

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. 34

[Period from 1 to 30 June 2015]

(July 2015)

Verified by: Fredrick Leong 

Position: Independent Environmental Checker

Date: 14 July 2015

MTR Corporation Limited

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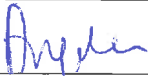
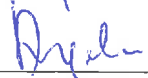
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Date: 14 July 2015

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. 34**

[Period from 1 to 30 June 2015]

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Version:	A	Date: 14 July 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 2019 tentatively. **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 thirty-fourth 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 30 June 2015.

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"> All the construction activities were completed in September 2013.
1102	Hin Keng Station and Approach Structures	<ul style="list-style-type: none"> Slope Improvement Works; Pumping Test; ELS Structure Installation at At-grade Box; Pier and Pile Cap Construction of Viaduct; Steel Structure and ABWF Works at Hin Keng Station; and Modification of Retaining Wall and Installation of Noise Barrier.
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"> Structural works: Concrete curing & strut removal; earthmat, blinding and waterproof laying; construct track base slab and sump pit; construct platform wall/ column; falsework and trolley works & OTE slab/wall; scaffolding erection; Interchange Adit: Construct base slab; West Unpaid Link Adit: Strut remedial works and water proofing membrane application; construct base slab; construct column, walls and bulk head; East MOE: Preparation of piling works and pre-drilling works; and Entrance A1: Construct base slab; construct stub column/ wall.
1107	Tunnel section next to Kai Tak Station	<ul style="list-style-type: none"> Tunnel construction at cut and cover tunnels; Site preparation works for TBM excavation; and Reprovision of Box culvert.
1108	Kai Tak Station	<ul style="list-style-type: none"> Open Cut Tunnel: roof and wall waterproofing, walkway formwork erection, staircase corridor baseslab cast Cut and Cover Tunnel: Defect rectification Package 4.5: Backfilling, sheet pile extraction, excavation, base slab construction Station structure: slab concreting, concourse slab concreting, waterproofing for Entrance B tunnel Launching Shaft: Base slab construction, strut installation Receiving Shaft: Backfilling, excavation for formation, boulders breaking, base slab construction
1108A	Kai Tak Barging Point Facilities	<ul style="list-style-type: none"> Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by trucks from Designated and Interfacing Contracts. Temporary stockpiling of received spoil in the Barging Point Facilities.

Works Contract	Site	Construction Activities
		<ul style="list-style-type: none"> • Marine transportation of received spoil to receptor sites for beneficial reuse. • Trial dumping using uncontaminated natural excavated material as capping of contaminated mud pit at South of the Brothers.
1109	Ma Tau Wai (MTW) Works Area	<ul style="list-style-type: none"> • TKW/MTW Road Garden – Operation of bentonite plant and EEP construction; 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 Area	<ul style="list-style-type: none"> • Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation • TKW Station – Pump installation, open cut excavation and tunnelling works; • Tam Kung Road – Shaft construction; and Nam Kok Road – Installation of pipe pile.
1111	Mong Kok Freight Terminal ⁽¹⁾	<ul style="list-style-type: none"> • All the construction activities were completed in May 2015.
	Hung Hom Area	<ul style="list-style-type: none"> • Excavation work, site clearance, slope work, cable detection, excavation lateral support, form work erection, reinforcement fixing, • Construction of drainage and man hole, emergency vehicular access, • Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works, • Erection of hoarding, scaffolding platform, erection of utility temporary supports, erection of temporary link walkway • Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation, installation of temporary support for OB2, modification work for OB2, • Removal of pipe, dismantling of scaffolding, • Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.
1112	Hong Hom (HUH and HHS) Works Area	<ul style="list-style-type: none"> • Piling for foundation and noise enclosure at HUH, SAT and NAT • D-wall construction for foundation at HUH • Initial excavation at HUH and HHS • Underpinning at HUH • Barging point operation at SAT • Jet grouting at SAT • Utilities diversion at SAT • Modification works at Concourse level • Drainage diversion at NAT • Operation of MBME at HUH • Reconstruction of 1875 drainage at HHS Piling for HUH, NAT and SAT

Note:

(1) Construction works were completed.

- 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 Contract 1109, 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 Water quality monitoring was not carried out during this reporting period since no dredging activity was conducted in the reporting month.
- 2.1.6 Under Works Contract 1109, exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3(A) on 1-6, 8, 10, 12, 13, 15, 18, 19, 22-27, 29 and 30 June 2015, at MTW-12-4(A) on 23 June 2015, at MTW-12-11(A) on 1-6, 8, 13, 15, 19, 22-24, 27, 29 and 30 June 2015, and at MTW-16-1 on 1-6, 8-10, 12, 13, 15, 16, 18, 19, 22-27, 29 and 30 June 2015.
- 2.1.7 Under Works Contract 1107, two public complaints were received on 9 and 30 June 2015 regarding noise impact, dust impact and muddy water. Investigation for the complaint received on 9 June 2015 had been carried out as per EM&A programme. The complaint received on 30 June 2015 is still under investigation, and the findings will be reported in the next reporting month.
- 2.1.8 Under Works Contract 1108, two public complaints were received on 9 and 13 June 2015 regarding noise impact, dust impact and muddy water. Investigations had been carried out as per EM&A programme.
- 2.1.9 Under Works Contract 1109, seven public complaints were received during the reporting month. A complaint was referred to MTR by EPD on 9 June 2015 regarding noise and dust issues from construction work. Another complaint was referred to MTR by EPD on 13 June 2015 regarding dust issue from construction work and insufficient cover of stockpiles. A complaint was referred to MTR by EPD on 16 June 2015 regarding noise and dust issues from non-stop construction work (7am to 7pm) including the concrete mixing plant inside the Kai Tak Development Area and Ma Tau Wai. On 17 June 2015, EPD referred to MTR a complaint regarding dust issue from construction work, improper cover of stockpiles, and water issue found in To Kwa Wan Typhoon Shelter. Three complaints were referred to MTR on 19 June 2015 regarding noise issue from percussive piling work at the Olympic Garden works area, odour issue near Nam Kok Road works area and noise issue generated from excavation work near the Nam Kok Road works area. Investigations had been carried out as per EM&A programme.
- 2.1.10 No 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**.
- 2.1.11 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	22.4 – 44.0	148.7	260	No
Works Contract 1103					
DMS-2	Price Memorial Catholic Primary School	5.4 – 37.4	167.4	260	No
Works Contracts 1103 and 1106					
DMS-3	Hong Kong S.K.H Nursing Home ⁽¹⁾	6.7 – 19.6	159.1	260	No
Works Contract 1106 and 1107					
DMS-4	Block 1, Rhythm Garden	23.7 – 41.7	160.4	260	No
Works Contract 1108⁽⁵⁾					
Works Contract 1108A⁽⁵⁾					
Works Contract 1109					
DMS-6	Katherine Building ⁽²⁾	46 – 55	156.8	260	No
DMS-7	Parc 22 ⁽³⁾	49 – 59	166.7	260	No
DMS-8	SKH Good Shepherd Primary School	49 – 59	152.2	260	No
DMS-9	No. 12 Pau Chung Street ⁽⁴⁾⁽⁹⁾	53 – 66	160.9	260	No
DMS-10	Chat Ma Mansion	48 – 57	170.4	260	No
Works Contract 1111					
AM1 ⁽⁶⁾	No. 234 – 238 Chatham Road North ⁽⁷⁾	26.2 – 41.5	183.9	260	No
Works Contract 1112					
AM2	Site Boundary of Finger Pier Adjacent To Harbourfront Horizon ⁽⁸⁾	23.4 – 41.4	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	58.1 – 61.3	57.0	51.6 – 59.3	70 (65 during examination period)	No
Works Contract 1103						
NMS-CA-2	Price Memorial Catholic Primary School	67.8 – 68.8	66.0	63.1 – 65.6	70 (65 during examination period)	No
Works Contracts 1103 and 1106						
NMS-CA-3	Hong Kong S.K.H Nursing Home ⁽¹⁾	69.8 – 71.4	73.0	< Baseline	70	No
Works Contract 1106 and 1107						
NMS-CA-4	Block 1, Rhythm Garden (north-eastern façade)	72.6 – 73.4	71.0	67.5 – 69.7	75	No
NMS-CA-5	Block 1, Rhythm Garden (northern façade) ⁽²⁾	71.1 – 71.8	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⁾	62.6 – 64.7	76.1	< Baseline	75	No
NMS-CA-7	Skytower Tower 2	64.7 – 65.9	70.0	< Baseline	75	No
NMS-CA-8	SKH Good Shepherd Primary School	75.1 – 80.1	75.4	<Baseline – 78.4	70 (65 during examination period) (79 during the period of conducting the continuous noise monitoring) ⁽⁸⁾	No
NMS-CA-9	Kong Yiu Mansion ⁽⁴⁾	73.2 – 74.7	69.2	71.0 – 73.3	75	No
NMS-CA-10	Chat Ma Mansion	75.3 – 76.4	76.6	<Baseline	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)	66.5 – 68.8	68.0	<Baseline – 61.1	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⁾	68.8 – 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 CNMMP and CNMP which were approved by EPD.
- (10) Daytime noise Limit Level of 77 dB(A) applies during the continuous noise monitoring period.

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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)	(4)	(4)	(4)	80	(4)
MTW-12-3	Lucky Mansion	MTW-12-3(A) (SKH Good Shepherd Primary School)	70.3 – 88.8	75.4	< Baseline – 88.6	80	(9)
MTW-12-4	352-354 Ma Tau Wai Rd (East Façade)	MTW-12-4(A) (Kong Yiu Mansion)	65.2 – 82.1	69.2	< Baseline – 81.9	80	(9)
MTW-12-4-1	352-354 Ma Tau Wai Rd (North Façade)	MTW-12-4-1(A) (59 Maidstone Road)	64.0 – 82.7	75.4	< Baseline – 81.8	82	No
MTW-12-10	Lucky Building	MTW-12-10 (Lucky Building)	(4)	(4)	(4)	84	(4)

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⁾		
	(South Facade)	(South Façade))					
MTW-12-10-1	Lucky Building (East Facade)	MTW-12-10-1 (Lucky Building (East Façade))	(4)	(4)	(4)	80	(4)
MTW-12-11	Jing Ming Building	MTW-12-11(A) (SKH Good Shepherd Primary School)	70.3 – 88.8	75.4	< Baseline – 88.6	81	(9)
MTW-16-1	SKH Good Shepherd Primary School	MTW-16-1 (SKH Good Shepherd Primary School)	70.3 – 88.8	75.4	< Baseline – 88.6	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)	68 ⁽⁷⁾	(4)
HH2 ⁽⁶⁾	Wing Fung Building	NM2 (No. 234-238 Chatham Road North ⁽⁵⁾)	(4)	(4)	(4)	77	(4)
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	0	0	0
1106	0	0	0
1107	2	0	0
1108	2	0	0
1108A	0	0	0
1109	7	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) 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) 31 Mar 2015 (Contract 1106 submission only) 13 Apr 2015 (Contract 1106 submission only) 15 Apr 2015 (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) 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 (1st submission)

EP Condition (EP-438/2012/H)	Submission	Submission date
		12 Sep 2012 (2 nd submission) 5 Oct 2012 (3 rd submission) 10 Oct 2012 (Approved) 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 (1st 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 - 32 Monthly EM&A Report No. 33	Reported in previous Monthly EM&A Reports 11 Jun 2015

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) 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) 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 (VLTP)	14 Nov 2012 (1 st submission) 8 Feb 2013 (2 nd submission) 4 Feb 2015 (3 rd submission) 26 Jun 2015 (4 th 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 - 32 Monthly EM&A Report No. 33	Reported in previous Monthly EM&A Reports 11 Jun 2015

Appendix A

**34th 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.34

[Period from 1 to 30 June 2015]

Works Contract 1108A – Kai Tak Barging Point
Facilities

(June 2015)

Certified by: 
_____ Dr. Priscilla Choy _____

Position: Environmental Team Leader

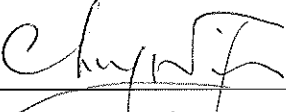
Date: 9th July 2015

Concentric – Hong Kong River Joint Venture

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

Monthly Environmental Monitoring and Audit Report for June 2015

(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 34th 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 June 2015.

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 to receive excavated spoil delivered by trucks from Designated and Interfacing Contracts.
 - Temporary stockpiling of received spoil in the Barging Point Facilities.
 - Marine transportation of received spoil to receptor sites for beneficial reuse.
 - Trial dumping using uncontaminated natural excavated material as capping of contaminated mud pit at South of the Brothers.

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.....4 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 and 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 trucks from Designated and Interfacing Contracts.
- Temporary stockpiling of received spoil in the Barging Point Facilities.
- Marine transportation of received spoil to receptor sites for beneficial reuse.

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 34th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 June to 30 June 2015.

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**.

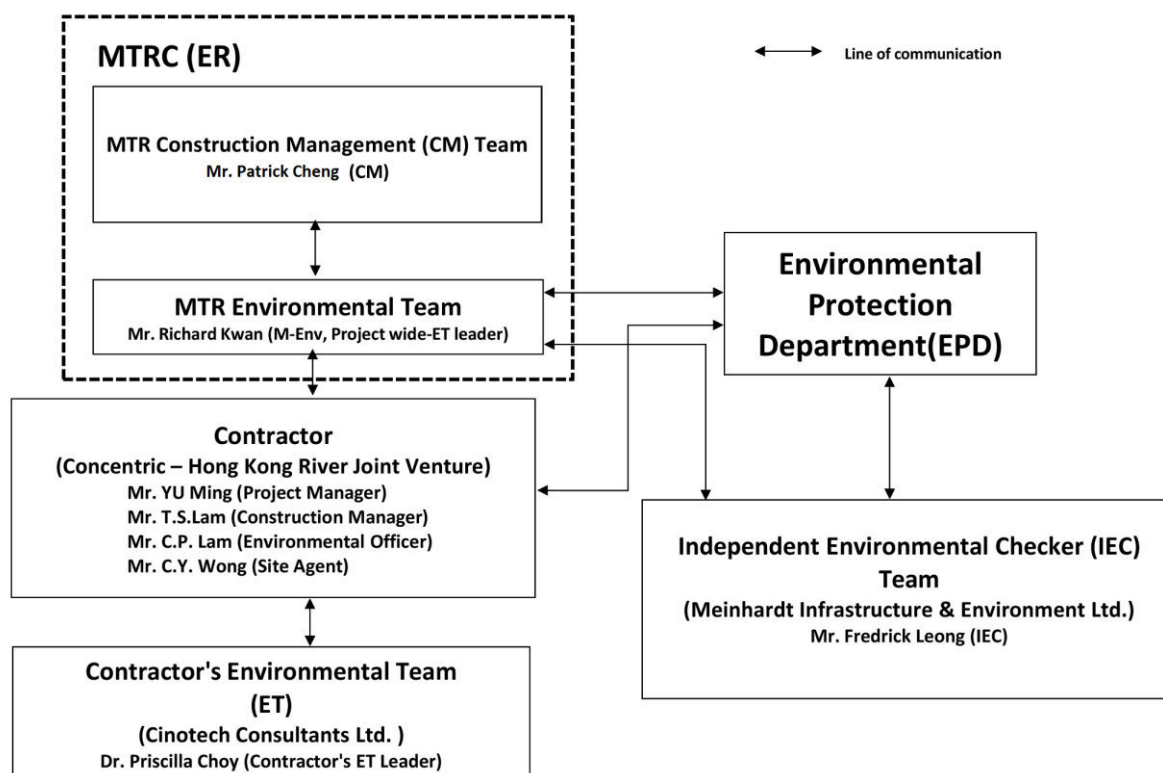
Construction Programme and Activities

- 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 to receive excavated spoil delivered by trucks from Designated and Interfacing Contracts.
 - Temporary stockpiling of received spoil in the Barging Point Facilities.
 - Marine transportation of received spoil to receptor sites for beneficial reuse.
 - Trial dumping using uncontaminated natural excavated material as capping of contaminated mud pit at South of the Brothers.

