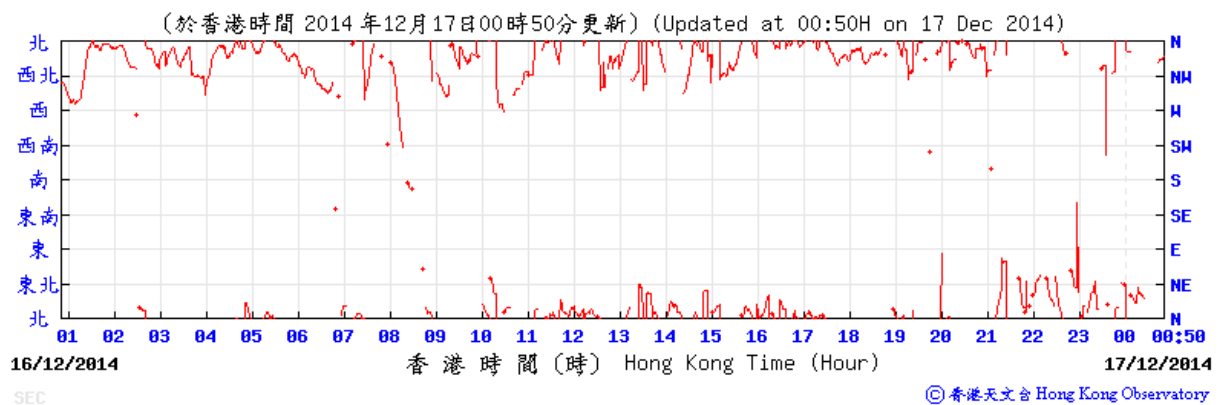
4 December 2014



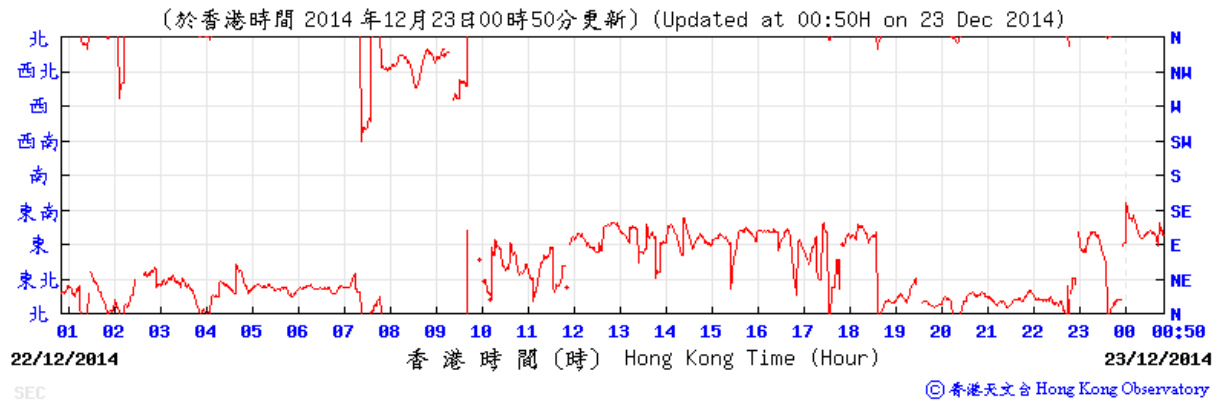
10 December 2014



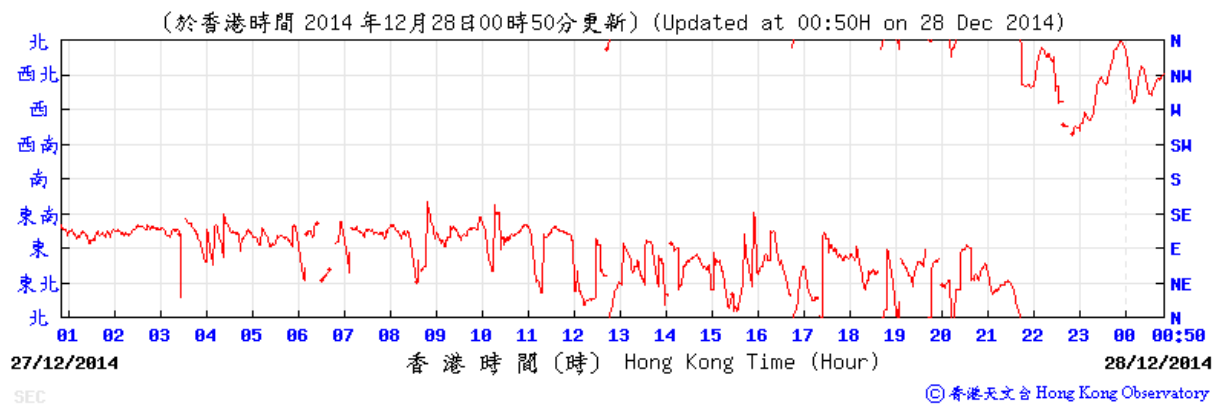
16 December 2014



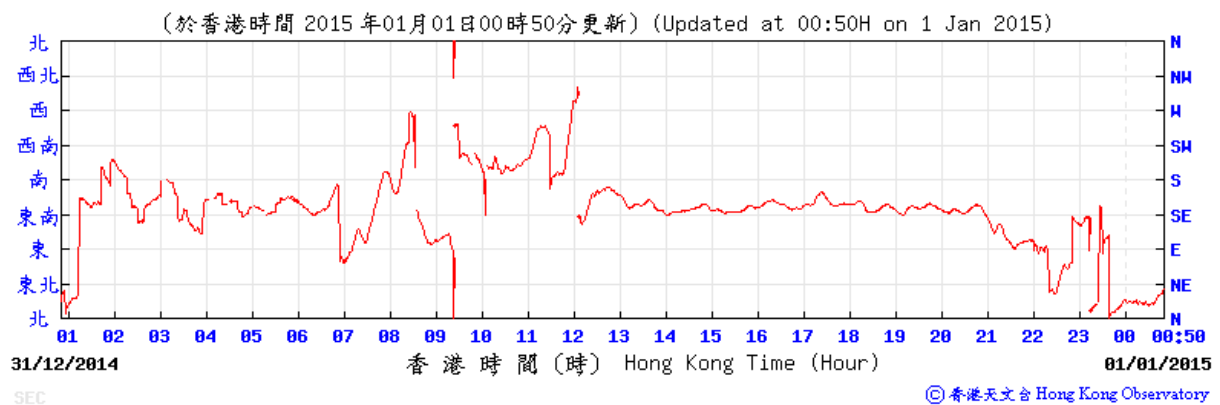
22 December 2014



27 December 2014

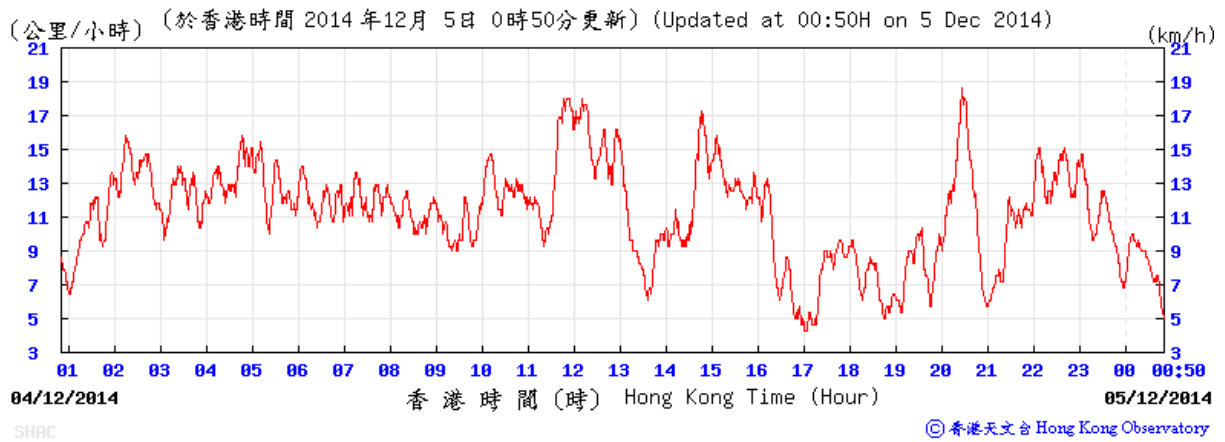


31 December 2014

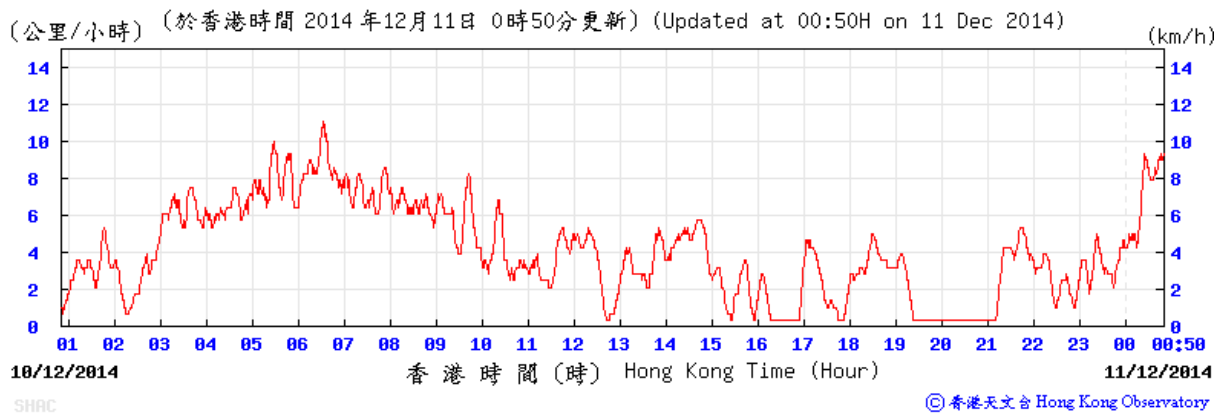


Average wind speed obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

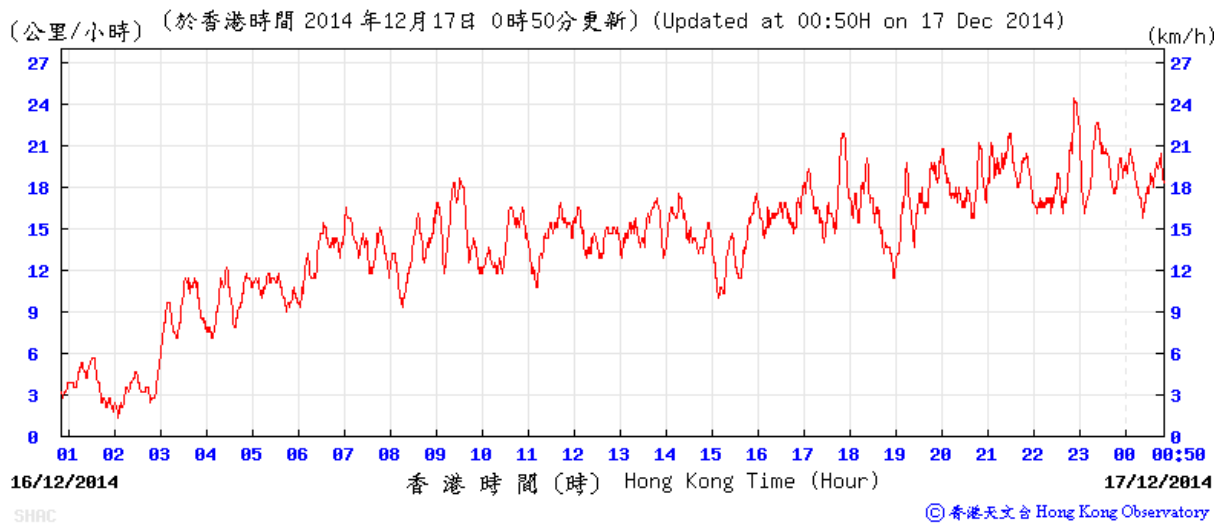
4 December 2014



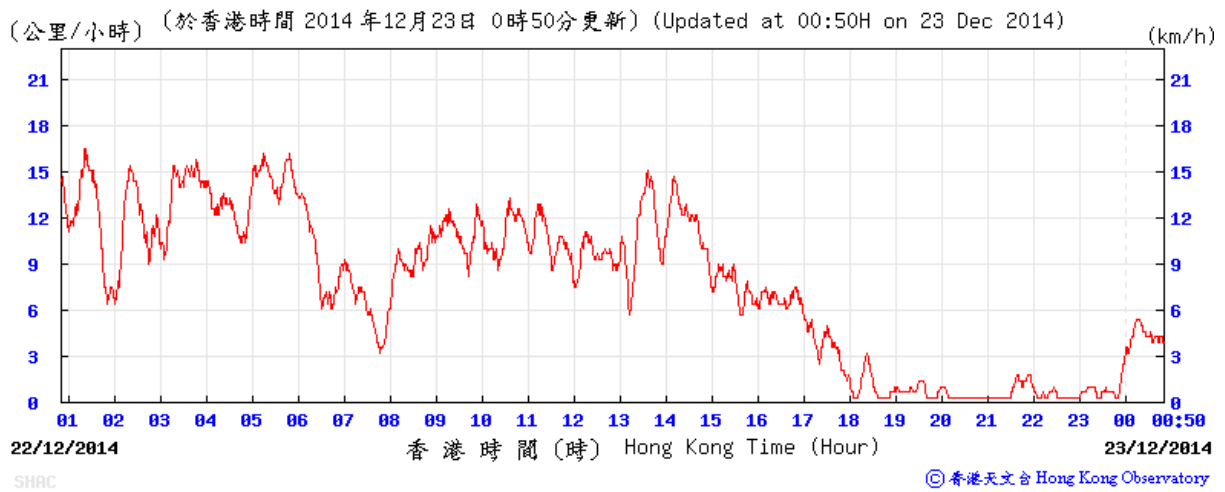
10 December 2014



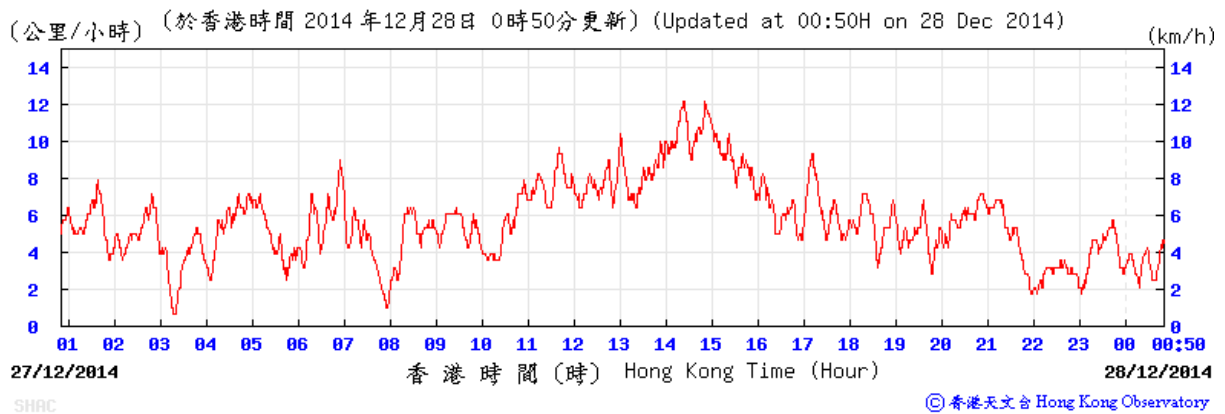
16 December 2014



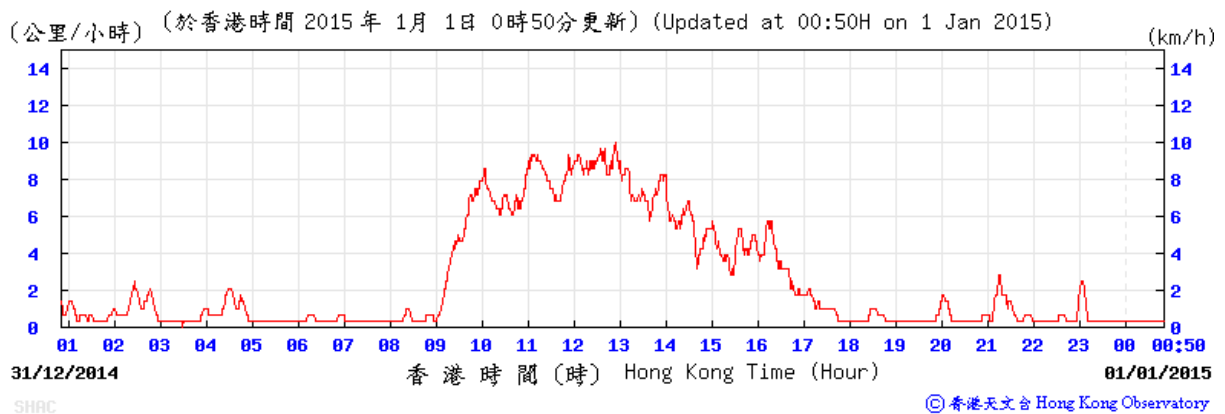
22 December 2014



27 December 2014

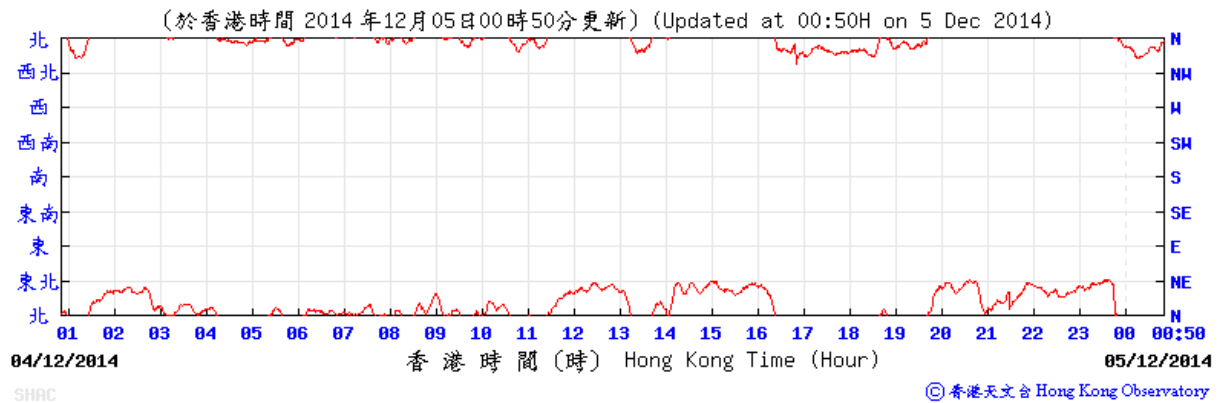


31 December 2014

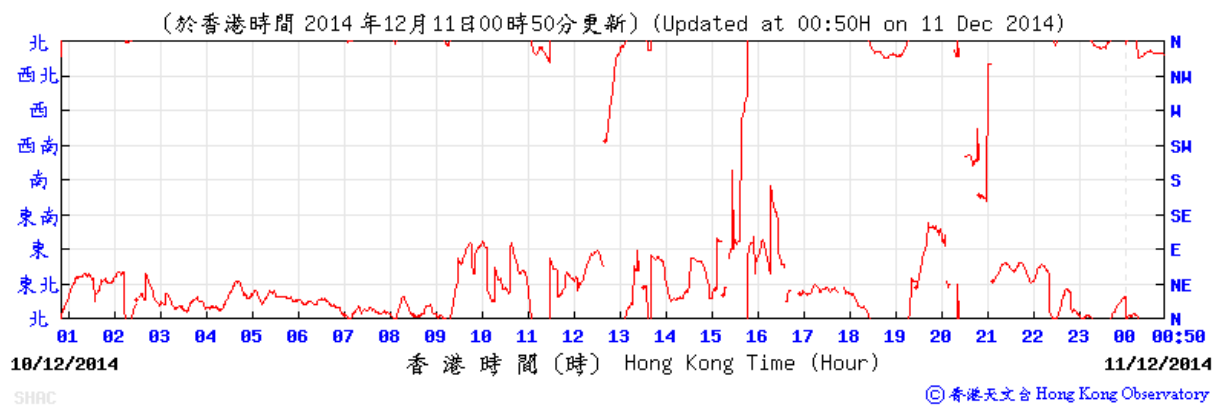


Average wind direction obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

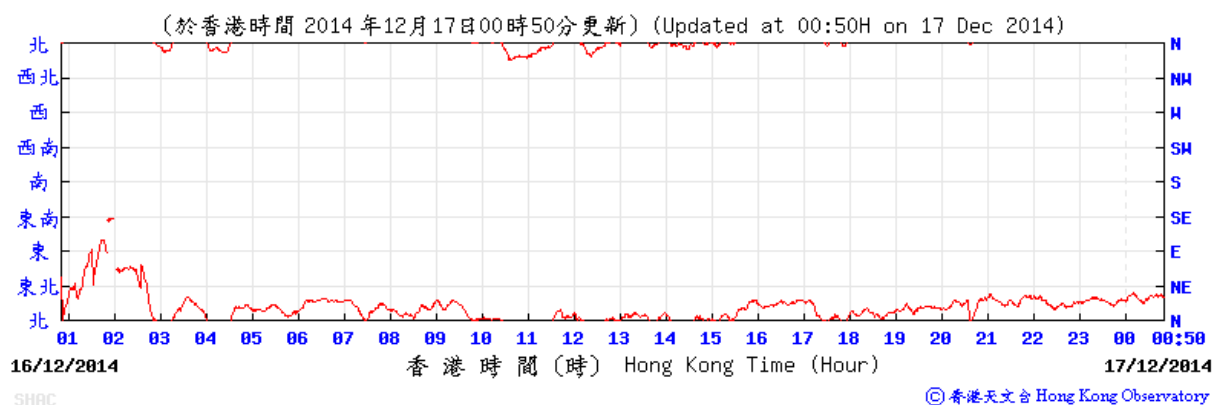
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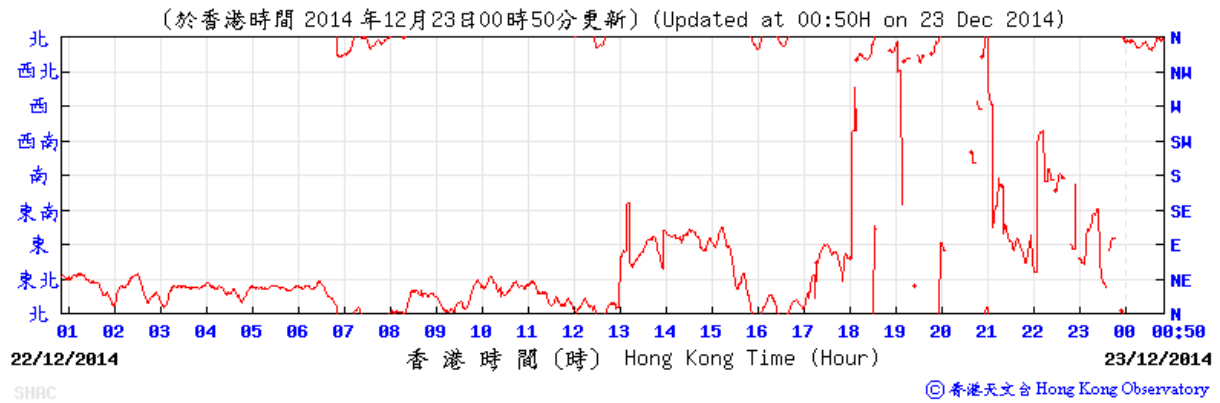
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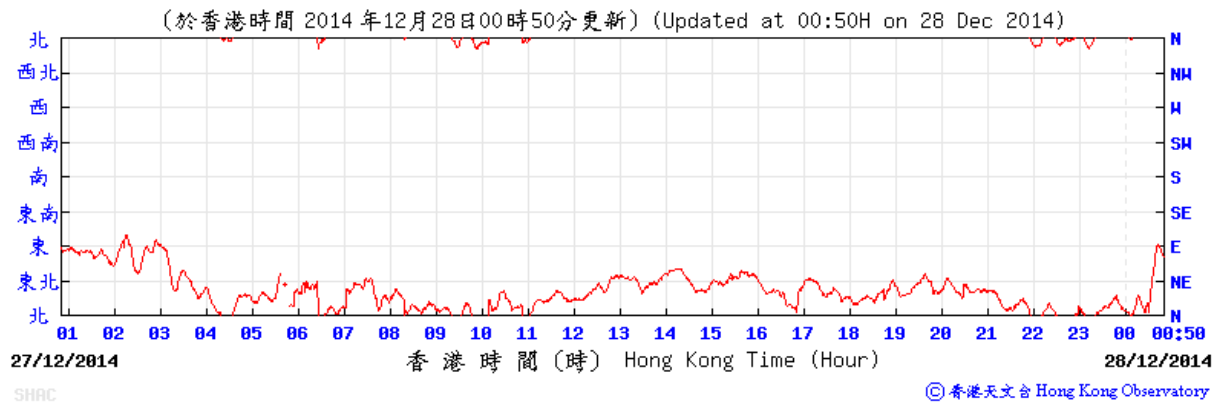
16 December 2014



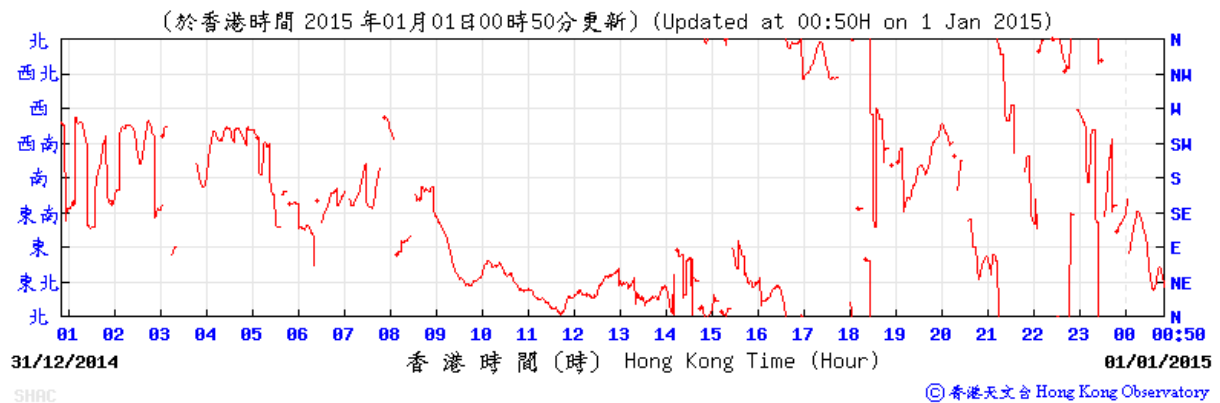
22 December 2014



27 December 2014



31 December 2014



Appendix G

Calibration
Certificates of Noise
Monitoring
Equipment



Certificate of Calibration

校正證書

Certificate No. : C145333
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-2191) Date of Receipt / 收件日期 : 25 August 2014

Description / 儀器名稱 : Integrating Sound Level Meter
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2320694
Supplied By / 委託者 : Ove Arup & Partners Hong Kong Co., Ltd.
Level 5, Festival Walk, 80 Tat Chee Avenue, Kowloon Tong,
Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^\circ\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check


DATE OF TEST / 測試日期 : 30 August 2014


TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By : 
測試 : K C Lee
Project Engineer

Certified By : 
核證 : K M Wu
Engineer

Date of Issue : 1 September 2014
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Certificate of Calibration

校正證書

Certificate No. : C145333
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

- Test procedure : MA101N.

- Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

- 6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L _{AFP}	A	F	94.00	1	93.9

- 6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L _{AFP}	A	F	94.00	1	94.0	± 0.7

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L _{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Certificate of Calibration

校正證書

Certificate No. : C145333
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L _{AFP}	A	F	94.00	1	94.0	Ref.
	L _{ASP}		S			94.0	± 0.1
	L _{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L _{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L _{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L _{ASP}	S	Continuous		106.0	Ref.	
	L _{ASMax}		500 ms		102.0	-4.1 ± 1.0	

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L _{AFP}	A	F	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C145333
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L _{CFP}	C	F	94.00	31.5 Hz	91.0	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L _{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
			60 sec.			1/10 ²		90	89.9	± 0.5
			5 min.			1/10 ³		80	79.2	± 1.0
						1/10 ⁴		70	69.2	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2791364

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Sun Creation Engineering Limited – Calibration & Testing Laboratory

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輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



Certificate of Calibration 校正證書

Certificate No. : C145331
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-2191) Date of Receipt / 收件日期 : 25 August 2014

Description / 儀器名稱 : Acoustical Calibrator
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 4231
Serial No. / 編號 : 2713427
Supplied By / 委託者 : Ove Arup & Partners Hong Kong Co., Ltd.
Level 5, Festival Walk, 80 Tat Chee Avenue, Kowloon Tong,
Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 30 August 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By : 
測試 : K C Lee
Project Engineer

Certified By : 
核證 : K M Wu
Engineer

Date of Issue : 1 September 2014
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Certificate of Calibration

校正證書

Certificate No. : C145331
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

- Test procedure : MA100N.
- Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

Appendix H

Noise Results

Location: NMS-CA-1 - C.U.H.K.A.A Thomas Cheung School

Daytime Noise Monitoring Results

Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L _{Aeq,30min}	Limit	L _{10,30min}	L _{90,30min}		
05-Dec-14	11:50-12:20	58.6	70.0	60.0	53.5	57.0	53.5
11-Dec-14	12:05-12:35	59.2	70.0	59.0	53.0	57.0	55.2
17-Dec-14	12:20-12:50	57.4	70.0	56.0	49.5	57.0	< Baseline Level
23-Dec-14	10:40-11:10	57.8	70.0	60.0	54.0	57.0	50.1
29-Dec-14	10:30-11:00	60.7	70.0	62.5	54.0	57.0	58.3

Notes: (*) : Façade correction is included

(#) : Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

Average L _{Aeq,30min}	58.7
Max L _{Aeq,30min}	60.7
Min L _{Aeq,30min}	57.4

Location: NMS-CA-2 - Price Memorial Catholic Primary School

Daytime Noise Monitoring Results

Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L _{Aeq,30min}	Limit	L _{10,30min}	L _{90,30min}		
05-Dec-14	09:15-09:45	66.7	70.0	69.0	63.5	66.0	58.4
11-Dec-14	09:20-09:50	68.5	70.0	70.0	64.0	66.0	64.9
17-Dec-14	09:20-09:50	67.6	70.0	64.0	59.0	66.0	62.5
23-Dec-14	11:35-12:05	68.4	70.0	72.0	63.0	66.0	64.7
29-Dec-14	08:30-09:00	67.9	70.0	70.5	67.0	66.0	63.4

Notes: (*) : Façade correction is included

(#) : Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

Average L _{Aeq,30min}	67.8
Max L _{Aeq,30min}	68.5
Min L _{Aeq,30min}	66.7

Location: NMS-CA-3 / NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home

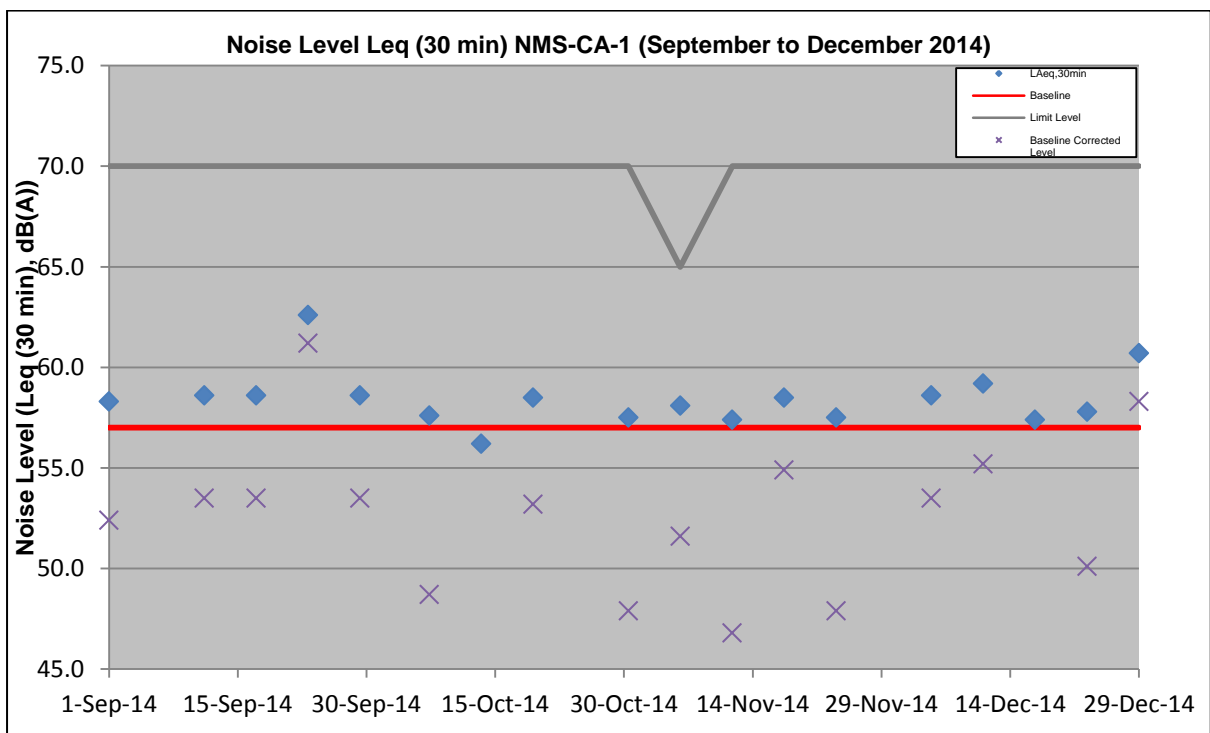
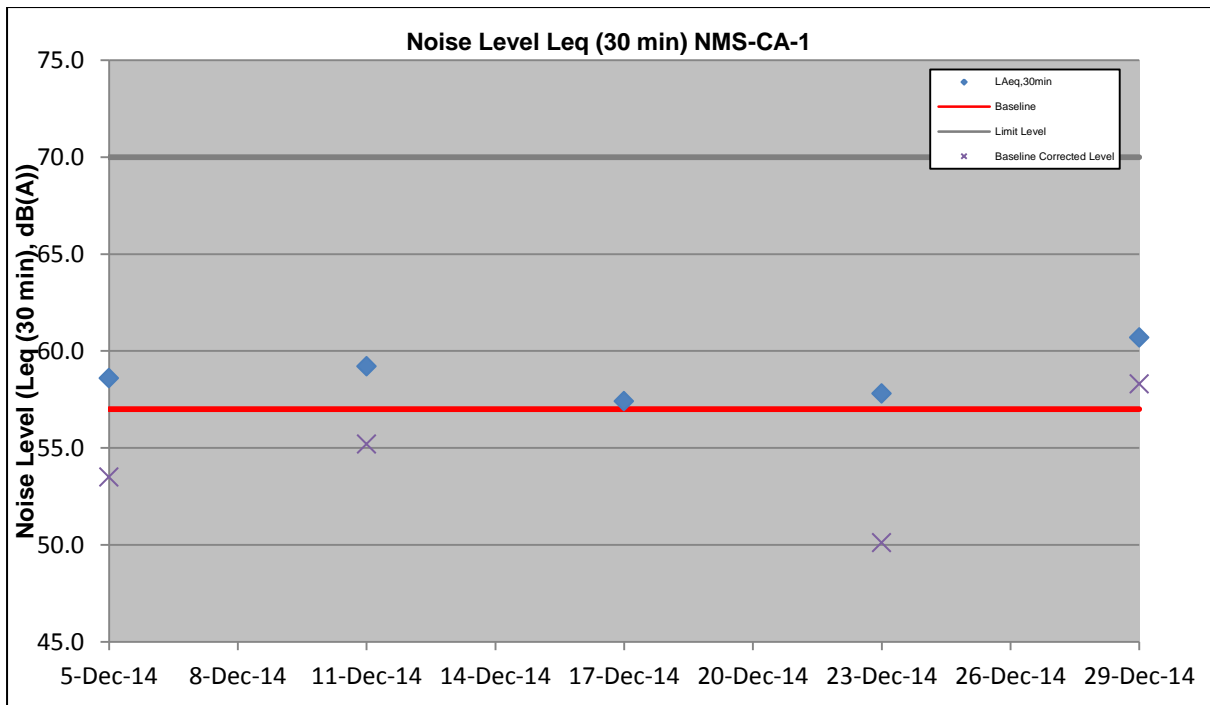
Daytime Noise Monitoring Results

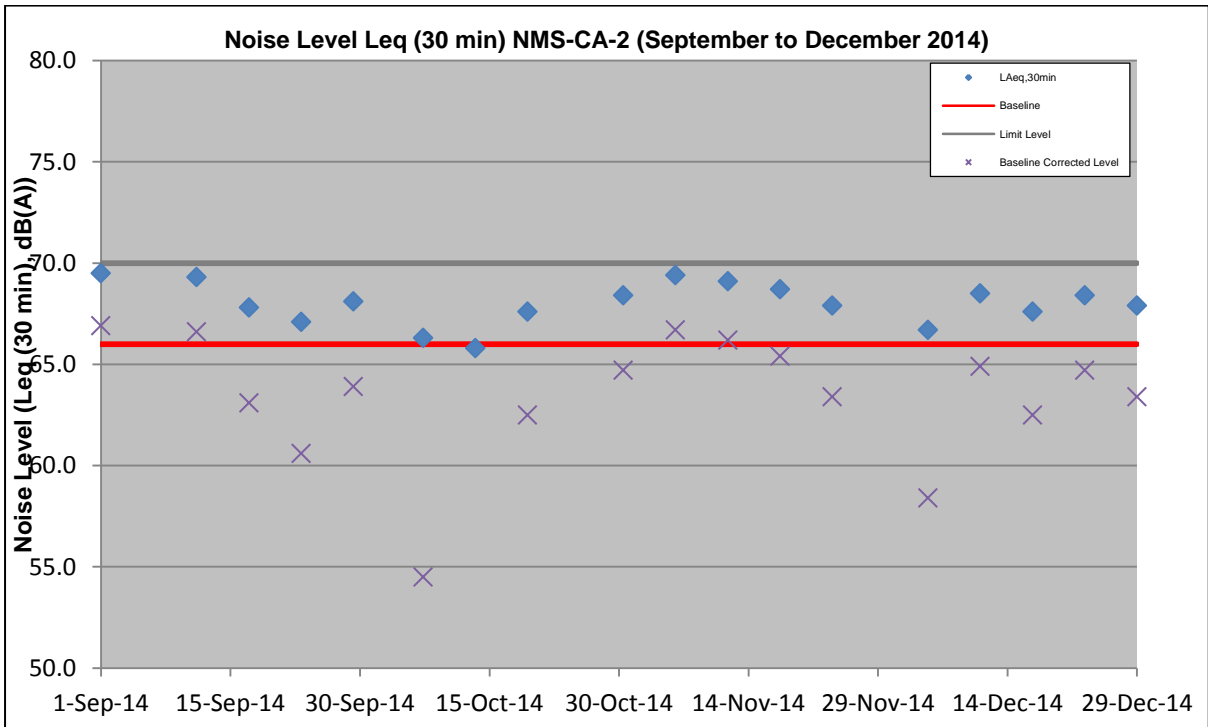
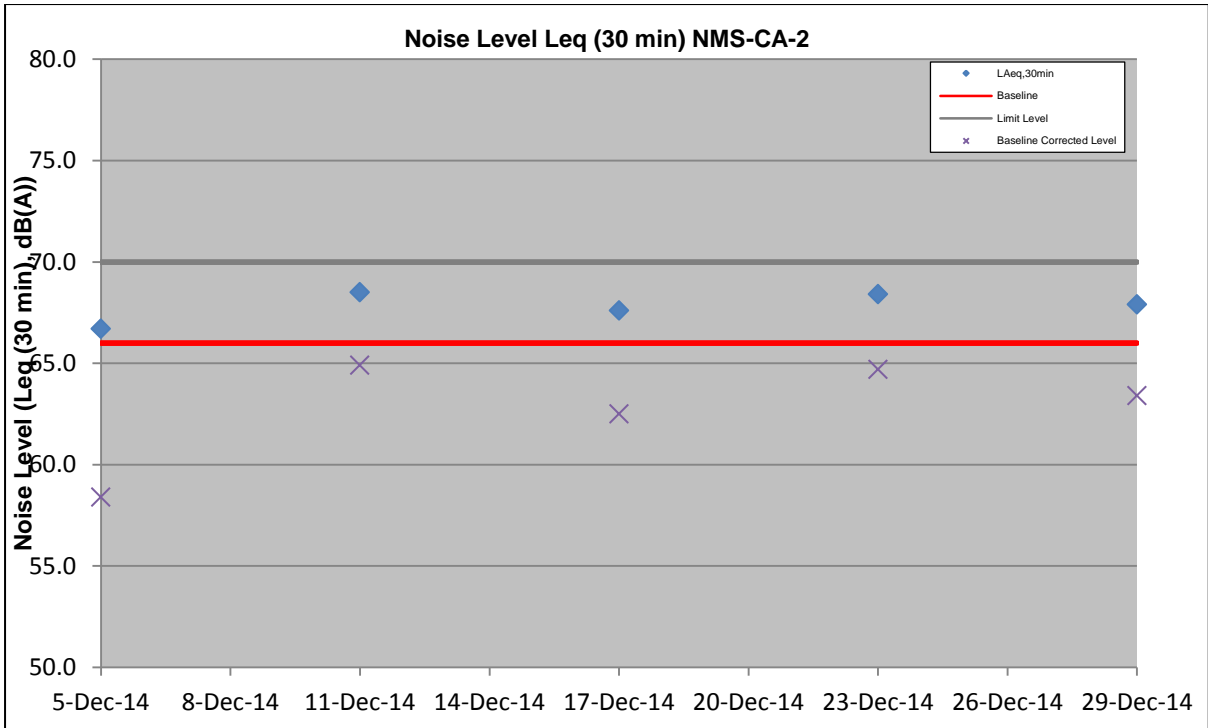
Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L _{Aeq,30min}	Limit	L _{10,30min}	L _{90,30min}		
05-Dec-14	10:20-10:50	71.3	70.0	74.0	67.0	73.0	< Baseline Level
11-Dec-14	10:30-11:00	72.1	70.0	76.5	66.0	73.0	< Baseline Level
17-Dec-14	10:45-11:15	67.7	70.0	69.5	63.5	73.0	< Baseline Level
23-Dec-14	13:00-13:30	71.5	70.0	74.0	67.0	73.0	< Baseline Level
29-Dec-14	13:00-13:30	71.7	70.0	74.0	67.0	73.0	< Baseline Level

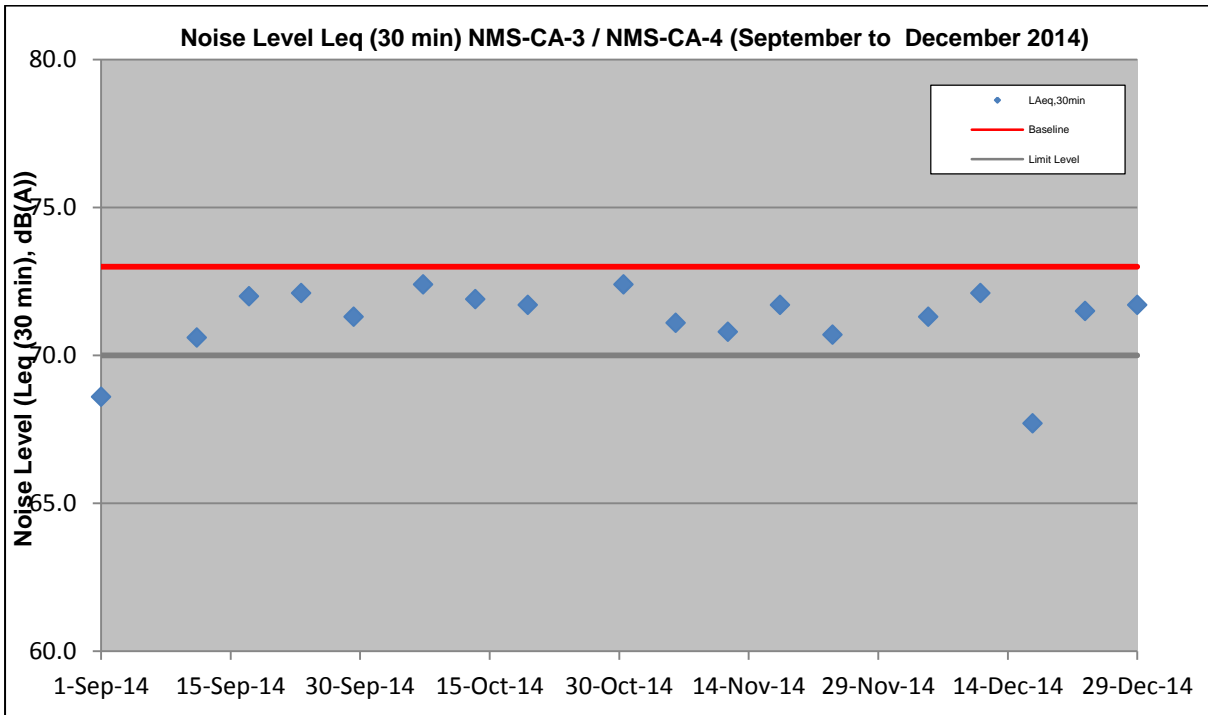
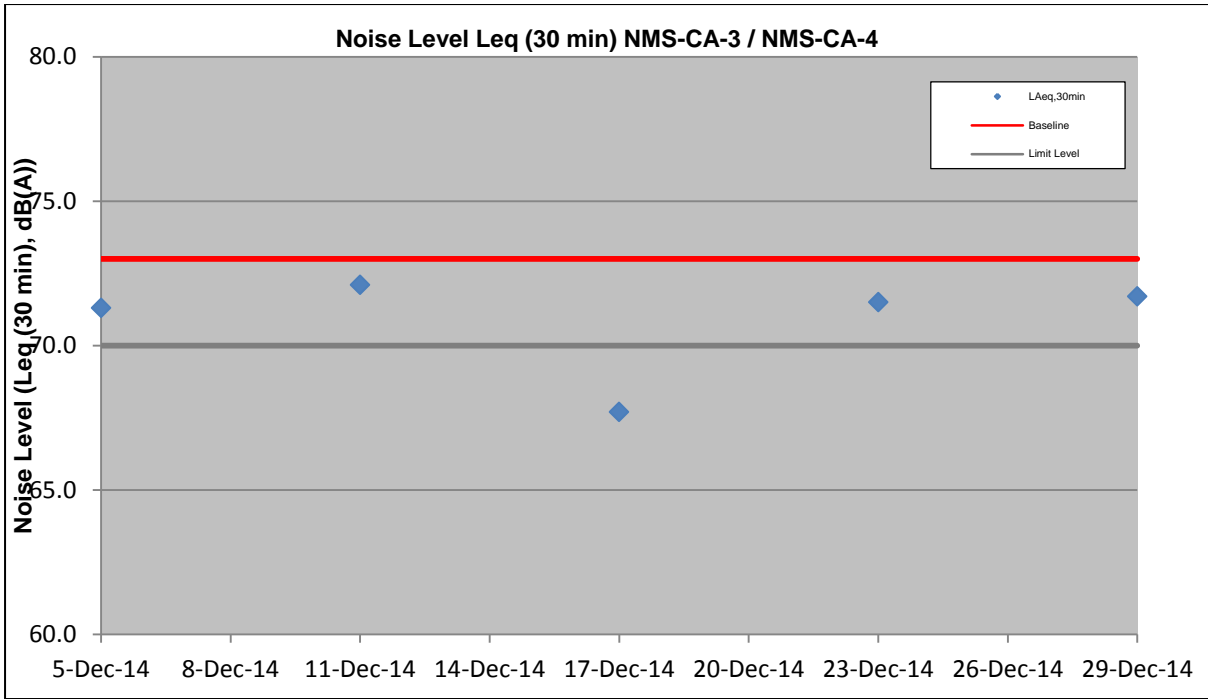
Notes: (*) : Façade correction is included

(#) : Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

Average L _{Aeq,30min}	70.9
Max L _{Aeq,30min}	72.1
Min L _{Aeq,30min}	67.7







Appendix I

Event/Action Plan for
Air Quality, Airborne
Noise and Landscape
and Visual

Event and Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
Action Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 	<ol style="list-style-type: none"> 1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

Limit Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Airborne Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event / Action Plan for Landscape and Visual

Action Level	ET	IEC	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer’s Representative

Appendix J

Waste Flow Table

Monthly Summary Waste Flow Table for 2014

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	17.414	0.000	0.000	10.800	6.243	0.371	0.000	0.000	0.000	1.400	0.056
Feb	8.651	0.000	0.000	5.637	2.953	0.062	0.000	0.000	0.000	0.800	0.090
Mar	13.909	0.000	0.173	7.040	5.845	0.851	0.000	0.000	0.000	0.000	0.117
Apr	7.577	0.000	0.000	2.712	4.757	0.107	0.000	0.000	0.000	2.200	0.059
May	7.120	0.000	0.045	1.750	5.325	0.000	0.000	0.000	0.000	1.200	0.090
Jun	7.480	0.000	0.015	2.883	4.535	0.047	0.000	0.000	0.000	0.600	0.130
Sub-total	62.152	0.000	0.233	30.822	29.659	1.438	0.000	0.000	0.000	6.200	0.542
July	6.281	0.000	0.000	0.124	6.158	0.000	0.390	0.175	0.000	0.400	0.075
August	11.202	0.000	0.000	5.610	5.592	0.000	0.000	0.000	0.000	0.000	0.122
September	20.767	0.000	0.000	14.020	6.748	0.000	5.620	0.000	0.000	0.000	0.110
October	24.278	0.000	0.000	18.687	5.591	0.000	8.970	0.000	0.000	1.200	0.148
November	49.149	0.000	0.000	46.564	2.585	0.000	0.000	0.175	0.000	0.800	0.128
December	24.958	0.000	0.000	22.277	2.681	0.000	0.000	0.175	0.000	0.000	0.124
Total	198.787	0.000	0.233	138.104	59.013	1.438	14.980	0.525	0.000	8.600	1.250

Comments:

- 1) Assumption: The densities of Rock, Soil, Mix Rock and Soil, and Regular Spoil are 2.0 ton/m³; the density of general refuse is 1.0 ton/m³; the density of waste oil is 1.0 ton/m³.
- 2) The cut-off date of waste amount in Dec is 28/12/2014 for TKO137FB/TM38FB, NENT landfill and Kai Tak 1108A.
- 3) The amounts of waste in Dec are 124.49 tons for NENT Landfill, 5361.53 tons for TKO137FB/TM38 FB, 41779.4 tons for Kai Tak Contract 1108A and 2774.64 tons for Contract 820.
- 4) The amount of paper waste in Dec is 5 bags, approximately 175 kg, for cut-off date as 29/12/2014.
- 5) The amount of chemical waste in Dec is 0L for cut-off date as 29/12/2014.

Appendix K

Environmental
Monitoring
Programme for
Coming Month

**SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels
Tentative Impact Monitoring Schedule - January 2015**

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L _{Aeq} , 30 min	
01-Jan-15 Thu			
02-Jan-15 Fri			
03-Jan-15 Sat			
04-Jan-15 Sun			
05-Jan-15 Mon			
06-Jan-15 Tue			
07-Jan-15 Wed			
08-Jan-15 Thu			
09-Jan-15 Fri			
10-Jan-15 Sat			
11-Jan-15 Sun			
12-Jan-15 Mon			
13-Jan-15 Tue			
14-Jan-15 Wed			
15-Jan-15 Thu			
16-Jan-15 Fri			
17-Jan-15 Sat			
18-Jan-15 Sun			
19-Jan-15 Mon			
20-Jan-15 Tue			
21-Jan-15 Wed			
22-Jan-15 Thu			
23-Jan-15 Fri			
24-Jan-15 Sat			
25-Jan-15 Sun			
26-Jan-15 Mon			
27-Jan-15 Tue			
28-Jan-15 Wed			
29-Jan-15 Thu			
30-Jan-15 Fri			
31-Jan-15 Sat			

	Public Holiday
	Monitoring Day

Monitoring Details

Monitoring	Locations	Parameters
Air Quality	DMS-1 - C.U.H.K.A.A Thomas Cheung School, DMS-2 - Price Memorial Catholic Primary School and DMS-3 / DMS-4 - Hong Kong Sheng Kung Hui Nursing Home	24-hour TSP
Noise	NMS-CA-1 - C.U.H.K.A.A Thomas Cheung School, NMS-CA-2 - Price Memorial Catholic Primary School and NMS-CA-3 /NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home	L _{Aeq} (30 min), L ₁₀ , L ₉₀

Appendix L

Cumulative Log for
Complaints,
Notifications of
Summons and
Successful
Prosecutions

SCL 1103 Hin Keng to Diamond Hill Tunnels Construction Stage
Environmental Complaint Log (December 2014)

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date Complaint Received	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date Complaint Received by ET	ET's Investigation Date	Investigation/Mitigation Measures	Status
RN30836-14	RN30836-14	Referred by EPD	11 Dec 2014	Midnight	Hin Kwai House	Noise	Complaint on Noise from Shatin to Central Link Construction Site near Hin Kwai House at midnight on 11 December 2014.	11 Dec 2014	17 Dec 2014	<p>No works and PME's were found at the surface within the site in accordance with the valid Construction Noise Permits GWRN0658- 14 and GW-RN0660-14 on 10-11 December 2014.</p> <p>The contractor reminded their staff to fully follow the CNP conditions.</p> <p>All CNP conditions shall be fully followed.</p>	Closed
RN30976-14	RN30976-14	Referred by EPD	15 Dec 2014	Early Morning	SCL Construction Site	Noise	Complaint on Noise from Shatin to Central Link Construction Site at midnight on 6 December 2014.	15 Dec 2014	17 Dec 2014	<p>No works and PME's were found at the surface within the site in accordance with the valid Construction Noise Permits GWRN0658-14 and GW-RN0660-14 on 6 December 2014.</p> <p>The contractor reminded their staff to fully follow the CNP conditions.</p> <p>All CNP conditions shall be fully followed.</p>	

Ove Arup and Partners HK Ltd.

SCL 1103 Hin Keng to Diamond Hill Tunnels Construction Stage
Environmental Complaint Log (Cumulative)

Reporting Month	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Number of Prosecutions in Reporting Month
February 2013	0	0	0
March 2013	0	0	0
April 2013	0	0	0
May 2013	0	0	0
June 2013	0	0	0
July 2013	0	0	0
August 2013	0	0	0
September 2013	0	0	0
October 2013	0	0	0
November 2013	0	0	0
December 2013	0	0	0
January 2014	0	0	0
February 2014	0	0	0
March 2014	0	0	0
April 2014	0	0	0
May 2014	0	0	0
June 2014	0	0	0
July 2014	0	0	0
August 2014	0	0	0
September 2014	0	0	0
October 2014	0	0	0
November 2014	1	0	0
December 2014	2	0	0
Total	3	0	0

Appendix F

**22nd EM&A Report for Works Contract 1106 –
Diamond Hill Station**

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 22

[Period from 1 to 31 December 2014]

Works Contract 1106 – Diamond Hill Station

(January 2015)

Certified by: 
_____ Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 13th January 2015

Sembawang – Leader Joint Venture

Shatin to Central Link – Contract 1106 Diamond Hill Station

Monthly Environmental Monitoring and Audit Report For December 2014

(Version 2.1)

Certified By



Dr. Priscilla Choy
(Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY

Introduction

1. This is the 22nd monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for **MTR Shatin to Central Link (SCL) Works Contract 1106 – Diamond Hill Station**. This report documents the findings of EM&A Works conducted from 1 to 31 December 2014.

Summary of Construction Works undertaken during the Reporting Month

2. The major site activities undertaken in the reporting month include:
 - Interchange Adit- pre-bored socketed H-piling works, installation of observation, recharge and pump wells for stage 1;
 - Entrance A1- ground treatment works and installation of pump well;
 - Excavation and ELS works;
 - West Unpaid Adit- pre-bored socketed H-pile, installation of observation, recharge and pump wells for stage 1, and
 - Structural works- form base and binding layer; base slab waterproofing and formworks.

Environmental Monitoring and Audit Progress

3. A summary of the monitoring activities in this reporting period is listed below:

Regular Construction Noise and Construction Dust Monitoring

- Regular construction noise monitoring during normal working hours

Noise Monitoring Station ID

- | | |
|--|---------|
| • NMS-CA-3 ⁽¹⁾⁽³⁾ /NMS-CA-4 ⁽²⁾⁽³⁾ (H.K. Sheng Kung Hui Nursing Home) | 5 times |
| • NMS-CA-4 ⁽¹⁾ /NMS-CA-3 ⁽²⁾ (Block 1, Rhythm Garden (north-eastern façade)) | 5 times |
| • NMS-CA-5 ⁽¹⁾ /NMS-CA-2 ⁽²⁾ (Block 1, Rhythm Garden (northern façade)) | 5 times |

- Construction Dust (24-hour TSP) Monitoring

Dust Monitoring Station ID

- | | |
|---|---------|
| • DMS-3 ⁽¹⁾⁽⁴⁾ /DMS-4 ⁽²⁾⁽⁴⁾ (H.K. Sheng Kung Hui Nursing Home) | 6 times |
| • DMS-4 ⁽¹⁾ /DMS-3 ⁽²⁾ (Block 1, Rhythm Garden) | 6 times |

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Noise monitoring on NMS-CA-3⁽¹⁾/ NMS-CA-4⁽²⁾ (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.
- (4) Dust monitoring on DMS-3⁽¹⁾/ DMS-4⁽²⁾ (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.

Cultural Heritage

4. An Archaeological Action Plan (AAP) for the survey-cum-excavation at the former Tai Hom Village site was approved by EPD on 8 April 2013. A Licence to Excavate and

Search for Antiquities under Antiquities and Monuments Ordinance has been subsequently obtained from Antiquities and Monuments Office (AMO) on 19 April 2013. The archaeological survey-cum-excavation at Former Tai Hom Village commenced on 25 April 2013 and the fieldwork had been completed in September 2013 in accordance with the Licence granted and the approved AAP. A draft Archaeological Survey-cum-Excavation Report was submitted to AMO for review in March 2014. Comments from AMO were received in September 2014 and the Report is under revision.

5. The Conservation Plans for the two historic buildings, namely Former Royal Air Force Hangar and the Old Pillbox at the former Tai Hom Village site, were approved by EPD on 24 April 2013. Dismantling works on Former Royal Air Force Hangar was carried out in accordance with the approved Conservation Plan and completed in June 2013. Relocation works for the Old Pillbox had been completed in November 2013 in accordance with the approved Conservation Plan. Regular maintenance and inspection works of the two historic buildings were carried out in accordance with the approved Conservation Plan.

Waste Management

6. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 20,721m³ of inert C&D materials were generated from the Project and were sent to SCL1108A, SCL1108 and Tuen Mun Area 38 Fill Bank during the reporting month. 68m³ of non-recyclable non-inert C&D materials, such as general refuse, were disposed of at NENT Landfill. No chemical waste was collected by licensed collector during the reporting month. No plastics, metal but 220kg of paper/ cardboard packaging were generated in this reporting month.

Landscape and Visual

7. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 4 and 18 December 2014. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 6.

Environmental Site Inspection

8. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 4, 11, 18 and 24 December 2014. The representative of the IEC joined the site inspection on 24 December 2014. Details of the audit findings and implementation status are presented in Section 6.

Environmental Exceedance/Non-conformance/Complaint/Summons and Successful Prosecution

9. No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period.
10. No non-compliance event was recorded during the reporting period.
11. No Project related environmental complaint and notification of summons/ successful prosecutions were received in this reporting period.

Future Key Issues

12. Major site activities for the coming reporting month will include:
- Excavation and ELS works;
 - Interchange Adit – excavation and ELS for stage 1;
 - West Unpaid Adit – remedial works for completed barrette, excavation and ELS works;
 - Entrance A1- erect temporary platform and excavation and ELS works, and
 - Structural works – construct track base slab and concrete curling and removal of struts.

1 INTRODUCTION

- 1.1 Cinotech Consultants Limited (Cinotech) was appointed by Sembawang – Leader Joint Venture (SLJV) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL) Works Contract 1106 – Diamond Hill Station (hereafter referred to as the Project).

Purpose of the Report

- 1.2 This is the 22nd EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 December 2014.

Structure of the Report

- 1.3 The structure of the report is as follows:

Section 1: **Introduction** - details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement** - summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Mitigation Measures** - summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection** - summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance** - summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues** - summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

- 2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).
- 2.2 The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts. This Works Contract 1106 covers the construction of Shatin-to-Central Link (SCL) station in Diamond Hill (DIH).

General Site Description

- 2.3 For Works Contract 1106, the works area for the DIH station is located to the northeast of Choi Hung Road next to the existing Kwun Tong Line DIH Station. The DIH station will be constructed by cut-and-cover method. The alignment and works area for the Works Contract 1106 are shown in **Figure 1**.

Construction Programme and Activities

- 2.4 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.
 - Interchange Adit – pre-bored socketed H-piling works, installation of observation, recharge and pump wells for stage 1;
 - Entrance A1 – ground treatment works and installation of pump well;
 - Excavation and ELS works;
 - West Unpaid Adit – pre-bored socketed H-pile, installation of observation, recharge and pump wells for stage 1, and
 - Structural works – form base and binding layer; base slab waterproofing and formworks.

Project Organisation

- 2.5 The project organizational chart and contact details are shown in **Figure 4**.

Status of Environmental Licences, Notification and Permits

- 2.6 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since the commencement of the construction works in March 2013 is presented in Table 2.1.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012/H	10/09/2014	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
No.: 353668	19/12/2012	N/A	Valid
Billing Account for Construction Waste Disposal			
Account No.: 7016601	27/12/2012	N/A	Valid
Registration of Chemical Waste Producer			
5213-281-S3711-01	11/01/2013	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00014959-2012	14/01/2013	31/01/2018	Valid
WT00016920-2013	06/09/2013	30/09/2018	Valid
Construction Noise Permit (CNP)			
GW-RE0754-14	08/07/2014	02/01/2015	Valid
GW-RE1325-14	29/11/2014	25/05/2015	Valid

Summary of EM&A Requirements

- 2.7 The EM&A programme under Works Contract 1106 requires regular dust and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event / Action Plans;
 - Environmental mitigation measures, as recommended in the Project EIA study final report; and
 - Environmental requirements in contract documents.
- 2.8 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 2.9 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely construction noise & dust monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Noise Monitoring

- 3.1 In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was rejected; alternative locations were proposed and agreed by the ER (Engineer’s Representative), IEC (Independent Environmental Checker) and EPD (Environmental Protection Department). The construction noise monitoring locations are listed in **Table 3.1** and shown in **Figure 2**.

Table 3.1 Regular Construction Noise Monitoring Location

Regular Construction Noise Monitoring Location	Description	Type of Measurement
NMS-CA-3 ⁽¹⁾⁽³⁾⁽⁴⁾ / NMS-CA-4 ⁽²⁾⁽³⁾⁽⁴⁾	Hong Kong Sheng Kung Hui Nursing Home	Façade
NMS-CA-4 ⁽¹⁾ / NMS-CA-3 ⁽²⁾	Block 1, Rhythm Garden (north-eastern façade)	Façade
NMS-CA-5 ⁽¹⁾⁽⁵⁾ / NMS-CA-2 ⁽²⁾⁽⁵⁾	Block 1, Rhythm Garden (northern façade)	Façade

Note:

- (1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
- (4) Noise monitoring on NMS-CA-3⁽¹⁾/NMS-CA-4⁽²⁾ (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.
- (5) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.

Monitoring Parameter and Frequency

- 3.2 Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period of monitoring stations at Rhythm Garden is shown in **Appendix D**.
- 3.3 The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). L_{Aeq} (30min) (as six consecutive $L_{eq, 5-min}$ readings) was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays.

Monitoring Equipment and Methodology

Field Monitoring

3.4 The monitoring procedures are as follows:

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - measurement time : 5 minutes (obtaining six consecutive $L_{eq,5min}$ readings for a $L_{eq,30 min}$ reading)
- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station was checked with the portable wind meter. Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- At the end of the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- A façade correction of +3dB(A) shall be made to the noise parameter obtained by free field measurement.

Monitoring Equipment

3.5 The sound level meters and calibrator used for the noise measurement, as listed in **Table 3.2**, comply with the IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in **Appendix C**.

Table 3.2 Noise Monitoring Equipment

Monitoring Equipment	Model (Serial no.)
Sound Level Meter	SVAN 955 (Serial no.: 12553 and 14303) SVAN 957 (Serial no.: 21460 and 23853)
Calibrator	SV30A (Serial no.: 24803, 24791 and 24780) B&K 4231 (Serial no.: 2412367)

Maintenance and Calibration

3.6 Maintenance and Calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals. Copies of calibration certificates are attached in **Appendix C**.

Action & Limit Level for Construction Noise Monitoring

3.7 The Action and Limit Levels are presented in **Appendix B** and the Event / Action Plan (EAP) for noise monitoring is presented in **Appendix I**.

Continuous Noise Monitoring

3.8 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared and submitted under EP Condition 2.10, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria will be anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (TAW-HUH) under Works Contract 1106.

Regular Construction Dust Monitoring

3.9 The proposed dust monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are listed in **Table 3.3** and shown in **Figure 3**. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.3 Dust Monitoring Location

Regular Dust Monitoring Location	Description
DMS-3 ⁽¹⁾⁽³⁾⁽⁴⁾ / DMS-4 ⁽²⁾⁽³⁾⁽⁴⁾	Hong Kong Sheng Kung Hui Nursing Home
DMS-4 ⁽¹⁾ / DMS-3 ⁽²⁾	Block 1, Rhythm Garden

Note:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
- (4) Dust monitoring on DMS-3⁽¹⁾/DMS-4⁽²⁾ (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.

Monitoring Parameter and Frequency

- 3.10 The dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 24-hour TSP levels were monitored at the frequency and duration stated in **Table 3.4**. The TSP monitoring at Rhythm Garden was conducted as per the schedule presented in **Appendix D**.

Table 3.4 Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring ⁽¹⁾	Throughout the construction period	24-hour TSP	Once per 6 days

Note:

- (1) 1- hour TSP shall be conducted when one documented valid complaint is received.

Monitoring Equipment

- 3.11 **Table 3.5** summarizes the equipment used for the dust monitoring.

Table 3.5 Dust Monitoring Equipment

Equipment	Model and Make	Qty.
HVS	Tisch Environmental, Inc.; Model no. TE-5170, Serial no.: 2352	1
Calibration Orifice	Tisch Environmental, Inc.; Model no. TE – 5025A Orifice ID: 0993	1

Instrumentation

- 3.12 High Volume Samplers (HVS) connected with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 Appendix B (Part 50).

HVS Installation

- 3.13 The following guidelines were adopted during the installation of HVS:
- Sufficient support was provided to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The samplers were more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction

during monitoring.

Filters Preparation

- 3.14 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 μm diameter. A HOKLAS accredited laboratory, Wellab Ltd. (HOKLAS Registration No. 083), was responsible for the preparation of pre-weighed filter papers for Cinotech's monitoring team.
- 3.15 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than $\pm 5\%$. A convenient working RH was 40%.
- 3.16 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

- 3.17 Operating/analytical procedures for the TSP monitoring were highlighted as follows:
 - Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 and 1.4 $\text{m}^3/\text{min}.$) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard.
 - The power supply was checked to ensure the sampler worked properly.
 - The filter holding frame and the area surrounding the filter were cleaned.
 - On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the air quality monitoring station.
 - The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
 - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts to avoid air leakage at the edges.
 - The shelter lid was closed and secured with the aluminum strip.
 - A new flow rate record chart was set into the flow recorder.
 - The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
 - The flow rate of the HVS sampler would be verified to be constant and recorded on the data sheet before and after sampling.
 - The elapsed time and other relevant information was recorded. After sampling, the sampled filter was removed carefully and folded in half-length so that only surfaces with collected particulate matter were in contact.
 - It was then placed in a clean plastic envelope and sealed and sent to the Wellab Ltd. for weighing.
 - Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment should be between 25°C and 30°C and not vary by more than ± 3 °C; the relative humidity (RH) should be < 50% and not vary by more than $\pm 5\%$. A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations.

Maintenance/Calibration

- 3.18 The following maintenance/calibration was required for the HVS:
- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
 - Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. Copies of calibration certificates are attached in **Appendix C**.
 - The HVS calibration orifice will be calibrated annually.

Action and Limit Levels for Dust Monitoring

- 3.19 The Action and Limit levels have been established and are presented in **Appendix B** and the Event / Action Plan (EAP) for dust monitoring is presented in **Appendix I**.

Cultural Heritage

- 3.20 An Archaeological Action Plan (AAP) for the survey-cum-excavation at the former Tai Hom Village site was approved by EPD on 8 April 2013. A Licence to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance has been subsequently obtained from Antiquities and Monuments Office (AMO) on 19 April 2013. The archaeological survey-cum-excavation at Former Tai Hom Village shall be conducted in accordance with the Licence granted and the approved AAP.
- 3.21 The Conservation Plans for the two historic buildings, namely Former Royal Air Force Hangar and the Old Pillbox at the former Tai Hom Village site, were approved by EPD on 24 April 2013. Dismantling works on Former Royal Air Force Hangar and relocation work of the Old Pillbox shall be carried out in accordance with the approved Conservation Plan. Regular maintenance and inspection works of the two historic buildings shall be carried out in accordance with the approved Conservation Plan.

Landscape and Visual

- 3.22 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is given in **Appendix J**. The Event / Action Plan (EAP) for landscape and visual are presented in **Appendix I**.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

- 4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix J**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (November 2014)	12 th December 2014

5 MONITORING RESULTS

Regular Construction Noise Monitoring

- 5.1 A total of 10 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. No exceedance of the limit level was recorded at designated monitoring stations.
- 5.2 All noise monitoring results recorded on December at NMS-CA-5⁽¹⁾/NMS-CA-2⁽²⁾ (Block 1, Rhythm Garden (northern façade)) exceeded the daytime construction noise criterion. However, the results are not considered as exceedance as all the results were below the baseline noise level. All noise monitoring results recorded on December at NMS-CA-4⁽¹⁾/NMS-CA-3⁽²⁾ (Block 1, Rhythm Garden (north-eastern façade)) did not exceed the daytime construction noise criterion.
- 5.3 Based on observation during the on-site monitoring, road traffic nearby is considered as a potential noise source other than construction works of the Project that affects the monitoring results of the reporting month.
- 5.4 The noise monitoring results together with their graphical presentations are presented in **Appendix F⁽³⁾**.
- 5.5 No exceedance of the Action and Limit Levels of construction noise due to the Project was recorded during the reporting period.

Regular Dust Monitoring

- 5.6 A total of 6 sets of 24-hour TSP monitoring were carried out at the designated monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. The monitoring results together with their graphical presentations are presented in **Appendix E⁽³⁾** and a summary of the dust monitoring results in this reporting month is given in **Table 5.1**.

Table 5.1 Summary Table of Dust Monitoring Results during the reporting month

Parameter	Minimum µg/m ³	Maximum µg/m ³	Average µg/m ³	Action Level, µg/m ³	Limit Level, µg/m ³
24-hr TSP (DMS-3 ⁽¹⁾⁽⁴⁾ / DMS-4 ⁽²⁾⁽⁴⁾)	23.7	145.7	83.5	159.1	260
24-hr TSP (DMS-4 ⁽¹⁾ / DMS-3 ⁽²⁾)	48.9	116.3	73.9	160.4	260

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) The monitoring results and graphical presentation for H.K. Sheng Kung Hui Nursing Home are presented in Monthly EM&A Report for Contract 1103.
- (4) Dust monitoring on DMS-3⁽¹⁾/DMS-4⁽²⁾ (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103

- 5.7 Based on observation during the on-site monitoring, road traffic emission nearby is considered as a potential dust source other than construction works of the Project that affects the monitoring results of the reporting month.

- 5.8 Wind monitoring data were obtained from Kai Tak Meteorological Station of Hong Kong Observatory and shown on **Appendix E**.
- 5.9 No exceedance of the Action and Limit Levels of the 24-hour TSP was recorded during the reporting period.

Cultural Heritage

- 5.10 An Archaeological Action Plan (AAP) for the survey-cum-excavation at the former Tai Hom Village site was approved by EPD on 8 April 2013. A Licence to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance has been subsequently obtained from Antiquities and Monuments Office (AMO) on 19 April 2013. The archaeological survey-cum-excavation at Former Tai Hom Village commenced on 25 April 2013 and completed in September 2013 in accordance with the Licence granted and the approved AAP. A draft Archaeological Survey-cum-Excavation Report was submitted to AMO for review in March 2014. Comments from AMO were received in September 2014 and the Report is under revision.
- 5.11 The Conservation Plans for the two historic buildings, namely Former Royal Air Force Hangar and the Old Pillbox at the former Tai Hom Village site, were approved by EPD on 24 April 2013. Dismantling works on Former Royal Air Force Hangar was carried out in accordance with the approved Conservation Plan and completed in June 2013. Relocation works for the Old Pillbox had been completed in November 2013 in accordance with the approved Conservation Plan. Regular maintenance and inspection works of the two historic buildings were carried out in accordance with the approved Conservation Plan.

Waste Management

- 5.12 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes like plastics and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.2**. 20,721m³ of C&D materials, 68m³ of general refuse were generated. No chemical waste was collected by licensed collector during the reporting month. No plastics, metal but 220kg of paper/ cardboard packaging were generated in this reporting month. Detail of waste management data is presented in **Appendix K**.

Table 5.2 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) ^(a)	C&D Materials (non-inert) ^(b)				
		General Refuse	Chemical Waste	Recycled materials		
Paper/ cardboard	Plastics			Metals		
December 2014	20,721m ³	68m ³	0kg	220kg	0kg	0kg
Notes:						
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil, which were delivered to SCL 1108A, SCL1108 and Tuen Mun Area 38 Fill Bank during the reporting month.						
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. General refuse was delivered to designated landfill for disposal.						

Landscape and Visual

- 5.13 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 4 and 18 December 2014. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION

Site Audits

- 6.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix H**.
- 6.2 Site audits were conducted on 4, 11, 18 and 24 December 2014. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 24 December 2014. No site visit was conducted by EPD. The details of observations during site audit carried out by ET can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

- 6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix J**.
- 6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	27 November 2014	<u>Observation:</u> The drainage hose should be properly connected to the water treatment facility at W8 to prevent leakage of untreated water.	As observed on 4 Dec., the hose had been properly connected to the water treatment facility. The effluent was being discharged into the waste water pool.
<i>Noise</i>	---	---	---
<i>Landscape and Visual</i>	27 November 2014	<u>Observation:</u> Tree protection zone should be set up to protect the tree at site A1. The shoe washing facility should also be relocated away from the tree.	As observed on 4 Dec., the tree protection zone had been set up but shoe washing facility should be relocated; and as observed on 11 Dec., the shoe washing facility had been relocated and placed far away from the tree.
	4 December 2014	<u>Observation:</u> The construction materials placed near the tree protection zone of tree DT1851 located near the existing Diamond Hill Station exit B should be removed or located further away to protect the tree.	As observed on 11 Dec., the construction materials had been removed.
	18 December 2014	<u>Reminder:</u> Tree protection zones should be properly set up to protect the trees near the bar bending area at W8.	As observed on 24 Dec., the tree protection zones were not properly set up to protect all trees at W8. This item has been included in the observation on 24 Dec. for rectification.
	24 December 2014	<u>Observation:</u> Trees at W8 and near the ramp were observed without a proper tree protection zone. Tree protection zone should be properly set up to protect the trees.	The follow up action will be reported in the next reporting month.
<i>Cultural Heritage</i>	---	---	---

Parameters	Date	Observations and Recommendations	Follow-up
<i>Air Quality</i>	27 November 2014	<u>Reminder:</u> The slope near Lung Cheung Road should be properly covered by impervious sheeting to avoid dust generation.	As observed on 4 Dec., the slope had been paved with cement to avoid dust generation.
	11 December 2014	<u>Reminder:</u> The contractor is reminded to clear the empty cement bags near west unpaid link near Lung Cheung Road.	As observed on 18 Dec., the cement bags had been removed.
	18 December 2014	<u>Observation:</u> A stockpile of bagged cements was placed near the ramp without any cover. The Contractor is reminded to properly cover it on 3 sides and on top to avoid dust generation.	As observed on 24 Dec., the stockpile of bagged cements had been removed.
	24 December 2014	<u>Reminder:</u> Contractor is reminded to properly cover up the stockpile of dusty material near West Unpaid Link to avoid dust generation.	The follow up action will be reported in the next reporting month.
<i>Waste/ Chemical Management</i>	27 November 2014	<u>Reminder:</u> Construction waste accumulating near Lung Cheung Road should be cleared, sorted and recycled where appropriate to avoid accumulation. Skip should also be provided to store the waste.	As observed on 4 Dec., the construction waste had been removed.
	4 December 2014	<u>Observation:</u> The chemical containers on the mobile batching plant should be provided with drip tray or properly removed as chemical waste.	As observed on 11 Dec., the chemical containers had been removed from the area.
	11 December 2014	<u>Observation:</u> Construction waste were observed scattering on the ground near the existing Diamond Hill Station exit B. Contractor is reminded to properly store the construction waste in a container. The waste should also be sorted and recycled where appropriate and disposed of on a regular basis.	As observed on 18 Dec., the construction waste had been removed from the area
	24 December 2014	<u>Observation:</u> Chemical and paint containers were placed on the ground near Interchange Adit and the mobile batching plant without any drip tray. Tray should be provided underneath the containers to avoid chemical leakage.	The follow up action will be reported in the next reporting month.
	24 December 2014	<u>Reminder:</u> Contractor is reminded to clear the construction waste (near the ramp) on a regular basis and properly dispose the general refuse (at W8) to avoid accumulation.	The follow up action will be reported in the next reporting month.
<i>Permits/ Licenses</i>	---	---	---

ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

- 6.5 No exceedance of the Action and Limit Levels of the regular construction noise and 24-hour TSP monitoring was recorded during the reporting month. The summary of exceedance is provided in **Appendix G**.

Summary of Environmental Non-Compliance

- 6.6 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

- 6.7 No environmental Project-related complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix L**.

Summary of Environmental Summon and Successful Prosecution

- 6.8 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix L**.

7 FUTURE KEY ISSUES

Construction Programme for the Next Month

7.1 A tentative construction programme is provided in **Appendix A**. The major construction activities in the coming month will include:

- Excavation and ELS works;
- Interchange Adit – excavation and ELS for stage 1;
- West Unpaid Adit – remedial works for completed barrette, excavation and ELS works;
- Entrance A1 – erect temporary platform and excavation and ELS works, and
- Structural works- construct track base slab and concrete curling and removal of struts.