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. Patrick CHENG	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 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	Expired
GW-RE0246-15	29/03/2015	28/04/2015	Expired
GW-RE0407-15	01/05/2015	31/07/2015	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	Expired
EP/MD/15-249	30/03/2015	30/06/2015	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

- 2.11 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.
- 2.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 2.13 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 (May 2015)	Submitted to EPD on 11 th June 2015 (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
June 2015	0 m ³	0 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 and 23 June 2015 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 11 June 2015. 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>	27 May 2015	<u>Reminder:</u> Properly clear the stagnant water in the drip tray near Conveyor Belt no.1 and the catch pit of former floating jetty no. 4 adjacent to the seawall.	This item was observed improved/rectified by Contractor during the site inspection on 2 June 2015.
	27 May 2015	<u>Reminder:</u> Replace the water of wheel washing facilities near the site entrance regularly.	This item was observed improved/rectified by Contractor during the site inspection on 2 June 2015.
	2 June 2015	<u>Reminder:</u> Clear the mud accumulated near the site entrance.	This item was observed improved/rectified by Contractor during the site inspection on 11 June 2015.
	11 and 16 June 2015	<u>Reminder:</u> Sand bags should be provided to the public channel near the site entrance to control the site runoff.	This item was observed improved/rectified by Contractor during the site inspection on 23 June 2015.
	23 June 2015	<u>Reminder:</u> Clear the accumulated mud on the walkway of floating jetty no.3.	This item was the remarked item of item ref. No.150616-R04, which was classified as an air quality impact. Follow up action will be reported in next reporting month.
<i>Noise</i>	N/A	N/A	N/A

Parameters	Date	Observations and Recommendations	Follow-up
<i>Ecology/ Landscape and Visual</i>	N/A	N/A	N/A
<i>Air Quality</i>	27 May 2015	<u>Reminder:</u> Properly clear the dried soil accumulated near the access road to the Conveyor Belt no.1 to prevent dust generation.	This item was observed improved/rectified by Contractor during the site inspection on 2 June 2015.
	27 May 2015	<u>Reminder:</u> Sufficient cover should be provided to the stockpile of dusty material stored onsite to prevent dust generation.	This item was observed improved/rectified by Contractor during the site inspection on 2 June 2015.
	2 June 2015	<u>Reminder:</u> To provided water spray on the haul road.	This item was observed improved/rectified by Contractor during the site inspection on 11 June 2015.
	2 June 2015	<u>Observation:</u> Openings were observed at the enclosure of conveyor belt no.2 while the conveyor belt was in operation. Contractor was reminded to repair it.	This item was observed improved/rectified by Contractor during the site inspection on 23 June 2015.
	11 and 16 June 2015	<u>Reminder:</u> Openings were observed at the enclosure of conveyor belt no.1 and 2 while the conveyor belts were not in operation. Contractor was reminded to repair it.	
	11, 16 and 23 June 2015	<u>Reminder:</u> The dust curtain of tipping hall of floating jetty no.3 was loosen. Contractor was reminded to repair it.	Follow up action will be reported in next reporting month.
16 June 2015	<u>Reminder:</u> Clear the accumulated sand on the walkway of floating jetty no.3	This item was found outstanding and remarked as item ref. No. 150623-R02 during the site inspection on 23 June 2015. It was observed that the accumulated sand on the walkway of floating jetty no.3 was turned into mud due to rain during the site inspection on 23 June 2015, this would cause water quality impact from muddy runoff generation. The remarked item (ref. No. 150623-R02) was classified as a water quality impact and included in the water quality section. Follow up action will be reported in next reporting	

Parameters	Date	Observations and Recommendations	Follow-up
			month.
<i>Waste / Chemical Management</i>	2 June 2015	<u>Reminder:</u> To check the excavator to ensure that there is no leakage from it.	This item was observed improved/rectified by Contractor during the site inspection on 11 June 2015.
	16 June 2015	<u>Reminder:</u> Clear the stagnant water in the drip tray near the conveyor belt no.1.	Accumulation of stagnant water in the drip tray due to rain was observed during the site inspection on 23 June 2015. Follow up action will be reported in next reporting month.
	23 June 2015	<u>Reminder:</u> Clear the oil stain on the walkway of floating jetty no.3 as chemical waste.	Follow up action will be reported in next reporting month.
<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 There was no environmental complaint received in the reporting month. The Complaint Log is presented in **Appendix G**.

Summary of Environmental Summon and Successful Prosecution

- 7.4 No environmental 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 daily 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 trucks from Designated and Interfacing Contracts.
- Temporary stockpiling of received spoil in the Barging Point Facilities.
- Marine transportation of received spoil to receptor sites for beneficial reuse.

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 June 2015 to 30 June 2015 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 received in the reporting month.
- 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

- Accumulated mud on the ground within the site area should be cleared to prevent the generation of muddy surface runoff.
- Sand bags should be maintained and used whenever necessary to prevent muddy surface runoff flowing to the public channel.

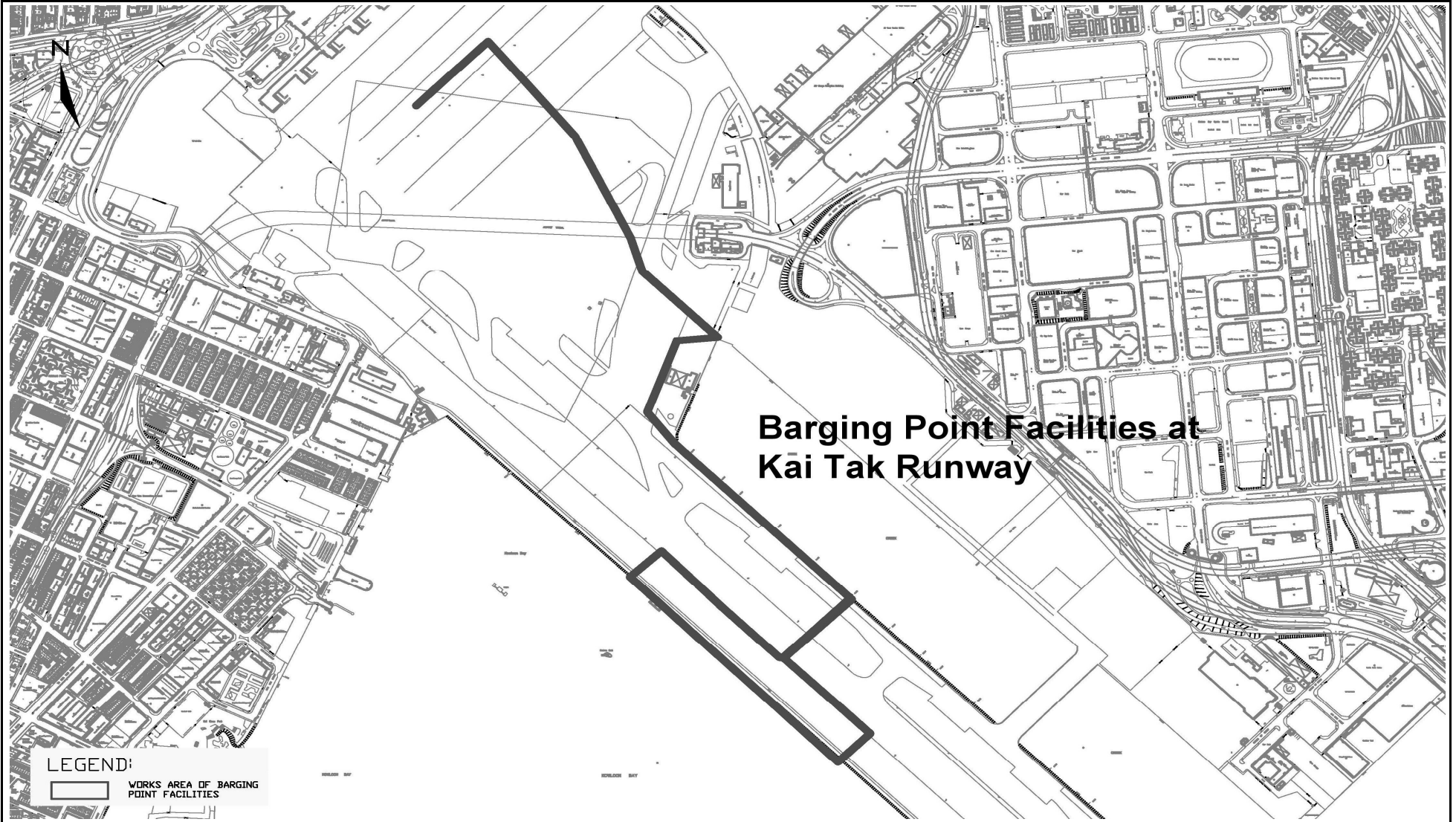
Air Quality

- The dust curtains of tipping hall of floating jetty and enclosure of conveyor belts should be properly maintained.
- Accumulated sand and mud on the ground within the site area should be cleared for dust suppression.
- Water spray should be provide to the haul road regularly for dust suppression.

Waste/Chemical Management

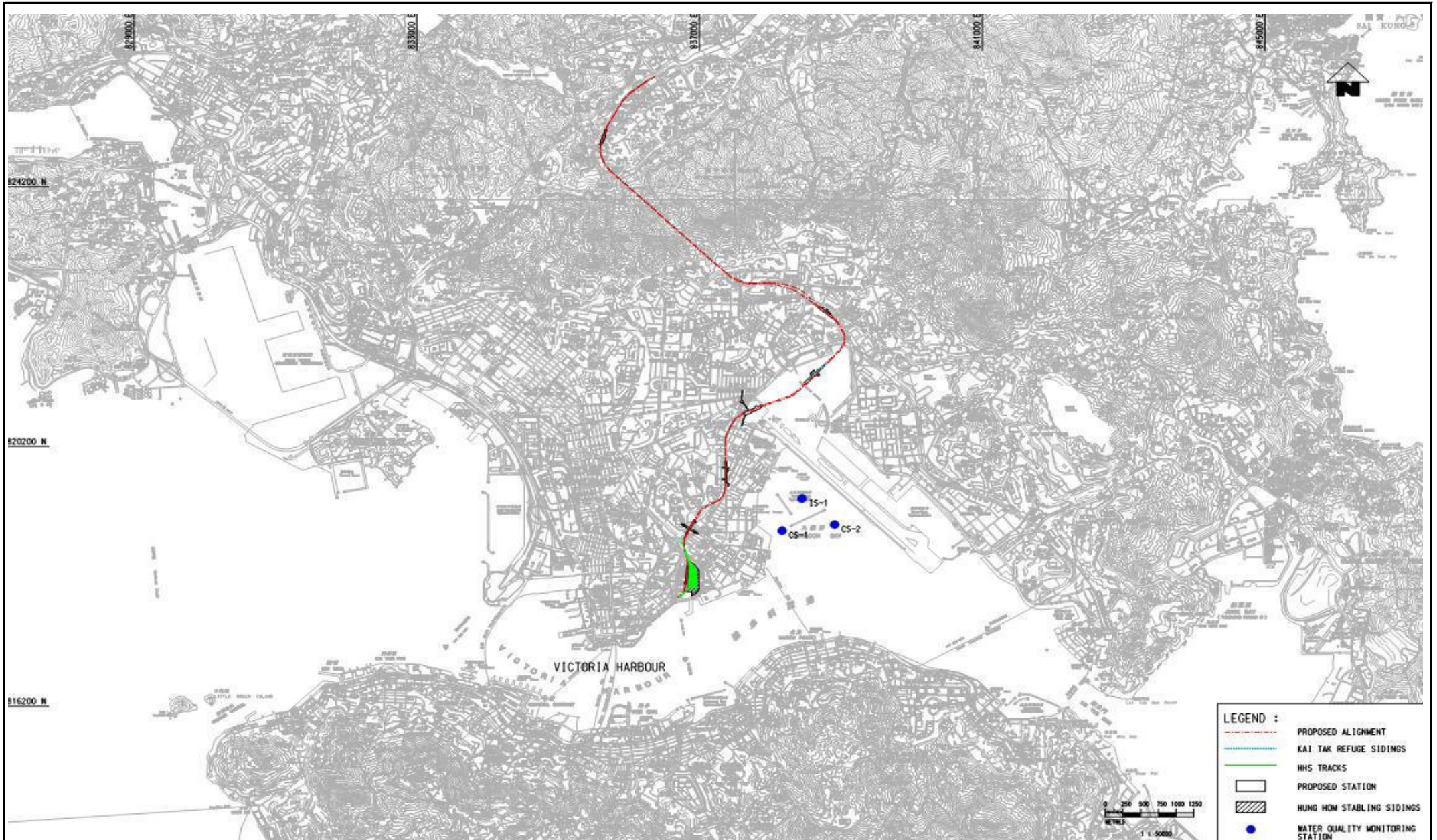
- Oil should be removed as chemical waste, and plants and equipment should be properly maintained to prevent oil leakage.
- Drip tray for oil containers should be well maintained to prevent accumulation of stagnant water.

FIGURES



Title	SCL Contract 1108A The Shatin to Central Link - Kai Tak Barging Point Facilities Site Layout Plan		Scale	N.T.S	Project No.	MA12028
			Date	Apr-14	Figure	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	<u>Surface & Middle:</u> 4.6 (5 percentile of baseline data) <u>Bottom:</u> 3.9 (5 percentile of baseline data)	<u>Surface & Middle:</u> 4 <u>Bottom:</u> 2
SS in mg/L	6.1 (95 percentile of baseline data) or 120% of upstream control station's SS at the same tide of the same day	6.3 (99 percentile of baseline data) or 130% of upstream control station's SS at the same tide of the same day
Turbidity in NTU	4.8 (95 percentile of baseline data) or 120% of upstream control station's Turbidity at the same tide of the same day	5.0 (99 percentile of baseline data) or 130% of upstream control station's Turbidity at the same tide of the same day

APPENDIX B
SUMMARY OF EXCEEDANCE

APPENDIX B – SUMMARY OF EXCEEDANCE

Reporting Month: June 2015

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	150602
Date	2 June 2015 (Tuesday)
Time	15:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
150602-R04	Part B - Water Quality <ul style="list-style-type: none">• Clear the mud accumulated near the site entrance.	B 13
150602-O01	Part C - Ecology/Others <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection.	D 12
150602-R03	Part D – Air Quality <ul style="list-style-type: none">• Openings were observed at the enclosure of conveyor belt no.2 while the conveyor belt was in operation. Contractor was reminded to repair it.• To provide water spray on the haul road.	D 6
150602-R02	Part E – Construction Noise Impact <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. Part F – Waste/Chemical Management <ul style="list-style-type: none">• To check the excavator to ensure that there is no leakage from it. Part G - Permit / Licenses <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. Others <ul style="list-style-type: none">• Follow-up on previous audit section (Ref. No.:150527), all environmental deficiency was identified/rectified by the Contractor.	F 8

	Name	Signature	Date
Recorded by	KC Chung		2 June 2015
Checked by	Dr. Priscilla Choy		2 June 2015

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150611
Date	11 June 2015 (Thursday)
Time	14:30 – 15:30

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

Ref. No.	Remarks/Observations	Related Item No.
150611-R03	Part B - Water Quality <ul style="list-style-type: none">Sand bags should be provided to the public channel near the site entrance to control the site runoff.	B 11
150611-R01	Part C - Ecology/Others <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Part D - Air Quality <ul style="list-style-type: none">The dust curtain of tipping hall of floating jetty no.3 was loosen. Contractor was reminded to repair it.	D 18
150611-R02	<ul style="list-style-type: none">Openings were observed at the enclosure of conveyor belt no.1 and 2 while the conveyor belts were not in operation. Contractor was reminded to repair it. Part E - Construction Noise Impact <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Part F - Waste/Chemical Management <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Part G - Permit / Licenses <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Others <ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.:150602), follow-up actions is required for item 150602-O01 which was remarked as 150611-R02.	D 12

	Name	Signature	Date
Recorded by	KC Chung		11 June 2015
Checked by	Dr. Priscilla Choy		11 June 2015

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities

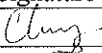

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150616
Date	16 June 2015 (Tuesday)
Time	15:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
150616-R03	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> Sand bags should be provided to the public channel near the site entrance to control the site runoff. 	B 11
150616-R01	<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"> The dust curtain of tipping hall of floating jetty no.3 was loosen. Contractor was reminded to repair it. 	D 18
150616-R02	<ul style="list-style-type: none"> Openings were observed at the enclosure of conveyor belt no.1 and 2 while the conveyor belts were not in operation. Contractor was reminded to repair it. 	D 12
150616-R05	<ul style="list-style-type: none"> Clear the accumulated sand on the walkway of floating jetty no.3 <p>Part E – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 6
150616-R04	<p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> Clear the stagnant water in the drip tray near the conveyor belt no.1 <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.:150611), follow-up actions is required for items 150611-R01, 150611-R02 and 150611-R03 which were remarked as 150616-R01, 150616-R02 and 150616-R03. 	F 9

	Name	Signature	Date
Recorded by	KC Chung		16 June 2015
Checked by	Dr. Priscilla Choy		16 June 2015

Shatin to Central Link -**Contract 1108A Kai Tak Barging Point Facilities****Record Summary of Environmental Site Inspection****Inspection Information**

Checklist Reference Number	150623
Date	23 June 2015 (Tuesday)
Time	15:30 – 16:30

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

Ref. No.	Remarks/Observations	Related Item No.
150623-R02	Part B - Water Quality <ul style="list-style-type: none">Clear the accumulated mud on the walkway of floating jetty no.3	B 15 ii
150623-R01	Part C - Ecology/Others <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Part D - Air Quality <ul style="list-style-type: none">The dust curtain of tipping hall of floating jetty no.3 was loosen. Contractor was reminded to repair it. Part E - Construction Noise Impact <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection.	D 18
150623-R03	Part F - Waste/Chemical Management <ul style="list-style-type: none">Clear the oil stain on the walkway of floating jetty no.3 as chemical waste. Part G - Permit / Licenses <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. Others <ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.:150616), follow-up actions is required for items 150616-R01, 150616-R04 and 150616-R05. Items 150616-R01 and 150616-R05 were remarked as 150623-R01 and 150623-R02.	F 8

	Name	Signature	Date
Recorded by	KC Chung		23 June 2015
Checked by	Dr. Priscilla Choy		23 June 2015

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	^

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		<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	N/A ⁽²⁾

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		<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>

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		<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 	<p>^</p> <p>N/A⁽¹⁾</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 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 	*

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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 	<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> <p style="text-align: center;">^</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; • 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>

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		<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>

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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⁾

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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 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	^

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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⁾

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		<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>^</p> <p>^</p> <p>N/A⁽¹⁾</p> <p>*</p>

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		<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>

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		<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⁾

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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>

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		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 	^ ^ ^

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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

Contractor Log Ref.	Complaint Location/ Nature	Incoming Complaint Reference no.	Complainant/ Date or Period of Complaint	Date of Complaint received	Details of Complaint	Investigation/ Mitigation Action	Status
6	Barging Point/ Construction Noise	15-05127	--/Night time after 11:00pm	12 March 2015	As per information from EPD, the complainant complained about the construction noise generated from the barge point at night after 11:00pm.	<p>According to the information provided by the Contractor, no construction activity in the site area, including barge operation has been carried out after 11:00 pm since the commencement of the project. All construction works carried out within the validity period of CNP were in compliance with the conditions stated in the valid CNP (Permit No.: GW-RE1017-14).</p> <p>It was observed that the Contractor has implemented appropriate noise mitigation measures to reduce noise nuisance generated from the work site. In addition, according to the EIA report and the EM&A Manual, it is anticipated that construction activities of this project would not cause any significant noise impact to the vicinity of the work site as there are no Noise Sensitive Receivers (NSRs) located within 300m from the barge point.</p> <p>The environmental conditions of the site and effectiveness of the implementation</p>	Closed

						of mitigation measures will be continuously reviewed and monitored by the Resident Site Staff and the Environmental Team.	
7	Barging Point / Dust and Disposal of Construction Waste	15-07297	-- / --	2 April 2015	As per the information from EPD, the complainant complained the dust generated from the discharge point at tipping halls and no water spraying was provided for the stockpile on vessel and land. In addition, the complainant complained that construction waste was disposed everywhere in Kai Tak Area.	<p>According to the information provided by the Contractor, all the construction waste generated from this Contract was disposed to the designated landfill (NENT) and no construction waste was disposed in Kai Tak Area. The construction waste disposal activities in Kai Tak Area outside the site boundary of this Contract were not related to this Contract.</p> <p>It was observed that the Contractor has implemented appropriate dust mitigation measures to reduce dust issue generated from the work site. In addition, according to the EIA Report and the EM&A Manual of the Project, it is anticipated that construction activities of this Contract would not cause any significant dust impact to the vicinity of the work site as there are no Air Sensitive Receivers (ASRs) located within 500m from the barging point.</p> <p>The environmental conditions of the site and effectiveness of the implementation of mitigation measures will be</p>	Closed

						continuously reviewed and monitored by the Resident Staff and the Environmental Team.	
8	Barging Point / Dust emission	15-10412	-- / --	4 May 2015	The complainant complained the dust generated from the transportation of sand and mud at the barge point and water spray was insufficient. In addition, no impervious sheeting for covering stockpiles was found.	<p>It was observed that the Contractor has implemented appropriate dust mitigation measures to reduce dust issue generated from the work site. In addition, according to the EIA Report and the EM&A Manual of the Project, it is anticipated that construction activities of this Contract would not cause any significant dust impact to the vicinity of the work site as there are no Air Sensitive Receivers (ASRs) located within 500m from the barging point.</p> <p>The environmental conditions of the site and effectiveness of the implementation of mitigation measures will be continuously reviewed and monitored by the Resident Site Staff and the Environmental Team.</p>	Closed

**APPENDIX H
TENTATIVE CONSTRUCTION
PROGRAMME**

Act ID	Description	Orig Dur	Early Start	Early Finish	%	2015																								
						MAY				JUN				JUL				AUG				SEP				OCT				NOV
						04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28	05	12	19
COMMENCEMENT & COMPLETION																														
Time for Completion																														
1108ADC04C	Completion of The Whole of the Works	1477	13AUG12 A	28AUG16	71	[Gantt bar: Blue from 13AUG12 to 28AUG16, Red from 28AUG16 to 30JUN15]																								
MILESTONES SCHEDULE																														
Milestones for Cost Centre A																														
1108AMSA81	Satisfactory Impl'n of Quality req'ts.	0		27SEP15	0	[Gantt bar: Green from 27SEP15 to 27SEP15]																								
1108AMSA82	Satisfactory Impl'n of Prog. Mgt. System	0		27SEP15	0	[Gantt bar: Green from 27SEP15 to 27SEP15]																								
Milestones for Cost Centre B																														
1108AMSB70	Mgt., Maint., & Operation of BPF	0		28JUN15 A	100	[Gantt bar: Blue from 28JUN15 to 28JUN15]																								
Cost Centre A																														
Preliminaries																														
1108AA8010	Satisfactory Impl'n of Quality req'ts.	1145	13AUG12 A	27SEP15	92	[Gantt bar: Blue from 13AUG12 to 27SEP15, Green from 27SEP15 to 27SEP15]																								
1108AA8020	Satisfactory Impl'n of Prog. Mgt. System	1145	13AUG12 A	27SEP15	92	[Gantt bar: Blue from 13AUG12 to 27SEP15, Green from 27SEP15 to 27SEP15]																								
1108AA9010	Satisfactory Impl'n of Safety & Env req'ts.	1328	13AUG12 A	03APR16	79	[Gantt bar: Blue from 13AUG12 to 03APR16, Green from 03APR16 to 03APR16]																								
Cost Centre B																														
Kai Tak BPF - Mgt., Maintenance & Operation																														
1108AB7010	Manage, Maintain & Operate the BPF	182	30DEC14 A	28JUN15 A	100	[Gantt bar: Blue from 30DEC14 to 28JUN15, Green from 28JUN15 to 28JUN15]																								
1108AB8010	Manage, Maintain & Operate the BPF	182	29JUN15 A	27DEC15	1	[Gantt bar: Green from 29JUN15 to 27DEC15]																								

Start date	10AUG12
Finish date	28AUG16
Data date	30JUN15
Run date	01JUL15
Page number	1A
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MTR SCL 1108A
KAI TAK BARGING POINT FACILITIES

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

Appendix B

**34th 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. 34

[Period from 1 to 30 June 2015]

Works Contract 1109 - Stations and Tunnels of
Kowloon City Section

(13 July 2015)

Certified by: 
_____ Winnie Ko _____

Position: Environmental Team Leader

Date: 13 July 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.34

June 2015

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Works Contract 1109 – Stations and
Tunnels of Kowloon City Section
Monthly EM&A Report No.34

June 2015

Reference 0171181

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed:



Position: Partner

Date: 13 July 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 thirty-fourth monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 June 2015 to 30 June 2015 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 EEP construction; 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, installation of pipe pile and TTMS preparation;
 - TKW Station – Pump installation, open cut excavation, and tunnelling works;
 - Tam Kung Road – Shaft construction; 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 MTW-12-3(A), MTW-12-4(A), MTW-12-4-1(A), MTW-12-11(A) and MTW-16-1 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 and S.K.H. Holy Trinity Church 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 48,857 m³ of inert C&D materials were generated from the Project, which were sent to 1108A Kai Tai Barging Facilities during the reporting month. 880 kg of plastics was generated and sent to recyclers for recycling during the reporting period. About 144 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. 41 kg of paper/cardboard packaging was generated and sent to recyclers for recycling during the reporting period. No 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 8 and 22 June 2015. 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 June 2015. The representative of the IEC joined the site inspection on 8 June 2015. 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.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3(A) on 1-6, 8, 10, 12, 13, 15, 18, 19, 22-27, 29 and 30 June 2015, at MTW-12-4(A) on 23 June 2015, at MTW-12-11(A) on 1-6, 8, 13, 15, 19, 22-24, 27, 29 and 30 Jun 2015, and at MTW-16-1 on 1-6, 8-10, 12, 13, 15, 16, 18, 19, 22-27, 29 and 30 June 2015.

Investigation of exceedances on 1-6, 8-10, 12, 13, 15, 16, 18, and 19 June 2015 had been completed and the investigation reports are presented in Annex L. The exceedances recorded on 22-27, 29 and 30 June 2015 are still under investigation and the findings will be reported in the next reporting period.

A total of seven complaints were received on 9, 13, 16, 17 and 19 June 2015. Investigation of all the complaints had been completed and the investigation reports are presented in *Annex L*.

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 EEP construction; 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, installation of pipe pile and TTMS preparation;
 - Tam Kung Road – Shaft construction;
 - TKW Station – Pump installation, open cut excavation and tunnelling works; 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 thirty-fourth EM&A report which summarises the monitoring results and audit findings during the reporting period from 1 June to 30 June 2015.

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
<i>Works in Ma Tau Wai (MTW)</i>
<ul style="list-style-type: none">• TKW/MTW Road Garden – Operation of bentonite plant and EEP construction; 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>Works in To Kwa Wan (TKW)</i>
<ul style="list-style-type: none">• Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation;• TKW Station – Pump installation, open cut excavation, and tunnelling works;• Tam Kung Road – Shaft construction; 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			
<i>Site at TKW</i>	WT00019555-2014	30-September-2017	-
<i>Site at MTW</i>	WT00019556-2014	30-September-2017	-
Chemical Waste Producer Registration			
<i>Site at TKW</i>	5213-286-S3682-01	Throughout the Contract	-
<i>Site at MTW</i>	5213-242-S3682-02	Throughout the Contract	-
Construction Noise Permit			
- <i>PME in Pier 15 works area and EEP</i>	GW-RE0296-15	1 April 2015 – 24 September 2015	-
- <i>PME on Kowloon City Road</i>	GW-RE0377-15	20 April 2015 – 5 October 2015	-
- <i>PME at SUW works area</i>	GW-RE0227-15	16 March 2015 - 8 September 2015	-
- <i>PME at TKW Garden</i>	GW-RE0124-15	10 February 2015 - 1 August 2015	-
- <i>PME at Kai Tak New Land 2</i>	GW-RE0127-15	10 February 2015 - 23 July 2015	-
- <i>PME at Tam Kung Road</i>	GW-RE0142-15	14 February 2015 - 8 August 2015	-
- <i>PME at MTW Road north bound & E3-E6</i>	GW-RE0151-15	16 February 2015 - 12 August 2015	-
- <i>PME at TKW Market</i>	GW-RE0454-15	20 May 2015 – 19 June 2015	-
- <i>PME at SUW works area 2</i>	GW-RE0551-15	1 June 2015 – 30 June 2015	Superseded by GW-RE0643-15

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
- <i>PME at SUW works area 2</i>	GW-RE0643-15	30 June 2015 – 29 July 2015	
- <i>PME at Olympic Avenue</i>	GW-RE0532-15	2-Jun 2015 to 20 Nov 2015	
- <i>PME at Nam Kok Road</i>	GW-RE0529-15	1 Jun 2015 to 26 Nov 2015	
- <i>PME at Kai Tak New Land 1</i>	GW-RE0646-15	30 Jun 2015 to 18 Dec 2015	
SP-Licence for TBM operation	L-3-249(1)	19 May 2015 – 18 May 2018	-
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) Sound 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 and

Continuous Noise Monitoring Location ^(a)	Description
review in March 2015.	

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	Thirty-third Monthly EM&A Report	11 June 2015

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 MTW-12-3(A), MTW-12-4(A), MTW-12-4-1(A), MTW-12-11(A) and MTW-16-1 during the reporting month, according to the schedule presented in latest approved CNMP.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3(A) on 1-6, 8, 10, 12, 13, 15, 18, 19, 22-27, 29 and 30 June 2015, at MTW-12-4(A) on 23 June 2015, at MTW-12-11(A) on 1-6, 8, 13, 15, 19, 22-24, 27, 29 and 30 June 2015, and at MTW-16-1 on 1-6, 8-10, 12, 13, 15, 16, 18, 19, 22-27, 29 and 30 June 2015.

Investigation of exceedances on 1-6, 8-10, 12, 13, 15, 16, 18, and 19 June 2015 had been completed and the investigation reports are presented in *Annex L*. The exceedances recorded on 22-27, 29 and 30 June 2015 are still under investigation and the findings will be reported in the next reporting period.

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

5.3 CONSTRUCTION DUST MONITORING

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	51	46 – 55	156.8	260
DMS-7	53	49 – 59	166.7	260
DMS-8	54	49 – 59	152.2	260
DMS-9 (a)	58	53 - 66	160.9	260

Monitoring Station	24-hour TSP Monitoring Results measured, μgm^{-3} (a)		Action Level, μgm^{-3}	Limit Level, μgm^{-3}
	Average	Range		
DMS-10	52	48 - 57	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.

5.4

CULTURAL HERITAGE

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 and S.K.H. Holy Trinity Church 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 (c)	Non-inert C&D Materials			
			General Refuse/Vegetative Waste	Recycled materials		
				Paper/card board	Plastics	Metals
June 2015	48,857 m ³	0 kg	144 m ³	41 kg	880 kg	0 kg

Notes:

- (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil.
- (b) About 48,857 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 8 and 22 June 2015. Most of the mitigation measures given in *Annex H* have been implemented. Required Actions that were found are listed below:

8 June 2015

- No observation was reported during the site inspection.

22 June 2015

- 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 June 2015. The representative of the IEC joined the site inspection on 8 June 2015. 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 June 2015

- The Contractor was reminded to check and maintain the exhaust filter of the generator and mobile crane at TKW/MTW Road Garden and E1 works area respectively.
- The Contractor was reminded to provide sufficient drip trays for the chemical containers near the launching shaft.

8 June 2015

- There was no major observation during the site inspection.

15 June 2015

- There was no major observation during the site inspection.

22 June 2015

- There was no major observation during the site inspection.

29 June 2015

- 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.

7.1 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.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3(A) on 1-6, 8, 10, 12, 13, 15, 18, 19, 22-27, 29 and 30 June 2015, at MTW-12-4(A) on 23 June 2015, at MTW-12-11(A) on 1-6, 8, 13, 15, 19, 22-24, 27, 29 and 30 Jun 2015, and at MTW-16-1 on 1-6, 8-10, 12, 13, 15, 16, 18, 19, 22-27, 29 and 30 June 2015.

Investigation of exceedances on 1-6, 8-10, 12, 13, 15, 16, 18, and 19 June 2015 had been completed and the investigation reports are presented in Annex L. The exceedances recorded on 22-27, 29 and 30 June 2015 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

A total of seven complaints were received on 9, 13, 16, 17 and 19 June 2015. Investigation of all the complaints had been completed and the investigation reports are presented in *Annex L*. 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>
<ul style="list-style-type: none"> • TKW/MTW Road Garden – Operation of bentonite plant and EEP construction; 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>
<ul style="list-style-type: none"> • Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation; • Tam Kung Road – Shaft construction; • TKW Station – Pump installation, open cut excavation, and tunnelling works; 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 34th monthly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 June 2015 to 30 June 2015 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.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-3(A) on 1-6, 8, 10, 12, 13, 15, 18, 19, 22-27, 29 and 30 June 2015, at MTW-12-4(A) on 23 June 2015, at MTW-12-11(A) on 1-6, 8, 13, 15, 19, 22-24, 27, 29 and 30 Jun 2015, and at MTW-16-1 on 1-6, 8-10, 12, 13, 15, 16, 18, 19, 22-27, 29 and 30 June 2015.

Investigation of exceedances on 1-6, 8-10, 12, 13, 15, 16, 18, and 19 June 2015 had been completed and the investigation reports are presented in Annex L. The exceedances recorded on 22-27, 29 and 30 June 2015 are still under investigation and the findings will be reported in the next reporting period.