Key Issues in the Next Month

7.2 Key issues to be considered in the coming month include:

- Dust arising from loading, unloading, transfer, handling or storage of bulk cement or dry PFA and excavated materials;
- Control of silty surface runoff;
- Preservation of Former Royal Air Force Hangar and Old Pillbox after dismantling and relocation;
- Preservation and protection of retained and transplanted trees; and
- Implementation of mitigation measures for noise nuisance from construction works.

Monitoring Schedule in the Next Month

7.3 The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring at Rhythm Garden in the next reporting period is presented in **Appendix D**. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

8 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 8.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 31 December 2014 in accordance with EM&A Manual and the requirement under EP.
- 8.2 No exceedance of the Action and Limit Levels of regular construction noise and 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting month.
- 8.3 4 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 2 times of bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting period.
- 8.4 There was no Project related environmental complaint, successful prosecution or notification of summons received during the reporting month.
- 8.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- N/A

Construction Noise

- N/A

Landscape and Visual

- “No-intrusion zone” should be established and maintained for existing trees as far as practicable. The Contractor is reminded to closely monitor and restrict the site working staff and construction plants from entering the erected “no-intrusion zone” for existing trees and avoid placing construction materials within the tree protection zone for maximizing the protection. No construction works should be carried out in the “no-intrusion zone” for existing trees.

Air Quality

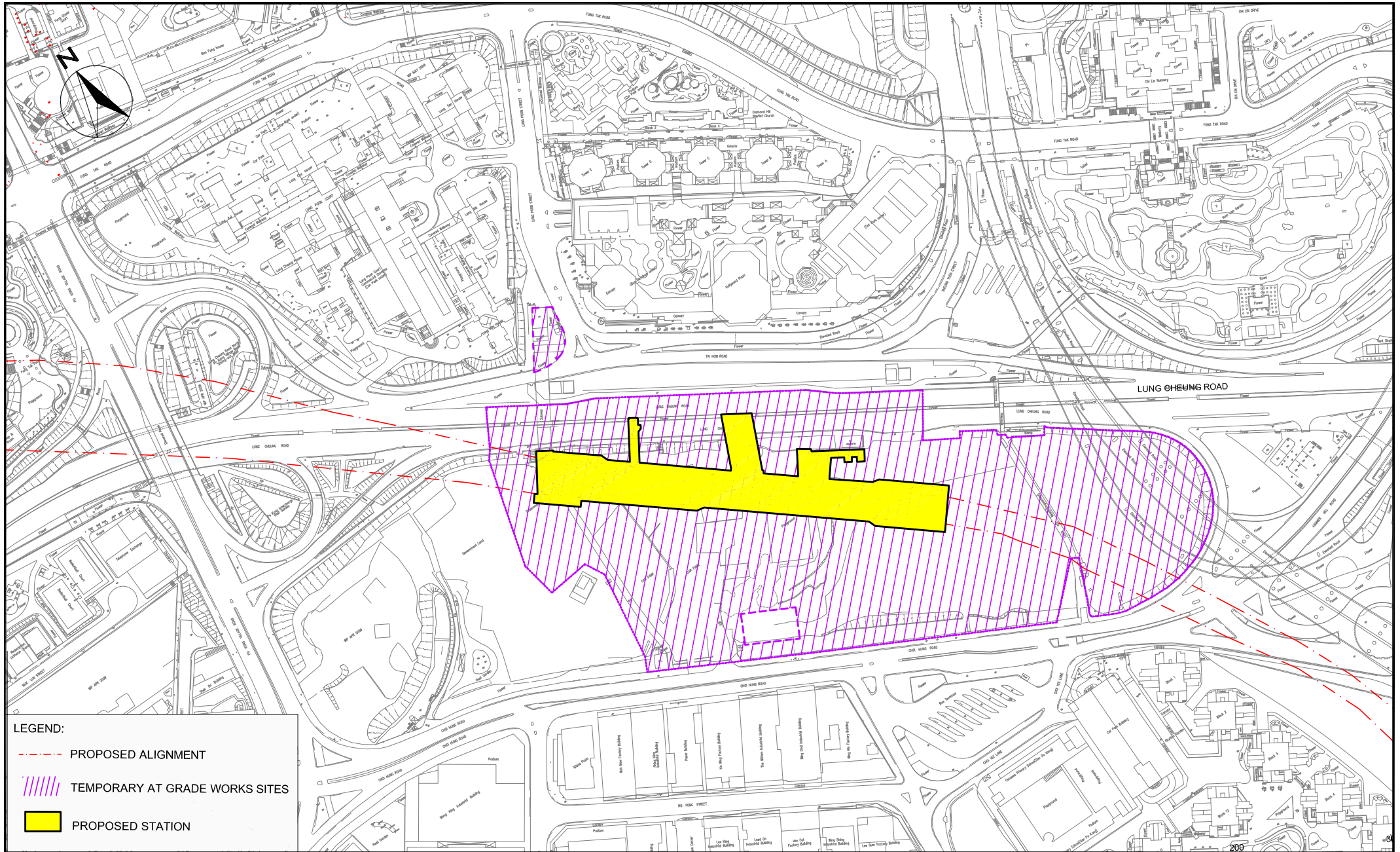
- Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting or placed in an area sheltered on the top and at the 3 sides.
- Excavated or stockpile of dusty materials and exposed slope surface should be covered by tarpaulin, impervious sheeting or other appropriate materials to avoid dust generation.

Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals and oil containers shall be sustained. Drip trays should also be properly maintained.

- Construction waste generated on-site should be sorted and recycled where possible. The waste should also be stored in container or skip separately from general refuses and chemical wastes. The waste should also be collected in a regularly basis to avoid accumulation.

FIGURES



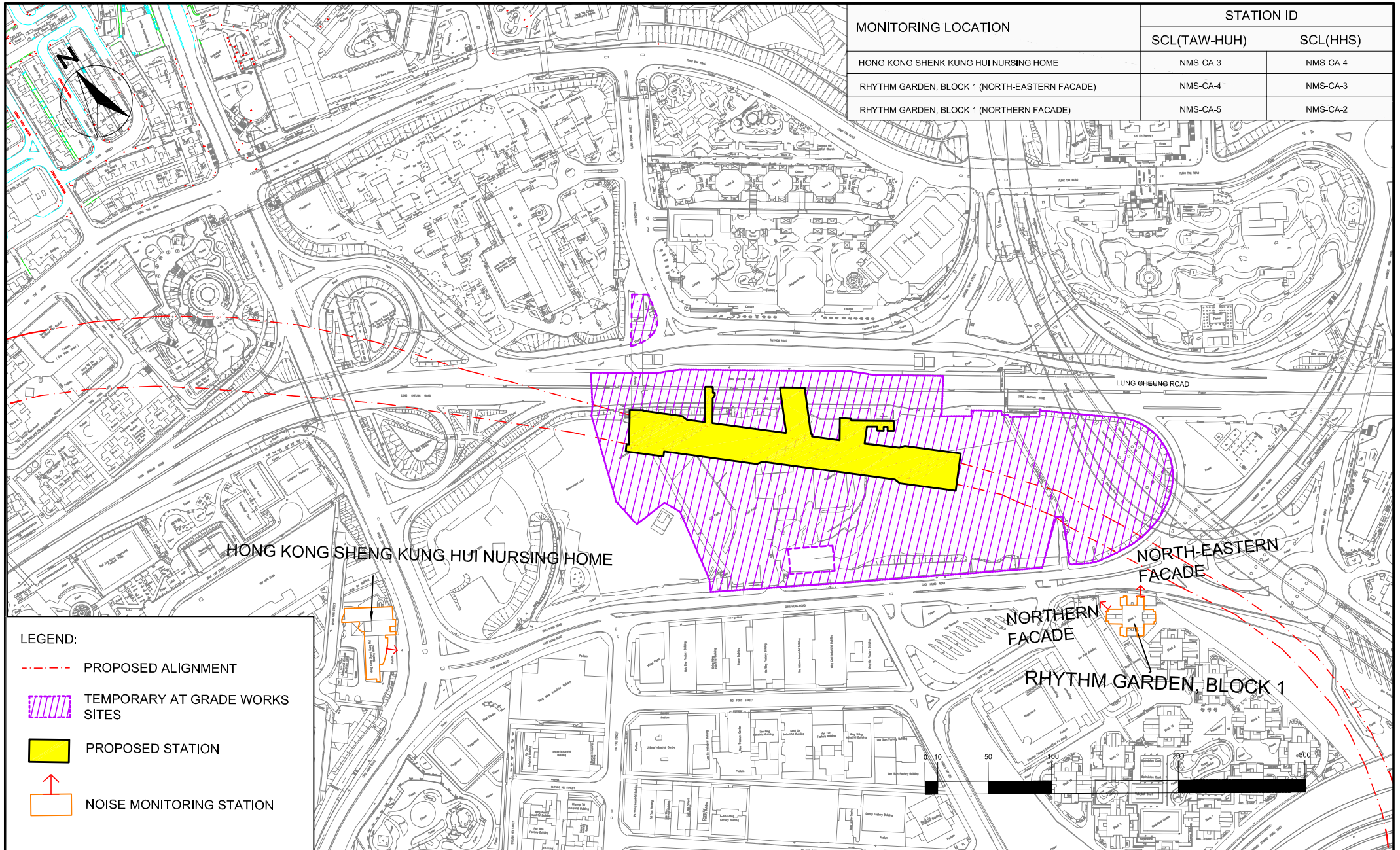
- LEGEND:**
- - - PROPOSED ALIGNMENT
 - ||||| TEMPORARY AT GRADE WORKS SITES
 - PROPOSED STATION

SHATIN TO CENTRAL LINK CONTRACT 1106
DIAMOND HILL STATION





SITE LAYOUT PLAN



SCALE	1:80	DATE	MAY 2013	
CHECK	KC	DRAWN	JW	
JOB No.	MA12051	FIGURE NO.	1	REV
				-



MONITORING LOCATION	STATION ID	
	SCL(TAW-HUH)	SCL(HHS)
HONG KONG SHENK KUNG HUI NURSING HOME	NMS-CA-3	NMS-CA-4
RHYTHM GARDEN, BLOCK 1 (NORTH-EASTERN FACADE)	NMS-CA-4	NMS-CA-3
RHYTHM GARDEN, BLOCK 1 (NORTHERN FACADE)	NMS-CA-5	NMS-CA-2

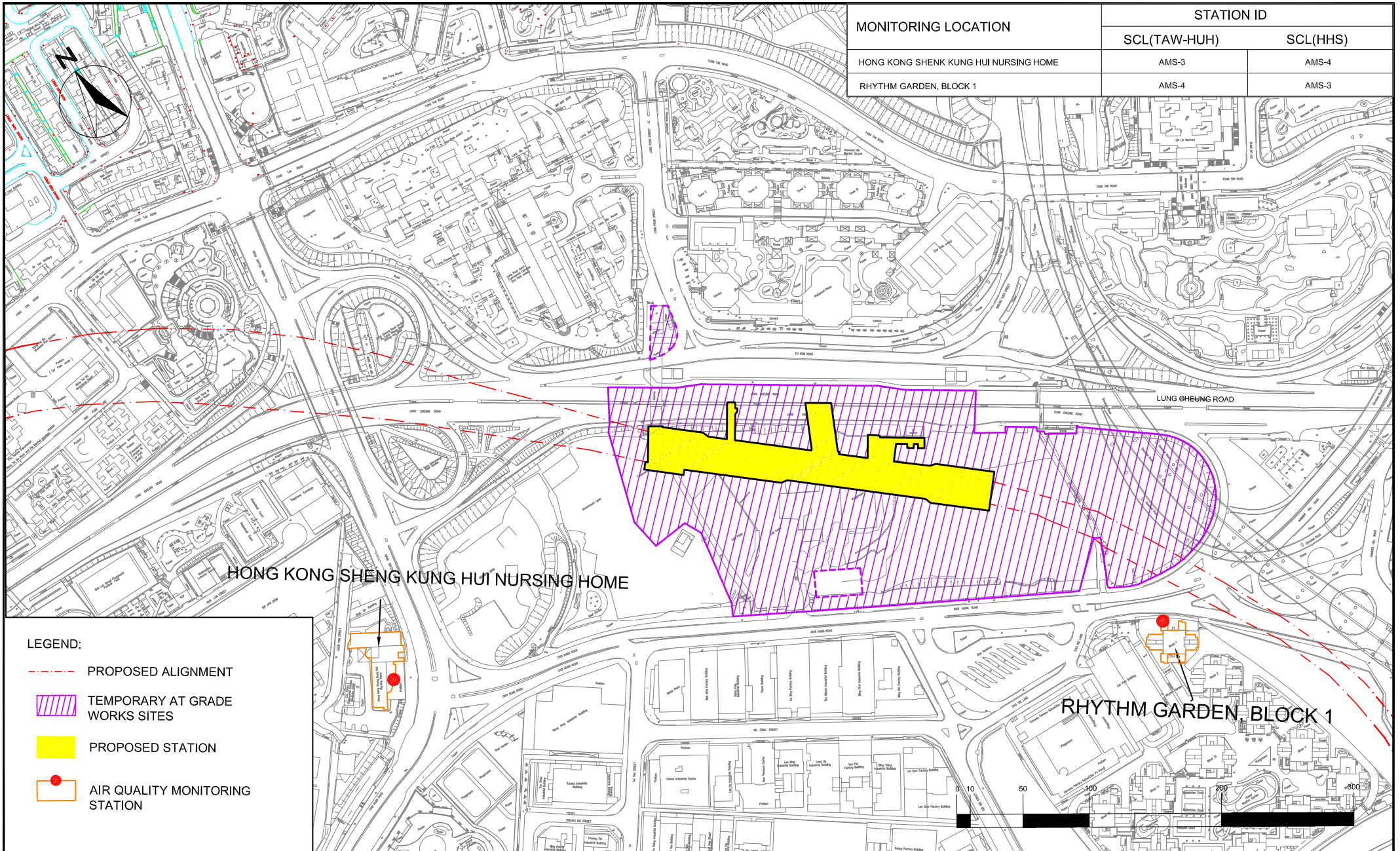
- LEGEND:**
-  PROPOSED ALIGNMENT
 -  TEMPORARY AT GRADE WORKS SITES
 -  PROPOSED STATION
 -  NOISE MONITORING STATION

SHATIN TO CENTRAL LINK CONTRACT 1106
DIAMOND HILL STATION

LOCATION OF NOISE MONITORING STATIONS(CONSTRUCTION AIRBORNE NOISE)

CINOTECH
Cinotech Consultants Limited

SCALE	1:100	DATE	MAY 2013	
CHECK	KC	DRAWN	JW	
JOB No.	MA12051	FIGURE NO.	2	REV -




MONITORING LOCATION	STATION ID	
	SCL(TAW-HUH)	SCL(HHS)
HONG KONG SHENG KUNG HUI NURSING HOME	AMS-3	AMS-4
RHYTHM GARDEN, BLOCK 1	AMS-4	AMS-3

HONG KONG SHENG KUNG HUI NURSING HOME

RHYTHM GARDEN, BLOCK 1

LEGEND:

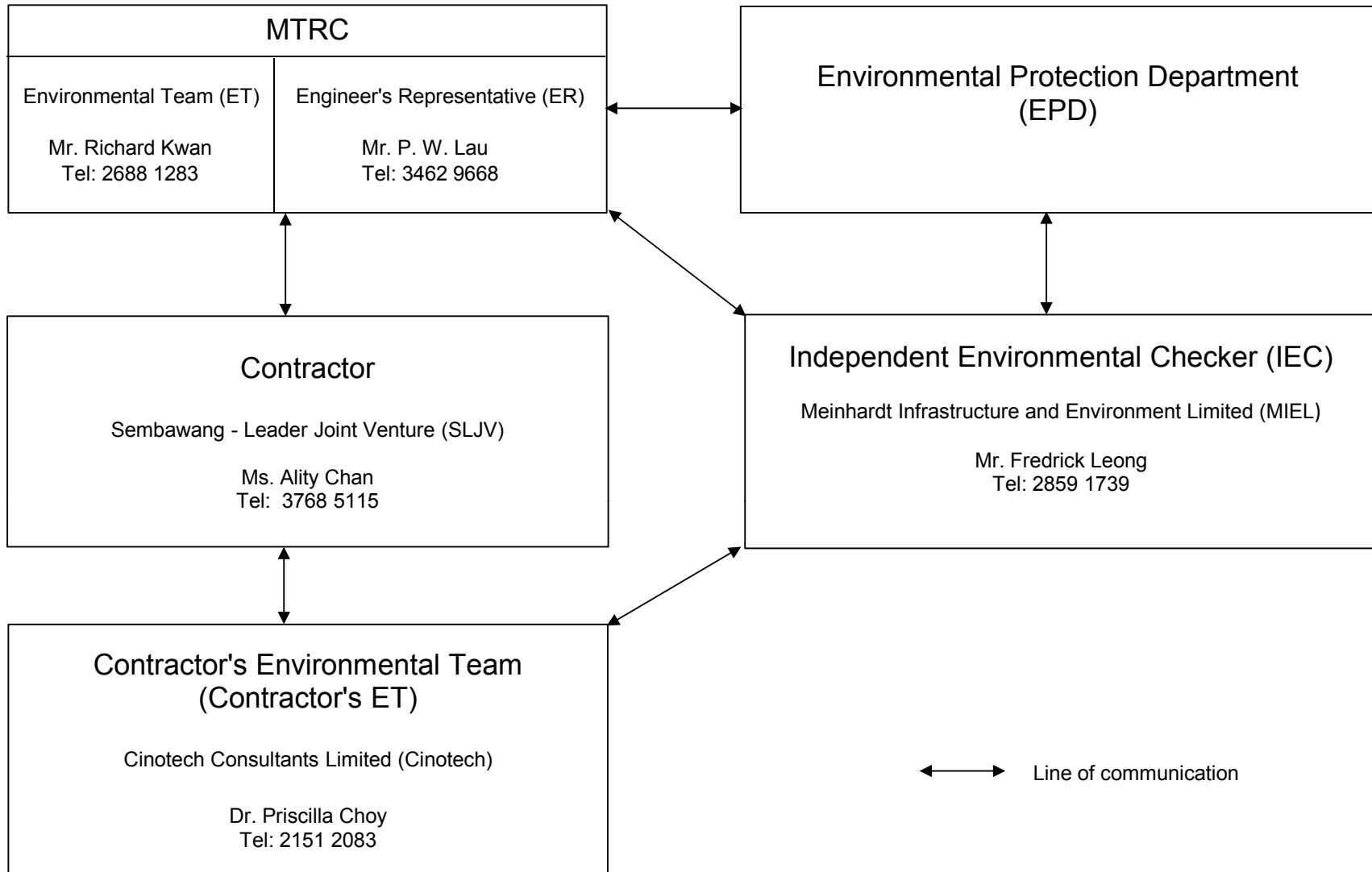
-  PROPOSED ALIGNMENT
-  TEMPORARY AT GRADE WORKS SITES
-  PROPOSED STATION
-  AIR QUALITY MONITORING STATION

SHATIN TO CENTRAL LINK CONTRACT 1106
DIAMOND HILL STATION

LOCATION OF AIR QUALITY MONITORING STATIONS



SCALE	1:100	DATE	MAY 2013
CHECK	KC	DRAWN	JW
JOB No.	MA12051	FIGURE NO.	3
		REV	-



↔ Line of communication

Title	MTR SCL Works Contract 1106 Diamond Hill Station	Scale	N.T.S	Proposal No.	MA12051	CINOTECH
	Organisation Chart and Key Contact of the Project	Date	Sep-14	Figure	4	

**APPENDIX A
TENTATIVE CONSTRUCTION
PROGRAMME**



Contract 1106 - Diamond Hill Station



Activity ID	Activity Name	Orig Dur	Forecast Start	Forecast Finish	% Complete	December					January					February					March				
						01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30		
						103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120		

Contract Dates

Completion Obligation Dates

The Whole of the Works

Completion Dates

C1106.CDW02C	2C: Complete Retrieval Shaft at DIH (SCL) East GL 49-53 with Base Slab and Ready for 1107 TBM Retrieval	0		13-Feb-15*	0%
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◆ 2C: Complete Retrieval Shaft at DIH (SCL) East GL 49-53 with Base Slab and Ready for 1107 TBM Retrieval

Milestone Dates

Cost Centre A Milestones

Preliminaries

C1106.MSA09	A9: Engineer's Confirmation of Satisfactory Implementation of Quality Requirements	0		21-Jan-15	0%
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◆ A9: Engineer's Confirmation of Satisfactory Implementation of Quality Requirements

Cost Centre B (Option 5 Tender (SCL), Entrances & Adits)

Completion Dates

C1106.MSB03c	B3c: Lung Chung Road Traffic Diversion Scheme Approved	0		31-Mar-15	0%
C1106.MSB06	B6: Complete 50% & 80% Excavation Shaft from GL 39-49 & GL 49-53; Shop Drwgs Approved for Ceiling & Metal Wall Panel	0		19-Jan-15	0%
C1106.MSB07	B7: Complete Shaft Excavation & Base Slab from 49-53; TBM Retrieval Complete & Ready for TBM Breakthrough from KAT	0		13-Feb-15	0%

◆ B6: Complete 50% & 80% Excavation Shaft from GL 39-49 & GL 49-53; Shop Drwgs Approved for Ceiling & Metal Wall Panel

◆ B7: Complete Shaft Excavation & Base Slab from 49-53; TBM Retrieval Complete & Ready for TBM Breakthrough from KAT

Cost Centre A - Preliminaries

General Requirements

Submissions

General

C1106.GS0278	Prepare & Submit Preliminary ABWF Programme	28	15-Dec-14 A	27-Jan-15	30%
C1106.GS0282	Review & Approve Preliminary ABWF Programme	28	28-Jan-15	24-Feb-15	0%
C1106.GS0285	Prepare & Submit CSD/SEM Drwg GL 31-53	28	25-Feb-15	24-Mar-15	0%
C1106.GS0332	2nd Quality Management Audit - A9	92	22-Oct-14 A	21-Jan-15	60%
C1106.GS0335	2nd System Assurance and Risk Management & Design for Safety Audit - A10	92	22-Jan-15	23-Apr-15	0%

Prepare & Submit Preliminary ABWF Programme, Prepare & Submit Preliminary ABWF Programme

Review & Approve Preliminary ABWF Programme

Prepare & Submit

2nd Quality Management Audit - A9, 2nd Quality Management Audit - A9

Cost Centre B: SCL- DIH Station, Entrances and Adits

TTMS Implementation

Submissions

TTM Submission

C1106.TMS0333	Approval of TTMS Plan	28	29-Oct-14 A	30-Jan-15	60%
C1106.TMS0335	To Obtain Road Works Advice from Road Management Office & ready for TTMS Implementation	60	31-Jan-15	31-Mar-15	0%

Approval of TTMS Plan, Approval of TTMS Plan

Choi Hung Road

TTA Implementation

C1106.TMS0564	TTA for Site Access at Choi Hung Road and Temp Footpath Diversion at Ex-tai Hom (SLG/1106/004/DIH/006/001B)	90	15-Sep-14 A	31-Jan-15	70%
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TTA for Site Access at Choi Hung Road and Temp Footpath Diversion at Ex-tai Hom (SLG/1106/004/DIH/006/001B), TTA for Site Access at

Diaphragm Wall & Foundation Works

DIH (SCL) Gridline 43 - 50

Pump Test

C1106.BDW4878	Submit Report for MTR Review (Final stage)	5	26-Nov-14 A	08-Dec-14 A	100%
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Submit Report for MTR Review (Final stage)

Earthworks

DIH (SCL) Gridline 35 - 43

Excavation & ELS Works

C1106.BEX3565	Excavate to -10.8 mPD, GL 35-39	8	26-Nov-14 A	20-Dec-14 A	100%
C1106.BEX3570	Install Strut S8 at -10.2mPD, GL 35-39	7	10-Dec-14 A	27-Dec-14 A	100%
C1106.BEX3575	Excavate to -13.7mPD, GL 35-39	8	30-Dec-14 A	08-Jan-15	30%
C1106.BEX3580	Install Strut S9 at -13.1mPD, GL 35-39	7	09-Jan-15	16-Jan-15	0%
C1106.BEX3585	Excavate to -16.7mPD, GL35-39	8	17-Jan-15	26-Jan-15	0%
C1106.BEX3590	Install Strut S10 at -16.7mPD, GL 35-39	7	27-Jan-15	03-Feb-15	0%
C1106.BEX3595	Excavate to Formation -19.20 mPD, GL 35-39	8	04-Feb-15	12-Feb-15	0%
C1106.BEX3605	Excavation Complete GL 35-39	0		12-Feb-15	0%
C1106.BEX3928	Install Strut S3 at -1.9mPD, GL 39-43	10	27-Oct-14 A	13-Dec-14 A	100%
C1106.BEX3960	Excavate to -6.7mPD, GL 39-43	6	29-Nov-14 A	17-Dec-14 A	100%
C1106.BEX3970	Install Strut S5 at -6.1mPD, GL 39-43	10	18-Dec-14 A	07-Jan-15	50%
C1106.BEX3975	Excavate to -10.8mPD, GL 39-43	6	08-Jan-15	14-Jan-15	0%
C1106.BEX3980	Install Strut S6 at -10.2mPD, GL 39-43	10	15-Jan-15	26-Jan-15	0%
C1106.BEX3985	Excavate to -13.7mPD, GL 39-43	4	27-Jan-15	30-Jan-15	0%
C1106.BEX3987	Install Strut S7 at -13.1mPD, GL 39-43	10	31-Jan-15	11-Feb-15	0%
C1106.BEX3990	Excavate to -16.6mPD, GL39-43	4	12-Feb-15	16-Feb-15	0%
C1106.BEX3992	Install Strut S8 at -16mPD, GL 39-43	10	17-Feb-15	03-Mar-15	0%
C1106.BEX3995	Excavate to Formation -19.30 mPD, GL 39-43	4	04-Mar-15	07-Mar-15	0%

Excavate to -10.8 mPD, GL 35-39

Install Strut S8 at -10.2mPD, GL 35-39

Excavate to -13.7mPD, GL 35-39, Excavate to -13.7mPD, GL 35-39

Install Strut S9 at -13.1mPD, GL 35-39

Excavate to -16.7mPD, GL35-39

Install Strut S10 at -16.7mPD, GL 35-39

Excavate to Formation -19.20 mPD, GL 35-39

Excavation Complete GL 35-39

Install Strut S3 at -1.9mPD, GL 39-43

Excavate to -6.7mPD, GL 39-43

Install Strut S5 at -6.1mPD, GL 39-43, Install Strut S5 at -6.1mPD, GL 39-43

Excavate to -10.8mPD, GL 39-43

Install Strut S6 at -10.2mPD, GL 39-43

Excavate to -13.7mPD, GL 39-43

Install Strut S7 at -13.1mPD, GL 39-43

Excavate to -16.6mPD, GL39-43

Install Strut S8 at -16mPD, GL 39-43

Excavate to Formation -19.30 mPD, GL 39-43

- Remaining Work
- Critical Remaining Work
- Baseline (PMP)
- Actual Work
- Baseline Milestone
- Milestone

1 of 3

MTR Contract 1106 - Diamond Hill Station Three Month Rolling Programme As of 31 December 2014

3 Month Rolling Programme

Date	Revision	Checked	Approved
02-Jan-15	C-1106-3MRP/ 24		

Activity ID	Activity Name	Orig Dur	Forecast Start	Forecast Finish	% Complete	December					January					February					March				
						01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30		
						103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120		
C1106.BEX4870	Complete Excavation GL 39-43	0		07-Mar-15	0%	◆ Complete Excavation GL 39-43																			
DIH (SCL) Gridline 43 - 50																									
Excavation & ELS Works																									
C1106.BEX3918	Install Strut S1 at 5.6mPD at GL43-50	12	10-Nov-14 A	10-Dec-14 A	100%	Install Strut S1 at 5.6mPD at GL43-50																			
C1106.BEX3930	Excavate to 1.7mPD, GL 43-50	8	08-Dec-14 A	16-Dec-14 A	100%	Excavate to 1.7mPD, GL 43-50																			
C1106.BEX3933	Install Strut S2 at +2.3mPD, GL 43-50	14	13-Dec-14 A	27-Dec-14 A	100%	Install Strut S2 at +2.3mPD, GL 43-50																			
C1106.BEX3950	Excavate to -2.5 mPD, GL 43-50	10	20-Dec-14 A	06-Jan-15	80%	Excavate to -2.5 mPD, GL 43-50, Excavate to -2.5 mPD, GL 43-50																			
C1106.BEX3965	Install Strut S3 at -1.9mPD GL 43-50	14	27-Dec-14 A	10-Jan-15	35%	Install Strut S3 at -1.9mPD GL 43-50, Install Strut S3 at -1.9mPD GL 43-50																			
C1106.BEX4010	Excavate to -6.7mPD, GL 43-50	10	08-Jan-15	19-Jan-15	0%	Excavate to -6.7mPD, GL 43-50																			
C1106.BEX4015	Install Strut S5 at -6.1mPD, GL 43-50	14	17-Jan-15	02-Feb-15	0%	Install Strut S5 at -6.1mPD, GL 43-50																			
C1106.BEX4020	Excavate to -10.8mPD, GL 43-50	10	02-Feb-15	12-Feb-15	0%	Excavate to -10.8mPD, GL 43-50																			
C1106.BEX4025	Install Strut S6 at -10.2mPD, GL 44-50	14	12-Feb-15	03-Mar-15	0%	Install Strut S6 at -10.2mPD, GL 44-50																			
C1106.BEX4030	Excavate to -13.7mPD, GL 44-50	8	02-Mar-15	10-Mar-15	0%	Excavate to -13.7mPD, GL 44-50																			
C1106.BEX4033	Install Strut S7 at -13.1mPD, GL 44-50	14	11-Mar-15	26-Mar-15	0%	Install Strut S7 at -13.1mPD, GL 44-50																			
C1106.BEX4035	Excavate to -16.6mPD, GL44-50	7	25-Mar-15	01-Apr-15	0%	Excavate to -16.6mPD, GL44-50																			
DIH (SCL) Gridline 50- 53																									
Excavation & ELS Works																									
C1106.BEX4982	Excavate at -18.6 mPD, GL 50-53	5	17-Nov-14 A	01-Dec-14 A	100%	Excavate at -18.6 mPD, GL 50-53																			
C1106.BEX4984	Install Strut S8 at -18.0mPD, GL 50-53	9	27-Nov-14 A	08-Dec-14 A	100%	Install Strut S8 at -18.0mPD, GL 50-53																			
C1106.BEX4986	Excavate to Formation -20.6 mPD, GL 50-53	6	09-Dec-14 A	27-Dec-14 A	100%	Excavate to Formation -20.6 mPD, GL 50-53																			
C1106.BEX4990	Completed Excavation GL 49-53	0		27-Dec-14 A	100%	◆ Completed Excavation GL 49-53																			
Structural Works																									
Track Slab/ Bottom Level																									
Base Slab																									
C1106.BBS1225	GL 36-37 Form Base & Binding Layer	6	09-Mar-15	14-Mar-15	0%	GL 36-37 Form Base & Binding Layer																			
C1106.BBS1230	GL 36-37 Construct Track Base Slab	12	16-Mar-15	28-Mar-15	0%	GL 36-37 Construct Track Base Slab																			
C1106.BBS1235	GL 37-38 Form Base & Binding Layer	6	16-Mar-15	21-Mar-15	0%	GL 37-38 Form Base & Binding Layer																			
C1106.BBS1240	GL 37-38 Construct Track Base Slab	12	30-Mar-15	15-Apr-15	0%	GL 37-38 Construct Track Base Slab																			
C1106.BBS1245	GL 38-39 Form Base & Binding Layer	6	23-Mar-15	28-Mar-15	0%	GL 38-39 Form Base & Binding Layer																			
C1106.BBS1280	GL 50-53 Plate Load Test/ Earth Mat and Blinding Layer Laying	6	18-Dec-14 A	23-Dec-14 A	100%	GL 50-53 Plate Load Test/ Earth Mat and Blinding Layer Laying																			
C1106.BBS1285	GL 50-53 Base Slab Waterproofing and Formwork at C.J	7	22-Dec-14 A	29-Dec-14 A	100%	GL 50-53 Base Slab Waterproofing and Formwork at C.J																			
C1106.BBS1290	GL 50-53 Construct Track Base Slab	12	30-Dec-14 A	14-Jan-15	20%	GL 50-53 Construct Track Base Slab, GL 50-53 Construct Track Base Slab																			
C1106.BBS1295	GL 50-53 Concrete Curing and Removal of Struts	8	15-Jan-15	23-Jan-15	0%	GL 50-53 Concrete Curing and Removal of Struts																			
C1106.BBS1297	GL 50-53 Construct Head Wall	18	24-Jan-15	13-Feb-15	0%	GL 50-53 Construct Head Wall																			
Multi-Level																									
Opening at GL 51-53 N-P (10m x 10m)																									
C1106.BML5946	TBM Retrieval Shaft Complete and Ready for TBM Breakthrough from KAT	0		13-Feb-15*	0%	◆ TBM Retrieval Shaft Complete and Ready for TBM Breakthrough from KAT																			
Construction of Interchange Adit																									
Gridline U-V																									
C1106.BIA7017	Installation of Observation, Recharge and Pump Wells for Stage 1	14	22-Nov-14 A	12-Dec-14 A	100%	Installation of Observation, Recharge and Pump Wells for Stage 1																			
C1106.BIA7020	Install Prebored Socketed H-Pile (2 nos.)	12	18-Dec-14 A	31-Dec-14 A	100%	Install Prebored Socketed H-Pile (2 nos.)																			
C1106.BIA7025	Loading Test (Compression & Tension Test)	6	24-Dec-14 A	31-Dec-14 A	100%	Loading Test (Compression & Tension Test)																			
C1106.BIA7035	Pumping Test prior to Excavation (1st Pumping Test)	7	02-Jan-15	09-Jan-15	0%	Pumping Test prior to Excavation (1st Pumping Test)																			
C1106.BIA7040	Interchange Adit - Excavation and ELS (4000 m3) - Stage 1	25	10-Jan-15	07-Feb-15	0%	Interchange Adit - Excavation and ELS (4000 m3) - Stage 1																			
C1106.BIA7050	Interchange Adit - Construct Base Slab	10	09-Feb-15	23-Feb-15	0%	Interchange Adit - Construct Base Slab																			
C1106.BIA7055	Interchange Adit - Construct Column & Walls and Bulk Head Wall	20	24-Feb-15	18-Mar-15	0%	Interchange Adit - Construct Column & Walls and Bulk Head Wall																			
C1106.BIA7060	Interchange Adit - Construct Top Slab	16	19-Mar-15	09-Apr-15	0%	Interchange Adit - Construct Top Slab																			
Construction of West Unpaid Link Adit																									
West Adit Link - South Section																									
Adit Cofferdam																									
C1106.BWA8275	Install Prebored Socketed H-Pile (610mm)	12	24-Nov-14 A	05-Dec-14 A	100%	Install Prebored Socketed H-Pile (610mm)																			
C1106.BWA8277	Installation of Observation, Recharge and Pump Wells for Stage 1	9	10-Dec-14 A	31-Dec-14 A	100%	Installation of Observation, Recharge and Pump Wells for Stage 1																			
C1106.BWA8279	Remedial Works for Completed Barrette	7	02-Jan-15	09-Jan-15	0%	Remedial Works for Completed Barrette																			
C1106.BWA8300	Loading Test (Compression & Tension Test)	6	10-Jan-15	16-Jan-15	0%	Loading Test (Compression & Tension Test)																			
C1106.BWA8305	West Unpaid Link Adit - Pumping Test Prior to Stage 1 Excavation	7	17-Jan-15	24-Jan-15	0%	West Unpaid Link Adit - Pumping Test Prior to Stage 1 Excavation																			
Adit - Excavation																									
C1106.BWA8310	West Unpaid Link Adit - Excavation and ELS (1350 m3) Stage 1	18	26-Jan-15	14-Feb-15	0%	West Unpaid Link Adit - Excavation and ELS (1350 m3) Stage 1																			
Civil & Structural Works																									
C1106.BWA8320	West Unpaid Link Adit - Construct Base Slab	18	16-Feb-15	11-Mar-15	0%	West Unpaid Link Adit - Construct Base Slab																			
C1106.BWA8330	West Unpaid Link Adit - Construct Column & Walls and Bulk Head	20	12-Mar-15	07-Apr-15	0%	West Unpaid Link Adit - Construct Column & Walls and Bulk Head																			
Cost Centre C: KTL - DIH Entrance A1 Works																									
Entrance A1 (24 hr Walkway and New Lift)																									
Piling and Excavation																									

█ Remaining Work ◆ Milestone
█ Critical Remaining Work
 Baseline (PMP)
 Actual Work
◆ Baseline Milestone

Date	Revision	Checked	Approved
02-Jan-15	C-1106-3MRP/ 24		



Contract 1106 - Diamond Hill Station



Activity ID	Activity Name	Orig Dur	Forecast Start	Forecast Finish	% Complete	December					January					February				March					
						01 103	08 104	15 105	22 106	29 107	05 108	12 109	19 110	26 111	02 112	09 113	16 114	23 115	02 116	09 117	16 118	23 119	30 120		
Piling Works																									
C1106.CEA3155	Ground Treatment	14	01-Dec-14 A	16-Dec-14 A	100%	Ground Treatment																			
C1106.CEA3157	Installation of Pump Well (Observation, Dewatering and Recharge Well)	1	17-Dec-14 A	31-Dec-14 A	100%	Installation of Pump Well (Observation, Dewatering and Recharge Wells)																			
C1106.CEA3160	Carry-out Pumping Test	7	02-Jan-15	09-Jan-15	0%	Carry-out Pumping Test																			
C1106.CEA3165	Load test for Pre-bored H-pile	14	10-Jan-15	26-Jan-15	0%	Load test for Pre-bored H-pile																			
Excavation & Structural Works																									
C1106.CEA3168	Erect Temporary Working Platform	12	10-Jan-15	23-Jan-15	0%	Erect Temporary Working Platform																			
C1106.CEA3172	Excavation and ELS Works down to +10.00 mPD	15	27-Jan-15	12-Feb-15	0%	Excavation and ELS Works down to +10.00 mPD																			
C1106.CEA3175	Excavation and ELS Works down to Formation Level +4.17 mPD	15	13-Feb-15	05-Mar-15	0%	Excavation and ELS Works down to Formation Level +4.17																			
Structural Works																									
Excavation & Structural Works																									
C1106.CEA3315	Construct Base Slab 600mm at +4.57mPD, +5.57mPD & +7.47mPD	14	06-Mar-15	21-Mar-15	0%	Construct Base Slab 600mm at +4.57mPD, +5.57mPD & +7.47mPD																			
C1106.CEA3320	Construct Stub Column / Wall +11.47mPD, +10.92mPD	18	23-Mar-15	15-Apr-15	0%	Construct Stub Column / Wall +11.47mPD, +10.92mPD																			
Cost Centre H - Bored Piles Foundation for DIH CDA Site under STT																									
Piling Works for CDA																									
CDA Development Site																									
Piling Works																									
C1106.CDA2134	CDA - Submit BA14 for Bored Pile	14	18-Nov-14 A	02-Dec-14 A	100%	CDA - Submit BA14 for Bored Pile																			
C1106.CDA2136	CDA Full Coring	7	03-Dec-14 A	10-Dec-14 A	100%	CDA Full Coring																			
C1106.CDA2138	Submit Report	2	11-Dec-14 A	16-Dec-14 A	100%	Submit Report																			
C1106.CDA2140	BA14 Acknowledgement	0		16-Dec-14 A	100%	BA14 Acknowledgement																			

* Bore Piling works are entrusted by Planning Department

- Remaining Work
- Critical Remaining Work
- Baseline (PMP)
- Actual Work
- ◆ Baseline Milestone
- ◆ Milestone

3 of 3

MTR Contract 1106 - Diamond Hill Station Three Month Rolling Programme As of 31 December 2014

3 Month Rolling Programme			
Date	Revision	Checked	Approved
02-Jan-15	C-1106-3MRP/ 24		

**APPENDIX B
ACTION AND LIMIT LEVELS**

APPENDIX B – Action and Limit Levels

24-Hour TSP

Regular Dust Monitoring Location	Description	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
DMS-3 ⁽¹⁾⁽³⁾⁽⁴⁾ / DMS-4 ⁽²⁾⁽³⁾⁽⁴⁾	Hong Kong Sheng Kung Hui Nursing Home	159.1	260
DMS-4 ⁽¹⁾ / DMS-3 ⁽²⁾	Block 1, Rhythm Garden	160.4	

Note:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
- (4) Dust monitoring on DMS-3⁽¹⁾/DMS-4⁽²⁾ is carried out by Environmental Team of SCL Works Contract 1103.

Construction Noise

Regular Construction Noise Monitoring Location ⁽¹⁾	Description	Time Period	Action Level	Limit Level (Leq (30-min))
NMS-CA-3 ⁽¹⁾⁽³⁾⁽⁴⁾ / NMS-CA-4 ⁽²⁾⁽³⁾⁽⁴⁾	Hong Kong Sheng Kung Hui Nursing Home	0700-1900 hrs on normal weekdays	When one documented complaint is received	70 dB(A)
NMS-CA-4 ⁽¹⁾ / NMS-CA-3 ⁽²⁾	Block 1, Rhythm Garden (north-eastern façade)			75 dB(A)
NMS-CA-5 ⁽¹⁾⁽⁵⁾ / NMS-CA-2 ⁽²⁾⁽⁵⁾	Block 1, Rhythm Garden (northern façade)			65 / 70 dB(A) ⁽⁶⁾

Note:

- (1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
- (4) Noise monitoring on NMS-CA-3⁽¹⁾/ NMS-CA-4⁽²⁾ is carried out by Environmental Team of SCL Works Contract 1103.
- (5) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.
- (6) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

**APPENDIX C
CALIBRATION CERTIFICATES FOR
MONITORING EQUIPEMENT**

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0010

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 23-Oct-14 Next Due Date: 22-Dec-14
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	295.3	Pressure, Pa (mmHg)	765.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.7	3.45	59.68	7.8	2.82
2	8.8	2.99	51.82	5.7	2.41
3	7.6	2.78	48.19	5.0	2.25
4	4.6	2.16	37.58	3.1	1.78
5	3.2	1.80	31.42	2.0	1.43

By Linear Regression of Y on X

Slope, mw = 0.0482 Intercept, bw : -0.0685
 Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.95

Remarks: _____

Conducted by: Wk Tang Signature: [Signature]
 Checked by: [Signature] Signature: [Signature]

Date: 23/10/14
 Date: 23 October 2014

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0011

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 22-Dec-14 Next Due Date: 21-Feb-15
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	286.7	Pressure, Pa (mmHg)	771.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	26-Sep-15				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.53	61.04	8.2	2.94
2	9.1	3.10	53.66	6.2	2.56
3	7.2	2.76	47.78	5.1	2.32
4	5.2	2.34	40.67	3.4	1.89
5	3.2	1.84	31.99	2.0	1.45

By Linear Regression of Y on X

Slope, mw = 0.0513 Intercept, bw = -0.1796

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.89

Remarks: _____

Conducted by: Wk Tang Signature: Kwai Date: 22/12/14
 Checked by: A Signature: _____ Date: 22 December 2014

TEST REPORT

Description Calibration Orifice
Serial No. 0993
Model No. TE-5025A
Date 27 September 2014

Manufacturer TISCH
Temperature, Ta (K) 299
Pressure, Pa (mmHg) 761.8
Equipment No.: A-04-04

Plate	Diff.Vol (m ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

Qstd Slope (m) = 2.05398
Intercept (b) = -0.02487
Coefficient (r) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

Qa Slope (m) = 1.28617
Intercept (b) = -0.01559
Coefficient (r) = 0.99996

CALCULATIONS

$V_{std} = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/760](298/\text{Ta})$
 $Q_{std} = V_{std}/\text{Time}$
 $V_a = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/\text{Pa}]$
 $Q_a = V_a/\text{Time}$

For subsequent flow rate calculations:

$Q_{std} = l/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))]-b\}$
 $Q_a = l/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))]-b\}$

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140919/1
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140104
Date of Issue:	2014-01-05
Date Received:	2014-01-04
Date Tested:	2014-01-04
Date Completed:	2014-01-05
Next Due Date:	2015-01-04

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 14303
Microphone No.	: 35222
Equipment No.	: N-08-05

Test conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 52%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

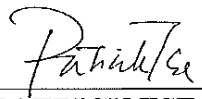
In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

Remark: 1) This report supersedes the one dated 2012/01/21 with certificate number C/N/120120/1.

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141129/1_v1
Date of Issue:	2014-12-01
Date Received:	2014-11-29
Date Tested:	2014-11-29
Date Completed:	2014-12-01
Next Due Date:	2015-11-30

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141003/1
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141003/2
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141003/3
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

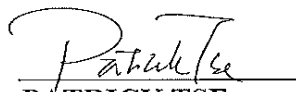
The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140822/2
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

APPENDIX D
IMPACT MONITORING SCHEDULE

**Shatin to Central Link – Contract 1106 Diamond Hill Station
Impact Air Quality and Noise Monitoring Schedule for December 2014**

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)

NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

**Shatin to Central Link – Contract 1106 Diamond Hill Station
Tentative Impact Air Quality and Noise Monitoring Schedule for January 2015**

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

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)

NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

**APPENDIX E
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONIS**

Appendix E - 24-hour TSP Monitoring Results

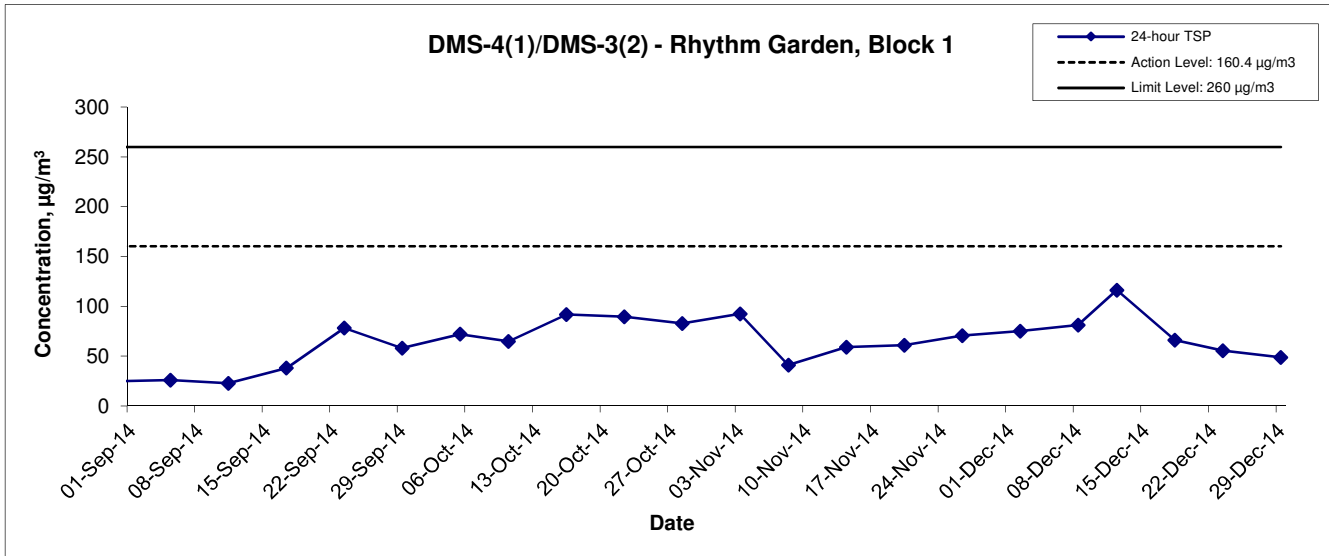
Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
					Initial	Final		Initial	Final		Initial	Final			
2-Dec-14	09:00	Cloudy	287.6	768.8	3.2423	3.3770	0.1347	3494.2	3518.2	24.0	1.24	1.24	1.24	1789.3	75.3
8-Dec-14	09:00	Cloudy	288.1	769.5	3.1809	3.3264	0.1455	3518.2	3542.2	24.0	1.24	1.24	1.24	1788.4	81.4
12-Dec-14	09:00	Cloudy	286.6	772.6	3.1675	3.3764	0.2089	3542.2	3566.2	24.0	1.25	1.25	1.25	1796.5	116.3
18-Dec-14	09:00	Cloudy	284.1	774.3	3.2249	3.3444	0.1195	3566.2	3590.2	24.0	1.25	1.25	1.25	1805.9	66.2
23-Dec-14	09:00	Cloudy	286.9	770.0	3.2813	3.3788	0.0975	3590.2	3614.2	24.0	1.22	1.22	1.22	1752.0	55.7
29-Dec-14	11:00	Cloudy	290.4	763.6	3.2757	3.3606	0.0849	3614.2	3638.2	24.0	1.21	1.21	1.21	1735.6	48.9
														Min	48.9
														Max	116.3
														Average	73.9

Remarks:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

24-hour TSP Concentration Levels



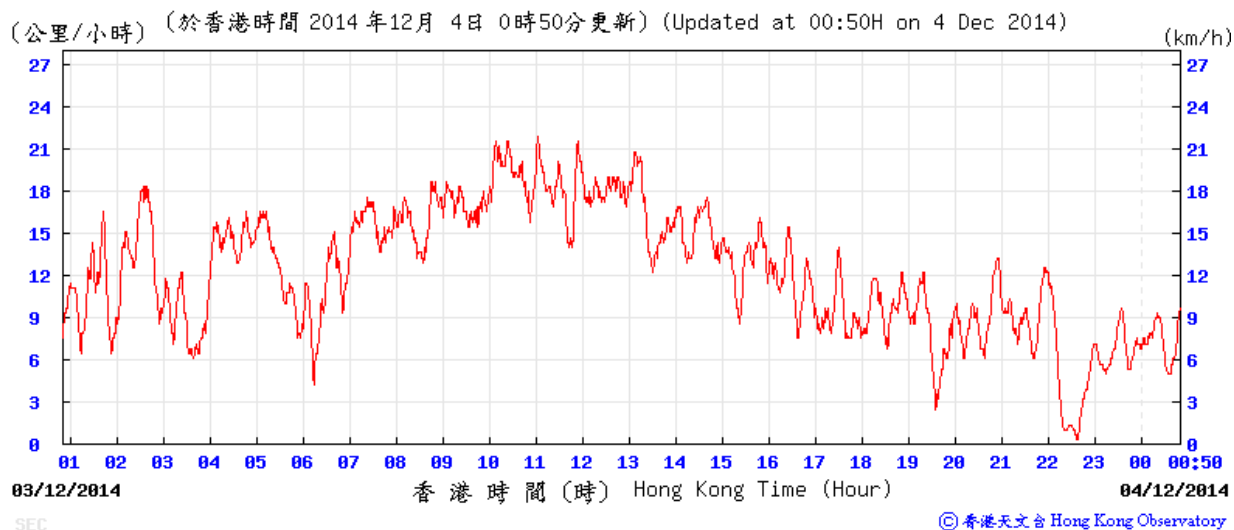
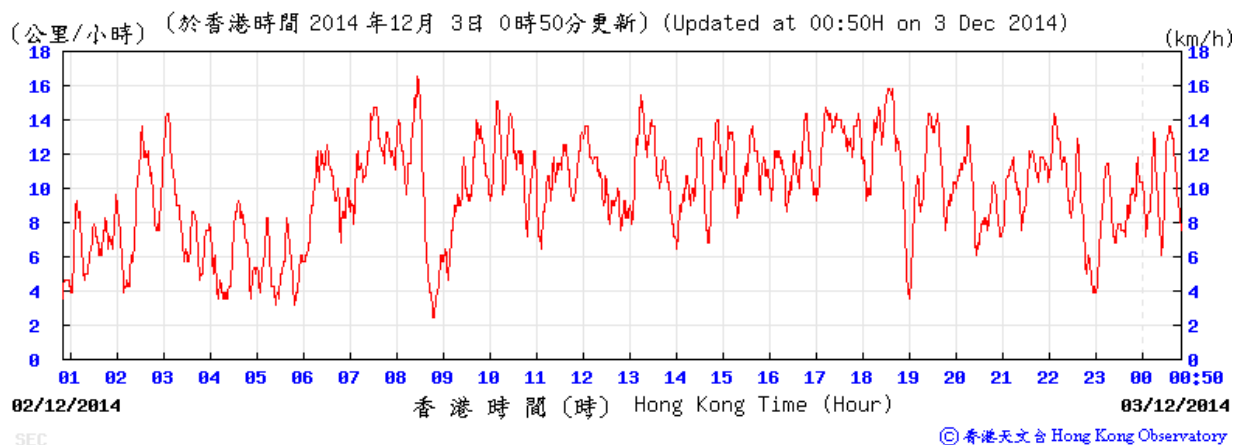
Remarks:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Title Shatin to Central Link – Contract 1106 Diamond Hill Station Graphical Presentation of 24-hour TSP Monitoring Results	Scale	Project No.	CINOTECH
	Date	Appendix	
	N.T.S	MA12051	
	Jan 15	E	

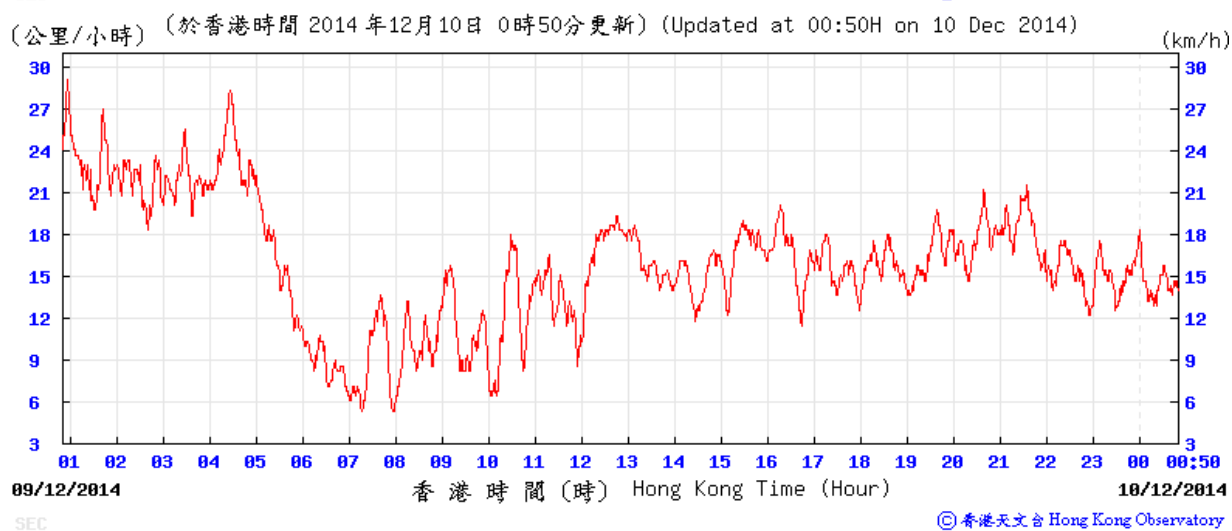
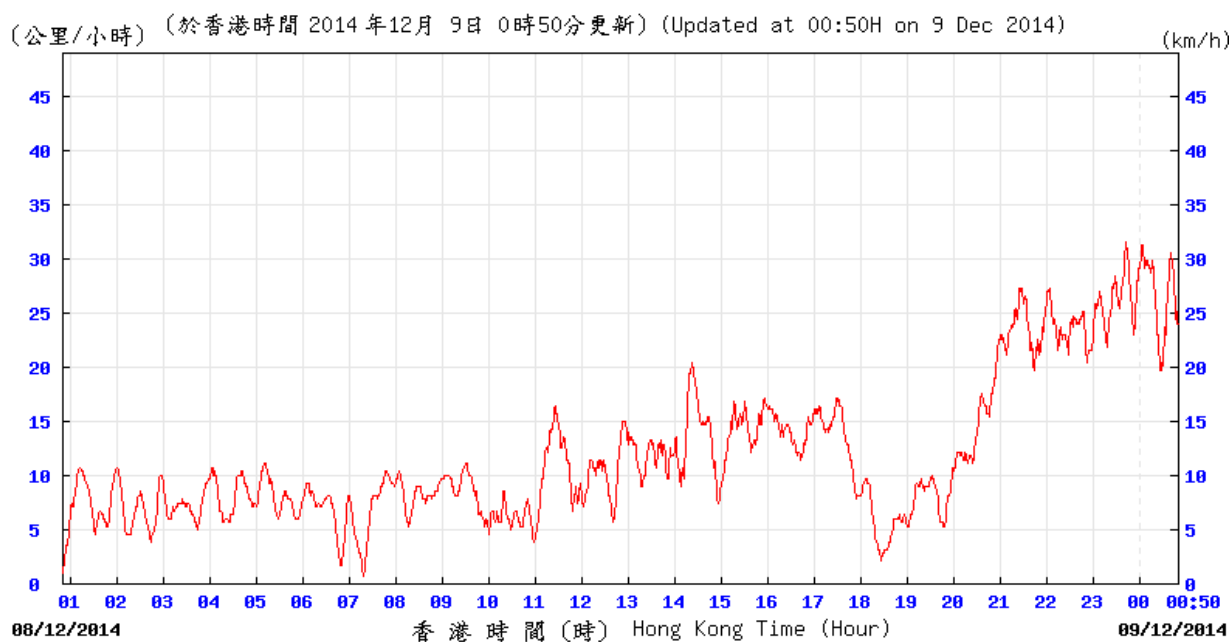
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 December 2014



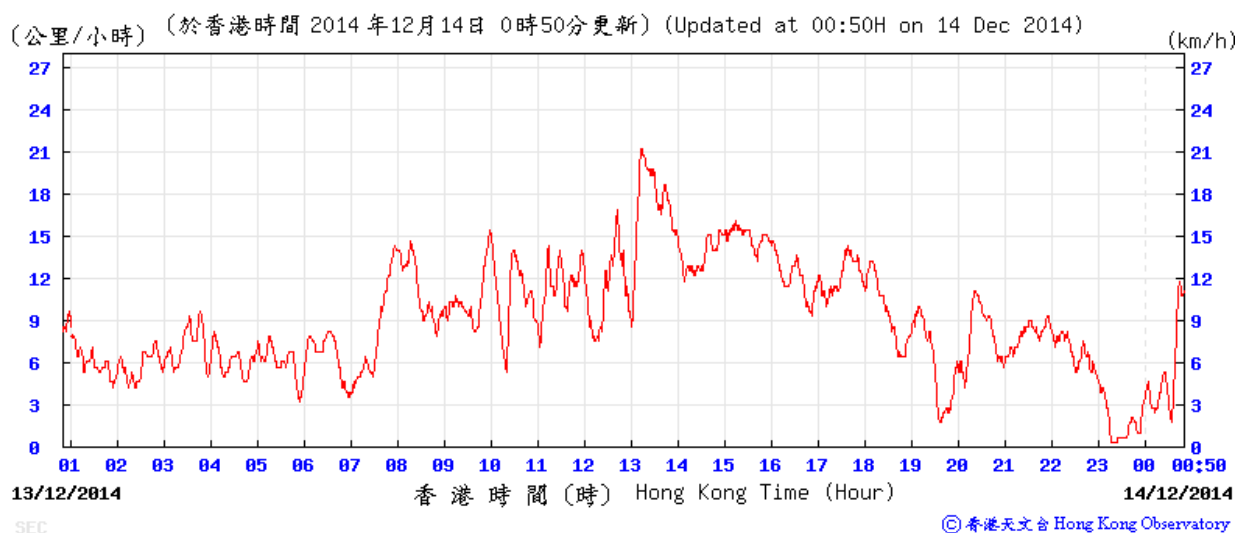
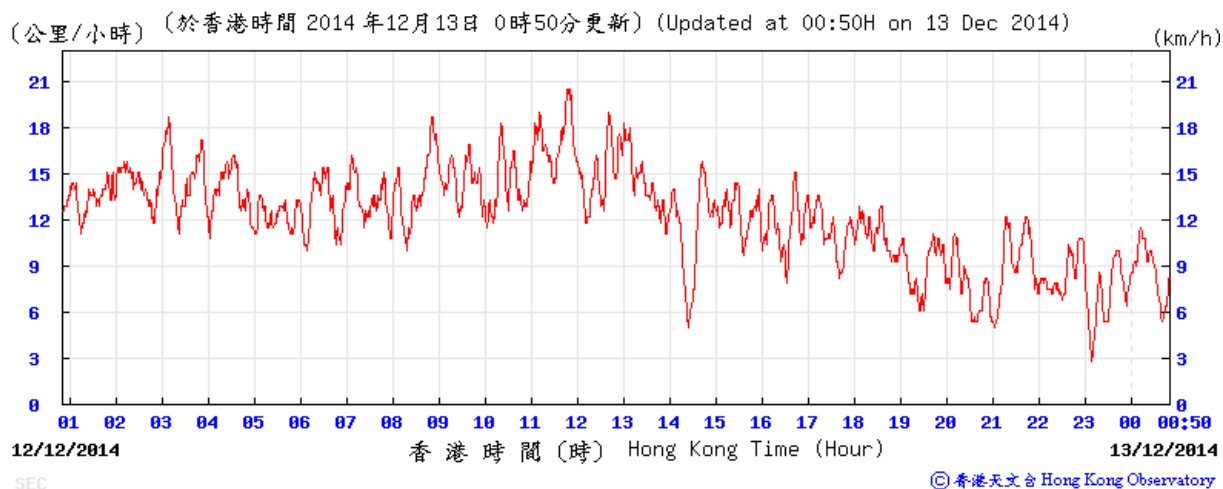
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

8-9 December 2014



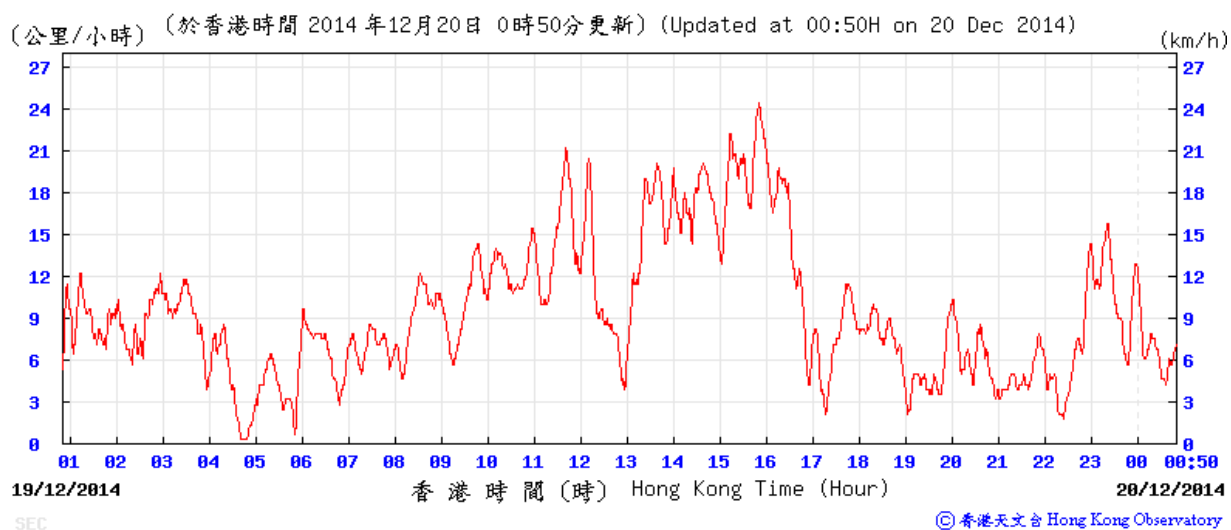
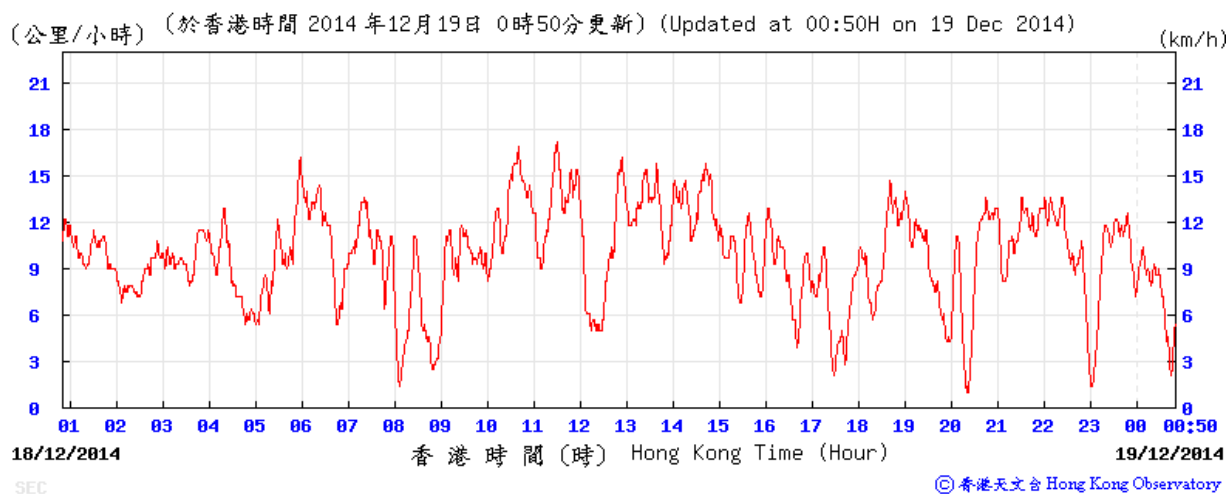
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

12-13 December 2014



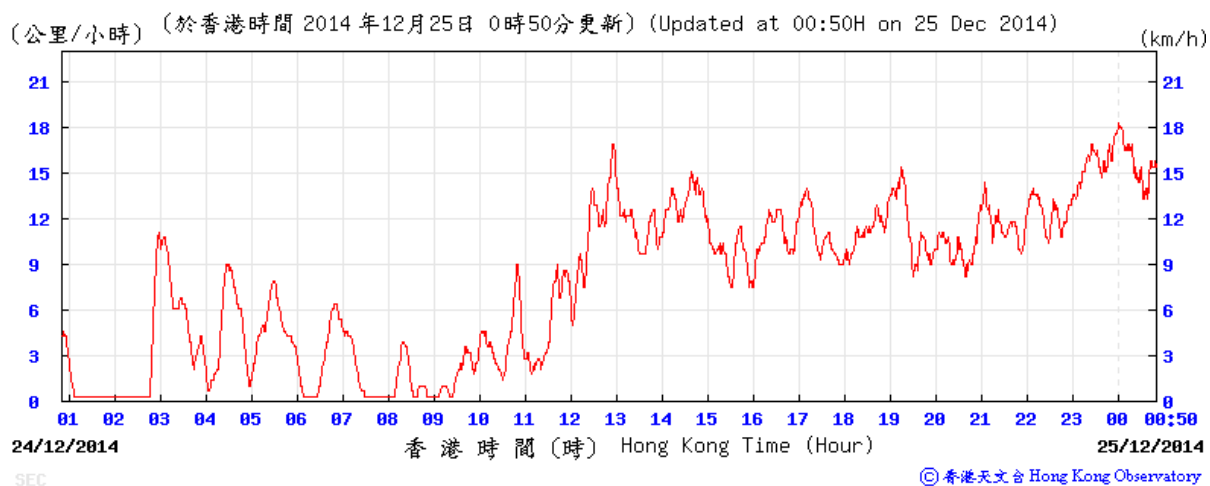
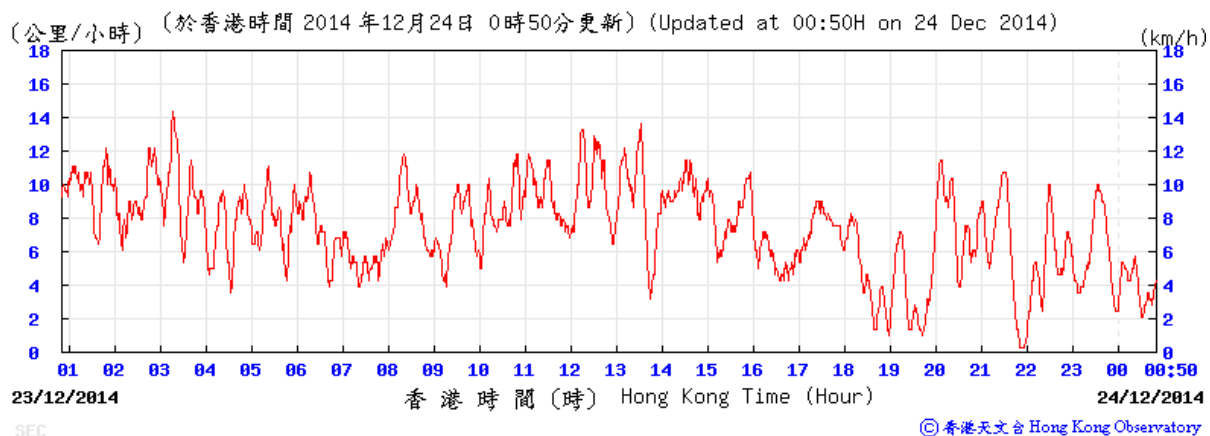
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

18-19 December 2014



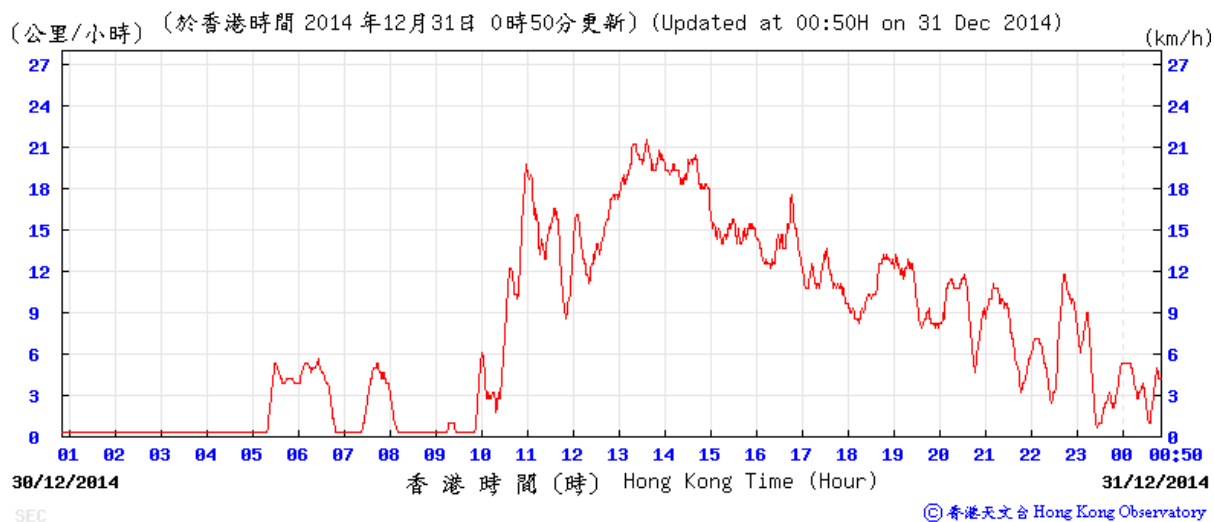
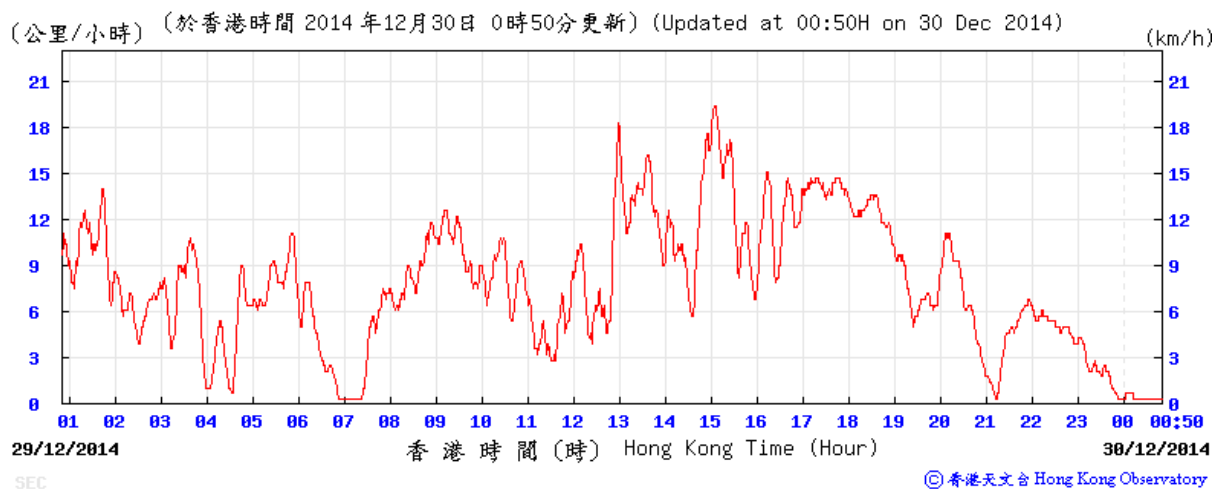
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

23-24 December 2014



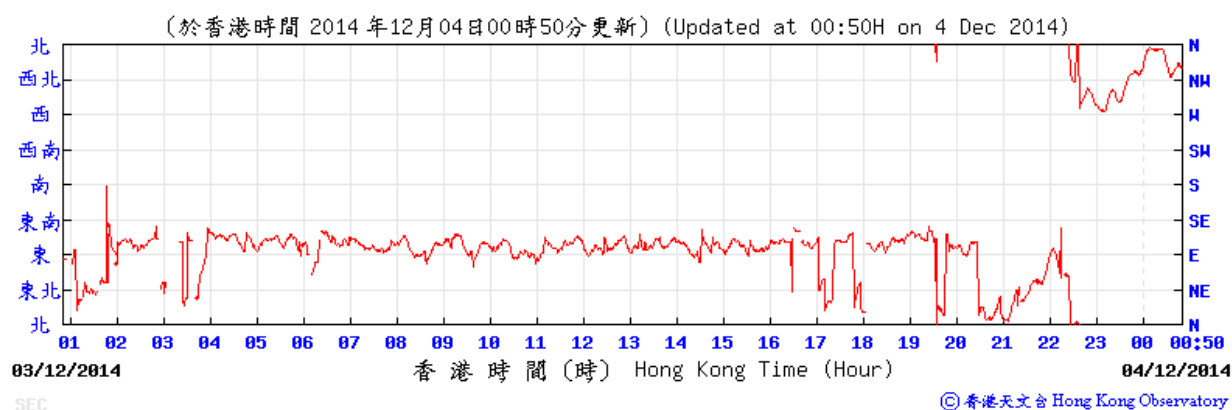
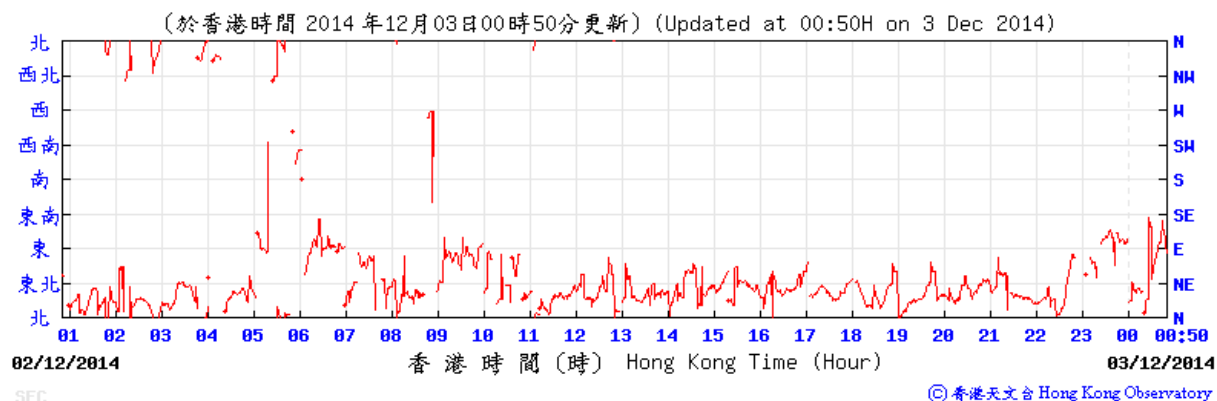
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

29-30 December 2014



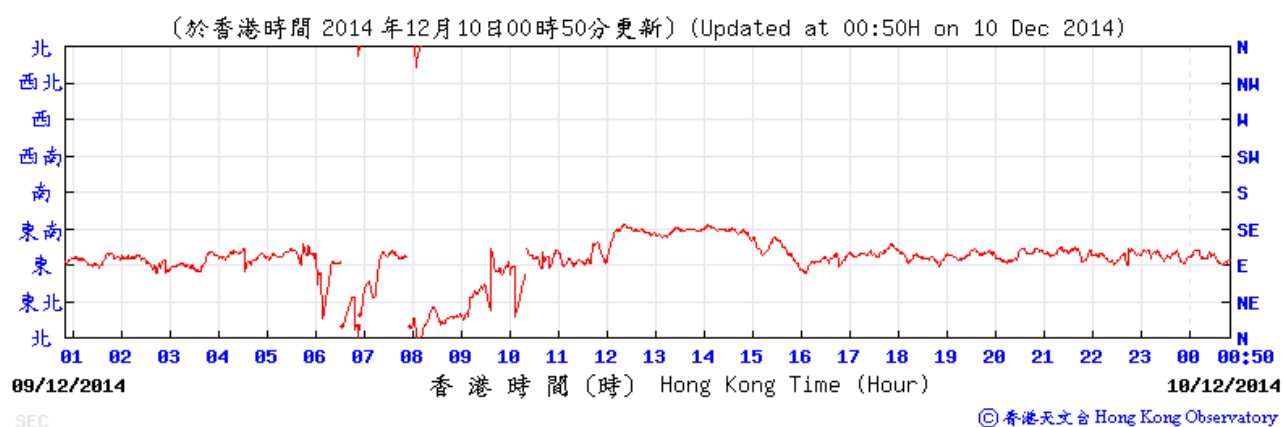
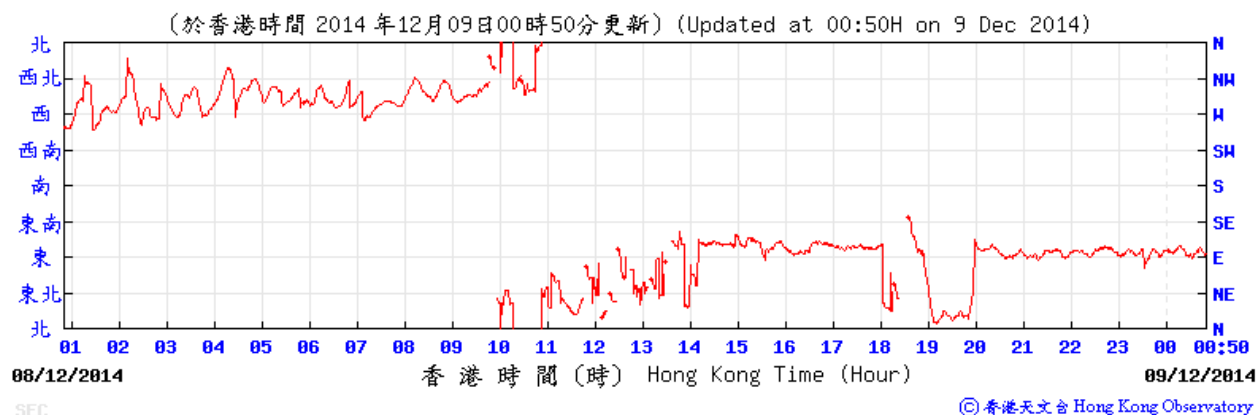
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 December 2014