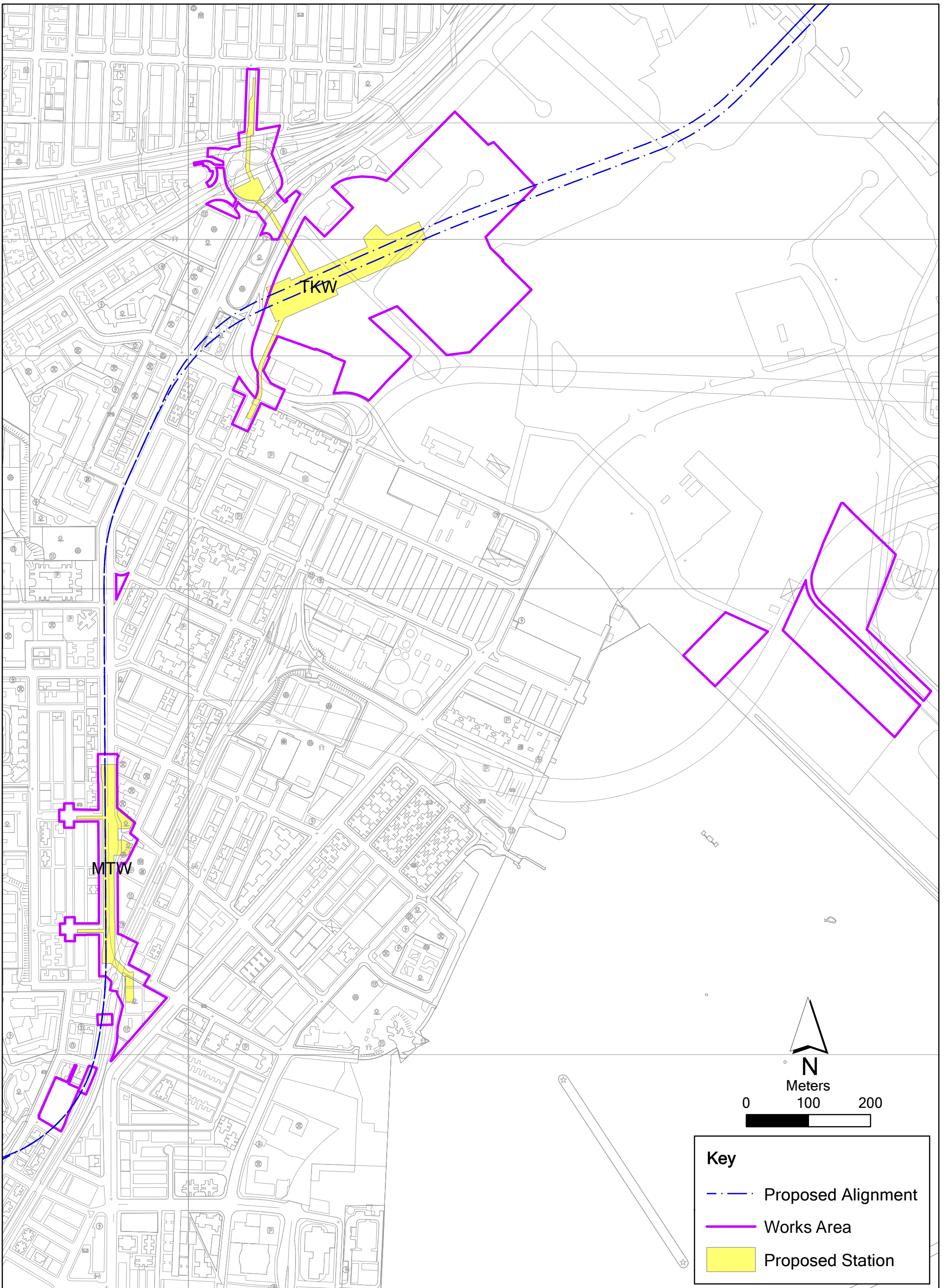
A total of seven complaints were received on 9, 13, 16, 17 and 19 June 2015. Investigation of all the complaints had been completed and the investigation reports are presented in *Annex L*.

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.

SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - JUNE 2015

Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
1109 - SUW & TKW Stations and Tunnels June 2015 (UWP R5)								
PROJECT DATES								
Specified Milestone Dates								
CC-A Milestones								
01109.MSA11ii	A11(ii) - Engr's confirmation of satisfac implementation of Sys Assu.& Risk Mgmt as per approved spec(31May15)	100%		31-May-15 A	◆			
01109.MSA12	A12 - Engr's confirmation of satisfac implementation of safety & environ.reqmts as per approved spec. (Wk33/15;16Aug15)	0%		16-Aug-15*			◆	
CC-B Milestones								
01109.MSB011ii	B11(ii)-50% by volume of excavation for Adit C complete.(Revised IPS 27 Sep 15)	100%		25-May-15 A				
01109.MSB12iii	B12(iii)-All structural works of Adit C & Entrance C of SUW complete.(Revised IPS 6 Dec 15)	100%		25-May-15 A				
CC-C Milestones								
01109.MSC10	C10-70% by plan area of roof slab between gridlines 1 to 28 complete.(30Jun15)	100%		15-Jun-15 A	◆			
CC-B - SUW STATION, ENTRANCES AND ADITS								
SUW Station Construction Works								
Station - Excavation and Foundation								
Earthworks								
Tie Back Anchor								
01109.PDBA1000A	Drilling of test anchor TP1 near G/L 12	100%	28-May-15 A	29-May-15 A	■			
01109.PDBA1010A	Install rebar and grouting	100%	30-May-15 A	30-May-15 A	■			
01109.PDBA1020A	Curing and gain strength of grout	100%	01-Jun-15 A	08-Jun-15 A	■			
01109.PDBA1030A	Pull out test	100%	09-Jun-15 A	09-Jun-15 A	■			
01109.PDBA1040A	Investigation	100%	10-Jun-15 A	12-Jun-15 A	■			
01109.PDBA1080A	Drilling of trial anchor X4 witness by BD	100%	12-Jun-15 A	12-Jun-15 A	■			
01109.PDBA1050A	Install another test anchor due to fail of previous test	100%	13-Jun-15 A	13-Jun-15 A	■			
01109.PDBA1060A	Curing and gain strength of grout	100%	15-Jun-15 A	17-Jun-15 A	■			
01109.PDBA1090A	Grouting of trial anchor X4	100%	15-Jun-15 A	15-Jun-15 A	■			
01109.PDBA1070A	Pull out test	100%	18-Jun-15 A	18-Jun-15 A	■			
Row X								
01109.PDBA1100A	Drilling of tie back anchor Row X, 9nos. (1 rig)	80%	19-Jun-15 A	27-Jun-15	■			
01109.PDBA1110A	Insert rebar	30%	24-Jun-15 A	29-Jun-15	■			
01109.PDBA1120A	Grouting	10%	25-Jun-15 A	30-Jun-15	■			
01109.PDBA1130A	Install waling & anchor head	0%	30-Jun-15	04-Jul-15	■			



MTR Corporation Limited
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- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (May 2015)
- ◆ Milestone
- MP Rev.1 Milestone
- ▼ May 2015 Milestone

Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
01109.PDBA1140A	TDR test & welding test	0%	07-Jul-15	09-Jul-15				
01109.PDBA1150A	Shotcrete	0%	10-Jul-15	11-Jul-15				
Row A								
01109.PDBA1160A	Excavation to -1.5mPD (900m3 including rock / corestone) (18 Jul15)	0%	14-Jul-15	24-Jul-15				
01109.PDBA1170A	Setting up platform for drilling rig	0%	25-Jul-15	25-Jul-15				
01109.PDBA1180A	Drilling of test anchor TP2 near G/L 10	0%	27-Jul-15	27-Jul-15				
01109.PDBA1190A	Install rebar & grouting	0%	28-Jul-15	28-Jul-15				
01109.PDBA1200A	Drilling of tie back anchor A23-A31, 9nos. (1 rig)	0%	29-Jul-15	01-Aug-15				
01109.PDBA1210A	Curing & gain strength of grout	0%	29-Jul-15	02-Aug-15				
01109.PDBA1220A	Drilling of tie back anchor A13-A23, 10nos. (1 rig)	0%	31-Jul-15	08-Aug-15				
01109.PDBA1240A	Pull out test	0%	04-Aug-15	04-Aug-15				
01109.PDBA1230A	Insert rebar	0%	05-Aug-15	08-Aug-15				
01109.PDBA1250A	Grouting	0%	06-Aug-15	10-Aug-15				
01109.PDBA1260A	Install waling & anchor head	0%	08-Aug-15	12-Aug-15				
01109.PDBA1270A	TDR test & welding test	0%	13-Aug-15	15-Aug-15				
01109.PDBA1280A	Shotcrete	0%	18-Aug-15	18-Aug-15				
Row B-1								
01109.PDBA1290A	Excavation to -3mPD at G/L 7.5-10.5 (900m3 including rock/corestone)	0%	13-Aug-15	24-Aug-15				
01109.PDBA1300A	Setting up platform for drilling rig	0%	25-Aug-15	25-Aug-15				
01109.PDBA1310A	Drilling of tie back anchor, 16nos. (2 rigs)	0%	26-Aug-15	03-Sep-15				
01109.PDBA1320A	Insert rebar	0%	29-Aug-15	03-Sep-15				
01109.PDBA1330A	Grouting	0%	01-Sep-15	04-Sep-15				
01109.PDBA1340A	Install waling & anchor head	0%	03-Sep-15	08-Sep-15				
01109.PDBA1350A	TDR test & welding test	0%	09-Sep-15	11-Sep-15				
01109.PDBA1360A	Shotcrete	0%	12-Sep-15	12-Sep-15				
Row B-2								
01109.PDBA1370A	Excavation to -3mPD at G/L 10.5-14 (550m3 soil)	0%	13-Aug-15	14-Aug-15				
01109.PDBA1380A	Setting up platform for drilling rig	0%	15-Aug-15	15-Aug-15				
01109.PDBA1390A	Drilling of tie back anchor, 8nos. (1 rig)	0%	18-Aug-15	21-Aug-15				
01109.PDBA1400A	Insert rebar	0%	20-Aug-15	24-Aug-15				
01109.PDBA1410A	Grouting	0%	21-Aug-15	25-Aug-15				
01109.PDBA1420A	Install waling & anchor head	0%	24-Aug-15	27-Aug-15				
01109.PDBA1430A	TDR test & welding test	0%	28-Aug-15	01-Sep-15				
01109.PDBA1440A	Shotcrete	0%	02-Sep-15	02-Sep-15				



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- Actual Work
- Remaining Work
- Master Programme Rev.1
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- Milestone
- MP Rev.1 Milestone
- May 2015 Milestone

Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
Stage 1 Excavation EGL to +1.0mPD & form 1.5m berm								
Stage 1 Excavation, Zone 2								
01109.PDB3930	Stg 1 - Excavation; Part 3- GL 10 to 11	100%	26-May-15 A	02-Jun-15 A				
01109.PDB4120	Stg 1 - Excavation; Part 2- GL 9 to 10	100%	03-Jun-15 A	10-Jun-15 A				
01109.PDB4090	Stg 1 - Excavation; Part 2- GL 8 to 9	100%	11-Jun-15 A	18-Jun-15 A				
01109.PDB4060	Stg 1 - Excavation; Part 2- GL 7 to 8	80%	19-Jun-15 A	27-Jun-15				
Stage 2 Excavation +1.0 to -6.0mPD & form 1.5m berm								
Stage 2 Excavation, Zone 2								
01109.PDB4560	Stg 2 - Excavation; Part 3- GL 11 to 12	0%	28-Jul-15	06-Aug-15				
01109.PDB4500	Stg 2 - Excavation; Part 3- GL 10 to 11	0%	07-Aug-15	15-Aug-15				
01109.PDB4690	Stg 2 - Excavation; Part 2- GL 9 to 10	0%	18-Aug-15	26-Aug-15				
01109.PDB4660	Stg 2 - Excavation; Part 2- GL 8 to 9	0%	03-Sep-15	12-Sep-15				
01109.PDB4630	Stg 2 - Excavation; Part 2- GL 7 to 8	0%	14-Sep-15	23-Sep-15				
Pile Load Tests								
Part 2								
(C77HP01 GL 9-10)								
01109.PDB2440-10A	Excavation to +4.5mPD for pile loading test on pile no. C77HP01	100%	08-May-15 A	27-May-15 A				
01109.PDB2440-12A	Pile load test & test platform fabrication (C77HP01 GL 9-10) - Blinding layer casting	100%	28-May-15 A	28-May-15 A				
01109.PDB2440-13A	Pile load test & test platform fabrication (C77HP01 GL 9-10) - Setting out, Mobilization of plant and equipment	100%	29-May-15 A	06-Jun-15 A				
01109.PDB2440-14A	Pile load test & test platform fabrication (C77HP01 GL 9-10) - Setup the loading test	100%	29-May-15 A	06-Jun-15 A				
01109.PDB2440-15A	Pile load test & test platform fabrication (C77HP01 GL 9-10) - Loading Test	100%	08-Jun-15 A	10-Jun-15 A				
01109.PDB2440-17A	Pile load test & test platform fabrication (C77HP01 GL 9-10) - Dismantle the test platform	100%	11-Jun-15 A	17-Jun-15 A				
(C42HP02)								
01109.PDB2440-23A	Pile load test & test platform fabrication (C42HP02) - Installation of loading test platform	100%	18-May-15 A	11-Jun-15 A				
01109.PDB2440-24A	Pile load test & test platform fabrication (C42HP02) - Loading Test	100%	12-Jun-15 A	16-Jun-15 A				
01109.PDB2440-25A	Pile load test & test platform fabrication (C42HP02) - Report submission & consent	100%	17-Jun-15 A	19-Jun-15 A				
01109.PDB2440-26A	Pile load test & test platform fabrication (C42HP02) - Dismantle the test platform	100%	17-Jun-15 A	19-Jun-15 A				
Earthing Mat and Waterproofing works								
01109.PDB5360-04A	Dismantle the test platform (C42HP02 Pile Load test (tension))	100%		16-Jun-15 A				
01109.PDB5360-08A	Earthing Mat installation (C.L 21 To G.L 24, C to F), Hual raod for mobilization	30%	22-Jun-15 A	02-Jul-15				
01109.PDB5360-05A	Earthing Mat installation (C.L 21 To G.L 24, C to F), Installation of 3.6m ground rod	0%	03-Jul-15	11-Jul-15				
01109.PDB5360-06A	Earthing Mat installation (C.L 21 To G.L 24, C to F), Laying Copper tape	0%	09-Jul-15	27-Jul-15				
01109.PDB5360-07A	Earthing Mat installation (C.L 21 To G.L 24, C to F), Casting the Blinding Layer	0%	17-Jul-15	04-Aug-15				
Water proofing Works								



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- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (May 2015)
- Milestone
- MP Rev.1 Milestone
- May 2015 Milestone

Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
01109.PDB5370-13A	Water proofing (T type) SUW - Stud Tunnel D1 (3rd Portion 9m)	100%	02-Jun-15 A	04-Jun-15 A				
Station - C&S Works (Platform Level)								
Tower Cranes: Erection, Testing and Commissioning								
TC1								
01109.PDB5400-1A	TC1 - Mobilization of piling rig	100%	18-Jun-15 A	22-Jun-15 A				
01109.PDB5400-2A	TC1 - Piling of tower crane TC1 foundation (4nos.)	20%	23-Jun-15 A	02-Jul-15				
01109.PDB5400-3A	TC1 - Grouting of piles	0%	30-Jun-15	08-Jul-15				
01109.PDB5400-4A	TC1 - Construction of pile cap	0%	09-Jul-15	22-Jul-15				
Sump Pits & Base Slabs								
Part 4								
01109.PDB5680-12A	Base Slab SUW - Stud Tunnel U1 (2st Portion 9m)	100%	22-May-15 A	08-Jun-15 A				
01109.PDB5680-13A	Base Slab SUW - Stud Tunnel D1 (3rd Portion 9m)	100%	05-Jun-15 A	15-Jun-15 A				
01109.PDB5680-1A	Base Slab SUW - Stud Tunnel U3	50%	16-Jun-15 A	04-Jul-15				
01109.PDB5620-1A	Base Slab SUW - Stud Tunnel U4	30%	16-Jun-15 A	18-Jul-15				
01109.PDB5590-1A	Base Slab SUW - Stud Tunnel U5	0%	21-Jul-15	11-Aug-15				
01109.PDB5620-2A	Base Slab; Part 4- GL 22 to 23	0%	12-Aug-15	28-Aug-15				
01109.PDB5590-2A	Base Slab; Part 4- GL 21 to 22	0%	29-Aug-15	16-Sep-15				
External Walls & Columns; From Base to Concourse Slab; (B/S-C/S)								
Part 4								
01109.PDB5940-11A	Wall SUW - Stud Tunnel U2	50%	16-May-15 A	24-Jul-15				
01109.PDB5940-12A	Wall SUW - Stud Tunnel U1	70%	08-Jun-15 A	03-Jul-15				
01109.PDB5940-13A	Wall SUW - Stud Tunnel D1	60%	15-Jun-15 A	29-Jun-15				
01109.PDB5940-1A	Wall SUW - Stud Tunnel U3	0%	07-Jul-15	29-Jul-15				
01109.PDB5910-1A	Wall SUW - Stud Tunnel U4	0%	21-Jul-15	11-Aug-15				
01109.PDB5860-1A	Wall and Roof Slab; Part 4- GL 21 to 22 (stud tunnel), U5	0%	12-Aug-15	03-Sep-15				
Station - C&S Works (Concourse Level and Above)								
Concourse Slab								
Part 4								
01109.PDB7670-12A	Roof Slab SUW - Stud Tunnel U1	60%	13-Jun-15 A	03-Jul-15				
01109.PDB7670-13A	Roof Slab SUW - Stud Tunnel D1	40%	22-Jun-15 A	29-Jun-15				
01109.PDB7670-11A	Roof Slab SUW - Stud Tunnel U2	0%	10-Jul-15*	24-Jul-15				
01109.PDB7670-1A	Roof Slab SUW - Stud Tunnel U3	0%	15-Jul-15	29-Jul-15				
01109.PDB7670-2A	Roof Slab SUW - Stud Tunnel U4	0%	28-Jul-15	11-Aug-15				
Entrance C and Associated Adits								