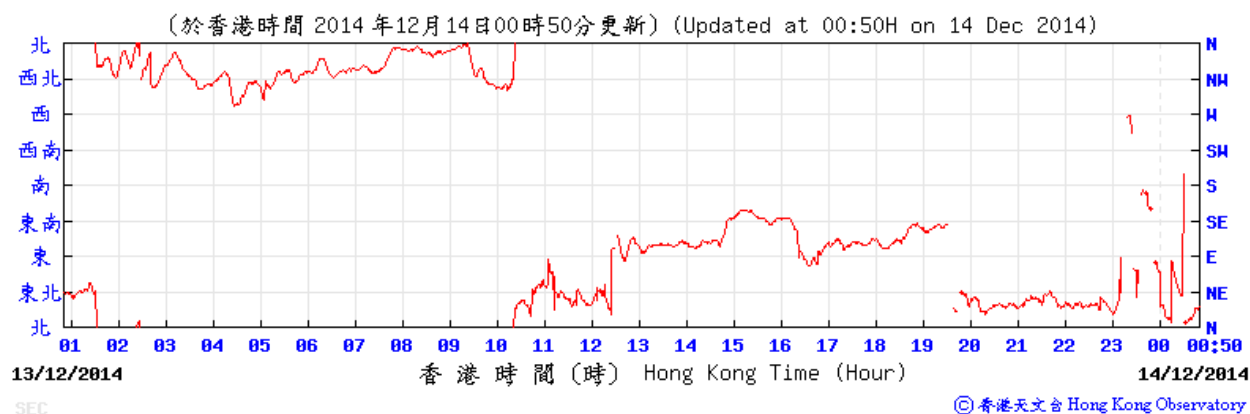
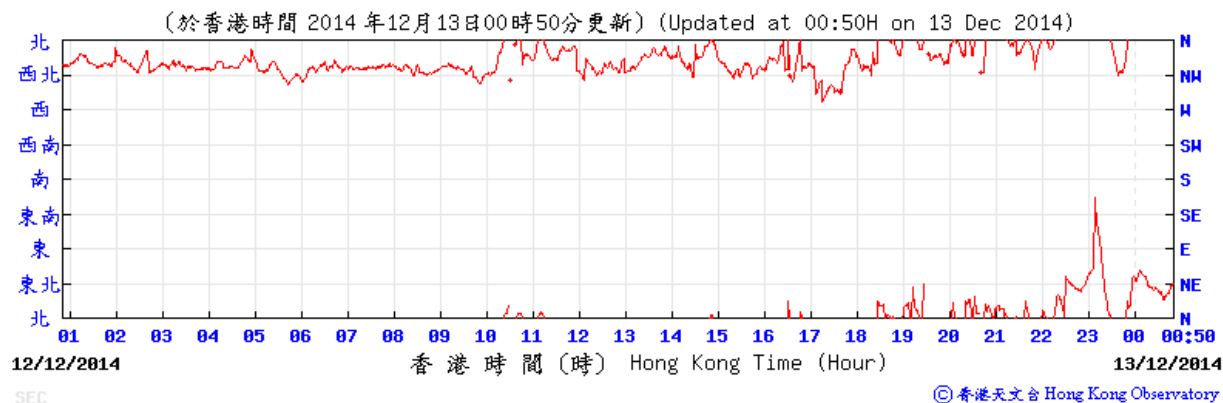
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

8-9 December 2014



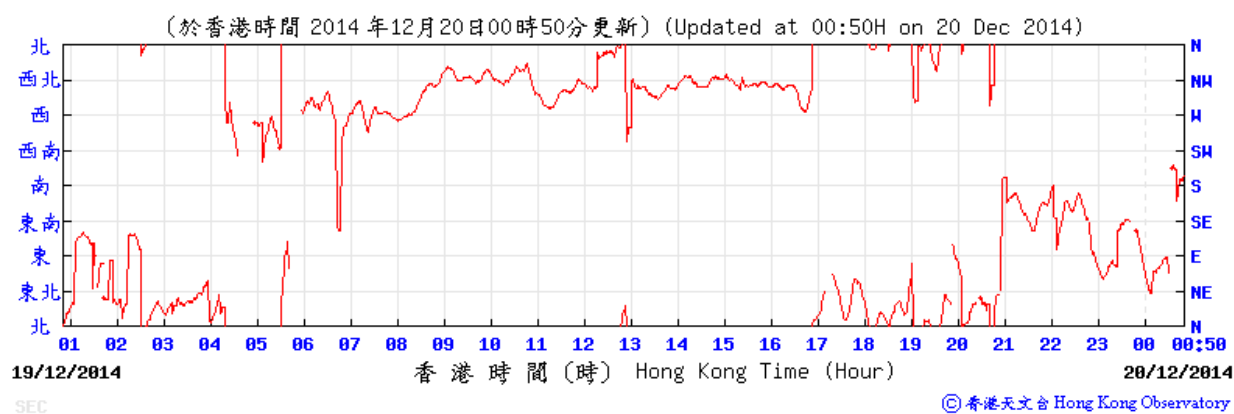
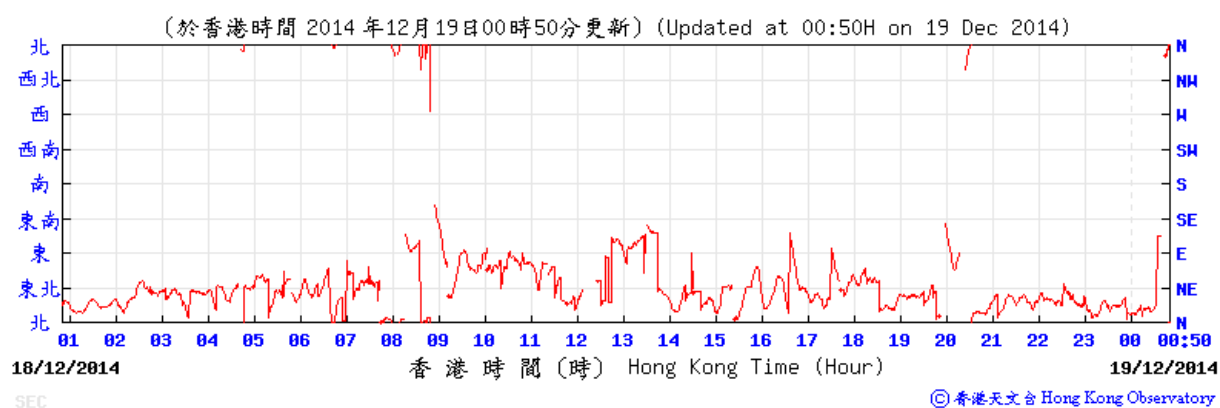
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

12-13 December 2014



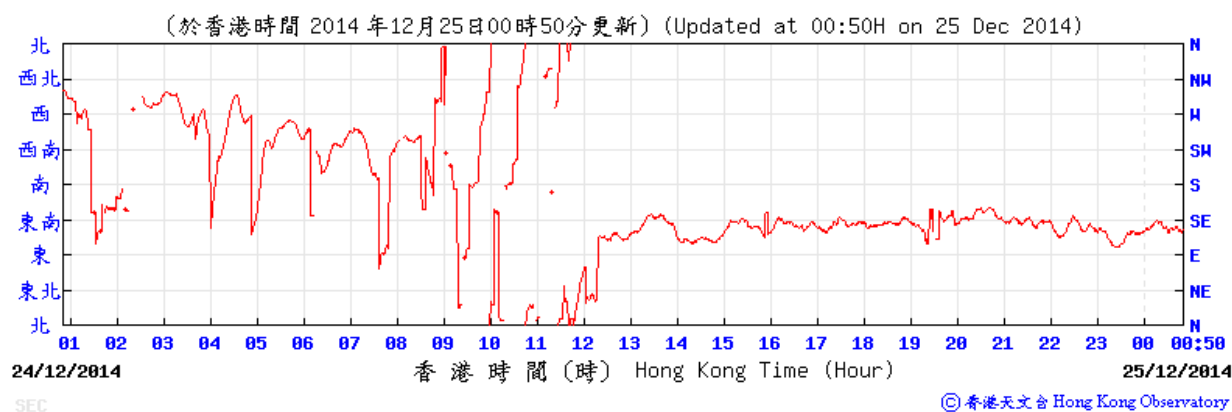
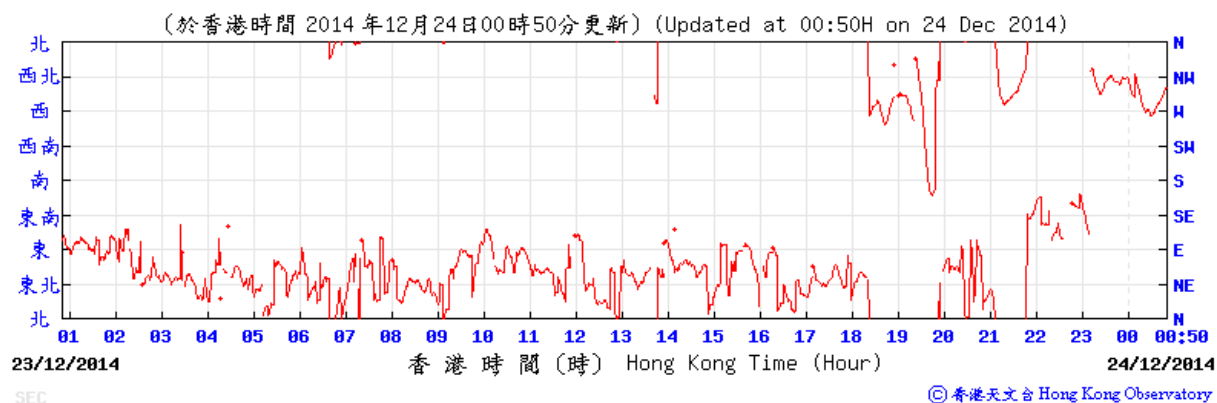
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

18-19 December 2014



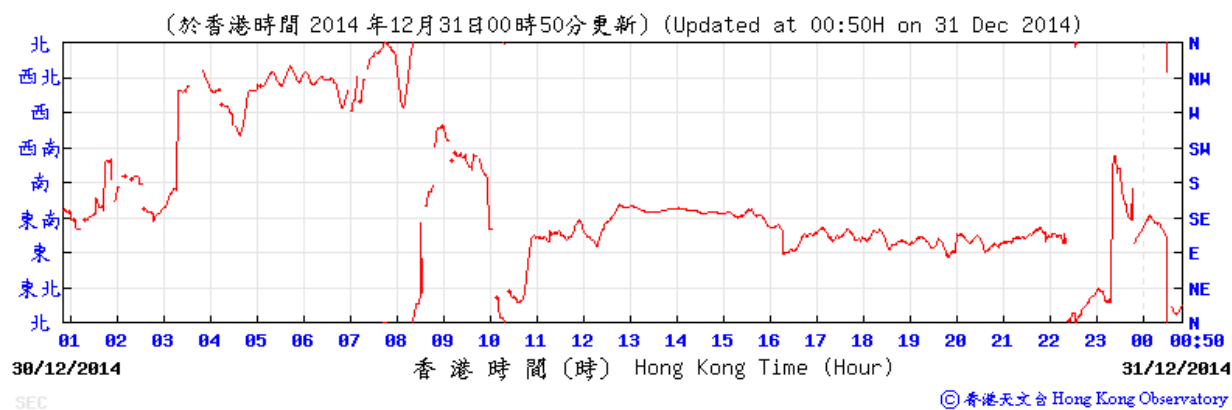
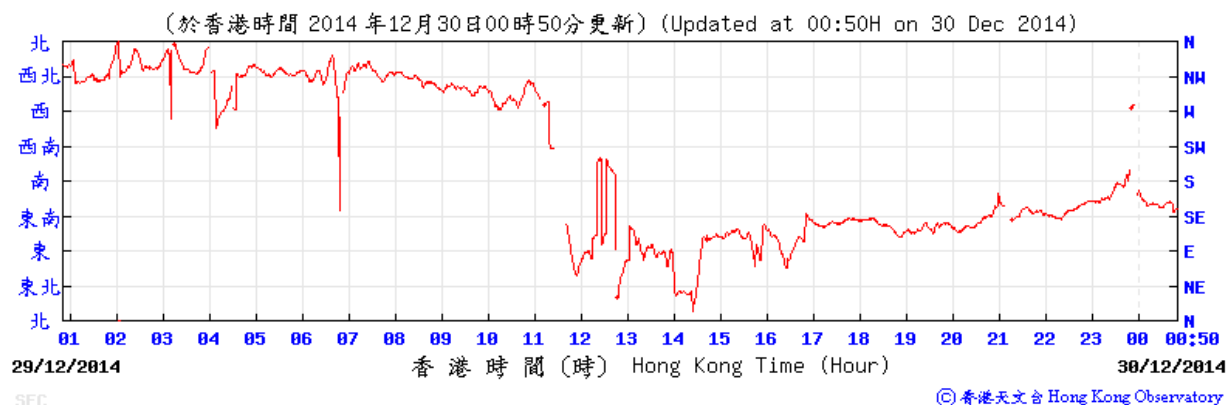
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

23-24 December 2014



Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

29-30 December 2014



**APPENDIX F
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix F - Noise Monitoring Results

Location NMS-CA-4(1)/NMS-CA-3(2) - Block 1, Rhythm Garden (north-eastern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	L _{eq}
4-Dec-14	Cloudy	14:30	69.4	71.3	66.9	69.9	71	69.9 Measured ≤ Baseline Level
		14:35	69.7	71.5	66.8			
		14:40	69.5	71.1	67.4			
		14:45	70.3	71.9	67.7			
		14:50	70.5	72.3	67.9			
		14:55	69.9	71.4	66.8			
9-Dec-14	Sunny	14:25	73.1	74.2	71.7	72.9	71	68.4
		14:30	72.7	73.8	71.4			
		14:35	72.7	73.7	71.7			
		14:40	73.0	74.0	71.9			
		14:45	72.6	73.6	71.4			
		14:50	73.1	74.3	71.9			
15-Dec-14	Cloudy	10:48	73.5	74.2	71.6	72.6	71	67.5
		10:53	72.3	73.5	70.9			
		10:58	72.4	73.6	71.1			
		11:03	72.5	73.7	71.1			
		11:08	72.3	73.5	70.9			
		11:13	72.3	73.4	71.1			
24-Dec-14	Cloudy	11:20	72.6	73.9	71.2	72.3	71	66.4
		11:25	72.3	73.6	70.6			
		11:30	72.3	73.8	71.0			
		11:35	72.4	73.8	70.7			
		11:40	72.2	73.5	71.0			
		11:45	71.9	73.2	70.3			
30-Dec-14	Sunny	16:02	73.7	74.7	72.3	72.9	71	68.4
		16:07	72.8	73.8	71.5			
		16:12	72.6	73.7	71.4			
		16:17	72.8	73.8	71.5			
		16:22	72.8	73.9	71.3			
		16:27	72.4	73.4	71.3			

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

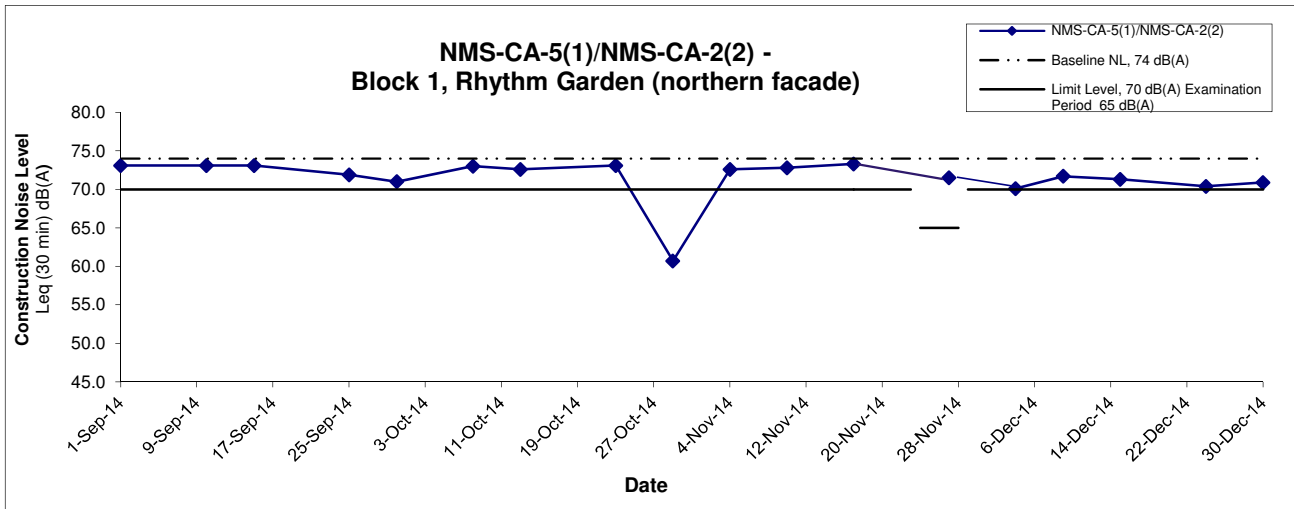
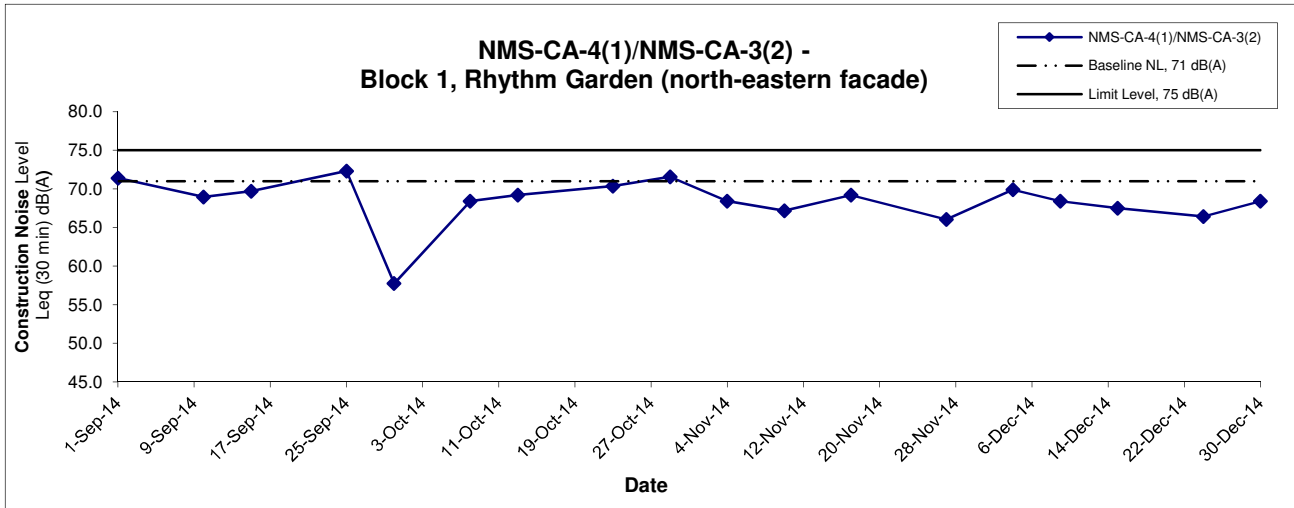
Appendix F - Noise Monitoring Results

Location NMS-CA-5(1)/NMS-CA-2(2) - Block 1, Rhythm Garden (northern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	L _{eq}
4-Dec-14	Cloudy	15:05	70.4	72.3	68.4	70.1	74	70.1 Measured ≤ Baseline Level
		15:10	70.3	72.4	68.6			
		15:15	69.9	71.3	67.7			
		15:20	69.7	70.9	67.8			
		15:25	70.2	72.5	68.6			
		15:30	70.3	72.3	68.5			
9-Dec-14	Sunny	13:50	71.5	72.7	69.9	71.7	74	71.7 Measured ≤ Baseline Level
		13:55	71.2	72.6	69.9			
		14:00	70.8	72.3	69.3			
		14:05	70.8	71.8	69.4			
		14:10	73.3	74.7	71.9			
		14:15	72.1	74.3	71.9			
15-Dec-14	Cloudy	11:29	71.3	72.6	69.9	71.3	74	71.3 Measured ≤ Baseline Level
		11:34	71.1	72.2	70.0			
		11:39	71.6	72.8	70.8			
		11:44	71.3	72.7	69.7			
		11:49	71.4	72.9	69.6			
		11:54	71.3	72.8	69.5			
24-Dec-14	Cloudy	10:45	70.4	71.8	69.3	70.4	74	70.4 Measured ≤ Baseline Level
		10:50	70.1	71.3	69.0			
		10:55	70.5	71.8	69.1			
		11:00	70.3	72.0	69.5			
		11:05	70.8	72.1	69.3			
		11:10	70.3	72.3	69.1			
30-Dec-14	Sunny	15:30	70.7	71.9	69.2	70.9	74	70.9 Measured ≤ Baseline Level
		15:35	70.5	71.6	69.1			
		15:40	71.2	72.4	70.0			
		15:45	71.0	72.2	69.5			
		15:50	71.0	72.2	69.6			
		15:55	71.1	72.5	69.4			

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Noise Levels



Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) In case of Measured Level \leq Baseline Level, only Measured Level is presented on the graphical presentation.

Title	Shatin to Central Link - Contract 1106 - Diamond Hill Station	Scale	N.T.S	Project No.	MA12051	CINOTECH
	Graphical Presentation of Construction Noise Monitoring Results	Date	Jan 15	Appendix	F	

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: December 2014

- a) Exceedance Report for Dust Monitoring (NIL)**
- b) Exceedance Report for Noise Monitoring (NIL)**

APPENDIX H
SITE AUDIT SUMMARY

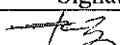

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141204
Date	4 December 2014 (Thursday)
Time	13:30 – 16:00

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

Ref. No.	Remarks/Observations	Related Item No.
141204-001	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> The construction materials placed near the tree protection zone of tree DT1851 located near the existing Diamond Hill Station exit B should be removed or located further away to protect the tree. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 3
141204-002	<p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> The chemical containers on the mobile batching plant should be provided with drip tray or properly removed as chemical waste. <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:141127), follow up action is needed to be review for item 141127-002. 	H 10

	Name	Signature	Date
Recorded by	Kenneth Yuen		8 December 2014
Checked by	Dr. Priscilla Choy		8 December 2014

Shatin to Central Link -

Contract 1106 Diamond Hill Station

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141211
Date	11 December 2014 (Thursday)
Time	13:30 – 16:15

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

Ref. No.	Remarks/Observations	Related Item No.
141211-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> The contractor is reminded to clear the empty cement bags near west unpaid link near Lung Cheung Road. 	E 16
141211-O01	<p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> Construction waste were observed scattering on the ground near the existing Diamond Hill Station exit B. Contractor is reminded to properly store the construction waste in a container. The waste should also be sorted and recycled where appropriate and disposed of on a regular basis. <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J – Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:141204), all items are observed improved/rectified by Contractor. 	H 4i

	Name	Signature	Date
Recorded by	Kenneth Yuen		12 December 2014
Checked by	Dr. Priscilla Choy		12 December 2014

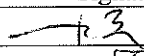

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141218
Date	18 December 2014 (Thursday)
Time	13:30 – 15:45

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

Ref. No.	Remarks/Observations	Related Item No.
141218-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> Tree protection zone should be properly set up to protect the trees near the bar bending area at W8. 	D 2
141218-O01	<p>Part E – Air Quality</p> <ul style="list-style-type: none"> A stockpile of bagged cements is placed near the ramp without any cover. The Contractor is reminded to properly cover it on 3 sides and on top to avoid dust generation. <p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:141211), all items were observed improved/rectified by Contractor. 	E 16

	Name	Signature	Date
Recorded by	Kenneth Yuen		22 December 2014
Checked by	Dr. Priscilla Choy		22 December 2014

Shatin to Central Link -

Contract 1106 Diamond Hill Station



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141224
Date	24 December 2014 (Wednesday)
Time	09:00 – 11:20

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

Ref. No.	Remarks/Observations	Related Item No.	
141224-001	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 2	
141224-R04	<p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> Trees at W8 and near the ramp were observed without a proper tree protection zone. Tree protection zone should be properly set up to protect the trees. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> Contractor is reminded to properly cover up the stockpile of dusty material near West Unpaid Link to avoid dust generation. 		E 6
141224-002	<p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> Chemical and paint containers were placed on the ground near Interchange Adit and the mobile batching plant without any drip tray. Tray should be provided underneath the containers to avoid chemical leakage. 		H 10
141224-R03	<ul style="list-style-type: none"> Contractor is reminded to clear the construction waste (near the ramp) and properly dispose the general refuse (at W8) on a regular basis to avoid accumulation. <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J – Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:141218), follow up action is needed to review for item 141218-R02. 	H 1iii/4ii	

	Name	Signature	Date
Recorded by	Kenneth Yuen		29 December 2014
Checked by	Dr. Priscilla Choy		29 December 2014

**APPENDIX I
EVENT AND ACTION PLANS**

Event and Action Plan for Air Quality Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1106 ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 	<ol style="list-style-type: none"> 1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

LIMIT LEVEL

<p>1.Exceedance for one sample</p>	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
<p>2.Exceedance for two or more consecutive samples</p>	<ol style="list-style-type: none"> 1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Noise Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1106 ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event and Action Plan for Landscape and Visual during Construction Phase

Action Level	Works Contract 1106 ET	IEC	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

**APPENDIX J
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE**

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
<i>Cultural Heritage Impact (Construction Phase)</i>								
S4.8.1	CH1	Submit an Archaeological Action Plan. Survey-cum-excavation shall be conducted prior to the construction works at the former Tai Hom Village site.	Salvage cultural remains at the Former Tai Hom Village Site	Contractor	Former Tai Hom Village Site	Prior to the Construction Phase of DIH site	<ul style="list-style-type: none"> • AMO's requirements 	^ ^
S4.8.2	CH2	Submit a Conservation Plan for the Former Royal Air Force Hangar and the Old Pillbox to AMO for agreement.	Proposal for conservation of 2 historical buildings	Contractor	Former Tai Hom Village Site	Prior to the Construction Phase of DIH site	<ul style="list-style-type: none"> • AMO's requirements • Principles for the Conservation of Heritage Sites in China • Burra Charter, the Australia's ICOMOS Charter for Places of Cultural Significance 	^
<i>Ecology (Construction Phase)</i>								
S5.7	E1	<u>Good Site Practices</u> Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, appropriate storage of chemicals and chemical waste away	Minimise ecological impacts	Contractor	All construction sites	During Construction	<ul style="list-style-type: none"> • ProPECC PN 1/94 	*

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> • No on-site burning of waste; • Waste and refuse in appropriate receptacles. 						^ *
Landscape & Visual (Construction Phase)								
S6.12	LV1	<p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and 	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	•TM-EIAO	^ *

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>the works site to minimize visual impact to adjacent VSRs.</p> <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> Trees of medium to high survival rate that would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006. 						^
Air Quality (Construction Phase)								
/	A1	<p>Emission from Vehicles and Plants</p> <ul style="list-style-type: none"> All vehicles shall be shut down in intermittent use. Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD) 	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	A2	Open burning shall be prohibited	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	APCO	^
Construction Dust Impact								
S7.6.6	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM- 	*

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
							EIA criteria	
S7.6.6	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m ² to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	^
S7.6.6	D3	<ul style="list-style-type: none"> • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated 	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	* ^ ^ ^ ^

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</p> <ul style="list-style-type: none"> • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; 						<p>^</p> <p>^</p> <p>^</p> <p>^</p>

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • 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; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or 						N/A ^ * ^ ^ N/A

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		part of the construction site where the exposed earth lies.						
S7.6.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	^
Construction Airborne Noise								
S8.5.6	AN1	Implement the following good site practices: <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) 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, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^ ^ ^ ^ ^

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S8.5.6	AN2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN4	Use "Quiet" plant	Reduce the noise levels of plant items	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected	Contractor	Selected representative noise monitoring	Construction stage	•TM-EIA	^

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
			representative locations		station			
Water Quality (Construction Phase)								
S10.7.1	W1	<p>In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following:</p> <p><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent 	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	^
								^

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>drainage channels to enhance deposition rates.</p> <p>The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5 m³/s the basin would be 150 m³. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. • Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers • Precautions be taken at any time of year when rainstorms 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes</p> <ul style="list-style-type: none"> • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil 						<p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>interceptors to prevent flushing during heavy rain.</p> <ul style="list-style-type: none"> • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices. 						^ * ^ ^
S10.7.1	W3	<p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. 	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water 	^
S10.7.1	W5	<p><u>Accidental Spillage</u></p> <p>In order to prevent accidental spillage of chemicals, the following is</p>	To minimize water quality impact from accidental	Contractor	All construction sites where	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance 	

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>recommended:</p> <ul style="list-style-type: none"> • Proper storage and handling facilities should be provided; • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains; • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings; and • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	spillage		practicable		<ul style="list-style-type: none"> • ProPECC PN1/94 • TM-EIAO • TM-Water 	* * ^ ^
<i>Waste Management (Construction Waste)</i>								
S11.4.1.1	WM1	<p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant 	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • DEVB TC(W) No. 6/2010 	N/A

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.</p>						
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken 	<p>Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal</p>	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 	<p>^</p> <p>^</p> <p>^</p> <p>N/A</p>

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>concrete effectively for recycling purpose, where possible;</p> <ul style="list-style-type: none"> • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and EPD and get their approval before implementation 						^
S11.5.1	WM3	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The 	<p>Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final</p>	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW 	^

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</p> <ul style="list-style-type: none"> The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 	disposal				No.19/2005	*
S11.5.1	WM4	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	* ^ ^

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>easily accessible. Separate labelled bins for their deposit should be provided if feasible.</p> <ul style="list-style-type: none"> Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. 						^
S11.5.1	WM6	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450L unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; be enclosed on at least 3 sides; have an impermeable floor and 	<p>Control the chemical waste and ensure proper storage, handling and disposal.</p>	Contractor	All Construction Sites	Construction Stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	<p>^</p> <p>^</p> <p>^</p>

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; be covered to prevent rainfall entering; and be arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; and be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						^

Remarks: ^ Compliance of mitigation measure X Non-compliance of mitigation measure

 • Non-compliance but rectified by the contractor

 * Recommendation was made during site audit but improved/rectified by the contractor.

 N/A Not Applicable

**APPENDIX K
WASTE GENERATION IN THE
REPORTING MONTH**

Contract No: MTR SCL 1106 - Diamond Hill Station

Date of Report: December, 2014

Monthly Summary Waste Flow Table for 2014

Monthly	Actual Quantities of C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly					Remarks
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects (See Note 2)	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste (See Note 3)	Others, e.g. general refuse	
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	
Jan	2.940	0.000	0.000	2.529	0.411	0.000	0.000	0.000	0.000	0.000	0.073	
Feb	2.869	0.000	0.000	2.348	0.521	0.000	0.000	0.225	0.000	1.600	0.090	
Mar	5.081	0.000	0.000	2.957	2.124	0.000	0.000	0.020	0.000	1.760	0.049	
Apr	4.360	0.000	0.000	1.447	2.913	1.000	0.000	0.055	1.000	3.460	0.118	
May	4.904	0.000	0.000	0.930	3.973	0.000	0.000	0.313	2.000	2.260	0.128	
Jun	7.414	0.000	0.000	1.710	5.704	0.000	0.000	0.000	0.000	0.000	0.115	
Sub-total	27.568	0.000	0.000	11.921	15.646	1.000	0.000	0.613	3.000	9.080	0.573	
Jul	12.467	0.000	0.000	1.593	10.874	0.000	0.000	0.210	0.000	2.110	0.091	
Aug	12.237	0.000	0.000	0.846	11.391	0.000	0.000	0.000	0.000	0.120	0.088	
Sept	15.599	0.000	0.000	7.297	8.302	0.000	0.000	0.210	0.000	1.963	0.080	
Oct	22.144	0.000	0.000	13.839	8.305	0.000	0.000	0.260	0.000	0.000	0.138	
Nov	22.732	0.000	0.000	20.461	2.271	0.000	0.000	0.000	0.000	0.000	0.136	"C&D material reused in other projects" and "general refuse" values were updated in mid-Dec 2014
Dec	20.721	0.000	0.000	20.233	0.488	0.000	0.000	0.220	0.000	0.000	0.068	
Total	133.467	0.000	0.000	76.190	57.277	1.000	0.000	1.513	3.000	13.273	1.174	

Notes:

- 1) Assume the densities of Rock, Soil, Mix Rock and Soil, are Regular Spoil to be 2.0 tonnes/m³. Assumption the densities of general refuse is 1.0 tonnes/m³
- 2) Inert C&D material was delivered to Kai Tak Barging Point Facility (Contract 1108A) & Contract 1108.
- 3) Chemical waste includes waste diesel oil. It is assumed density of diesel oil to be 0.8kg/L.

**APPENDIX L
CUMULATIVE LOG FOR COMPLAINT
LOGS, NOTIFICATION OF SUMMONS
AND SUCCESSFUL PROSECUTIONS**

Appendix L - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
--	--	--	--	--	--

Cumulative Log for Notifications of Summons

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
--	--	--	--	--	--

Cumulative Log for Successful Prosecutions

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
--	--	--	--	--	--

Appendix G

**20th EM&A Report for Works Contract 1107 –
Diamond Hill to Kai Tak Tunnels**

MTR Corporation Limited


**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No.20

[Period from 1 to 31 December 2014]

Works Contract 1107 – Diamond Hill to Kai Tak
Tunnels

(January 2015)

Certified by: 
_____ Dr. Priscilla Choy

Position: _____ Environmental Team Leader

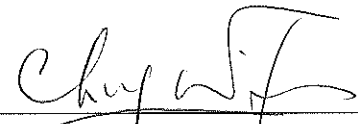
Date: _____ 13th January 2015

Chun Wo – SELI Joint Venture

**Shatin to Central Link –
Contract 1107
Diamond Hill to Kai Tak Tunnels**

**Monthly Environmental
Monitoring and Audit Report
For December 2014**

(Version 2.0)

Certified By 

Dr. Priscilla Choy
(Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY**Introduction**

1. This is the 20th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for **MTR Shatin to Central Link (SCL) Works Contract 1107 – Diamond Hill to Kai Tak Tunnels**. This report documents the findings of EM&A Works conducted from 1 to 31 December 2014.

Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month include:
 - Site investigation works;
 - Investigation and removal of old foundation works;
 - Shaft excavation and tunnels construction;
 - Site preparation works;
 - Grouting works and
 - TBM excavation.

Variation in Construction Method

3. As of the reporting month, an alignment section of approximately 90m long between DIH and KAT under this Works Contract 1107 will be constructed by the cut-and-cover method, instead of bored tunnelling method as assessed in the approved Environmental Impact Assessment (EIA) Report of Shatin to Central Link - Stabling Sidings at Hung Hom Freight Yard (hereafter referred to as SCL (HHS)) [Register No.: AEIAR-164/2012] due to increased construction risk caused by potential left-in piles. Also, pile removal works would be conducted if reinforced bored piles are identified along the bored tunnelling section. Application for variation of Environmental Permit (VEP) was approved by the EPD for the varied construction method. The updated EP (EP No.: EP-438/2012/F) was issued by EPD on 15 July 2014. Application for variation of Environmental Permit (VEP) was approved by the EPD for including the installation and operation of a Mobile Batching Machinery Equipment at Diamond Hill during the construction of SCL (TAW-HUH). The updated EP (EP No.: EP-438/2012/G) was issued by EPD on 14 August 2014. Application for variation of Environmental Permit (VEP) was approved by the EPD for varying Figure 11 of the previous Environment Permit. The updated EP (EP No.: EP-438/2012/H) was issued by EPD on 10 September 2014.
4. A summary of the monitoring activities in this reporting period is listed below:

Regular Construction Noise and Construction Dust Monitoring

- Regular construction noise monitoring during normal working hours

Noise Monitoring Station ID

- NMS-CA-4⁽¹⁾⁽³⁾/NMS-CA-3⁽²⁾⁽³⁾ (Block 1, Rhythm Garden (north-eastern façade)) 5 times
- NMS-CA-5⁽¹⁾⁽⁴⁾/NMS-CA-2⁽²⁾⁽⁴⁾ (Block 1, Rhythm Garden (northern façade)) 5 times

- Construction Dust (24-hour TSP) Monitoring

Dust Monitoring Station ID

- DMS-4⁽¹⁾⁽⁵⁾/ DMS-3⁽²⁾⁽⁵⁾ (Block 1, Rhythm Garden) 6 times

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Noise monitoring on NMS-CA-4⁽¹⁾/ NMS-CA-3⁽²⁾ (Block 1, Rhythm Garden (north-eastern façade) is carried out by Environmental Team of SCL Works Contract 1106.
- (4) Noise monitoring on NMS-CA-5⁽¹⁾/ NMS-CA-2⁽²⁾ (Block 1, Rhythm Garden (northern façade) is carried out by Environmental Team of SCL Works Contract 1106.
- (5) Dust monitoring on DMS-4⁽¹⁾/ DMS-3⁽²⁾ (Block 1, Rhythm Garden) is carried out by Environmental Team of SCL Works Contract 1106.

Waste Management

5. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. Details of waste management data is presented in Section 5 and **Appendix K**.

Landscape and Visual

6. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 5, and 19 December 2014. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 6.

Environmental Site Inspection

7. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 5, 11, 19 and 24 December 2014. The representative of the IEC joined the site inspection on 11 December 2014. Details of the audit findings and implementation status are presented in Section 6.

Environmental Exceedance/Non-conformance/Complaint/Summons and Successful Prosecution

8. No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period.
9. No non-compliance event was recorded during the reporting period.
10. No Project related environmental complaint and notification of summons/ a successful prosecution was received in this reporting period.

Future Key Issues

11. Major site activities for the coming reporting month will include:
 - Investigation and removal of old foundation works;
 - Tunnel construction at cut and cover tunnels;
 - Site preparation works;
 - Grouting works, and
 - TBM excavation.

1 INTRODUCTION

- 1.1 Cinotech Consultants Limited (Cinotech) was appointed by Chun Wo – SELI Joint Venture (CSJV) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL) Works Contract 1107 – Diamond Hill to Kai Tak Tunnels (hereafter referred to as the Project).

Purpose of the Report

- 1.2 This is the 20th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 December 2014. The major construction works for Contract 1107 commenced on 27 May 2013.

Structure of the Report

- 1.3 The structure of the report is as follows:

Section 1: **Introduction** - details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement** - summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Mitigation Measures** - summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection** - summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance** - summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues** - summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

- 2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).
- 2.2 The construction of the SCL (TAW-HUH) and SCL (HHS) have been divided into a series of civil construction works contracts. This Works Contract 1107 covers the construction of running tunnel from Kai Tak (KAT) North to SCL Diamond Hill (DIH) Station which is under the approved SCL (HHS) EIA Report. This construction contract was awarded to Chun Wo - SELI Joint Venture (CSJV) in March 2013.

General Site Description

- 2.3 The construction of tunnel from KAT to DIH will employ either cut-and-cover method or bored tunneling. The alignment and works area for the Works Contract 1107 are shown in **Figure 1**.

Construction Programme and Activities

- 2.4 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.
 - Site investigation works;
 - Investigation and removal of old foundation works;
 - Shaft excavation and tunnels construction;
 - Site preparation works;
 - Grouting works, and
 - TBM excavation.

Project Organisation

- 2.5 The project organizational chart and contact details are shown in **Figure 4**.

Status of Environmental Licences, Notification and Permits

- 2.6 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.1**. Two new Construction Noise Permits (CNP): GW-RE1383-14 and GW-RE1426-14 were granted in this reporting month.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012/H	10/09/2014	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
Ref no.: 357051	18/03/2013	N/A	Valid
Billing Account for Construction Waste Disposal			
Account No. 7017163	26/03/2013	N/A	Valid
Registration of Chemical Waste Producer			
5213-286-C3798-01	29/04/2013	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00015861-2013	13/05/2013	31/05/2018	Valid
WT00016009-2013	23/05/2013	31/05/2018	Valid
Construction Noise Permit (CNP)			
GW-RE0722-14	30/06/2014	29/12/2014	Valid
GW-RE0884-14	14/08/2014	04/02/2015	Valid
GW-RE1125-14	08/10/2014	15/01/2015	Valid
GW-RE1246-14	10/11/2014	31/12/2014	Valid
GW-RE1383-14	08/12/2014	31/01/2015	Valid
GW-RE1426-14	21/12/2014	26/12/2014	Valid

Summary of EM&A Requirements

- 2.7 The EM&A programme under Works Contract 1107 require regular dust and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event / Action Plans;
 - Environmental mitigation measures, as recommended in the Project EIA study final report; and
 - Environmental requirements in contract documents.
- 2.8 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 2.9 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely construction noise & dust monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Noise Monitoring

- 3.1 In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was rejected; alternative locations were proposed and agreed by the ER (Engineer's Representative), IEC (Independent Environmental Checker) and EPD (Environmental Protection Department). The construction noise monitoring locations are listed in **Table 3.1** and shown in **Figure 2**.

Table 3.1 Regular Construction Noise Monitoring Location

Regular Construction Noise Monitoring Location⁽⁴⁾⁽⁵⁾	Description	Type of Measurement
NMS-CA-4 ⁽¹⁾ / NMS-CA-3 ⁽²⁾	Block 1, Rhythm Garden (north-eastern façade)	Façade
NMS-CA-5 ⁽¹⁾⁽³⁾ / NMS-CA-2 ⁽²⁾⁽³⁾	Block 1, Rhythm Garden (northern façade)	Façade

Note:

- (1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.
- (4) Noise monitoring on NMS-CA-4⁽¹⁾/NMS-CA-3⁽²⁾ (Block 1, Rhythm Garden (north-eastern façade) is carried out by Environmental Team of SCL Works Contract 1106.
- (5) Noise monitoring on NMS-CA-5⁽¹⁾/NMS-CA-2⁽²⁾ (Block 1, Rhythm Garden (northern façade) is carried out by Environmental Team of SCL Works Contract 1106.

Monitoring Parameter and Frequency

- 3.2 Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period of monitoring stations at Rhythm Garden is shown in **Appendix D**.
- 3.3 The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). L_{Aeq} (30min) (as six consecutive $L_{eq, 5-min}$ readings) was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays.

Monitoring Equipment and Methodology

Field Monitoring

3.4 The monitoring procedures are as follows:

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - measurement time : 5 minutes (obtaining six consecutive $L_{eq,5min}$ readings for a $L_{eq,30 min}$ reading)
- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station was checked with the portable wind meter. Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- At the end of the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- A façade correction of +3dB(A) shall be made to the noise parameter obtained by free field measurement.

Monitoring Equipment

3.5 The sound level meters and calibrator used for the noise measurement, as listed in **Table 3.2**, comply with the IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in **Appendix C**.

Table 3.2 Noise Monitoring Equipment

Monitoring Equipment	Model (Serial no.)
Sound Level Meter	SVAN 955 (Serial no.: 12553 and 14303) SVAN 957 (Serial no.: 21460 and 23853)
Calibrator	SV30A (Serial no.: 24803, 24791 and 24780) B&K 4231 (Serial no.: 2412367)

Maintenance and Calibration

3.6 Maintenance and Calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals. Copies of calibration certificates are attached in **Appendix C**.

Action & Limit Level for Construction Noise Monitoring

3.7 The Action and Limit Levels are presented in **Appendix B** and the Event / Action Plan (EAP) for noise monitoring is presented in **Appendix I**.

Continuous Noise Monitoring

3.8 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared submitted under EP Condition 2.9 and Condition 2.10 respectively, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria will be anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (TAW-HUH) under Works Contract 1107.

Regular Construction Dust Monitoring

3.9 The proposed dust monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are listed in **Table 3.3** and shown in **Figure 3**. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.3 Dust Monitoring Location

Regular Dust Monitoring Location	Description
DMS-4 ⁽¹⁾⁽³⁾ / DMS-3 ⁽²⁾⁽³⁾	Block 1, Rhythm Garden

Note:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Dust monitoring on DMS-4⁽¹⁾/DMS-3⁽²⁾ (Block 1, Rhythm Garden) is carried out by Environmental Team of SCL Works Contract 1106.

Monitoring Parameter and Frequency

3.10 The dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 24-hour TSP levels were monitored at the frequency and duration stated in **Table 3.4**. The TSP monitoring at Rhythm Garden was conducted as per the schedule presented in **Appendix D**.

Table 3.4 Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring ⁽¹⁾	Throughout the construction period	24-hour TSP	Once per 6 days

Note:

(1) 1- hour TSP shall be conducted when one documented valid complaint is received.

Monitoring Equipment

3.11 **Table 3.5** summarizes the equipment used for the dust monitoring.

Table 3.5 Dust Monitoring Equipment

Equipment	Model and Make	Qty.
HVS	Tisch Environmental, Inc.; Model no. TE-5170, Serial no.: 2352	1
Calibration Orifice	Tisch Environmental, Inc.; Model no. TE – 5025A Orifice ID: 0993	1

Instrumentation

3.12 High Volume Samplers (HVS) connected with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 Appendix B (Part 50).

HVS Installation

3.13 The following guidelines were adopted during the installation of HVS:

- Sufficient support was provided to secure the samplers against gusty wind.
- No two samplers were placed less than 2 meters apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
- No furnaces or incineration flues were nearby.
- Airflow around the sampler was unrestricted.
- The samplers were more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filters Preparation

3.14 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 μm diameter. A HOKLAS accredited laboratory, Wellab Ltd. (HOKLAS Registration No. 083), was responsible for the preparation of pre-weighed filter papers for Cinotech's monitoring team.

- 3.15 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than ± 5 %. A convenient working RH was 40%.
- 3.16 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

- 3.17 Operating/analytical procedures for the TSP monitoring were highlighted as follows:
- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard.
 - The power supply was checked to ensure the sampler worked properly.
 - The filter holding frame and the area surrounding the filter were cleaned.
 - On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the air quality monitoring station.
 - The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
 - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts to avoid air leakage at the edges.
 - The shelter lid was closed and secured with the aluminum strip.
 - A new flow rate record chart was set into the flow recorder.
 - The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
 - The flow rate of the HVS sampler would be verified to be constant and recorded on the data sheet before and after sampling.
 - The elapsed time and other relevant information was recorded. After sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
 - It was then placed in a clean plastic envelope and sealed and sent to the Wellab Ltd. for weighing.
 - Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment should be between 25°C and 30°C and not vary by more than ± 3 °C; the relative humidity (RH) should be < 50% and not vary by more than ± 5 %. A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

- 3.18 The following maintenance/calibration was required for the HVS:
- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
 - Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. Copies of calibration certificates are attached in **Appendix C**.
 - The HVS calibration orifice will be calibrated annually.

Action and Limit Levels for Dust Monitoring

- 3.19 The Action and Limit levels have been established and are presented in **Appendix B** and the Event / Action Plan (EAP) for dust monitoring is presented in **Appendix I**.

Landscape and Visual

- 3.20 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The Event / Action Plan (EAP) for landscape and visual is presented in **Appendix I**. The implementation status is given in **Appendix J**.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

- 4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix J**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (November 2014)	12 th December 2014

5 MONITORING RESULTS

Regular Construction Noise Monitoring

- 5.1 A total of 10 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. No exceedance of the limit level was recorded at designated monitoring stations.
- 5.2 All noise monitoring results recorded on December at NMS-CA-5⁽¹⁾/NMS-CA-2⁽²⁾ (Block 1, Rhythm Garden (northern façade)) exceeded the daytime construction noise criterion. However, the results are not considered as exceedance as all the results were below the baseline noise level. All noise monitoring results recorded on December at NMS-CA-4⁽¹⁾/NMS-CA-3⁽²⁾ (Block 1, Rhythm Garden (north-eastern façade)) did not exceed the daytime construction noise criterion.
- 5.3 Based on observation during the on-site monitoring, road traffic nearby is considered as a potential noise source other than construction works of the Project that affects the monitoring results of the reporting month.
- 5.4 The noise monitoring results together with their graphical presentations are presented in **Appendix F**.
- 5.5 No exceedance of the Action and Limit Levels of construction noise due to the Project was recorded during the reporting period.

Regular Dust Monitoring

- 5.6 6 sets of 24-hour TSP monitoring were carried out at the designated monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. The monitoring results together with their graphical presentations are presented in **Appendix E** and a summary of the dust monitoring results in this reporting month is given in **Table 5.1**.

Table 5.1 Summary Table of Dust Monitoring Results during the reporting month

Parameter	Minimum µg/m ³	Maximum µg/m ³	Average µg/m ³	Action Level, µg/m ³	Limit Level, µg/m ³
24-hr TSP (DMS-4 ⁽¹⁾⁽³⁾ / DMS-3 ⁽²⁾⁽³⁾)	48.9	116.3	73.9	160.4	260

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Dust monitoring on DMS-4⁽¹⁾/DMS-3⁽²⁾ (Block 1, Rhythm Garden) is carried out by Environmental Team of SCL Works Contract 1106.
- 5.7 Based on observation during the on-site monitoring, road traffic emission nearby is considered as a potential dust source other than construction works of the Project that affects the monitoring results of the reporting month.
- 5.8 Wind monitoring data were obtained from Kai Tak Meteorological Station of Hong Kong Observatory and shown on **Appendix E**.
- 5.9 No exceedance of the Action and Limit Levels of the 24-hour TSP was recorded during the reporting period.

Waste Management

5.10 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes like plastics and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.2**. 13,025m³ of C&D materials, 60m³ of general refuse, and 20kg chemical waste were generated and disposed; No metal, plastics and paper/cardboard were generated and recycled during this reporting month. Details of waste management data is presented in **Appendix K**.

Table 5.2 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) ^(a)	C&D Materials (non-inert) ^(b)				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/cardboard	Plastics	Metals
December 2014	13,025m ³	60 m ³	20 kg	0 kg	0 kg	0 kg
Notes:						
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil,						
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.						

Landscape and Visual

5.11 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 5 and 19 December 2014. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION

Site Audit

- 6.1 Site audit was carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audit are attached in **Appendix H**.
- 6.1.1 Site audits were conducted on 5, 11, 19 and 24 December 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 11 December 2014. No site inspection was conducted by EPD on the reporting month. The details of observations during site audit can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

- 6.2 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix J**.
- 6.3 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	5 December 2014	<u>Observation:</u> Muddy slurry was observed leaking near the site entrance. Contractor is reminded to take appropriate measure to avoid leaking of slurry into manholes and properly clear the slurry off the road. (It is noted that emergency measure such as sucking of slurry from the nearby manhole by vacuum truck was immediately implemented.)	As observed on 11 Dec., the road and the pedestrian seemed uncontaminated by the muddy slurry produced last week.
	11 December 2014	<u>Reminder:</u> Contractor is reminded to fix the pH gauge of the water treatment facility at the upstream area.	As observed on 19 Dec., the pH gauge had been fix and the pH value is within the limited range.
<i>Noise</i>	---	---	---
<i>Landscape and Visual</i>	---	---	---
<i>Air Quality</i>	5 December 2014	<u>Reminder:</u> Contractor is reminded to properly cover the cement grouting plant on 3 sides and on top when grouting work is being carried out.	As observed on 11 Dec., the plant is properly covered and no fume was observed.
	11 December 2014	<u>Observation:</u> The stockpiles of bagged cements at the TBM workshop are not covered. The contractor should properly cover it on 3-sides and on top when they are not being used.	As observed on 19 Dec., the stockpiles of bagged cements had been removed.
	24 December 2014	<u>Reminder:</u> The coverage of dusty stockpile should be enhanced to suppress dust generation.	The follow up action will be reported in the next reporting month.

Parameters	Date	Observations and Recommendations	Follow-up
<i>Waste / Chemical Management</i>	28 November 2014	<u>Reminder:</u> General refuses at the downstream area should be cleared on a regular basis to avoid accumulation. Construction skip should also be provided to store the refuses.	As observed on 5 Dec., the general refuses had been removed.
	11 December 2014	<u>Observation:</u> Chemicals were observed stored inside the chemical waste cupboard. Contractor is reminded that the cupboard is only for the storage of chemical waste. The chemicals should be removed from it.	As observed on 19 Dec., the chemicals had been removed from the chemical waste cupboard.
	19 December 2014	<u>Reminder:</u> The drain hole of the drip tray at pile removal area should be plugged to prevent chemical leakage.	As observed on 24 Dec., the drain hole was plugged.
	19 December 2014	<u>Reminder:</u> Drip tray should be placed underneath the chemical containers/oil drums at Shaft A enclosure to avoid chemical leakage.	As observed on 24 Dec., drip tray was provided.
	24 December 2014	<u>Reminder:</u> The hole of drip tray for generator should be plugged to prevent leakage.	The follow up action will be reported in the next reporting month.
<i>Permits/ Licenses</i>	--	--	--

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

- 7.1 No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period. The summary of exceedance is provided in **Appendix G**.

Summary of Environmental Non-Compliance

- 7.2 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

- 7.3 No environmental Project-related complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix L**.

Summary of Environmental Summon and Successful Prosecution

- 7.4 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix L**.

8 FUTURE KEY ISSUES

Construction Programme for the Next Month

8.1 A tentative construction programme is provided in **Appendix A**. The major construction activities in the coming month will include:

- Investigation and removal of old foundation works;
- Tunnel construction at cut and cover tunnels;
- Site preparation works;
- Grouting works, and
- TBM excavation.

Key Issues in the Next Month

8.2 Key issues to be considered in the coming month include:

- Dust impact from excavating works;
- Dust arising from loading, unloading, transfer, handling or storage of bulk cement or dry PFA and bentonite;
- Treatment of wastewater from shaft excavation works;
- To ensure the performance of sorting of C&D materials at source (during generation); and
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.

Monitoring Schedule in the Next Month

8.3 The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring at Rhythm Garden in the next reporting period is presented in **Appendix D**. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 31 December 2014 in accordance with EM&A Manual and the requirement under EP.
- 9.2 No exceedance of the Action and Limit Levels of regular construction noise and 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting month.
- 9.3 4 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 2 times of bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting period.
- 9.4 There was no Project related environmental complaint, successful prosecution or notification of summons received during the reporting month.
- 9.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- Drainage and water treatment facilities should be regularly inspected and maintained to ensure proper and efficient operation at all times.
- Measures should be taken to prevent the washing away of construction materials, soil, silt, slurry or debris into any drainage system.

Landscape and Visual

- N/A

Noise

- N/A.

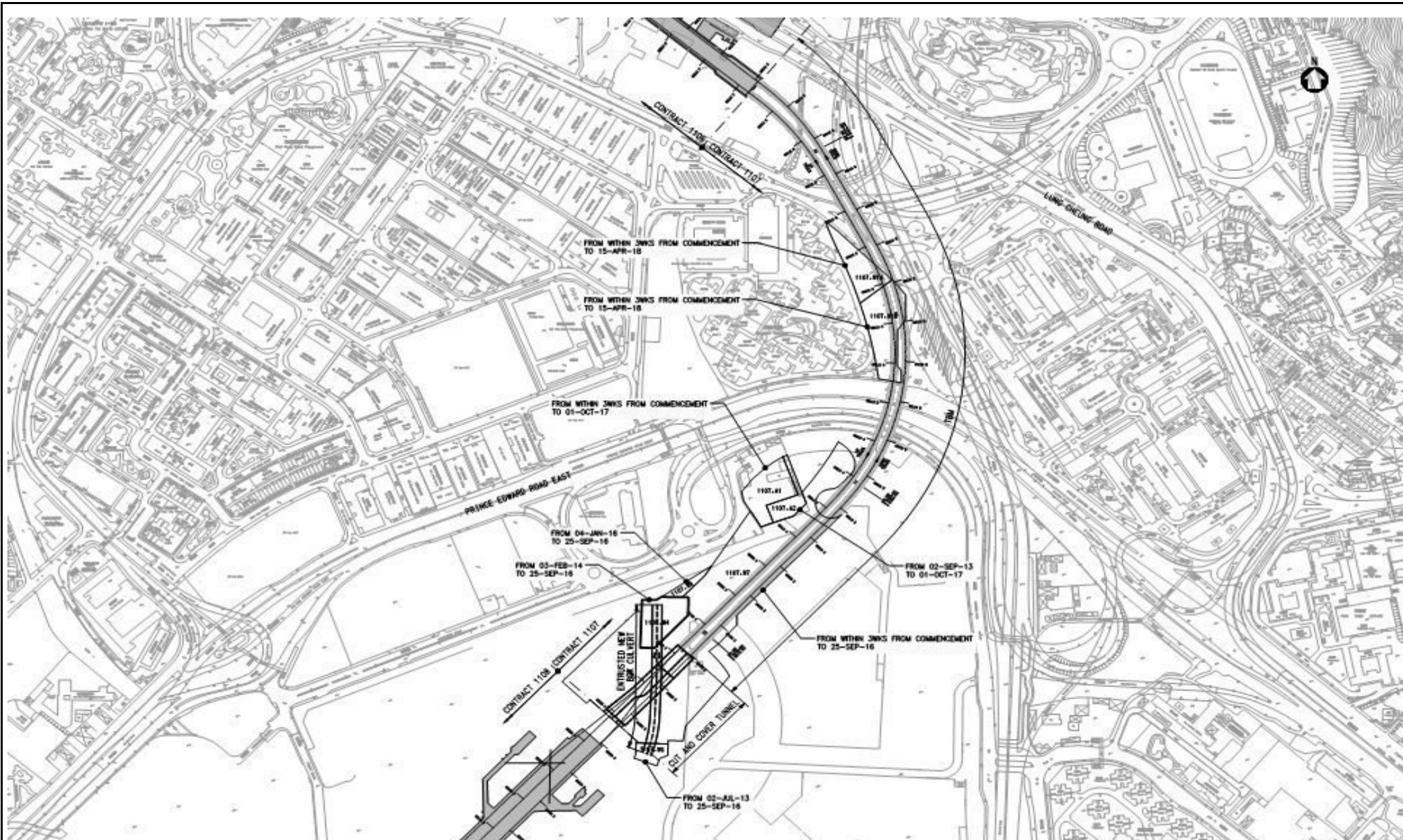
Air Quality

- Dusty stockpile at the site should be covered entirely by impervious sheet or watered regularly to maintain the entire surface wet.
- Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.
- Loading, unloading, transfer, handling or storage of bulk cement 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.

Waste/Chemical Management

- Drip tray of appropriate size should be provided to chemical containers to prevent chemical leakage. The chemical storage area should also be properly maintained.
- The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste.

FIGURES



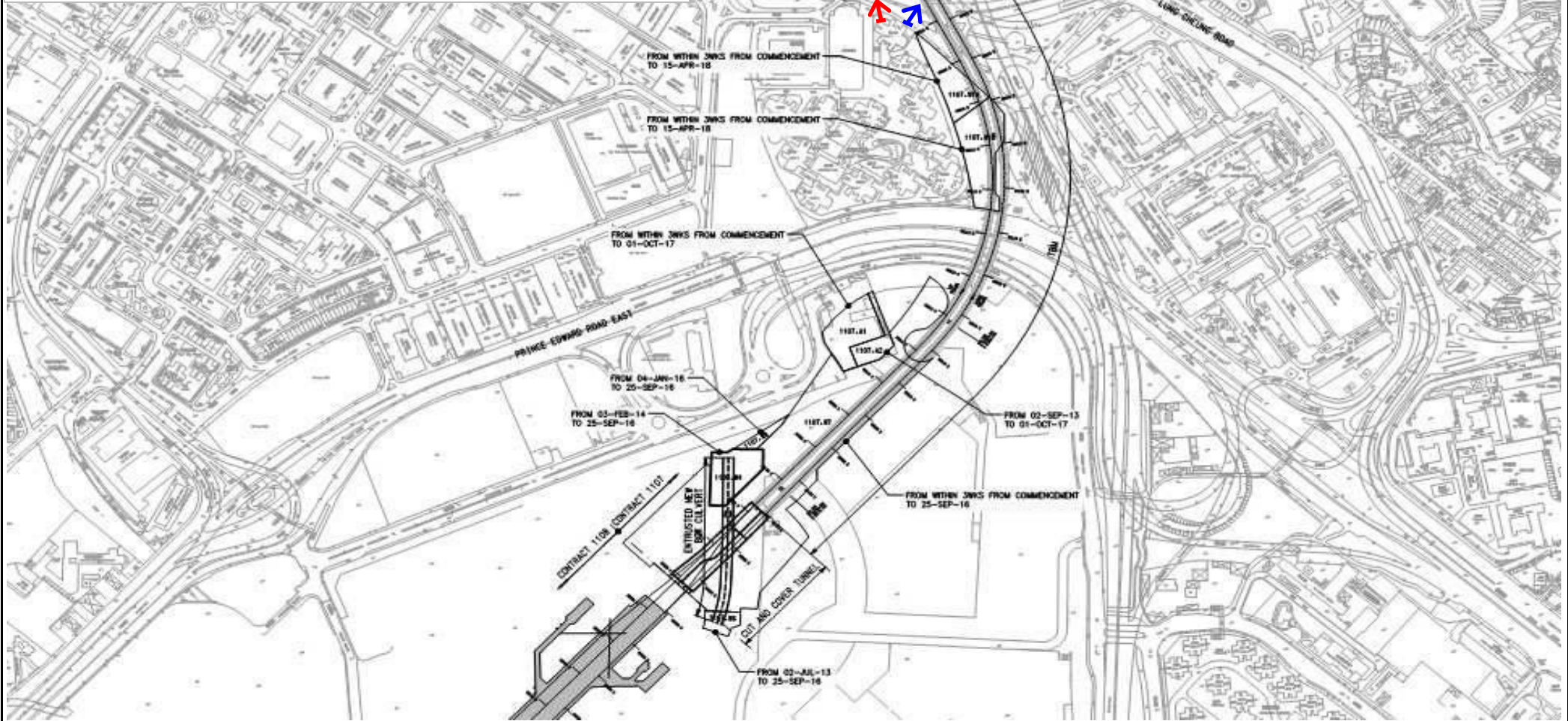
Title	MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Site Layout Plan	Scale	N.T.S	Project No.	MA13018	CINOTECH
		Date	May-13	Figure	1	

Legend:

- ➔ NMS-CA-4⁽¹⁾/NMS-CA-3⁽²⁾ Block 1, Rhythm Garden (north-eastern façade)
- ➔ NMS-CA-5⁽¹⁾/NMS-CA-2⁽²⁾ Block 1, Rhythm Garden (northern façade)

Note:

- (1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).



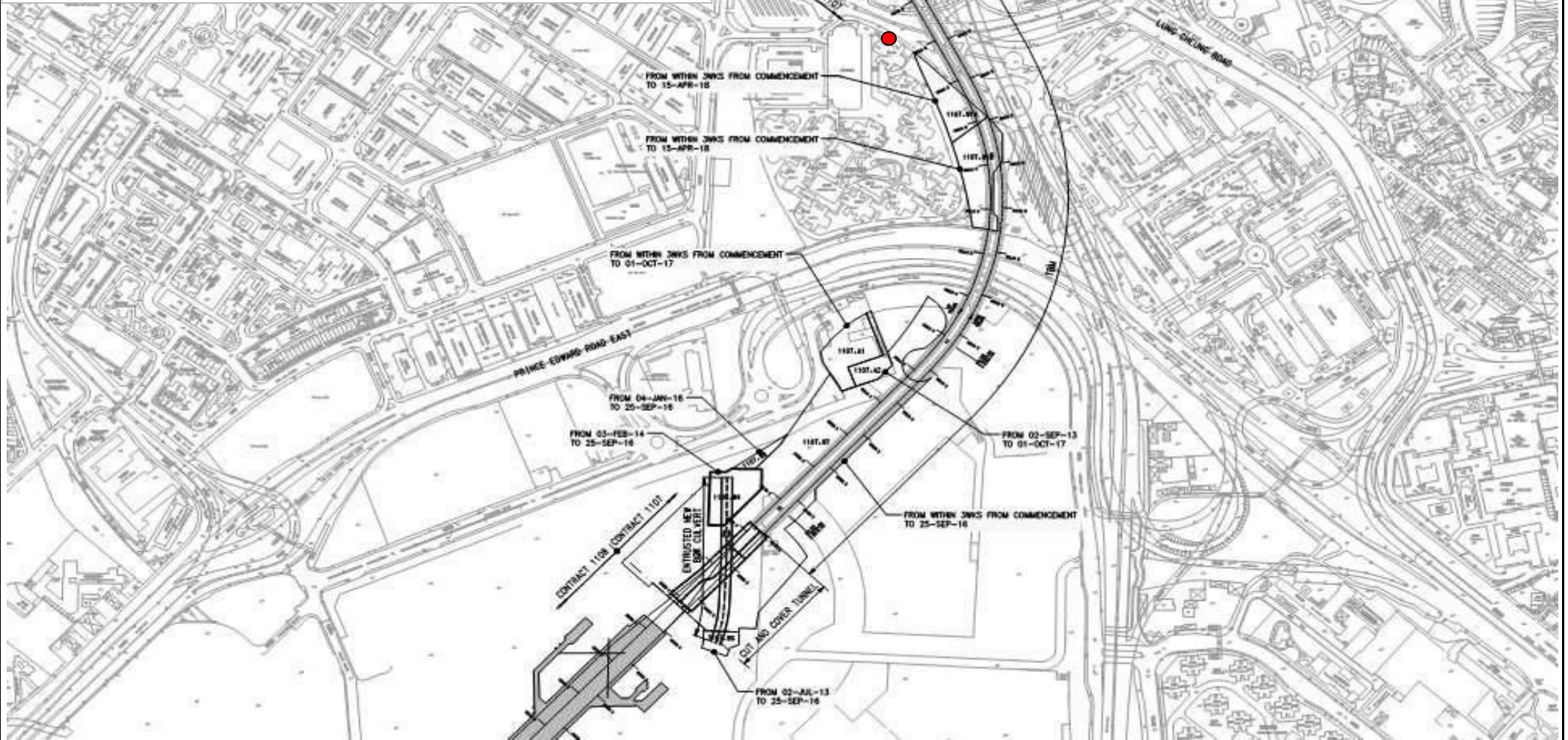
<p>Title</p> <p style="text-align: center;">MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels</p> <p style="text-align: center;">Locations of Constrction Noise Monitoring</p>	<p>Scale</p> <p style="text-align: center;">N.T.S</p>	<p>Project No.</p> <p style="text-align: center;">MA13018</p>	
	<p>Date</p> <p style="text-align: center;">May-13</p>	<p>Figure</p> <p style="text-align: center;">2</p>	

Legend:

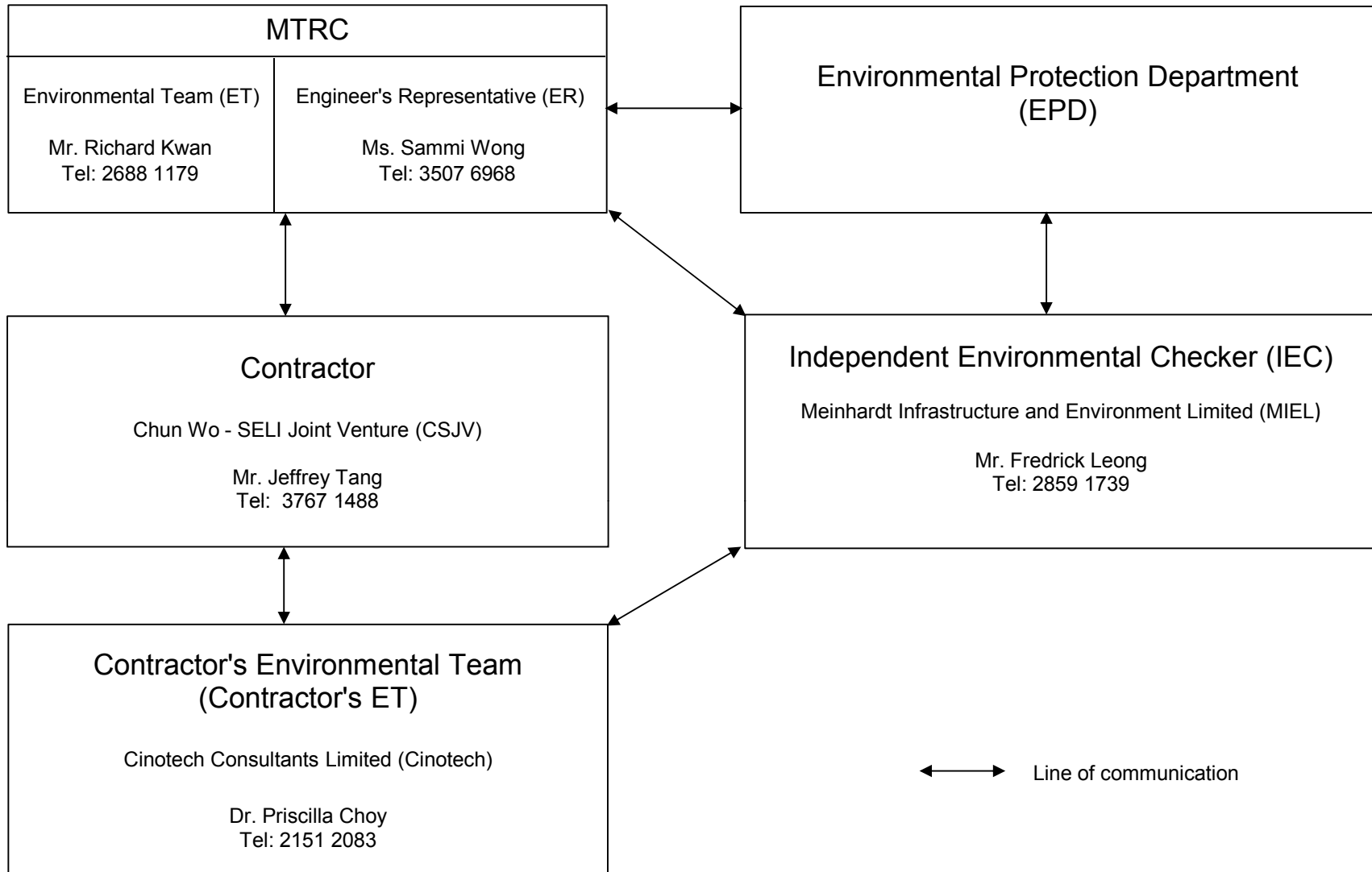
- DMS-4⁽¹⁾/DMS-3⁽²⁾ Block 1, Rhythm Garden

Note:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).