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- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (May 2015)
- Milestone
- MP Rev.1 Milestone
- May 2015 Milestone

Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
Entrance C - Part 2 - GL C1 to C3								
01109EI125A	EI 125 Omission of Construction Works for Adit C of Sung Wong Toi Station	100%		26-May-15 A				
Entrance C - Part 3- ELS Works								
01109.PDB11370	Traffic Diversion for site clearance, utility relocation/diversion in Ent C & Adits Area	100%	25-May-15 A	25-May-15 A				
01109.PDB11380	Utility relocation / diversion in Ent C & Adits Area	100%	25-May-15 A	25-May-15 A				
01109.PDB11390	Site clearance and Tree Felling in Ent C & Adits Area	100%	25-May-15 A	25-May-15 A				
Entrance C - Part 3- Sheet Piling & Toe Grouting Works								
01109.PDB11410	Sheet Piling & Toe grouting Works;GL C1 to C3; East Side	100%	25-May-15 A	25-May-15 A				
01109.PDB11420	Sheet Piling & Toe grouting Works;GL C1 to C3;West Side	100%	25-May-15 A	25-May-15 A				
01109.PDB11430	All Sheet piling Works for Ent C & Adits complete	100%		25-May-15 A				
Entrance C - Part 3-Excavation Works								
01109.PDB11450	Excavation & Lateral Support Works;GLC1 to C3	100%	25-May-15 A	25-May-15 A				
01109.PDB11460	All Excavation & Lateral Support Works for Ent C & Adits complete	100%		25-May-15 A				
Entrance C - Part 3- Concrete Structure Works								
01109.PDB11500	Concrete Structure GL C1 to C2 Underground	100%	25-May-15 A	25-May-15 A				
01109.PDB11510	Concrete Structure GL C2 to C3 Underground	100%	25-May-15 A	25-May-15 A				
01109.PDB11480	Prepare area for concrete Works	100%	25-May-15 A	25-May-15 A				
01109.PDB11540	All concrete work complete	100%		25-May-15 A				
01109.PDB11520	Concrete Structure GL C1 to C2 above ground	100%	25-May-15 A	25-May-15 A				
01109.PDB11530	Concrete Structure GL C2 to C3 above ground	100%	25-May-15 A	25-May-15 A				
Entrance C - Part 2 - GL C3 to C7								
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								
01109EI117A	EI 117 Suspension of Construction Works for Adit C, SUW	100%	10-Feb-15 A	25-May-15 A				
01109.PDB10730	Sheet Piling & Toe grouting Works; GL C5 to C7; Segment 1; East Side	100%	25-May-15 A	25-May-15 A				
01109.PDB10740	Sheet Piling & Toe grouting Works; GL C5 to C7; Segment 1; West Side	100%	25-May-15 A	25-May-15 A				
01109.PDB10750	All Sheet piling Works for Ent C; GL C5 to C7; Segment 1 complete	100%		25-May-15 A				
Entrance C - Part 2- Seg 1; Excavation Works								
01109.PDB10770	Excavation & Lateral Support Works for Ent C; GL C5 to C7; Segment 1	100%	25-May-15 A	25-May-15 A				
01109.PDB10780	All Excavation & Lateral Support Works; GL C5 to C7; Segment 1 complete	100%		25-May-15 A				
Entrance C - Part 1 - GL C7 to C14								
Entrance C - Part 1- ELS Works								
Entrance C - Part 1-Excavation Works								



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					Jun	Jul	Aug	Sep
01109.PDB10460	ELS Works; GL C7 to C14; complete	100%		25-May-15 A				
Entrance B and Associated Adits								
Entrance B - Olympic Avenue and SUW playground Works (GL B5 to B11)								
01109.PDB-X0190A	Olympic Avenue (Adit B1, GL B4.5-B6.5) - Removal of sheet piles at Twin rising mains	100%	15-May-15 A	25-May-15 A				
01109.PDB-X0240A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Excavation for UU support (132KV & dia. 1650FD)	50%	20-May-15 A	29-Jun-15				
01109.PDB-X0250A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -132KV & dia. 1650 FD supporting installation	100%	04-Jun-15 A	10-Jun-15 A				
01109.PDB-X0280A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Lagging installation	100%	04-Jun-15 A	16-Jun-15 A				
01109.PDB-X0300A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Installation of traffic decking	50%	12-Jun-15 A	13-Jul-15				
01109.PDB-X0260A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Excavation for inclined sleeve pipe near twin rising main	100%	15-Jun-15 A	19-Jun-15 A				
01109.PDB-X0210A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Grout hole drilling (32nos.)	0%	14-Jul-15	06-Aug-15				
01109.PDB-X0320A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Grouting (32nos.)	0%	07-Aug-15	11-Aug-15				
01109.PDB-X0330A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Abutment casting	0%	12-Aug-15	15-Aug-15				
01109.PDB-X0340A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Traffic decking (Final)	0%	16-Aug-15	20-Aug-15				
01109.PDB-X0350A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Road furniture & temp. road reinstatement	0%	16-Aug-15	19-Aug-15				
01109.PDB-X0360A	Olympic Avenue (Adit B1, GL B4.5-B6.5) -Traffic diversion	0%		20-Aug-15				
Entrance B - Kowloon City Interchange (GL B11 to B22)								
01109.PDB-X11630A	Olympic Garden -Backfilling for piling platform to G/L (10 Layer) at Pier 46	80%	13-May-15 A	02-Jul-15				
01109.PDB-X11600A	Olympic Garden -Construct well system on Zone 2 (29 nos)	100%	14-May-15 A	11-Jun-15 A				
01109.PDB-X11550A	Olympic Garden -BC & chemical grouting (GL 15.5 - 16.5) at Zone 4B (48 nos)	30%	20-May-15 A	02-Jul-15				
01109.PDB-X11560A	Olympic Garden -BC & chemical grouting (GL 13.5) at Zone 2 (38 nos)	70%	09-Jun-15 A	02-Jul-15				
01109.PDB-X11110A	Olympic Garden - Pumping test for Zone 1	40%	16-Jun-15 A	08-Jul-15				
01109.PDB-X11610A	Olympic Garden -Pumping test for Zone 2	0%	26-Jun-15	18-Jul-15				
01109.PDB-X11580A	Olympic Garden -Bulk excavation G/L to +5mPD on Zone 1 (370m3)	0%	09-Jul-15	23-Jul-15				
01109.PDB-X11580A10	Olympic Garden -Bulk excavation G/L to +5mPD on Zone 2	0%	21-Jul-15	01-Aug-15				
Entrance B - Underpinning of KNEC Piers								
Pier P74								
01109.PDB12930	Dismantle temporary steel frame	0%	13-Aug-15	20-Aug-15				
01109.PDB12940	Backfill & remove codfferdam wall	0%	21-Aug-15	02-Sep-15				
Pier P75								
01109.PDB13090	Dismantle temporary steel frame	0%	08-Aug-15	14-Aug-15				
01109.PDB13100	Backfill & remove codfferdam wall	0%	15-Aug-15	27-Aug-15				
Pier P76								
01109.PDB13250	Dismantle temporary steel frame	0%	04-Aug-15	10-Aug-15				
01109.PDB13260	Backfill & remove codfferdam wall	0%	11-Aug-15	22-Aug-15				



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					Jun	Jul	Aug	Sep
Pier P46								
01109.PDB-X11219A	Olympic Garden - Construction pilecap at Pier 46 (Suspend by MTRC on 13 May 2015)	80%	15-May-15 A	17-Jul-15				
01109.PDB-X11220A	Olympic Garden - Construction pilecap at Pier 46	0%	17-Jul-15	12-Aug-15				
01109.PDB-X11230A	Olympic Garden - Pier 46 - Installation of Temporary Supporting Frame	0%	12-Aug-15	04-Sep-15				
01109.PDB-X11240A	Olympic Garden - Pier 46 - Jack system installation	0%	04-Sep-15	11-Sep-15				
01109.PDB-X11250A	Olympic Garden - Pier 46 - Load Transfer Pier 46	0%	11-Sep-15	14-Sep-15				
01109.PDB-X11260A	Olympic Garden - Pier 46 - Demolition of Existing Pier 46 Pile Cap	0%	14-Sep-15	26-Sep-15				
Entrance B - Nam Kok Road Works - (GL B22 to B30)								
01109.PDB-X11701A	Pipe pile construction (GL 23-27) - 79 nos, Soldier pile construction (GL 23-27) - 16 nos, 4 nos per week, Week 1 of Jul	0%	26-Jun-15	04-Jul-15				
01109.PDB-X11702A	Pipe pile construction (GL 23-27) - 79 nos, Soldier pile construction (GL 23-27) - 16 nos, 4 nos per week, Week 2 of Jul	0%	05-Jul-15	11-Jul-15				
01109.PDB-X11703A	Pipe pile construction (GL 23-27) - 79 nos, Soldier pile construction (GL 23-27) - 16 nos, 4 nos per week, Week 3 of Jul	0%	12-Jul-15	18-Jul-15				
01109.PDB-X11704A	Pipe pile construction (GL 23-27) - 79 nos, Soldier pile construction (GL 23-27) - 16 nos, 4 nos per week, Week 4 of Jul	0%	19-Jul-15	25-Jul-15				
01109.PDB-X11705A	Pipe pile construction (GL 23-27) - 79 nos, Soldier pile construction (GL 23-27) - 16 nos, 4 nos per week, Week 5 of Jul	0%	26-Jul-15	01-Aug-15				
Entrance B - Nam Kok Road Works - (GL B19 to B23)								
01109.PDB-X11590A	Nam Kok Road (GL B19-B23) - Trench excavation & Gas pipe laying (1st stage)	100%	13-May-15 A	03-Jun-15 A				
01109.PDB-X11530A	Nam Kok Road (GL B19-B23) - Water pipe testing	100%	21-May-15 A	04-Jun-15 A				
01109.PDB-X11650A	Nam Kok Road (GL B19-B23) - TTMS , stage 2, phase 2 implementation	100%	01-Jun-15 A	01-Jun-15 A				
01109.PDB-X11660A	Nam Kok Road (GL B19-B23) - Trench excavation & GAS pipe laying (2nd stage)	100%	02-Jun-15 A	11-Jun-15 A				
01109.PDB-X11570A	Nam Kok Road (GL B19-B23) - Water pipe connection	100%	05-Jun-15 A	05-Jun-15 A				
01109.PDB-X11670A	Nam Kok Road (GL B19-B23) - TTMS , stage 2, phase 3 implementation	0%	26-Jun-15	27-Jun-15				
01109.PDB-X11680A	Nam Kok Road (GL B19-B23) - Excavation for low-rise drilling rib	0%	29-Jun-15	11-Jul-15				
01109.PDB-X11690A	Nam Kok Road (GL B19-B23) - Mobilization of piling machine	0%	14-Jul-15	16-Jul-15				
01109.PDB-X11700A	Nam Kok Road (GL B19-B23) - Pipe piling commencement	0%	17-Jul-15	17-Jul-15				
CC-C - TKW STATION, ENTRANCES AND ADITS								
TKW Station								
Existing Utility Diversion Works								
Water Supply								
01109.PDC1760	TKW-FW301 - at Ent C (P42) - Divert 150dia fresh Watermain	100%	08-Jun-15 A	25-Jun-15 A				
01109.PDC1770	TKW-FW302 - at Ent C (P42) - Support & protect exist 6" Fresh watermain	100%	08-Jun-15 A	25-Jun-15 A				
Top Slab, Utility, & Backfill EAST side								
Area E1-1 - GL 1 to 5.5								
01109.PDC29255A	E1-1 - Toe Grouting (remaining)	70%	23-Apr-15 A	30-Jun-15				
01109.PDC19180-1A	E1-1 - Earthwork; Excavation for roof slab concrete (1.5m)	100%	29-Apr-15 A	26-May-15 A				
01109.PDC19190	E1-1 - Steelwork; Installation of struts and walers (ELS works)	100%	07-May-15 A	01-Jun-15 A				



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01109.PDC19180-2A	E1-1 - Earthwork; Excavation for roof slab concrete (main excav)	100%	11-May-15 A	28-May-15 A					
01109.PDC19200-1A	E1-1B - Structure; Roof slab r-c works	100%	15-May-15 A	09-Jun-15 A					
01109.PDC19200-2A	E1-1A - Structure; Roof slab r-c works	100%	21-May-15 A	15-Jun-15 A					
01109.PDC19210	E1-1 - Structure; Waterproofing of roof slab	100%	10-Jun-15 A	19-Jun-15 A					
01109.PDC19210A	E1-1 - Structure; Remove strut & walers; Install Retaining Wall	70%	12-Jun-15 A	30-Jun-15					
01109.PDC19230	E1-1 - Earthwork; Backfill for road reinstatement	52%	16-Jun-15 A	07-Jul-15					
01109.PDC29265A	E1-1 - Testing (remaining)	0%	26-Jun-15	07-Jul-15					
01109.PDC19240	E1-1 - Pavement for next TTM	0%	08-Jul-15	14-Jul-15					
Area E2-1 - GL 5.5 to 10									
01109.PDC8310-1A	E2-1 - Earthwork; Excavation for roof slab concrete (1.5m)	65%	16-Jun-15 A	27-Jun-15					
01109.PDC8310-2A	E2-1 - Earthwork; Excavation for roof slab concrete (main excav)	65%	22-Jun-15 A	30-Jun-15					
01109.PDC8320	E2-1 - Steelwork; Installation of struts and walers (ELS works)	0%	26-Jun-15	30-Jun-15					
01109.PDC8330	E2-1 - Structure; Roof slab r-c works	0%	29-Jun-15	07-Jul-15					
01109.PDC8340	E2-1 - Structure; Waterproofing of roof Slab	0%	08-Jul-15	09-Jul-15					
01109.PDC1927A	E2-1 - Structure; Remove strut & walers; Install Retaining Wall	0%	10-Jul-15	22-Jul-15					
01109.PDC8360	E2-1 - Earthwork; Backfill	0%	15-Jul-15	25-Jul-15					
01109.PDC29237A	E2-1 - Toe Grouting (remaining)	0%	18-Jul-15	29-Jul-15					
01109.PDC8370	E2-1 - Pavement for next TTM	0%	30-Jul-15	06-Aug-15					
Area E2-2 - GL 10 to 12.5									
01109.PDC5120-1A	E2-2 - Earthwork; Excavation for roof slab concrete (1.5m)	100%	16-May-15 A	30-May-15 A					
01109.PDC5130	E2-2 - Steelwork; Installation of struts and walers (ELS works)	100%	20-May-15 A	05-Jun-15 A					
01109.PDC5120-2A	E2-2 - Earthwork; Excavation for roof slab concrete (main excav)	100%	28-May-15 A	02-Jun-15 A					
01109.PDC5140	E2-2 - Structure; Roof slab r-c works	100%	29-May-15 A	11-Jun-15 A					
01109.PDC5150	E2-2 - Structure; Waterproofing of roof Slab	100%	12-Jun-15 A	15-Jun-15 A					
01109.PDC1926A	E2-2 - Structure; Remove strut & walers; Install Retaining Wall	100%	12-Jun-15 A	24-Jun-15 A					
01109.PDC5170	E2-2 - Earthwork; Backfill for road reinstatement	7%	25-Jun-15 A	30-Jun-15					
01109.PDC5180	E2-2 - Pavement for next TTM	0%	02-Jul-15	08-Jul-15					
Area E2-3 - GL 12.5 to 15									
01109.PDC9010	E2-3 - Pumping Test	100%	12-May-15 A	15-Jun-15 A					
01109.PDC11594A	W2-2a - Remove Sheet Pile	100%	04-Jun-15 A	23-Jun-15 A					
01109.PDC8870-1A	E2-3 - Earthwork; Excavation for roof slab concrete (1.5m)	37%	19-Jun-15 A	27-Jun-15					
01109.PDC29374-3A	EI No. 121 - (BMW FG) Drilling and grouting - 3 holes	0%	26-Jun-15	29-Jun-15					
01109.PDC8870-2A	E2-3 - Earthwork; Excavation for roof slab concrete (main excav)	0%	26-Jun-15	02-Jul-15					
01109.PDC8880	E2-3 - Steelwork; Installation of struts and walers (ELS works)	0%	27-Jun-15	02-Jul-15					