Title	MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Location of Dust Monitoring		Scale	N.T.S	Project No.	MA13018
	Date	May-13	Figure	3		




← → Line of communication

Title	MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels	Scale	N.T.S	Proposal No.	MA13018	CINOTECH
	Organisation Chart and Key Contact of the Project	Date	Jul 2014	Figure	4	

**APPENDIX A
TENTATIVE CONSTRUCTION
PROGRAMME**

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014		2015		
									Nov	Dec	Jan	Feb	Mar
MTRC SCL 1107 Diamond Hill to Kai Tak													
Schedule of Completion Obligation & Other													
Schedule of Milestone Dates - Cost Centre A													
1107.MS10220	A7 Engr confirm satisfactory implementation of quality requirements in accordance with Approved Specified Plans	0		28-Dec-14		28-Dec-14		28-Dec-14*					23-Feb-15, S
Schedule of Milestone Dates - Cost Centre C													
1107.MS10420	C5a Manufacturing of pre-cast tunnel lining segment 20% by number complete and delivery to site 28SEP14	0		11-Jun-14		29-Oct-14		09-Dec-14*					23-Feb-15, S
1107.MS10430	C5b Up track TBM tunnel drive from Kai Tak to DIH 35% by plan length complete 28SEP14	0		05-Aug-14		16-Dec-14		16-Dec-14*					23-Feb-15, S
1107.MS10450	C6b Up track TBM tunnel drive from Kai Tak to DIH complete 28DEC14	0		06-Oct-14		04-Feb-15		23-Feb-15*					23-Feb-15, S
Schedule of Milestone Dates - Cost Centre F													
1107.MS10680	F5a Complete water main replacement at Choi Hung Road (East) and accepted by WSD and relevant Governments 29JUN14	0		11-Jun-14		02-Jan-15		02-Jan-15*					23-Feb-15, S
1107.MS10690	F5b Complete road reinstatement of Choi Hung Road (East) 29JUN14	0		11-Jun-14		02-Jan-15		02-Jan-15*					23-Feb-15, S
Schedule of Milestone Dates - Cost Centre I (for													
1107.MS10790	I5a Manufacturing of pre-cast tunnel lining segment 20% by number complete and delivery to site 28SEP14	0		11-Jun-14		29-Oct-14		09-Dec-14*					23-Feb-15, S
1107.MS10800	I5b Up track TBM tunnel drive from Kai Tak to DIH 35% by plan length complete 28SEP14	0		05-Aug-14		16-Dec-14		16-Dec-14*					23-Feb-15, S
1107.MS10820	I6b Up track TBM tunnel drive from Kai Tak to DIH complete 28DEC14	0		06-Oct-14		04-Feb-15		23-Feb-15*					23-Feb-15, S
Programme Data													
1107.ID10950	3.0a 1106 compl Retrieval Shaft at DIH (SCL) east 49-53 with Base Slab & Ready for 1107 TBM Retr 28SEP14 MTR to advise	0		28-Sep-14		01-Nov-14		01-Dec-14*					23-Feb-15, S
1107.ID10990	4.0b 1108 remove affected temporary works for 1107 stub tunnels (Up and Down tracks) construction MTR to advise	0		19-Oct-14		19-Oct-14		01-Dec-14*					23-Feb-15, S
Cost Centre A - Preliminaries													
Project Audit													
1107.12460	1st Audit of quality plan	12		24-Nov-14		20-Dec-14		08-Dec-14					23-Feb-15, S
Site Enabling Works													
Site Setup													
Engineer's Site Accomodation													
1107.12650e	Engr's Site Accomodation- Construction Works- E&M & ABWF	33				02-Aug-14		10-Sep-14					23-Feb-15, S
1107.12660	Engr's Site Accomodation- Statutory Inspection & Handover	1		11-Sep-13		13-Sep-13		07-Nov-14					23-Feb-15, S
1107.12670	Handover Date of Engineer's Accomodation (Q&A CON T051) 17SEP13	0		17-Sep-13		07-Nov-14		28-Nov-14 A					23-Feb-15, S
Misc Items													
1107.19012	Provision of Site General Staff (Drivers, Amahs, etc) - 1-Nov-14 to 17-Nov-14	14				01-Nov-14		17-Nov-14 A					23-Feb-15, S
1107.19013	Provision of Site General Staff (Drivers, Amahs, etc) - 18-Nov-14 to 3-Dec-14	14				18-Nov-14		03-Dec-14					23-Feb-15, S
1107.19014	Provision of Site General Staff (Drivers, Amahs, etc) - 4-Dec-14 to 19-Dec-14	14				04-Dec-14		19-Dec-14					23-Feb-15, S
1107.19015	Provision of Site General Staff (Drivers, Amahs, etc) - 20-Dec-14 to 31-Dec-14	8				20-Dec-14		31-Dec-14					23-Feb-15, S
1107.19020	Provision of Site General Staff (Drivers, Amahs, etc) - 2-Jan-15 to 17-Jan-15	14		02-Jan-15		31-Mar-15		02-Jan-15					23-Feb-15, S
1107.19021	Provision of Site General Staff (Drivers, Amahs, etc) - 19-Jan-15 to 3-Feb-15	14				19-Jan-15		03-Feb-15					23-Feb-15, S

	Data Date 01-Dec-14	MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme Data Date 01-Dec-14	Date	Revision	Checked	Approved
	Page 1 of 8		See 2nd Col	0	KCL	KCL
SCL1107 M-3MR-021 Printed 04-Dec-14 09:53		<ul style="list-style-type: none"> Master Prog Baseline Bar Last Month Forecast Bar Actual Work Remaining Work Critical Remaining Work Milestone Summary 				

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014		2015		
									Nov	Dec	Jan	Feb	Mar
1107.19022	Provision of Site General Staff (Drivers, Amahs, etc) - 4-Feb-15 to 23-Feb-15	14			04-Feb-15	23-Feb-15	04-Feb-15	23-Feb-15					Provision of
1107.19023	Provision of Site General Staff (Drivers, Amahs, etc) - 24-Feb-15 to 11-Mar-15	14			24-Feb-15	11-Mar-15	24-Feb-15	11-Mar-15					
1107.19200	Provision of Site General Labour for Temporary Works - 3-Oct-14 to 17-Oct-14	75	03-Oct-14	31-Dec-14	03-Oct-14	31-Dec-14	03-Oct-14 A	17-Oct-14 A	Provision of Site General Labour for Temporary Works - 3-Oct-14 to				
1107.19202	Provision of Site General Labour for Temporary Works - 1-Nov-14 to 17-Nov-14	14			01-Nov-14	17-Nov-14	01-Nov-14 A	17-Nov-14 A	Provision of Site General Labour for Temporary Works - 1-Nov-14 to 17-Nov-14				
1107.19203	Provision of Site General Labour for Temporary Works - 18-Nov-14 to 3-Dec-14	14			18-Nov-14	03-Dec-14	18-Nov-14 A	03-Dec-14	Provision of Site General Labour for Temporary Works - 18-Nov-14 to 3-Dec-14				
1107.19204	Provision of Site General Labour for Temporary Works - 4-Dec-14 to 19-Dec-14	14			04-Dec-14	19-Dec-14	04-Dec-14	19-Dec-14	Provision of Site General Labour for Temporary Works - 4-Dec-14 to 19-Dec-14				
1107.19205	Provision of Site General Labour for Temporary Works - 20-Dec-14 to 31-Dec-14	8			20-Dec-14	31-Dec-14	20-Dec-14	31-Dec-14	Provision of Site General Labour for Temporary Works - 20-Dec-14				
1107.19210	Provision of Site General Labour for Temporary Works - 2-Jan-15 to 17-Jan-15	14	02-Jan-15	31-Mar-15	02-Jan-15	17-Jan-15	02-Jan-15	17-Jan-15					
1107.19211	Provision of Site General Labour for Temporary Works - 19-Jan-15 to 3-Feb-15	14			19-Jan-15	03-Feb-15	19-Jan-15	03-Feb-15	Provision of Site General Labour				
1107.19212	Provision of Site General Labour for Temporary Works - 4-Feb-15 to 23-Feb-15	14			04-Feb-15	23-Feb-15	04-Feb-15	23-Feb-15	Provision of				
1107.19213	Provision of Site General Labour for Temporary Works - 24-Feb-15 to 11-Mar-15	14			24-Feb-15	11-Mar-15	24-Feb-15	11-Mar-15					
Cost Centre C - Tunnel Construction by		141	09-Nov-13	11-Mar-15	10-Oct-14	31-Mar-15	10-Oct-14 A	30-Mar-15					
Site Enabling Works for TBM		132	09-Nov-13	07-Oct-14	10-Oct-14	19-Mar-15	10-Oct-14 A	19-Mar-15					
OPTION 3 - Obstruction Removal		124			20-Oct-14	19-Mar-15	25-Oct-14 A	19-Mar-15					
Removal of Abandoned Airport Admin Bldg Foundations DN		124			20-Oct-14	19-Mar-15	25-Oct-14 A	19-Mar-15					
1107.13560a	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 1b)	14			20-Oct-14	04-Nov-14	25-Oct-14 A	15-Nov-14 A	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 1b)				
1107.13560b	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 1c)	14			05-Nov-14	20-Nov-14	15-Nov-14 A	09-Dec-14	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 1c)				
1107.13560c	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 1d)	15			21-Nov-14	06-Dec-14	10-Dec-14	29-Dec-14	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 1d)				
1107.13560d	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2a)	14			10-Jan-15	26-Jan-15	10-Jan-15	26-Jan-15	Remove Abandoned Airport Admin. Bldg				
1107.13560e	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2b)	14			27-Jan-15	11-Feb-15	27-Jan-15	11-Feb-15	Remove Abandoned Airp				
1107.13560f	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2c)	14			12-Feb-15	03-Mar-15	12-Feb-15	03-Mar-15	Ren				
1107.13560g	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2d)	14			04-Mar-15	19-Mar-15	04-Mar-15	19-Mar-15					
1107.20062	ELS to Locate Foundations (Portion 2) DN 98040 to 98080 - Excavate to S2	6			01-Nov-14	07-Nov-14	01-Nov-14 A	07-Nov-14 A	ELS to Locate Foundations (Portion 2) DN 98040 to 98080 - Excavate to S2				
1107.20063	ELS to Locate Foundations (Portion 2) Install S2 Struts	10			08-Nov-14	19-Nov-14	08-Nov-14 A	19-Nov-14 A	ELS to Locate Foundations (Portion 2) Install S2 Struts				
1107.20064	ELS to Locate Foundations (Portion 2) Excavate to S3	9			20-Nov-14	29-Nov-14	20-Nov-14 A	29-Nov-14 A	ELS to Locate Foundations (Portion 2) Excavate to S3				
1107.20065	ELS to Locate Foundations (Portion 2) Demolish Abandoned Concrete Slab	7			01-Dec-14	08-Dec-14	01-Dec-14	08-Dec-14	ELS to Locate Foundations (Portion 2) Demolish Abandoned Concrete Slab				
1107.20066	ELS to Locate Foundations (Portion 2) - Install S3, Demolish Abandoned Slab Complete & Identify Old Piles	13			09-Dec-14	23-Dec-14	09-Dec-14	23-Dec-14	ELS to Locate Foundations (Portion 2) - Install S3, Demolish Abandoned Sl				
1107.20067	ELS to Locate Foundations (Portion 2) Remove S3, S2 & S1 & Backfill to Original Ground Level (In Sequence)	12			24-Dec-14	09-Jan-15	24-Dec-14	09-Jan-15	ELS to Locate Foundations (Portion 2) Remove S3, S2 &				
Ground Treatment		132	09-Nov-13	07-Oct-14	10-Oct-14	19-Mar-15	10-Oct-14 A	19-Mar-15					
Jet Grouting Treatment for KAT TBM Launch Shaft		28	13-Dec-13	02-Jan-14	12-Feb-15	19-Mar-15	12-Feb-15	19-Mar-15					
1107.12990c	Launch Shaft Jet Grouting Stage 2 (After Pile Extraction) (approx 20nos)	10			12-Feb-15	26-Feb-15	12-Feb-15	26-Feb-15	Launch S				
1107.13000	Demobilise	3	13-Dec-13	16-Dec-13	27-Feb-15	02-Mar-15	27-Feb-15	02-Mar-15	Dem				
1107.13010	Curing of Grout	21	13-Dec-13	02-Jan-14	27-Feb-15	19-Mar-15	27-Feb-15	19-Mar-15					



Data Date 01-Dec-14
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MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme
Data Date 01-Dec-14

Date	Revision	Checked	Approved
See 2nd Col	0	KCL	KCL

- █ Master Prog Baseline Bar
- █ Last Month Forecast Bar
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ▼ Summary

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014		2015		
									Nov	Dec	Jan	Feb	Mar
Jet Grouting Treatment for Cross Passage 3		49	27-Feb-14	25-Jul-14	10-Oct-14	06-Dec-14	10-Oct-14 A	12-Dec-14	12-Dec-14, Jet Grouting Treatment for Cross Passage 3				
1107.13120	Jet Grouting (36 nos) (Average 2.25 Columns per day) Stage 2 (Cutterhead Intervention omitted- smaller grout block)	20	27-Feb-14	21-Mar-14	10-Oct-14	01-Nov-14	10-Oct-14 A	01-Nov-14 A	Jet Grouting (36 nos) (Average 2.25 Columns per day) Stage 2 (Cutterhead Intervention omitted- smaller grout block)				
1107.13130	Demobilise	3	22-Mar-14	25-Mar-14	13-Nov-14	15-Nov-14	13-Nov-14 A	15-Nov-14 A	Demobilise				
1107.13140	Curing of Grout	18	22-Mar-14	11-Apr-14	13-Nov-14	30-Nov-14	13-Nov-14 A	30-Nov-14 A	Curing of Grout				
1107.13141	3 nos core Sample	3			01-Dec-14	03-Dec-14	01-Dec-14	03-Dec-14	3 nos core Sample				
1107.13150	Reinstate Road	14	22-Mar-14	12-Apr-14	17-Nov-14	02-Dec-14	17-Nov-14 A	12-Dec-14	Reinstate Road				
1107.13160	Approx date of TBM Pass Through (Up Track)	0	25-Jul-14		06-Dec-14		06-Dec-14		Approx date of TBM Pass Through (Up Track)				
Jet Grouting Treatment for Cross Passage 1		82	15-Mar-14	11-Sep-14	11-Nov-14	03-Feb-15	11-Nov-14 A	18-Feb-15	18-Feb-15, Jet Gr				
1107.13270	Demobilise	6	15-Mar-14	21-Mar-14	11-Nov-14	17-Nov-14	11-Nov-14 A	17-Nov-14 A	Demobilise				
1107.13280	Curing of Grout	18	15-Mar-14	04-Apr-14	11-Nov-14	28-Nov-14	11-Nov-14 A	28-Nov-14 A	Curing of Grout				
1107.13290	Approx date of TBM Pass Through (Up Track)	0	11-Sep-14		03-Feb-15		18-Feb-15*		Approx date of TB				
Pressure Grouting Treatment for DIH TBM Retrieval Shaft		104	09-Nov-13	07-Oct-14	06-Nov-14	05-Feb-15	10-Nov-14 A	13-Mar-15	1107 Allowed Access to 1106 Eastern Retrieval Shaft Grout Block Work Area				
1107.13390	1107 Allowed Access to 1106 Eastern Retrieval Shaft Grout Block Work Area	0	09-Nov-13		06-Nov-14		22-Nov-14 A		1107 Allowed Access to 1106 Eastern Retrieval Shaft Grout Block Work Area				
1107.13410	Site Clearance Plant set up (After Initial Partial Site Access on 10th Nov)	6	09-Nov-13	15-Nov-13	06-Nov-14	12-Nov-14	10-Nov-14 A	21-Nov-14 A	Site Clearance Plant set up (After Initial Partial Site Access on 10th Nov)				
1107.13420	Trial pit for Locating Underground Utilities	6	16-Nov-13	22-Nov-13	08-Nov-14	14-Nov-14	10-Nov-14 A	21-Nov-14 A	Trial pit for Locating Underground Utilities				
1107.13430	Pressure Grouting UP Track (56 nos) Average 4 Points/day with 2 machines	14	03-Dec-13	27-Jan-14	11-Nov-14	24-Nov-14	22-Nov-14 A	13-Dec-14	Pressure Grouting UP Track (56 nos) Average 4 Points/day with 2 machines				
1107.13430a	Pressure Grouting UP Track (56 nos) Average 4 Points/day with 2 machines	14			25-Nov-14	08-Dec-14	15-Dec-14	02-Jan-15	Pressure Grouting UP Track (56 nos) Average 4 Points/day with 2 machines				
1107.13430b	Pressure Grouting UP Track (56 nos) Average 4 Points/day with 2 machines	14			09-Dec-14	22-Dec-14	03-Jan-15	19-Jan-15	Pressure Grouting UP Track (56 nos) Average 4				
1107.13430c	Pressure Grouting UP Track (57 nos) Average 4 Points/day with 2 machines	15			23-Dec-14	06-Jan-15	20-Jan-15	05-Feb-15	Pressure Grouting UP Track (5				
1107.13431a	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines	14			07-Jan-15	20-Jan-15	06-Feb-15	25-Feb-15	Pressure				
1107.13431a10	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines	14			21-Jan-15	03-Feb-15	26-Feb-15	13-Mar-15	Pressure				
1107.13432	Curing of Grout (UP Track)	18			07-Jan-15	27-Jan-15	06-Feb-15	23-Feb-15	Curing of Gr				
1107.13470	Approx date of TBM Break Through (Up Track)	0	07-Oct-14		05-Feb-15		24-Feb-15*		Approx date				
Mobilisation of TBM		23	22-Apr-14	21-Jun-14	28-Oct-14	22-Nov-14	28-Oct-14 A	22-Nov-14 A	22-Nov-14 A, Mobilisation of TBM				
1107.13910	Noise Enclosure - Complete Panels Installation	23	22-Apr-14	21-Jun-14	28-Oct-14	22-Nov-14	28-Oct-14 A	22-Nov-14 A	Noise Enclosure - Complete Panels Installation				
1107.13911	Noise Enclosure - Install Air Vents	4			13-Nov-14	17-Nov-14	13-Nov-14 A	17-Nov-14 A	Noise Enclosure - Install Air Vents				
1107.21140	Delivery of last 30% of TBM Ancillary Spare Parts (30% on site)	6			01-Nov-14	07-Nov-14	01-Nov-14 A	07-Nov-14 A	Delivery of last 30% of TBM Ancillary Spare Parts (30% on site)				
Tunnel Boring Construction - UP Track		112	28-Jun-14	28-Dec-14	13-Nov-14	14-Mar-15	13-Nov-14 A	30-Mar-15	Shaft Final Set-up, Ready for Tunnel Drive				
1107.13950	Shaft Final Set-up, Ready for Tunnel Drive	5	28-Jun-14	04-Jul-14	13-Nov-14	18-Nov-14	13-Nov-14 A	18-Nov-14 A	Shaft Final Set-up, Ready for Tunnel Drive				
1107.13960	TBM Boring Next 123m	15	05-Jul-14	24-Jul-14	19-Nov-14	05-Dec-14	19-Nov-14 A	05-Dec-14	TBM Boring Next 123m				
1107.13970	Special Cutterhead Maintenance Intervention (approx Ch 97854)	2	25-Jul-14	26-Jul-14	06-Dec-14	08-Dec-14	06-Dec-14	08-Dec-14	Special Cutterhead Maintenance Intervention (approx Ch 97854)				
1107.13980	TBM Boring Next 50 m (35% complete)	7	28-Jul-14	05-Aug-14	09-Dec-14	16-Dec-14	09-Dec-14	16-Dec-14	TBM Boring Next 50 m (35% complete)				
1107.13990	C5b Up track TBM tunnel drive from Kai Tak to DIH 35% by plan length complete	0		28-Sep-14		16-Dec-14		16-Dec-14*	C5b Up track TBM tunnel drive from Kai Tak to DIH 35% by plan length complete				

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014		2015		
									Nov	Dec	Jan	Feb	Mar
1107.14000	TBM Boring Next 165 m	11	06-Aug-14	21-Aug-14	17-Dec-14	31-Dec-14	17-Dec-14	31-Dec-14			TBM Boring Next 165 m		
1107.14010	Special Cutterhead Maintenance Intervention (approx Ch 97639)	2	22-Aug-14	23-Aug-14	02-Jan-15	03-Jan-15	02-Jan-15	03-Jan-15			Special Cutterhead Maintenance Intervention (approx Ch 97639)		
1107.14020	TBM Boring Next 23 m (60%)	3	25-Aug-14	28-Aug-14	05-Jan-15	07-Jan-15	05-Jan-15	07-Jan-15			TBM Boring Next 23 m (60%)		
1107.14029	TBM Boring Next 150m	12			08-Jan-15	21-Jan-15	08-Jan-15	21-Jan-15			TBM Boring Next 150m		
1107.14030	TBM Boring Remaining 151m (100% complete) - TBM Break Through	12	29-Aug-14	06-Oct-14	22-Jan-15	04-Feb-15	06-Feb-15	23-Feb-15			TBM Boring		
1107.14032	Float Indicator against MileStone C6b	0		06-Oct-14		04-Feb-15		23-Feb-15			Float Indicator		
1107.14050	C6b Up track TBM tunnel drive from Kai Tak to DIH complete	0		28-Dec-14		04-Feb-15		23-Feb-15*			C6b Up track		
1107.14060	TBM Shield Retrieval at 1106/DIH	30	07-Oct-14	10-Nov-14	05-Feb-15	14-Mar-15	24-Feb-15	30-Mar-15					
1107.14080	UP Track Tunnel Invert & Walkway (50% Complete)	29	07-Oct-14	08-Nov-14	05-Feb-15	13-Mar-15	24-Feb-15	28-Mar-15					
Tunnel Boring Construction - DN Track		30	07-Oct-14	10-Nov-14	05-Feb-15	14-Mar-15	24-Feb-15	30-Mar-15					
1107.14140	Re-assembly of TBM Shield in Shaft	30	07-Oct-14	10-Nov-14	05-Feb-15	14-Mar-15	24-Feb-15	30-Mar-15					
Cross Passages		13	07-Oct-14	21-Oct-14	05-Feb-15	23-Feb-15	24-Feb-15	10-Mar-15					
Phase 1 - From UP Track		13	07-Oct-14	21-Oct-14	05-Feb-15	23-Feb-15	24-Feb-15	10-Mar-15					
DIH 001		13	07-Oct-14	21-Oct-14	05-Feb-15	23-Feb-15	24-Feb-15	10-Mar-15					
1107.14350	Drainage	4	07-Oct-14	10-Oct-14	05-Feb-15	09-Feb-15	24-Feb-15	27-Feb-15			Drainage		
1107.14360	Frame Installation & Rings Cutting	3	11-Oct-14	14-Oct-14	10-Feb-15	12-Feb-15	28-Feb-15	03-Mar-15			Frame		
1107.14370	Excavation	6	15-Oct-14	21-Oct-14	13-Feb-15	23-Feb-15	04-Mar-15	10-Mar-15					
DIH 002		13	07-Oct-14	21-Oct-14	05-Feb-15	23-Feb-15	24-Feb-15	10-Mar-15					
1107.14400	Drainage	4	07-Oct-14	10-Oct-14	05-Feb-15	09-Feb-15	24-Feb-15	27-Feb-15			Drainage		
1107.14410	Frame Installation & Rings Cutting	3	11-Oct-14	14-Oct-14	10-Feb-15	12-Feb-15	28-Feb-15	03-Mar-15			Frame		
1107.14420	Excavation	6	15-Oct-14	21-Oct-14	13-Feb-15	23-Feb-15	04-Mar-15	10-Mar-15					
Production of Pre - Cast Tunnel Lining		108	28-Sep-14	11-Mar-15	01-Nov-14	31-Mar-15	01-Nov-14 A	13-Mar-15					
Production of Segments		108	28-Sep-14	11-Mar-15	01-Nov-14	31-Mar-15	01-Nov-14 A	13-Mar-15					
1107.14731a	48 Rings of Segment Production (Culmalative 546) (RC)	12			01-Nov-14	14-Nov-14	01-Nov-14 A	14-Nov-14 A			48 Rings of Segment Production (Culmalative 546) (RC)		
1107.14731b	48 Rings of Segment Production (Culmalative 594) (RC)	12			15-Nov-14	28-Nov-14	15-Nov-14 A	28-Nov-14 A			48 Rings of Segment Production (Culmalative 594) (RC)		
1107.14731c	48 Rings of Segment Production (Culmalative 642) (RC)	12			29-Nov-14	12-Dec-14	29-Nov-14 A	12-Dec-14			48 Rings of Segment Production (Culmalative 642) (RC)		
1107.14732	48 Rings of Segment Production (Culmalative 690) (RC)	12	07-Oct-14	19-Dec-14	13-Dec-14	29-Dec-14	13-Dec-14	29-Dec-14			48 Rings of Segment Production (Culmalative 690) (RC)		
1107.14732a	48 Rings of Segment Production (Culmalative 738) (RC)	12			30-Dec-14	13-Jan-15	30-Dec-14	13-Jan-15			48 Rings of Segment Production (Culmalative 738) (RC)		
1107.14732b	48 Rings of Segment Production (Culmalative 786) (RC)	12			14-Jan-15	27-Jan-15	14-Jan-15	27-Jan-15			48 Rings of Segment Production (Culmalative 786) (RC)		
1107.14732c	48 Rings of Segment Production (Culmalative 834) (RC)	12			28-Jan-15	10-Feb-15	28-Jan-15	10-Feb-15			48 Rings of Segment Production (Culmalative 834) (RC)		
1107.14732d	48 Rings of Segment Production (Culmalative 882) (RC)	12			11-Feb-15	27-Feb-15	11-Feb-15	27-Feb-15			48 Rings of Segment Production (Culmalative 882) (RC)		
1107.14740	48 Rings of Segment Production (Culmalative 930) (RC) (70%)	12	20-Dec-14	11-Mar-15	28-Feb-15	13-Mar-15	28-Feb-15	13-Mar-15			48 Rings of Segment Production (Culmalative 930) (RC) (70%)		
1107.14790	C5a Manufacturing of pre-cast tunnel lining segment 20% by number complete and delivery to site	0		28-Sep-14		16-Dec-14		09-Dec-14*			C5a Manufacturing of pre-cast tunnel lining segment 20% by number complete and delivery to site		
1107.20690	Delivery of Rings 121 - 150 (5th load)	2			17-Nov-14	18-Nov-14	13-Nov-14 A	14-Nov-14 A			Delivery of Rings 121 - 150 (5th load)		
1107.20700	Delivery of Rings 151 - 180 (6th load)	2			24-Nov-14	25-Nov-14	21-Nov-14 A	22-Nov-14 A			Delivery of Rings 151 - 180 (6th load)		
1107.20710	Delivery of Rings 181 - 210 (7th load)	2			01-Dec-14	02-Dec-14	26-Nov-14 A	27-Nov-14 A			Delivery of Rings 181 - 210 (7th load)		



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Date	Revision	Checked	Approved
See 2nd Col	0	KCL	KCL

- Master Prog Baseline Bar
- Last Month Forecast Bar
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone
- Summary

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014		2015		
									Nov	Dec	Jan	Feb	Mar
1107.20720	Delivery of Rings 211 - 240 (8th load)	2			08-Dec-14	09-Dec-14	02-Dec-14	03-Dec-14		■			
1107.20730	Delivery of Rings 241 - 270 (9th load) (20%)	2			15-Dec-14	16-Dec-14	08-Dec-14	09-Dec-14		■			
1107.20740	Delivery of Rings 271 - 300	2			22-Dec-14	23-Dec-14	12-Dec-14	15-Dec-14		■			
1107.20750	Delivery of Rings 301 - 330	2			29-Dec-14	30-Dec-14	18-Dec-14	19-Dec-14		■			
1107.20760	Delivery of Rings 331 - 360	2			05-Jan-15	06-Jan-15	24-Dec-14	25-Dec-14		■			
1107.20770	Delivery of Rings 361 - 390	2			12-Jan-15	13-Jan-15	26-Dec-14	29-Dec-14		■			
1107.20780	Delivery of Rings 391 - 420	2			19-Jan-15	20-Jan-15	01-Jan-15	02-Jan-15		■			
1107.20790	Delivery of Rings 421 - 450	2			26-Jan-15	27-Jan-15	07-Jan-15	08-Jan-15		■			
1107.20800	Delivery of Rings 451 - 480	2			02-Feb-15	03-Feb-15	13-Jan-15	14-Jan-15		■			
1107.20810	Delivery of Rings 481 - 510	2			09-Feb-15	10-Feb-15	19-Jan-15	20-Jan-15		■			
1107.20820	Delivery of Rings 511 - 540	2			16-Feb-15	17-Feb-15	23-Jan-15	26-Jan-15		■			
1107.20830	Delivery of Rings 541 - 570	2			23-Feb-15	24-Feb-15	29-Jan-15	30-Jan-15		■			
1107.20840	Delivery of Rings 571 - 600	2			02-Mar-15	03-Mar-15	04-Feb-15	05-Feb-15		■			
1107.20850	Delivery of Rings 601 - 630	2			09-Mar-15	10-Mar-15	10-Feb-15	11-Feb-15		■			
1107.20860	Delivery of Rings 631 - 660	2			16-Mar-15	17-Mar-15	17-Feb-15	18-Feb-15		■			
1107.20910	Delivery of Rings 661 - 690	2			23-Mar-15	24-Mar-15	24-Feb-15	25-Feb-15		■			
1107.20920	Delivery of Rings 691 - 720	2			30-Mar-15	31-Mar-15	03-Mar-15	04-Mar-15		■			

Cost Centre D - KAT Cut & Cover Tunnels

Excavation & C&C Tunnel Structure

C&C Tunnel Structure (Previously Boxes 2B & 1B)

ELS Section 1 & 2

1107.16490	Excavate to Formation Level Section 2	4	26-Sep-14	30-Sep-14	01-Nov-14	05-Nov-14	01-Nov-14 A	05-Nov-14 A
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ELS Section 3 & 4

1107.16680	Excavate to Formation Level Section 3	4	11-Oct-14	15-Oct-14	04-Nov-14	07-Nov-14	04-Nov-14 A	07-Nov-14 A
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1107.16690	Excavate to Formation Level Section 4	4	22-Oct-14	25-Oct-14	08-Nov-14	12-Nov-14	08-Nov-14 A	12-Nov-14 A
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1107.16770	Install Strut S4 Section 4	8	11-Oct-14	21-Oct-14	08-Nov-14	17-Nov-14	08-Nov-14 A	17-Nov-14 A
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Tunnel Structure

1107.16775c	Fabrication of Steel Forms	12			06-Nov-14	19-Nov-14	06-Nov-14 A	19-Nov-14 A
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1107.16778	Plate Load Test	5			06-Nov-14	11-Nov-14	06-Nov-14 A	11-Nov-14 A
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1107.16780	Base Slab & Mass Concrete backfill Section 1	8	27-Oct-14	04-Nov-14	12-Nov-14	20-Nov-14	12-Nov-14 A	06-Dec-14
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1107.16790	Base Slab & Mass Concrete backfill Section 2	8	05-Nov-14	13-Nov-14	21-Nov-14	29-Nov-14	21-Nov-14 A	06-Dec-14
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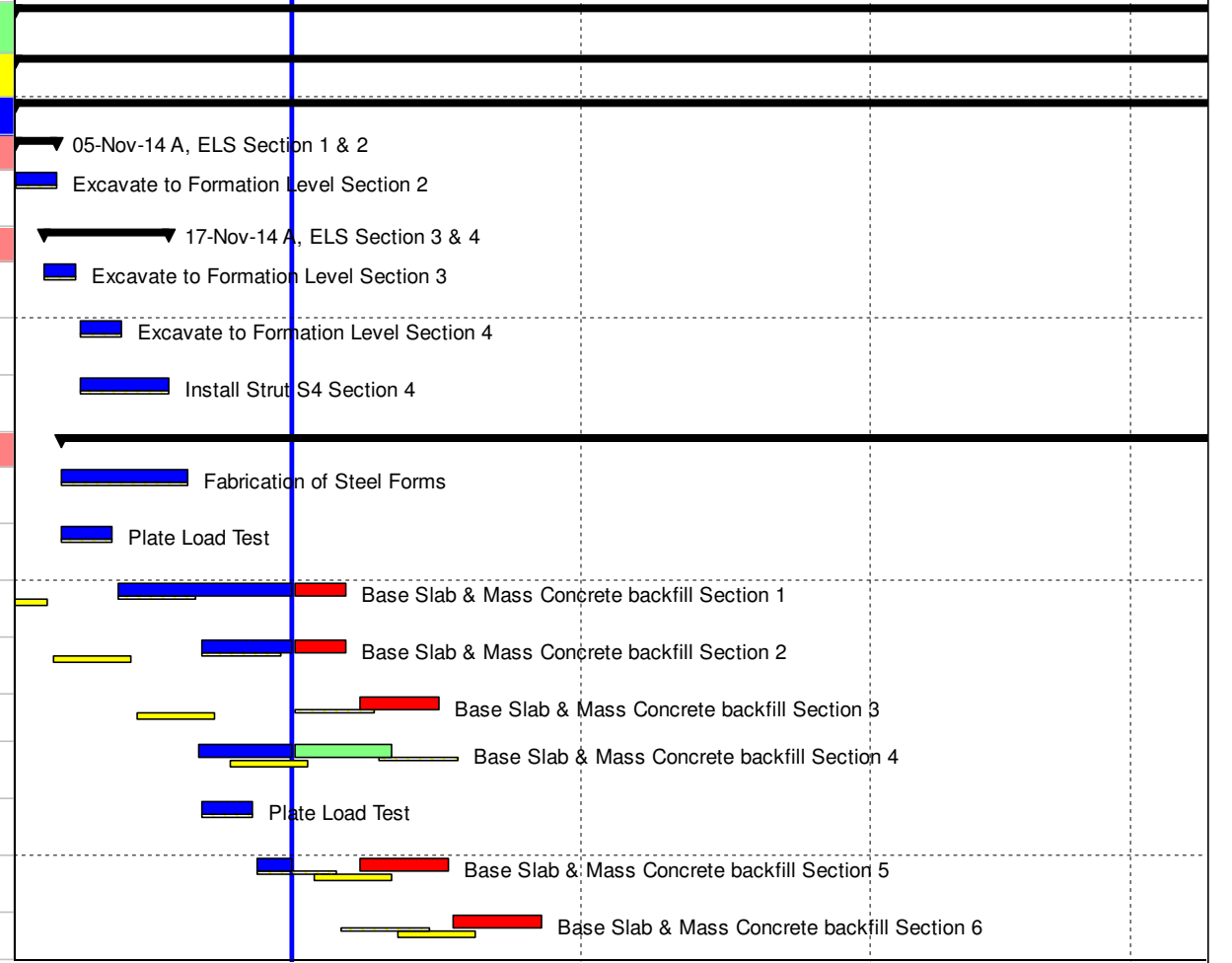
1107.16800	Base Slab & Mass Concrete backfill Section 3	8	14-Nov-14	22-Nov-14	01-Dec-14	09-Dec-14	08-Dec-14	16-Dec-14
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1107.16810	Base Slab & Mass Concrete backfill Section 4	8	24-Nov-14	02-Dec-14	10-Dec-14	18-Dec-14	21-Nov-14 A	11-Dec-14
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1107.16818	Plate Load Test	5			21-Nov-14	26-Nov-14	21-Nov-14 A	26-Nov-14 A
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1107.16820	Base Slab & Mass Concrete backfill Section 5	8	03-Dec-14	11-Dec-14	27-Nov-14	05-Dec-14	27-Nov-14 A	17-Dec-14
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1107.16830	Base Slab & Mass Concrete backfill Section 6	7	12-Dec-14	20-Dec-14	06-Dec-14	15-Dec-14	18-Dec-14	27-Dec-14
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Date	Revision	Checked	Approved
See 2nd Col	0	KCL	KCL

- Master Prog Baseline Bar
- ◆ Milestone
- ▬ Last Month Forecast Bar
- ▼ Summary
- Actual Work
- Remaining Work
- Critical Remaining Work

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014					2015				
									Nov	Dec	Jan	Feb	Mar					
1107.16840	Base Slab & Mass Concrete backfill Section 7	7	22-Dec-14	02-Jan-15	16-Dec-14	24-Dec-14	29-Dec-14	06-Jan-15										
1107.16850	Remove Struts S4 Section 1	5	05-Nov-14	10-Nov-14	21-Nov-14	26-Nov-14	08-Dec-14	12-Dec-14										
1107.16860	Remove Struts S4 Section 2	5	14-Nov-14	19-Nov-14	01-Dec-14	05-Dec-14	08-Dec-14	12-Dec-14										
1107.16870	Remove Struts S4 Section 3	5	24-Nov-14	28-Nov-14	10-Dec-14	15-Dec-14	17-Dec-14	22-Dec-14										
1107.16880	Remove Struts S4 Section 4	5	03-Dec-14	08-Dec-14	19-Dec-14	24-Dec-14	12-Dec-14	17-Dec-14										
1107.16890	Remove Struts S4 Section 5	5	12-Dec-14	17-Dec-14	06-Dec-14	11-Dec-14	18-Dec-14	23-Dec-14										
1107.16900	Remove Struts S4 Section 6	5	22-Dec-14	29-Dec-14	16-Dec-14	20-Dec-14	29-Dec-14	03-Jan-15										
1107.16910	Remove Struts S4 Section 7	5	03-Jan-15	08-Jan-15	27-Dec-14	02-Jan-15	07-Jan-15	12-Jan-15										
1107.16920	Walls to Strut S3 Section 1	8	11-Nov-14	19-Nov-14	27-Nov-14	05-Dec-14	13-Dec-14	22-Dec-14										
1107.16930	Walls to Strut S3 Section 2	8	20-Nov-14	28-Nov-14	06-Dec-14	15-Dec-14	23-Dec-14	03-Jan-15										
1107.16940	Walls to Strut S3 Section 3	8	29-Nov-14	08-Dec-14	16-Dec-14	24-Dec-14	05-Jan-15	13-Jan-15										
1107.16950	Walls to Strut S3 Section 4	8	09-Dec-14	17-Dec-14	27-Dec-14	06-Jan-15	14-Jan-15	22-Jan-15										
1107.16960	Walls to Strut S3 Section 5	8	18-Dec-14	29-Dec-14	12-Dec-14	20-Dec-14	24-Dec-14	05-Jan-15										
1107.16970	Walls to Strut S3 Section 6	8	30-Dec-14	08-Jan-15	22-Dec-14	02-Jan-15	06-Jan-15	14-Jan-15										
1107.16980	Walls to Strut S3 Section 7	8	09-Jan-15	17-Jan-15	03-Jan-15	12-Jan-15	15-Jan-15	23-Jan-15										
1107.16990	Internal Re-strut & Waterproofing to Strut S3 Section 1	6	20-Nov-14	26-Nov-14	06-Dec-14	12-Dec-14	23-Dec-14	31-Dec-14										
1107.17000	Internal Re-strut & Waterproofing to Strut S3 Section 2	6	29-Nov-14	05-Dec-14	16-Dec-14	22-Dec-14	05-Jan-15	10-Jan-15										
1107.17010	Internal Re-strut & Waterproofing to Strut S3 Section 3	6	09-Dec-14	15-Dec-14	27-Dec-14	03-Jan-15	14-Jan-15	20-Jan-15										
1107.17020	Internal Re-strut & Waterproofing to Strut S3 Section 4	6	18-Dec-14	24-Dec-14	07-Jan-15	13-Jan-15	23-Jan-15	29-Jan-15										
1107.17030	Internal Re-strut & Waterproofing to Strut S3 Section 5	6	30-Dec-14	06-Jan-15	22-Dec-14	30-Dec-14	06-Jan-15	12-Jan-15										
1107.17040	Internal Re-strut & Waterproofing to Strut S3 Section 6	6	09-Jan-15	15-Jan-15	03-Jan-15	09-Jan-15	15-Jan-15	21-Jan-15										
1107.17050	Internal Re-strut & Waterproofing to Strut S3 Section 7	6	19-Jan-15	24-Jan-15	13-Jan-15	19-Jan-15	24-Jan-15	30-Jan-15										
1107.17060	Backfill to S3 & Remove Strut S3 Section 1	6	27-Nov-14	03-Dec-14	13-Dec-14	19-Dec-14	02-Jan-15	08-Jan-15										
1107.17070	Backfill to S3 & Remove Strut S3 Section 2	6	06-Dec-14	12-Dec-14	23-Dec-14	31-Dec-14	12-Jan-15	17-Jan-15										
1107.17080	Backfill to S3 & Remove Strut S3 Section 3	6	16-Dec-14	22-Dec-14	05-Jan-15	10-Jan-15	21-Jan-15	27-Jan-15										
1107.17090	Backfill to S3 & Remove Strut S3 Section 4	6	27-Dec-14	03-Jan-15	14-Jan-15	20-Jan-15	30-Jan-15	05-Feb-15										
1107.17100	Backfill to S3 & Remove Strut S3 Section 5	6	07-Jan-15	13-Jan-15	31-Dec-14	07-Jan-15	13-Jan-15	19-Jan-15										
1107.17110	Backfill to S3 & Remove Strut S3 Section 6	6	16-Jan-15	22-Jan-15	10-Jan-15	16-Jan-15	22-Jan-15	28-Jan-15										
1107.17120	Backfill to S3 & Remove Strut S3 Section 7	6	26-Jan-15	31-Jan-15	20-Jan-15	26-Jan-15	31-Jan-15	06-Feb-15										
1107.17130	Roof Slab Section 1	9	04-Dec-14	13-Dec-14	20-Dec-14	02-Jan-15	09-Jan-15	19-Jan-15										
1107.17140	Roof Slab Section 2	9	13-Dec-14	23-Dec-14	02-Jan-15	12-Jan-15	19-Jan-15	28-Jan-15										
1107.17150	Roof Slab Section 3	9	23-Dec-14	05-Jan-15	12-Jan-15	21-Jan-15	28-Jan-15	06-Feb-15										
1107.17160	Roof Slab Section 4	9	05-Jan-15	14-Jan-15	21-Jan-15	30-Jan-15	06-Feb-15	16-Feb-15										
1107.17170	Roof Slab Section 5	9	14-Jan-15	23-Jan-15	08-Jan-15	17-Jan-15	20-Jan-15	29-Jan-15										
1107.17180	Roof Slab Section 6	9	23-Jan-15	02-Feb-15	17-Jan-15	27-Jan-15	29-Jan-15	07-Feb-15										
1107.17190	Roof Slab Section 7	9	02-Feb-15	11-Feb-15	27-Jan-15	05-Feb-15	07-Feb-15	17-Feb-15										
1107.17200	Waterproofing, Backfill & Remove Strut S2 Section 1	7	15-Dec-14	22-Dec-14	03-Jan-15	10-Jan-15	20-Jan-15	27-Jan-15										

 	Data Date 01-Dec-14	MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme Data Date 01-Dec-14	Date	Revision	Checked	Approved	Master Prog Baseline Bar ◆ Milestone Last Month Forecast Bar Summary Actual Work Remaining Work Critical Remaining Work
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	SCL1107 M-3MR-021						
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Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014		2015		
									Nov	Dec	Jan	Feb	Mar
1107.17210	Waterproofing, Backfill & Remove Strut S2 Section 2	7	24-Dec-14	03-Jan-15	13-Jan-15	20-Jan-15	29-Jan-15	05-Feb-15					
1107.17220	Waterproofing, Backfill & Remove Strut S2 Section 3	7	06-Jan-15	13-Jan-15	22-Jan-15	29-Jan-15	07-Feb-15	14-Feb-15					
1107.17230	Waterproofing, Backfill & Remove Strut S2 Section 4	7	15-Jan-15	22-Jan-15	31-Jan-15	07-Feb-15	17-Feb-15	27-Feb-15					
1107.17240	Waterproofing, Backfill & Remove Strut S2 Section 5	7	24-Jan-15	31-Jan-15	19-Jan-15	26-Jan-15	30-Jan-15	06-Feb-15					
1107.17250	Waterproofing, Backfill & Remove Strut S2 Section 6	7	03-Feb-15	10-Feb-15	28-Jan-15	04-Feb-15	09-Feb-15	16-Feb-15					
1107.17260	Waterproofing, Backfill & Remove Strut S2 Section 7	7	12-Feb-15	23-Feb-15	06-Feb-15	13-Feb-15	18-Feb-15	28-Feb-15					
1107.17340	Strip Formwork & Undertrack/Walkway Slab - UP Track	14	03-Feb-15	18-Feb-15	31-Jan-15	16-Feb-15	17-Feb-15	07-Mar-15					
1107.17380	P-Way Opening Retaining Walls to S1 Level	12	05-Jan-15	17-Jan-15	21-Jan-15	03-Feb-15	30-Jan-15	12-Feb-15					
1107.17390	Waterproofing & Backfill to S1 Level & Remove Strut S1 Section 1 - 4	12	23-Jan-15	05-Feb-15	09-Feb-15	25-Feb-15	24-Feb-15	09-Mar-15					
1107.17391	Backfill to S1 Level & Remove Strut S1 Section 5 - 7	12	24-Feb-15	09-Mar-15	14-Feb-15	03-Mar-15	02-Mar-15	14-Mar-15					
Cost Centre F3 - Utilities Protection / Div		80	29-Jun-14	29-Aug-14	01-Nov-14	22-Jan-15	01-Nov-14 A	06-Feb-15	06-Feb-15, Cost Centre F3 - U				
Diversion/ Replacement of WaterMains at Choi		80	29-Jun-14	29-Aug-14	01-Nov-14	22-Jan-15	01-Nov-14 A	06-Feb-15	06-Feb-15, Diversion/ Replace				
1107.17680	F5b Complete road reinstatement of Choi Hung Road (East)	0		29-Jun-14		02-Jan-15		02-Jan-15*	◆ F5b Complete road reinstatement of Choi Hung Road (East)				
1107.17690	F5a Complete water main replacement at Choi Hung Road (East) and accepted by WSD and relevant Governments	0		29-Jun-14		02-Jan-15		02-Jan-15*	◆ F5a Complete water main replacement at Choi Hung Road (East)				
Trial Holes and Pipe Installation		45			01-Nov-14	23-Dec-14	01-Nov-14 A	23-Dec-14	23-Dec-14, Trial Holes and Pipe Installation				
1107.20271	TP11 Lane 3 - TTMS	9			01-Nov-14	11-Nov-14	01-Nov-14 A	11-Nov-14 A	TP11 Lane 3 - TTMS				
1107.20271a	TP11 Lane 3 - Excavation	12			12-Nov-14	25-Nov-14	12-Nov-14 A	25-Nov-14 A	TP11 Lane 3 - Excavation				
1107.20271b	TP11 Lane 3 - Pipeworks	12			26-Nov-14	09-Dec-14	26-Nov-14 A	09-Dec-14	TP11 Lane 3 - Pipeworks				
1107.20271c	TP11 Lane 3 - Reinstatement of Roads	12			10-Dec-14	23-Dec-14	10-Dec-14	23-Dec-14	TP11 Lane 3 - Reinstatement of Roads				
1107.20280	TP03 Traffic Island (North) -(24hrs) - TTMS	9			01-Nov-14	11-Nov-14	01-Nov-14 A	11-Nov-14 A	TP03 Traffic Island (North) -(24hrs) - TTMS				
1107.20280a	TP03 Traffic Island (North) -(24hrs) - Excavation	12			12-Nov-14	25-Nov-14	12-Nov-14 A	25-Nov-14 A	TP03 Traffic Island (North) -(24hrs) - Excavation				
1107.20280b	TP03 Traffic Island (North) -(24hrs) - Pipeworks	12			26-Nov-14	09-Dec-14	26-Nov-14 A	09-Dec-14	TP03 Traffic Island (North) -(24hrs) - Pipeworks				
1107.20280c	TP03 Traffic Island (North) -(24hrs) - Reinstatement of Roads	12			10-Dec-14	23-Dec-14	10-Dec-14	23-Dec-14	TP03 Traffic Island (North) -(24hrs) - Reinstatement of Roads				
Testing		16			10-Dec-14	30-Dec-14	10-Dec-14	30-Dec-14	30-Dec-14, Testing				
1107.20290	Hydrostatic Pressure Test	6			10-Dec-14	16-Dec-14	10-Dec-14	16-Dec-14	Hydrostatic Pressure Test				
1107.20300	Pipe Swabbing to Pipelines	4			17-Dec-14	20-Dec-14	17-Dec-14	20-Dec-14	Pipe Swabbing to Pipelines				
1107.20310	CCTV Inspection of Pipelines	2			17-Dec-14	18-Dec-14	17-Dec-14	18-Dec-14	CCTV Inspection of Pipelines				
1107.20320	FW450 Sterillisation of Pipelines	6			22-Dec-14	30-Dec-14	22-Dec-14	30-Dec-14	FW450 Sterillisation of Pipelines				
Connection of FW & SW		45	29-Aug-14	29-Aug-14	12-Dec-14	22-Jan-15	12-Dec-14	06-Feb-15	06-Feb-15, Connection of FW				
1107.17700	Approx date of TBM Pass Through (Up Track)	0	29-Aug-14		22-Jan-15		06-Feb-15*		◆ Approx date of TBM Pass Thr				
1107.20330	Notification for Connection	14			12-Dec-14	30-Dec-14	12-Dec-14	30-Dec-14	Notification for Connection				
1107.20340	Connection to Existing Pipeline	2			31-Dec-14	02-Jan-15	31-Dec-14	02-Jan-15	Connection to Existing Pipeline				
Cost Centre G CEDD Entrusted Works		101	16-May-14	03-Nov-14	03-Nov-14	09-Jan-15	03-Nov-14 A	06-Mar-15					
New Reprovisioned Culvert		101	16-May-14	03-Nov-14	03-Nov-14	09-Jan-15	03-Nov-14 A	06-Mar-15					
North Section of Culvert		101	16-May-14	03-Nov-14	03-Nov-14	09-Jan-15	03-Nov-14 A	06-Mar-15					
1107.18290	Excavation for North Section of New Culvert	8	16-May-14	24-May-14	17-Nov-14	25-Nov-14	12-Jan-15*	20-Jan-15	Excavation for North Section of New Culvert				



Date	Revision	Checked	Approved
See 2nd Col	0	KCL	KCL

- █ Master Prog Baseline Bar
- █ Last Month Forecast Bar
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ▼ Summary

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2014		2015		
									Nov	Dec	Jan	Feb	Mar
1107.18300	Bay 4 Sub base, Blinding & Base Slab	10	26-May-14	06-Jun-14	26-Nov-14	06-Dec-14	21-Jan-15	31-Jan-15					
1107.18310	Bay 4 Walls	12	07-Jun-14	20-Jun-14	08-Dec-14	20-Dec-14	02-Feb-15	14-Feb-15					
1107.18320	Bay 4 Roof Slab	14	21-Jun-14	08-Jul-14	22-Dec-14	09-Jan-15	16-Feb-15	06-Mar-15					
1107.18375	(Predicted) Commencement of 2014/2015 Dry Season	0	03-Nov-14		03-Nov-14		03-Nov-14 A						

◆ (Predicted) Commencement of 2014/2015 Dry Season

**APPENDIX B
ACTION AND LIMIT LEVELS**

APPENDIX B – Action and Limit Levels**24-Hour TSP**

Regular Dust Monitoring Location	Description	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
DMS-4 ⁽¹⁾⁽³⁾ / DMS-3 ⁽²⁾⁽³⁾	Block 1, Rhythm Garden	160.4	260

Note:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Dust monitoring on DMS-3⁽¹⁾/DMS-4⁽²⁾ is carried out by Environmental Team of SCL Works Contract 1106.

Construction Noise

Regular Construction Noise Monitoring Location⁽¹⁾	Description	Time Period	Action Level	Limit Level
NMS-CA-4 ⁽¹⁾⁽⁵⁾ / NMS-CA-3 ⁽²⁾⁽⁵⁾	Block 1, Rhythm Garden (north-eastern façade)	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)
NMS-CA-5 ⁽¹⁾⁽³⁾⁽⁵⁾ / NMS-CA-2 ⁽²⁾⁽³⁾⁽⁵⁾	Block 1, Rhythm Garden (northern façade)			65 / 70 dB(A) ⁽⁴⁾

Note:

- (1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.
- (4) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.
- (5) Noise monitoring on Block 1, Rhythm Garden are carried out by Environmental Team of SCL Works Contract 1106.

**APPENDIX C
CALIBRATION CERTIFICATES FOR
MONITORING EQUIPEMENT**

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0010

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 23-Oct-14 Next Due Date: 22-Dec-14
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	295.3	Pressure, Pa (mmHg)	765.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.7	3.45	59.68	7.8	2.82
2	8.8	2.99	51.82	5.7	2.41
3	7.6	2.78	48.19	5.0	2.25
4	4.6	2.16	37.58	3.1	1.78
5	3.2	1.80	31.42	2.0	1.43

By Linear Regression of Y on X

Slope, mw = 0.0482 Intercept, bw : -0.0685
 Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.95

Remarks: _____

Conducted by: Wk Tang Signature: [Signature]
 Checked by: [Signature] Signature: [Signature]

Date: 23/10/14
 Date: 23 October 2014

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0011

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 22-Dec-14 Next Due Date: 21-Feb-15
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	286.7	Pressure, Pa (mmHg)	771.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	26-Sep-15				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.53	61.04	8.2	2.94
2	9.1	3.10	53.66	6.2	2.56
3	7.2	2.76	47.78	5.1	2.32
4	5.2	2.34	40.67	3.4	1.89
5	3.2	1.84	31.99	2.0	1.45

By Linear Regression of Y on X

Slope, mw = 0.0513 Intercept, bw = -0.1796

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.89

Remarks: _____

Conducted by: Wk Tang Signature: Kwai Date: 22/12/14
 Checked by: A Signature: _____ Date: 22 December 2014

TEST REPORT

Description Calibration Orifice
Serial No. 0993
Model No. TE-5025A
Date 27 September 2014

Manufacturer TISCH
Temperature, Ta (K) 299
Pressure, Pa (mmHg) 761.8
Equipment No.: A-04-04

Plate	Diff.Vol (m ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

Qstd Slope (m) = 2.05398
Intercept (b) = -0.02487
Coefficient (r) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

Qa Slope (m) = 1.28617
Intercept (b) = -0.01559
Coefficient (r) = 0.99996

CALCULATIONS

$V_{std} = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/760](298/\text{Ta})$
 $Q_{std} = V_{std}/\text{Time}$
 $V_a = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/\text{Pa}]$
 $Q_a = V_a/\text{Time}$

For subsequent flow rate calculations:

$Q_{std} = l/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))]-b\}$
 $Q_a = l/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))]-b\}$

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140919/1
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140104
Date of Issue:	2014-01-05
Date Received:	2014-01-04
Date Tested:	2014-01-04
Date Completed:	2014-01-05
Next Due Date:	2015-01-04

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 14303
Microphone No.	: 35222
Equipment No.	: N-08-05

Test conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 52%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

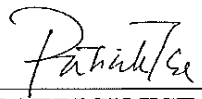
In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

Remark: 1) This report supersedes the one dated 2012/01/21 with certificate number C/N/120120/1.

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141129/1_v1
Date of Issue:	2014-12-01
Date Received:	2014-11-29
Date Tested:	2014-11-29
Date Completed:	2014-12-01
Next Due Date:	2015-11-30

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141003/1
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141003/2
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/141003/3
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

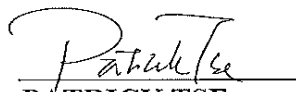
The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/140822/2
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 64%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

APPENDIX D
IMPACT MONITORING SCHEDULE

**Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tuk Tunnels
Impact Air Quality and Noise Monitoring Schedule for December 2014**

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)

NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

**Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tuk Tunnels
Tentative Impact Air Quality and Noise Monitoring Schedule for January 2015**

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

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)

NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

**APPENDIX E
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONIS**

Appendix E - 24-hour TSP Monitoring Results

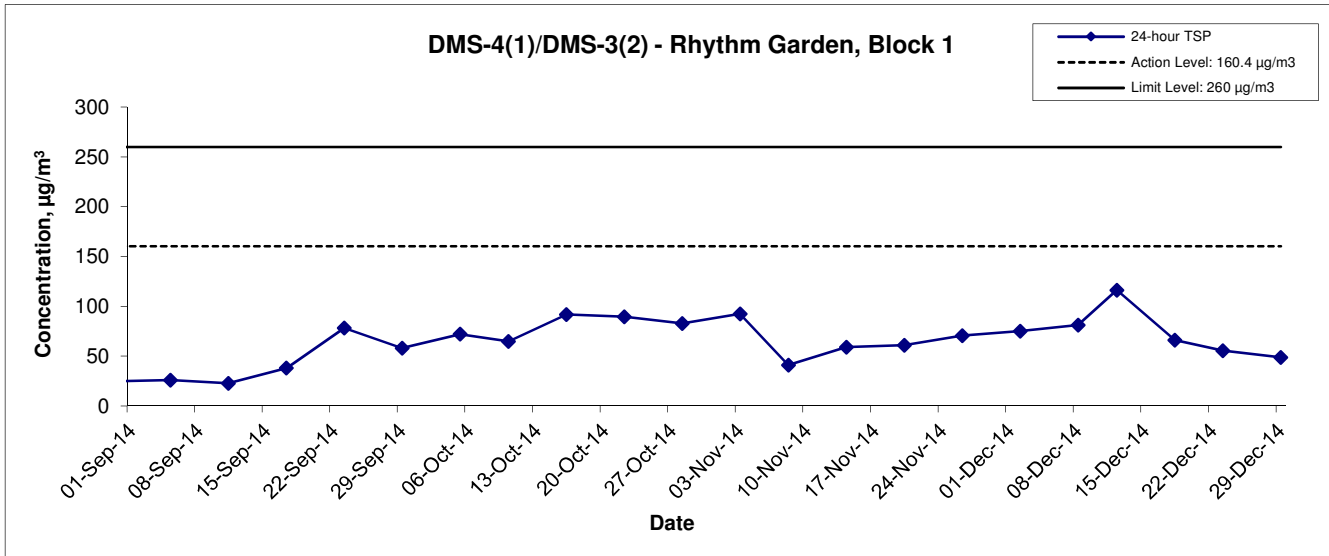
Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
					Initial	Final		Initial	Final		Initial	Final			
2-Dec-14	9:00	Cloudy	287.6	768.8	3.2423	3.3770	0.1347	3494.2	3518.2	24.0	1.24	1.24	1.24	1789.3	75.3
8-Dec-14	9:00	Cloudy	288.1	769.5	3.1809	3.3264	0.1455	3518.2	3542.2	24.0	1.24	1.24	1.24	1788.4	81.4
12-Dec-14	9:00	Cloudy	286.6	772.6	3.1675	3.3764	0.2089	3542.2	3566.2	24.0	1.25	1.25	1.25	1796.5	116.3
18-Dec-14	9:00	Cloudy	284.1	774.3	3.2249	3.3444	0.1195	3566.2	3590.2	24.0	1.25	1.25	1.25	1805.9	66.2
23-Dec-14	9:00	Cloudy	286.9	770.0	3.2813	3.3788	0.0975	3590.2	3614.2	24.0	1.22	1.22	1.22	1752.0	55.7
29-Dec-14	11:00	Cloudy	290.4	763.6	3.2757	3.3606	0.0849	3614.2	3638.2	24.0	1.21	1.21	1.21	1735.6	48.9
														Min	48.9
														Max	116.3
														Average	73.9

Remarks:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

24-hour TSP Concentration Levels



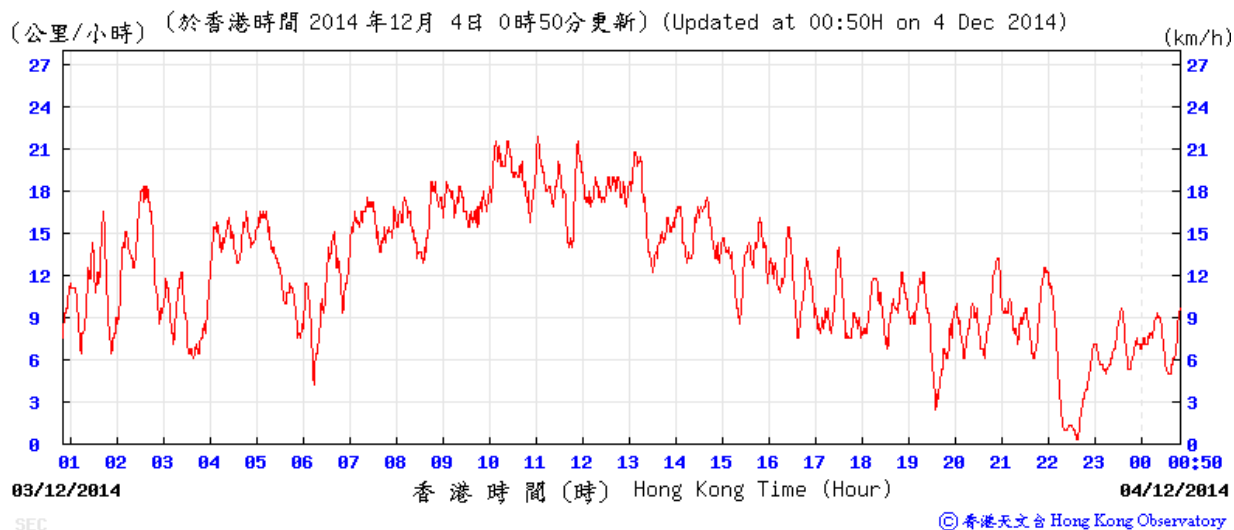
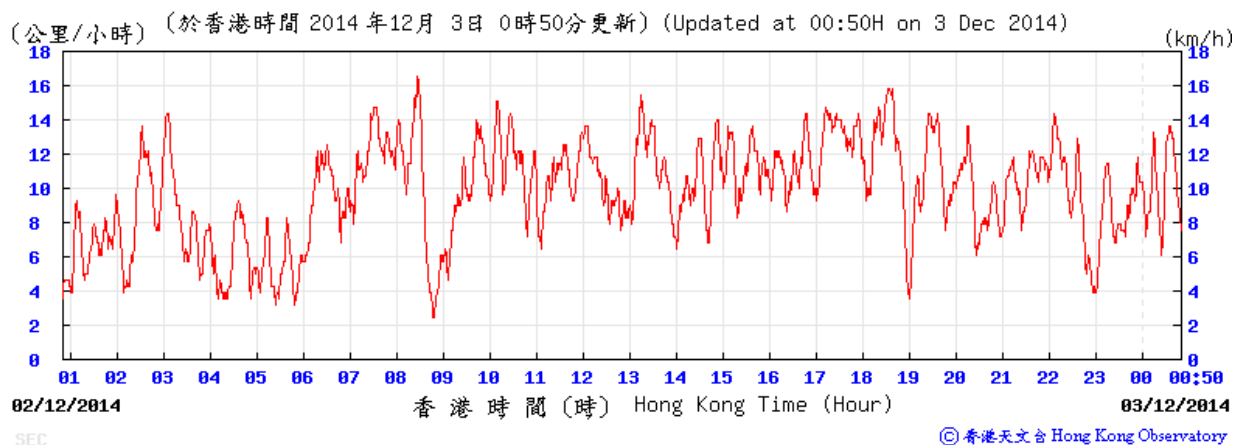
Remarks:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Title Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tuk Tunnels Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA13018	
	Date Jan 14	Appendix E	

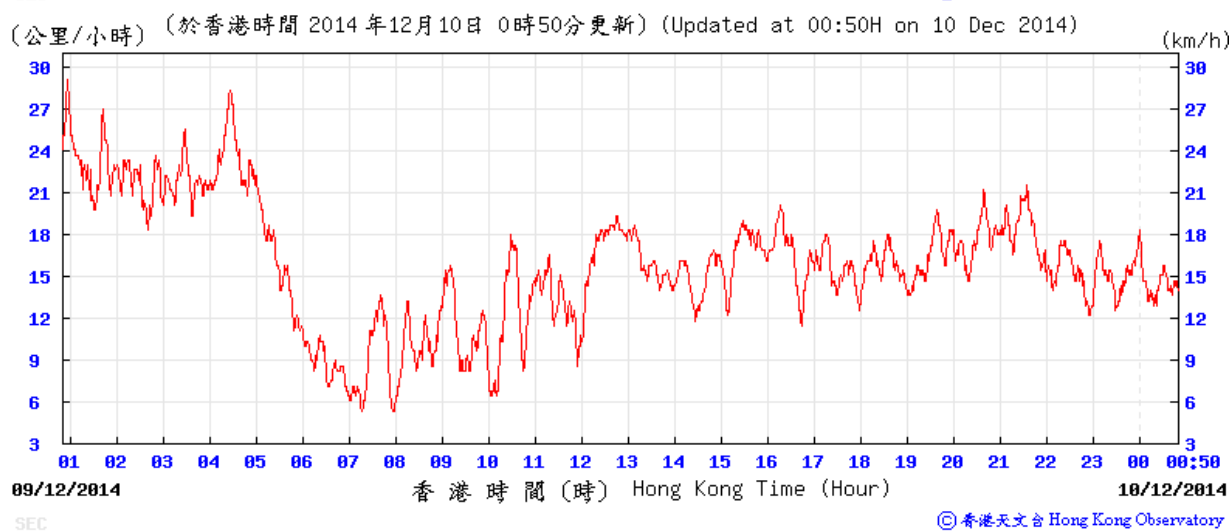
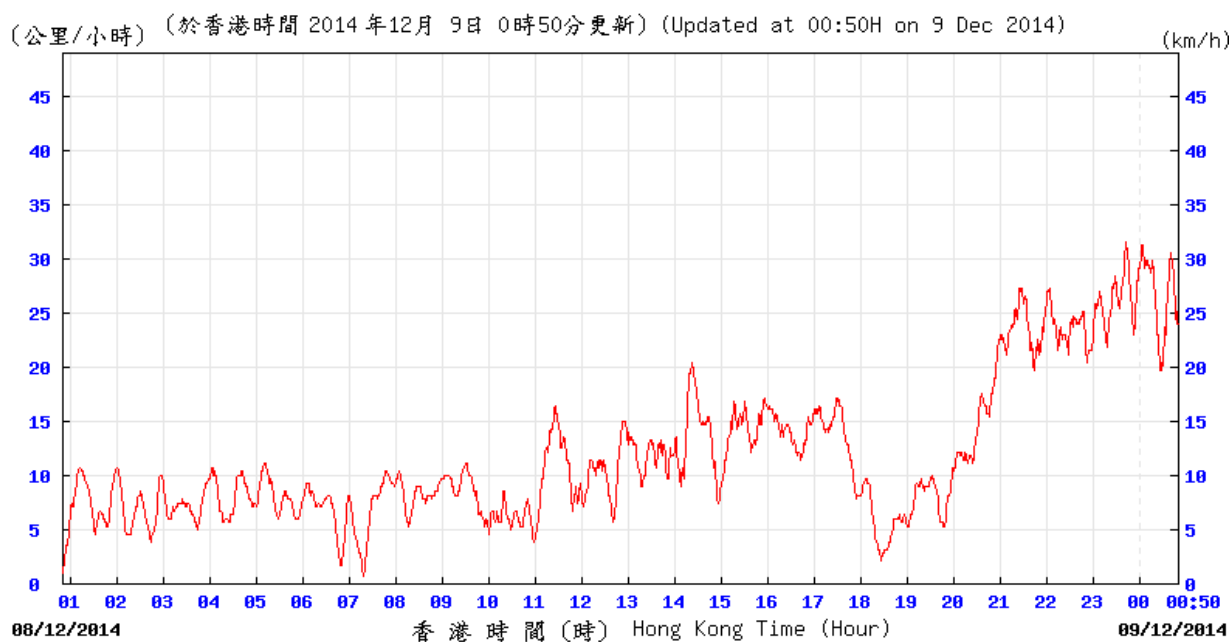
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 December 2014



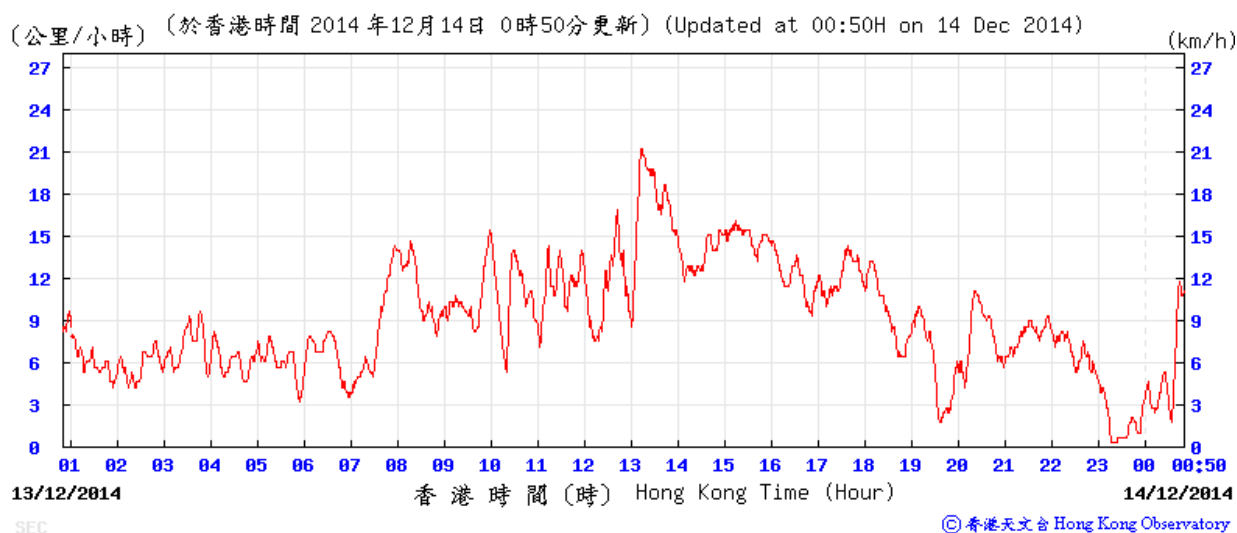
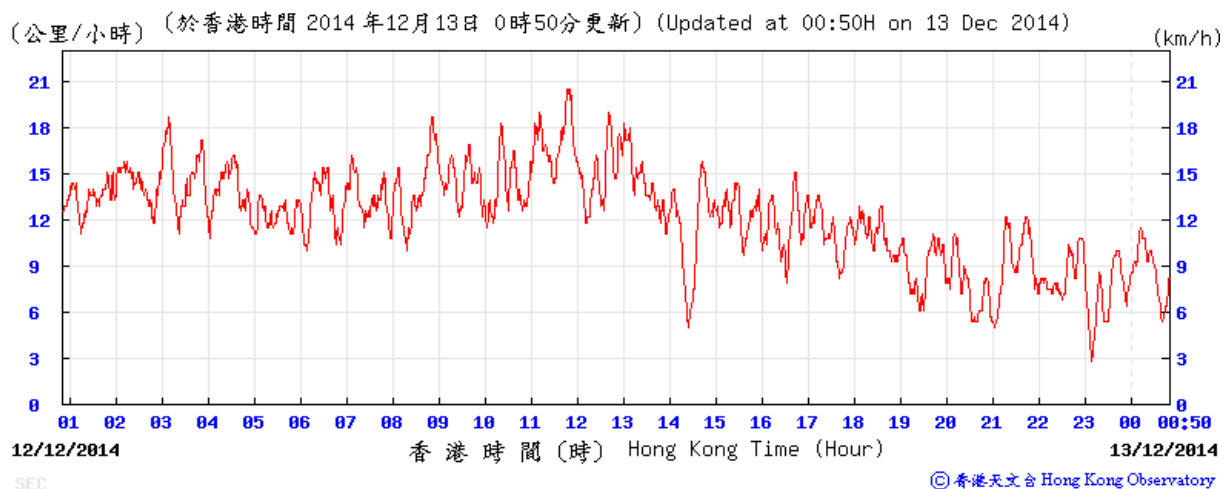
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

8-9 December 2014



Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

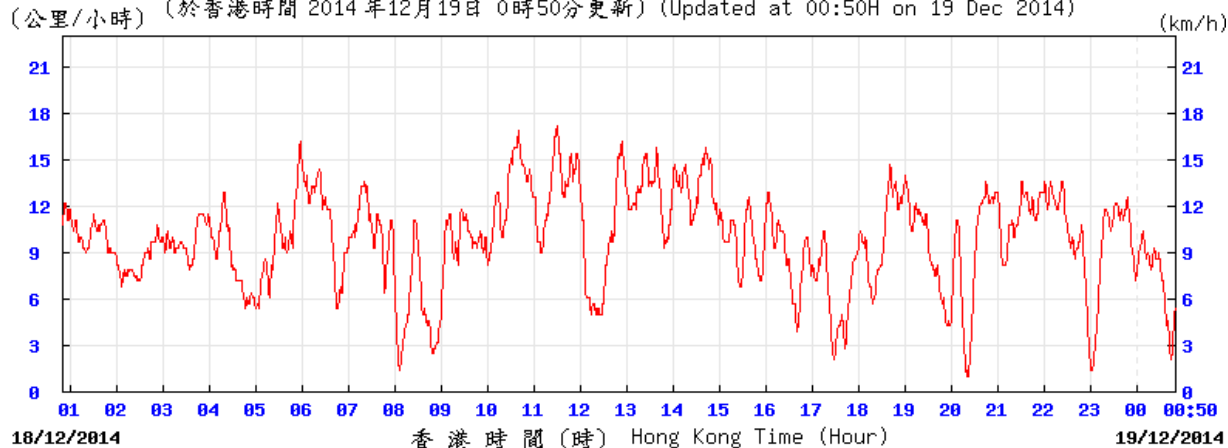
12-13 December 2014



Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

18-19 December 2014

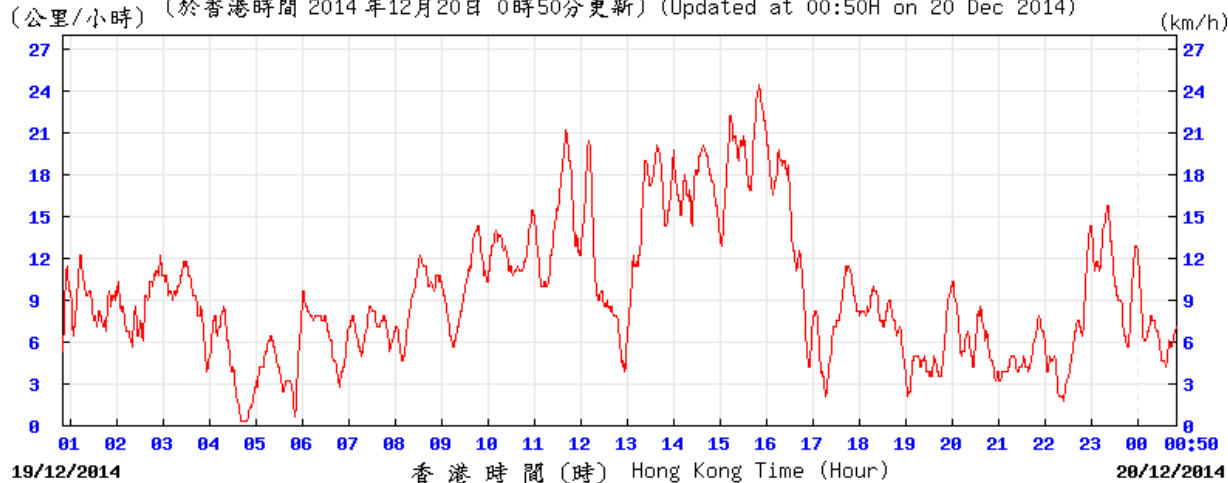
(公里/小時) (於香港時間 2014 年12月19日 0時50分更新) (Updated at 00:50H on 19 Dec 2014)



SEC

© 香港天文台 Hong Kong Observatory

(公里/小時) (於香港時間 2014 年12月20日 0時50分更新) (Updated at 00:50H on 20 Dec 2014)

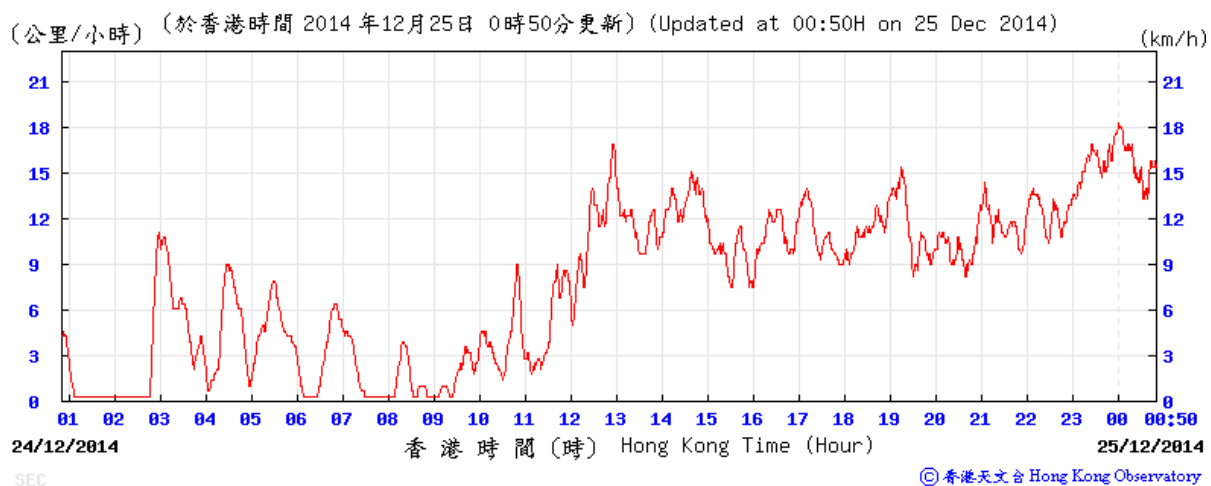
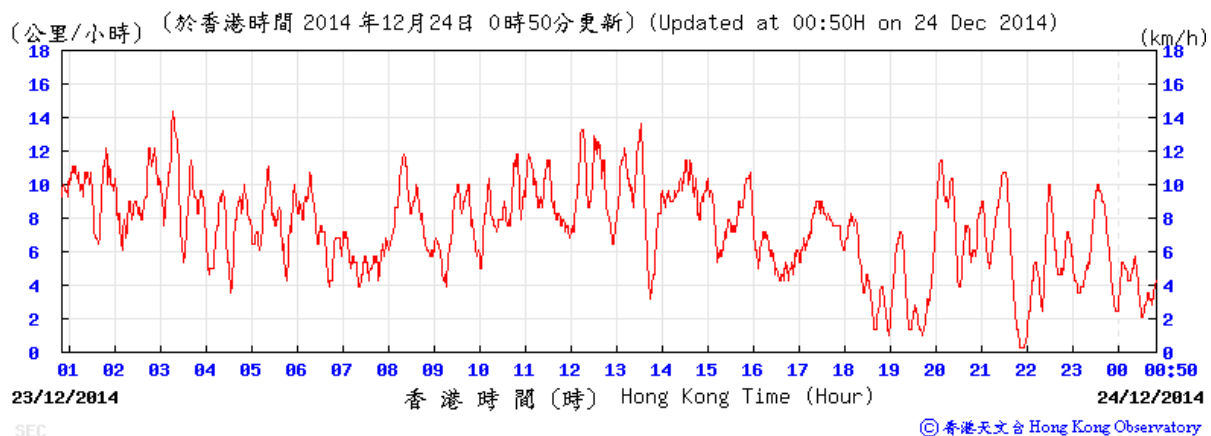


SEC

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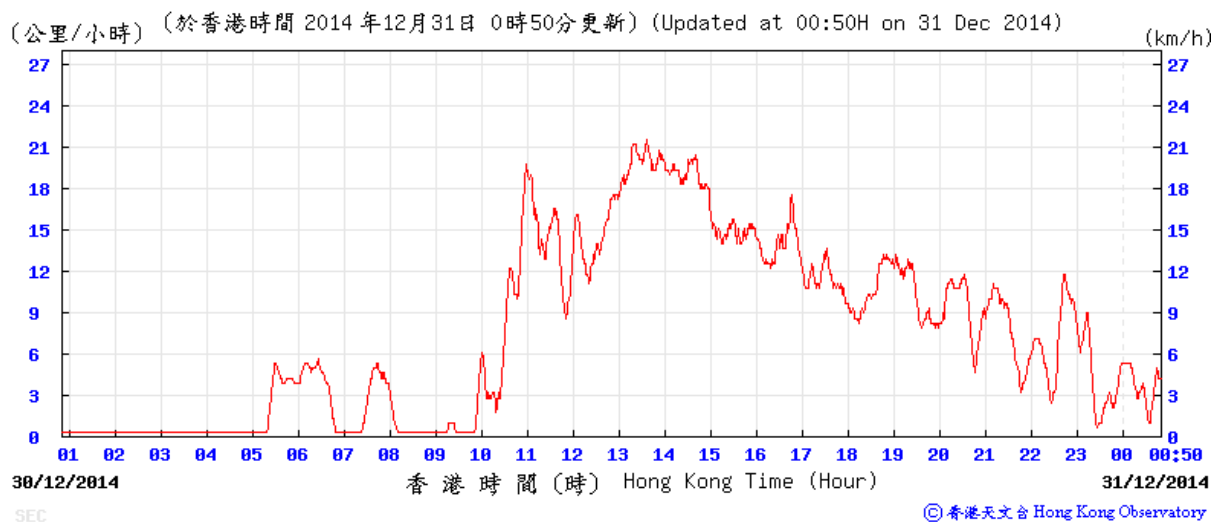
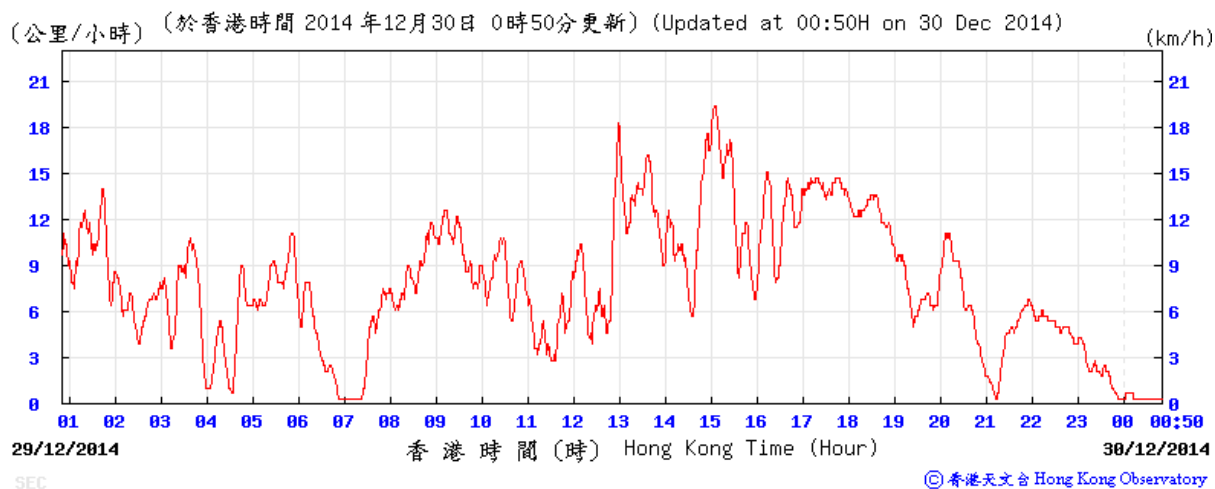
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

23-24 December 2014



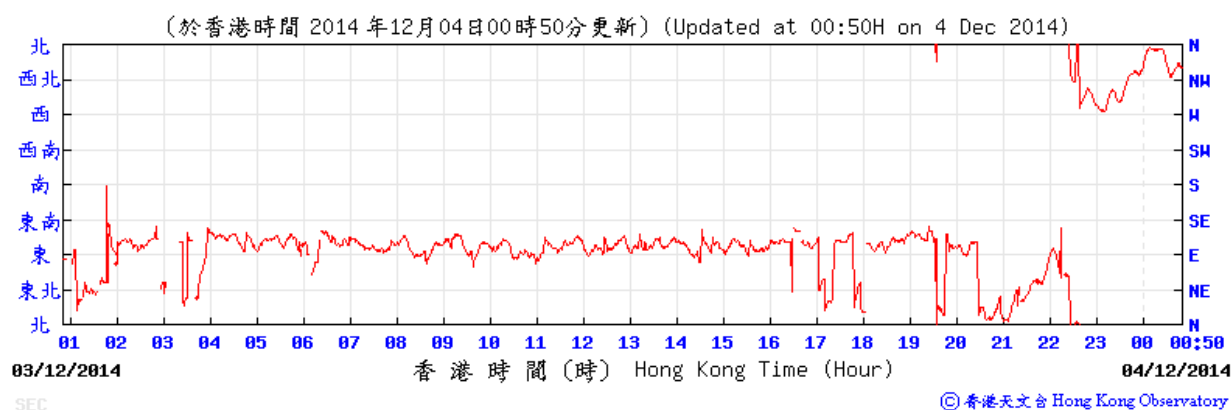
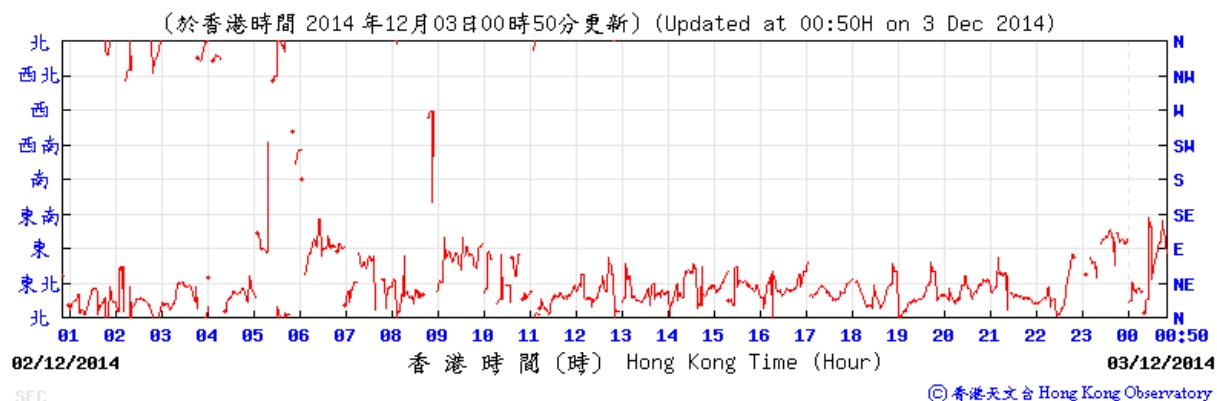
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