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01109.PDC8890	E2-3 - Structure; Roof slab r-c works	0%	02-Jul-15	15-Jul-15				
01109.PDC8900	E2-3 - Structure Waterproofing of roof slab	0%	15-Jul-15	18-Jul-15				
01109.PDC1925A	E2-3 - Structure; Remove strut & walers; Install Retaining Wall	0%	18-Jul-15	28-Jul-15				
01109.PDC8920	E2-3 - Earthwork; Backfill for road reinstatement	0%	23-Jul-15	31-Jul-15				
01109.PDC8930	E2-3 - Pavement for next TTM	0%	28-Jul-15	04-Aug-15				
Area E3-1 - GL 15 to 17								
01109.PDC6050	E3-1 - Pumping Test	100%	27-Apr-15 A	03-Jun-15 A				
01109.PDC29238A	E3-1 - Toe Grouting (remaining)	100%	04-May-15 A	30-May-15 A				
01109.PDC5950-1A	E3-1 - Earthwork; Excavation for roof slab concrete (1.5m)	100%	01-Jun-15 A	10-Jun-15 A				
01109.PDC5950-2A	E3-1 - Earthwork; Excavation for roof slab concrete (main excav)	100%	03-Jun-15 A	22-Jun-15 A				
01109.PDC5960	E3-1 - Structure; Roof slab r-c works	40%	19-Jun-15 A	03-Jul-15				
01109.PDC6680A	E3-1 - Steelwork; Installation of struts and walers (ELS works)	0%	26-Jun-15	26-Jun-15				
01109.PDC5970	E3-1 - Structure Waterproofing of roof slab	0%	04-Jul-15	09-Jul-15				
01109.PDC1924A	E3-1 - Structure; Remove strut & walers; Install Retaining Wall	0%	10-Jul-15	22-Jul-15				
01109.PDC5990	E3-1 - Earthwork; Backfill for road reinstatement	0%	15-Jul-15	27-Jul-15				
01109.PDC6000	E3-1 - Pavement for next TTM	0%	28-Jul-15	01-Aug-15				
Area E3-2 - GL 17 to 19.5								
01109.PDC6790	E3-2 - Pumping Test	100%	27-Apr-15 A	03-Jun-15 A				
01109.PDC29239A	E3-2 - Toe Grouting (remaining)	100%	29-Apr-15 A	28-May-15 A				
01109.PDC6690-1A	E3-2 - Earthwork; Excavation for roof slab concrete (1.5)	100%	30-May-15 A	10-Jun-15 A				
01109.PDC6690-2A	E3-2 - Earthwork; Excavation for roof slab concrete (main excav)	100%	03-Jun-15 A	19-Jun-15 A				
01109.PDC6700	E3-2 - Structure; Roof slab r-c works	40%	19-Jun-15 A	04-Jul-15				
01109.PDC6710	E3-2 - Structure; Waterproofing of roof slab	0%	07-Jul-15	10-Jul-15				
01109.PDC1923A	E3-2 - Structure; Remove strut & walers; Install Retaining Wall	0%	11-Jul-15	23-Jul-15				
01109.PDC6730	E3-2 - Earthwork; Backfill for road reinstatement	0%	16-Jul-15	28-Jul-15				
01109.PDC6740	E3-2 - Pavement for next TTM	0%	29-Jul-15	06-Aug-15				
Area E3-3 - GL 19.5 to 21.5								
01109.PDC8410	E3-3 - Pumping Test	100%	27-Apr-15 A	10-Jun-15 A				
01109.PDC29240A	E3-3 - Toe Grouting (remaining)	100%	29-Apr-15 A	28-May-15 A				
01109.PDC11595A10	W3-2 (W8) - Remove Sheet Pile	100%	27-May-15 A	27-May-15 A				
01109.PDC8110-1A	E3-3 - Earthwork; Excavation for roof slab concrete (1.5m)	100%	04-Jun-15 A	23-Jun-15 A				
01109.PDC8110-2A	E3-3 - Earthwork; Excavation for roof slab concrete (main excav)	80%	18-Jun-15 A	26-Jun-15				
01109.PDC8140	E3-3 - Structure; Roof slab r-c works	10%	22-Jun-15 A	07-Jul-15				
01109.PDC8120	E3-3 - Steelwork; Installation of struts and walers (ELS works)	100%	23-Jun-15 A	23-Jun-15 A				



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					Jun	Jul	Aug	Sep
01109.PDC29241-1A	E3-3 - Remedial Works P94 (remaining)	0%	01-Jul-15	12-Jul-15				
01109.PDC8150	E3-3 - Structure; Waterproofing of roof slab	0%	08-Jul-15	10-Jul-15				
01109.PDC1922A	E3-3 - Structure; Remove strut & walers	0%	11-Jul-15	11-Jul-15				
01109.PDC8170	E3-3 - Earthwork; Backfill for road reinstatement	0%	14-Jul-15	27-Jul-15				
01109.PDC29195A	E3-3 - Shear Pin	0%	28-Jul-15	13-Aug-15				
01109.PDC8180	E3-3 - Pavement for next TTM	0%	10-Aug-15	18-Aug-15				
Area E6-1 - GL 21.5 to 25								
01109.PDC10026A	E6-1 - Earthwork; Excavation for roof slab concrete (1.5 m)	100%	28-Apr-15 A	27-May-15 A				
01109.PDC29395A	E6-1 - Steelwork; Installation of struts and walers (ELS works)	100%	11-May-15 A	30-May-15 A				
01109.PDC10022A	E6-1 - Earthwork; Excavation for roof slab concrete (main excav)	100%	12-May-15 A	30-May-15 A				
01109.PDC29405-1A	E6-1 - Structure; Roof slab r-c works	100%	13-May-15 A	03-Jun-15 A				
01109.PDC19212A	E6-1 - Structure; Remove strut & walers; Install Retaining Wall	80%	04-Jun-15 A	27-Jun-15				
01109.PDC29415A	E6-1 - Structure; Waterproofing of roof Slab	100%	05-Jun-15 A	18-Jun-15 A				
01109.PDC29405-2A	E6-1A - Structure; Roof slab r-c works	100%	08-Jun-15 A	16-Jun-15 A				
01109.PDC29425A	E6-1 - Earthwork; Backfill for road reinstatement	67%	10-Jun-15 A	03-Jul-15				
01109.PDC29196A	E6-1 - Shear Pin	0%	27-Jun-15	31-Jul-15				
01109.PDC8180A	E6-1 - Pavement for next TTM	0%	28-Jul-15	05-Aug-15				
Area E6-2 - GL 25 to 28								
01109.PDC29195	E6-2 - Shear Pin	58%	02-Jun-15 A	15-Jul-15				
01109.PDC16231A	Bus Stop Shifting	0%	01-Aug-15	10-Aug-15				
Entrance D Diaphragm Wall during EAST side Top Slab								
Entrance D - Founding Level Pre-drill								
01109.PDC18160	Stg 2 Ent D - P: 1,5,2,4,3 - GI Report & Confirmation of Founding Levels	100%	15-May-15 A	12-Jun-15 A				
BC Cutter 1								
01109.PDC23970	E1 (Ent D) - Dwall works P8 (under TKW Flyover)	100%	13-May-15 A	26-May-15 A				
01109.PDC26790	Stg 3 Ent D - Dwall works - P3	100%	22-May-15 A	05-Jun-15 A				
01109.PDC23960	E1 (Ent D) - Dwall works P7	100%	30-May-15 A	11-Jun-15 A				
01109.PDC23900	E1 (Ent D) - Dwall works P10 (under TKW Flyover)	90%	09-Jun-15 A	27-Jun-15				
01109.PDC23920	E1 (Ent D) - Dwall works P136 (under TKW Flyover)	60%	19-Jun-15 A	16-Jul-15				
01109.PDC23410	E1 (Ent D) - Dwall works P134 (under TKW Flyover)	0%	08-Jul-15	27-Jul-15				
01109.PDC23930	E1 (Ent D) - Dwall works P9 (under TKW Flyover)	0%	22-Jul-15	13-Aug-15				
01109.PDC23890	E1 (Ent D) - Dwall works P135 (under TKW Flyover)	0%	05-Aug-15	27-Aug-15				
BC Cutter 4								
01109.PDC26740	Stg 3 Ent D - Dwall works - P153	100%	06-May-15 A	02-Jun-15 A				



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- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (May 2015)
- Milestone
- MP Rev.1 Milestone
- May 2015 Milestone

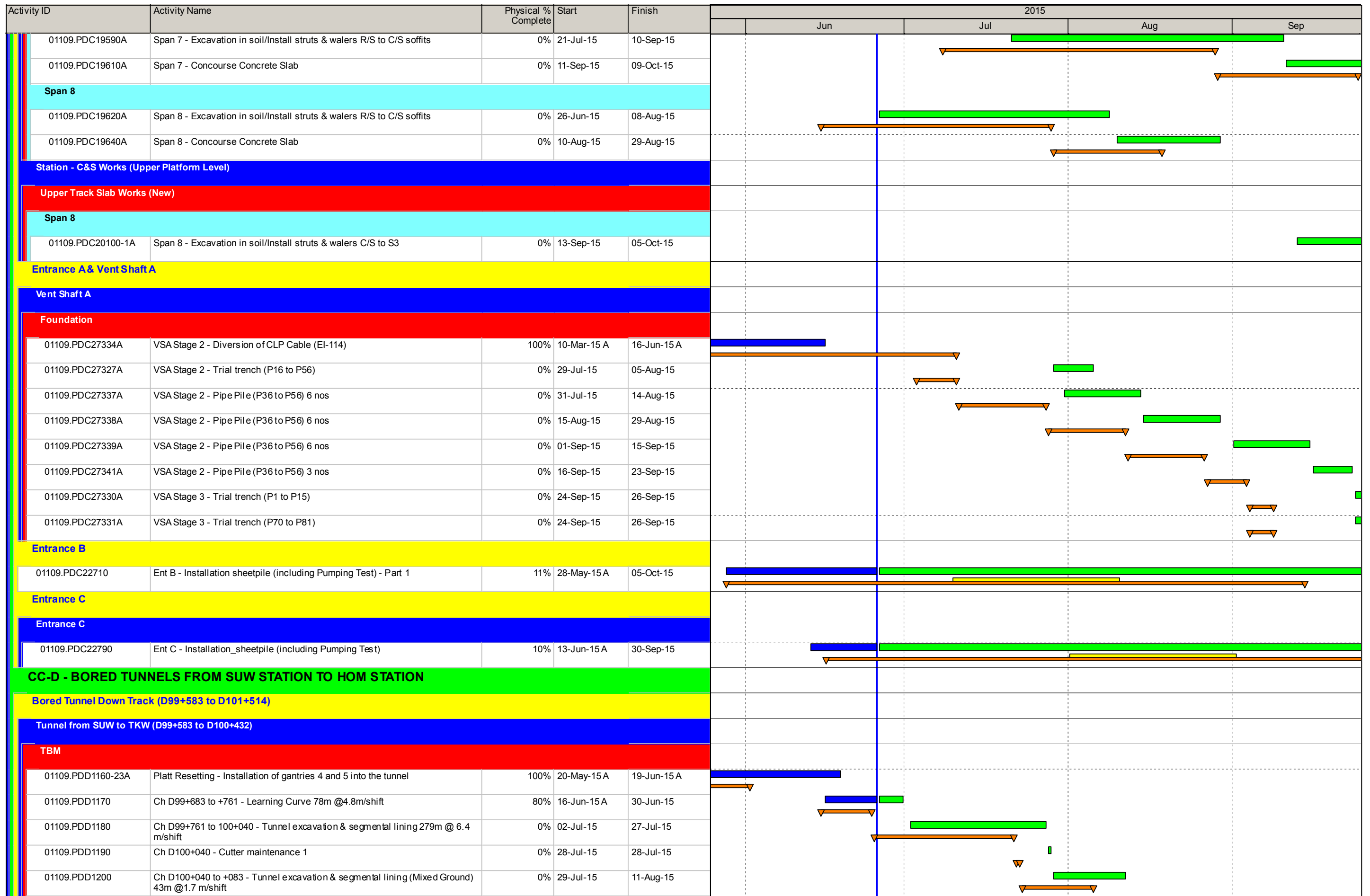
Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
01109.PDC26670	Stg 3 Ent D - Dwall works - P149 (Part 2 - excav)	100%	28-May-15 A	08-Jun-15 A				
01109.PDC26750	Stg 3 Ent D - Dwall works - P2	100%	08-Jun-15 A	22-Jun-15 A				
01109.PDC29375-2A	Stg 3 Ent D - Dwall works - P149 (Part 2 - excav, rebar, conc)	60%	17-Jun-15 A	30-Jun-15				
01109.PDC26730	Stg 3 Ent D - Dwall works - P156	0%	02-Jul-15	17-Jul-15				
01109.PDC26770	Stg 3 Ent D - Dwall works - P4	0%	15-Jul-15	28-Jul-15				
01109.PDC26780	Stg 3 Ent D - Dwall works - P155	0%	25-Jul-15	07-Aug-15				
01109.PDC26710	Stg 3 Ent D - Dwall works - P1	0%	05-Aug-15	18-Aug-15				
01109.PDC26760	Stg 3 Ent D - Dwall works - P154	0%	15-Aug-15	31-Aug-15				
Area E1 (Ent D) - Post Concrete Works								
01109.PDC18530	Stg 2 Ent D - Toe Grouting	28%	09-Jun-14 A	21-Sep-15				
01109.PDC18020	Stg 2 Ent D - Dwall testing	31%	29-Apr-15 A	08-Sep-15				
01109.PDC3960	E1 (Ent D) - Dwall testing (under Flyover)	17%	13-Jun-15 A	04-Sep-15				
01109.PDC3950	E1 (Ent D) - Dwall Toe grouting (under Flyover)	0%	28-Aug-15	16-Sep-15				
01109.PDC19100	Steelwork; Installation of sheet piles of 48m x 2lanes x 10m	0%	21-Sep-15	06-Oct-15				
Station - C&S Works (Concourse Level and above)								
Concourse Slab Works (new)								
Span 1								
01109.PDC19260A	Span 1 - Excavation in soil/Install struts & walers R/S to C/S soffits	0%	27-Jul-15	29-Aug-15				
01109.PDC19280A	Span 1 - Concourse Concrete Slab	0%	31-Aug-15	19-Sep-15				
Span 2								
01109.PDC19290A	Span 2 - Excavation in soil/Install struts & walers R/S to C/S soffits	0%	02-Jul-15	22-Aug-15				
01109.PDC19310A	Span 2 - Concourse Concrete Slab	0%	24-Aug-15	14-Sep-15				
Span 3								
01109.PDC19350A	Span 3 - Excavation in soil/Install struts & walers R/S to C/S soffits	0%	30-Jul-15	19-Sep-15				
01109.PDC19370A	Span 3 - Concourse Concrete Slab	0%	21-Sep-15	14-Oct-15				
Span 4								
01109.PDC19410A	Span 4 - Excavation in soil/Install struts & walers R/S to C/S soffits	0%	13-Jul-15*	29-Aug-15				
01109.PDC19430A	Span 4 - Concourse Concrete Slab	0%	31-Aug-15	30-Sep-15				
Span 5								
01109.PDC19470A	Span 5 - Excavation in soil/Install struts & walers R/S to C/S soffits	0%	01-Aug-15	21-Sep-15				
01109.PDC19490A	Span 5 - Concourse Concrete Slab	0%	21-Sep-15	27-Oct-15				
Span 6								
01109.PDC19530A	Span 6 - Excavation in soil/Install struts & walers R/S to C/S soffits	0%	11-Aug-15	02-Oct-15				
Span 7								



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Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
01109.PDD1210	Ch D100+083 - Cutter maintenance 2	0%	12-Aug-15	12-Aug-15				
01109.PDD1220	Ch D100+083 to 100+224 - Tunnel excavation & segmental lining (Rock) 141m @3.3 m/shift	0%	13-Aug-15	04-Sep-15				
01109.PDD1230	Ch D100+224 - Cutter maintenance 3	0%	05-Sep-15	05-Sep-15				
01109.PDD1240	Ch D100+224 to 100+287 - Tunnel excavation & segmental lining (Mixed Ground) 63m @1.7 m/shift	0%	07-Sep-15	29-Sep-15				
Chatham Road North								
EEP (EI No.52)								
EI 52 - Preparation Works								
01109.PDDEI52004	EI 52 - Grout Curtain to shaft	0%	31-Aug-15	30-Oct-15				
Pipe Pile (remaining - Rig No.1)								
01109.PDDEI52260A	EI 52 - Pipe Piling Works P4 (drilling)	100%	23-May-15 A	27-May-15 A				
01109.PDDEI52160A	EI 52 - Pipe Piling Works P3 (drilling)	100%	27-May-15 A	29-May-15 A				
01109.PDDEI52240A	EI 52 - Pipe Piling Works P2 (drilling)	100%	30-May-15 A	02-Jun-15 A				
01109.PDDEI52150A	EI 52 - Pipe Piling Works P14 (drilling)	100%	04-Jun-15 A	05-Jun-15 A				
01109.PDDEI52350A	EI 52 - Pipe Piling Works P26 (drilling)	100%	05-Jun-15 A	08-Jun-15 A				
01109.PDDEI52171A	EI 52 - H Pile Installation	18%	05-Jun-15 A	12-Sep-15				
01109.PDDEI52330A	EI 52 - Pipe Piling Works P25 (drilling)	100%	09-Jun-15 A	11-Jun-15 A				
01109.PDDEI52310A	EI 52 - Pipe Piling Works P24 (drilling)	100%	12-Jun-15 A	15-Jun-15 A				
01109.PDDEI52290A	EI 52 - Pipe Piling Works P23 (drilling)	100%	15-Jun-15 A	18-Jun-15 A				
01109.PDDEI52020A	EI 52 - Pipe Piling Works P22 (drilling)	100%	18-Jun-15 A	22-Jun-15 A				
01109.PDDEI52050A	EI 52 - Pipe Piling Works P21 (drilling)	100%	23-Jun-15 A	25-Jun-15 A				
01109.PDDEI52121A	EI 52 - Pipe Piling Works P31 (drilling)	0%	26-Jun-15	29-Jun-15				
01109.PDDEI52110A	EI 52 - Pipe Piling Works P32 (drilling)	0%	30-Jun-15	03-Jul-15				
01109.PDDEI52111A	EI 52 - Pipe Piling Works P33 (drilling)	0%	04-Jul-15	07-Jul-15				
01109.PDDEI52100A	EI 52 - Pipe Piling Works P34 (drilling)	0%	08-Jul-15	10-Jul-15				
01109.PDDEI52102A	EI 52 - Pipe Piling Works P35 (drilling)	0%	11-Jul-15	14-Jul-15				
01109.PDDEI52090A	EI 52 - Pipe Piling Works P36 (drilling)	0%	15-Jul-15	17-Jul-15				
01109.PDDEI52093A	EI 52 - Pipe Piling Works P37 (drilling)	0%	18-Jul-15	21-Jul-15				
01109.PDDEI52080A	EI 52 - Pipe Piling Works P38 (drilling)	0%	22-Jul-15	24-Jul-15				
01109.PDDEI52320A	EI 52 - Pipe Piling Works P39 (drilling)	0%	25-Jul-15	28-Jul-15				
01109.PDDEI52070A	EI 52 - Pipe Piling Works P40 (drilling)	0%	29-Jul-15	31-Jul-15				
01109.PDDEI52071A	EI 52 - Pipe Piling Works P41 (drilling)	0%	01-Aug-15	04-Aug-15				
01109.PDDEI52060A	EI 52 - Pipe Piling Works P42 (drilling)	0%	05-Aug-15	07-Aug-15				
01109.PDDEI52340A	EI 52 - Pipe Piling Works P43 (drilling)	0%	08-Aug-15	11-Aug-15				
01109.PDDEI52040A	EI 52 - Pipe Piling Works P44 (drilling)	0%	12-Aug-15	14-Aug-15				



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Activity ID	Activity Name	Physical % Complete	Start	Finish	2015			
					Jun	Jul	Aug	Sep
01109.PDDEI52370A	EI 52 - Pipe Piling Works P45 (drilling)	0%	15-Aug-15	18-Aug-15				
01109.PDDEI52210A	EI 52 - Pipe Piling Works P17 (drilling)	0%	19-Aug-15*	21-Aug-15				
01109.PDDEI52190A	EI 52 - Pipe Piling Works P16 (drilling)	0%	22-Aug-15	25-Aug-15				
01109.PDDEI52170A	EI 52 - Pipe Piling Works P15 (drilling)	0%	26-Aug-15	28-Aug-15				
To Kwa Wan Ancillary Building								
Excavation and Foundation								
Stage 3								
01109.PDD3150-1A	Soft Excavation to -6.75 mPD and PU grouting	100%	15-May-15 A	30-May-15 A				
01109.PDD3180	Install 4th layer Ring Beam at -6mPD (modified)	100%	04-Jun-15 A	05-Jun-15 A				
Stage 4								
01109.PDD3170-2A	Rock / Corestone Excavation at -7.25 mPD from 2 Jun 2015	80%	02-Jun-15 A	07-Jul-15				
01109.PDD3180A	Install 5th layer Ring Beam at -9.5mPD (modified)	0%	08-Jul-15	10-Jul-15				
Stage 5								
01109.PDD3191A	Excavate shaft rock to -11.5mPD	0%	11-Jul-15	27-Jul-15				
01109.PDD3192A	Excavate shaft rock to -12.8mPD	0%	28-Jul-15	11-Aug-15				
01109.PDD3194A	Excavate shaft rock to -13.25mPD	0%	12-Aug-15	15-Aug-15				
01109.PDD3200A	Excavate shaft rock to -14.5mPD	0%	18-Aug-15	01-Sep-15				
01109.PDD3201A	Excavate shaft rock to -15.46mPD	0%	02-Sep-15	11-Sep-15				
01109.PDD3210	Excavate shaft rock to -18.4mPD	0%	12-Sep-15	15-Oct-15				
Stage 5 Summary								
01109.PDD3140	Commence TAM grout ground improvement works	0%	11-Jul-15	11-Aug-15				
CC-E - REPROVISIONING, REMEDIAL AND IMPROVEMENT WORKS (RRIW)								
General C & S Works								
KS33								
01109.PDE1050-32A	BC grouting for KS33	0%	26-Jun-15	10-Jul-15				
01109.PDE1050-4A	Pumping test for KS33	0%	11-Jul-15	09-Aug-15				
01109.PDE1050-5A	Excavation for KS33	0%	10-Aug-15	08-Oct-15				
KS34								
01109.PDE1051-25A	Pipe piling for KS34 - Backfilling for piling platform	100%	29-Apr-15 A	28-May-15 A				
01109.PDE1051-2A	Pipe piling for KS34	40%	29-May-15 A	11-Aug-15				
01109.PDE1051-3A	Grout curtain for KS34	0%	12-Aug-15	20-Sep-15				
01109.PDE1051-4A	Pumping test for KS34	0%	21-Sep-15	20-Oct-15				



MTR Corporation Limited
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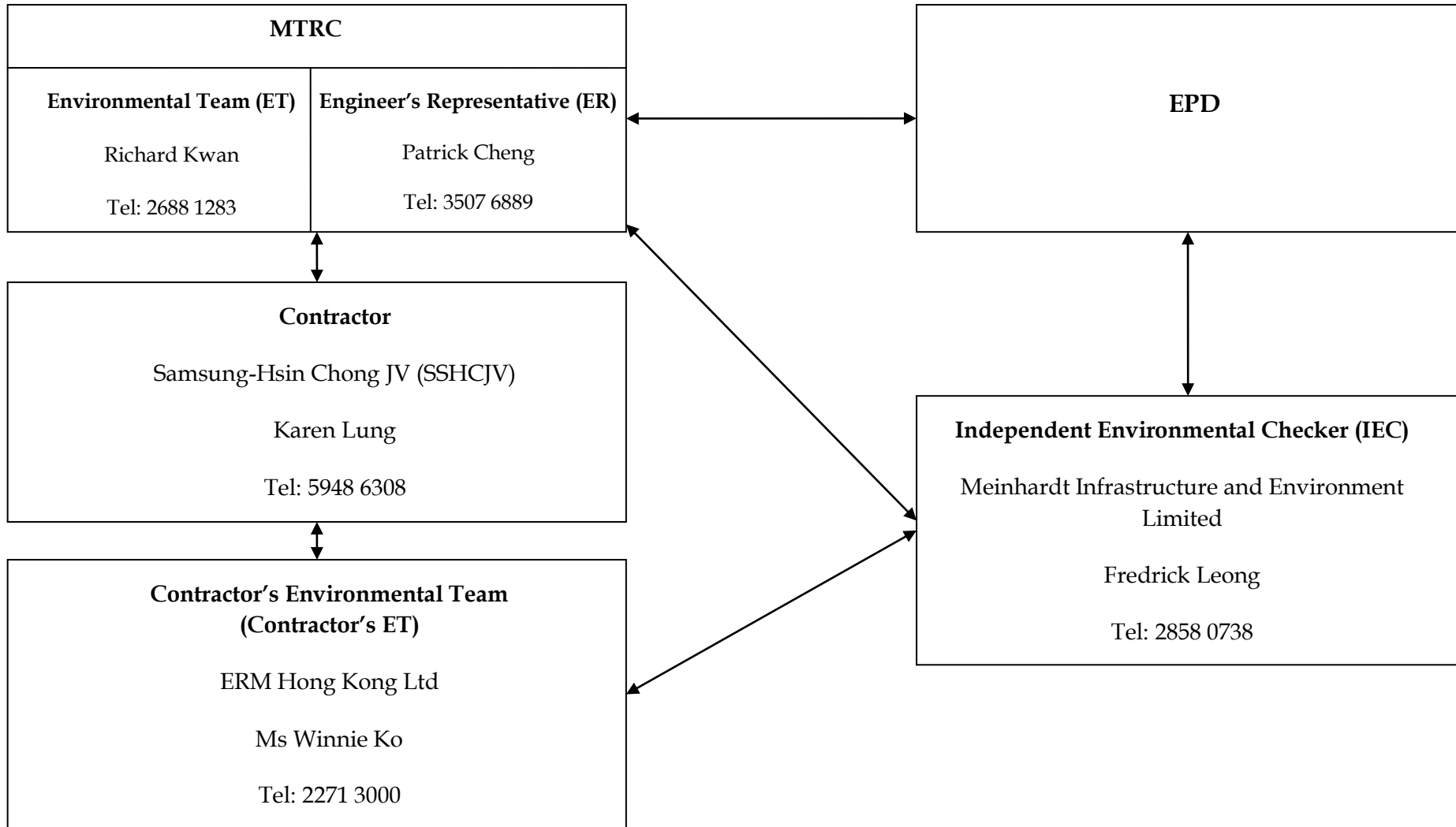
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Annex C

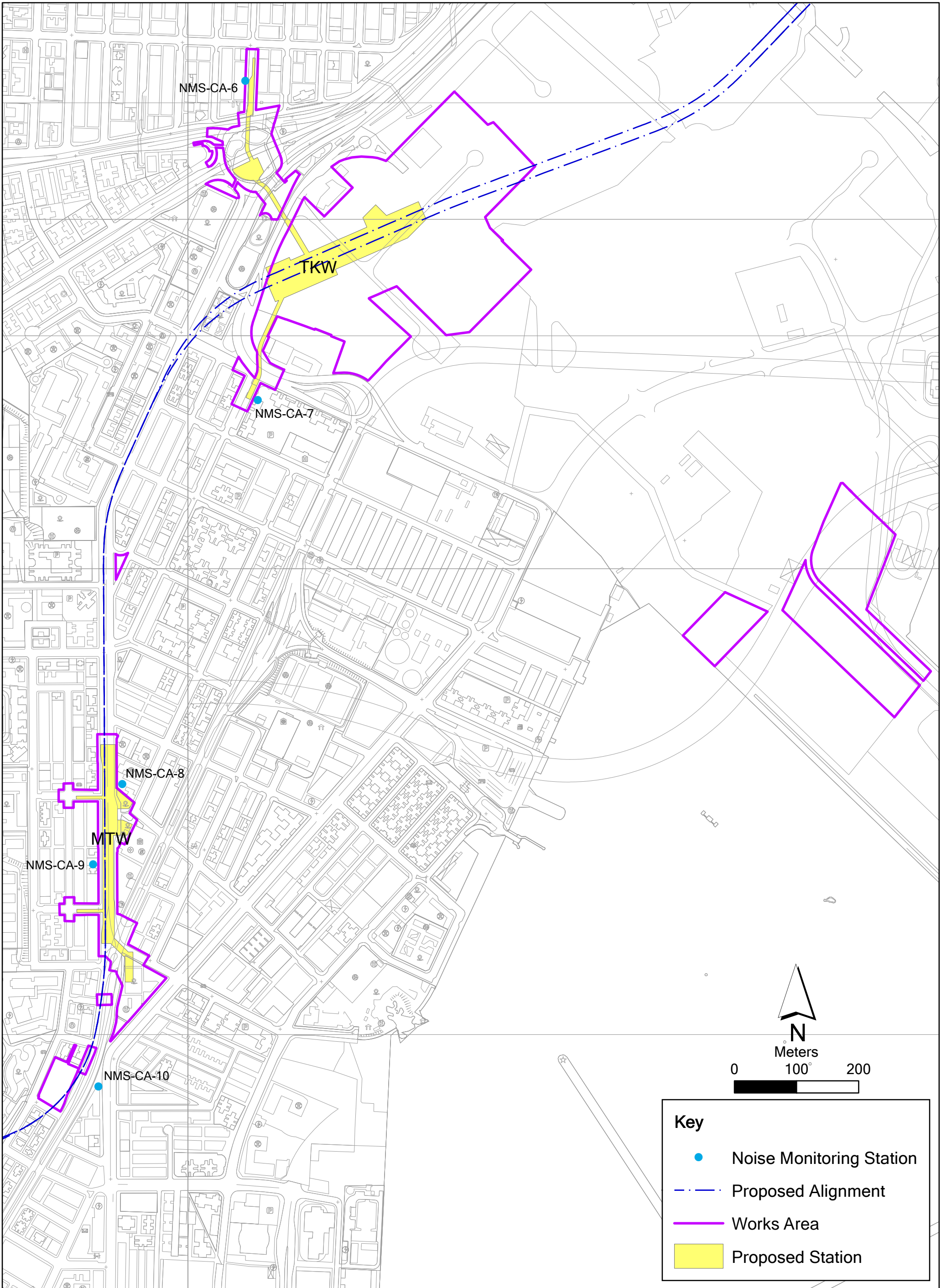
Project Organization Chart and Contact Detail

Annex C Project Organization of SCL Works Contract 1109



Annex D

Locations of Noise and Dust Monitoring Stations



Key

- Noise Monitoring Station
- - - Proposed Alignment
- ▭ Works Area
- ▭ Proposed Station