29-30 December 2014



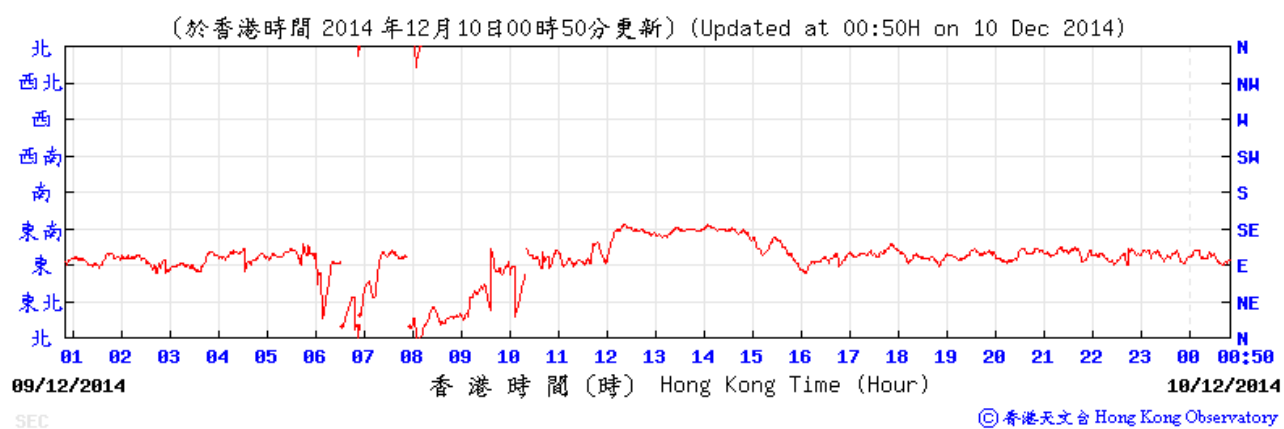
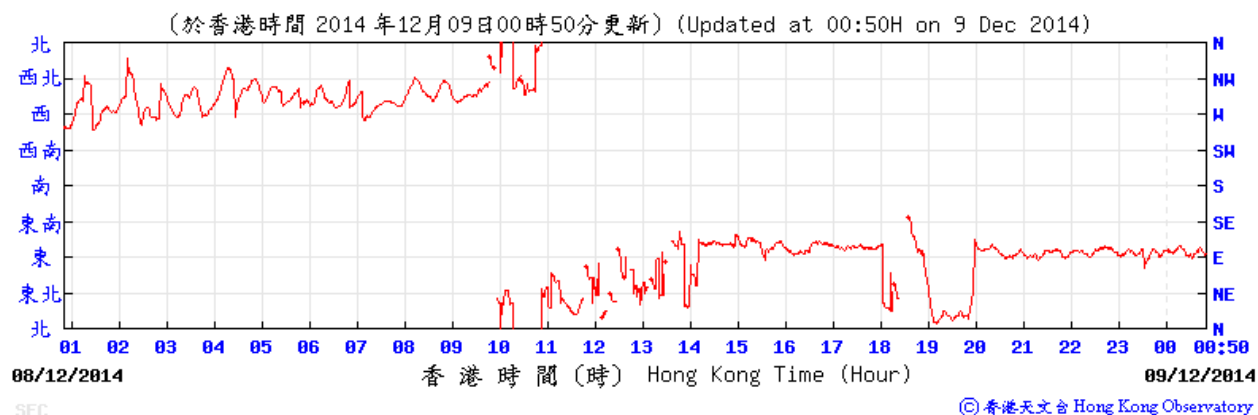
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 December 2014



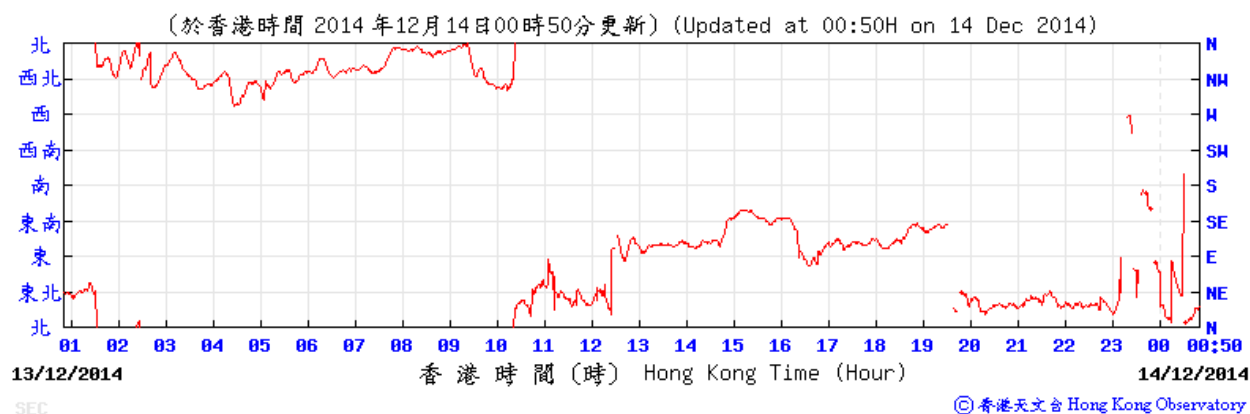
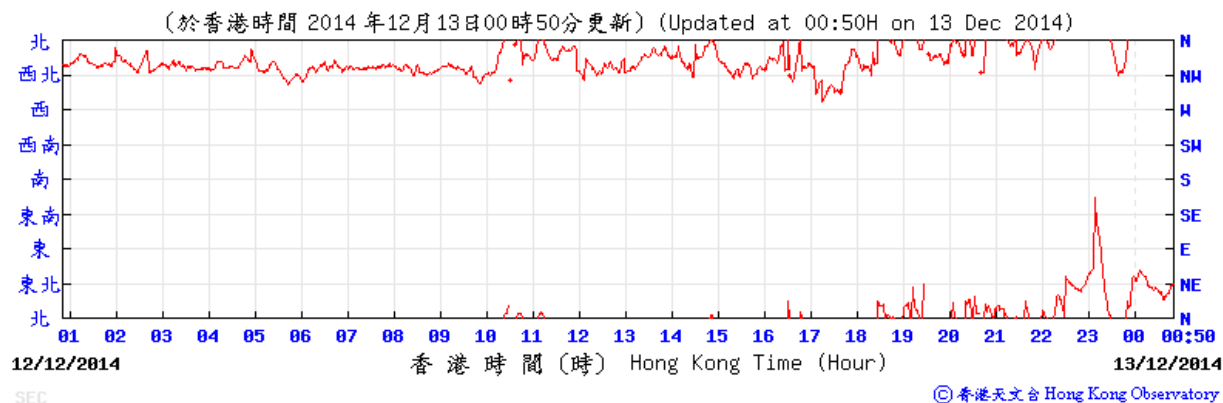
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

8-9 December 2014



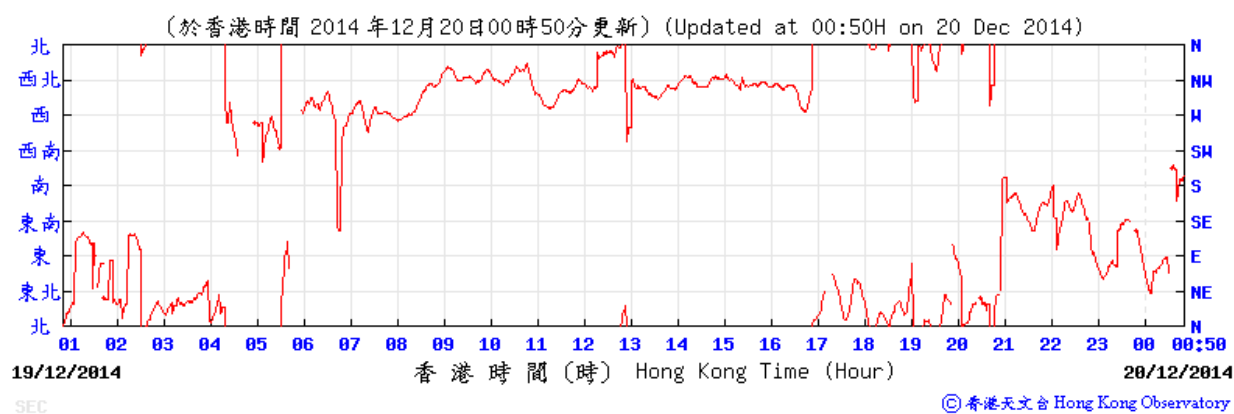
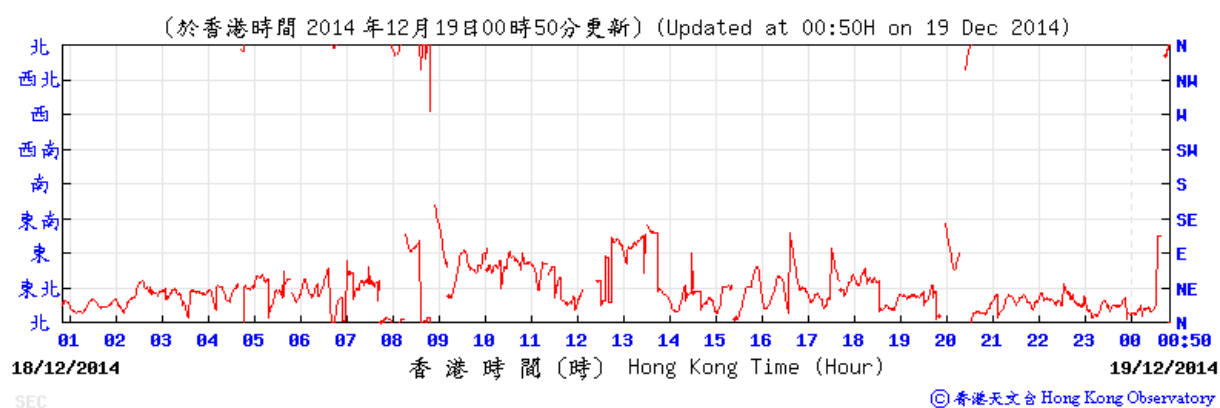
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

12-13 December 2014



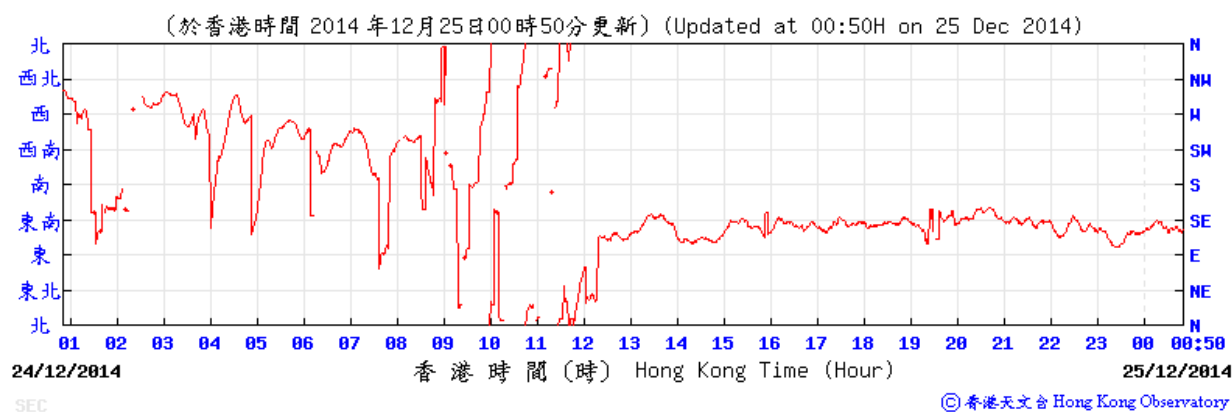
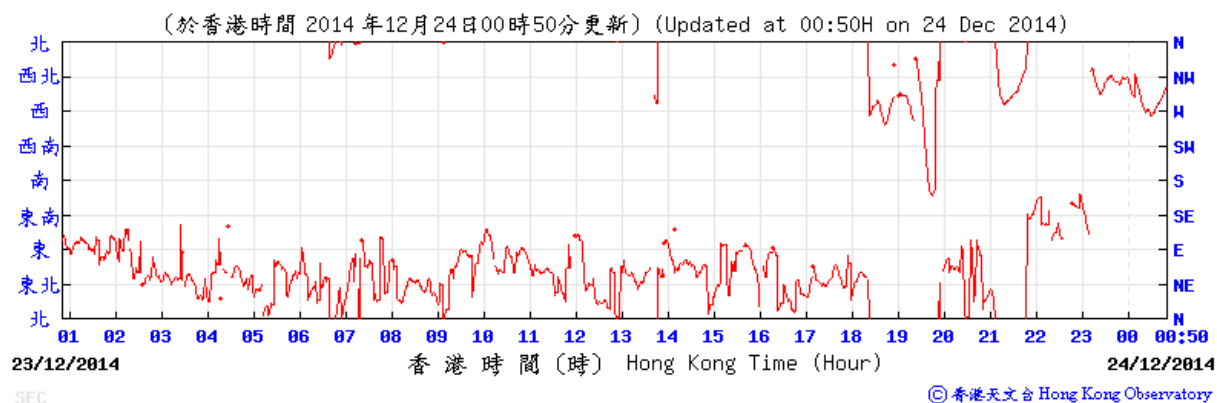
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

18-19 December 2014



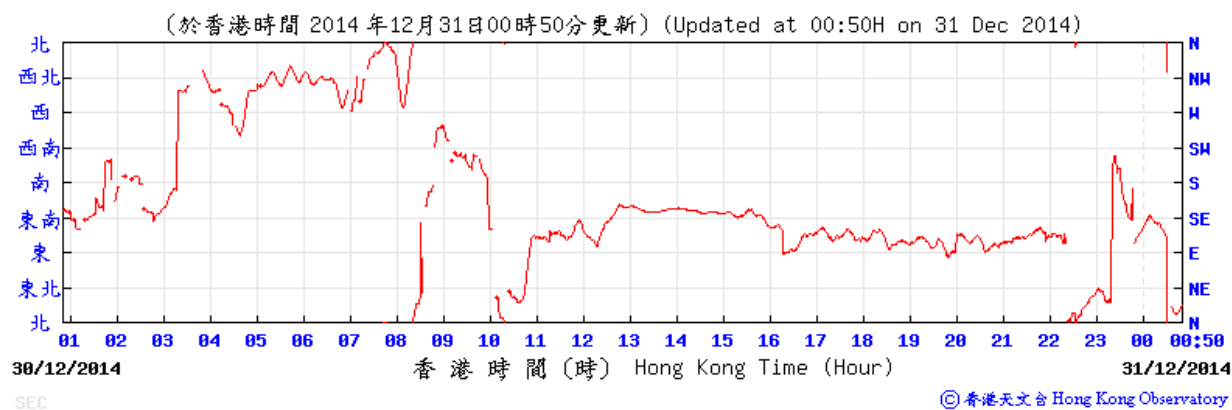
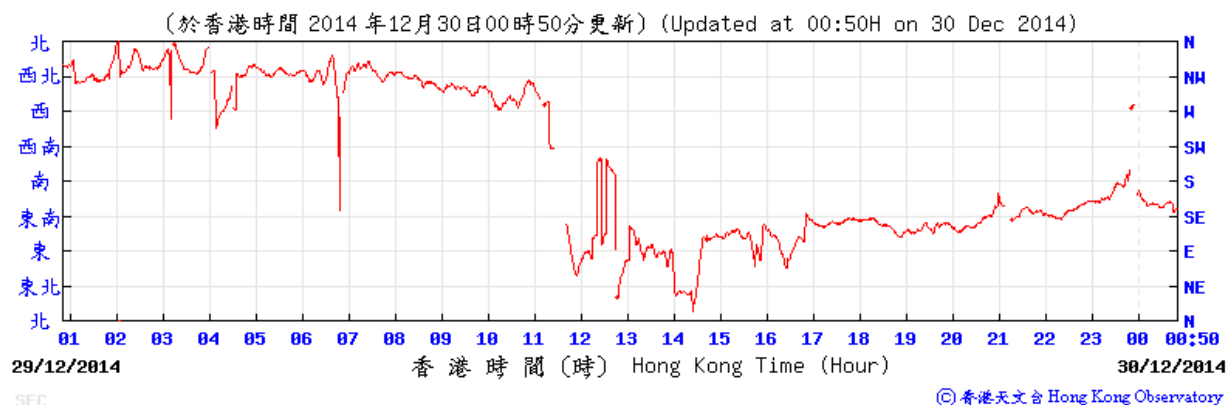
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

23-24 December 2014



Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

29-30 December 2014



**APPENDIX F
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix F - Noise Monitoring Results

Location NMS-CA-4(1)/NMS-CA-3(2) - Block 1, Rhythm Garden (north-eastern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	L _{eq}
4-Dec-14	Cloudy	14:30	69.4	71.3	66.9	69.9	71	69.9 Measured ≤ Baseline Level
		14:35	69.7	71.5	66.8			
		14:40	69.5	71.1	67.4			
		14:45	70.3	71.9	67.7			
		14:50	70.5	72.3	67.9			
		14:55	69.9	71.4	66.8			
9-Dec-14	Sunny	14:25	73.1	74.2	71.7	72.9	71	68.4
		14:30	72.7	73.8	71.4			
		14:35	72.7	73.7	71.7			
		14:40	73.0	74.0	71.9			
		14:45	72.6	73.6	71.4			
		14:50	73.1	74.3	71.9			
15-Dec-14	Cloudy	10:48	73.5	74.2	71.6	72.6	71	67.5
		10:53	72.3	73.5	70.9			
		10:58	72.4	73.6	71.1			
		11:03	72.5	73.7	71.1			
		11:08	72.3	73.5	70.9			
		11:13	72.3	73.4	71.1			
24-Dec-14	Cloudy	11:20	72.6	73.9	71.2	72.3	71	66.4
		11:25	72.3	73.6	70.6			
		11:30	72.3	73.8	71.0			
		11:35	72.4	73.8	70.7			
		11:40	72.2	73.5	71.0			
		11:45	71.9	73.2	70.3			
30-Dec-14	Sunny	16:02	73.7	74.7	72.3	72.9	71	68.4
		16:07	72.8	73.8	71.5			
		16:12	72.6	73.7	71.4			
		16:17	72.8	73.8	71.5			
		16:22	72.8	73.9	71.3			
		16:27	72.4	73.4	71.3			

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

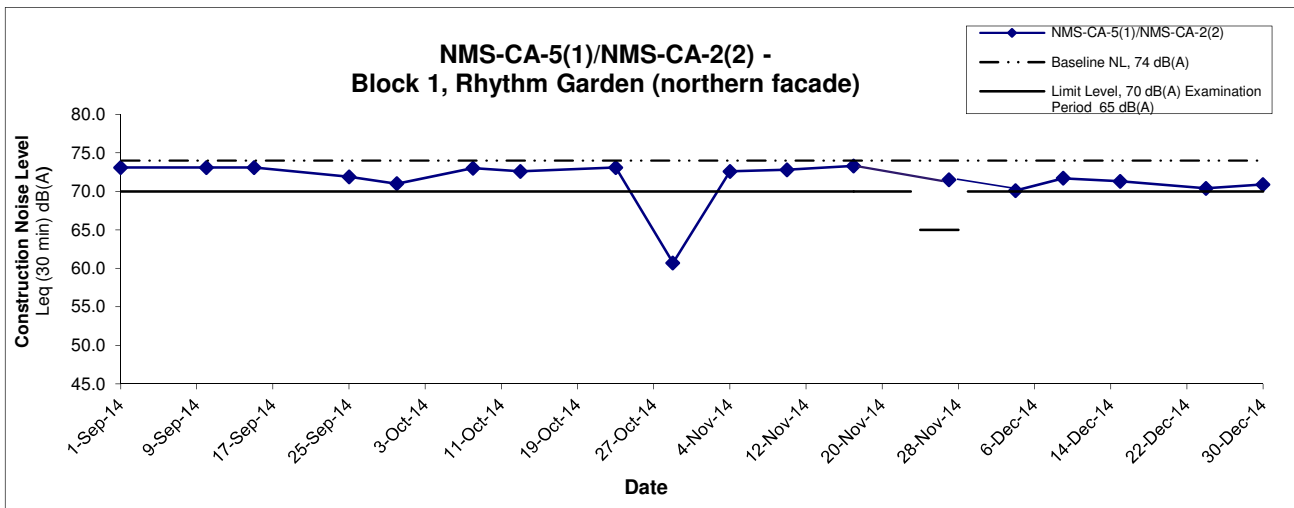
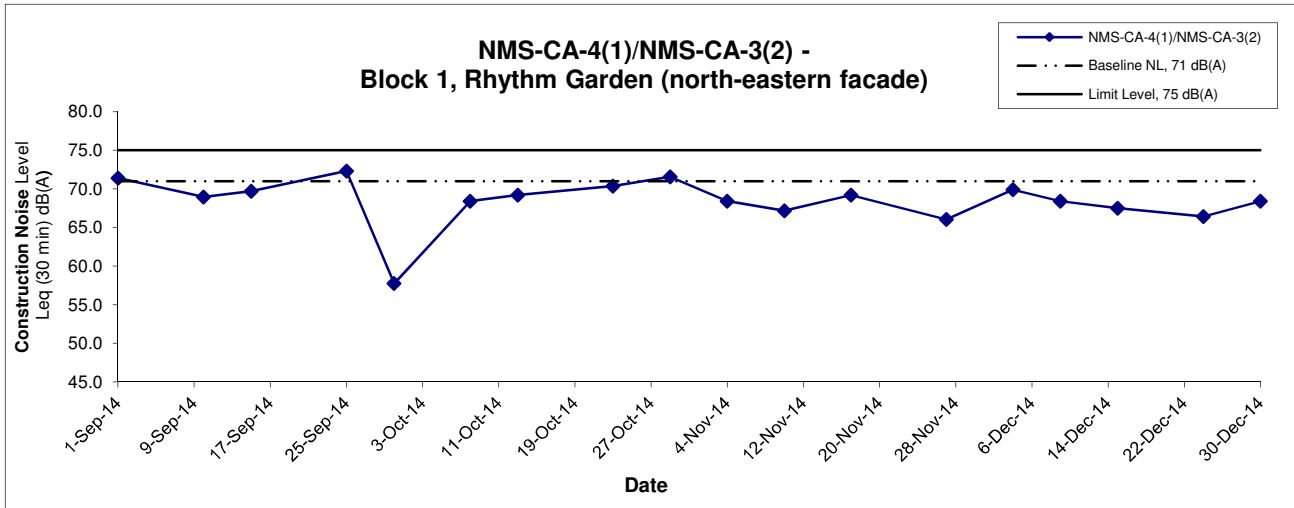
Appendix F - Noise Monitoring Results

Location NMS-CA-5(1)/NMS-CA-2(2) - Block 1, Rhythm Garden (northern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	L _{eq}
4-Dec-14	Cloudy	15:05	70.4	72.3	68.4	70.1	74	70.1 Measured ≤ Baseline Level
		15:10	70.3	72.4	68.6			
		15:15	69.9	71.3	67.7			
		15:20	69.7	70.9	67.8			
		15:25	70.2	72.5	68.6			
		15:30	70.3	72.3	68.5			
9-Dec-14	Sunny	13:50	71.5	72.7	69.9	71.7	74	71.7 Measured ≤ Baseline Level
		13:55	71.2	72.6	69.9			
		14:00	70.8	72.3	69.3			
		14:05	70.8	71.8	69.4			
		14:10	73.3	74.7	71.9			
		14:15	72.1	74.3	71.9			
15-Dec-14	Cloudy	11:29	71.3	72.6	69.9	71.3	74	71.3 Measured ≤ Baseline Level
		11:34	71.1	72.2	70.0			
		11:39	71.6	72.8	70.8			
		11:44	71.3	72.7	69.7			
		11:49	71.4	72.9	69.6			
		11:54	71.3	72.8	69.5			
24-Dec-14	Cloudy	10:45	70.4	71.8	69.3	70.4	74	70.4 Measured ≤ Baseline Level
		10:50	70.1	71.3	69.0			
		10:55	70.5	71.8	69.1			
		11:00	70.3	72.0	69.5			
		11:05	70.8	72.1	69.3			
		11:10	70.3	72.3	69.1			
30-Dec-14	Sunny	15:30	70.7	71.9	69.2	70.9	74	70.9 Measured ≤ Baseline Level
		15:35	70.5	71.6	69.1			
		15:40	71.2	72.4	70.0			
		15:45	71.0	72.2	69.5			
		15:50	71.0	72.2	69.6			
		15:55	71.1	72.5	69.4			

Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Noise Levels



Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) In case of Measured Level \leq Baseline Level, only Measured Level is presented on the graphical presentation.

Title	Shatin to Central Link - Contract 1107 - Diamond Hill to Kai Tuk Tunnels	Scale	Project No.	CINOTECH
	Graphical Presentation of Construction Noise Monitoring Results	N.T.S	MA13018	
		Date	Appendix	
		Jan 14	F	

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: December 2014

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX H
SITE AUDIT SUMMARY

*Shatin to Central Link -
Contract 1107 Diamond Hill to Kai Tak Tunnels*

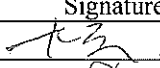

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141205
Date	5 December 2014 (Friday)
Time	9:00 – 1045

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

Ref. No.	Remarks/Observations	Related Item No.
141205-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> Contractor is reminded to properly cover the cement grouting plant on 3 sides and on top when grouting work is being carried out. <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 17iii
141205-O01	<p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> Muddy slurry was observed leaking near the site entrance. Contractor is reminded to take appropriate measure to avoid leaking of slurry into manholes and properly clear the slurry off the road. (It is noted that emergency measure such as sucking of slurry from the nearby manhole by vacuum truck was immediately implemented.) <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 141128), the item is observed improved/rectified by Contractor. 	F 7

	Name	Signature	Date
Recorded by	Kenneth Yuen		5 December 2014
Checked by	Dr. Priscilla Choy		5 December 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141211
Date	11 December 2014 (Thursday)
Time	9:00 – 10:30

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

Ref. No.	Remarks/Observations	Related Item No.
141211-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> Contractor is reminded to fix the pH gauge of the water treatment facility at the upstream area. 	B 7
141211-O03	<p>Part C – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> The stockpiles of bagged cements at the TBM workshop are not covered. The contractor should properly cover it on 3-sides and on top when they are not being used. <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 16
141211-O01	<p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> Chemicals were observed stored inside the chemical waste cupboard. Contractor is reminded that the cupboard is only for the storage of chemical waste. The chemicals should be removed from it. <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 141205), all items were observed improved/rectified by Contractor. 	F 2ii

	Name	Signature	Date
Recorded by	Kenneth Yuen		11 December 2014
Checked by	Dr. Priscilla Choy		11 December 2014

Shatin to Central Link -

Contract 1107 Diamond Hill to Kai Tak Tunnels

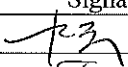

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141219
Date	19 December 2014 (Friday)
Time	9:00 – 11:10

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

Ref. No.	Remarks/Observations	Related Item No.
141219-R01	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
141219-R02	<p>Part C – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> The drain hole of the drip tray at pile removal area should be plugged to prevent chemical leakage. Drip tray should be placed underneath the chemical containers/oil drums at Shaft A enclosure to avoid chemical leakage. <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 141211), all items were observed improved/rectified by Contractor. 	F 10 F 10

	Name	Signature	Date
Recorded by	Kenneth Yuen		19 December 2014
Checked by	Dr. Priscilla Choy		19 December 2014

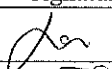
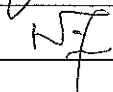
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141224
Date	24 December 2014 (Wednesday)
Time	9:00 – 10:00

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

Ref. No.	Remarks/Observations	Related Item No.
141224-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> The coverage of dusty stockpile should be enhanced to suppress dust generation. 	D 6
141224-R01	<p>Part E – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> The hole of drip tray for generator should be plugged to prevent leakage. <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 141219), all items were observed improved/rectified by Contractor. 	F 10

	Name	Signature	Date
Recorded by	Jason Lai		24 December 2014
Checked by	Dr. Priscilla Choy		24 December 2014

APPENDIX I
EVENT AND ACTION PLANS

Appendix I - Event and Action Plan for Noise Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1107 ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Appendix I - Event and Action Plan for Air Quality Monitoring during Construction Phase

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 	<ol style="list-style-type: none"> 1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

Appendix I - Event and Action Plan for Air Quality Monitoring during Construction Phase

LIMIT LEVEL				
<p>1.Exceedance for one sample</p>	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
<p>2.Exceedance for two or more consecutive samples</p>	<ol style="list-style-type: none"> 1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix I - Event and Action Plan for Landscape and Visual during Construction Phase

EVENT	ACTION			
	Works Contract 1107 ET	IEC	ER	CONTRACTOR
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

**APPENDIX J
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE**

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system.</p> <ul style="list-style-type: none"> The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites. 						^
Table 6.9	LV2	<p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> Trees of medium to high survival rate that would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB 	Minimize the visual and landscape impact of the Project during construction phase	Contractor	Within Project Site	Detailed design and construction stage	<ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006 	N/A N/A N/A

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		TCW No 3/2006.						
<i>Air Quality (Construction Phase)</i>								
/	A1	Emission from Vehicles and Plants <ul style="list-style-type: none"> • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD) 	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	A2	Open burning shall be prohibited	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	• APCO	^
<i>Construction Dust Impact</i>								
S7.6.6	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM- EIA criteria	*
S7.6.6	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM- EIA criteria	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		an equivalent intensity of no less than 1.8 L/m ² to achieve the dust removal efficiency						
S7.6.6	D3	<ul style="list-style-type: none"> • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extending beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary 	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	<p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; 						^
								^
								^
								N/A
								N/A

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • 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; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 						* ^ * N/A
S7.6.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	^
Construction Airborne Noise								
S8.5.6	AN1	Implement the following good site practices: <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant 	Control construction airborne	Contractor	All Construction Sites where	Construction stage	• Annex 5, TM-EIA	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		plants including air compressor, generators and saw.	construction sites					
S8.5.6	AN4	Use "Quiet" plant	Reduce the noise levels of plant items	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	N/A
S8.5.6	AN5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	• TM-EIA	^
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> <ul style="list-style-type: none"> At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site 	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5 m³/s the basin would be 150 m³. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. 						^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via 						<p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">*</p> <p style="text-align: center;">N/A</p>

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>silt removal facilities.</p> <ul style="list-style-type: none"> • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. • Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure 						<p>^</p> <p>*</p> <p>^</p> <p>^</p>

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</p> <ul style="list-style-type: none"> • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. 						<p>N/A</p> <p>^</p> <p>N/A</p> <p>^</p>

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. 	from sewage effluent		sites where practicable	stage	Control Ordinance • TM-water	^
S10.7.1	W5	<p><u>Accidental Spillage</u></p> <p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> Proper storage and handling facilities should be provided; All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains; The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings; and Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water 	* * ^ N/A
<i>Waste Management (Construction Waste)</i>								
S11.4.1.1	WM1	<p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> Geological assessment should be carried out by competent 	Separation of unsuitable rock from ending up at	Contractor	All construction sites	Construction stage	• DEVB TC(W) No. 6/2010	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.</p>	<p>concrete batching plants and be turned into concrete for structural use</p>					
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; 	<p>Good site practice to minimize the waste generation and recycle the</p>	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) 	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and EPD and get their approval before implementation 	C&D materials as far as practicable so as to reduce the amount for final disposal				Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	^ ^ N/A ^ ^ ^
S11.5.1	WM3	<u>C&D Waste</u> <ul style="list-style-type: none"> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the 	Good site practice to minimize the waste generation and recycle the C&D materials as far as	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</p> <ul style="list-style-type: none"> The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 	practicable so as to reduce the amount for final disposal				<ul style="list-style-type: none"> Waste Disposal Ordinance ETWB TCW No.19/2005 	^
S11.5.1	WM4	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance 	^ ^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S11.5.1	WM6	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450L unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; be enclosed on at least 3 sides; have an impermeable floor and bunding of 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All Construction Sites	Construction Stage	<ul style="list-style-type: none"> • Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">*</p>

**APPENDIX K
WASTE GENERATION IN THE
REPORTING MONTH**

CW - SELI Joint Venture

Name of Department: MTRC

Contract No.:1107

Monthly Summary Waste Flow Table for 2014

Year	Estimated Quantities of Inert C&D Materials (in '000m ³) (see Note 3)										Estimated Quantities of C&D Wastes									
	Total Quantity Generated		Suitable for Recycled Aggregates		Reused in the Contract		Reused in other Projects		Disposed as Public Fill		Metals		Paper/cardboard packaging		Plastics (see Note 2)		Chemical Waste		Others, e.g. general refuse	
	(a)		(b)		(c)		(d)		(e=a-b-c-d)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000m ³)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
January	5.500	5.330	0.000	0.000	0.000	0.000	2.500	1.840	3.000	3.49	0.000	0.000	0.100	0.158	0.100	0.810	0.000	0.108	0.100	0.040
February	5.500	2.685	0.000	0.000	0.000	0.000	0.000	0.660	5.500	2.025	1.000	2.660	0.100	0.230	1.000	0.650	0.000	0.000	0.100	0.015
March	8.400	5.945	0.000	0.000	0.000	0.000	4.000	3.145	4.400	2.800	0.000	0.000	0.100	0.135	0.000	0.000	0.000	0.000	0.100	0.025
April	4.400	4.025	0.000	0.000	0.000	0.000	0.000	2.670	4.400	1.355	5.000	5.950	0.100	0.000	0.000	0.000	0.100	0.000	0.100	0.025
May	8.400	2.740	0.000	0.000	0.000	0.000	4.000	1.810	4.400	0.930	0.000	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.100	0.040
June	8.400	4.340	0.000	0.000	0.000	0.000	4.000	2.110	4.400	2.230	0.000	9.260	0.100	0.277	0.000	0.000	0.100	0.400	0.100	0.035
July	8.400	6.275	0.000	0.000	0.000	0.000	4.000	4.150	4.400	2.125	0.000	5.640	0.100	0.000	0.000	0.000	0.000	0.000	0.100	0.045
August	8.400	5.105	0.000	0.000	0.000	0.000	4.000	2.025	4.400	3.080	0.000	0.000	0.100	0.150	0.000	0.000	0.000	0.000	0.100	0.050
September	8.400	8.260	0.000	0.000	0.000	0.000	4.000	6.675	4.400	1.585	0.000	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.100	0.045
October	8.400	7.920	0.000	0.000	0.000	0.000	4.000	6.750	4.400	1.170	0.000	0.000	0.100	0.143	1.000	0.850	0.100	0.020	0.100	0.055
November	8.400	8.115	0.000	0.000	0.000	0.000	4.000	6.865	4.400	1.250	0.000	0.000	0.100	0.180	1.000	1.650	0.000	0.000	0.100	0.060
December	10.000	13.025	0.000	0.000	0.000	0.000	6.000	12.015	4.400	1.010	0.000	0.000	0.100	0.000	0.000	0.000	0.100	0.020	0.100	0.060
Total	92.600	73.765	0.000	0.000	0.000	0.000	40.500	50.715	52.500	23.050	6.000	23.510	1.200	1.273	3.100	3.960	0.400	0.548	1.200	0.495

- Notes:
- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
 - (3) The quantities of C&D Materials, in m³, was calculated by multiply the no. of truck with the volume of truck, which is 5m³.

**APPENDIX L
CUMULATIVE LOG FOR COMPLAINT
LOGS, NOTIFICATION OF SUMMONS
AND SUCCESSFUL PROSECUTIONS**

Appendix L - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions**Cumulative Complaint Log**

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
--	--	--	--	--	--

Cumulative Log for Notifications of Summons

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
--	--	--	--	--	--

Cumulative Log for Successful Prosecutions

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
--	--	--	--	--	--

Appendix H

**19th Monthly EM&A Report for Works Contract 1112 –
Hung Hom Station and Stabling Sidings**

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section and
Mong Kok East to Hung Hom Section**

Monthly EM&A Report

[Period from 1 to 31 December 2014]

(January 2015)

Certified by: Vivian Chan 

Position: Environmental Team Leader

Date: 14 January 2015



19th Monthly EM&A Report for December 2014

Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings

January 2015

Project/Deliverable No.	7076187 D43/01
Project Name	Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings
Report Name	19 th Monthly EM&A Report for December 2014
Report Date	January 2015
Report for	Leighton Contractors (Asia) Limited

PREPARATION, REVIEW AND AUTHORISATION

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EXECUTIVE SUMMARY

Introduction

The construction works of MTRC Shatin to Central Link Works Contract 1112- Hung Hom Station and Stabling Sidings (the Project) comprise permanent works and the necessary temporary works for Hung Hom Station (HUH), Hung Hom Stabling Sidings (HHS), the South Approach Tunnels (SAT) and the North Approach Tunnels (NAT) to the new station, HHS and any reprovisioning remedial and improvement works (RRIW).

Construction works of the Project commenced on 3 June 2013. This is the 19th monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 31 December 2014 in accordance with the EM&A manual.

During the reporting month, the following activity took place for the Project:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

Landscape and Visual Monitoring

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 3 and 17 December 2014. All necessary mitigation measures have been implemented by the Contractor.

Air Quality Monitoring

Air quality (24-hour TSP) monitoring was carried out on 6, 12, 18, 24 and 30 December 2014. No exceedance of Action and Limit Level of 24-hour TSP monitoring was recorded at the monitoring location in the reporting month.

Noise Quality Monitoring

Construction airborne noise monitoring can be referred to the Monthly EM&A Report for Contract 1111.

Waste Management

As advised by the Contractor, 130,830 kg of general refuse was generated from the Project and disposed of at NENT landfill. 166,980 kg of asphalt was recycled from the Project. A total of 8,587 m³ inert construction and demolition (C&D) materials were generated from the Project, where 3,715 m³

was imported from SCL 1111, 2,969 m³ was reused in other projects, 5,618 m³ was disposed of at TM38 Public Fill, and none was disposed of at TKO137 Public Fill. 5,400 kg of chemical waste was disposed. 532 kg of paper/cardboard packaging and 59,600 kg of metals were recycled during the reporting month.

Environmental Auditing

A total of 5 weekly environmental site audits were conducted on 4, 11, 18, 24 and 31 December 2014. The IEC joint site audit was undertaken on 18 December 2014.

Compliant, Notification of Summons and Successful Prosecution

No environmental complaints were reported during the reporting month.

No summons or prosecution related to the environmental issues were received in the reporting period.

Future Key Issues

Major site activities for the coming reporting month will include:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Modification works at Concourse level
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise and waste management.

1 INTRODUCTION

1.1 Project Background

1.1.1 The Shatin to Central Link (SCL) is a designated project (DP) under the Environmental Impact Assessment Ordinance (EIAO). For the purposes of the Environmental Impact Assessment (EIA), five EIA studies have been conducted to cover different sections of the SCL. These are Tai Wai to Hung Hom Section (SCL (TAW-HUH)), Mong Kok East to Hung Hom Section (SCL (MKK-HUH)), Hung Hom to Admiralty Section (SCL (HUH-ADM)), Protection Works at Causeway Bay Typhoon Shelter and Stabling Sidings at Hung Hom Freight Yard (SCL (HHS)).

1.1.2 Three EIA reports are of relevance to Works Contract 1112 (the Project), namely EIA for SCL (TAW-HUH) (Register No. AEIAR-167/2012), EIA for SCL (MKK-HUH) (Register No. AEIAR-165/2012) and EIA for SCL (HHS) (Register No. AEIAR-164/2012). These were submitted and subsequently approved with conditions by the Environmental Protection Department (EPD) on 17 February 2012. Two Environmental Permits (EPs), Environmental Permit No. EP-437/2012 for SCL (MKK-HUH) and Environmental Permit No. EP-438/2012 for SCL (TAW-HUH) were subsequently obtained on 22 March 2012. A recent application for variation of the EP for SCL (TAW-HUH) was approved and a varied EP (EP No. EP-438/2012/H) was issued by Director of Environmental Protection (DEP) on 10 September 2014.

1.1.3 Construction of the SCL has been divided into a number of works contracts. This Works Contract 1112 was awarded to Leighton Contractors (Asia) Limited (the Contractor) in March 2013. Leighton has engaged SMEC Asia Limited as the Environmental Team under the EIAO for Works Contract 1112.

1.2 Purpose of the Report

1.2.1 This is the 19th EM&A report which summarizes the monitoring results and audit findings during the reporting period from 1 to 31 December 2014.

1.3 Report Structure

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Environmental Monitoring Parameters
- Section 4: Implementation Status of Environmental Mitigation Measures
- Section 5: Monitoring Results
- Section 6: Environmental Site Inspection and Audit
- Section 7: Environmental Non-conformance
- Section 8: Future Key Issues
- Section 9: Conclusions and Recommendations

2 PROJECT INFORMATION

2.1 General Site Description

2.1.1 The works under Works Contract 1112 comprise permanent works and the necessary temporary works for Hung Hom Station (HUH), Hung Hom Stabling Sidings (HHS), the South Approach Tunnels (SAT) and the North Approach Tunnels (NAT) to the new station, HHS and any reprovisioning remedial and improvement works (RRIW). The major permanent works under Works Contract 1112 generally comprise the following:

- New HUH integrated with the existing HUH station, with associated entrances, ventilation facilities, plant rooms, other ancillary facilities, and ABWF works.
- Modification of the existing HUH station to allow interchange between Existing East Rail Line and SCL(TAW-HUH), and between SCL(MKK-HUH) and SCL(TAW-HUH) comprising alteration and addition works at podium level, mid-level, and platform level.
- Running tunnels of the SCL(TAW-HUH) at the south and north ends of the new HUH to the existing stub tunnel of Existing West Rail and interface with Works Contract 1111.
- Running tunnels of the SCL(MKK-HUH) at the south and north ends of the new HUH to the proposed North Ventilation Building and interface with Works Contract 1111.
- Extensive underpinning and modification of the existing podium structure of HUH and the Hong Kong Coliseum, and associated protection works.
- Diversion, modification and dismantling of existing building services associated with underpinning and modification of existing structures.
- Demolition and clearance of the majority of the existing Hung Hom Freight Terminal infrastructure.
- Protection, diversion, and modification of utilities and services.
- Launching and retrieval track connecting the SCL(TAW-HUH) to HHS from the turnout close to WRL at the south and interface with Works Contract 1111 at the north.
- CLP Transformer Building.
- Demolition of the existing International Mail Centre adjacent to Salisbury Road, the MTR Freight Operations Building within the southern end of the Hung Hom Freight Terminal, and other ancillary buildings.
- Reconstruction of Cheong Wan Road Viaduct.
- Civil, BS and ABWF provisions for designated and interfacing contracts.
- Landscape works.
- Modification to various parts of existing disused Freight Yard structure for provision of HHS, comprising alteration and addition works at underground level, ground level, mezzanine level and podium level including new

accommodation and plant areas and stablings and associated track provisions connecting to the interface with Works Contract 1111.

- Extensive underpinning of the podium structures above the existing disused Freight Yard for provision of HHS and its associated works.
- Construct part of the shunting track.
- Construct the emergency track and its associated works which connect the stabling siding to the mainline which run parallel with the northern approach of HUH.
- Construct the semi-enclosed noise enclosure and its associated works over the entire HHS north fan area.

2.1.2 The works area for the Works Contract 1112 is shown in **Appendix A**.

2.2 Construction Programme and Activities

2.2.1 The summary of construction programme is presented in **Appendix B**.

2.2.2 The major construction activities carried out by the Contractor in the reporting period are summarized as below:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

2.3 Project Organisation

2.3.1 The project organization structure is presented in **Appendix C**. The contact names and numbers for key personnel of the Project are summarized in **Table 2-2-1**.

Table 2-2-1 Contact Information of Key Personnel

Company	Position	Name	Telephone	Fax
MTR	Construction Manager	Mr Kit CHAN	3127 6203	3127 6422
	SCL Project Environmental Team Leader	Mr Richard KWAN	2688 1283	2993 7577
Meinhardt	Independent Environmental Checker	Mr Fredrick LEONG	2859 1739	2540 1580

Company	Position	Name	Telephone	Fax
Leighton	Environmental Manager	Mr Kevin HARMAN	3973 0270	2356 9355
SMEC	ET Leader	Ms Vivian CHAN	3995 8140	3995 8101

2.4 Status of Environmental Licences, Notification and Permits

2.4.1 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2-2**.

Table 2-2 Status of Environmental Licenses, Notification and Permits

Permit / Licence No. / Notification / Reference No.	Valid Period		Status	Remark
	From	To		
Environmental Permit				
EP-437/2012	22 Mar 2012	-	Valid	EP for SCL (MKK-HUH)
EP-438/2012/H	10 Sep 2014	-	Valid	EP for SCL (TAW-HUH)
Construction Noise Permit				
GW-RE1029-14	11 Sep 2014	10 Mar 2015	Valid	Generator for intrafor office in barging point
GW-RE1079-14	30 Sep 2014	31 Dec 2014	Valid until cancellation on 31 Dec 2014	Delivery of Heavy vehicles
GW-RE1171-14	25 Oct 2014	23 Jan 2015	Valid	Pipe jacking works
GW-RE1172-14	14 Oct 2014	13 Apr 2015	Valid	Loading and unloading of scissor lift outside Hung Hom station
GW-RE1199-14	27 Oct 2014	26 Apr 2015	Valid until cancellation on 1 Dec 2014	Underpinning works under podium
GW-RE1203-14	24 Oct 2014	23 Apr 2015	Valid	Preparatory Works for Podium Concourse Modification Stage 1
GW-RE1242-14	30 Oct 2014	29 Apr 2015	Valid until cancellation on 20 Dec 2014	TBM and desander operation during restricted hours
GW-RE-1200-14	14 Nov 2014	13 May 2015	Valid	Dewatering at HHS
GW-RE-1250-14	4 Nov 2014	4 Dec 2014	Valid until cancellation on 4 Dec 2014	Erection/removal of temporary footbridge, replacement of the precast beams and movement joints

Permit / Licence No. / Notification / Reference No.	Valid Period		Status	Remark
	From	To		
GW-RE-1263-14	5 Nov 2014	3 Jan 2015	Valid until cancellation on 30 Dec 2014	Erection of 9m protection barrier for bored pile GP1
GW-RE1283-14	30 Nov 2014	29 May 2015	Valid	ADMS installations within live rail areas
GW-RE1312-14	27 Nov 2014	26 May 2015	Valid until cancellation on 22 Dec 2014	Washing CJ for NAT
GW-RE1343-14	5 Dec 2014	3 Jan 2015	Valid	Erection/removal of temporary footbridge, replacement of the precast beams and movement joints
GW-RE1345-14	1 Dec 2014	31 May 2015	Valid until cancellation on 23 Dec 2014	Underpinning works under podium
GW-RE1408-14	20 Dec 2014	17 May 2015	Valid	CNP for SAT shafts
GW-RE1423-14	16 Dec 2014	16 Jan 2015	Valid	Concreting inside concourse during NTH
GW-RE1445-14	31 Dec 2014	31 Mar 2015	Valid	Delivery of Heavy vehicles
GW-RE1449-14	30 Dec 2014	28 Feb 2015	Valid	Erection of 9m protection barrier for bored pile GP1
GW-RE1450-14	22 Dec 2014	22 May 2015	Valid	Cheong Wan Road Bridge Deck Construction / Washing CJ for NAT
GW-RE1471-14	22 Dec 2014	22 May 2015	Valid	Underpinning works under podium
GW-RE1486-14	23 Dec 2014	23 May 2015	Valid	Works under podium
Wastewater Discharge License				
WT00015983-2013	28 Jun 2013	30 Jun 2018	Valid	-
Chemical Waste Producer Registration				
5213-213-L2603-03	28 Jun 2013	-	Valid	-
Billing Account for Construction Waste Disposal				
7017179	27 Mar 2013	-	Active Account	-
Notification Under Air Pollution Control (Construction Dust) Regulation				
357078	18 Mar 2013	-	Notified	-

Permit / Licence No. / Notification / Reference No.	Valid Period		Status	Remark
	From	To		
Marine Dumping Permit				
EP/MD/14-135	1 Nov 2014	1 Apr 2015	Valid	Type 1 – Open Sea Disposal
EP/MD/14-135	24 Dec 2014	1 Apr 2015	Valid	Additional Vessel for Hopper Barge (Vessel Licence No. B141011)
EP/MD/15-086	1 Dec 2014	31 Dec 2014	Valid until cancellation on 31 Dec 2014	Type 2 – Confined Marine Disposal
Notification of Asbestos Abatement Works				
AX141187	11 Oct 2014 (earliest commencement date)	-	Notified	Demolition of International Mail Centre, 80 Salisbury Road, Hung Hom
AX141235	27 Oct 2014 (earliest commencement date)	-	Notified	Demolition of Freight Operation Building, MTR Hung Hom Depot
Notification of New Expiration Date of Sediment Quality Report (SQR)				
EP60/G1/12-395/Part XXVI	3 Nov 2014	22 Jan 2017	Notified	Data Reliability Review on Sediment Quality Report

2.4.2 Modification to the Asbestos Abatement Plan (AAP) for proposed asbestos abatement works at the International Mail Centre was submitted to EPD for approval in accordance with Cap. 311 of the Air Pollution Control Ordinance (APCO). A summary of status of required submission and its status is presented in **Table 2-2**.

Table 2-2 Summary of Status of Required Submission under APCO

Required Submission	Date of Submission	Date Approved by EPD	Status
Modified AAP for Proposed Demolition of International Mail Centre at Hung Hom	15 December 2014	17 December 2014	Approved

3 ENVIRONMENTAL MONITORING PARAMETERS

3.1 Landscape and Visual Impact Monitoring

3.1.1 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period.

3.2 Air Quality Monitoring

Parameter, Frequency and Duration

3.2.1 In accordance with the EM&A Manual, 24-hour Total Suspended Particulates (TSP) level at the designated air quality monitoring station is required throughout the construction period. The monitoring parameters and frequency are provided in **Table 3-1**.

Table 3-1 Air Quality Monitoring Parameters and Frequency

Parameter	Frequency
1-hour TSP	3 times in every 6 days when one documented valid complaint is received
24-hour TSP ^[1]	Once per 6 days

Note:

1. 24-hour TSP will be conducted when project-related construction activities are being undertaken within a radius of 500m from monitoring stations.

Monitoring Location

3.2.2 One air quality monitoring station was set up at the location in accordance with the approved EM&A Manuals. The location of the construction dust monitoring station is summarised in **Table 3-2** and shown in **Appendix D**.

3.2.3 The monitoring location of AM2 has been located on the roof of the Site Office Building next to Harbourfront Horizon since 19 March 2014.

Table 3-2 Air Quality Monitoring Location

ID	Location
AM2 ^[1]	Harbourfront Horizon ^[2]

Note:

1. Different IDs were used in various EM&A Manuals for dust monitoring location at Harbourfront Horizon, DMS-12 was used in EM&A Manual for SCL(TAW-HUH), AM2 were used in EM&A Manual and EIA report for SCL(MKK-HUH), and DMS-1 Works Contract 1112 were used in EM&A Manual and EIA report for HHS. For ease of future reference, AM2 will be adopted for EM&A reporting for Works Contract 1112 when referring to this monitoring location.
2. Air quality monitoring location at Harbourfront Horizon is the same as monitoring station CD6a as proposed in the EM&A Manual for “Kwun Tong Line Extension (KTE)”. Access to Harbourfront Horizon was rejected by the owner during preparation for baseline

monitoring for the KTE in early 2011. A representative monitoring location at the adjacent Finger Pier, at about 25m from Harbourfront Horizon, was adopted as an alternative monitoring location for KTE. This monitoring location is considered the most appropriate alternative monitoring location for AM2 and have been adopted for dust monitoring for Contract 1112.

Monitoring Equipment

3.2.4 The air quality monitoring was performed using High Volume Sampler (HVS). The HVS meets all the requirements of the EM&A Manual. Detail of the HVS used in air quality monitoring is provided in **Table 3-3**.

Table 3-3 Air Quality Monitoring Equipment

Equipment	Brand and Model	Serial Number
High Volume Sampler	GS-2310 Accu-vol	694-0665
Calibration Kit	Tisch (TE-5025A)	1612

3.2.5 The HVS were calibrated in every six months interval using calibration kit which is re-calibrated by the manufacturer after one year of use. The calibration certificate of the calibration kit and the calibration spreadsheet of the HVS is provided in **Appendix E**.

Monitoring Procedures

3.2.6 Specifications of HVS are as follow:

- i. 0.6 - 1.7m³ per minute adjustable flow range
- ii. Equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation
- iii. Installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation
- iv. Capable of providing a minimum exposed area of 406cm²
- v. Flow control accuracy: +/- 2.5% deviation over 24-hour sampling period
- vi. Equipped with a shelter to protect the filter and sampler
- vii. Incorporated with an electronic mass flow rate controller or other equivalent devices
- viii. Equipped with a flow recorder for continuous monitoring
- ix. Provided with a peaked roof inlet
- x. Incorporated with a manometer
- xi. Able to hold and seal the filter paper to the sampler housing at horizontal position
- xii. Easily changeable filter and
- xiii. Capable of operating continuously for a 24-hour period.

3.2.7 Preparation of Filter Papers

- i. Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.

- ii. All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25°C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than ± 5 %. A convenient working RH was 40%.
- iii. All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

3.2.8 Field Monitoring

- i. The power supply was checked to ensure the HVS works properly.
- ii. The filter holder and the area surrounding the filter were cleaned.
- iii. The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- iv. The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- v. The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
- vi. Then the shelter lid was closed and was secured with the aluminium strip.
- vii. The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
- viii. A new flow rate record sheet was set into the flow recorder.
- ix. On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.3 m³/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m³/min).
- x. The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
- xi. The initial elapsed time was recorded.
- xii. At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
- xiii. The final elapsed time was recorded.
- xiv. The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- xv. It was then placed in a clean plastic envelope and sealed.
- xvi. All monitoring information was recorded on a standard data sheet.
- xvii. Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

Wind Data Monitoring

- 3.2.9 Average wind data (wind speed and direction) at the King's Park meteorological station during the monitoring period were obtained from the Hong Kong Observatory (HKO) and presented in **Appendix F**.

Monitoring Schedule

- 3.2.10 The schedule for environmental monitoring in December 2014 is provided in **Appendix G**.

3.3 Construction Noise Monitoring

- 3.3.1 In accordance with the approved EM&A Manuals for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS), construction noise monitoring is required at No. 234-238 Chatham Road North (originally proposed as Wing Fung Building in the approved EM&A Manuals).
- 3.3.2 Construction airborne noise monitoring requirement details at No. 234-238 Chatham Road North (NM2) can be referred to the Monthly EM&A Report for Contract 1111.

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

- 4.1.1 All environmental mitigation measures and requirements as stated in EIA Reports, Environmental Permits and EM&A Manuals are implemented. The implementation status of the environmental mitigation measures for this Works Contract during the reporting period is summarized in *Appendix H*.
- 4.1.2 Submissions to EPD during construction stage had been made in accordance with the EP requirements. A summary of EP submission requirements and their status is presented in *Table 4-1*.

Table 4-1 Summary of Status of Required Submission under EP

Required Submission	Environmental Permit	Date of Submission	Status
EP Condition 3.4 - Monthly Environmental Monitoring & Audit (EM&A) Report	EP-437/2012	12 December 2014	Submitted
	EP-438/2012/H	12 December 2014	Submitted

5 MONITORING RESULTS

5.1 Landscape and Visual

5.1.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 3 and 17 December 2014. All necessary mitigation measures have been implemented by the Contractor.

5.1.2 The Event and Action Plan for Landscape and Visual Impact Monitoring is provided in *Appendix I*.

5.2 Air Quality Monitoring

5.2.1 The monitoring results for 24-hour TSP are summarized in *Table 5-1*. Detailed air quality monitoring results are presented in *Appendix J*.

Table 5-1 Summary of 24-hour TSP Monitoring Results

ID	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM2	83.9	54.4 – 125.4	182	260

5.2.2 No Action and Limit Level exceedance was recorded in the reporting month.

5.2.3 The Event and Action Plan is provided in *Appendix I*.

5.3 Regular Construction Noise Monitoring

5.3.1 Construction airborne noise monitoring results in the reporting month can be referred to the Monthly EM&A Report for Contract 1111.

5.4 Waste Management

5.4.1 Receptacles for collection of general refuse were provided at the site. As advised by the Contractor, 130,830 kg of general refuse was generated from the Project and disposed of at NENT landfill. 166,980 kg of asphalt was recycled from the Project. A total of 8,587 m³ inert construction and demolition (C&D) materials were generated from the Project, where 3,715 m³ was imported from SCL 1111, 2,969 m³ was reused in other projects, 5,618 m³ was disposed of at TM38 Public Fill, and none was disposed of at TKO137 Public Fill. 5,400 kg of chemical waste was disposed. 532 kg of paper/cardboard packaging and 59,600 kg of metals were recycled during the reporting month. The waste flow table is presented in *Appendix K*.

5.4.2 A billing account for construction waste disposal has been approved and a trip ticket system was implemented to record the waste generated from the Project in the reporting month.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

- 6.1.1 Weekly site audits were conducted by the ET and attended by the ER and the Contractor to monitor the timely implementation of proper environmental management practices and mitigation measures at the site. 5 site audits were carried out on 4, 11, 18, 24 and 31 December 2014 during the reporting month. Representative of the IEC joined the site inspection on 18 December 2014. A summary of the implementation schedule of environmental mitigation measures is provided in **Appendix H**.
- 6.1.2 EPD inspection was conducted on 2, 9, 16 and 19 December 2014 to witness smoke test at containments constructed for asbestos abatement work. No adverse comment has been provided by EPD.
- 6.1.3 During the weekly site inspections, no non-conformance was identified. Details of observations recorded during site inspection are summarized in **Table 6-1**.

Table 6-1 Observations and Recommendations of Site Audits

Parameters	Description	Works Area	Observation Date	Status
Landscape and Visual	N/A	N/A	N/A	N/A
Air Quality	White smoke emission was observed. The Contractor should review the efficiency of exhaust system regularly and maintain equipment in good condition.	NAT	20 November 2014	The item was rectified by the Contractor on 11 December 2014.
		SAT	4 December 2014	The item was rectified by the Contractor on 11 December 2014.
		NAT	4 December 2014	The item was rectified by the Contractor on 11 December 2014.
		IMC	4 December 2014	The item was rectified by the Contractor on 11 December 2014.
		NAT	11 December 2014	The item was rectified by the Contractor on 18 December 2014.
		SAT	11 December 2014	The item was rectified by the Contractor on 23 December 2014.
		HUH (O18)	11 December 2014	The item was rectified by the Contractor on 18 December 2014.
		SAT	18 December 2014	The item was rectified by the Contractor on 23
	More than 20 bags of cement bags/cementitious grout were observed without covered with impervious sheeting. The Contractor should cover the cement bags/cementitious grout bags entirely with			

Parameters	Description	Works Area	Observation Date	Status
	impervious sheeting.			December 2014.
		HHS (Cb10)	31 December 2014	The item will be followed-up in the next reporting month.
	Grout mixing activity was not enclosed properly. The Contractor should ensure all grouting activity with proper enclosure.	NAT	11 December 2014	The item was rectified by the Contractor on 18 December 2014.
	Muddy water was found at the exit. The Contractor should enhance and fully implement the wheel washing system.	Gate 3	11 December 2014	The item was rectified by the Contractor on 18 December 2014.
	Accumulated stockpile was observed. The Contractor should dispose dusty stockpiles regularly.	SAT	27 November 2014	The item was rectified by the Contractor on 4 December 2014.
Noise	Noise emission label was found missing. The Contractor should ensure air compressors consist of noise emission label.	HHS (Cb17)	23 December 2014	The item was rectified by the Contractor on 31 December 2014.
Water Quality	Gully was observed with inadequate protections. The Contractor should enhance the protections for gullies to prevent sand/silt entering the drainage system.	SAT	11 December 2014	The item was rectified by the Contractor on 23 December 2014.
Waste/ Chemicals Management	Chemical containers or machineries were observed without secondary containment. The Contractor should provide secondary containments to all chemical containers or machineries to prevent land contamination.	SAT	27 November 2014	The item was rectified by the Contractor on 11 December 2014.
		HUH	27 November 2014	The item was rectified by the Contractor on 4 December 2014.
		HHS (G24)	4 December 2014	The item was rectified by the Contractor on 23 December 2014.
		HHS (B21)	11 December 2014	The item was rectified by the Contractor on 23 December 2014.
		NAT	18 December 2014	The item was rectified by the Contractor on 23 December 2014.
	Accumulation of waste without sorting. The Contractor should sort all	IMC	4 December 2014	The item was rectified by the Contractor on 11

Parameters	Description	Works Area	Observation Date	Status
	wastes and provide designated skip.			December 2014.
	Several empty grease containers were found. The Contractor should remove the containers and dispose of as chemical waste.	HHS (Ca15)	27 November 2014	The item was rectified by the Contractor on 4 December 2014.

Note:

1. HUH: Hung Hom Station
2. HHS: Hung Hom Stabling Sidings
3. NAT: North Approach Tunnels
4. SAT: South Approach Tunnels
5. N/A: Not Applicable
6. M5a: Works area close to the intersection of Salisbury Road and Hong Wan Path
7. IMC: International Mail Centre

6.1.4 Follow-up actions requested by Contractor's ET and IEC during site inspections were undertaken by the Contractor and the work were confirmed in the following weekly site inspection. Follow-up actions that are still outstanding in the reporting month will be inspected in site inspections in following month, until the corresponding action has been satisfactorily completed by the Contractor.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

7.1.1 All 24-hour TSP results were below the Action and Limit level at all monitoring locations in the reporting month.

7.2 Summary of Environmental Non-Compliance

7.2.1 No environmental non-compliance event was recorded during the reporting month.

7.3 Summary of Environmental Complaint

7.3.1 No environmental related complaint was reported during the reporting month.

7.3.2 Details and cumulative statistics on environmental complaints can be referred to *Appendix L*.

7.4 Summary of Environmental Summons and Successful Prosecution

7.4.1 No summon was received during the reporting month.

7.4.2 The cumulative statistics on notification of summons and successful prosecutions is provided in *Appendix L*.

8 FUTURE KEY ISSUES

8.1 Construction Programme for Next Month

8.1.1 The construction programme for the upcoming month is provided in *Appendix B* and the key issues to be considered in the upcoming months include:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Modification works at Concourse level
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

8.2 Key Issues for the Coming Months

8.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise and waste management.

8.3 Monitoring Schedule for Next Month

8.3.1 The tentative schedule for environmental monitoring in January 2015 is provided in *Appendix G*.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

- 9.1.1 The construction phase of the Project was commenced on 3 June 2013. The EM&A programme has been implemented to include air quality monitoring and environmental site audits. This is the 19th monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 31 December 2014.
- 9.1.2 6 nos. of 24-hour TSP monitoring were carried out in the reporting month.
- 9.1.3 No exceedance of the Action and Limit Levels of air quality monitoring was recorded at the designated monitoring stations during reporting period.
- 9.1.4 Two landscape and visual monitoring and five environmental site audits were conducted in the reporting month. Recommendations on remedial actions were provided to the Contractor for deficiencies identified during the site audits.
- 9.1.5 No environmental complaints were reported during the reporting month.
- 9.1.6 The ET will keep track on the EM&A programme to ensure the compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

9.2 Recommendations

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

Air Quality Impact

- Maintain all site plant equipment to function in good condition to prevent fume generation.
- Cover the cement bags/cementitious grout bags entirely with impervious sheeting.
- Ensure all grouting activity with proper enclosure.
- Enhance and fully implement the wheel washing system.

Noise Impact

- Provide noise emission labels to all air compressors.

Water Quality

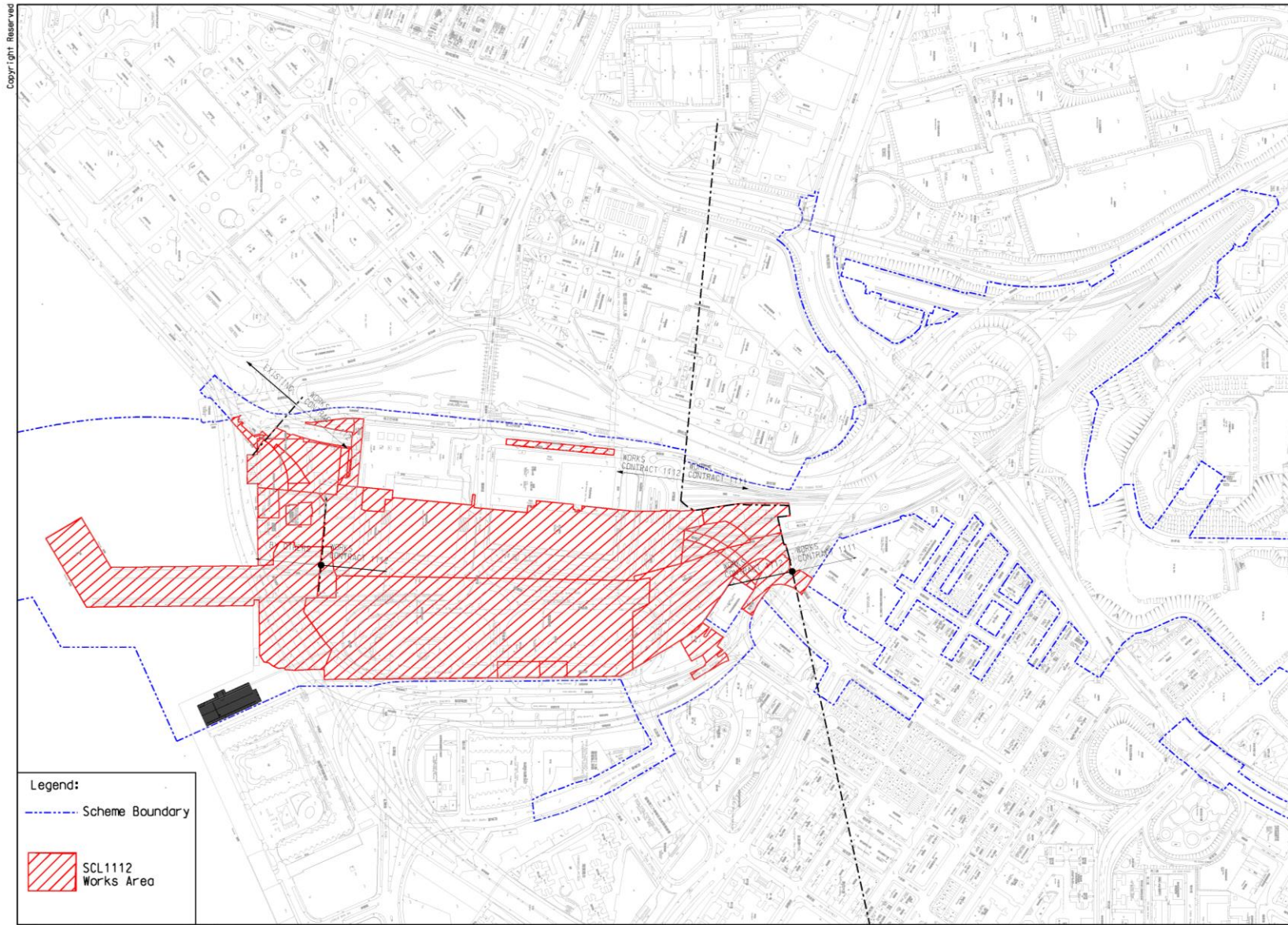
- Enhance the protections for gullies to prevent sand/silt entering the drainage system.

Chemical and Waste Management

- Provide secondary containment with proper maintenance and usage to prevent any possibility in contaminating the land.
- Sort all wastes and provide designated skip.

APPENDIX A

Project Works Boundary



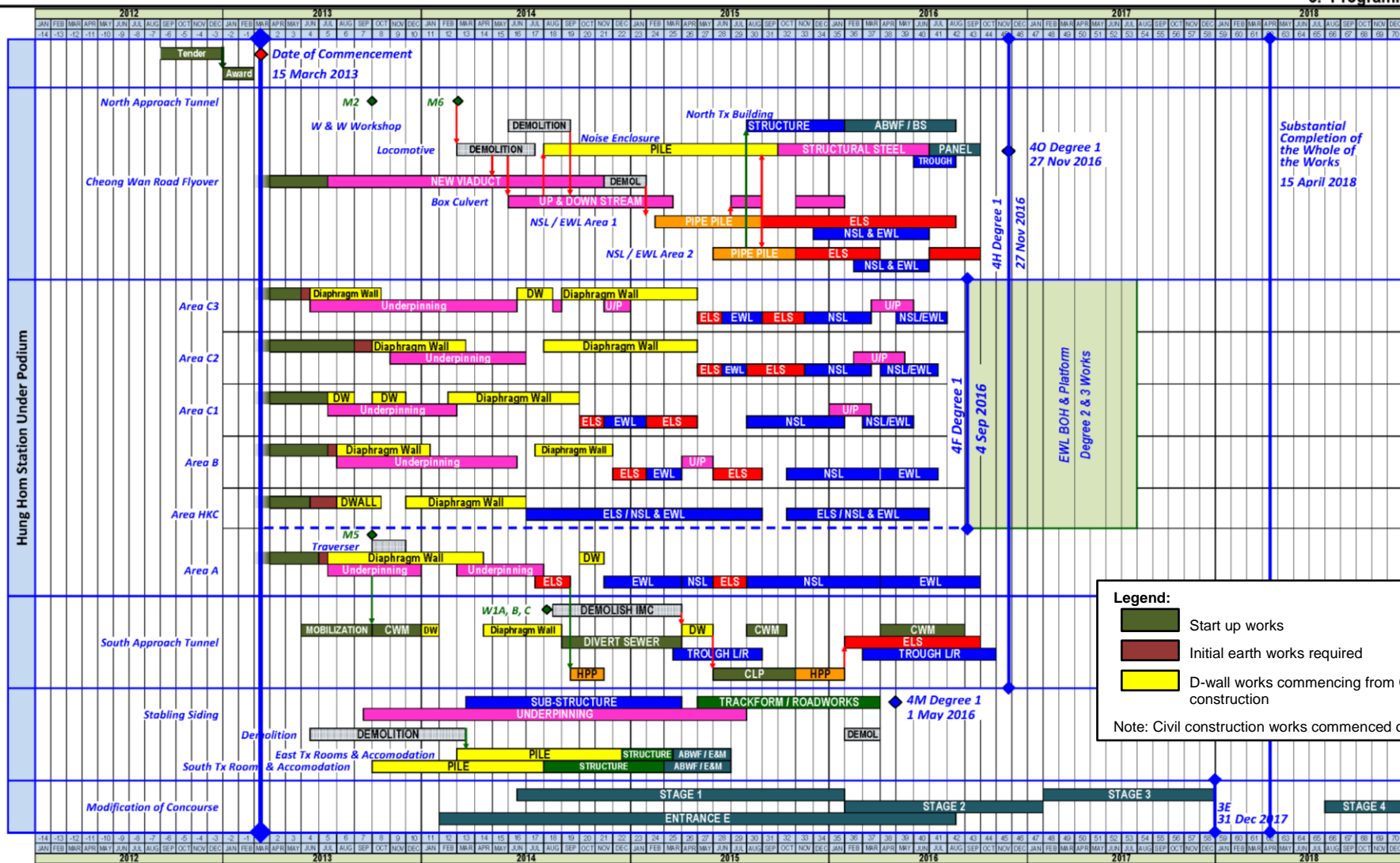
A3 420mm x 297mm

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APPENDIX B

Construction Programme

3. Programme



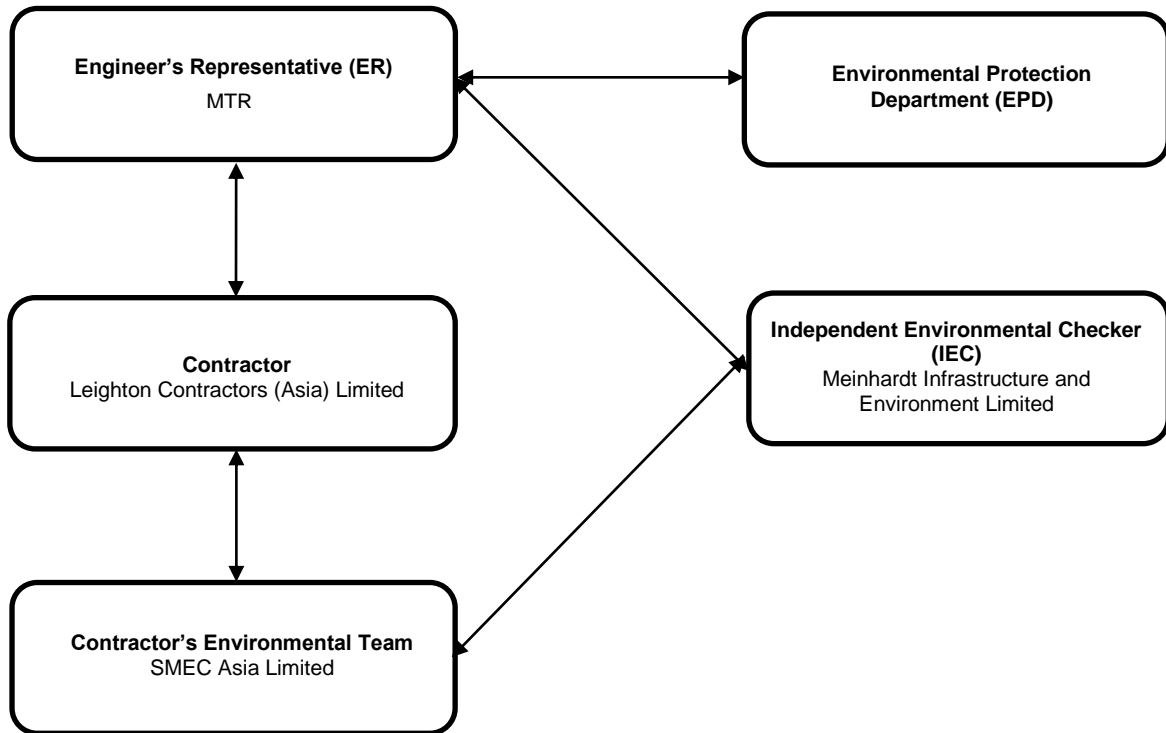
Legend:

- Start up works
- Initial earth works required
- D-wall works commencing from Guide wall construction

Note: Civil construction works commenced on 3 Jun 13

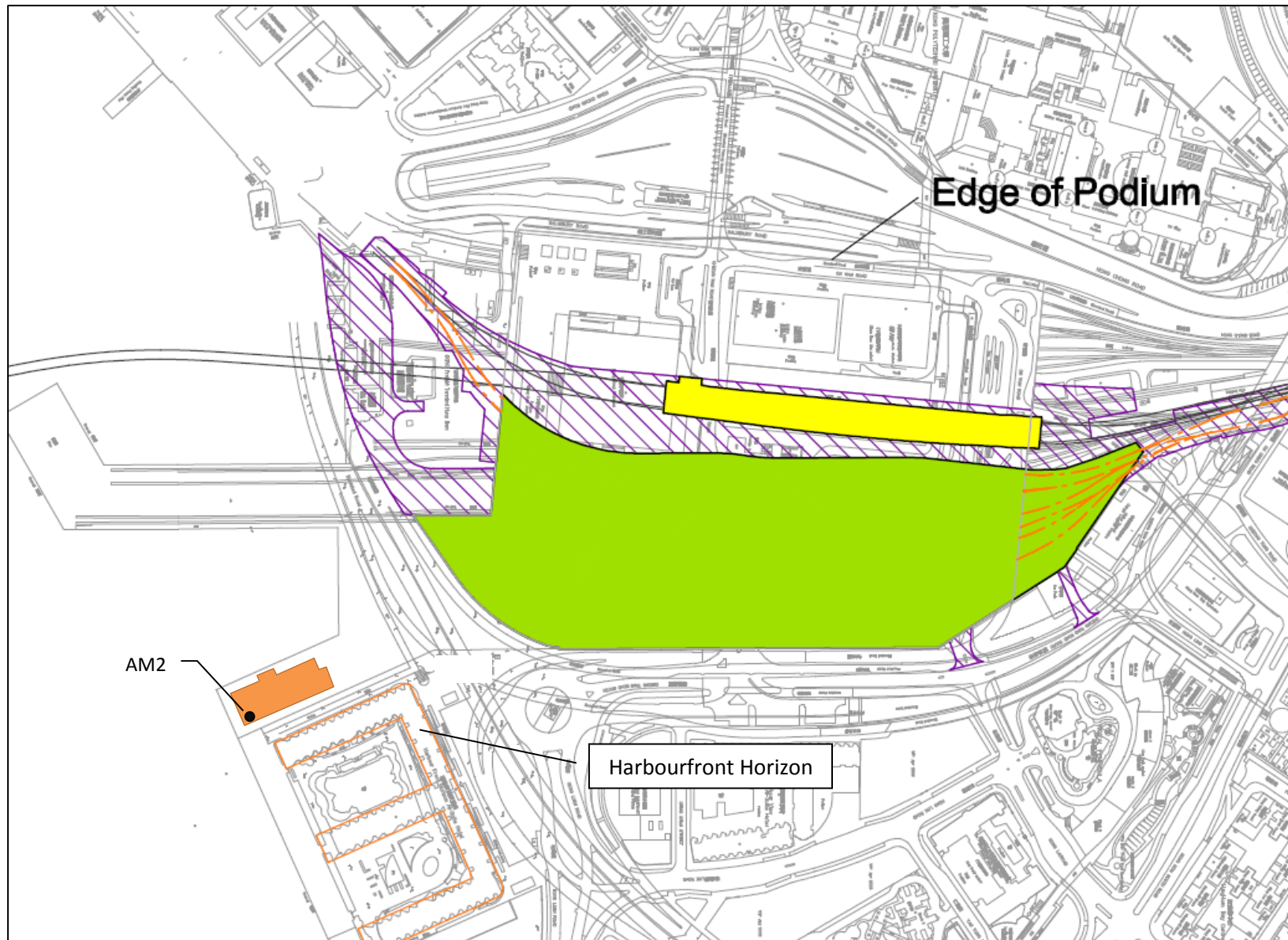
APPENDIX C

Project Organisation for Environmental Works



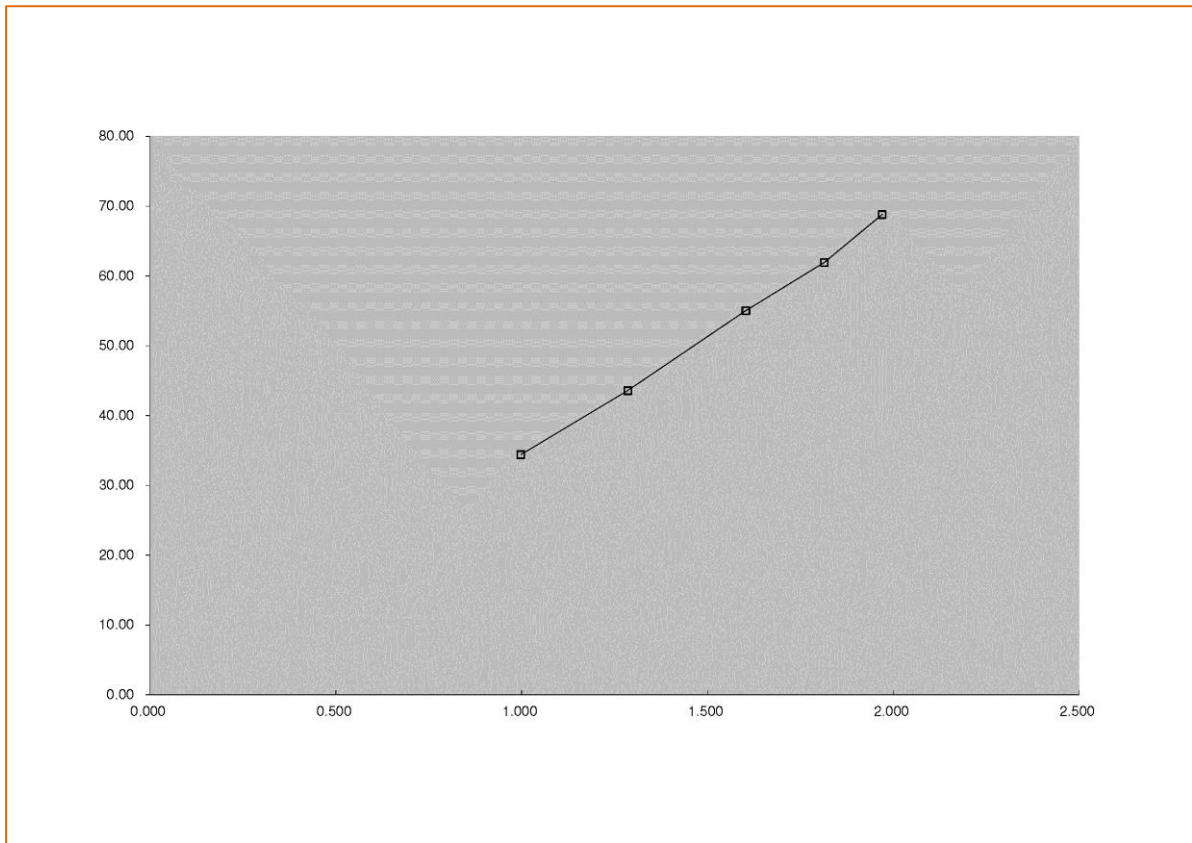
APPENDIX D

Location of Air Quality Monitoring Station



APPENDIX E

Calibration Certificates for Monitoring Equipment



TSP Sampler Calibration

SITE

Location: Hung Hom Calibration Date: December 6, 2014
 Sampler: Hunghom MTR TSP Next Calibration Date: February 6, 2015
 Serial No 694-0665 Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg): 40.15 Corrected Pressure (mm Hg): 1020
 Temperature (deg F): 63 Temperature (deg K): 290
 Average Press. (in Hg): 40.15 Corrected Average (mm Hg): 1020
 Average Temp. (deg F): 63 Average Temp. (deg K): 290

CALIBRATION ORIFICE

Make: Tisch Qstd Slope: 2.00757
 Model: TE-5025A Qstd Intercept: -0.01628
 Serial#: 1612 Date Certified: April 7, 2014

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	11.80	2.017	60.0	70.43	Slope =	35.0633
2	10.00	1.857	54.0	63.39	Intercept =	-1.0616
3	7.80	1.641	48.0	56.34	Corr. coeff.=	0.9991
4	5.00	1.316	38.0	44.60		
5	3.00	1.021	30.0	35.21	# of Observations:	5

Calculations

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta)) - b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart response
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pa = actual pressure during calibration (mm Hg)
 Tstd = 298 deg K
 Pstd = 760 mm Hg

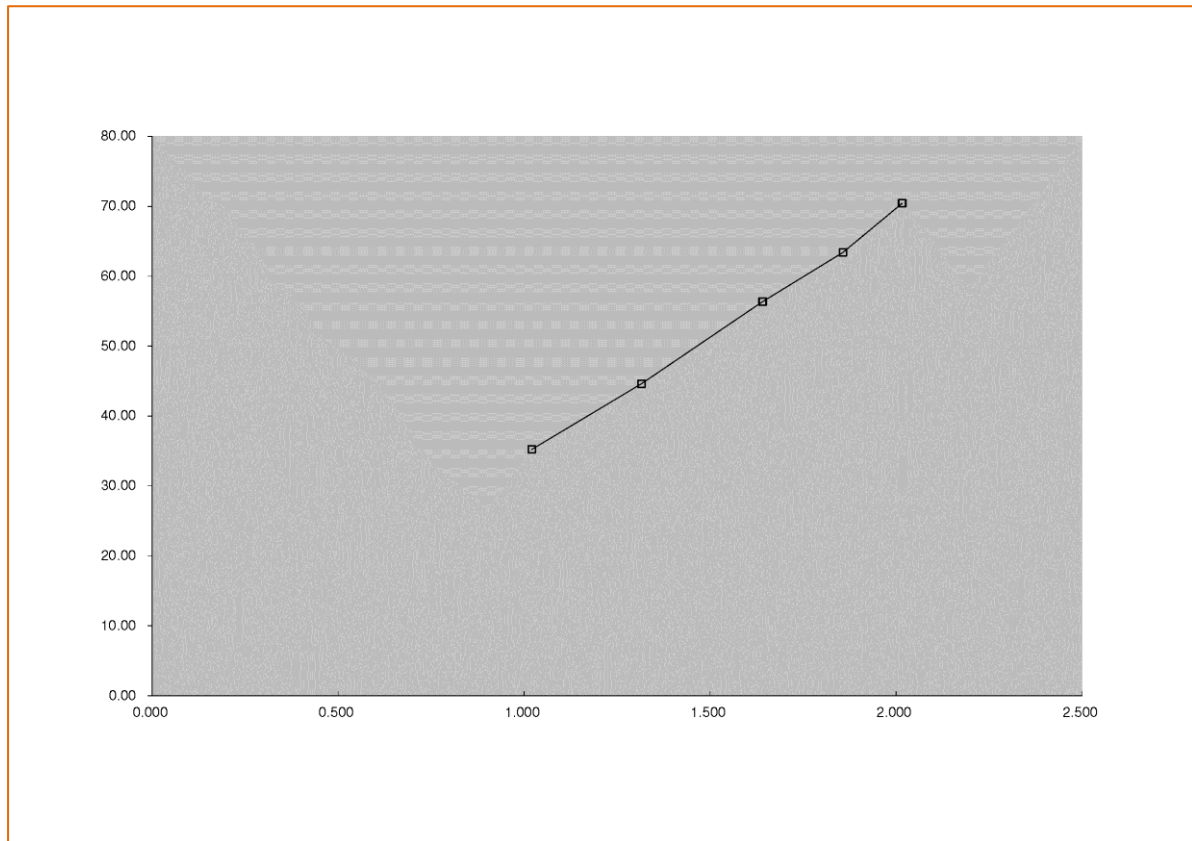
For subsequent calculation of sampler flow:
 $1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)] - b)$

m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure

Reviewer: Sam Wong

Signature: 

Date: December 6, 2014





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 877.263.7610 TOLL FREE
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Apr 07, 2014 Rootsmeter S/N 0438320 Ta (K) - 294
 Operator Tisch Orifice I.D. - 1612 Pa (mm) - 742.95

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3940	3.2	2.00
2	NA	NA	1.00	0.9790	6.4	4.00
3	NA	NA	1.00	0.8800	7.8	5.00
4	NA	NA	1.00	0.8350	8.8	5.50
5	NA	NA	1.00	0.6910	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9866	0.7077	1.4077	0.9957	0.7142	0.8896
0.9823	1.0034	1.9908	0.9914	1.0127	1.2581
0.9804	1.1140	2.2258	0.9894	1.1243	1.4066
0.9791	1.1726	2.3345	0.9881	1.1834	1.4753
0.9739	1.4094	2.8155	0.9829	1.4224	1.7793

Qstd slope (m) = 2.00757
 intercept (b) = -0.01628
 coefficient (r) = 0.99989

Qa slope (m) = 1.25710
 intercept (b) = -0.01029
 coefficient (r) = 0.99989

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

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

CALCULATIONS

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

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

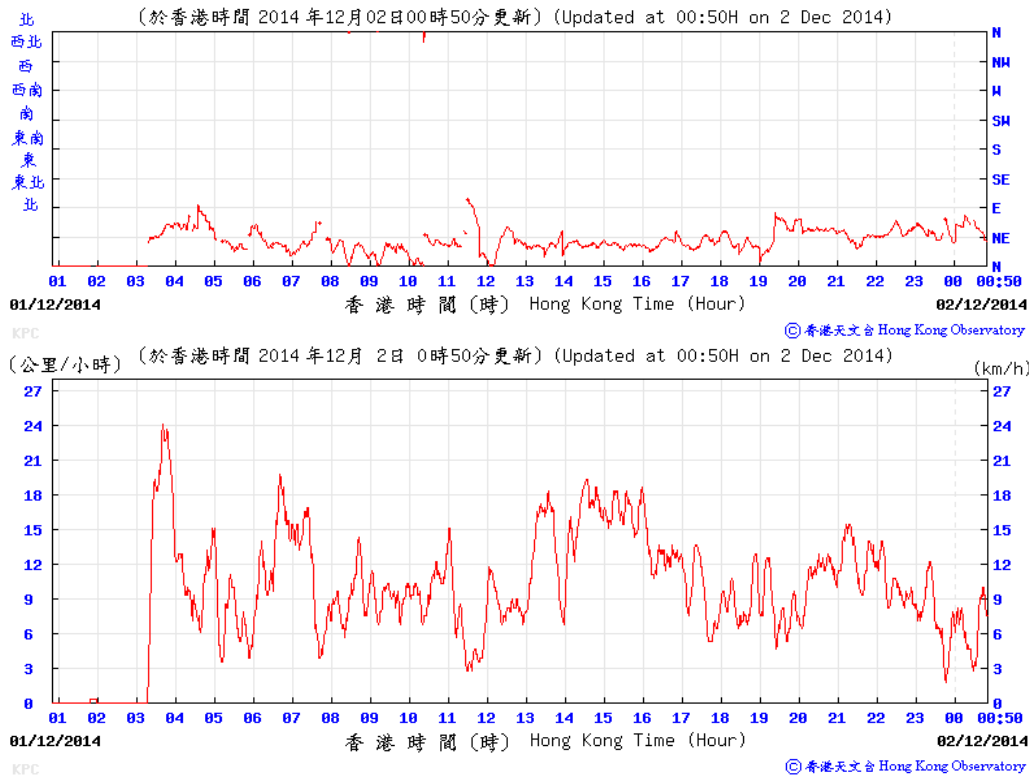
For subsequent flow rate calculations:

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

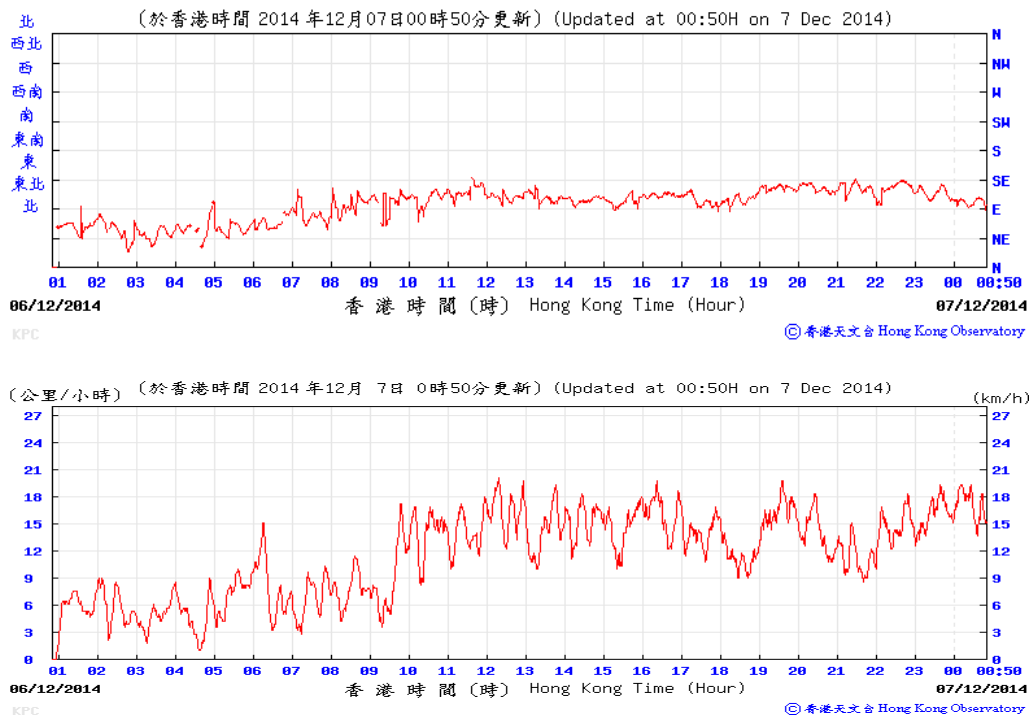
Appendix F

Wind Data

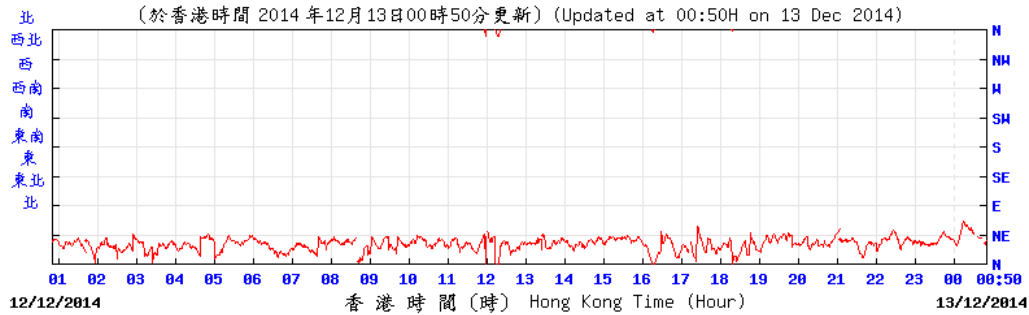
1 December 2014



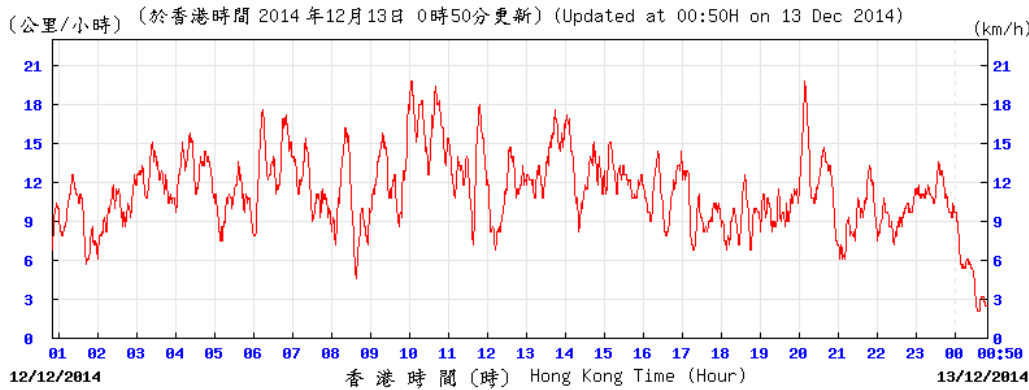
6 December 2014



12 December 2014

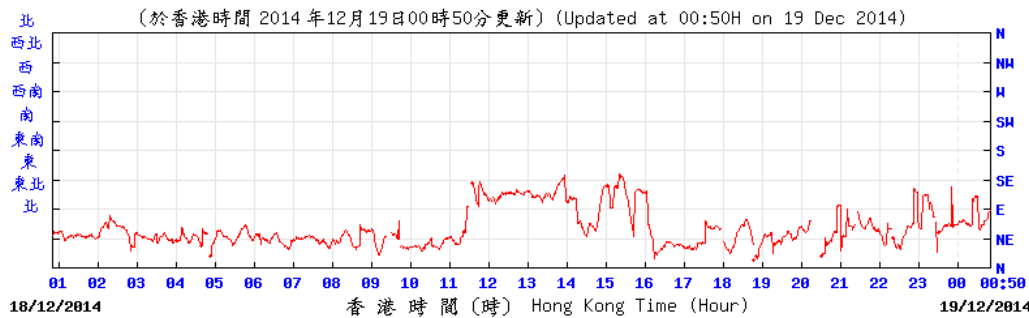


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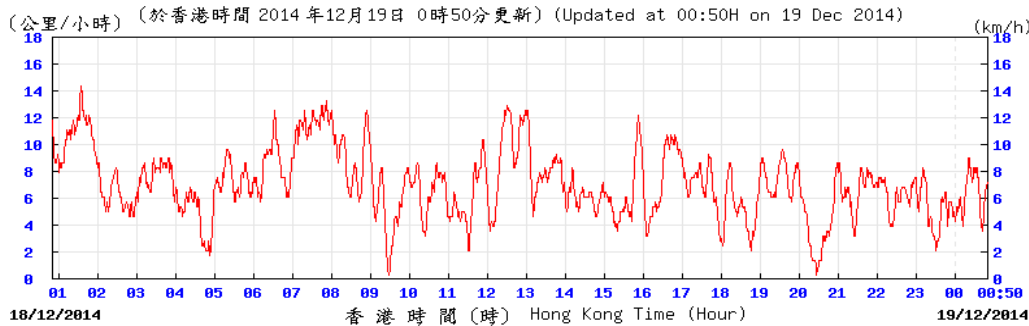


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18 December 2014

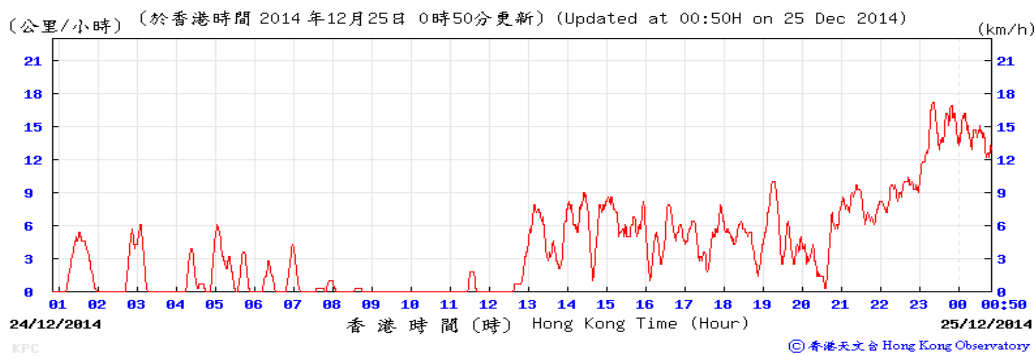
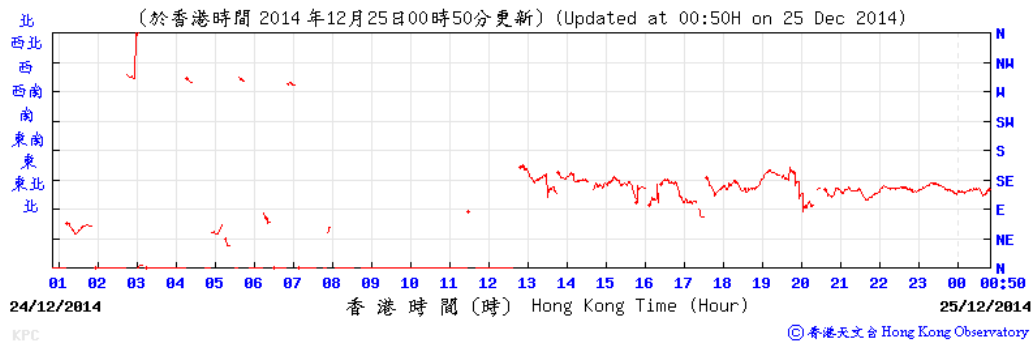


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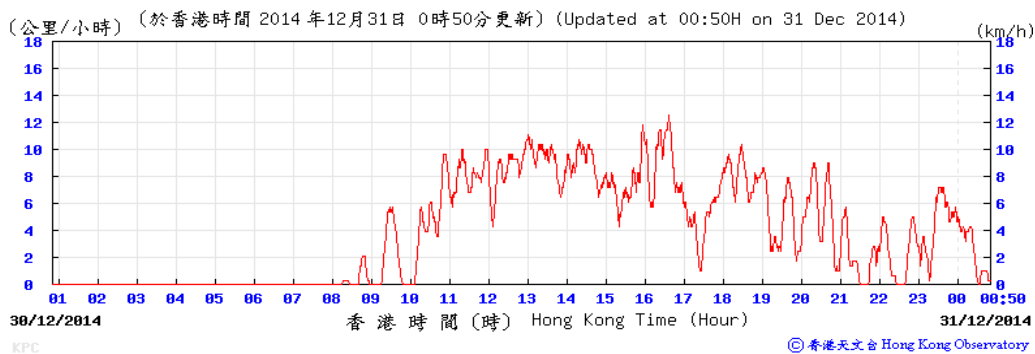
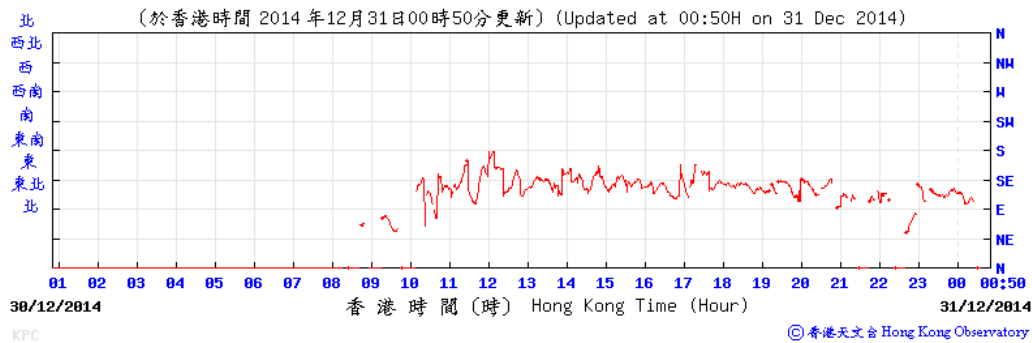


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24 December 2014



30 December 2014



Appendix G

Environmental Monitoring Programme

Environmental Monitoring Schedule for SCL1112 in December 2014

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

Environmental Monitoring Schedule for SCL1112 in January 2015

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

APPENDIX H

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	practicable. Tree transplanting proposal including final location for transplanted trees will be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.						
Air Quality (Construction Phase)							
N.A.	Emission from Vehicles and Plants: <ul style="list-style-type: none"> All vehicles shall be shut down in intermittent use. Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. All diesel fuelled construction plant within the works areas shall be powered by ultra-low sulphur diesel fuel (ULSD). 	Reduce air pollution emission from construction vehicles and plants	Contractor	All constructions sites	Construction stage	Air Pollution Control Ordinance (APCO)	^ * ^
Construction Dust Impact							
S7.6.5 of Ref. 1; S7.6.6 of Ref. 3	The contractor will follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	APCO To control the dust impact to meet HKAQO and EIAO-TM criteria	^
S5.20, S5.21, S5.50 and Table 5.4 of Ref. 2	Barging Facility: <ul style="list-style-type: none"> Unloading of spoils to barge – the unloading process should be undertaken within a 3-sided screen with top tipping hall. Water spraying and flexible dust curtains should be provided at the discharge point for dust suppression. Transportation of the spoil from the construction sites to the Barging Point – watering once along all paved haul roads to reduce dust emission by 91.7%. This dust suppression efficiency is derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.7 L/m² once every working hour. Any potential dust impact and watering mitigation would be subject to the actual site condition. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the above water application intensity may not be unreservedly applied. While the above watering frequency is to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7L/m² to achieve the removal efficiency. The dust levels would be monitored and managed under an EM&A programme as specified in the 	To minimize the construction dust impacts to the nearby sensitive receivers	Contractor	Barging point at Hung Hom Freight Pier	Construction stage	APCO	^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	EM&A Manual. <ul style="list-style-type: none"> Vehicles leaving the barging facilities – vehicles would be required to pass through the wheel washing facilities to be provided at site exit. 						^
S7.6.5 of Ref. 1; S5.50 of Ref. 2; S7.6.6 of Ref. 3	Mitigation measures in form of regular watering under a good site practice will be adopted. Watering once per hour on exposed worksites and haul road will be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but will be sufficient to maintain an equivalent intensity of no less than 1.8 L/m ² to achieve the dust removal efficiency.	Minimise dust impact at the nearby sensitive receivers	Contractor	Active works areas, exposed areas and paved haul roads	Construction stage	APCO To control the dust impact to meet HKAQO and EIAO-TM criteria	^
S7.6.5 of Ref. 1; S5.51 of Ref. 2; S7.6.6 of Ref. 3	<ul style="list-style-type: none"> Any excavated or stockpile of dusty material will be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading. Any dusty materials remaining after a stockpile is removed will be wetted and cleared from the surface of roads. A stockpile of dusty material will not be extend beyond the pedestrian barriers, fencing or traffic cones. The load of dusty materials on a vehicle leaving a construction site will be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle. Where practicable, vehicle washing facilities with high pressure water jet will be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point will be paved with concrete, bituminous materials or hardcore. When there are open excavation and reinstatement works, hoarding of not less than 2.4m high will be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice will also be adopted by the contractor to ensure the conditions of the hoardings are properly maintained in construction period. The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit will be kept clear of dusty materials. Surfaces where any pneumatic or power-driven drilling, 	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	APCO Air Pollution Control (Construction Dust) Regulation To control the dust impact to meet HKAQO and EIAO-TM criteria	* ^ ^ ^ * ^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	<p>cutting, polishing or other mechanical breaking operation takes place will be sprayed with water or a dust suppression chemical continuously.</p> <ul style="list-style-type: none"> • Any area that involves demolition activities will be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet. • Where scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground floor level of the building, or a canopy will be provided from the first floor level up to the highest level of the scaffolding. • Any skip hoist for material transport will be totally enclosed by impervious sheeting. • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) will 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 will 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 will be carried out in a totally enclosed system or facility, and any vent or exhaust will be fitted with an effective fabric filter or equivalent air pollution control system. • Exposed earth will be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 						<p>^</p> <p>^</p> <p>N/A</p> <p>^</p> <p>#</p> <p>^</p> <p>*</p> <p>^</p>
S7.6.5 of Ref. 1; S5.57 of Ref. 2; S7.6.6 of Ref. 3	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Harbourfront Horizon	Construction stage	EIAO-TM APCO	^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
Construction Airborne Noise							
S8.3.6 of Ref. 1; S6.61 of Ref. 2; S8.5.6 of Ref. 3	Implement the following good site practices: <ul style="list-style-type: none"> Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction programme. Machines and plant (such as trucks, cranes) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum. Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs. Silencers or mufflers on construction equipment will be properly fitted and maintained during the construction works. Mobile plant will be sited as far away from NSRs as possible and practicable. Material stockpiles, mobile container site office and other structures will be effectively utilised, where practicable, to screen noise from onsite construction activities. 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	* ^ ^ ^ ^ ^
S8.3.6 of Ref. 1; S6.68 of Ref. 2; S8.5.6 of Ref. 3	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings will be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^
S8.3.6 of Ref. 1; S6.64 – 6.67 and Table 6.20 of Ref. 2; S8.5.6 of Ref. 3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^
S8.3.6 of Ref. 1; S6.62 – 6.63 and Table 6.19 of Ref. 2; S8.5.6 of Ref. 3	The following quiet PME should be used: <ul style="list-style-type: none"> Asphalt Paver (SWL=101dB(A)) Backhoe (SWL=106dB(A)) Backhoe with Hydraulic Breaker (SWL=110dB(A)) Concrete lorry mixer (SWL=96dB(A)) Concrete mixer truck (SWL=96dB(A)) Concrete Pump (SWL=106dB(A)) Concrete Pump Truck (SWL=106dB(A)) Crane, mobile (SWL=94dB(A)) Crawler Crane (SWL=102dB(A)) 	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	<ul style="list-style-type: none"> • Drill, hand-held (SWL=98dB(A)) • Dump truck (SWL=104dB(A)) • Excavator (SWL=106dB(A)) • Flat Bed Lorry (SWL=102dB(A)) • Generator (SWL=95dB(A)) • Giken Piler and Power-pack (SWL=94dB(A)) • Hydraulic breaker (SWL=110dB(A)) • Hydraulic excavator (SWL=106dB(A)) • Lorry (SWL=102dB(A)) • Lorry with crane/ grab (SWL=94dB(A)) • Mini Piling Rig (SWL=112dB(A)) • Piling Rig (SWL=112dB(A)) • Poker, vibrator, hand-held (SWL=98dB(A)) • Road Roller (SWL=101dB(A)) • Rock Drill (SWL = 108dB(A)) • Roller (SWL = 101dB(A)) • Truck (SWL=103dB(A)) • Vibratory Hammer (SWL=118dB(A)) 						
S8.3.6 of Ref. 1; S8.5.6 of Ref. 3	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^
S8.3.6 of Ref. 1; S8.5.6 of Ref. 3	Implement noise monitoring under EM&A programme.	Monitoring of construction noise impact	Contractor	Wing Fung Building	Construction stage as required by IEC	TM-EIA	^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	<p>vegetated areas.</p> <ul style="list-style-type: none"> • Measures will be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they will be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations will be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ will be covered with tarpaulin or similar fabric during rainstorms. • Measures will be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) will always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention will be paid to the control of silty surface runoff during storms, especially areas near steep slopes. • All vehicles and plant will be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities will be provided at every construction site exit where practicable. Wash-water will have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road will be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors will be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors will be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass will be provided for 						<p>^</p> <p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	<p>the oil interceptors to prevent flushing during heavy rain.</p> <ul style="list-style-type: none"> Construction solid waste, debris and rubbish on site will be collected, handled and disposed of properly to avoid water quality impacts. All fuel tanks and storage areas will be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. All the earth works involving will be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. Adopt Best Management Practices. 						<p>^</p> <p>^</p> <p>^</p> <p>^</p>
S10.7.1 of Ref. 1; S10.7.1 of Ref. 3	<p><u>Tunnelling works</u></p> <ul style="list-style-type: none"> Cut-and-cover/ open-cut tunnelling work will be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. Uncontaminated discharge will pass through sedimentation tanks prior to off-site discharge. The wastewater with a high concentration of SS will be treated (eg, by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. It will be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) will be provided on site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 will be adhered to in the handling and disposal of bentonite slurries. 	To minimize construction water quality impact from tunnelling works	Contractor	All tunnelling portion	Construction stage	WPCO ProPECC PN1/94 EIAO-TM TM-Water	<p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
S8.68 of Ref. 2; S10.7.1 of Ref. 1	<p><u>Operation of Barging Facilities</u> The following good practice shall apply for the barging facilities operations:</p> <ul style="list-style-type: none"> All barges should be fitted with tight bottom seals to prevent leakage of materials during transport; Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or transportation; 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; and Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Mitigation measures as outlined for control of <i>construction runoff and site drainage</i> provide above should be applied to minimise water quality impacts from site runoff and open stockpile spoils at the proposed barging facilities where appropriate. 	To minimize water quality impact from operation of barging facility	Contractor	All barging facilities	Construction stage	WPCO TM-EIA	^ ^ ^ ^ ^
S8.51 – 8.52 of Ref. 2	<p><u>Bentonite Slurries:</u></p> <ul style="list-style-type: none"> Bentonite slurries used in diaphragm wall construction should be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry should either be dewatered or mixed with inert fill material for disposal to a public filling area. If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the TM-DSS. 	To minimize water quality impact from bentonite slurries	Contractor	All works area	Construction stage	WPCO TM-EIA	^ ^
S8.53 – 8.54 of Ref. 2	<p><u>Wastewater from Building Construction:</u></p> <ul style="list-style-type: none"> Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as washing and general cleaning etc., can minimise water 	To minimize water quality impact from building construction	Contractor	All construction sites where practicable	Construction stage	WPCO EIAO-TM	^ N/A

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office of EPD.						
S8.62 of Ref. 2	<p><u>Excavation Activities:</u></p> <ul style="list-style-type: none"> The construction programme should be properly planned to minimise soil excavation, if any, in rainy seasons. This prevents soil erosion from exposed soil surfaces. Any exposed soil surfaces should also be properly protected to minimise the potential for dust emission, increased siltation and contamination of runoff. In areas where a large amount of exposed soils exist, earth bunds or sand bags should be provided. Exposed stockpiles should be covered with tarpaulin or impervious sheets at all times. The stockpiles of materials should be placed at locations away from water environment so as to avoid releasing materials into the water bodies. Final surfaces of earthworks should be compacted and protected by permanent work. 	To minimize water quality impact from excavation activities	Contractor	All excavation works areas	Construction stage	WPCO EIAO-TM	^
S8.63 of Ref. 2	<p><u>Diaphragm Wall</u></p> <ul style="list-style-type: none"> The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be implemented to control site run-off and drainage as well as any site effluents generated from the works areas, and to prevent run-off and construction wastes from entering nearby water environment. Proper handling of bentonite slurries used in diaphragm wall construction should be adopted. 	To minimize water quality impact from diaphragm walling	Contractor	All diaphragm walling works areas	Construction stage	WPCO EIAO-TM	^
S8.60 – 8.61 of Ref. 2; S10.7.1 of Ref. 3	<p><u>Sewage effluent</u></p> <p>Portable chemical toilets are recommended for handling the construction sewage generated by the workforce. A licensed contractor will be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.</p>	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	WPCO TM-Water	^
S8.64 of Ref. 2; S10.7.1 of Ref. 3	<p><u>Groundwater seepage</u></p> <p>As some proposed works areas at Hung Hom are near Victoria Harbour, high ground water level regime due to both tidal effects and rainwater infiltration is anticipated. Appropriate measures will be deployed to minimise the intrusion of groundwater into excavation works areas. In case seepage of groundwater occurs, groundwater will be pumped out from the works areas and discharged into the storm system via silt</p>	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found.	Construction stage	WPCO TM-Water EIAO-TM	^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	removal facilities. Groundwater from dewatering process will also be discharged into the storm system via silt traps.						
S10.7.1 of Ref. 1; S8.57 – 8.59 of Ref. 2; S10.7.1 of Ref. 3	<p><u>Accidental spillage</u> To prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> • Proper storage and handling facilities will be provided. • All the tanks, containers, storage area will be bunded and the locations will be locked as far as possible from the sensitive watercourse and stormwater drains. • The contractor will register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities will be stored with suitable labels and warnings. • Disposal of chemical wastes will be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	WPCO ProPECC PN1/94 EIAO-TM TM-Water	* ^ ^
S8.72 of Ref.2	Regular site inspections should be undertaken to inspect the construction activities and works areas	To ensure the recommended water quality mitigation measures are properly implemented	Contractor	All construction sites	Construction stage	EIAO-TM WPCO ProPECC PN 1/94 TM-DSS WDO	^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
Waste Management (Construction Phase)							
S11.4.1.1 of Ref. 1; S9.80 – 9.83 of Ref. 2; S11.4.1.1 of Ref.3	<p><u>Onsite sorting of C&D material</u></p> <p>Geological assessment will be carried out by competent persons onsite during excavation to identify materials which are not suitable to use as aggregate in structural concrete (eg, volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock will be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator will also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities will be submitted by the Contractors for the Engineer to review and agree. In addition, site records will also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) ref: 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc will also be explored.</p>	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	DEVB TC(W) ref. 6/2010	^
S11.5.1 of Ref.1; S9.72 – 9.74 of Ref. 2; S11.5.1 of Ref.3	<p><u>Construction and demolition material</u></p> <ul style="list-style-type: none"> Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement. Carry out onsite sorting. Make provisions in the Contract documents to allow and promote The use of recycled aggregates where appropriate. Adopt ‘selective demolition’ technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible. Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. Implement an enhanced Waste Management Plan similar to ETWBTC (Works) ref 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. will be avoided. The contractor will propose the final disposal sites to the Project 	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW Ref 19/2005	^ ^ ^ ^ ^ ^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	Proponent and EPD and get their approval before implementation.						
S11.5.1 of Ref.1; S9.73 of Ref. 2; S11.5.1 of Ref.3	<p><u>C&D waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication will be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works will be considered. Use of wooden hoardings will not be used, as in other projects. Metal hoarding will be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. The contractor will recycle as much of the C&D materials as possible onsite. Public fill and C&D waste will be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites will be considered for such segregation and storage. 	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW Ref 19/2005	^ ^
S11.5.1 of Ref.1; S9.100-9.102 of Ref.2; S11.5.1 of Ref. 3	<p><u>General refuse</u></p> <ul style="list-style-type: none"> General refuse generated onsite will be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector will be employed by the contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. Aluminium cans will be often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit will be provided if feasible. Office wastes will be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme will be considered by the contractor. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance	* ^ ^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
S11.5.1 of Ref.1; S9.84 – 9.93 of Ref. 2	<p><u>Land-based sediment</u></p> <ul style="list-style-type: none"> The basic requirements and procedures for excavated sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. The Project Proponent should agree in advance with MFC of CEDD on the site allocation. Subject to the final decision by MFC, Type 1 sediments are typically disposed to South Cheung Chau and/or East of Ninepin as open sea disposal while Type 2 sediments are disposed to East Sha Chau as confined marine disposal. Sampling and Testing Plan(s) should be prepared in accordance with ETWB TC(W) No. 34/2002. Site investigation, based on the Sediment Sampling and Testing Plan(s), should be carried out in order to confirm the disposal arrangements for the proposed excavated sediments. A Sediment Quality Report (SQR) should then be submitted to EPD for agreement prior to the tendering of the construction contract, discussing in details the site investigation, testing results as well as the delineation of each of the categories of excavated materials and the corresponding types of disposal. The excavated sediments is expected to be loaded onto the dumping trucks and transferred to the barging point where the sediments would be transported via barge to the existing designated disposal sites allocated by the MFC. The excavated sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002. Requirements of the Air Pollution Ordinance (Construction Dust) Regulation, where relevant, shall be adhered to during excavation, transportation and disposal of sediments. Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged 	To ensure the sediment is handled and disposed of in a least impacted way and in accordance to the statutory	Contractor	All construction sites	Construction stage	ETWB TC(W) NO. 34/2002 Dumping at Sea Ordinance (DASO) APCO WPCO	N/A N/A N/A N/A N/A

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	<p>according to the Water Pollution Control Ordinance (WPCO).</p> <ul style="list-style-type: none"> In order to minimize the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments should be wetted during excavation / material handling and should be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In order to minimize the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. 						<p>N/A</p> <p>N/A</p> <p>N/A</p>
<p>S11.5.1 of Ref.1; S8.94 – 9.97 of Ref. 2; S11.5.1 of Ref. 3</p>	<p><u>Chemical waste</u></p> <ul style="list-style-type: none"> Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, will be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes will be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450L unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes will be clearly labelled and used solely for the storage of chemical waste; be enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; be covered to prevent rainfall entering; and be arranged so that incompatible materials are adequately separated. 	<p>Control the chemical waste and ensure proper storage, handling and disposal.</p>	<p>Contractor</p>	<p>All construction sites</p>	<p>Construction stage</p>	<p>Waste Disposal (Chemical Waste) (General) Regulation</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</p>	<p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	<ul style="list-style-type: none"> Disposal of chemical waste will be via a licensed waste collector; and be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD. 						^
S9.98 – 9.99 of Ref 2	<p><u>Asbestos wastes</u></p> <ul style="list-style-type: none"> All storage of asbestos waste should be carried out properly in a secure place isolated from other substances so as to prevent any possible release of asbestos fibres into the atmosphere and contamination of other substances. The storage area should bear warning panels to alert people of the presence of asbestos waste. Collection, transportation and disposal of asbestos waste will follow the trip-ticket system. Licensed asbestos waste collectors will be appointed to collect the asbestos waste and deliver to the designated landfill for disposal. The Project Proponent should notify to EPD in advance for disposal of asbestos waste. After processing the notification, EPD will issue specific instructions and directions for disposal. The waste producer must strictly follow these directions 	To ensure the asbestos wastes are handled and disposed of in accordance with the statutory requirements	Contractor	All construction sites	Construction stage	Code of practice on the Handling, Transportation and Disposal of Asbestos Waste	^ N/A

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
Land Contamination							
S10.24 – 10.34 of Ref 2	<p><u>Precautionary measures</u></p> <ul style="list-style-type: none"> Precautionary measures such as visual inspection are recommended to be undertaken during construction activities that disturb soil. The inspection process should involve a visual observation of excavated soils for discolouration and the presence of oils, together with identifying the presence of odours, which may also indicate soil and/or groundwater contamination. If soil discolouration or the presence of oil/unnatural odour is noted during visual inspection, sampling and testing should also be undertaken to verify the presence of contamination. 	To act as a general precautionary measure to screen soils for the presence of contamination during construction	Contractor	All construction sites	Construction stage	<p>“Guidance Note for Contaminated Land Assessment and Remediation”</p> <p>“Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management”</p>	<p>^</p> <p>^</p>
S10.35 of Ref 2	<ul style="list-style-type: none"> Potential remediation of contaminated soil If land contamination is identified, CAR and RAP detailing the proposed remediation works should be prepared. RR should then be prepared and submitted to EPD to demonstrate that the decontamination work is adequate and has been carried out in accordance with the endorsed CAR and RAP. Information such as soil treatment/disposal records (including trip tickets), confirmatory sampling results and photographs should be included in the RR. No construction work should be carried out prior to endorsement of the RR by EPD. In order to minimise environmental impacts arising from the handling of potentially contaminated materials, the following environmental precautionary measures are recommended to be utilised during the course of any required 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; If proposed remediation methods employ chemical oxidation methods as the contaminant mass reduction technology, chemicals will be securely and separately stored away from 	To remediate contaminated soil	Contractor	All construction sites	Construction stage	<p>“Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair /Dismantling Workshop”</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	<p>sources of ignition or oxidisable items. Handling will be undertaken by personnel with appropriate training and Personal Protective Equipment</p> <ul style="list-style-type: none"> • 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 coVehicle wheel and body washing facilities at the site's exit points should be established and used; and contaminated materials should be enforced; • Pollution control measures for air emissions e.g. from biopile blower, noise emissions e.g. from blower, and water discharges e.g. runoff control should be implemented and complied with relevant regulations and guidelines. 						N/A
							N/A
							N/A
							N/A
S10.36 of Ref 2	<p>The Occupation Safety and Health Ordinance (OSHO) (Chapter 509) and its subsidiary Regulations should be followed by all site personnel working on the site at all times. In addition, the following basic health and safety measures should be implemented as far as possible:</p> <p>Set up a list of safety measures for site workers.</p> <p>Provide written information and training on safety for site workers.</p> <p>Keep a log-book and plan showing the contaminated zones and clean zones.</p> <p>Maintain a hygienic working environment.</p> <p>Avoid dust generation.</p> <p>Provide face and respiratory protection gear to site workers.</p> <p>Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers.</p> <p>Provide first aid training and materials to site workers.</p>	To minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation.	Contractor	All construction sites	Site remediation and prior to construction phase	<p>"Guidance Note for Contaminated Land Assessment and Remediation"</p> <p>"Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management"</p> <p>"Occupation Safety and Health Ordinance (Chapter 509)"</p>	N/A
EM&A Project							
S14.2 – 14.4 of Ref. 1; S13.2 – 13.4 of Ref. 3 1.	<ul style="list-style-type: none"> • An Environmental Team needs to be employed as per this EM&A Manual. • Prepare a systematic EMP to ensure effective implementation of the mitigation measures. • An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in this 	Perform environmental monitoring & auditing	Contractor	All construction sites	Construction stage	EIAO Guidance Note Ref4/2010 EIAO-TM	^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	EM&A Manual are fully complied with.						

Remark for Status:

^ Compliance of mitigation measure
 + Non-compliance but rectified by the contractor
 N/A Not Applicable

X Non-compliance of mitigation measure
 * Recommendation was made during site audit but improved/rectified by the contractor
 # Recommendation was made during site audit and improvement/rectification not yet completed by the contractor

Notes:

Ref. 1 – EIA Report for SCL (TAW-HUH)
 Ref. 2 – EIA Report for SCL (MKK-HUH)
 Ref. 3 – EIA Report for SCL (HHS)

This EMIS contains only those requirements that are relevant to Works Contract 1112 in terms of:

- EM&A required under Works Contract 1112
- Who to implement the measures – the Contractor (Leighton)
- The location of the measures – within and in the vicinity of the Works Contract 1112 Site Boundary
- When to implement the measures – during the design and construction

APPENDIX I

Event and Action Plan

Event and Action Plan for Landscape and Visual Impact Monitoring

Event	ET	IEC	ER	Contractor
Action level				
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the contractor's working method 3. Discuss with the ET, ER and the contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the contractor 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify source 2. Inform the contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1. Notify the contractor 2. In consultation with the ET and IEC, agree with the contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Event and Action Plan for Air Quality

Event	ET	IEC	ER	Contractor
Action level				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER 2. Discuss with the Contractor, IEC and ER on the remedial measures required 3. Repeat measurement to confirm findings 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET 2. Check Contractor's working method 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures	1. Confirm receipt of notification of exceedance in writing	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate
2. Exceedance for two or more consecutive samples	1. Inform the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Repeat measurements to confirm findings 4. Increase monitoring frequency to daily 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor 6. If exceedance stops, cease additional monitoring	2. Check monitoring data submitted by the ET 3. Check Contractor's working method 4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures	1. Confirm receipt of notification of exceedance in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise Implementation of remedial measures	1. Identify source and investigate the causes of exceedance 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification 3. Implement the agreed proposals 4. Amend proposal as appropriate

Event	ET	IEC	ER	Contractor
Limit Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, EPD, Contractor and ER 2. Repeat measurement to confirm findings 3. Increase monitoring frequency to daily 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET 2. Check the Contractor's working method 3. Discuss with the ET, ER and Contractor on possible remedial measures 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor 4. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification 4. Implement agreed proposals 5. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify IEC, Contractor & EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency to daily 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET 2. Check the Contractor's working method 3. Discuss with ET, ER, and Contractor on the potential remedial measures 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note:

ET – Environmental Team, IEC – Independent Environmental Checker, ER – Engineer's Representative

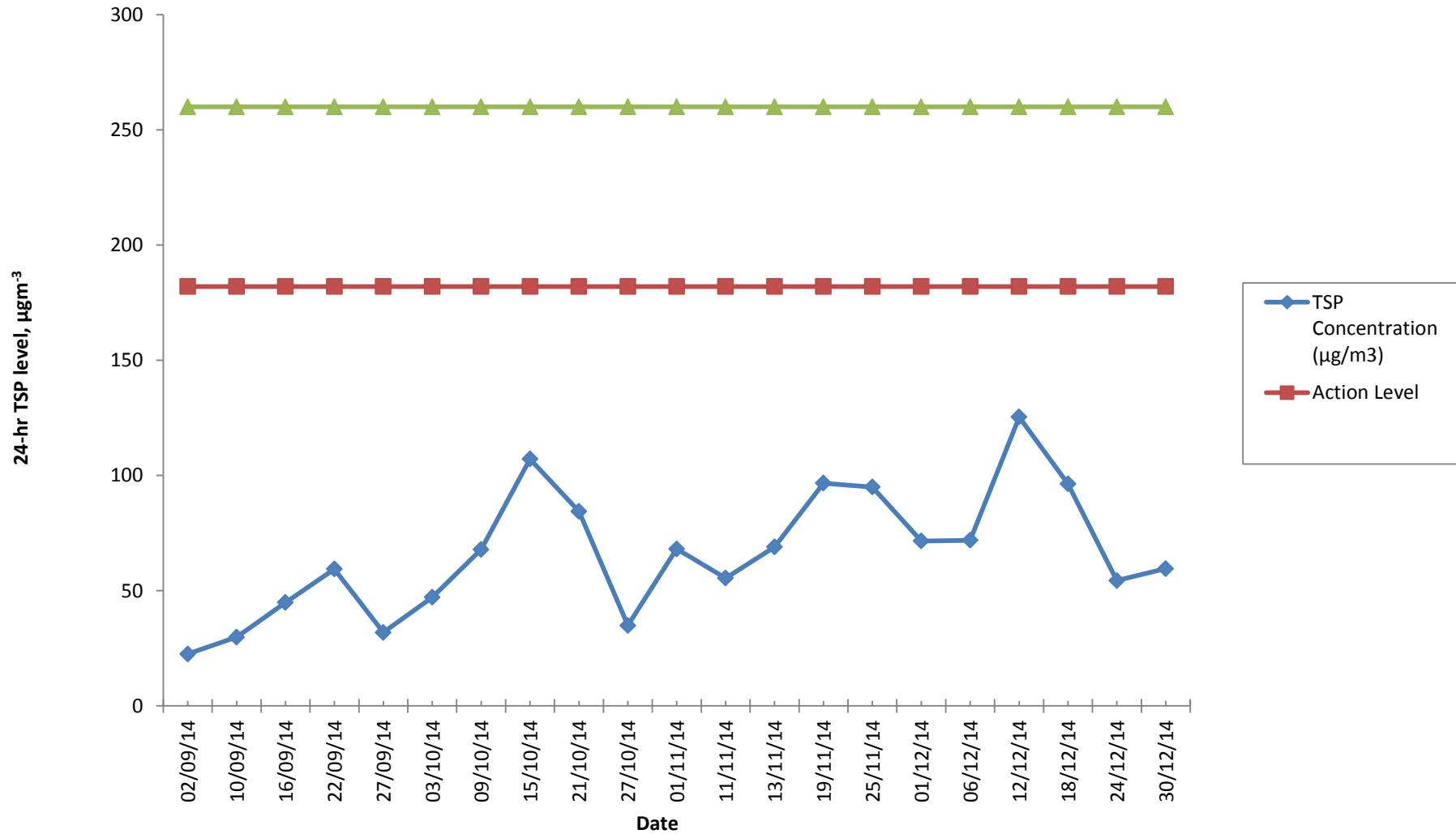
APPENDIX J

Monitoring Results and their Graphical Presentations

Air Quality Monitoring Results for AM2

Sampling Date	Wt. of paper (g)				Elapse Time			Flow Rate (CFM)			Total Volume (m ³)	TSP Concentration (µg/m ³)	Weather	Remark
	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate				
01/12/14	A3	2.7530	2.8697	0.1167	11943.30	11967.30	24.00	40	40	40.0	1631.05	71.5490	Cloudy	-
06/12/14	A4	2.7789	2.8962	0.1173	11967.30	11991.30	24.00	40	40	40.0	1631.05	71.9169	Cloudy	-
12/12/14	A5	2.7770	2.9815	0.2045	11991.30	12015.30	24.00	40	40	40.0	1631.05	125.3793	Sunny	-
18/12/14	A6	2.7863	2.9434	0.1571	12015.30	12039.30	24.00	40	40	40.0	1631.05	96.3183	Cloudy	-
24/12/14	A7	2.8145	2.9032	0.0887	12039.30	12063.30	24.00	40	40	40.0	1631.05	54.3821	Cloudy	-
30/12/14	A8	2.7979	2.8951	0.0972	12063.30	12087.30	24.00	40	40	40.0	1631.05	59.5935	Sunny	-

Construction Dust Monitoring Results for AM2 (Harbourfront Horizon)



APPENDIX K

Waste Flow Table

Waste Flow Table														
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of non-inert C&D Wastes Generated Monthly					
	Generated			Disposed					Recycled				Disposed	
	Imported from SCL1111	Total Quantity Generated	Hard Rock and Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fills at HH Barging Point	Disposed as Public Fills at TKO137	Disposed as Public Fills at TM38	Metals	Paper/ Cardboard Packaging	Asphalt	Plastics	Chemical Waste	General Refuse ^[Note 2]
Unit	(in '000m ³)								(in '000Kg)					
Jun-13	0	0	0	0	0	0	0	0	137.3	0	0	0	0	6.55
Jul-13	0	0.36	0	0	0	0	0	0.36	365.34	0	0	0	0	16.87
Aug-13	0	1.68	0	0	0	0.05	0	1.63	69.98	0.25	0	0	0	12.67
Sep-13	0	3.39	0	0	0	0.20	0	3.19	131.18	0.22	0	0.46	0	16.25
Oct-13	0	4.04	0	0	0	0.78	0	3.26	179.97	0.63	8.28	2.04	0	39.87
Nov-13	0	6.09	0	0	0	2.09	0.18	3.82	125.70	0.45	160.35	0	0	28.69
Dec-13	0	5.69	0	0	0	1.74	0.01	3.94	72.15	0.39	4.13	0	0	18.04
Jan-14	0	4.58	0	0	0	0	0.27	4.31	117.57	0.26	147.67	0.26	0	30.09
Feb-14	0	3.80	0	0	0.14 ^[Note1]	0	0.19	3.46	28.32	0.29	414.67	0	0	15.73
Mar-14	0	10.10	0	0	6.18 ^[Note2]	0	0.29	3.63	96.26	0.25	0	0	0	47.76
Apr-14	0	6.67	0	0	4.82 ^[Note3]	0	0.0053	1.85	75.43	0.23	1,322.39	0	0.2	78.63
May-14	0.52	5.77	0	0.43	2.00 ^[Note4]	0	0.12	3.65	48.86	0.28	501.45	0	0	66.03
Jun-14	0.47	4.56	0	0	1.73 ^[Note5]	0	0.29	2.54	42.95	0.25	0	0	0.4	45.97
Jul-14	0.34	8.61	0	0	2.89 ^[Note6]	0	0.87	4.84	70.99	0	0	0	0	40.50
Aug-14	0.20	8.57	0	0	3.56 ^[Note7]	0	0.44	4.57	227.86	0	0	0	0	76.93
Sep-14	0.23	11.11	0	0	5.82 ^[Note8]	0	0.23	5.06	220.85	0.29	0	0	0	43.01
Oct-14	0.54	12.79	0	0	6.04 ^[Note9]	0	0.06	6.69	174.82	0.71	329.16	0	0	97.92
Nov-14	0.93	10.63	0	0	3.78 ^[Note10]	0	0.15	6.70	163.72	0.56	376.40	0	0	81.91
Dec-14	3.72	8.59	0	0	2.97 ^[Note11]	0	0	5.62	59.60	0.53	166.98	0	5.4	130.83
TOTAL	6.93	117.02	0	0.43	39.91	4.85	3.12	69.13	2408.84	6.75	3431.48	2.76	6.00	894.25

Note:

1. 137 m³ of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904.
2. 267 m³ of the Inert C&D materials were reused in SIL Project Contract 904;
3,998 m³ of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
1,912 m³ of the Inert C&D materials were reused in Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) Project Contract HY/2012/08.
3. 1,728 m³ of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
3,088 m³ of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
4. 184 m³ of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904; and
1814 m³ of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
5. 1,021 m³ of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
707 m³ of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
6. 2,894 m³ of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
7. 575.5m³ of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
2907.6 m³ of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08; and 76.0 m³ of the Inert C&D materials were reused in Wan
Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2009/08.
8. 4,905.4 m³ of the Inert C&D materials were reused in TM-CLKL and 912.3 m³ of the Inert C&D materials were reused in SIL Project Contract 904.
9. 5,522.9 m³ of the Inert C&D materials were reused in TM-CLKL and 515.9 m³ of the Inert C&D materials were reused in SIL Project Contract 904.
10. 3,774.6 m³ of the Inert C&D materials were reused in TM-CLKL.
11. 2,968.9 m³ of the Inert C&D materials were reused in TM-CLKL (HY/2012/08).

APPENDIX L

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Reference No.	Subject	Location of Concern	Status
Environmental complaints	11 Nov 2014	Public comment received by EPD, EPD's Ref. No. K01/RE/00028087-14	Complaint of welding smell and air nuisance other than dark smoke, from construction machine from Hung Hom Station, Tsim Sha Tsui	At footbridge between Hung Hom Station and Hung Hom Region, near Royal Peninsula	<ul style="list-style-type: none"> Barrier was erected on the side of footbridge facing the construction site ET conducted followed-up inspection of the implemented mitigation measures on 20 Nov 2014 and air quality control was found to be satisfactory Investigation Report submitted to EPD on 3 Dec 2014
	11 Nov 2014	Public comment received by EPD, EPD's Ref. No. K01/RE/00028181-14	Complaint of construction dust from Hung Hom Station, Tsim Sha Tsui	At footbridge between Hung Hom Station and Hung Hom Region, near Royal Peninsula	<ul style="list-style-type: none"> Barrier was erected on the side of footbridge facing the construction site ET conducted followed-up inspection of the implemented mitigation measures on 20 Nov 2014 and air quality control was found to be satisfactory Investigation Report submitted to EPD on 3 Dec 2014
Notification of summons	-	-	-	-	-
Successful Prosecution	-	-	-	-	-

Appendix I

**19th Monthly EM&A Report for Works Contract 1108 –
Kai Tak Station and Associated Tunnels**

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 19

[Period from 1 to 31 December 2014]

Works Contract 1108 – Kai Tak Station and
Associated Tunnels

(January 2015)

Certified by: Goldie Fung 

Position: Environmental Team Leader

Date: 12 January 2015

Kaden – Chun Wo Joint Venture (KCJV)

Shatin to Central Link –

Contract 1108

Kai Tak Station and Associated Tunnels

Monthly Environmental Monitoring & Auditing Report for

December 2014

The Contents of this report have been certified by:



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Executive Summary

This is the nineteenth monthly Environmental Monitoring and Audit (EM&A) Report for **MTR Shatin to Central Link (SCL) Works Contract 1108 – Kai Tak Station and Associated Tunnels**. The project commenced on 17th June 2013. This report documents the finding of EM&A Works conducted from 1st December 2014 to 31st December 2014.

Summary of the Construction Works undertaken during the Reporting Month

The major site activities in this reporting period were including:

- Shotcreting to excavated slop down to formation level at open cut tunnel
- Formwork erection at access shaft base
- Station structure: concreting
- HPP at launching shaft
- Waler construction at receiving shaft
- Backfilling

Variation in Construction Method

Based on recent engineering information and having considered the high construction risk for tunnel excavation, the tunnel with mining method is required to be shortened and the associated at-grade construction works within the buffer zone above the Former Kowloon City Pier (FKCP) is therefore proposed to minimize the potential impact on FKCP. The application for variation of an Environmental Permit with Environmental Review Report has been submitted to EPD on 19th March 2014 and the amended Environmental Permit (EP-438/2012/E) was issued to MTRC on 4th April 2014.

Environmental Monitoring and Audit Progress

Culture Heritage

Inspection of the Former Kowloon City Pier was conducted during the weekly environmental site inspection. Details of the inspection findings are presented in Section 6.

Landscape and Visual

The implementation of landscape and visual mitigation measures was inspected during the weekly environmental site inspection. Most of the necessary mitigation measures have been implemented. Details of the audit findings and implementation status are

presented in Section 6.

Waste Management

According to Contractor's waste flow data, 931 m³ of Type 1 DS and Type 2 marine mud were generated during this reporting month and were disposed to the receiving facility of Contract 1108A. 15,040 m³ of inert C&D materials were reused in the Contract. 171.97 m³ of general refuse were generated and disposed at landfill site. 110 kg of paper, 20 kg of plastics and 24,320 kg of metal were sent to recyclers for recycling.

Environmental Site Inspection

Joint weekly inspections were conducted by representatives of the Contractor, Engineer and ET on 2nd, 9th, 16th, 23rd and 30th December 2014. The representative of the IEC joined the site inspection on 16th December 2014. No inspection was conducted by EPD in this reporting month. Details of the audit findings and implementation status are presented in Section 6.

Environmental Exceedance / Non-conformance / Compliant / Summons and Successful Prosecution

No breaches of Action and Limits levels, non-compliance event, environmental complaint, notification of summons and successful prosecution against the Project were received in this reporting month.

Future Key Issues

The major construction works to be undertaken in the next reporting month include:

- Open cut tunnel: shotcreting, cast concrete
- Cut and cover tunnel: cast concrete, dismantling ELS shoring
- Station: concreting, backfilling
- Mined tunnel: HPP, shoring installation

1 Introduction

The Environmental Team (ET), Environmental Pioneers & Solutions Limited (EPSL), was appointed by Kaden – Chun Wo Joint Venture (KCJV) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL) Works Contract 1108 – Kai Tak Station and Associated Tunnels (the Project). The project commenced on 17th June 2013.

1.1 Purpose of the Report

This is the nineteenth monthly EM&A Report which summarises the audit findings for the EM&A programme during the reporting period from 1st December 2014 to 31st December 2014.

1.2 Structure of the Report

The structure of the report is as follow:

Section 1: Introduction - details the scope and structure of the report.

Section 2: Project Information - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: Environmental Monitoring Requirement - summarises the monitoring requirements and environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: Implementation Status on Environmental Mitigation Measures - summarises the implementation of environmental protection measures during the reporting period.

Section 5: Monitoring Results - summarises the monitoring results obtained in the reporting period.

Section 6: Environmental Site Inspection - summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: Environmental Non-conformance - summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: Future Key Issues - summarises the impact forecast and monitoring schedule for the next three months.

Section 9: Conclusions and Recommendations

2 Project Information

2.1 Background

The Shatin to Central Link – Tai Wai to Hung Hom Section (SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic East-West rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) and SCL (HHS) have been divided into a series of civil construction works contracts. This Works Contract 1108 covers the construction of Kai Tak Station (KAT) and the section of tunnel between KAT and Sung Wong Toi Station (SUW) plus a short section of tunnel from KAT towards Diamond Hill Station (DIH). This construction contract was awarded to Kaden - Chun Wo Joint Venture (KCJV) in April 2013.

2.2 General Site Description

The works area includes work sites in the Kai Tak New Development Area. The construction of tunnel will employ cut & cover method. The alignment and works area for the Project is shown in **Appendix A**.

2.3 Construction Programme and Activities

A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix B**.

- Shotcreting to excavated slop down to formation level at open cut tunnel
- Formwork erection at access shaft base
- Station structure: concreting
- HPP at launching shaft
- Waler construction at receiving shaft
- Backfilling

2.4 Project Organization

The project organization chart and contact details are shown in **Appendix C**.

2.5 Status of Environmental Licences, Notification and Permits

A summary of the relevant permits, licences, and notifications on environmental protection for this Project is presented in Table 2.1.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status	Remark
	From	To		
Environmental Permit (EP)				
EP-438/2012/H	10/09/2014	N/A	Valid	/
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
Ref. Number 359540	16/05/2013	N/A	Valid	/
Construction Noise Permit for the Carrying Out of Percussive Piling				
PP-RE0050-14	01/09/2014	28/02/2015	Valid	/
Construction Noise Permit for General Works				
GW-RE0748-14	15/07/2014	14/01/2015	Valid	/
GW-RE0863-14	14/08/2014	13/02/2015	Valid	/
GW-RE0899-14	15/08/2014	14/02/2015	Valid	/
GW-RE1016-14	14/09/2014	13/03/2015	Valid	/
GW-RE1035-14	16/09/2014	10/03/2015	Valid	/
GW-RE1145-14	14/10/2014	09/04/2015	Valid	/
GW-RE1175-14	21/10/2014	15/04/2015	Valid	/
GW-RE1181-14	27/10/2014	26/04/2015	Valid	/
GW-RE1219-14	29/10/2014	23/04/2015	Valid	/
GW-RE1300-14	21/11/2014	20/05/2015	Valid	Renewal of permit (GW-RE0583-14)
Effluent Discharge License				
WT00018268-2014	17/03/2014	31/08/2018	Valid	/
Waste Disposal (Charges for Disposal of Construction Waste) Regulation				
Billing Account No. 7017544	07/06/2013	N/A	Valid	/
Registration of Chemical Waste Producer				
WPN 5213-286-K3069-01	09/07/2013	N/A	Valid	/
Marine Dumping Permit				
EP/MD/15-144	19/11/2014	18/12/2014	Valid	Permit held by C1108A

2.6 Summary of EM&A Requirements

The EM&A programme under Works Contract 1108 require regular environmental site audits. The EM&A requirements are described in the following sections, including:

- Weekly inspection for Cultural Heritage;
- Weekly inspection for Landscape and Visual;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.

3 Environmental Monitoring Requirements

3.1 Culture Heritage

In accordance with the Environmental Permit and EM&A Manual, a buffer zone shall be maintained between both Lung Tsun Stone Bridge and Former Kowloon City Pier and SCL (TAW-HUH) works sites during the tunneling work. For Lung Tsun Stone Bridge, a horizontal distance of 25m between the bridge and the buffer boundary shall be maintained. For Former Kowloon City Pier, a vertical buffer distance of 1.8 – 2.2m from the top of the tunnel shall be maintained. The layout of the buffer zone was attached in **Appendix D**. No at-grade construction activities shall be allowed within the buffer zone. Audit shall be conducted on a weekly basis throughout the construction period for the mined tunnel section under Former Kowloon City Pier.

3.2 Landscape and Visual

In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted every week throughout the construction period. The implementation status is given in **Appendix G**.

The event/action plan for Landscape and Visual during Construction Stage is attached in **Appendix E**.

4 Implementation Status on Environmental Protection Requirements

The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix G**. Status of required submissions under the Environmental Permit (EP) as of the reporting period is presented in Table 4.1.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Eighteenth Monthly EM&A Report	12 th December 2014

5 Monitoring Results

5.1 Cultural Heritage

Inspection of the Former Kowloon City Pier was conducted during the weekly environmental site inspection. Details of the inspection findings are presented in Section 6.

5.2 Landscape and Visual

Inspections of the implementation of landscape and visual mitigation measures were conducted on weekly basis. The observations and recommendations made during the audit sessions are summarized in Table 6.1.

5.3 Waste Management

With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in Table 5.1. 931 m³ of Type 1 DS and Type 2 marine mud were generated during this reporting month and were disposed to the receiving facility of Contract 1108A. The inert C&D materials were reused in the contract. The general refuse was disposed to designated landfill site. Paper, plastics and metal were sent to recycler for recycling. No chemical waste was generated and collected by licensed collector. Detail of waste management data is presented in **Appendix F**.

Table 5.1 Quantities of Waste Disposed from the Project

Reporting Month	Quantity					
	C&D Materials (inert) ^(a)	C&D Materials (non-inert) ^(b)				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/cardboard	Plastics	Metals
December 2014	15,040 m ³	171.97 m ³	0 kg	110 kg	20 kg	24,320 kg

Notes:

- (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.
- (b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel metal generated from the Project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

6 Environmental Site Inspection

6.1 Site Audit

Site audit was carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

Joint weekly inspections were conducted by representatives of the Contractor, Engineer and ET on 2nd, 9th, 16th, 23rd and 30th December 2014. The representative of the IEC joined the site inspection on 16th December 2014. The details of observations during site audit can refer to Table 6.1.

No inspection was conducted by EPD in this reporting month.

6.2 Implementation Status of Environmental Mitigation Measures

According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. Updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix G**.

During site inspections in the reporting month, no non-conformance was identified. The observations, reminders and recommendations made during the audit sessions are summarized in Table 6.1.

Table 6.1 Summary results of site inspections findings

Parameters	Date	Findings	Advice from ET	Action taken	Closing date	Remarks
Noise	N/A	N/A	N/A	N/A	N/A	/
Air Quality	25 Nov 14	Insufficient vehicle washing was observed at Gate 1 of Area 3 during the regular maintenance of wheel washing bay.	Contractor was reminded to provide proper vehicle washing for all vehicles before leaving the site.	Proper vehicle washing was provided at Gate 1 of Area 3.	2 Dec 14	/
	2 Dec 14	Poor storage of cement stockpiles at Area 1 was noted and some cement bags were broken leading to leakage of cement.	Contractor was advised to remove the broken cement bags and leaked cement and cover the cement stockpile entirely with tarpaulin for dust prevention.	The cement stockpiles at Area 1 were covered by tarpaulin and damaged cement bags were removed.	9 Dec 14	/

Parameters	Date	Findings	Advice from ET	Action taken	Closing date	Remarks
	9 Dec 14	The stockpile at Area 2 was partially exposed and dry.	Contractor was reminded to entirely cover the stockpile with impervious sheeting or spray with water to prevent dust generation.	Enhanced covering for the stockpile at Area 2 was provided. The exposed active area will be covered after work.	16 Dec 14	/
	16 Dec 14	The exposed surface of the site was generally dry and dusty.	Contractor was advised to enhance water spraying for the exposed area to maintain the surface wet and avoid dust generation.	Enhanced water spraying was provided. The exposed area was generally wet.	23 Dec 14	/
	23 Dec 14	Covering was missing for the cement stockpiles at Area 3.	Contractor was advised to entirely cover the cement stockpiles with tarpaulin for dust prevention.	The cement stockpiles at Area 3 were removed.	30 Dec 14	/
	30 Dec 14	Water spraying was missing for the concrete breaking work at Area 2.	Contractor was advised to provide water spraying during concrete breaking for dust suppression.	Follow-up action will be inspected in next reporting month.	N/A	/
	30 Dec 14	Improper covering of the dusty load for a dump truck at Area 3 was observed.	Contractor was reminded to ensure the skip of all dump trucks have been fully covered with proper mechanical cover and the load should be within the level of any sides of the skip to prevent dust generation and falling of soil.	Follow-up action will be inspected in next reporting month.	N/A	/
Water Quality	18 Nov 14	The drip tray for the air compressor at Area 1 was damaged.	Contractor was reminded to replace a new drip tray for proper containment of any leaked oil.	The damaged drip tray and the air compressor at Area 1 were removed.	2 Dec 14	/
	25 Nov 14	Insufficient treatment of site water was noted and discharge of silty water in the nullah at Area 2 was observed.	Contractor was advised to provide sufficient treatment for the site water before discharge.	Site water at Area 2 was properly treated by sedimentation tank and the effluent was clean.	2 Dec 14	/
	25 Nov 14	Insufficient runoff control measure was noted at Gate 1 of Area 3.	Contractor was advised to provide bunding to avoid leakage of runoff to public access.	Sandbags were provided to avoid leakage of runoff to public access at Gate 1 of Area 3.	2 Dec 14	/
	2 Dec 14	Silty water was observed discharging from storm drain into the nullah at Area 2 during the inspections on 2 Dec 14 & 9 Dec 14. Insufficient runoff control measure was noted at Area 2 which leading to potential discharge of untreated site water into existing drainage.	Contractor was advised to ensure all site water was properly treated before discharge. Contractor was also advised to enhance the runoff control by providing bunding to enclose the discharge pit and existing drainage.	For the inspection on 16 Dec 14, no discharge of silty water into the nullah at Area 2 was observed. The discharge pit at Area 2 was bunded by sandbags to avoid discharge of untreated runoff. Contractor was still reminded to block the channel to avoid discharge of untreated runoff. For the inspection on 23 Dec 14, the existing channel at Area 2 was	23 Dec 14	/

Parameters	Date	Findings	Advice from ET	Action taken	Closing date	Remarks
				noted to be blocked to avoid discharge of untreated runoff.		
	16 Dec 14	Secondary containment was missing for the oil drum at Area 2.	Contractor was advised to provide drip tray for the oil drum to avoid leakage of oil.	The oil drum at Area 2 was removed.	23 Dec 14	/
	23 Dec 14	Although de-silting tanks were installed for treating the site water before discharge, silty effluent was observed discharging into the downstream of the nullah.	Contractor was advised to enhance the treatment effectiveness to avoid further discharge of silty water.	Site water was properly treated. No silty effluent was observed discharging into the downstream of the nullah.	30 Dec 14	/
	23 Dec 14	Used chemical containers were observed at FKCP of Area 1 without secondary containment.	Contractor was reminded to provide drip tray or remove the containers as chemical waste.	The used chemical containers at FKCP of Area 1 were removed.	30 Dec 14	/
Waste / Chemical Management	18 Nov 14	General refuse was observed within a pit at Area 2.	Contractor was reminded to remove the refuse and provide sufficient container for proper collection of waste.	General refuse within the pit at Area 2 were removed. Additional rubbish bin was provided for proper collection of general waste	2 Dec 14	/
Cultural Heritage	N/A	N/A	N/A	N/A	N/A	/
Landscape and Visual	N/A	N/A	N/A	N/A	N/A	/
Permits/ Licenses	N/A	N/A	N/A	N/A	N/A	/

7 Environmental Non-Conformance

7.1 Summary of Environmental Exceedances

No breaches of Action and Limit levels was recorded in the reporting month.

7.2 Summary of Environmental Non-Compliance

No environmental non-compliance was recorded in the reporting month.

7.3 Summary of Environmental Complaint

No environmental project-related complaint was received in the reporting month.

7.4 Summary of Environmental Summon and Successful Prosecution

There was no successful environmental prosecution or notification of summons received since the Project commencement.

The cumulative log for environmental exceedance, non-compliance, complaint and summon and successful prosecution since the commencement of the Project is presented in **Appendix H**.

8 Future Key Issues

The major construction activities in the coming month will include:

- Open cut tunnel: shotcreting, cast concrete
- Cut and cover tunnel: cast concrete, dismantling ELS shoring
- Station: concreting, backfilling
- Mined tunnel: HPP, shoring installation

Potential environmental impacts arising from the above construction activities are mainly associated with dust, construction noise, water quality and waste management. The Contractor has been reminded to properly implement dust, construction noise and water quality control measures as well as proper waste management in order to minimize the potential environmental impacts due to the construction works of the Project.

9 Conclusions and Recommendations

9.1 Conclusions

This is the nineteenth monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during 1st December 2014 to 31st December 2014 in accordance with the EM&A Manual and the requirement under EP-438/2012/H.

5 nos. of environmental site inspections were carried out in this reporting month. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

No exceedances, non-compliance event, complaint and summons/prosecution was received during the reporting period.

The ET will keep tracking of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all the necessary mitigation measures.

9.2 Recommendations

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

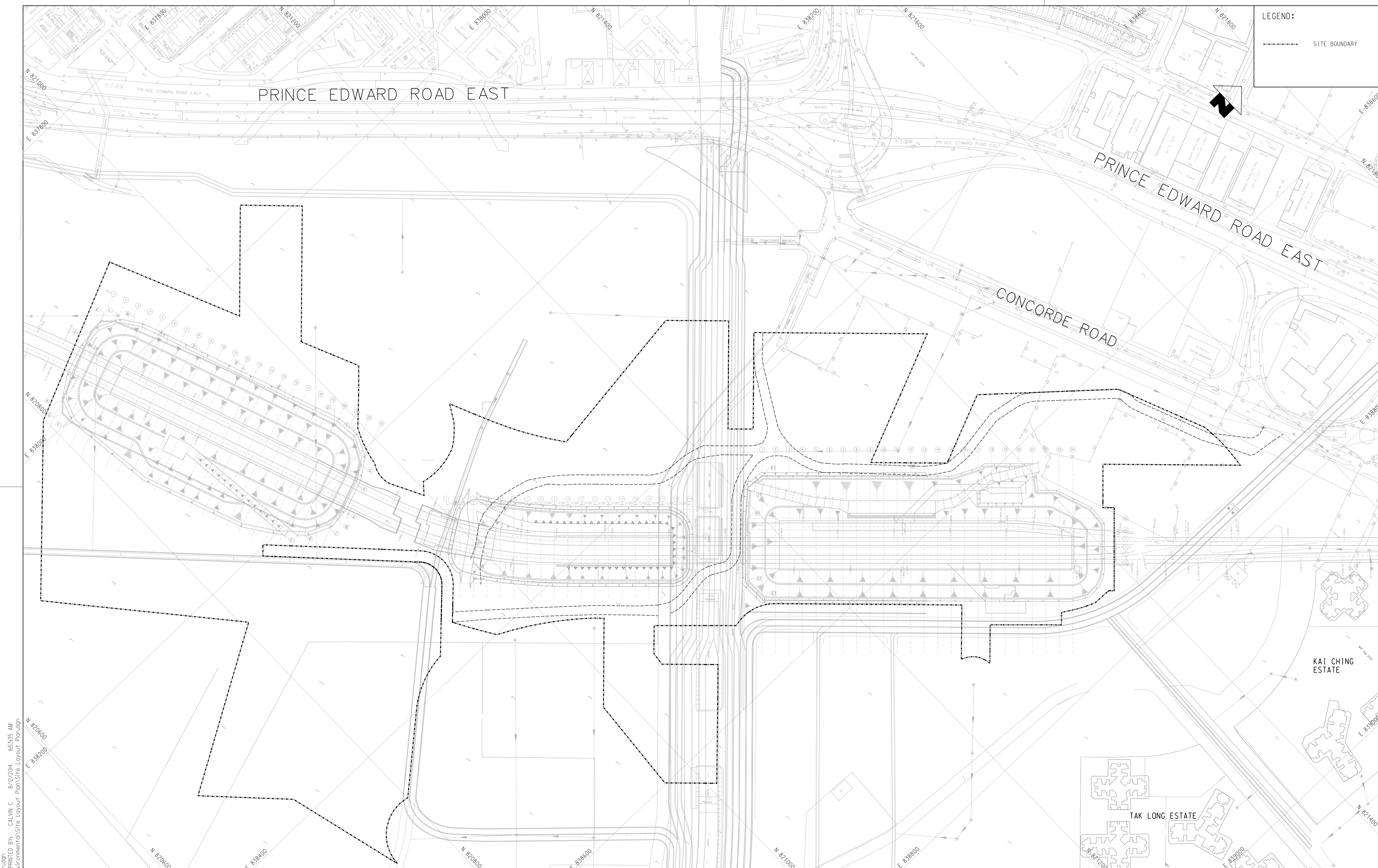
Air Quality Impact

- Cover cement stockpiles entirely with tarpaulin for dust prevention
- Spray with water or cover dusty stockpiles for dust prevention
- Enhance regular water spraying for the exposed area for dust suppression
- Provide water spraying when carrying out dust generating works (i.e. concrete breaking)
- Ensure the dusty load of all dump trucks is fully covered before leaving the site

Water Quality Impact

- Provide runoff control measure (i.e. sandbags, bunding, etc.) to direct site water and runoff to wastewater treatment facilities with sufficient capacity prior to discharge and avoid possible leakage of runoff out of the site and discharge of untreated wastewater
- Provide secondary containment for the storage of chemicals on-site



Appendix A – Site Location Plan



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DRAWN	CC
DESIGNED	KW
CHECKED	ET
APPROVED	BW
DATE	11/AUG/2014


SHATIN TO CENTRAL LINK
 ORIGINATOR

 Kaden - Chun Wo Joint Venture
 CADD REF. Site Layout Plan.dgn

TITLE
CONTRACT 1108
KAI TAK STATION AND ASSOCIATED TUNNELS
 SITE LAYOUT PLAN
 SCALE 1 : 1500 (A1)
 DRAWING NO. SITE LAYOUT PLAN
 REV. A

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Appendix B – Construction Programme

Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April	
					21					22				23				24				25	
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06
Contract 1108 Kai Tak Station and Associated Tunnels																							
Contractual Dates and Project Key Dates																							
Contractual Dates																							
01108.CD1-COMM	Date for Commencement (25-Apr-13)	100%	25-Apr-13 A																				
Critical Dates																							
Schedule of Options																							
Latest Exercising Date																							
01108.CDO3a-ED	Option 3a - Reconstruction & Upgrading of Kai Tak Nullah - Latest Exercising Date (31-Dec-14)	0%	31-Dec-14*	▲																			
01108.CDO2a-ED	Option 2a - Roads L9 & L16 & Associated Works, except the works in Options 2b & 2c - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15*	▲																			
01108.CDO2c-ED	Option 2c - Establishment works of the landscape softworks in Option 2b - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15*	▲																			
01108.CDO2b-ED	Option 2b - Landscape hardwork, Irrigation facilities, softworks & pavers - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15*	▲																			
Specified Parts Completion of the Works (General Damages Applicable)																							
01108.CD3A	3A - Complete temporary channel & ready for Kai Tak Nullah diversion (Wk. 33/14, 17-Aug-14)	0%	03-Jan-15*	▲																			
IPS Milestone Dates																							
Cost Centre A - Preliminaries																							
01108.MSA01	A1 - Complete haul/access road, Access for Interface/Designated/CEDD Contractor to KTBarging Facility (WN.22/13,02-Jun	100%	02-Jun-13 A																				
01108.MSA02	A2-Approval of Submissions:EMP(G5.1.10),QP(G9.2.1), MC(G12.1.1),SS(G12.11.1),SARMP(P25.3.1),DSCP(AppQ) WN28/13.	100%	14-Jul-13 A																				
01108.MSA03	A3 - Approval of Preliminary Master Programme, Time Chainage Programme, Health & Safety Plan, (Wk.No.37/13, 15-Sep	100%	17-Oct-13 A																				
Cost Centre B - Kai Tak Station, Entrances and Adits																							
01108.MSB01	B1 - Pump test completed, accepted by Engineer & ready for open cut excavation of KAT station (Week No.36/13, 8-Sep-13)	100%	22-Oct-13 A																				
01108.MSB02	B2 - Complete 30% of open cut excavation of KAT station (Week No. 45/13, 10-Nov-13)	100%	13-Dec-13 A																				
01108.MSB03	B3 - Complete 50% of open cut excavation of KAT station (Week No. 11/14, 16-Mar-14)	100%	16-Mar-14 A																				
01108.MSB04	B4 - Complete excavation down to station formation level (Week No. 48/14, 30-Nov-14)	100%	30-Nov-14 A																				
01108.MSB06	B6 - Complete all structural works for Platform Level (Week No. 10/15, 8-Mar-15)	0%	29-Dec-14	▲																			
Cost Centre C - South Approach Tunnel																							
01108.MSC01	C1 - Pump test completed, accepted by Engineer & ready for open cut excavation (Week No. 38/13, 22-Sep-13)	100%	11-Mar-14 A																				
01108.MSC03a	C3 - Complete 50% excavation by volume to tunnel formation levels (Week No. 15/14, 13-Apr-14)	100%	23-Oct-14 A																				
01108.MSC04	C4 - Complete 50% by plan length of tunnel structures (Week No. 35/14, 31-Aug-14)	0%	01-Dec-14	▲																			
01108.MSC02	C2 - Complete preparation works for start of mined tunnel works (Week No. 49/13, 08-Dec-13)	0%	11-Feb-15	▲																			
Cost Centre D - Associated Works																							
01108.MSD010	D1 - Complete temporary drainage channel for Kai Tak Nullah diversion (Week No. 33/14, 17-Aug-14)	100%	31-Oct-14 A																				
Cost Centre G - Option 3 - CEDD Entrusted Works for Reconstruction & Upgrading of Kai Tak Nullah																							
01108.MSG01a	G1 - Contractor's dwgs submission schedule & All permanent works Material Control Schedule approved (WN.08/15,22-Feb-15)	0%	02-Feb-15	▲																			
01108.MSG01b	G1 - Shop drawings & material submissions approved (Week No. 08/15, 22-Feb-15)	0%	02-Feb-15	▲																			
Programme Data																							
Interface with Contract 1107																							
01108.PD4-IF1107.1	Contract 1107 Provide access to Contract 1108 at interface area for ELS Works (Week No. 52/13, 29-Dec-13)	100%	27-Dec-13 A																				
Schedule of Access & Vacate Dates for Works Areas																							
Possession Dates																							
Works Areas																							
01108.ACW02	Works Area 1108.W2 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW07	Works Area 1108.W7 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW08	Works Area 1108.W8 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW09	Works Area 1108.W9 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW11	Works Area 1108.W11 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW12	Works Area 1108.W12 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW13	Works Area 1108.W13 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACWA1	Works Area 1108.A1 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACWA3	Works Area 1108.A3 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACWA4	Works Area 1108.A4 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACWA2	Works Area 1108.A2 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW01	Works Area 1108.W1 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				
01108.ACW10	Works Area 1108.W10 (Within 3 weeks from commencement of works)	100%	29-Apr-13 A																				

▲ Milestone
 ▲ Critical Milestone
 Critical Remaining Work
 Remaining Work
 Remaining Level of Effort
 Primary Baseline
 Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (Dec 2014)



Activity ID	Activity Name	Activity % Complete	Start	Finish	December				January				February				March				April	
					21				22				23				24				25	
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30
01108.STN.EX19-21	GL 19~21 Excavation, 36895 m3	100%	01-Mar-14 A	02-Jul-14 A																		
B1.2.3 Earthworks																						
General Site Clearance & Trim to +3.5mPD																						
01108.STN.EX10-19	GL 10~19 General clearance & trim existing ground to +3.5mPD, 20381 m3	100%	31-Jul-13 A	04-Oct-13 A																		
01108.STN.EX0000	Construct station drainage protection system	100%	31-Jul-13 A	31-Jan-14 A																		
01108.STN.EX19-24	GL 19~24 General clearance & trim existing ground to +3.5mPD, 11469 m3	100%	31-Jul-13 A	04-Oct-13 A																		
01108.STN.EX06-10	GL 06~10 General clearance & trim existing ground to +3.5mPD, 8614 m3	100%	31-Jul-13 A	04-Oct-13 A																		
01108.STN.EX00-06	Adj to Nullah to GL06 General clearance & trim existing ground to +3.5mPD, 11906 m3	100%	14-Mar-14 A	02-Sep-14 A																		
Excavation to Formation Level																						
01108.STN.EX14-16	GL 14~16 Excavation, 38998 m3	100%	18-Oct-13 A	15-Feb-14 A																		
01108.STN.EX12-14	GL 12~14 Excavation, 31199 m3	100%	18-Oct-13 A	30-Jan-14 A																		
01108.STN.EX16-19	GL 16~19 Excavation, 38998 m3	100%	18-Oct-13 A	18-Mar-14 A																		
01108.STN.EX06-08	GL 06~08 Excavation, 31442 m3 (3 nr. backhoe)	100%	05-Dec-13 A	09-Apr-14 A																		
01108.STN.EX08-10	GL 08~10 Excavation, 31442 m3	100%	05-Dec-13 A	07-Mar-14 A																		
01108.STN.EX10-12	GL 10~12 Excavation, 31294 m3	100%	05-Dec-13 A	04-Mar-14 A																		
01108.MSB02P	KTS Milestone B2 - 30% Excavation - Programmed	100%		13-Dec-13 A																		
01108.STN.EX21-24	GL 21~24 Excavation, 38731 m3 (5 nr. backhoe)	100%	15-Jan-14 A	10-Nov-14 A																		
01108.STN.EX02-04	GL 03~04 Excavation, 15755 m3	100%	15-Jan-14 A	28-Jul-14 A																		
01108.MSB01P	Commencement of excavation after pumping test for area from GL 10~19	100%		15-Jan-14 A																		
01108.STN.EX04-06	GL 04~06 Excavation, 31510 m3	100%	15-Jan-14 A	16-Apr-14 A																		
01108.MSB03P	KTS Milestone B3 - 50% Excavation - Programmed	100%		24-Mar-14 A																		
01108.STN.EX00-02	Adj. to Nullah to GL 03 Open Cut Excavation, 41522 m3	100%	07-Jun-14 A	01-Aug-14 A																		
B1.3 Station - U/G C&S Works (Below Concourse Level Soffit)																						
Temporary Foundation for Lifting Crane Tower																						
01108.STN.BL001	Temporary foundation for lifting crane tower, 3 nr., Approved	100%	25-Oct-13 A	28-Apr-14 A																		
01108.STN.BL000	Design, ICE & submission of temporary foundation for lifting crane tower, 3 nr at GL 11-12, GL 19-20, GL 4-5	100%	25-Oct-13 A	31-Mar-14 A																		
01108.STN.BL11-12	Temporary foundation for lifting crane tower at GL 11~12	100%	27-Jan-14 A	20-Feb-14 A																		
01108.STN.BL11-12i	Installation and testing of lifting crane tower at GL 11~12	100%	24-Feb-14 A	25-Feb-14 A																		
01108.STN.BL19-20	Temporary foundation for lifting crane tower at GL 19~20	100%	24-Apr-14 A	05-May-14 A																		
01108.STN.BL04-05	Temporary foundation for lifting crane tower at GL 04~05	100%	25-Apr-14 A	29-Apr-14 A																		
01108.STN.BL04-05i	Installation and testing of lifting crane tower at GL 04~05	100%	29-Apr-14 A	02-May-14 A																		
01108.STN.BL19-20i	Installation and testing of lifting crane tower at GL 19~20	100%	06-May-14 A	08-May-14 A																		
Base Slab																						
01108.STN.BS12-14	GL 12~14 Base slab, 24mL (Team 2)	100%	27-Jan-14 A	27-Mar-14 A																		
01108.STN.BS0	Commencement of Structure after excavation & test completed to GL 10~19	100%		13-Feb-14 A																		
01108.STN.BS10-12	GL 10~12 Base slab, 24mL (Team 2)	100%	01-Mar-14 A	24-Apr-14 A																		
01108.STN.BS14-16	GL 14~16 Base slab, 30mL (Team 1)	100%	01-Apr-14 A	15-Apr-14 A																		
01108.STN.BS08-10	GL 08~10 Base slab, 24mL (Team 2)	100%	04-Apr-14 A	07-May-14 A																		
01108.STN.BS16-19	GL 16~19 Base slab, 30mL (Team 1)	100%	15-Apr-14 A	26-May-14 A																		
01108.STN.BS06-08	GL 06~08 Base slab, 24mL (Team 2)	100%	20-May-14 A	18-Jun-14 A																		
01108.STN.BS04-06	GL 04~06 Base slab, 24mL	100%	13-Jun-14 A	21-Aug-14 A																		
01108.STN.BS19-21	GL 19~21 Base slab, 30mL (Team 1)	100%	02-Jul-14 A	09-Aug-14 A																		
01108.STN.BS02-04	GL 02~04 Base slab, 24mL	100%	30-Jul-14 A	04-Sep-14 A																		
01108.STN.BS21-24	GL 21~24 Base slab, 34mL (Team 1)	100%	01-Aug-14 A	18-Nov-14 A																		
01108.STN.BS00-02	GL 00~02 Base slab, 19.6mL	90%	21-Aug-14 A	03-Dec-14																		
External Wall to Concourse																						
01108.STN.EC14-16	GL 14~16 External wall (2 teams, 10cycles)	100%	04-Apr-14 A	24-Jun-14 A																		
01108.STN.EC12-14	GL 12~14 External wall (2 teams, 8 cycles)	100%	17-Apr-14 A	29-May-14 A																		
01108.STN.EC10-12	GL 10~12 External wall (2 teams, 8 cycles)	100%	07-May-14 A	07-Jul-14 A																		
01108.STN.EC08-10	GL 08~10 External wall (2 teams, 8 cycles)	100%	03-Jun-14 A	01-Sep-14 A																		
01108.STN.EC16-19	GL 16~19 External wall (2 teams, 10cycles)	100%	18-Jun-14 A	11-Oct-14 A																		
01108.STN.EC06-08	GL 06~08 External wall (2 teams, 8 cycles)	100%	01-Aug-14 A	23-Sep-14 A																		
01108.STN.EC04-06	GL 04~06 External wall (2 teams, 8 cycles)	100%	01-Sep-14 A	14-Oct-14 A																		
01108.STN.EC19-21	GL 19~21 External wall (2 teams, 10cycles)	100%	03-Oct-14 A	12-Nov-14 A																		

▲ Milestone
 ▲ Critical Milestone
 ■ Critical Remaining Work
 ■ Remaining Work
 ■ Remaining Level of Effort

Primary Baseline
 Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (Dec 2014)



Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April		
					21					22				23				24				25		
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06	
01108.STN.EC02-04	GL 02~04 External wall (2 teams, 8 cycles)	100%	04-Oct-14 A	20-Nov-14 A	[Green bar]																			
01108.STN.EC21-24	GL 21~24 External wall (2 teams, 10cycles)	65%	01-Nov-14 A	08-Dec-14	[Green bar]																			
01108.STN.EC00-02	GL 00~02 External wall (2 teams, 8 cycles)	50%	05-Nov-14 A	09-Dec-14	[Green bar]																			
01108.STN.EC24-24	GL 24~24 End wall (2 teams in 10m panel, 2 cycles)	0%	01-Dec-14	23-Dec-14	[Green bar]																			
01108.STN.EC00-00	GL 00~00 End wall (2 teams in 10m panel, 2 cycles)	0%	01-Dec-14	18-Dec-14	[Green bar]																			
Internal Wall & Column to Concourse																								
01108.STN.IC12-14	GL 12~14 Internal wall & column (168m with 6 teams in 10m panel)	100%	25-Mar-14 A	07-Jun-14 A																				
01108.STN.IC14-16	GL 14~16 Internal wall & column (224m with 8 teams in 10m panel)	100%	04-Apr-14 A	27-Jun-14 A																				
01108.STN.IC16-19	GL 16~19 Internal wall & column (196m with 6 teams in 10m panel)	100%	28-May-14 A	01-Nov-14 A																				
01108.STN.IC08-10	GL 08~10 Internal wall & column (168m with 6 teams in 10m panel)	100%	13-Jun-14 A	17-Sep-14 A																				
01108.STN.IC10-12	GL 10~12 Internal wall & column (138m with 6 teams in 10m panel)	100%	14-Jun-14 A	05-Jul-14 A																				
01108.STN.IC06-08	GL 06~08 Internal wall & column (168m with 6 teams in 12m panel)	100%	29-Jul-14 A	23-Sep-14 A																				
01108.STN.IC04-06	GL 04~06 Internal wall & column (168m with 6 teams in 10m panel)	100%	01-Sep-14 A	11-Nov-14 A																				
01108.STN.IC19-21	GL 19~21 Internal wall & column (224m with 8 teams in 10m panel)	100%	01-Sep-14 A	29-Nov-14 A																				
01108.STN.IC21-24	GL 21~24 Internal wall & column (224m with 8 teams in 13m panel)	40%	06-Oct-14 A	13-Dec-14	[Green bar]																			
01108.STN.IC02-04	GL 02~04 Internal wall & column (168m with 6 teams in 10m panel)	100%	31-Oct-14 A	15-Dec-14 A	[Green bar]																			
01108.STN.IC00-02	GL 00~02 Internal wall & column (168m with 6 teams in 10m panel)	20%	27-Nov-14 A	18-Dec-14	[Green bar]																			
Platform Slab and Wall																								
01108.STN.PS12-14	GL 12~14 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	02-Apr-14 A	25-Apr-14 A																				
01108.STN.PS14-16	GL 14~16 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	14-Apr-14 A	06-Jun-14 A																				
01108.STN.PS10-12	GL 10~12 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	24-Apr-14 A	24-May-14 A																				
01108.STN.PS16-19	GL 16~19 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	07-May-14 A	17-Jul-14 A																				
01108.STN.PS08-10	GL 08~10 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	14-May-14 A	02-Jul-14 A																				
01108.STN.PS06-08	GL 06~08 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	18-Jun-14 A	11-Jul-14 A																				
01108.STN.PS04-06	GL 04~06 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	02-Jul-14 A	08-Sep-14 A																				
01108.STN.PS19-21	GL 19~21 Platform slab & wall (wall - 2 teams x 2 cycles)	100%	29-Jul-14 A	15-Nov-14 A																				
01108.STN.PS02-04	GL 02~04 Platform wall & slab (wall - 2 teams x 2 cycles)	100%	01-Sep-14 A	06-Oct-14 A	[Green bar]																			
01108.STN.PS00-02	GL 00~02 Platform wall & slab (wall - 2 teams x 2 cycles)	10%	13-Nov-14 A	19-Dec-14	[Green bar]																			
01108.STN.PS21-24	GL 21~24 Platform slab & wall (wall - 2 teams x 2 cycles)	0%	01-Dec-14	29-Dec-14	[Green bar]																			
01108.MSB06P	B6- Complete all structural works for Platform level (Week No. 10/15, 8-Mar-15) - Programmed	0%		29-Dec-14																				
Over Track Exhaust																								
01108.STN.OT12-14	GL 12~14 Over Track Exhaust	100%	02-Jun-14 A	23-Aug-14 A																				
01108.STN.OT10-12	GL 10~12 Over Track Exhaust	100%	18-Jun-14 A	19-Aug-14 A																				
01108.STN.OT14-16	GL 14~16 Over Track Exhaust	100%	25-Jun-14 A	24-Sep-14 A																				
01108.STN.OT16-19	GL 16~19 Over Track Exhaust	100%	08-Jul-14 A	27-Oct-14 A																				
01108.STN.OT08-10	GL 08~10 Over Track Exhaust	100%	23-Jul-14 A	17-Sep-14 A																				
01108.STN.OT06-08	GL 06~08 Over Track Exhaust	100%	15-Aug-14 A	09-Oct-14 A																				
01108.STN.OT04-08	GL 04~06 Over Track Exhaust	100%	10-Oct-14 A	12-Nov-14 A																				
01108.STN.OT19-21	GL 19~21 Over Track Exhaust	100%	25-Oct-14 A	06-Nov-14 A																				
01108.STN.OT02-04	GL 02~04 Over Track Exhaust	100%	01-Nov-14 A	15-Dec-14 A	[Green bar]																			
01108.STN.OT00-02	GL 00~02 Over Track Exhaust	100%	12-Nov-14 A	26-Nov-14 A	[Green bar]																			
01108.STN.OT21-24	GL 21~24 Over Track Exhaust	100%	27-Nov-14 A	17-Dec-14 A	[Green bar]																			
Compacted Soil Backfill between Up Track and Refuge Track																								
01108.STN.BF12-14	GL 12~14 Backfill and compaction, 1366 m3	100%	27-Aug-14 A	22-Sep-14 A																				
01108.STN.BF10-12	GL 10~12 Backfill and compaction, 1093 m3	100%	27-Aug-14 A	11-Oct-14 A																				
01108.STN.BF14-16	GL 14~16 Backfill and compaction, 1366 m3	100%	16-Sep-14 A	03-Oct-14 A																				
01108.STN.BF08-10	GL 08~10 Backfill and compaction, 1093 m3	100%	13-Oct-14 A	22-Oct-14 A																				
01108.STN.BF16-19	GL 16~19 Backfill and compaction, 1366 m3	100%	16-Oct-14 A	27-Nov-14 A																				
01108.STN.BF06-08	GL 06~08 Backfill and compaction, 1093 m3	100%	23-Oct-14 A	19-Nov-14 A																				
01108.STN.BF04-06	GL 04~06 Backfill and compaction, 1093 m3	100%	07-Nov-14 A	15-Dec-14 A	[Green bar]																			
01108.STN.BF02-04	GL 02~04 Backfill and compaction, 1093 m3	100%	01-Dec-14 A	06-Dec-14 A	[Green bar]																			
01108.STN.BF19-21	GL 19~21 Backfill and compaction, 1366 m3	100%	01-Dec-14 A	12-Dec-14 A	[Green bar]																			
01108.STN.BF21-24	GL 21~24 Backfill and compaction, 1549 m3	100%	22-Dec-14 A	07-Jan-15 A	[Green bar]																			
01108.STN.BF00-02	GL 00~02 Backfill and compaction, 893 m3	100%	03-Jan-15 A	10-Jan-15 A	[Green bar]																			

▲ Milestone	Primary Baseline
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Remaining Work	
Remaining Level of Effort	

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (Dec 2014)



Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April		
					21					22				23				24				25		
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06	
Metalworks, BWIC with Services and BS Works																								
01108.STN.BM12-24	GL 12~24 Installation of PSD support beam, 16.5 t	0%	01-Dec-14	10-Feb-15																				
01108.STN.BW12-24	GL 12~24 BWIC and BS works	0%	15-Dec-14	13-Mar-15																				
B1.4 Station U/G C&S Works (Concourse Level and Above)																								
Concourse Level																								
01108.STN.CS12-14	GL 12~14 Concourse slab	100%	02-Jul-14 A	23-Oct-14 A																				
01108.STN.CS10-12	GL 10~12 Concourse slab	100%	09-Jul-14 A	08-Nov-14 A																				
01108.STN.CS08-10	GL 08~10 Concourse slab	100%	09-Jul-14 A	27-Nov-14 A																				
01108.STN.CS14-16	GL 14~16 Concourse slab	100%	07-Aug-14 A	22-Nov-14 A																				
01108.STN.CS06-08	GL 06~08 Concourse slab	100%	06-Oct-14 A	12-Dec-14 A																				
01108.STN.CS16-19	GL 16~19 Concourse slab	100%	13-Oct-14 A	11-Dec-14 A																				
01108.STN.CS04-06	GL 04~06 Concourse slab	80%	31-Oct-14 A	06-Dec-14																				
01108.STN.CS19-21	GL 19~21 Concourse slab	80%	01-Nov-14 A	06-Dec-14																				
01108.STN.CS21-24	GL 21~24 Concourse slab	10%	08-Dec-14 A	29-Jan-15																				
01108.STN.CS02-04	GL 02~04 Concourse slab	10%	08-Dec-14 A	20-Dec-14																				
01108.STN.CS00-02	GL 00~02 Concourse slab	0%	19-Dec-14	14-Jan-15																				
External Wall to Lower Ground																								
01108.STN.EG12-14	GL 12~14 External wall (2 teams, 8 cycles)	100%	02-Sep-14 A	03-Nov-14 A																				
01108.STN.EG0	External wall hanging platform	100%	24-Sep-14 A	03-Oct-14 A																				
01108.STN.EG10-12	GL 10~12 External wall (2 teams, 8 cycles)	100%	08-Oct-14 A	03-Dec-14 A																				
01108.STN.EG08-10	GL 08~10 External wall (2 teams, 8 cycles)	100%	09-Oct-14 A	15-Dec-14 A																				
01108.STN.EG06-08	GL 06~08 External wall (2 teams, 8 cycles)	80%	17-Oct-14 A	04-Dec-14																				
01108.STN.EG14-16	GL 14~16 External wall (2 teams, 10 cycles)	100%	22-Oct-14 A	14-Nov-14 A																				
01108.STN.EG04-06	GL 04~06 External wall (2 teams, 8 cycles)	5%	12-Nov-14 A	22-Dec-14																				
01108.STN.EG16-19	GL 16~19 External wall (2 teams, 10 cycles)	80%	18-Nov-14 A	04-Dec-14																				
01108.STN.EG19-21	GL 19~21 External wall (2 teams, 10 cycles)	0%	06-Dec-14	31-Dec-14																				
01108.STN.EG02-04	GL 02~04 External wall (2 teams, 8 cycles)	0%	22-Dec-14	10-Jan-15																				
01108.STN.EG00-02	GL 00~02 External wall (2 teams, 8 cycles)	0%	14-Jan-15	02-Feb-15																				
01108.STN.EG24-24	GL 24~24 External end wall (2 teams in 10m panel, 2 cycles)	0%	29-Jan-15	25-Feb-15																				
01108.STN.EG21-24	GL 21~24 External wall (2 teams, 10 cycles)	0%	29-Jan-15	25-Feb-15																				
01108.STN.EG00-00	GL 00-00 External end wall (2 teams in 10m panel, 2 cycles)	0%	02-Feb-15	24-Feb-15																				
Internal Wall to Lower Ground																								
01108.STN.IG10-12	GL 10~12 Internal wall & column (196m with 6 teams in 10m panel)	100%	01-Nov-14 A	13-Nov-14 A																				
01108.STN.IG12-14	GL 12~14 Internal wall & column (196m with 6 teams in 10m panel)	100%	07-Nov-14 A	19-Nov-14 A																				
01108.STN.IG08-10	GL 08~10 Internal wall & column (196m with 6 teams in 10m panel)	100%	13-Nov-14 A	04-Dec-14 A																				
01108.STN.IG14-16	GL 14~16 Internal wall & column (261m with 8 teams in 10m panel)	100%	15-Nov-14 A	05-Dec-14 A																				
01108.STN.IG06-08	GL 06~08 Internal wall & column (196m with 6 teams in 12m panel)	20%	06-Dec-14 A	27-Dec-14																				
01108.STN.IG16-19	GL 16~19 Internal wall & column (229m with 6 teams in 10m panel)	50%	06-Dec-14 A	16-Dec-14																				
01108.STN.IG04-06	GL 04~06 Internal wall & column (196m with 6 teams in 10m panel)	0%	06-Dec-14	10-Jan-15																				
01108.STN.IG02-04	GL 02~04 Internal wall & column (196m with 6 teams in 10m panel)	0%	22-Dec-14	20-Jan-15																				
01108.STN.IG19-21	GL 19~21 Internal wall & column (261m with 6 teams in 11m panel)	15%	23-Dec-14 A	06-Jan-15																				
01108.STN.IG00-02	GL 00~02 Internal wall & column (196m with 6 teams in 10m panel)	0%	21-Jan-15	17-Feb-15																				
01108.STN.IG21-24	GL 21~24 Internal wall & column (261m with 8 teams in 13m panel)	0%	29-Jan-15	06-Mar-15																				
Lower Ground Slab																								
01108.STN.GS12-14	GL 12~14 Lower ground slab	100%	05-Nov-14 A	29-Dec-14 A																				
01108.STN.GS10-12	GL 10~12 Lower ground slab	100%	05-Nov-14 A	16-Dec-14 A																				
01108.STN.GS08-10	GL 08~10 Lower ground slab	30%	02-Dec-14 A	22-Jan-15																				
01108.STN.GS06-08	GL 06~08 Lower ground slab	0%	02-Jan-15	30-Jan-15																				
01108.STN.GS16-19	GL 16~19 Lower ground slab	0%	02-Jan-15	30-Jan-15																				
01108.STN.GS14-16	GL 14~16 Lower ground slab	0%	02-Jan-15	30-Jan-15																				
01108.STN.GS19-21	GL 19~21 Lower ground slab	0%	06-Jan-15	03-Feb-15																				
01108.STN.GS04-06	GL 04~06 Lower ground slab	0%	10-Jan-15	07-Feb-15																				
01108.STN.GS02-04	GL 02~04 Lower ground slab	0%	21-Jan-15	10-Feb-15																				
01108.STN.GS00-02	GL 00~02 Lower ground slab	0%	24-Feb-15	17-Mar-15																				


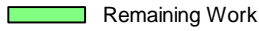
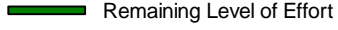


▲ Milestone
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Contract 1108
Kai Tak Station and Associated Tunnels
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基利
Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish	December				January				February				March				April		
					21		22		22		23		23		24		24		25		25		
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06
01108.STN.GS21-24	GL 21~24 Lower ground slab	0%	06-Mar-15	08-Apr-15																			
Mezzanine Level																							
Mezzanine Slab																							
01108.STN.MS12-14	GL 12~14/ A1-A Mezzanine slab	100%	06-Nov-14 A	15-Nov-14 A																			
01108.STN.MS15-17	GL 15~17/ A1-B Mezzanine slab	20%	23-Dec-14 A	20-Mar-15																			
01108.STN.MS19-22	GL 19~22/ A1-A & GL 21-22/A1-C Mezzanine slab	0%	03-Feb-15	06-Mar-15																			
01108.STN.MS17-19	GL 17~19/ A1-B Mezzanine slab	0%	13-Feb-15	17-Mar-15																			
01108.STN.MS00-02	GL 00~02/ A1-B Mezzanine slab	0%	17-Mar-15	11-Apr-15																			
Mezzanine Internal Wall																							
01108.STN.MW12-14	GL 12~14/ A1-A Mezzanine wall	100%	06-Nov-14 A	15-Nov-14 A																			
01108.STN.MW19-22	GL 19~22/ A1-A & GL 21-22/A1-C Mezzanine wall	0%	06-Mar-15	08-Apr-15																			
01108.STN.MW17-19	GL 17~19/ A1-B Mezzanine wall	0%	17-Mar-15	18-Apr-15																			
01108.STN.MW15-17	GL 15~17/ A1-B Mezzanine wall	0%	20-Mar-15	22-Apr-15																			
Waterproofing																							
Waterproofing to Concourse Level																							
01108.STN.WP10-12.1	GL 10~12 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	25%	01-Aug-14 A	05-Dec-14																			
01108.STN.WP12-14.1	GL 12~14 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	75%	07-Aug-14 A	02-Dec-14																			
01108.STN.WP08-10.1	GL 08~10 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	75%	07-Aug-14 A	02-Dec-14																			
01108.STN.WP06-08.1	GL 06~08 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	75%	15-Aug-14 A	02-Dec-14																			
01108.STN.WP14-16.1	GL 14~16 Waterproofing works to external wall up to concourse slab, 2 x 30mL x 7.66mH (460 m2)	75%	15-Aug-14 A	02-Dec-14																			
01108.STN.WP16-19.1	GL 16~19 Waterproofing works to external wall up to concourse slab, 2 x 30mL x 7.66mH (460 m2)	75%	25-Aug-14 A	02-Dec-14																			
01108.STN.WP04-06.1	GL 04~06 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	75%	25-Aug-14 A	02-Dec-14																			
01108.STN.WP19-21.1	GL 19~21 Waterproofing works to external wall up to concourse slab, 2 x 30mL x 7.66mH (460 m2)	75%	02-Sep-14 A	02-Dec-14																			
01108.STN.WP02-04.1	GL 02~04 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	50%	02-Sep-14 A	03-Dec-14																			
01108.STN.WP21-24.1	GL 21~24 Waterproofing works to external wall up to concourse slab, 2 x 34mL x 7.66mH (520 m2)	10%	17-Sep-14 A	09-Dec-14																			
01108.STN.WP00-02.1	GL 00~02 Waterproofing works to external wall up to concourse slab, 2 x 19.6mL x 7.66mH (300 m2)	0%	14-Jan-15	21-Jan-15																			
01108.STN.WP00-00.1	GL 00~00 Waterproofing works to external end wall up to concourse slab, 35.6mL x 7.66mH (273 m2)	0%	17-Jan-15	24-Jan-15																			
01108.STN.WP24-24.1	GL 24~24 Waterproofing works to external end wall up to concourse slab, 31.8L x 7.66mH (244 m2)	0%	25-Feb-15	04-Mar-15																			
Waterproofing to Lower Ground Level																							
01108.STN.WP12-14.2	GL 12~14 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	09-Jan-15	23-Jan-15																			
01108.STN.WP10-12.2	GL 10~12 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	13-Jan-15	27-Jan-15																			
01108.STN.WP08-10.2	GL 08~10 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	29-Jan-15	12-Feb-15																			
01108.STN.WP06-08.2	GL 06~08 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	06-Feb-15	24-Feb-15																			
01108.STN.WP14-16.2	GL 14~16 Waterproofing works to external wall up to LGL, 2 x 30mL x 5.9mH (354 m2)	0%	06-Feb-15	24-Feb-15																			
01108.STN.WP16-19.2	GL 16~19 Waterproofing works to external wall up to LGL, 2 x 30mL x 5.9mH (354 m2)	0%	06-Feb-15	24-Feb-15																			
01108.STN.WP19-21.2	GL 19~21 Waterproofing works to external wall up to LGL, 2 x 30mL x 5.9mH (354 m2)	0%	10-Feb-15	27-Feb-15																			
01108.STN.WP04-06.2	GL 04~06 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	14-Feb-15	04-Mar-15																			
01108.STN.WP02-04.2	GL 02~04 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	04-Mar-15	13-Mar-15																			
01108.STN.WP00-02.2	GL 00~02 Waterproofing works to external wall up to LGL, 2 x 19.6mL x 5.9mH (230 m2)	0%	17-Mar-15	24-Mar-15																			
01108.STN.WP00-00.2	GL 00~00 Waterproofing works to external end wall up to LGL, 35.6mL x 5.9mH (210 m2)	0%	24-Mar-15	02-Apr-15																			
Waterproofing at Lower Ground Level Slab																							
01108.STN.WP10-12.3	GL 10~12 Waterproofing works to roof, 856 m2	0%	27-Jan-15	04-Feb-15																			
01108.STN.WP08-10.3	GL 08~10 Waterproofing works to roof, 856 m2	0%	12-Feb-15	24-Feb-15																			
01108.STN.WP06-08.3	GL 06~08 Waterproofing works to roof, 856 m2	0%	24-Feb-15	04-Mar-15																			
01108.STN.WP14-16.3	GL 14~16 Waterproofing works to roof, 1070 m2	0%	24-Feb-15	05-Mar-15																			
01108.STN.WP16-19.3	GL 16~19 Waterproofing works to roof, 1070 m2	0%	24-Feb-15	05-Mar-15																			
01108.STN.WP19-21.3	GL 19~21 Waterproofing works to roof, 1070 m2	0%	27-Feb-15	09-Mar-15																			
01108.STN.WP04-06.3	GL 04~06 Waterproofing works to roof, 856 m2	0%	04-Mar-15	12-Mar-15																			
01108.STN.WP12-14.3	GL 12~14 Waterproofing works to roof, 856 m2	0%	05-Mar-15	13-Mar-15																			
01108.STN.WP02-04.3	GL 02~04 Waterproofing works to roof, 856 m2	0%	13-Mar-15	21-Mar-15																			
Backfilling																							
Backfilling to Concourse Level																							
01108.STN.BF08-10.1	GL 08~10 Backfill and compaction, 6700 m3	0%	02-Dec-14	02-Jan-15																			
01108.STN.BF12-14.1	GL 12~14 Backfill and compaction, 7920 m3	0%	02-Dec-14	02-Jan-15																			
01108.STN.BF04-06.1	GL 04~06 Backfill and compaction, 6770 m3	0%	02-Dec-14	02-Jan-15																			

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01108.STN.BF06-08.1	GL 06~08 Backfill and compaction, 6700 m3	0%	02-Dec-14	02-Jan-15	[Bar]																			
01108.STN.BF14-16.1	GL 14~16 Backfill and compaction, 7920 m3	0%	02-Dec-14	02-Jan-15	[Bar]																			
01108.STN.BF19-21.1	GL 19~21 Backfill and compaction, 7580 m3	0%	02-Dec-14	02-Jan-15	[Bar]																			
01108.STN.BF16-19.1	GL 16~19 Backfill and compaction, 7920 m3	0%	02-Dec-14	02-Jan-15	[Bar]																			
01108.STN.BF02-04.1	GL 02~04 Backfill and compaction, 6770 m3	0%	04-Dec-14	03-Jan-15	[Bar]																			
01108.STN.BF10-12.1	GL 10~12 Backfill and compaction, 7280 m3	0%	05-Dec-14	06-Jan-15	[Bar]																			
01108.STN.BF21-24.1	GL 21~24 Backfill and compaction, 6410 m3	0%	09-Dec-14	02-Jan-15	[Bar]																			
01108.STN.BF00-02.1	GL 00~02 Backfill and compaction, 4420 m3	0%	24-Jan-15	07-Feb-15						[Bar]				[Bar]										
Backfilling to Lower Ground Level																								
01108.STN.BF12-14.2	GL 12~14 Backfill and compaction, 9710 m3	0%	23-Jan-15	03-Mar-15						[Bar]														
01108.STN.BF10-12.2	GL 10~12 Backfill and compaction, 9700 m3	0%	27-Jan-15	06-Mar-15						[Bar]														
01108.STN.BF08-10.2	GL 08~10 Backfill and compaction, 8250 m3	0%	12-Feb-15	23-Mar-15						[Bar]														
01108.STN.BF06-08.2	GL 06~08 Backfill and compaction, 8250 m3	0%	24-Feb-15	31-Mar-15						[Bar]														
01108.STN.BF14-16.2	GL 14~16 Backfill and compaction, 9710 m3	0%	24-Feb-15	31-Mar-15						[Bar]														
01108.STN.BF16-19.2	GL 16~19 Backfill and compaction, 9710 m3	0%	24-Feb-15	31-Mar-15						[Bar]														
01108.STN.BF19-21.2	GL 19~21 Backfill and compaction, 9400 m3	0%	27-Feb-15	08-Apr-15						[Bar]														
01108.STN.BF04-06.2	GL 04~06 Backfill and compaction, 8410 m3	0%	04-Mar-15	14-Apr-15	[Bar]																			
01108.STN.BF02-04.2	GL 02~04 Backfill and compaction, 7410 m3	0%	13-Mar-15	08-Apr-15	[Bar]									[Bar]										
01108.STN.BF00-02.2	GL 00~02 Backfill and compaction, 5490 m3	0%	24-Mar-15	21-Apr-15										[Bar]										
Backfilling to Finish Ground Level																								
01108.STN.BF16-19.3	GL 16~19 Backfill and compaction, 8240 m3	0%	31-Mar-15	18-May-15														[Bar]						
01108.STN.BF14-16.3	GL 14~16 Backfill and compaction, 8240 m3	0%	31-Mar-15	18-May-15														[Bar]						
Water Tanks & CLP Transformer Rooms																								
Water Tanks																								
01108.STN.BSMW020	F.S. Water Tank & Sprinkler Water Tank (GL 20-21/A)	0%	07-Feb-15	09-Apr-15	[Bar]					[Bar]				[Bar]				[Bar]						
CLP Transformer Rooms																								
01108.STN.CP010	CLP Transformer Rooms 3~6 (GL 17-21/B-D) and Dedicated Access 2 (and LV Switch Room) - Walls, etc.	0%	07-Feb-15	15-May-15	[Bar]					[Bar]				[Bar]				[Bar]						
01108.STN.CP020	CLP Transformer Rooms 1~2 (GL A1-A2/1-4) and Dedicated Access 1 (and LV Switch Room)- Walls, etc.	0%	17-Mar-15	02-Jun-15						[Bar]				[Bar]				[Bar]						
01108.STN.CP110	CLP Transformer Rooms 3~6 - BS Works	0%	30-Mar-15	27-Jun-15	[Bar]					[Bar]				[Bar]				[Bar]						
Metalworks, BWIC with Services and BS Works																								
01108.STN.BW110	KAT Concourse level - Elect hoisting beams, 5.99t	0%	17-Mar-15	18-May-15										[Bar]				[Bar]						
01108.STN.BW120	KAT Concourse level - BWIC with services	0%	31-Mar-15	02-Jun-15										[Bar]				[Bar]						
B1.5 Station - A/G C&S Works (Vent Shaft)																								
Northern Vent Shaft																								
01108.STN.NS010	Suspended slabs and beams	0%	30-Jan-15	31-Mar-15						[Bar]				[Bar]				[Bar]						
01108.STN.NS020	External walls, columns and walls	0%	31-Mar-15	02-Jun-15										[Bar]				[Bar]						
Southern Vent Shaft																								
01108.STN.SS010	Suspended slabs and beams	0%	17-Mar-15	15-May-15										[Bar]				[Bar]						
01108.STN.SS020	External walls, columns and walls	0%	31-Mar-15	30-May-15										[Bar]				[Bar]						
B1.6 Station - Station - A/G C&S Works (Entrance D & DEE)																								
Entrance D																								
01108.STN.ED010	Suspended slabs and beams	0%	11-Feb-15	22-Apr-15						[Bar]				[Bar]				[Bar]						
01108.STN.ED020	External walls, columns and walls	0%	21-Mar-15	29-May-15										[Bar]				[Bar]						
Designated Emergency Entrance (DEE)																								
01108.STN.DE010	Suspended slabs and beams	0%	11-Feb-15	20-Mar-15						[Bar]				[Bar]				[Bar]						
01108.STN.DE020	External walls, columns and walls	0%	07-Mar-15	15-Apr-15										[Bar]				[Bar]						
01108.STN.DE030	Drainage	0%	21-Mar-15	15-Apr-15										[Bar]				[Bar]						
B1.7 Station - ABWF Works (Below Concourse Level Soffit)																								
ABWF Works - Degree 1 of Completion																								
01108.STN.CD4A1P2a	KAT Platform level - GL 12~4 Degree 1 of completion - Blockwork, partition wall, plastering, etc.	20%	09-Dec-14 A	27-Jan-15	[Bar]					[Bar]				[Bar]				[Bar]						
01108.STN.CD4A1P3a	KAT Platform level - GL 4~1 Degree 1 of completion - Blockwork, partition wall, plastering, finish, staircase, etc.	0%	30-Dec-14	24-Feb-15	[Bar]					[Bar]				[Bar]				[Bar]						
01108.STN.CD4A1P2b	KAT Platform level - GL 12~4 Degree 1 of completion - E&M opening, finish, staircase, shaft & pit, survey, etc.	0%	28-Jan-15	15-Apr-15	[Bar]					[Bar]				[Bar]				[Bar]						
B2 Entrance A, Adit & SEE																								
B2.1 Entrance A, Adit & SEE - Excavation																								
Temporary Works																								

▲ Milestone
 ▲ Critical Milestone
 [Pink Bar] Critical Remaining Work
 [Green Bar] Remaining Work
 [Black Bar] Remaining Level of Effort
 [Yellow Bar] Primary Baseline
 [Blue Bar] Actual Work

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					21					22					23					24					25	
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01108.STN.DN04.3.1	Entrance A & SEE - ELS Design, ICE & Submit to MTRC for review	0%	01-Dec-14	27-Jan-15																						
01108.STN.DN04.3.2	Entrance A & SEE - Design Revision, if required, & Submit to RDO/BD/GEO	0%	28-Jan-15	02-Mar-15																						
01108.STN.DN04.3.3	Entrance A & SEE - Design No-adverse-comment by RDO/BD/GEO	0%	03-Mar-15	10-Apr-15																						
B2.2 Entrance A, Adit & SEE - C&S Works																										
Entrance A, Adit and SEE																										
01108.STN.EA120	Site Access for Works Area 1108.W3 (02-Jan-15)	0%	02-Jan-15*																							
B3 Entrance B and Adit																										
B3.1 Entrance B and Adit - C&S Works																										
Entrance B and Adit																										
01108.STN.EB010	Aduit at concourse level	0%	01-Dec-14	10-Feb-15																						
01108.STN.EB020	Aduit at roof level	0%	07-Jan-15	20-Mar-15																						
01108.STN.EB030	Suspended slabs and beams	0%	11-Feb-15	29-Apr-15																						
01108.STN.EB040	External walls, columns and walls	0%	21-Mar-15	05-Jun-15																						
C - South Approach Tunnel																										
C1 Open Cut Tunnels (U=341m; D=340m)																										
Preliminaries																										
General Items																										
01108.OCT.HR0100	Diversiion of ex. AP2- DN1200/ DN1800 drain, ~ 170mL crossing at ~CH U99187 (near SUA) SE direction	100%	30-Apr-13 A	30-Aug-13 A																						
01108.OCT.HR0020	Haul road, condition survery, incl. utility survey	100%	02-Jul-13 A	30-Aug-13 A																						
Ground Investigation, Instrumentation & Monitoring																										
01108.OCT.G08-0010	Ground investigation - Boreholes BH1 to BH7, 7 nr.	100%	01-Aug-13 A	30-Aug-13 A																						
01108.OCT.IM00000	Instrumentation - Install & monitor, GS markers8+12+8nr & 4 nr on utilities; PZ, 8 nr; etc	100%	01-Aug-13 A	30-Aug-13 A																						
C1.2 Excavation																										
C1.2.2 Temporary Works																										
Temporary Works Design & Approval																										
01108.OCT.DN06.1.1	Open Cut (CH 98976 to 99222) - Design, ICE & Submit to MTRC for review	100%	21-Jun-13 A	16-Sep-13 A																						
01108.OCT.DN09.1.1	Hydraulic Cut Off - Design, ICE & Submit to MTRC for review	100%	21-Jun-13 A	24-Jun-13 A																						
01108.OCT.DN09.1.2	Hydraulic Cut Off - Revision, if required, & Submit to RDO/BD/GEO	100%	21-Jun-13 A	22-Aug-13 A																						
01108.OCT.DN09.1.3	Hydraulic Cut Off - No-adverse-comment by RDO/BD/GEO	100%	22-Aug-13 A	19-Sep-13 A																						
01108.OCT.DN06.1.2	Open Cut (CH 98976 to 99222) - Design Revision, if required, & Submit to RDO/BD/GEO	100%	16-Sep-13 A	16-Sep-13 A																						
01108.OCT.DN06.1.3	Open Cut (CH 98976 to 99222) - Design - No-adverse-comment by RDO/BD/GEO	100%	16-Sep-13 A	27-Feb-14 A																						
01108.OCT.DN06.2.1	Open Cut (CH 99222 to 99257, Inter face with C1109) - Design, ICE & Submit to MTRC for review	0%	02-Jan-15	02-Mar-15																						
01108.OCT.DN06.2.2	Open Cut (CH 99222 to 99257, Inter face with C1109) - Design Revision, if required, & Submit to RDO/BD/GEO	0%	03-Mar-15	01-Apr-15																						
Dewatering and Observation Wells																										
01108.OCT.DW9080	To Ch 99080 Dewatering, 22 nr PW40~61; Recharge 10 nr RW1~10; Observation, 8 nr OW11~18; Piezometer, 5 nr (3 Rigs)	100%	18-Sep-13 A	18-Dec-13 A																						
01108.OCT.DW9185	Ch 99080~99185 Dewatering wells, 21 nr PW19~PW39; Observation wells, 6 nr OW5~OW10	100%	08-Nov-13 A	18-Dec-13 A																						
01108.OCT.DW9080t	Ch 98926~99080 Pumping tests	100%	27-Feb-14 A	30-Mar-14 A																						
01108.OCT.DW9185t	Ch 99080~99217 Pumping tests	100%	12-Apr-14 A	30-Apr-14 A																						
Sheet Piles																										
Water Cut-off Wall at NW Side																										
01108.OCT.SP9080w	Point G to Ch 99080 Sheet piling, 192 nr x 21.5m (4128m, 273t, total)	100%	23-Aug-13 A	27-Dec-13 A																						
01108.OCT.SP9258w	Ch 99185~99258 Sheet piling, 382nr - 340 x 12.5m, 42 x 15m (4880m, 323t, total)	100%	12-Sep-13 A	15-Nov-13 A																						
01108.OCT.SP9185w	Ch 99080~99185 Sheet piling, 238 nr - 120 x 18.5m, 25 x 20m, 93 x 21.5m (4720m, 312t, total)	100%	12-Sep-13 A	15-Nov-13 A																						
01108.OCT.SP9081w	Point J to Point D Sheet piling, 136 nr x 21.5m (2924m, 193t, total)	100%	12-Sep-13 A	21-Dec-13 A																						
Water Cut-off Wall at SE Side																										
01108.OCT.SP9080e	To Ch 99080 Sheet piling, 316 nr - 215 x 12.5, 37 x 15m, 64 x 18.5m (4427m, 293t, total)	100%	16-Aug-13 A	03-Sep-13 A																						
01108.OCT.SP9185e	Ch 99080~99185 Sheet piling, 238 nr x 12.5m (2975m, 197t, total)	100%	11-Sep-13 A	24-Sep-13 A																						
01108.OCT.SP9258e	Ch 99185~99258 Sheet piling, 188 nr x 12.5m (2350m, 155t, total)	100%	11-Sep-13 A	24-Sep-13 A																						
C1.2.3 Excavation CH 98975 to CH 99217																										
General Site Clearance																										
01108.OCT.EX0015	General clearance & trim existing ground by +3.5mPD	100%	05-Aug-13 A	03-Sep-13 A																						
01108.OCT.EX0010	Construct drainage protection system	100%	10-Feb-14 A	21-Mar-14 A																						
From Existing Ground Level to Formation Level																										
01108.OCT.EX9038	CH 99017~99038 Excavation	50%	28-Sep-13 A	17-Dec-14																						
01108.OCT.EX9059	CH 99038~99059 Excavation	66%	28-Sep-13 A	12-Dec-14																						

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					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06
01108.OCT.EX9080	CH 99059~99080 Excavation	95%	28-Sep-13 A	02-Dec-14																			
01108.OCT.EX9101	CH 99080~99101 Excavation	100%	28-Sep-13 A	16-Dec-14 A																			
01108.OCT.EX9122	CH 99101~99122 Excavation	100%	28-Sep-13 A	04-Dec-14 A																			
01108.OCT.EX9143	CH 99122~99143 Excavation	100%	28-Sep-13 A	03-Nov-14 A																			
01108.OCT.EX9164	CH 99143~99164 Excavation	100%	28-Sep-13 A	01-Nov-14 A																			
01108.OCT.EX9185	CH 99164~99185 Excavation	100%	28-Sep-13 A	01-Nov-14 A																			
01108.OCT.EX9206	CH 99185~99206 Excavation	50%	28-Sep-13 A	17-Dec-14																			
01108.OCT.EX9217	CH 99206~99217 Excavation 10.5mL	50%	28-Sep-13 A	17-Dec-14																			
01108.OCT.EX9017	CH 98996~99017 Excavation	20%	07-Oct-13 A	30-Dec-14																			
01108.OCT.EX8996	CH 98975~98996 Excavation	10%	18-Oct-13 A	03-Jan-15																			
C1.2.3 Excavation CH 98577 to CH 98650																							
From Existing Ground Level to Formation Level																							
01108.OCT.SP8597	Sheet Piling at Existing Nullah Area for Water Cut-off Wall	74%	01-Dec-14 A	09-Jan-15																			
01108.OCT.EX8599	CH 98577~98598 Excavation	15%	08-Dec-14 A	23-Feb-15																			
01108.OCT.EX8620	CH 98598~98619 Excavation	15%	08-Dec-14 A	12-Mar-15																			
01108.OCT.EX8636	CH 98619~98650 Excavation, 31mL	15%	08-Dec-14 A	30-Mar-15																			
01108.OCT.SP8598	Pumping Tests (Existing Nullah)	0%	09-Jan-15	30-Jan-15																			
C1.3 C&S Works																							
Tunnel Construction CH 98975 to CH99217																							
Base Slabs																							
01108.OCT.TS9122	CH 99101~99122 Base slabs, 2 x 2 x 10.5mL	100%	10-Sep-14 A	16-Dec-14 A																			
01108.OCT.TS9164	CH 99143~99164 Base slabs, 2 x 2 x 10.5mL	50%	10-Sep-14 A	09-Dec-14																			
01108.OCT.TS9143	CH 99122~99143 Base slabs, 2 x 2 x 10.5mL	100%	26-Sep-14 A	07-Nov-14 A																			
01108.OCT.TS9080	CH 99059~99080 Base slabs, 2 x 2 x 10.5mL	50%	10-Oct-14 A	23-Mar-15																			
01108.OCT.TS9101	CH 99080~99101 Base slabs, 2 x 2 x 10.5mL	100%	10-Oct-14 A	20-Dec-14 A																			
01108.OCT.TS9059	CH 99038~99059 Base slabs, 2 x 2 x 10.5mL	50%	05-Nov-14 A	13-Mar-15																			
01108.OCT.TS9185	CH 99164~99185 Base slabs, 2 x 2 x 10.5mL	0%	10-Dec-14	29-Dec-14																			
01108.OCT.TS9206	CH 99185~99206 Base slabs, 2 x 2 x 10.5mL	0%	30-Dec-14	17-Jan-15																			
01108.OCT.TS8996	CH 98975~98996 Base slabs, 2 x 2 x 10.5mL	0%	05-Jan-15	22-Jan-15																			
01108.OCT.TS9217	CH 99206~99217 Base slabs, 2 x 10.5mL	0%	19-Jan-15	05-Feb-15																			
01108.OCT.TS9017	CH 98996~99017 Base slabs, 2 x 2 x 10.5mL	0%	23-Jan-15	10-Feb-15																			
01108.OCT.TS9038	CH 99017~99038 Base slabs, 2 x 2 x 10.5mL	0%	11-Feb-15	04-Mar-15																			
Walls & Top Slabs																							
01108.OCT.TR9164	CH 99143~99164 Wall & top slabs 2 x 2 x 10.5mL	100%	13-Oct-14 A	19-Nov-14 A																			
01108.OCT.TR9143	CH 99122~99143 Wall & top slabs 2 x 2 x 10.5mL	100%	24-Oct-14 A	19-Dec-14 A																			
01108.OCT.TR9185	CH 99164~99185 Wall & top slabs 2 x 2 x 10.5mL	0%	30-Dec-14	22-Jan-15																			
01108.OCT.TR9206	CH 99185~99206 Wall & top slabs 2 x 2 x 10.5mL	0%	23-Jan-15	14-Feb-15																			
01108.OCT.TR8966	CH 98975~98996 Wall & top slabs 2 x 2 x 10.5mL	0%	23-Jan-15	14-Feb-15																			
01108.OCT.TR9217	CH 99206~99217 Wall & top slabs 2 x 10.5mL	0%	16-Feb-15	09-Mar-15																			
01108.OCT.TR9017	CH 98996~99017 Wall & top slabs 2 x 2 x 10.5mL	0%	16-Feb-15	13-Mar-15																			
01108.OCT.TR9038	CH 99017~99038 Wall & top slabs 2 x 2 x 10.5mL	0%	14-Mar-15	10-Apr-15																			
Internal C&S Works																							
01108.OCT.IC9144	CH 99122~99143 Track level concrete works & finishes	0%	30-Dec-14	10-Jan-15																			
01108.OCT.IC9164	CH 99143~99164 Track level concrete works & finishes	0%	12-Jan-15	22-Jan-15																			
01108.OCT.IC9185	CH 99164~99185 Track level concrete works & finishes	0%	24-Feb-15	06-Mar-15																			
01108.OCT.IC8966	CH 98975~98996 Track level concrete works & finishes	0%	19-Mar-15	01-Apr-15																			
01108.OCT.IC9206	CH 99185~99206 Track level concrete works & finishes	0%	19-Mar-15	30-Mar-15																			
Waterproofing Works																							
01108.OCT.WP9143	CH 99122~99143 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	30-Dec-14	17-Jan-15																			
01108.OCT.WP9164	CH 99143~99164 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	12-Jan-15	29-Jan-15																			
01108.OCT.WP9185	CH 99164~99185 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	24-Feb-15	13-Mar-15																			
01108.OCT.WP8996	CH 98975~98996 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	19-Mar-15	10-Apr-15																			
01108.OCT.WP9206	CH 99185~99206 2-coat spray, 75mm spray & 75mm blockworks, 2 x 2 x 10.5mL	0%	19-Mar-15	10-Apr-15																			
Tunnel Construction CH 98577 to CH98650																							
Base Slabs																							

- △ Milestone
- ▲ Critical Milestone
- Critical Remaining Work
- Remaining Work
- Remaining Level of Effort
- Primary Baseline
- Actual Work

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Kaden - Chun Wo Joint Venture

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Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April	
					21					22				23				24				25	
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06
01108.CCT.DN05.1b.3	CCT ELS/ Hydraulic (CH 98650 to 98750) - No-adverse-comment by RDO/BD/ GEO	70%	20-Aug-13 A	12-Dec-14	[Green bar]																		
01108.CCT.DN05.2.2	CCT ELS (CH 98750 to 98976) - Design Revision, if required, & Submit to RDO/BD/ GEO	100%	06-Dec-13 A	23-Dec-13 A																			
01108.CCT.DN05.2.3	CCT ELS (CH 98750 to 98976) - Design No-adverse-comment by RDO/BD/ GEO	10%	23-Dec-13 A	20-Dec-14	[Green bar]																		
Dewatering and Observation Wells																							
01108.CCT.DW0030	Install dewatering wells, 51 nos. and observation wells, 10nr (4 Rigs) (CH 98636 to 98846)	100%	29-Aug-13 A	16-Sep-13 A																			
01108.CCT.DW0040	Pumping tests (CH 98650 to 98750)	100%	17-Oct-13 A	24-Oct-13 A																			
01108.CCT.DW40	Pumping tests (CH 98750 to 98846)	100%	19-Apr-14 A	12-May-14 A																			
Sheet Piles																							
Partial Open Cut																							
01108.CCT.SP0010a	Pre-bored existing seawall for sheet piling, 2 x ~30m horizontal run	100%	02-Jul-13 A	30-Aug-13 A																			
01108.CCT.SP0020	Sheet piling as cut-off walls, 2 x 525nr x 12m L, 2 x 6300m total (2 rigs)	100%	30-Jul-13 A	28-Sep-13 A																			
01108.CCT.SP8650e	SE - CH 98650~98750 Sheet piling FSP IV : 293nr x 23m-to-32.2mL, 7148m total, (2 rigs)	100%	21-Dec-13 A	24-Feb-14 A																			
01108.CCT.SP8650	NW - CH 98650~98750 Sheet piling FSP IV : 293nr x 23m-to-32.2mL, 7148m total, (2 rigs)	100%	21-Dec-13 A	24-Feb-14 A																			
01108.CCT.SP8770	NW - CH 98750~98840 Sheet piling FSP IV : 152nr x 22m-to-23mL, 3391m total	100%	24-Feb-14 A	23-Mar-14 A																			
01108.CCT.SP8770e	SE - CH 98750~98840 Sheet piling FSP IV : 152nr x 22m-to-23mL, 3391m total	100%	24-Feb-14 A	23-Mar-14 A																			
01108.CCT.SP8650pt	Pumping Tests (Cofferdam Excavation) Stage 1	100%	26-Feb-14 A	17-Mar-14 A																			
01108.CCT.SP8650pt1	Pumping Tests (Cofferdam Excavation) Stage 2	100%	29-Apr-14 A	12-May-14 A																			
Full Height Cofferdam																							
01108.CCT.SP020	N.of FKCP-Sht.piling, M3~G3~F3a, FSP V Type C1- 68nr x 34.2mL (2334m total) & FSP VI Type B- 29nr x 34.2mL (1003m total)	100%	20-Jan-14 A	23-Jun-14 A																			
01108.CCT.SP010	N.of FKCP-Sht.piling, M3~Q3~Q3a, FSP V Type C1- 51nr x 34.2mL (1733m total) & FSP VI Type B- 42nr x 34.2mL(1434m total)	100%	20-Jan-14 A	23-Jun-14 A																			
01108.CCT.SP110	S.of FKCP-Sht. piling, H4~F4~D4', FSP V Type C2- 36nr x 33.2m (1191m total) & FSP IV Type D1- 68nr x 33.2m (2241m total)	91%	15-Mar-14 A	02-Dec-14																			
01108.CCT.SP120	S.of FKCP-Sht. piling, H4~K4~L4', FSP V Type C2: 39nr x 33.2m (1279m total) & FSP IV Type D1- 93nr x 33.2m (3071m total)	91%	15-Mar-14 A	02-Dec-14																			
01108.CCT.SP130	Sheet piling, D4~A4, FSP IV Type D2, D1: 108nr x 27. 2~33. 2m, 3456m total	0%	02-Dec-14	24-Dec-14	[Green bar]																		
01108.CCT.SP140	Sheet piling, L4~R4, FSP IV Type D2, D1: 199nr x 33.2 to 27.2m, 3381m total	0%	24-Dec-14	17-Jan-15	[Green bar]																		
C3.2.3 Earthworks																							
Partial Open Cut																							
Full Height Cofferdam Adjacent Mined Tunnel																							
01108.CCT.EX8866	Pump test (East Shaft)	100%	17-Jun-14 A	05-Jul-14 A																			
01108.CCT.EX8985	CH 98840~98866 Excavation & struts, 2 x 10.5+ 5mL (East Shaft)	40%	08-Jul-14 A	18-Dec-14	[Pink bar]																		
01108.CCT.EX8928	Pump test (West Shaft)	100%	16-Aug-14 A	16-Dec-14 A	[Blue bar]																		
01108.CCT.EX8995	CH 98906~98928 Excavation & struts, 2 x 10.5mL (West Shaft)	30%	28-Aug-14 A	16-Dec-14	[Pink bar]																		
Open Cut from Existing Ground Level to -3.5mPD																							
01108.CCT.EX8636	CH 98650~98866 Clearance & trim ground level to +3.5mPD, 18480 m3	100%	30-Oct-13 A	14-Nov-13 A																			
01108.CCT.EX8657c	CH 98650~98671 Excavation to -3.5mPD, 5586 m3	100%	06-Jan-14 A	20-Jun-14 A																			
01108.CCT.EX8678c	CH 98671~98692 Excavation to -3.5mPD, 5166 m3 + 420 m3 seawall	100%	06-Jan-14 A	12-Jun-14 A																			
01108.CCT.EX8699c	CH 98692~98713 Excavation to -3.5mPD, 3381 m3 + 2205 m3 seawall	100%	06-Jan-14 A	04-Jun-14 A																			
01108.CCT.EX8720c	CH 98713~98734 Excavation to -3.5mPD, 3381 m3 + 2205 m3 seawall	100%	06-Jan-14 A	31-May-14 A																			
01108.CCT.EX8741c	CH 98734~98755 Excavation to -3.5mPD, 3381 m3 + 2205 m3 seawall	100%	06-Jan-14 A	31-May-14 A																			
01108.CCT.EX8762c	CH 98755~98776 Excavation to -3.5mPD, 3906 m3 + 1680 m3 seawall	100%	06-Jan-14 A	31-Oct-14 A																			
01108.CCT.EX8783c	CH 98776~98797 Excavation to -3.5mPD, 4746 m3 + 840 m3 seawall	100%	06-Aug-14 A	03-Nov-14 A																			
01108.CCT.EX8804c	CH 98797~98818 Excavation to -3.5mPD, 6384 m3	100%	06-Aug-14 A	04-Nov-14 A																			
01108.CCT.EX8825c	CH 98818~98840 Excavation to -3.5mPD, 6688 m3	85%	06-Aug-14 A	04-Dec-14	[Green bar]																		
Cofferdam below -3.5mPD																							
01108.CCT.EX8720s	CH 98713~98734 Excavation & struts, 5141 m3	100%	10-Feb-14 A	31-Mar-14 A																			
01108.CCT.EX8741s	CH 98734~98755 Excavation & struts, 5348 m3	100%	10-Feb-14 A	31-Mar-14 A																			
01108.CCT.EX8657s	CH 98650~98671 Excavation & struts, 4726 m3	100%	10-Feb-14 A	27-Jun-14 A																			
01108.CCT.EX8678s	CH 98671~98692 Excavation & struts, 4864 m3	100%	10-Feb-14 A	18-Jun-14 A																			
01108.CCT.EX8699s	CH 98692~98713 Excavation & struts, 5002 m3	100%	10-Feb-14 A	09-Jun-14 A																			
01108.CCT.EX8783s	CH 98776~98797 Excavation & struts, 5684 m3	100%	20-Jun-14 A	12-Sep-14 A																			
01108.CCT.EX8762s	CH 98755~98776 Excavation & struts, 5556 m3	100%	20-Jun-14 A	09-Sep-14 A																			
01108.CCT.EX8804s	CH 98797~98818 Excavation & struts, 5811 m3	100%	06-Aug-14 A	04-Nov-14 A																			
01108.CCT.EX8825s	CH 98818~98840 Excavation & struts, 6222m3	60%	06-Aug-14 A	09-Dec-14	[Pink bar]																		
Full Height Cofferdam																							
Excavation & ELS from Existing Groud Level to Formation Level																							
01108.CCT.EX8947	CH 98928~98947 Excavation & struts, 2 x 9.5mL	0%	01-Dec-14	05-Jan-15	[Pink bar]																		



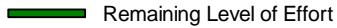


▲ Milestone
 ▲ Critical Milestone
 [Pink bar] Critical Remaining Work
 [Green bar] Remaining Work
 [Blue bar] Remaining Level of Effort

[Green line] Primary Baseline
 [Blue bar] Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (Dec 2014)


Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April			
					21					22				23				24				25			
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06		
01108.CCT.EX8966	CH 98947~98966 Excavation & struts, 2 x 9.5mL	0%	06-Jan-15	06-Feb-15																					
01108.CCT.EX8975	CH 98967~98975 Excavation & struts, 9.5mL	0%	07-Feb-15	28-Feb-15																					
C3.3 C&S Works																									
Tunnel Construction CH 98650 to CH 98840																									
Base Slabs																									
01108.CCT.TB8678	CH98671~98692 Base slabs, 2 x 2 x 10.5mL	100%	31-May-14 A	25-Jun-14 A																					
01108.CCT.TB8699	CH98692~98713 Base slabs, 2 x 2 x 10.5mL	100%	31-May-14 A	25-Jun-14 A																					
01108.CCT.TB8657	CH98650~98671 Base slabs, 2 x 2 x 10.5mL	100%	25-Jun-14 A	10-Jul-14 A																					
01108.CCT.TB8720	CH98713~98734 Base slabs, 2 x 2 x 10.5mL	100%	21-Jul-14 A	11-Aug-14 A																					
01108.CCT.TB8741	CH98734~98755 Base slabs, 2 x 2 x 10.5mL	100%	12-Aug-14 A	21-Sep-14 A																					
01108.CCT.TB8762	CH98755~98776 Base slabs, 2 x 2 x 10.5mL	0%	01-Dec-14	18-Dec-14																					
01108.CCT.TB8783	CH98776~98797 Base slabs, 2 x 2 x 10.5mL	0%	19-Dec-14	08-Jan-15																					
01108.CCT.TB8804	CH98797~98818 Base slabs, 2 x 2 x 10.5mL	0%	09-Jan-15	27-Jan-15																					
01108.CCT.TB8825	CH98818~98840 Base slabs, 2 x 2 x 10.5mL	0%	28-Jan-15	14-Feb-15																					
External Walls and Top Slab																									
01108.CCT.TW8678	CH98671~98692 Walls and Top Slab, 2 x 2 x 10.5mL	100%	02-Jul-14 A	06-Sep-14 A																					
01108.CCT.TW8699	CH98692~98713 Walls and Top Slab, 2 x 2 x 10.5mL	100%	02-Jul-14 A	06-Aug-14 A																					
01108.CCT.TW8741	CH98734~98755 Walls and Top Slab, 2 x 2 x 10.5mL	100%	19-Aug-14 A	11-Sep-14 A																					
01108.CCT.TW8720	CH98713~98734 Walls and Top Slab, 2 x 2 x 10.5mL	100%	21-Aug-14 A	06-Sep-14 A																					
01108.CCT.TW8657	CH98650~98671 Walls and Top Slab, 2 x 2 x 10.5mL	100%	25-Aug-14 A	11-Sep-14 A																					
01108.CCT.TW8762	CH98755~98776 Walls and Top Slab, 2 x 2 x 10.5mL	0%	19-Dec-14	08-Jan-15																					
01108.CCT.TW8783	CH98776~98797 Walls and Top Slab, 2 x 2 x 10.5mL	0%	09-Jan-15	27-Jan-15																					
01108.CCT.TW8804	CH98797~98818 Walls and Top Slab, 2 x 2 x 10.5mL	0%	28-Jan-15	14-Feb-15																					
01108.CCT.TW8825	CH98818~98840 Walls and Top Slab, 2 x 2 x 10.5mL	0%	16-Feb-15	09-Mar-15																					
Internal C&C Works																									
01108.CCT.IC8657	CH98650~98671 Track level concreteworks & finishes	0%	01-Dec-14	13-Dec-14																					
01108.CCT.IC8678	CH98671~98692 Track level concreteworks & finishes	0%	15-Dec-14	26-Dec-14																					
01108.CCT.IC8699	CH98692~98713 Track level concreteworks & finishes	0%	27-Dec-14	08-Jan-15																					
01108.CCT.IC8720	CH98713~98734 Track level concreteworks & finishes	0%	09-Jan-15	20-Jan-15																					
01108.CCT.IC8741	CH98734~98755 Track level concreteworks & finishes	0%	21-Jan-15	31-Jan-15																					
01108.CCT.IC8762	CH98755~98776 Track level concreteworks & finishes	0%	02-Feb-15	12-Feb-15																					
01108.CCT.IC8783	CH98776~98797 Track level concreteworks & finishes	0%	13-Feb-15	27-Feb-15																					
01108.CCT.IC8804	CH98797~98818 Track level concreteworks & finishes	0%	28-Feb-15	11-Mar-15																					
01108.CCT.IC8825	CH98818~98840 Track level concreteworks & finishes	0%	12-Mar-15	23-Mar-15																					
Waterproofing Works																									
01108.CCT.WP8657	CH98650~98671 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	100%	06-Aug-14 A	03-Sep-14 A																					
01108.CCT.WP8699	CH98692~98713 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	100%	06-Aug-14 A	03-Sep-14 A																					
01108.CCT.WP8720	CH98713~98734 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	100%	06-Aug-14 A	13-Sep-14 A																					
01108.CCT.WP8678	CH98671~98692 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	100%	08-Aug-14 A	23-Aug-14 A																					
01108.CCT.WP8741	CH98734~98755 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	85%	11-Sep-14 A	03-Dec-14																					
01108.CCT.WP8762	CH98755~98776 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	09-Jan-15	24-Jan-15																					
01108.CCT.WP8783	CH98776~98797 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	28-Jan-15	12-Feb-15																					
01108.CCT.WP8804	CH98797~98818 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	16-Feb-15	06-Mar-15																					
01108.CCT.WP8825	CH98818~98840 2-coat spray, 75m m screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	10-Mar-15	25-Mar-15																					
Drainage																									
01108.CCT.DR8975	CH98650~98755 U-channel, pipe laying, catch pits, 210mL	100%	01-Aug-14 A	11-Sep-14 A																					
01108.CCT.DR9005	CH98755~98840 U-channel, pipe laying, catch pits, 210mL	0%	26-Jan-15	30-Mar-15																					
Tunnel Construction CH 98928 to CH 98975																									
Base Slabs																									
01108.CCT.TB8947	CH98928~98947 Base slabs, 2 x 2 x 9.5mL	0%	06-Jan-15	28-Jan-15																					
01108.CCT.TB8966	CH98947~98966 Base slabs, 2 x 2 x 9.5mL	0%	07-Feb-15	05-Mar-15																					
01108.CCT.TB8975	CH98966~98975 Base slabs, 2 x 9.5mL	0%	06-Mar-15	21-Mar-15																					
External Walls																									
01108.CCT.TW8947	CH98928~98947 Walls, 2 x 2 x 9.5mL	0%	29-Jan-15	24-Feb-15																					
01108.CCT.TW8966	CH98947~98966 Walls, 2 x 2 x 9.5mL	0%	06-Mar-15	28-Mar-15																					

▲ Milestone
 ▲ Critical Milestone
 Critical Remaining Work
 Remaining Work
 Remaining Level of Effort
 Primary Baseline
 Actual Work

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Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April	
					21					22				23				24				25	
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06
01108.CCT.TW8975	CH98966~98975 Walls, 2 x 9.5mL	0%	30-Mar-15	18-Apr-15																			
Top Slabs																							
01108.CCT.TR8947	CH98928~98947 Top slabs, 2 x 2 x 9.5mL	0%	25-Feb-15	19-Mar-15																			
01108.CCT.TR8966	CH98947~98966 Top slabs, 2 x 2 x 9.5mL	0%	30-Mar-15	25-Apr-15																			
Backfill and Compaction																							
Backfill and Compaction CH 98650 to CH 98840																							
01108.CCT.BF8678	CH98671~98692 Backfill, compaction & remove strut, 8470m3	75%	04-Sep-14 A	05-Dec-14																			
01108.CCT.BF8699	CH98692~98713 Backfill, compaction & remove strut, 8470m3	100%	04-Sep-14 A	18-Oct-14 A																			
01108.CCT.BF8720	CH98713~98734 Backfill, compaction & remove strut, 8470m3	75%	30-Sep-14 A	05-Dec-14																			
01108.CCT.BF8657	CH98650~98671 Backfill, compaction & remove strut, 8470m3	45%	30-Sep-14 A	11-Dec-14																			
01108.CCT.BF8741	CH98734~98755 Backfill, compaction & remove strut, 8470m3	45%	16-Oct-14 A	11-Dec-14																			
CSMM Backfill CH 98650 to CH 98840																							
01108.CCT.BF8720c	CH98707~98720 CSMM backfill, 13mL x 42m2, total 546 m3	0%	01-Dec-14	06-Dec-14																			
01108.CCT.BF8741c	CH98720~98741 CSMM backfill, 21mL x 42m2, total 882 m3	0%	08-Dec-14	17-Dec-14																			
C4 Stub Tunnels (U=32m; D=32m; R=33m)																							
C4.1 Excavation CH 98255 to CH 98290																							
Temporary Works																							
Temporary Works Design, Review & Approval																							
01108.STT.DN04.2.1	Stub Tunnel Interface with C1107 - Design, ICE & Submit to MTRC for review	100%	12-Sep-13 A	24-Dec-13 A																			
01108.STT.DN04.2.2	Stub Tunnel Interface with C1107 - Design Revision, if required, & Submit to RDO/BD/ GEO	100%	18-Jan-14 A	25-Jan-14 A																			
01108.STT.DN04.2.3	Stub Tunnel Interface with C1107 - Design No-adverse-comment by RDO/BD/ GEO	50%	27-Jan-14 A	10-Dec-14																			
Temporay Works - Sheet Pile & ELS																							
01108.IF1107.1P	Contract 1107 provide access to Contract 1108 at interface area for ELS works	100%	27-Dec-13 A																				
01108.STT.SP050	Sheet piling, C1~D1, FSP III Type A1: 31nr, 843m (31nr x 27.2m)	100%	08-Jan-14 A	15-Apr-14 A																			
01108.STT.SP060	Sheet piling, E1~E1, FSP III Type A1: 25nr, 680m (25nr x 27.2m)	100%	08-Jan-14 A	15-Apr-14 A																			
01108.STT.SP010	Sheet piling, C1~A1, FSP III Type A1, A2: 102nr, 2587m (77nr x 27.2m & 25nr x 19.7m)	100%	08-Jan-14 A	15-Apr-14 A																			
01108.STT.SP020	Sheet piling, E1~J1, FSP III Type A1, A2: 139nr, 2299m (78nr x 27.2m & 61nr x 19.7m)	100%	08-Jan-14 A	15-Apr-14 A																			
01108.STT.SP170	Pump Test	100%	16-Apr-14 A	25-Apr-14 A																			
Earthworks																							
01108.STT.EX8273	CH98255~98273 Excavation & struts, 10930 m3	100%	27-May-14 A	11-Nov-14 A																			
01108.STT.EX8290	CH98273~98290 Excavation & struts, 10930 m3	100%	17-Sep-14 A	11-Nov-14 A																			
C4.2 Stub Tunnels - C&S Works																							
Tunnel Construction CH98268 to CH98290 (Up Track & Refuge Track)																							
Base Slabs																							
01108.STT.TB8279n	CH98268~98279 Base slabs, 1 x 11mL (Up-Refuge tracks)	100%	01-Dec-14 A	13-Dec-14 A																			
01108.STT.TB8290n	CH98279~98290 Base slabs, 2 x 11mL (Up & Refuge tracks)	0%	01-Dec-14	29-Dec-14																			
External Walls																							
01108.STT.TW8290n	CH98280~98290 Walls, 2 x 11mL (Up & Refuge tracks)	0%	30-Dec-14	27-Jan-15																			
01108.STT.TW8279n	CH98268~98279 Walls, 1 x 11mL (Up-Refuge tracks)	0%	14-Jan-15	10-Feb-15																			
Top Slabs																							
01108.STT.TR8290n	CH98280~98290 Top slabs, 2 x 11mL (Up & Refuge tracks)	0%	28-Jan-15	27-Feb-15																			
01108.STT.TR8279n	CH98268~98279 Top slabs, 1 x 11mL (Up-Refuge tracks)	0%	18-Feb-15	20-Mar-15																			
Internal C&C Works																							
01108.STT.IC8290n	CH98280~98290 Track level concreteworks & finishes	0%	28-Mar-15	13-Apr-15																			
Waterproofing Works																							
01108.STT.WP8290n	CH98280~98290 2-coat spray, 75m m screed & 75mm blockworks, 2 x 11mL (Up & Refuge tracks)	0%	14-Mar-15	01-Apr-15																			
Tunnel Construction CH98268 to CH98290 (Down Track)																							
Base Slabs																							
01108.STT.TB8279s	CH98268~98279 Base slabs, 1 x 11mL (Down track)	100%	26-Nov-14 A	05-Dec-14 A																			
01108.STT.TB8290s	CH98279~98290 Base slabs, 1 x 11mL (Down track)	100%	12-Dec-14 A	24-Dec-14 A																			
External Walls																							
01108.STT.TW8290s	CH98280~98290 Walls, 1 x 11mL (Down track)	0%	01-Dec-14	13-Dec-14																			
01108.STT.TW8279s	CH98268~98279 Walls, 1 x 11mL (Down track)	0%	30-Dec-14	13-Jan-15																			
Top Slabs																							
01108.STT.TR8290s	CH98280~98290 Top slabs, 1 x 11mL (Down track)	0%	15-Dec-14	29-Dec-14																			
01108.STT.TR8279s	CH98268~98279 Top slabs, 1 x 11mL (Down track)	0%	14-Jan-15	27-Jan-15																			

▲ Milestone
 ▲ Critical Milestone
 Critical Remaining Work
 Remaining Work
 Remaining Level of Effort
 Primary Baseline
 Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (Dec 2014)

基利
Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April	
					21					22				23				24				25	
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06
Internal C&C Works																							
01108.STT.IC8290s	CH98280~98290 Track level concreteworks & finishes	0%	28-Jan-15	03-Feb-15																			
01108.STT.IC8279s	CH98268~98279 Track level concreteworks & finishes	0%	04-Feb-15	10-Feb-15																			
Waterproofing Works																							
01108.STT.WP8290s	CH98280~98290 2-coat spray, 75m m screed & 75mm blockworks, 1x 11mL (Down track)	0%	14-Jan-15	20-Jan-15																			
01108.STT.WP8280s	CH98268~98280 2-coat spray, 75m m screed & 75mm blockworks, 1x 11mL (Down track)	0%	11-Feb-15	17-Feb-15																			
C5 SUA																							
C5.1 SUA - C&S Works																							
SUA Access at GL A1/A2																							
01108.OCT.SU010	At CH99088/GL A1~A2 SUA- Baseslab	0%	24-Mar-15	17-Apr-15																			
C6 Access Shafts																							
C&S Works																							
C6.1.1 External Walls																							
01108.CCT.AS010	CH98746~98768 Access shaft - Base slabs, 2 x 3 x 8.88mLx 9.82mW x 1~2.1mT	100%	04-Nov-14 A	21-Nov-14 A																			
01108.CCT.AS020	CH98746~98768 Access shaft - Walls B5~B3, W1 to Level C, 2 x 3 x 8.88mLx 9.82mW	0%	09-Dec-14	15-Jan-15																			
01108.CCT.AS030	CH98746~98768 Access shaft - Walls W2, W4, B2 to Level B, 2 x 3 x 8.88mLx 9.82mW x 1~2.1mT	0%	15-Jan-15	23-Feb-15																			
01108.CCT.AS040	CH98746~98768 Access shaft - Walls W2, W4, B1 to to Level A, 2 x 3 x 8.88mLx 9.82mW	0%	23-Feb-15	30-Mar-15																			
01108.OCT.AS050	CH98746~98768 Access shaft - Temporary Wall 0.4m T200mm above existing ground	0%	30-Mar-15	09-May-15																			
D - Associated Works																							
D3 Instrumentation and Monitoring																							
Instrumentation Installation and Monitoring																							
01108.AWM.0010	Installation of piezometers, inclinometers, ground/ bldg/ utility settlement markers	0%	02-Jul-13 A	10-Feb-15																			
01108.AWM.0020	Baseline Reading	100%	01-Aug-13 A	30-Aug-13 A																			
01108.AWM.0030	Regular Monitorings and Submit Monitoring Reports (weekly for 50 months)	50%	01-Aug-13 A	12-Nov-16																			
D4 Landscape																							
Soft Landscape																							
Tree Felling Permit & Tree Felling																							
01108.AWL.2035	Tree felling, 4nr. at Proposed Station open cut slope, tree survey nr. T0028, T0029, T0031 & T0032.	100%	01-Aug-13 A	30-Aug-13 A																			
01108.AWL.2000	Tree felling permit, ref. P10.21 & P46.1, no longer than 60 days	100%	01-Aug-13 A	30-Aug-13 A																			
01108.AWL.2039	Tree felling, Girth, rest 32 nr. (with majority at Works Area 1108.A2)	100%	01-Aug-13 A	30-Aug-13 A																			
Site Formation Works for Engineers's Accommodation																							
01108.AWS.0010	Site formation for Engineer's accommodation - Design, ICE and submission	0%	01-Dec-14	13-Dec-14																			
01108.AWS.0020	Site formation for Engineer's accommodation - Approval	0%	15-Dec-14	13-Jan-15																			
01108.AWS.0030	Filling to formation level for Engineer's accommodation, imported natural material, 3544 m3	0%	14-Jan-15	03-Feb-15																			
D5 Utilities Diversion																							
Diversion of Existing Nullah																							
Temporary Works & Hydraulic Assessment																							
01108.AWD.DNA1.1	KTND Hydraulic Assessment, incl. pre-construction CCTV, as-built survey - Design, ICE & TW & Submit to MTRC for review	100%	11-Jul-13 A	28-Nov-13 A																			
01108.AWD.DNA1.2	KTND Hydraulic Assessment - Revision, if required, & Submit to DSD	100%	24-Jul-13 A	28-Nov-13 A																			
01108.AWD.DNA1.3	KTND Hydraulic Assessment - No-adverse-comment by DSD	80%	08-Aug-13 A	09-Dec-14																			
01108.AWD.DN09.5.1	KTND Temporary Channel - Design, ICE & TW & Submit to MTRC for review	100%	15-Aug-13 A	16-Dec-13 A																			
01108.AWD.DN09.6.1	KTND Temp. Support for Demolishing Ex. KTN Decking - Design, ICE & TW & Submit to MTRC for review	100%	15-Aug-13 A	04-Sep-13 A																			
01108.AWD.DN09.6.2	KTND Temp. Support for Demolishing Ex. KTN Decking - Design Revision, if required, & Submit to DSD & RDO/BD/ GEO	100%	04-Sep-13 A	26-Sep-13 A																			
01108.AWD.DN09.6.3	KTND Temp. Support for Demolishing Ex. KTN Decking - Design - No-adverse-comment by DSD & RDO/BD/ GEO	100%	26-Sep-13 A	26-Sep-13 A																			
01108.AWD.DN09.5.2	KTND Temporary Channel - Design Revision, if required, & Submit to DSD & RDO/BD/ GEO	100%	28-Nov-13 A	07-Mar-14 A																			
01108.AWD.DN09.5.3	KTND Temporary Channel - Design - No-adverse-comment by DSD & RDO/BD/ GEO	90%	16-Jan-14 A	03-Dec-14																			
North Section																							
01108.AWD.0120	Connection section: North/ upstream - Remove concrete surface	100%	01-Aug-13 A	30-Aug-13 A																			
01108.AWD.0122	Connection section: North/ upstream - Saw-cut precast slab and beam, 140 pieces	100%	29-Aug-13 A	10-Oct-13 A																			
01108.AWD.0124	Connection section: North/ upstream - Remove saw-cut precast slab and beam, 140 pieces	100%	29-Aug-13 A	10-Oct-13 A																			
01108.AWD.0130	Connection section: North/ upstream - Demolish and remove partition wall	100%	02-Nov-13 A	16-Nov-13 A																			
01108.AWD.0170	Connection section: North - Place concrete blocks & sealing before demolish nullah wall	100%	05-Dec-13 A	24-Dec-13 A																			
01108.AWD.0100	North section: Open cut excavation, 205mL x 36.4mW x ~4mD, 25750 m3	100%	06-Jan-14 A	21-May-14 A																			
01108.AWD.0180	Connection section: North - Demolish and remove nullah wall	100%	14-Jan-14 A	21-Jan-14 A																			

▲ Milestone
 ▲ Critical Milestone
 Critical Remaining Work
 Remaining Work
 Remaining Level of Effort
 Primary Baseline
 Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (Dec 2014)

基利
Kaden – Chun Wo Joint Venture

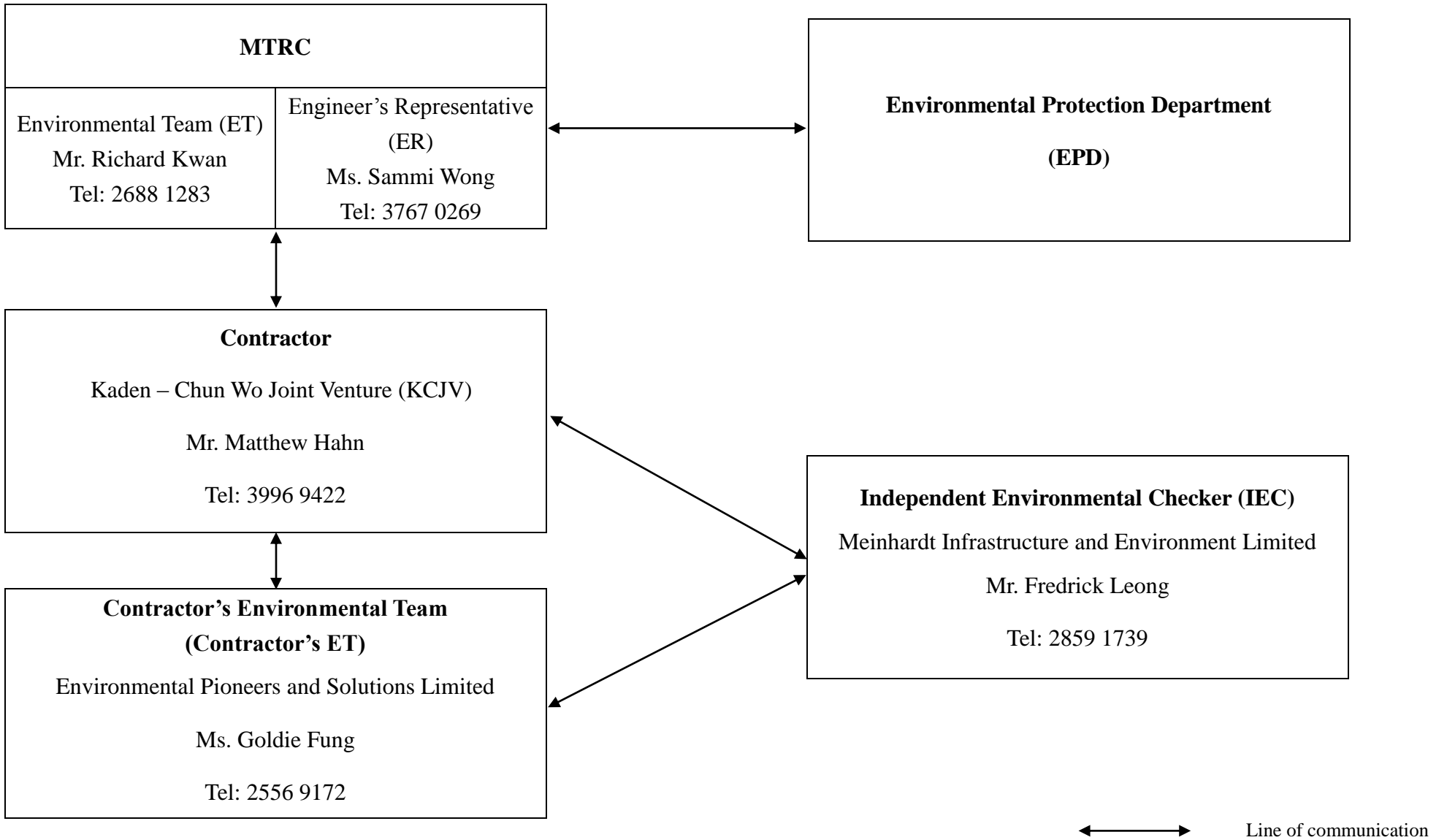
Activity ID	Activity Name	Activity % Complete	Start	Finish	December					January				February				March				April	
					21					22				23				24				25	
					01	08	15	22	29	05	12	19	26	02	09	16	23	02	09	16	23	30	06
01108.AWD.0150	North section: Concrete lining, 205mL x 39.4mW x 0.3mT	100%	12-Feb-14 A	30-Jun-14 A																			
01108.AWD.0110	North section across haul road : Concrete lining with concrete pipes & shotcrete surfaces, 24mL x 36.4mW x 0.4mT	100%	25-Feb-14 A	26-Mar-14 A																			
South Section																							
01108.AWD.0220	Connection section: South/ downstream - Rem ove concrete surface	100%	01-Aug-13 A	30-Aug-13 A																			
01108.AWD.0222	Connection section: South/ downstream - Saw-cut precast slab and beam, 84 pieces	100%	14-Sep-13 A	30-Oct-13 A																			
01108.AWD.0224	Connection section: South/ downstream - Rem ove saw-cut precast slab and beam, 84 pieces	100%	14-Sep-13 A	30-Oct-13 A																			
01108.AWD.0230	Connection section: South/ downstream - Demolish and rem ove partition wall	100%	22-Nov-13 A	03-Dec-13 A																			
01108.AWD.0270	Connection section: South - Place concrete blocks & sealing before demolish nullah wall	100%	26-Dec-13 A	09-Jan-14 A																			
01108.AWD.0240	South section: Open cut excavation, 205mL x 36.4mW x ~4mD, 25750 m3	100%	09-Jan-14 A	21-May-14 A																			
01108.AWD.0280	Connection section: South - Demolish and remove nullah wall	100%	22-Jan-14 A	23-Jan-14 A																			
01108.AWD.0250	South section: Concrete lining, 205mL x 39.4mW x 0.3mT	100%	16-Apr-14 A	30-Jun-14 A																			
Remaining Section																							
01108.AWD.1030	Tunnel section: Concrete lining, 60mL x 39.4mW x 0.3mT	0%	11-Dec-14	03-Jan-15																			
01108.AWD.1010	Completion of backfill after tunnel const ruction for remaining section of temporary nullah - Programmed	0%	11-Dec-14																				
01108.AWD.1020	Tunnel section: Remove cofferdam & open cut excavation, 60mL x 36.4mW x ~4mD, 7540 m3	0%	11-Dec-14	05-Jan-15																			
01108.CD3Ap	3A/D1- Complete temporary drainage channel for Kai Tak Nullah diversion(Week No.33/14, 17-Aug-14) - Programmed	0%		03-Jan-15*																			
01108.AWD.1035	Existing Nullah Diversion/Removal	0%	03-Jan-15	17-Jan-15																			
Temporary Diversion in Dry Season [P10.17]																							
01108.AWD.1050	D1- Temporary drainage channel for Kai Tak Nullah diversion in dry season [P10.17]	100%	28-Nov-14 A																				
F Option 2 CEDD Entrusted Works for Roads L9 & L16 & Associated Works																							
Option 2a Roads L9 and L16 and Assocaited Works																							
Preliminaries																							
01108.O2A.PRE.010	Submission of drawings & permanent works material control schedules & Approval	0%	31-Mar-15	09-May-15																			
01108.CDO2a.EDP	Option 2a CEDD Entrusted Works - Roads L9 & L16 - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15																				
4. Sewage Works																							
01108.O2A.SEW020	FM50_10~DP23/24 Sewer pipe, 300d to 450d, 307mL; 13 nr MH	0%	31-Mar-15	15-Jun-15																			
01108.O2A.SEW000	Remove disused pipes, 400mL	0%	31-Mar-15	15-May-15																			
11. Preservation & Protection of Trees																							
01108.O2A.PPT010	(Provisional) Preservataion & protection meausres to preserved trees, survey & reporting (30 months)	0%	31-Mar-15	17-Jul-17																			
Option 2b Landscape Hardworks & Softworks, Irrigation Facilities & Pavers																							
Programmed Completion Date																							
001108.CDO2b.EDP	Option 2b CEDD Entrusted Works - LS Hardwroks & Softwork & Irrigation System- LED (31-Mar-15)	0%	31-Mar-15																				
9. Irrigation Facilities																							
01108.O2B.IRR000	Design & Approval of Irrigation Systems	0%	31-Mar-15	15-Jun-15																			
Option 2c Establishment Works																							
10 Establishment Works																							
01108.CDO2c.EDP	Option 2c Establishment works of the landscape softworks in Option 2b -Latest Ex.Date (31-Mar-15) - Programmed	0%	31-Mar-15																				
G Option 3 CEDD Entrusted Works for Reconstruction of Kai Tak Nullah																							
Preliminaries																							
01108.CDO3.EDP	Option 3 CEDD Entrusted Works - Reconstruction & Upgrading of Kai Tak Nullah - LED (31-Dec-14)	0%	31-Dec-14																				
01108.O3.PRE.010	Submmission of drawings & permanent works material control schedules, shop drawings & material - Approval	0%	31-Dec-14	02-Feb-15																			
Earthworks																							
Demolition of Existing Nullah Structure																							
01108.CDO3.0EDP	Option 3 CEDD Entrusted Works - Reconstruction & Upgrading of KT Nullah - Latest Ex.Date (31-Dec-15)	0%	31-Dec-14																				
01108.O3.PRE010	Liaison with GEO on demolition of existing slope features, 11NE-A/R45&46 [P11.15.1]	0%	31-Dec-14	04-Feb-15																			
01108.O3.PRE020	Demolish existing nullah - decking, foundation & assocaited structures	0%	03-Jan-15	18-Mar-15																			
Temporary Works																							
01108.O3.TMW010	Design, ICE, submission & approval of sheet piles	0%	31-Dec-14	21-Jan-15																			
01108.O3.TMW020	Sheet pile, Type II, 150 m L, 375nr x 21.7m, 8141m total	0%	22-Jan-15	18-Feb-15																			

▲ Milestone	Primary Baseline
▲ Critical Milestone	Actual Work
█ Critical Remaining Work	
█ Remaining Work	
█ Remaining Level of Effort	

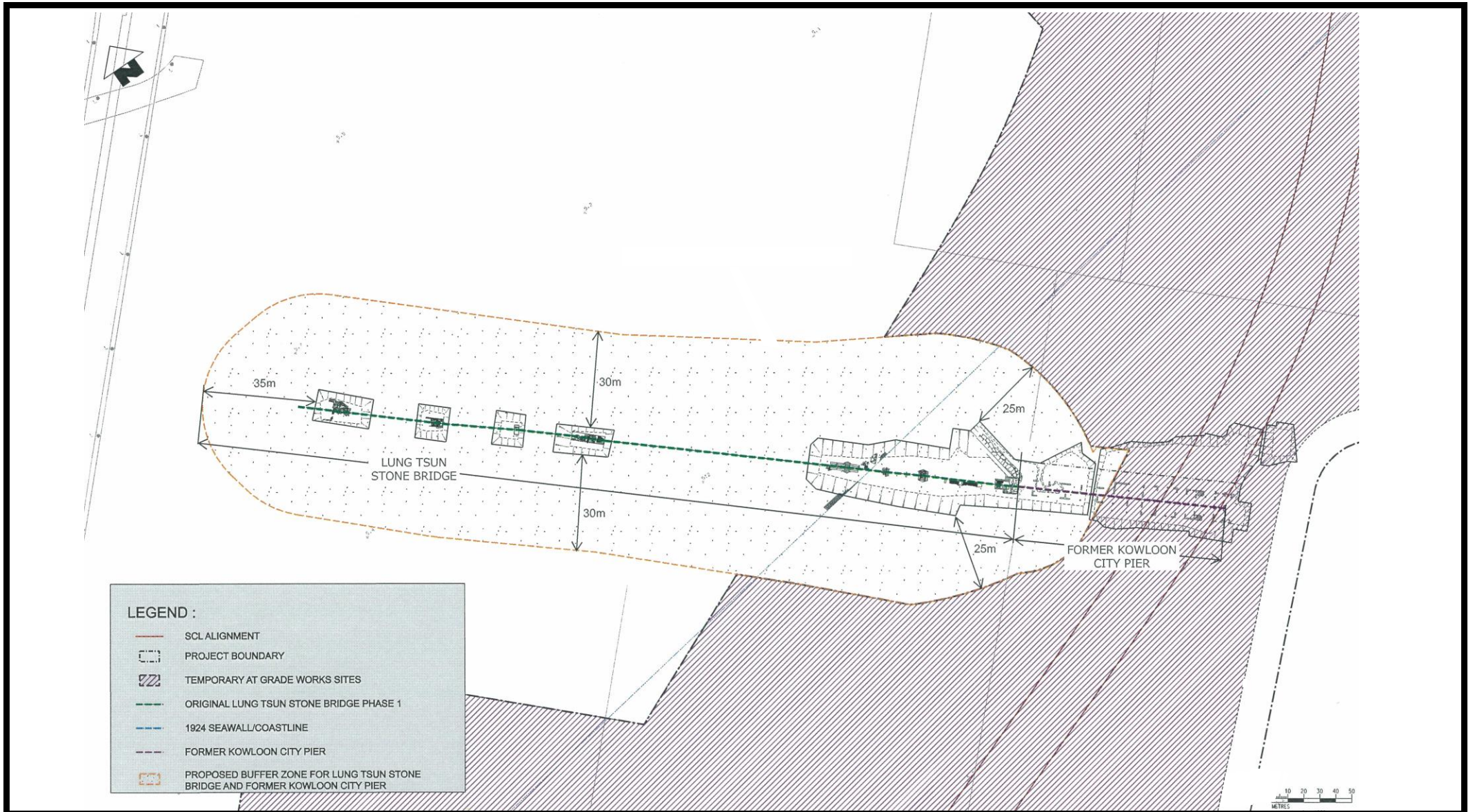
Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (Dec 2014)



Appendix C –Project Organization Chart & Contact Details



***Appendix D – Buffer Zone for Lung Tsun Stone Bridge & Former
Kowloon City Pier***



Project Title
工程名稱

Shatin to Central Link (SCL) - Tai Wai to Hung Hom Section(TAW-HUH)
沙田至中環綫 - 大圍至紅磡段

Environmental Permit No.: EP-438/2012/H
環境許可證編號：EP-438/2012/H

Figure 6
圖六

Buffer Zone from the Boundary of Lung Tsun Stone Bridge 龍津石橋界線之緩衝區
[This figure was prepared based on the attachment of the Application No.: VEP-432/2014]
[本圖是根據申請編號 VEP-432/2014 的附件編制]



***Appendix E – Event/Action Plan for landscape & Visual During
Construction Stage***

Event / Action Plan for Landscape and Visual during Construction Stage

Action Level	ET	IEC	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1) Inform the Contractor, the IEC and the ER 2) Discuss remedial actions with the IEC, the ER and the Contractor 3) Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1) Check inspection report 2) Check the Contractor's working method 3) Discuss with the ET, ER and the Contractor on possible remedial measures 4) Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1) Confirm receipt of notification of non-conformity in writing 2) Review and agree on the remedial measures proposed by the Contractor 3) Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1) Identify Source and investigate the non-conformity 2) Implement remedial measures 3) Amend working methods agreed with the ER as appropriate 4) Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1) Identify Source 2) Inform the Contractor, the IEC and the ER 3) Increase inspection frequency 4) Discuss remedial actions with the IEC, the ER and the Contractor 5) Monitor remedial actions until rectification has been completed 6) If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1) Check inspection report 2) Check the Contractor's working method 3) Discuss with the ET and the Contractor on possible remedial measures 4) Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1) Notify the Contractor 2) In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3) Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1) Identify Source and investigate the non-conformity 2) Implement remedial measures 3) Amend working methods agreed with the ER as appropriate 4) Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Appendix F – Waste Flow Table

Monthly Summary Waste Flow Table for 2014 (year)

Month	<u>Actual Quantities of Inert C&D Materials Generated Monthly</u>						<u>Actual Quantities of C&D Materials Generated Monthly</u>				
	Total Quantity Generated	Hard Rocks & Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals	Paper / cardboard packaging	Plastics	Chemical waste	Others (general refuse)
					1108A*	CEDD [#]					
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	74.526	0.000	0.000	0.000	72.007	2.519	32.340	0.110	0.000	0.000	0.059
Feb	57.988	0.000	0.000	0.000	55.963	2.025	0.000	0.160	0.007	0.640	0.123
Mar	45.732	0.000	0.000	0.000	41.405	4.327	0.000	0.096	0.000	0.000	0.146
Apr	32.976	0.000	0.000	0.000	30.126	2.850	0.000	0.034	0.000	0.000	0.060
May	26.839	0.000	0.000	0.000	26.839	0.000	46.620	0.048	0.000	0.260	0.135
Jun	15.390	0.000	0.000	0.000	11.868	3.522	0.000	0.060	0.004	0.000	0.240
Sub-total	253.451	0.000	0.000	0.000	238.208	15.243	78.960	0.508	0.011	0.900	0.763
July	7.001	0.000	0.000	0.000	0.015	6.986	0.000	0.022	0.003	0.000	0.075
August	6.836	0.000	0.000	0.000	0.000	6.836	0.000	0.040	0.000	0.000	0.081
September	9.244	0.000	4.132	0.000	0.000	5.112	0.000	0.060	0.000	0.000	0.096
October	11.577	0.000	11.577	0.000	0.000	0.000	0.000	0.028	0.000	0.640	0.132
November	8.727	0.000	8.727	0.000	0.000	0.000	0.000	0.087	0.022	0.000	0.165
December	15.040	0.000	15.040	0.000	0.000	0.000	24.320	0.110	0.020	0.000	0.172
Total	311.876	0.000	39.476	0.000	272.400		103.280	0.855	0.056	1.540	1.484
Year 2013	144.512	0.000	0.000	0.000	144.512		93.330	0.030	0.000	0.480	2.568
Grand Total	456.388	0.000	39.476	0.000	416.912		196.610	0.885	0.056	2.020	4.052

Notes: * MTR SCL Contract 1108A barging point.

Government (CEDD) Public Fill Reception Facilities

***Appendix G – Updated Environmental Mitigation Implementation
Schedule***

Environmental Mitigation Implementation Schedule –SCL Contract 1108 (Kai Tak Station and Associated Tunnels)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
<i>Cultural Heritage Impact (Construction and Operational Phase)</i>							
S4.9	CH1	Maintain a buffer distance as shown in Appendix D . A 1.8-2.2m vertical separation distance shall be maintained between the top of tunnel and the piles of the Former Kowloon City Pier.	Reserve sufficient area for necessary archaeological conservation and display works for Lung Tsun Stone Bridge in the future. Avoid direct impact on the Lung Tsun Stone Bridge and the Former Kowloon City Pier.	MTR Corporation Contractor	Lung Tsun Stone Bridge & Former Kowloon City Pier.	During the Construction of the tunnel section at Kai Tak	✓
<i>Landscape & Visual (Construction Phase)</i>							
S6.9.3	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> <ul style="list-style-type: none"> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. 	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, 					<p>✓</p> <p>✓</p> <p>✓</p>
S6.12	LV2	<p><u>Decorative Hoarding</u></p> <p>Erection of decorative screen during construction stage to screen</p>	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and	✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context</p> <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> Trees of high to medium survival rate would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006. 				construction stage	<p>✓</p> <p>N/A</p>
Air Quality (Construction Phase)							
/	A1	<p><u>Emission from Vehicles and Plants</u></p> <ul style="list-style-type: none"> All vehicles shall be shut down in intermittent use. Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. All diesel fuelled construction plant within the works areas shall be 	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	<p>✓</p> <p>✓</p> <p>✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		powered by ultra low sulphur diesel fuel (ULSD).					
/	A2	Open burning shall be prohibited.	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	✓
Construction Dust Impact							
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	*
S7.6.5	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m ² to achieve the dust removal efficiency.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	*
S7.6.5	D3	<ul style="list-style-type: none"> Proper watering of exposed spoil should be undertaken throughout the construction phase; Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extended beyond the 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	✓ * ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>pedestrian barriers, fencing or traffic cones.</p> <ul style="list-style-type: none"> • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; 					<p>*</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>*</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<ul style="list-style-type: none"> • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • 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; and • Exposed earth should be properly treated by compaction, turfing, 					<p>✓</p> <p>N/A</p> <p>✓</p> <p>*</p> <p>N/A</p> <p>N/A</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
<i>Construction Noise (Airborne)</i>							
S8.3.6	N1	<p>Implement the following good site practices:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) 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, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise	Contractor	All construction sites	Construction stage	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	✓
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	✓
S8.3.6	N4	Use “Quiet plants”	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	✓
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	✓

Water Quality (Construction Phase)

S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> <ul style="list-style-type: none"> At the start of site establishment (including the barging facilities), 	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	✓
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EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5 m³/s the basin would be 150 m³. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of 					<p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>construction.</p> <ul style="list-style-type: none"> • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via 					<p>✓</p> <p>✓</p> <p>*</p> <p>✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>silt removal facilities.</p> <ul style="list-style-type: none"> • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and 					<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</p> <ul style="list-style-type: none"> • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as 					<p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> <p style="text-align: center;">*</p> <p style="text-align: center;">✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>practicable.</p> <ul style="list-style-type: none"> Adopt best management practices 					✓
S10.7.1	W2	<p><u>Tunnelling Works</u></p> <ul style="list-style-type: none"> Cut-&-cover/ open cut tunnelling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. 	To minimize construction water quality impact from tunneling works	Contractor	All tunneling portion	Construction stage	<p>✓</p> <p>✓</p> <p>*</p> <p>✓</p>
S10.7.1	W3	<u>Sewage Effluent</u>	To minimize water quality	Contractor	All construction sites	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. TPH) to undetectable range. All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-Water and should be discharged into the foul sewers.</p> <ul style="list-style-type: none"> • If groundwater recharging wells are deployed, 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 the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH 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 					N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		groundwater.					
S10.7.1	W7	<p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. 	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	<p>*</p> <p>✓</p> <p>✓</p>
Waste Management (Construction Waste)							
S11.4.1.1	WM1	<p>On-site sorting of C&D material</p> <ul style="list-style-type: none"> Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should 	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.</p>					
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt ‘Selective Demolition’ technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; 	<p>Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal</p>	Contractor	All construction sites	Construction stage	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<ul style="list-style-type: none"> Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation 					<ul style="list-style-type: none"> ✓ ✓ ✓
S11.5.1	WM3	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</p>					
S11.5.1	WM4	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. 	<p>Minimize production of the general refuse and avoid odour, pest and litter impacts</p>	Contractor	All construction sites	Construction stage	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S11.5.1	WM6	<p><u>Land-based and Marine-based Sediment</u></p> <ul style="list-style-type: none"> • All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location; • All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • Before moving the vessels which are used for transporting dredged material, excess material shall be cleaned from the decks and exposed fittings of vessels and the excess materials shall never be dumped into the sea except at the approved locations; • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. • The Contractors shall monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers; • The Contractors shall comply with the conditions in the dumping 	To control pollution due to marine sediment	Contractor	Within Project Site Area	Construction Stage	<p>✓</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<p>licence.</p> <ul style="list-style-type: none"> • All bottom dumping vessels (Hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material; • The material shall be placed into the disposal pit by bottom dumping; • Contaminated marine mud shall be transported by spit barge of not less than 750m³ capacity and capable of rapid opening and discharge at the disposal site; • Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Material adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. • For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping into designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfil confined mud disposal. 					<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
S11.5.1	WM7	<u>Chemical Waste</u>	Control the chemical waste	Contractor	All construction sites	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		<ul style="list-style-type: none"> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a 	and ensure proper storage, handling and disposal.			stage	<p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.					
EM&A Project							
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	MTR Corporation/ Contractor	All construction sites	Construction stage	✓ ✓ ✓

Remarks :

- ✓ Compliance of mitigation measure
- X Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor
- * Recommendation was made during site audit but improved/rectified by the contractor.
- N/A Not Applicable

***Appendix H – Cumulative Log for Environmental Exceedance,
Complaints, Notification of Summons and Successful Prosecutions***

Cumulative Log for Environmental Exceedance, Complaints, Notification of Summons and Successful Prosecution

Reporting Month	Number of Exceedance	Number of Environmental Complaints	Number of Notification of Summons	Number of Successful Prosecutions
January 2014	0	0	0	0
February 2014	0	0	0	0
March 2014	0	0	0	0
April 2014	0	0	0	0
May 2014	0	0	0	0
June 2014	0	0	0	0
July 2014	0	0	0	0
August 2014	0	0	0	0
September 2014	0	0	0	0
October 2014	0	0	0	0
November 2014	0	0	0	0
December 2014	0	0	0	0
Total	0	0	0	0
Year 2013	0	0	0	0
Grand Total	0	0	0	0

Appendix J

**15th Monthly EM&A Report for Works Contract 1102 –
Hin Keng Station and Approach Structures**

MTR Corporation Limited

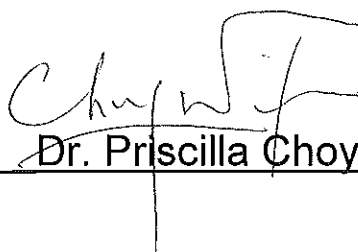
**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 15

[Period from 1 to 31 December 2014]

Works Contract 1102 –
Hin Keng Station and Approach Structures

(January 2015)

Certified by: 
_____ Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 12th January 2015

Penta-Ocean Construction Co. Ltd.

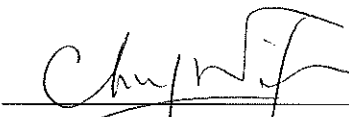
**Shatin to Central Link –
Contract 1102
Hin Keng Station and Approach
Structures**

**Monthly Environmental Monitoring
and Audit Report**

(Version 1.0)

December 2014

Approved By



(Contractor's Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY**Introduction**

1. This is the 15th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for MTR Shatin to Central Link (SCL) Works Contract 1102 – Hin Keng Station and Approach Structures. This report documents the findings of EM&A Works conducted from 1 to 31 December 2014.

Summary of Construction Works undertaken during the Reporting Month

2. The major site activities undertaken in the reporting month include:
 - Slope improvement works;
 - Bored Piling;
 - Pipe Pile Wall;
 - Pile Cap Excavation;
 - Superstructure Construction; and
 - Modification of Retaining Wall.

Environmental Monitoring and Audit Progress

3. A summary of the monitoring activities in this reporting period is listed below and the monitoring works were undertaken by Contractor ET of Works Contract SCL 1103:

Regular Construction Noise and Construction Dust Monitoring

- Regular construction noise monitoring during normal working hours
Noise Monitoring Station ID
 - NMS-CA-1⁽¹⁾ (C.U.H.K.A.A Thomas Cheung School) 5 times
- Construction Dust (24-hour TSP) Monitoring
Dust Monitoring Station ID
 - DMS-1⁽¹⁾ (C.U.H.K.A.A Thomas Cheung School) 6 times

Remarks:

(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

Waste Management

4. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 1,504.2 m³ of inert C&D materials were generated from the Project and were sent to Contract 1108A Kai Tak Barging Point, Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank during the reporting month. No non-recyclable non-inert C&D materials and 64.0 m³ general refuse were disposed of at NENT Landfill. No chemical wastes, steel material, plastics and paper/cardboard packaging was generated and collected by the recycler during this reporting month.

Landscape and Visual

5. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 2, 16 and 30 December 2014. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in **Section 6**.

Environmental Site Inspection

6. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 2, 9, 16, 23 and 30 December 2014. The representative of the IEC joined the site inspection on 16 December 2014. Details of the audit findings and implementation status are presented in **Section 6**.

Environmental Exceedance/Non-conformance/Complaint/Summons and Successful Prosecution

7. No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period.
8. No non-compliance event was recorded during the reporting period.
9. No reporting change was recorded during the reporting period.
10. No Project related environmental complaint and notification of summons/ successful prosecutions were received in this reporting period.

Future Key Issues

11. Major site activities for the coming reporting month will include:
 - Slope improvement works;
 - Bored piling;
 - Pipe Pile Wall;
 - Superstructure Construction;
 - Modification of Retaining Wall; and
 - Hoarding works.

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Penta-Ocean Construction Co.Ltd. (POC) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL)Works Contract 1102 – Hin Keng Station and Approach Structures (hereafter referred to as the Project).

Purpose of the Report

1.2 This is the 15th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 December 2014.

Structure of the Report

1.3 The structure of the report is as follows:

Section 1: **Introduction** - details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement** - summarises the monitoring parameters, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Mitigation Measures** - summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection** - summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance** - summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues** - summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

- 2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).
- 2.2 The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts. This Works Contract 1102 covers the construction of SCL Hin Keng Station (HIK Station) and its approach structures. This construction contract was awarded to Penta-Ocean Construction Co. Ltd. (POC) in July 2013 and the EM&A programme was commenced on 1st October 2013.

General Site Description

- 2.3 For Works Contract 1102, the works area for the HIK Station is located next to Hin Keng Estate and Che Kung Miu Road. The alignment and works area for the Works Contract 1102 are shown in **Figure 1**.

Construction Programme and Activities

- 2.4 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.
- Slope improvement works;
 - Bored Piling;
 - Pipe Pile Wall;
 - Pile Cap Excavation;
 - Superstructure Construction; and
 - Modification of Retaining Wall.

Project Organization

- 2.5 The project organization chart and contact details are shown in **Figure 2**.

Status of Environmental Licences, Notification and Permits

- 2.6 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since the commencement of the construction works in October 2013 are presented in **Table 2.1**.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012/H	10/9/2014	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
Reference No: 362534	29/7/2013	N/A	Valid
Billing Account for Construction Waste Disposal			
A/C No.: 7017900	02/8/2013	N/A	Valid
Registration of Chemical Waste Producer			
Registration No. 5218-759-P1057-03	03/9/2013	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00018589-2014	29/4/2014	30/9/2018	Valid
Construction Noise Permit (CNP)			
GW-RN0380-14	30/6/2014	29/12/2014	Valid
GW-RN0708-14	30/12/2014	29/6/2015	Valid

Summary of EM&A Requirements

- 2.7 The EM&A programme under Works Contract 1102 require regular dust and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event / Action Plans;
 - Environmental mitigation measures, as recommended in the Project EIA study final report; and
 - Environmental requirements in contract documents.
- 2.8 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 6** of this report.
- 2.9 This report presents the monitoring results, observations, locations of the required monitoring parameters, namely construction noise & dust monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Noise Monitoring

- 3.1 In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring station. The construction noise monitoring location is listed in **Table 3.1** and shown in **Figure 3**.

Table 3.1 Regular Construction Noise Monitoring Station

Regular Construction Noise Monitoring Location	Description	Type of Measurement
NMS-CA-1 ⁽¹⁾	C.U.H.K.A.A Thomas Cheung School	Façade

Note (1): NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

Monitoring Parameter and Frequency

- 3.2 Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual by the Contractor Environmental Team of Works Contract SCL 1103. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period could be referred to Appendix K of SCL 1103 monthly EM&A report. The construction noise was monitored at the frequency and duration stated in **Table 3.2**.

Table 3.2 Construction Noise Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring	Throughout the construction period	L_{eq} (30min)	Once per week

- 3.3 The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). L_{Aeq} (30min) was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays while L_{10} and L_{90} were also recorded as supplementary reference information for data auditing.

Monitoring Equipment, Maintenance, Calibration and Procedures

- 3.4 The detailed information of monitoring equipment, maintenance, calibration and procedures could be referred to Section 4.2 of SCL 1103 monthly EM&A report.

Action & Limit Level for Construction Noise Monitoring

- 3.5 The Action and Limit Levels are presented in **Appendix B** and the Event / Action Plan (EAP) for noise monitoring is presented in **Appendix F**.

Continuous Noise Monitoring

- 3.6 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared and submitted under EP Condition 2.10, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria will be anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (TAW-HUH) under Works Contract 1102.

Regular Construction Dust Monitoring

- 3.7 The proposed dust monitoring station for the construction phase of the Project, as recommended in the approved EM&A Manual, is listed in **Table 3.3** and shown in **Figure 4**.

Table 3.3 Dust Monitoring Station

Regular Dust Monitoring Location	Description
DMS-1 ⁽¹⁾	C.U.H.K.A.A. Thomas Cheung School

Note (1): ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

Monitoring Parameter and Frequency

- 3.8 The dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring station in accordance with the requirements stipulated in the EM&A Manual. The monitoring schedule for this reporting period could be referred to Appendix K of SCL 1103 monthly EM&A report. The 24-hour TSP levels were monitored at the frequency and duration stated in **Table 3.4**.

Table 3.4 Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring ⁽¹⁾	Throughout the construction period	24-hour TSP ⁽²⁾	Once per 6 days

Note:

(1) 1- hour TSP shall be conducted when one documented valid complaint is received.

(2) 24-hour TSP will be conducted when project-related construction activities are being undertaken within a radius of 500m from monitoring stations.

Monitoring Equipment, Maintenance, Calibration and Procedures

- 3.9 The detailed information of monitoring equipment, maintenance, calibration and procedures could be referred to Section 3.2 of SCL 1103 monthly EM&A report.

Action and Limit Levels for Dust Monitoring

- 3.10 The Action and Limit levels have been established and are presented in **Appendix B** and the Event / Action Plan (EAP) for dust monitoring is presented in **Appendix F**.

Landscape and Visual

- 3.11 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is given in **Appendix E**. The Event / Action Plan (EAP) for landscape and visual are presented in **Appendix F**.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

- 4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix E**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
3.4	Monthly Environmental Monitoring & Audit Report (November 2014)	12 December 2014

5 MONITORING RESULTS

Regular Construction Noise Monitoring

- 5.1 A total of 5 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays during the reporting period by ET of SCL 1103. No exceedance of the limit level was recorded at designated monitoring station.
- 5.2 Based on observation during the on-site monitoring, road traffic nearby is considered as a potential noise source other than construction works of the Project that affects the monitoring results of the reporting month.
- 5.3 The detailed noise monitoring results together with their graphical presentations are presented in Appendix H of SCL 1103 monthly EM&A report.

Table 5.1 Summary Table of Construction Noise Monitoring Results

Parameter	Minimum Leq(30min), dB(A)	Maximum Leq(30min), dB(A)	Action Level	Limit Level, Leq(30min), dB(A)
Noise	< Baseline Level	58.3	When one documented complaint is received	70/65 ⁽¹⁾

Remarks:

- (1) For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching period and examination periods respectively.
- (2) The noise monitoring data presented in the table is baseline corrected.

- 5.4 No exceedance of the Action and Limit Levels of construction noise due to the Project was recorded during the reporting period.

Regular Dust Monitoring

- 5.5 A total of 6 sets of 24-hour TSP monitoring were carried out at the designated monitoring station of the reporting period by ET of Works Contract SCL 1103. The monitoring results together with their graphical presentations are presented in Appendix E of SCL 1103 monthly EM&A report and a summary of the dust monitoring results in this reporting month is given in **Table 5.2**.

Table 5.2 Summary Table of Dust Monitoring Results

Parameter	Minimum $\mu\text{g}/\text{m}^3$	Maximum $\mu\text{g}/\text{m}^3$	Average $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
24-hr TSP	20.5	146.0	86.1	148.7	260

- 5.6 Wind monitoring data obtained from Kai Tak Meteorological Station of Hong Kong Observatory is shown in Appendix F of SCL 1103 monthly EM&A report.
- 5.7 Based on observation during the on-site monitoring, road traffic emission nearby is considered as a potential dust source other than construction works of the Project that affects the monitoring results of the reporting month.
- 5.8 No exceedance of the Action and Limit Levels of the 24-hour TSP was recorded during the reporting period.

Waste Management

- 5.9 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes like plastics and paper/cardboard packaging materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.3**. No chemical waste, steel material, plastics, paper/cardboard packaging was generated during this reporting month. Details of waste management data is presented in **Appendix G**.

Table 5.3 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) ^{(a)(b)}	C&D Materials (non-inert) ^(c)				
		General Refuse	Chemical Waste	Recycled materials		
Paper/cardboard	Plastics			Metals		
December 2014 ^(d)	1,504.2 m ³	64.0 m ³	0 kg	0 kg	0 kg	0 kg

Notes:

- (a) Inert C&D materials include excavated soil and rock. 986.3m³ and 472.4m³ of inert C&D materials were delivered to Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank respectively during the reporting month.
- (b) In 1,504.2 m³ inert C&D materials, 22.3 m³ of excavated soil was delivered to Contract 1108A Kai Tak Barging Point and would be reused in other project.
- (c) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. General refuse was delivered to designated landfill for disposal.
- (d) The cut-off date of the waste flow data in reporting month was 30 December 2014.

Landscape and Visual

- 5.10 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 2, 16 and 30 December 2014. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION

Site Audits

- 6.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix D**.
- 6.2 Site audits were conducted on 2, 9, 16, 23 and 30 December 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 16 December 2014. No EPD site inspection was conducted during the reporting month. The details of observations during site audit carried out by ET can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

- 6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix E**.
- 6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	2 Dec 2014	<u>Reminder:</u> Aquased at work area opposite to Hin Yau House should be maintained before operation.	The monitor of the aquased was maintained on 9 Dec 2014.
	2 Dec 2014	<u>Reminder:</u> Stagnant water in unused aquased near site exit should be properly removed.	Stagnant water was removed on 9 Dec 2014.
	9 Dec 2014	<u>Reminder:</u> Sand bag bund at discharge point should be improved to prevent untreated water entering. (opposite to Hin Yau House)	Sand bag bund was improved on 16 Dec 2014.
	23 & 30 Dec 2014	<u>Reminder:</u> Sand bag bund for gullies at site entrance at At-Grade Box should be enhance to prevent runoff entering.	Follow up actions will be reported in the next month.
<i>Noise</i>	4, 11, 18 & 25 Nov, 2 & 9 Dec 2014	<u>Reminder:</u> Noise mitigation measure should be improved to seal the gap between noise barriers at at-grade box.	Noise barriers on hoarding was enhanced to minimize the gap on 16 Dec 2014.
	25 Nov, 2 Dec 2014	<u>Reminder:</u> Movable noise barrier should be properly erected after re-arrangement of plants. (at-grade box)	Noise mitigation measure for plants at at-grade box was improved on 9 Dec 2014.
	9 Dec 2014	<u>Reminder:</u> Noise mitigation measure for RCD plant should be enhanced. (opposite to Hin Yau House)	The RCD plant was covered with acoustic mat on 16 Dec 2014.

Parameters	Date	Observations and Recommendations	Follow-up
	9 Dec 2014	<u>Reminder:</u> Noise mitigation measure for piling works at at-grade box should be improved.	Noise barrier was provided to piling work on 16 Dec 2014.
<i>Landscape and Visual</i>	16 Dec 2014	<u>Reminder:</u> The Contractor was reminded to protect retained trees with tree protection zone to prevent damage.	Tree protection zones were set for the retained trees on 23 Dec 2014.
<i>Air Quality</i>	25 Nov 2014	<u>Reminder:</u> The Contractor was reminded to keep clearance and remove sand and mud within site area near site entrance. (at-grade box)	Sand and mud had been removed on 2 Dec 2014.
	25 Nov 2014	<u>Reminder:</u> Water spraying should be provided more frequently to exposed area opposite to site office.	Wet haul road was observed on 2 Dec 2014.
	16 Dec 2014	Water spraying should be provided more frequently for haul road at at-grade box and exposed area at tail track area to suppress dust generation.	Wet haul road and water spraying for exposed area were observed on 23 Dec 2014.
	30 Dec 2014	To provide water spray for dust-generating works at At-Grade Box.	Follow up actions will be reported in the next month.
	30 Dec 2014	<u>Reminder:</u> To cover the dusty stockpile properly near Hin Keng Station area.	Follow up actions will be reported in the next month.
<i>Waste / Chemical Management</i>	16 Dec 2014	Oil / Chemical containers were observed at at-grade box and near site office. Drip tray should be provided to prevent leakage.	Oil/chemical containers at at-grade box and near site office were removed. Oil drums near haul road at at-grade box were provided with drip tray on 23 Dec 2014.
	30 Dec 2014	<u>Reminder:</u> To provide a drip tray for chemical containers near Hin Keng Station area	Follow up actions will be reported in the next month.
<i>Permits/ Licenses</i>	N/A	There was no observation in the reporting period.	N/A

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

- 7.1 No exceedance of the Action and Limit Levels of the regular construction noise and 24-hour TSP monitoring was recorded during the reporting month. The summary of exceedance is provided in **Appendix C**.

Summary of Environmental Non-Compliance

- 7.2 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

- 7.3 No environmental Project-related complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix H**.

Summary of Environmental Summon and Successful Prosecution

- 7.4 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix H**.

8 FUTURE KEY ISSUES

Construction Programme for the Next Month

8.1 A tentative construction programme is provided in **Appendix A**. The major construction activities in the coming month will include:

- Slope improvement works;
- Bored piling;
- Pipe Pile Wall;
- Superstructure Construction;
- Modification of Retaining Wall; and
- Hoarding works.

Key Issues in the Next Month

8.2 Key issues to be considered in the coming month include:

- Dust arising from loading, unloading, transfer, handling or storage of bulk cement, excavated materials and soil erosion in dry days;
- Control of silty surface runoff;
- Implementation of mitigation measures for wastewater spillage from construction works.
- Preservation and protection of retained and transplanted trees;
- Implementation of mitigation measures for noise nuisance from construction works; and
- Regular removal of silt, mud and sand along drainage channels and sedimentation tanks.

Monitoring Schedule in the Next Month

8.3 The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring at in the next reporting period is presented in Appendix K of SCL 1103 monthly EM&A report. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 31 December 2014 in accordance with EM&A Manual and the requirement under EP.
- 9.2 No exceedance of the Action and Limit Levels of regular construction noise and 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting month.
- 9.3 5 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 3 times of bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting period.
- 9.4 There was no Project related environmental complaint, successful prosecution or notification of summons received during the reporting month.
- 9.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times; and
- Sand bag bund should be provided for gullies to prevent site runoff entering before treatment.

Construction Noise

- Regular review on the noise mitigation measures and the conditions of the implemented noise mitigation measures shall be properly maintained.

Landscape and Visual

- "No-intrusion zone" should be established and maintained for existing trees as far as practicable. The Contractor is reminded to closely monitor and restrict the site working staff from entering the erected "no-intrusion zone" for existing trees and avoid placing construction materials within the tree protection zone for maximizing the protection.

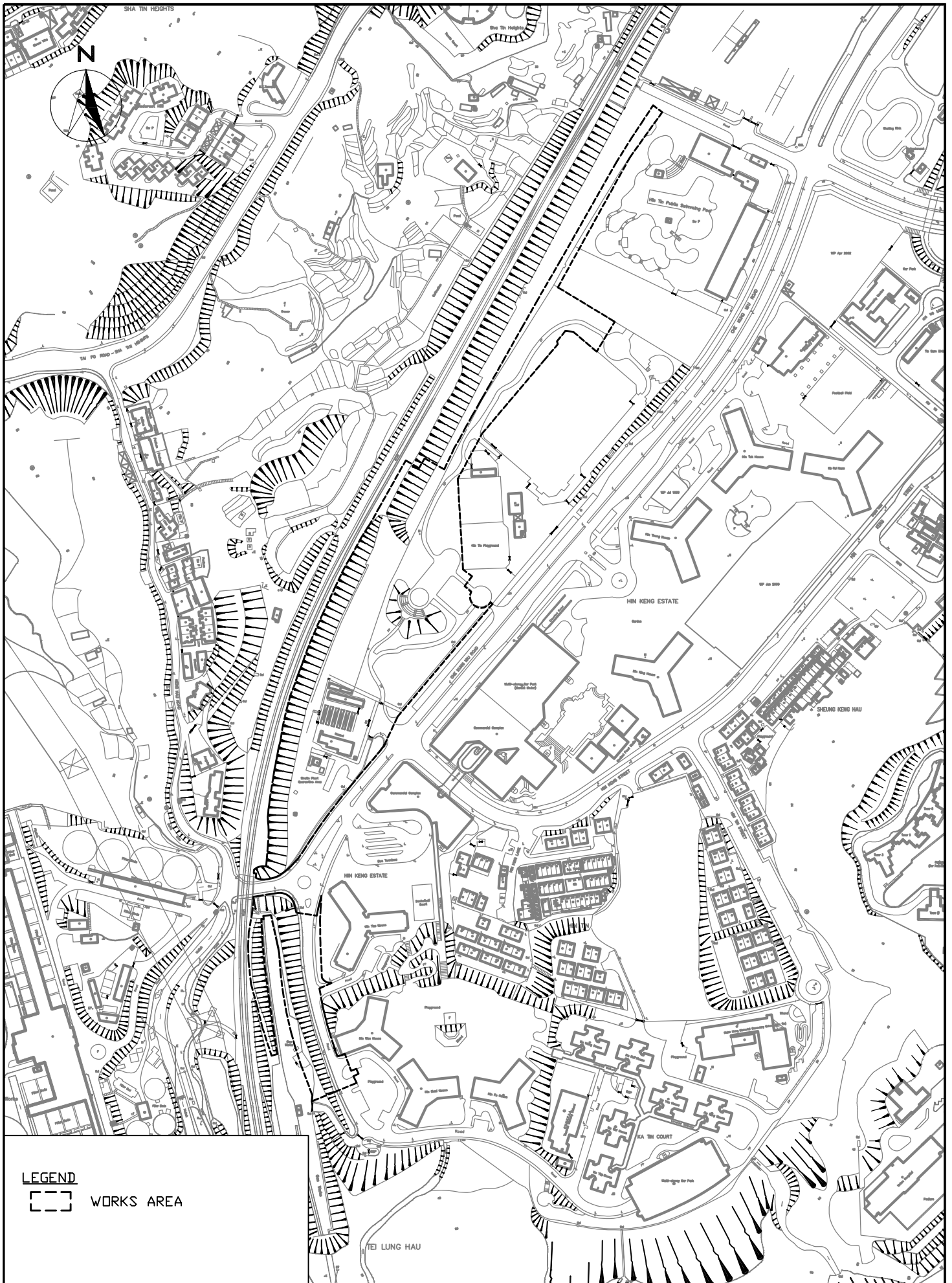
Air Quality

- Regular water spraying on site is reminded to be implemented as per EP requirement. Exposed work area should be covered with impervious sheet or paved where possible to suppress dust emission; and
- Proper mitigation measures should be implemented for dusty stockpile and dust-generating activities to reduce construction dust impact.

Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals shall be sustained. Drip trays should be properly maintained.

FIGURES



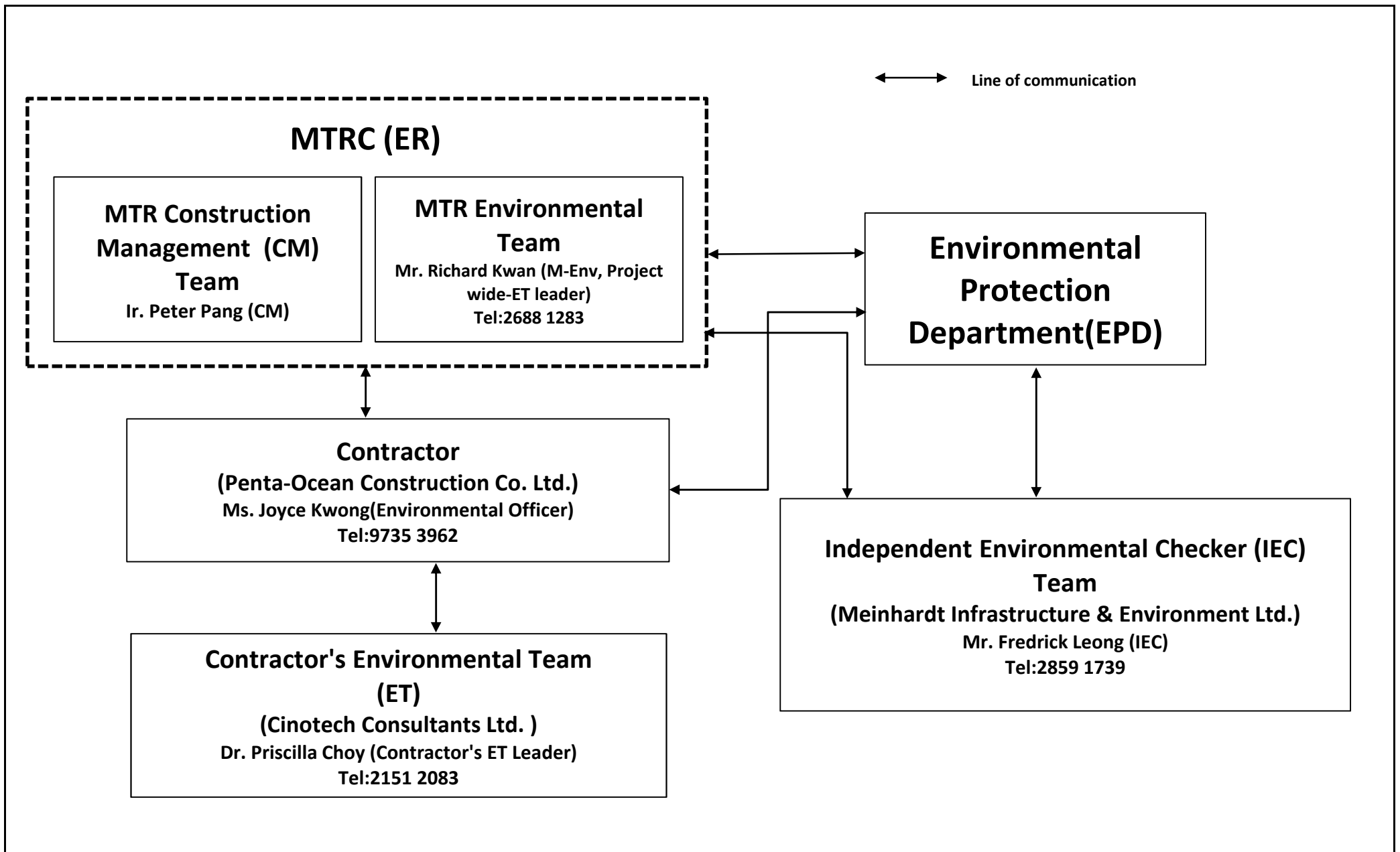
LEGEND

 WORKS AREA

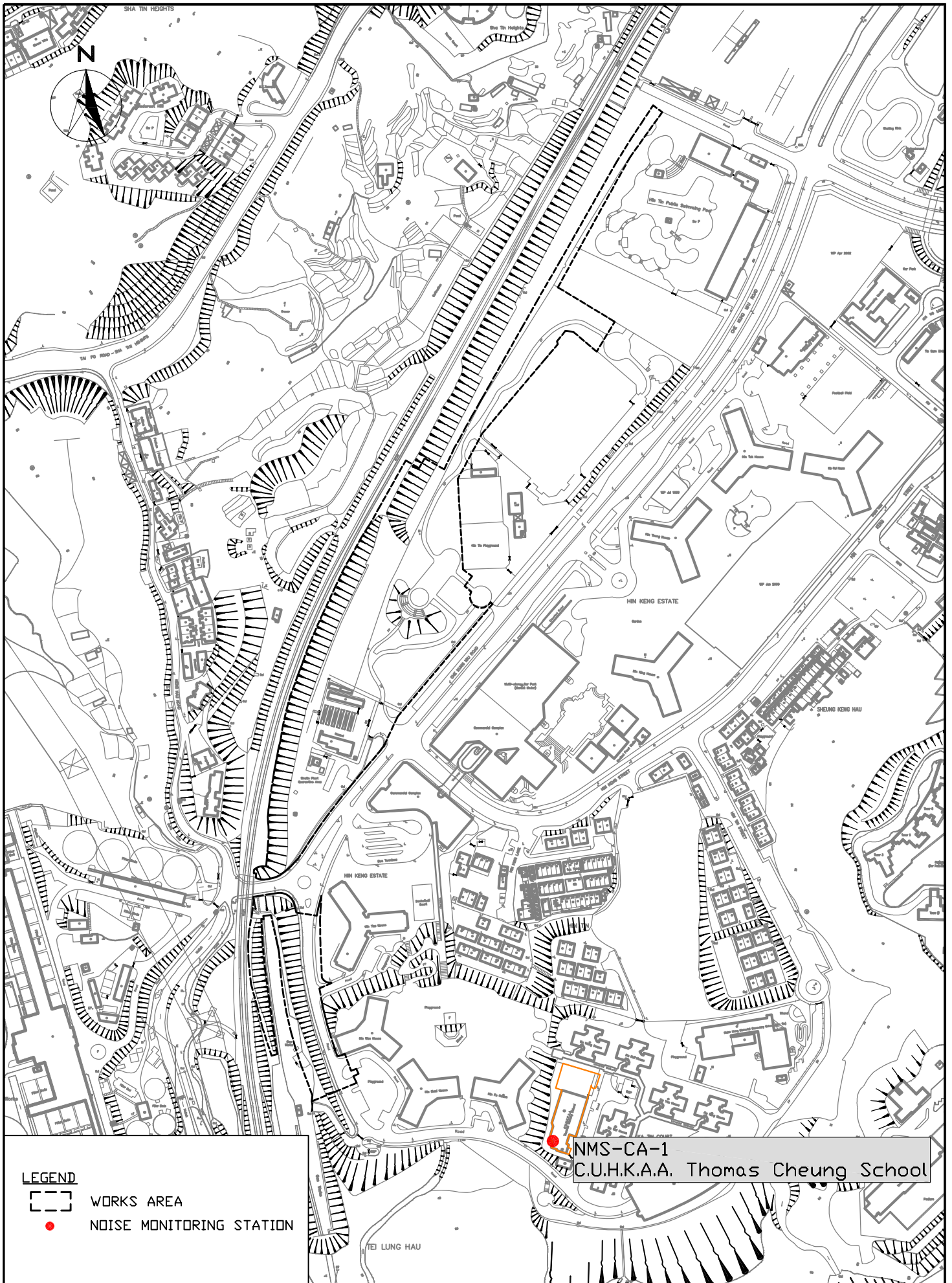
CINOTECH
Cinotech Consultants Limited

SCL CONTRACT 1102
THE SHATIN TO CENTRAL LINK -
HIN KENG STATION AND APPROACH STRUCTURES
**SITE LAYOUT PLAN OF
WORKS CONTRACT 1102**

SCALE	1:10000@A4	DATE	NOV 2013
CHECK	GL	DRAWN	JW
JOB No.	MA13040	FIGURE NO.	FIG 1
		REV	-



Title SCL Contract 1102 The Shatin to Central Link - Hin Keng Station and Approach Structures Organization Chart and Key Contact of the Project	Scale	N.T.S	Project No.	MA13040	
	Date	Oct-13	Figure	2	



LEGEND

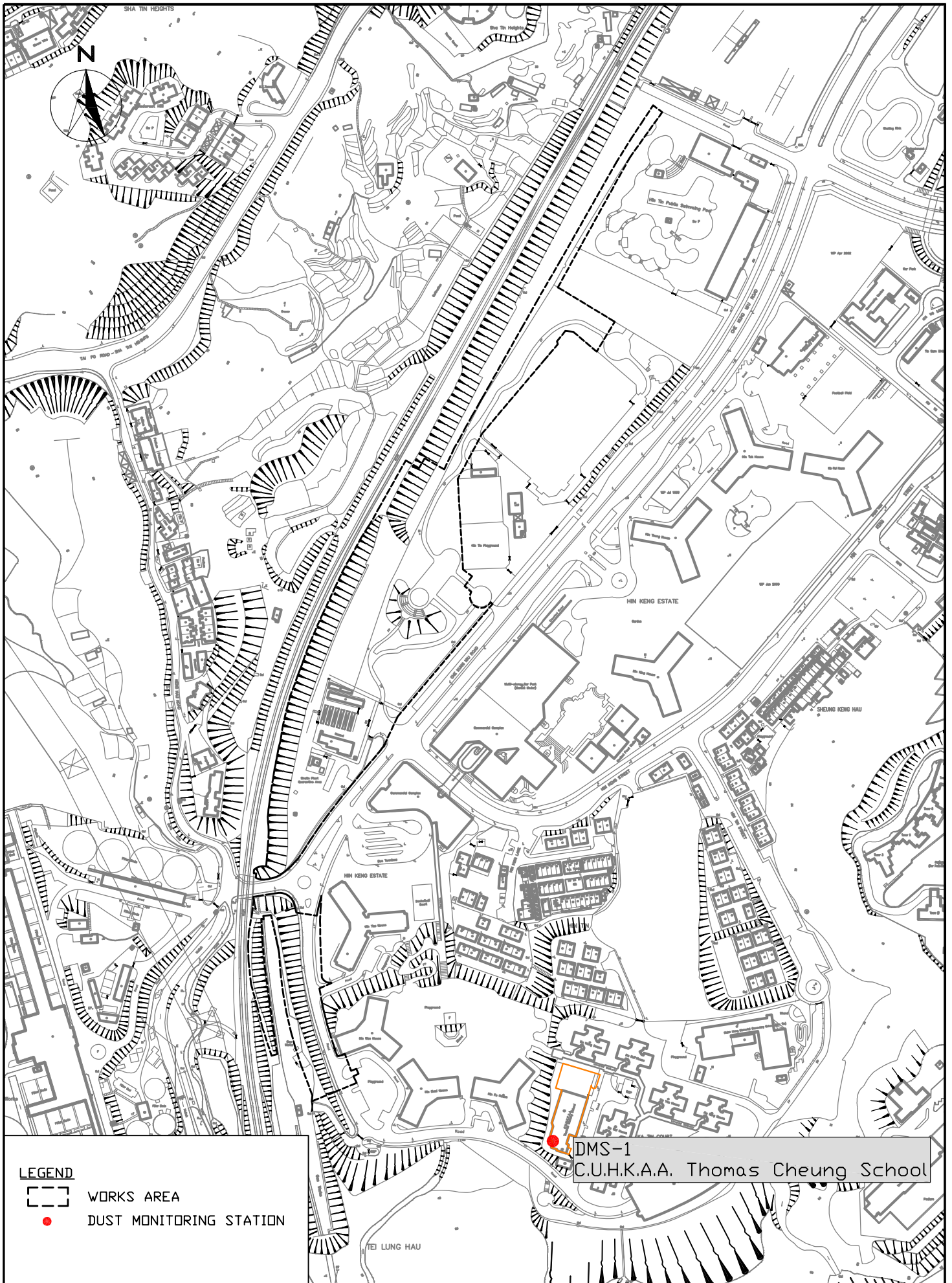
- WORKS AREA
- NOISE MONITORING STATION

NMS-CA-1
C.U.H.K.A.A. Thomas Cheung School



SCL CONTRACT 1102
THE SHATIN TO CENTRAL LINK -
HIN KENG STATION AND APPROACH STRUCTURES
LOCATION OF NOISE MONITORING STATION

SCALE	1:10000@A4	DATE	OCT 2013
CHECK	GL	DRAWN	JW
JOB No.	MA13040	FIGURE NO.	REV
		FIG 3	-



DMS-1
C.U.H.K.A.A. Thomas Cheung School

LEGEND

- WORKS AREA
- DUST MONITORING STATION



SCL CONTRACT 1102
THE SHATIN TO CENTRAL LINK -
HIN KENG STATION AND APPROACH STRUCTURES
LOCATION OF DUST MONITORING STATION

SCALE	1:10000@A4	DATE	OCT 2013
CHECK	GL	DRAWN	JW
JOB No.	MA13040	FIGURE NO.	FIG 4
		REV	-

**APPENDIX A
TENTATIVE CONSTRUCTION
PROGRAMME**

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	2014				
						Dec	Jan	Feb	Mar	Apr
3-month Rolling Programme Summary (Jan to Mar 2015)		910	378	21-Oct-13 A	23-Apr-16					
Hin Keng Station		174	39	28-Aug-14 A	25-Feb-15					
Sub-structure		174	39	28-Aug-14 A	25-Feb-15					
Earth Mat Installation		58	0	28-Aug-14 A	15-Nov-14 A					
Superstructure		125	39	25-Sep-14 A	25-Feb-15					
Concourse Level		49	0	25-Sep-14 A	13-Dec-14 A					
Mezzanine Floor		49	19	06-Oct-14 A	23-Jan-15					
Track Level		89	20	11-Nov-14 A	25-Feb-15					
Ma On Shan Line & Tail Track		910	378	21-Oct-13 A	23-Apr-16					
Retaining Wall RW7		330	15	02-Dec-13 A	19-Jan-15					
Initial Work		171	0	02-Dec-13 A	01-Nov-14 A					
Structural Works		113	15	20-Jun-14 A	19-Jan-15					
Noise Barrier behind Hin Tin Swimming Pool		378	378	21-Oct-13 A	23-Apr-16					
Noise Barrier Work		768	162	15-May-14 A	27-Jul-15					
Miscellaneous Items within Operation Area		146	146	28-Mar-14 A	08-Jul-15					
Elevated Evacuation Walkway		146	146	28-Mar-14 A	08-Jul-15					
At-grade Box		332	79	26-Feb-14 A	16-Apr-15					
Temporary Piling Platform		177	67	26-Feb-14 A	30-Mar-15					
Bored Pile Construction		179	79	08-Sep-14 A	16-Apr-15					
Hin Keng Viaduct		475	177	23-Dec-13 A	13-Aug-15					
Foundation		475	177	23-Dec-13 A	13-Aug-15					
Bored Piles Construction & Pile Test		414	119	23-Dec-13 A	04-Jun-15					
Pile Cap Construction		172	172	08-Jan-15	13-Aug-15					
FR63 Slope		127	72	24-Jun-14 A	08-Apr-15					
Pit by Pit Construction		127	72	24-Jun-14 A	08-Apr-15					
Row 2		38	8	24-Jun-14 A	10-Jan-15					
Row 3		78	72	20-Aug-14 A	08-Apr-15					
FR65 Slope		598	163	22-Jan-14 A	28-Jul-15					
Pit by Pit Construction		598	163	22-Jan-14 A	28-Jul-15					
Zone 1		300	64	22-Jan-14 A	26-Mar-15					
Zone 2		282	137	29-Jul-14 A	26-Jun-15					
Zone 3		390	163	29-Jul-14 A	28-Jul-15					
Zone 4		54	81	01-Sep-14 A	18-Apr-15					



- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

MTRC SCL Project Contract 1102
Hin Keng Station and Approach Structures

3 Months Rolling Programme
Summary

(Period - Jan to Mar 2015)

Date	Revision	Checked	Approved
05-Jan-15	0		

**APPENDIX B
ACTION AND LIMIT LEVELS**

APPENDIX B – Action and Limit Levels**24-Hour TSP**

Regular Dust Monitoring Station	Description	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
DMS-1 ⁽¹⁾⁽²⁾	C.U.H.K.A.A. Thomas Cheung School	148.7	260

Note:

- (1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
 (2) Dust monitoring is carried out by Environmental Team of SCL Works Contract 1103.

Construction Noise

Regular Construction Noise Monitoring Station	Description	Time Period	Action Level	Limit Level
NMS-CA-1 ⁽¹⁾⁽²⁾	C.U.H.K.A.A Thomas Cheung School	0700-1900 hrs on normal weekdays	When one documented complaint is received	65 / 70 dB(A) ⁽³⁾

Note:

- (1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
 (2) Construction Noise monitoring is carried out by Environmental Team of SCL Works Contract 1103.
 (3) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

**APPENDIX C
SUMMARY OF EXCEEDANCE**

APPENDIX C – SUMMARY OF EXCEEDANCE

Reporting Month: December 2014

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX D
SITE AUDIT SUMMARY

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141202
Date	2 December 2014 (Tuesday)
Time	09:00 – 11:15

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

Ref. No.	Remarks/Observations	Related Item No.
141202-R01	Part B – Water Quality <ul style="list-style-type: none"> Aquased at work area opposite to Hin Yau House should be maintained before operation. 	B 6
141202-R02	<ul style="list-style-type: none"> Stagnant water in unused aquased near site exit should be properly removed. 	B 12
	Part C – Ecology <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part D – Landscape & Visual <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part E – Air Quality <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part F – Construction Noise Impact <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part G – Waste/Chemical Management <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part H – Permits/Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
141202-F03	Part I – Others <ul style="list-style-type: none"> Movable noise barrier should be properly erected after re-arrangement of plants. (at-grade box) 	F 7
141202-F04	<ul style="list-style-type: none"> Noise mitigation measure should be improved to seal the gap between noise barriers at at-grade box. 	F 7

	Name	Signature	Date
Recorded by	Jason Lai		2 December 2014
Checked by	Dr. Priscilla Choy		2 December 2014

Shatin to Central Link -

Contract 1102 Hin Keng Station and Approach Structures


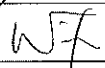
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141209
Date	9 December 2014 (Tuesday)
Time	09:00 – 11:00

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

Ref. No.	Remarks/Observations	Related Item No.
141209-R01	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> Sand bag bund at discharge point should be improved to prevent untreated water entering. (opposite to Hin Yau House) 	B 7
141209-R02	<p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	F 7
141209-R03	<p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> Noise mitigation measure for RCD plant should be enhanced. (opposite to Hin Yau House) 	F 5
141209-F04	<p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Others</p> <ul style="list-style-type: none"> Noise mitigation measure should be improved to seal the gap between noise barriers at at-grade box. 	F 7

	Name	Signature	Date
Recorded by	Jason Lai		9 December 2014
Checked by	Dr. Priscilla Choy		9 December 2014

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141216
Date	16 December 2014 (Tuesday)
Time	09:00 – 11:00

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

Ref. No.	Remarks/Observations	Related Item No.
141216-R03	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 3
141216-O02	<p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> The Contractor was reminded to protect retained trees with tree protection zone to prevent damage. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> Water spraying should be provided more frequently for haul road at at-grade box and exposed area at tail track area to suppress dust generation. 	E 5
141216-O01	<p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> Oil / chemical containers were observed at at-grade box and near site office. Drip tray should be provided to prevent leakage. <p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Others</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	G 10

	Name	Signature	Date
Recorded by	Jason Lai		16 December 2014
Checked by	Dr. Priscilla Choy		16 December 2014

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*


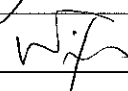
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141223
Date	23 December 2014 (Tuesday)
Time	09:00 – 11:00

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

Ref. No.	Remarks/Observations	Related Item No.
141223-R01	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> Sand bag bund for gullies at site entrance at At-Grade Box should be enhanced to prevent runoff entering. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Others</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	B 11

	Name	Signature	Date
Recorded by	Jason Lai		23 December 2014
Checked by	Dr. Priscilla Choy		23 December 2014

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*

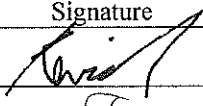

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	141230
Date	30 December 2014 (Tuesday)
Time	09:00 – 12:00

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

Ref. No.	Remarks/Observations	Related Item No.
141230-O01 141230-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> To provide water spray for dust-generating works at At-Grade Box. To cover the dusty stockpile properly near Hin Keng Station area. 	E 5 E 6
141230-R03	<p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> To provide a drip tray for chemical containers near Hin Keng Station Area. 	G 9 & G 10
141230-F04	<p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Others</p> <ul style="list-style-type: none"> Sand bag bund for gullies at site entrance at At-Grade Box should be enhanced to prevent runoff entering. 	B 11

	Name	Signature	Date
Recorded by	Kevin Lam		30 December 2014
Checked by	Dr. Priscilla Choy		30 December 2014

**APPENDIX E
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE**

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>waterbodies in particular the Tei Lung Hau stream;</p> <ul style="list-style-type: none"> • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. Tei Lung Hau Stream and the adjoining secondary woodland, tunnel on hill at top of slope stabilisation works; • No on-site burning of waste; • Waste and refuse in appropriate receptacles. 						N/A ^ ^
S5.7	E7	<p><u>Water Quality and Hydrology</u></p> <ul style="list-style-type: none"> • Implement water control measures (ETWB TCW No. 5/2005, Protection of natural streams/ rivers from adverse impacts arising from construction works to avoid direct or indirect impacts on the Tei Lung Hau Stream) and good site practices. 	<ul style="list-style-type: none"> • Avoid indirect water impact to any wetland habitats or wetland fauna • Minimize the drawdown of water table 	Contractor	Works area in Hin Keng	Construction stage	• TCW No. 5/2005	^
<i>Landscape & Visual (Construction Phase)</i>								
S6.9.3	LV1	<p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage 	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	TM-EIAO	^

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>ground, gathering ground and mixing ground may be set up on-site as necessary.</p> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the "no-intrusion zone", even for indirect construction activities and storage of equipment. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, 						<p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		including trees in contractor's works sites.						
S6.12	LV2	<ul style="list-style-type: none"> • <u>Decorative Hoarding</u> Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. • <u>Management of facilities on work sites</u> To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. • <u>Tree Transplanting</u> Trees of high to medium survival rate would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006. 	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and Construction stage	EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006	^ ^ ^

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
<i>Air Quality (Construction Phase)</i>								
/	A1	Emission from Vehicles and Plants <ul style="list-style-type: none"> • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra-low sulphur diesel fuel (ULSD) 	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	A2	Open burning shall be prohibited	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	• APCO	^
<i>Construction Dust Impact</i>								
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^
S7.6.5	D2	• Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area and once per 1.5hour at those in the Tai Wai area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	*

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		<p>may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m² to achieve the dust removal efficiency</p>						
S7.6.5	D3	<ul style="list-style-type: none"> • Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit 	<p>Minimize dust impact at the nearby sensitive receivers</p>	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria 	<p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p>

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>point should be paved with concrete, bituminous materials or hardcores;</p> <ul style="list-style-type: none"> • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building 						<p style="text-align: right;">^</p> <p style="text-align: right;">^</p> <p style="text-align: right;">*</p> <p style="text-align: right;">^</p> <p style="text-align: right;">^</p>

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</p> <p>Any skip hoist for material transport should be totally enclosed by impervious sheeting;</p> <ul style="list-style-type: none"> • 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; <p>and</p> <ul style="list-style-type: none"> • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		construction site or part of the construction site where the exposed earth lies.						
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	^
Construction Noise (Airborne)								
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) 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, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other 	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^ ^ ^ ^ ^

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.						
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	*
S8.3.6	N4	Use "Quiet plants"	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected	Contractor	Selected representative	Construction stage	• TM-EIA	^

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		<p>in the permanent drainage channels to enhance deposition rates.</p> <ul style="list-style-type: none"> • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5 m³/s the basin would be 150 m³. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. 						<p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

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		<ul style="list-style-type: none"> • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. 						<p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">*</p>

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EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

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		<p>accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.</p> <ul style="list-style-type: none"> • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices 						<p>^</p> <p>*</p> <p>^</p> <p>^</p>
S10.7.1	W3	<p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. 	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water 	^

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		operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.						
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promotethe use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

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		<ul style="list-style-type: none"> The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 						^
S11.5.1	WM4	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. Office wastes can be reduced through the recycling of paper if 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance 	^ ^ ^ ^

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		<p>volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.</p>						
S11.5.1	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. 	<p>Control the chemical waste and ensure proper storage, handling and disposal.</p>	Contractor	All construction sites	Construction Stage	<ul style="list-style-type: none"> • Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	<p style="text-align: right;">^</p> <p style="text-align: right;">^</p> <p style="text-align: right;">*</p>

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		<ul style="list-style-type: none"> • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD. 						^
Land Contamination								

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					Keng Street)	phases		
Chapter 13.13	A13C.8	Establishment of emergency response and evacuation plans (cooperation of various parties/departments required. For the operational phase the emergency plan should also include adequate procedures for controlling the tunnel ventilation system and stopping of the SCL train traffic in order to prevent the trains moving into the affected areas.)	To reduce the risks to the SCL staff, construction workers and passengers	MTRC/ Contractor	-	Construction and operation phases		^
Chapter 13.13	A13C.8	Safety/emergency response/evacuation training and drills for all personnel	To reduce the risks to the SCL staff, construction workers and passengers	MTRC/ Contractor	-	Construction and operation phases		^
EM&A Project								

APPENDIX F
EVENT AND ACTION PLANS

Appendix F - Event and Action Plan for Air Quality Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1102 ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 	<ol style="list-style-type: none"> 1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

LIMIT LEVEL

<p>1.Exceedance for one sample</p>	<ol style="list-style-type: none"> 1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
<p>2.Exceedance for two or more consecutive samples</p>	<ol style="list-style-type: none"> 1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Noise Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1102 ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	<ol style="list-style-type: none"> 1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event and Action Plan for Landscape and Visual during Construction Phase

Action Level	Works Contract 1102 ET	IEC	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

**APPENDIX G
WASTE GENERATION IN THE
REPORTING MONTH**

Name of Contractor: Penta-Ocean Construction Co. Ltd.
Waste Flow Table for Year 2014

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects (See Note 2)	Disposed as Public Fill (See Note 1)	Disposed as Sorting Facility	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Year 2013	4.2424	0.0803	0	0.2980	3.8011	0.0631	0	0	0	0	0.1227
Jan-14	1.3004	0	0	0.1714	1.1265	0.0025	0	0	0	0	0.0442
Feb-14	0.1766	0	0	0.1483	0.0044	0.0238	0	0	0	0	0.0069
Mar-14	2.7538	0	0	0.3543	2.3748	0.0248	0	0	0	0	0.0479
Apr-14	1.0369	0	0	0.0806	0.9444	0.0120	0	0	0	0	0.0215
May-14	2.5399	0	0	0.8866	1.6390	0.0143	0	0	0	0	0.0360
Jun-14	6.6293	0	0	4.1629	2.4548	0.0117	0	0	0	0	0.0233
Sub-total	18.6793	0.0803	0	6.1021	12.3450	0.1522	0	0	0	0	0.3025
Jul-14	6.4539	0	0	0.2108	6.2431	0	0	0	0	0	0.0307
Aug-14	5.0614	0	0	0	5.0562	0.0052	0	0	0	0	0.0433
Sep-14	1.9695	0	0	0	1.9652	0.0042	0	0	0	0	0.0502
Oct-14	1.5148	0	0	0	1.4954	0.0194	0	0	0	0	0.0484
Nov-14	2.4905	0	0	0	2.4823	0.0082	0	0	0	0	0.0567
Dec-14 (See Note 3)	1.5042	0	0	0.0223	1.4586	0.0233	0	0	0	0	0.0640
Total	37.6736	0.0803	0	6.3352	31.0458	0.2125	0	0	0	0	0.5958

Note: (1) Inert C&D materials include excavated soil and rock. 986.3m³ and 472.4m³ of inert C&D materials were delivered to Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank respectively during the reporting month.

Note: (2) Excavated soil was disposed of at Contract 1108A Kai Tak Barging Point and would be reused in other Project.

Note: (3) The cut-off date of waste flow data in reporting month was 30 December 2014.

**APPENDIX H
CUMULATIVE LOG FOR COMPLAINTS,
NOTIFICATIONS OF SUMMONS AND
SUCCESSFUL PROSECUTIONS**

Appendix H - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions**Cumulative Complaint Log**

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
SCL1102-05112014-C1	5 Nov 2014	A resident who lives near Keng Hau Road	The complainant complained about the noise from construction site near Keng Hau Road starting at 6a.m. from Sunday to Friday.	<p>According to the information provided by the Contractor, no construction activity was conducted within the restricted hours.</p> <p>The measured noise levels in September and October 2014 were in full compliance with the construction noise limit level.</p> <p>A surprise check was conducted around 6:30a.m. to ensure no construction activity was conducted within restricted hours.</p> <p>The Contractor had been implementing appropriate noise mitigation measures including installing movable noise barriers for noisy plants and installing noise barrier on temporary hoarding located on the site boundaries between noisy construction activities and NSRs.</p>	Closed

Cumulative Log for Notifications of Summons

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
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Cumulative Log for Successful Prosecutions

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
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