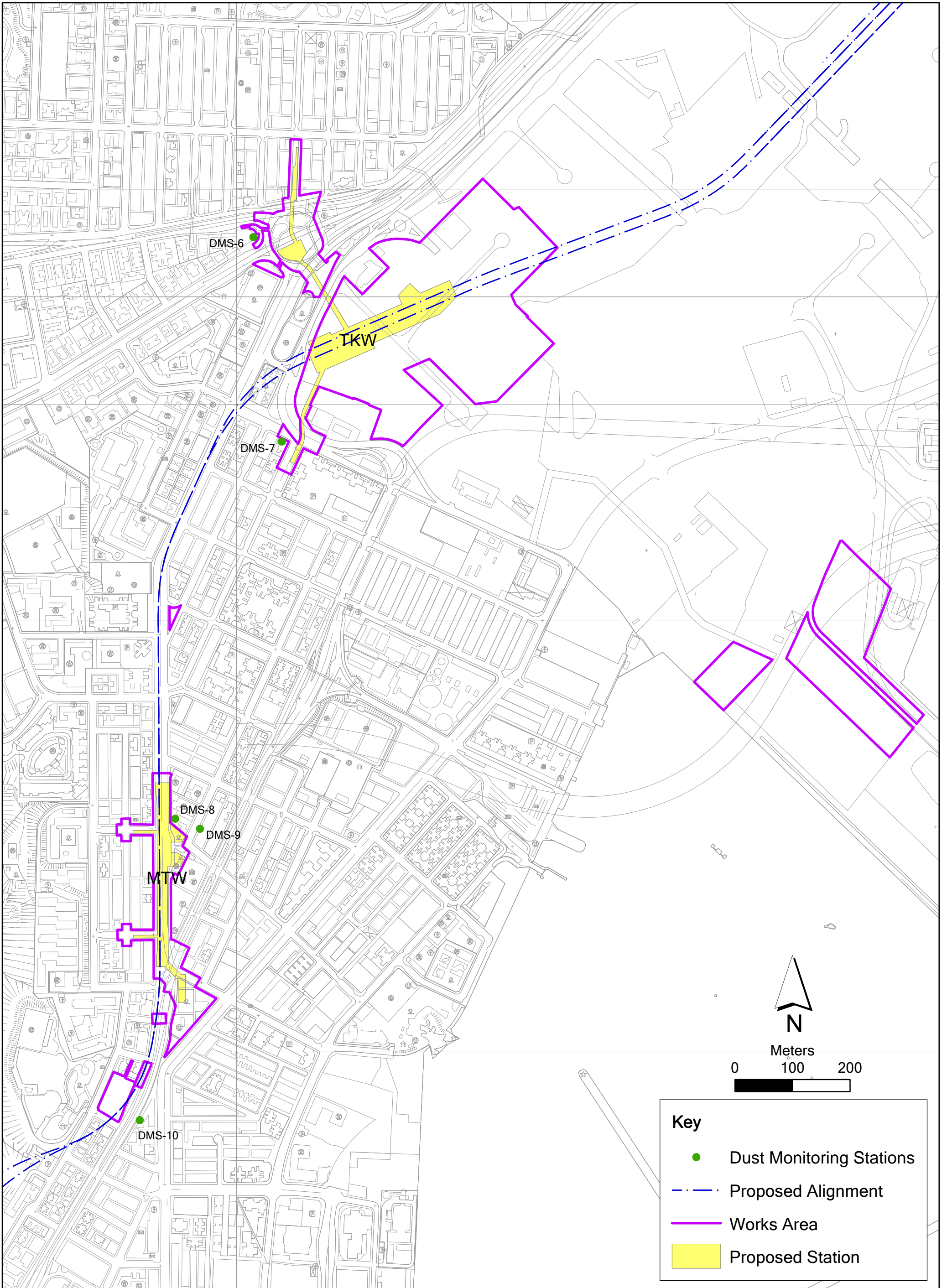
Annex D1

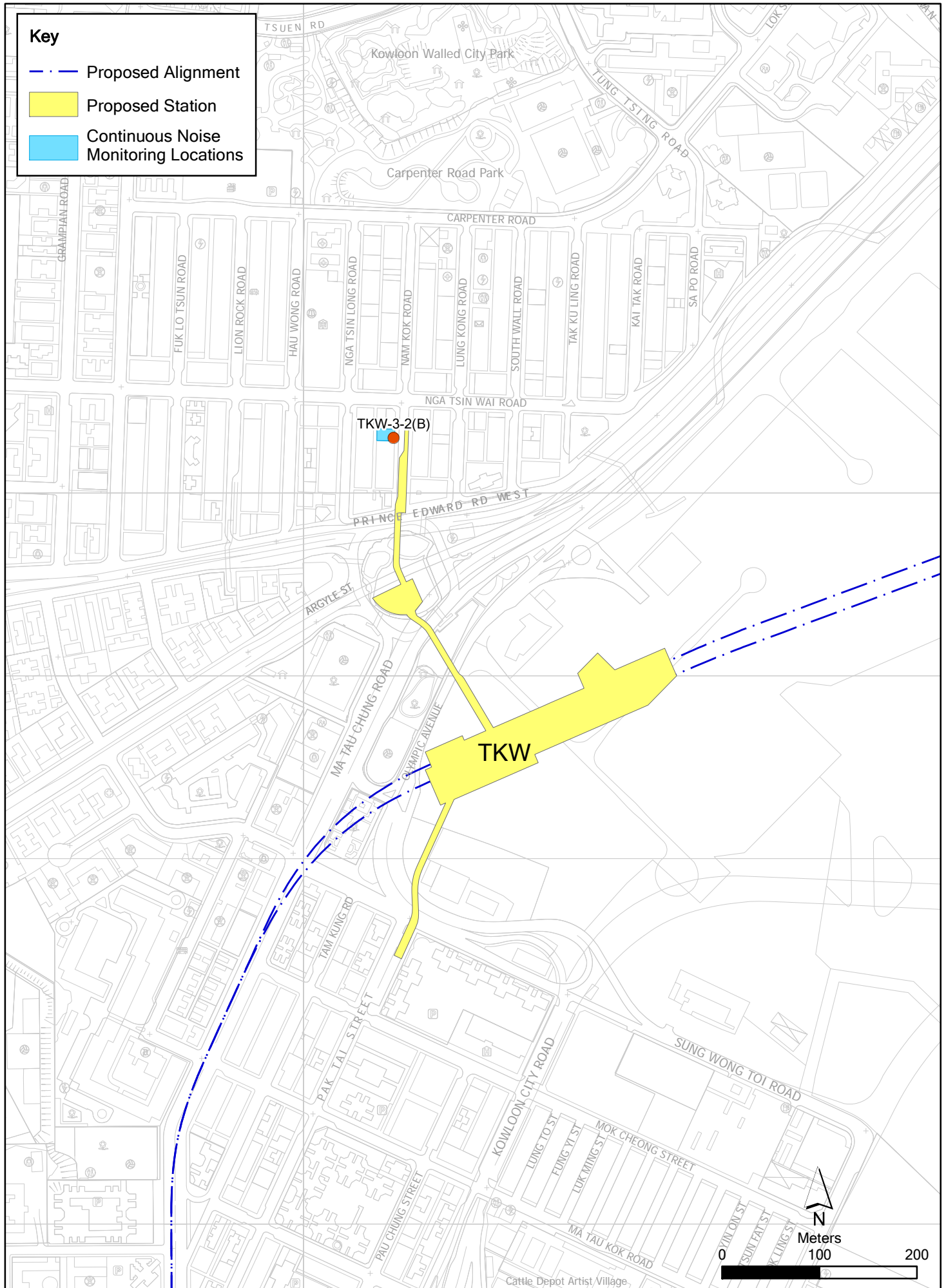
Location of Regular Construction Noise Monitoring Stations

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Date: 12/08/2014

Environmental
Resources
Management







Key


- - - Proposed Alignment
- Proposed Station
- Continuous Noise Monitoring Locations

Figure 2.2a

Continuous Noise Monitoring Locations

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 Date: 5/11/2014

Environmental Resources Management



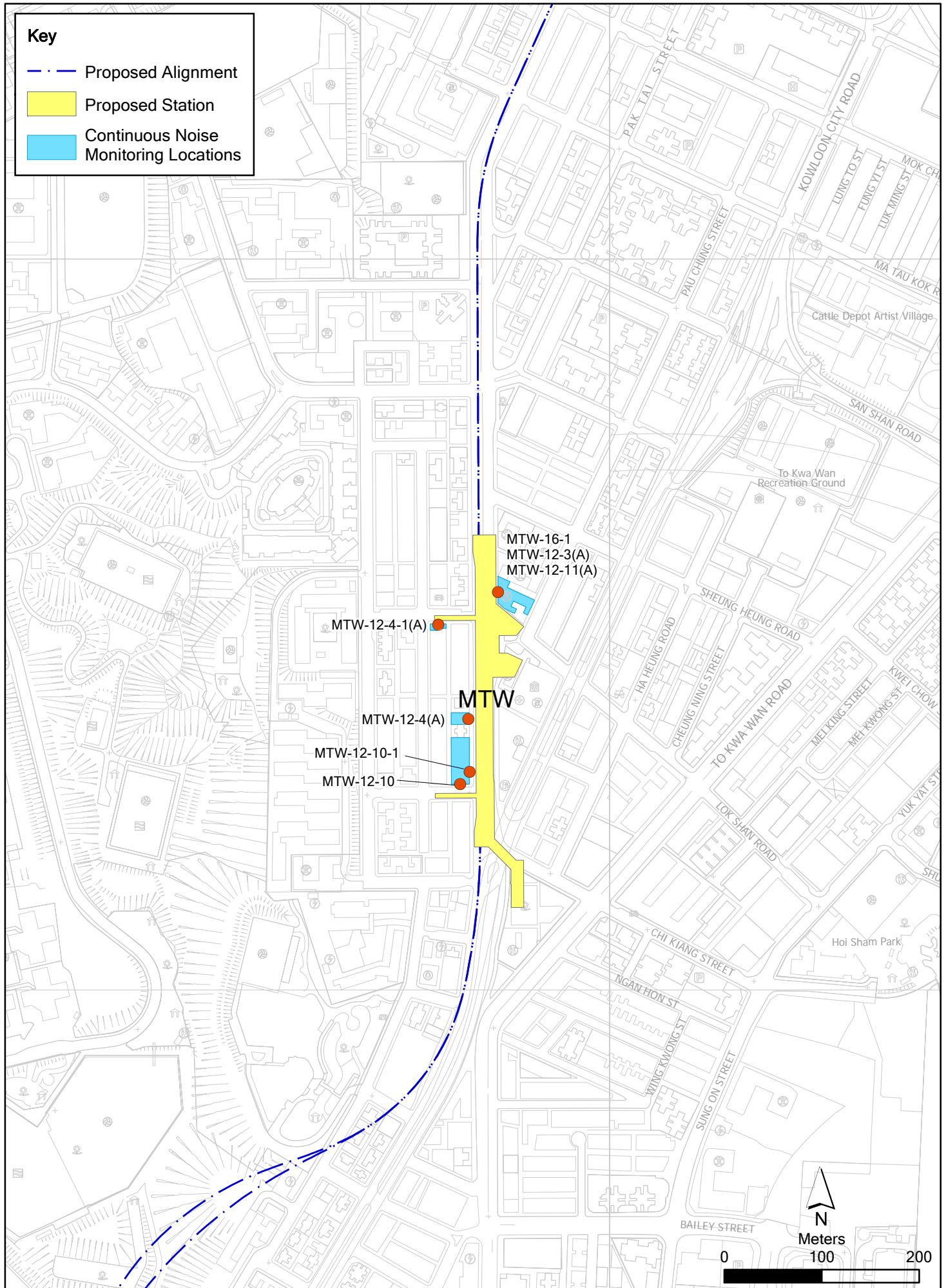


Figure 2.2b

Continuous Noise Monitoring Locations

Environmental
Resources
Management



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 Dust Monitoring Schedule**

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Jun	02-Jun	03-Jun	04-Jun	05-Jun	06-Jun
		24-hr TSP Monitoring				
07-Jun	08-Jun	09-Jun	10-Jun	11-Jun	12-Jun	13-Jun
	24-hr TSP Monitoring				24-hr TSP Monitoring	
14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun
				24-hr TSP Monitoring		Public Holiday
21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun
			24-hr TSP Monitoring			
28-Jun	29-Jun	30-Jun				
	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: July 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jul	02-Jul	03-Jul	04-Jul
			Public Holiday		24-hr TSP Monitoring	
05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul
				24-hr TSP Monitoring		
12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul
			24-hr TSP Monitoring			
19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul
		24-hr TSP Monitoring				
26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	
	24-hr TSP Monitoring				24-hr TSP 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 : June 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Jun	02-Jun	03-Jun	04-Jun	05-Jun	06-Jun
		Noise Monitoring				
07-Jun	08-Jun	09-Jun	10-Jun	11-Jun	12-Jun	13-Jun
	Noise Monitoring					
14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun
				Noise Monitoring		Public Holiday
21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun
			Noise Monitoring			
28-Jun	29-Jun	30-Jun				
	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 : July 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jul	02-Jul	03-Jul	04-Jul
			Public Holiday		Noise Monitoring	
05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul
				Noise Monitoring		
12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul
			Noise Monitoring			
19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul
		Noise Monitoring				
26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	
	Noise 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 March 2015	5 September 2015
DMS-7	Parc 22	TE-5170 (S/N 3574)	CM-AIR-43 (Orifice I.D. 2454)	5 March 2015	5 September 2015
DMS-8	SHK Good Shepherd Primary School	TE-5170 (S/N 3572)	CM-AIR-43 (Orifice I.D. 2454)	5 March 2015	5 September 2015
DMS-9	No. 12 Pau Chung Street	TE-5170 (S/N 0814)	CM-AIR-43 (Orifice I.D. 2454)	5 March 2015	5 September 2015
DMS-10	Chat Ma Mansion	TE-5170 (S/N 3573)	CM-AIR-43 (Orifice I.D. 2454)	5 March 2015	5 September 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
	Calibrator	Rion NC-73 (S/N 10997142)	14 June 2015	14 June 2016
	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
	Calibrator	Rion NC-73 (S/N 10997142)	14 June 2015	14 June 2016
	Sound Level Meter	Rion NL-31 (S/N 00320533)	28 June 2014	28 June 2015
	Sound Level Meter	Rion NL-31 (S/N 00320533)	14 June 2015	14 June 2016
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

Monitoring Station ID	Monitoring Equipment	Model & Serial No.	Last Calibration Date	Next Calibration Date
	Sound Level Meter	Rion NL-31 (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 : 05/03/2015

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) : 1014
Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.6	3.582	1.726	54	54.49
2 13 holes	9.6	3.126	1.506	46	46.41
3 10 holes	7.2	2.707	1.305	38	38.35
4 7 holes	4.4	2.116	1.020	28	28.25
5 5 holes	2.6	1.627	0.784	20	20.18

Sampler Calibration Relationship (Linear Regression)

Slope(m): 36.578 Intercept(b): -8.855 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan

Date: 08/03/2015

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-7(Parc 22)
 Calibrated by : K.T.Ho
 Date : 05/03/2015

Sampler

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

Calibration Office 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) : 1014
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.6	3.582	1.726	66	66.59
2 13 holes	9.6	3.126	1.506	58	58.52
3 10 holes	7.4	2.745	1.323	52	52.47
4 7 holes	4.8	2.2116	1.065	43	43.39
5 5 holes	3.0	1.748	0.842	36	36.32

Sampler Calibration Relationship (Linear Regression)

Slope(m):34.270 Intercept(b):7.165 Correlation Coefficient(r):0.9997

Checked by: Magnum Fan

Date: 08/03/2015

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-8(SHK Good Shepherd Primary School)
Calibrated by : K.T.Ho
Date : 05/03/2015

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) : 1014
Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.6	3.582	1.726	62	62.56
2 13 holes	9.8	3.159	1.522	56	56.50
3 10 holes	7.8	2.818	1.358	50	50.45
4 7 holes	5.0	2.256	1.087	40	40.36
5 5 holes	2.8	1.688	0.814	30	30.27

Sampler Calibration Relationship (Linear Regression)

Slope(m):35.832 Intercept(b):1.397 Correlation Coefficient(r):0.9993

Checked by: Magnum Fan

Date: 08/03/2015

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-9(No. 12 Pau Chung Street)
 Calibrated by : K.T.Ho
 Date : 05/03/2015

Sampler

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

Calibration Office 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) : 1014
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.8	3.610	1.739	70	70.63
2 13 holes	10.0	3.191	1.537	60	60.54
3 10 holes	7.8	2.818	1.358	53	53.48
4 7 holes	5.0	2.256	1.087	42	42.38
5 5 holes	2.8	1.688	0.814	30	30.27

Sampler Calibration Relationship (Linear Regression)

Slope(m): 42.925 Intercept(b): -4.652 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan

Date: 08/03/2015

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-10(Chat Ma Mansion)
 Calibrated by : K.T.Ho
 Date : 05/03/2015

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) : 1014
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.0	3.495	1.684	62	62.56
2 13 holes	9.8	3.159	1.522	57	57.51
3 10 holes	7.2	2.707	1.305	50	50.45
4 7 holes	4.6	2.164	1.043	43	43.39
5 5 holes	2.2	1.497	0.721	32	32.29

Sampler Calibration Relationship (Linear Regression)

Slope(m):31.092 Intercept(b):10.217 Correlation Coefficient(r):0.9993

Checked by: Magnum Fan

Date: 08/03/2015



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 Rootmeter 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 = 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 }



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

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 : 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).

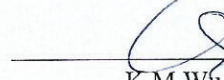
The test equipment used for calibration are traceable to National Standards via :

- 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. : C153241

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-1330)

Date of Receipt / 收件日期 : 10 June 2015

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

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 : 14 June 2015

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
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

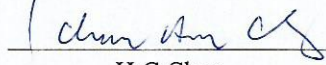
Tested By

測試


K C Lee
Project Engineer

Certified By

核證


H C Chan
Engineer

Date of Issue

簽發日期

16 June 2015

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

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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. : C153241
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	93.7	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.986	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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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

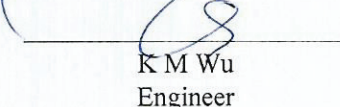
TEST RESULTS / 測試結果

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 : 23 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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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	± 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. : 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)

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. : 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 ^a	
			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

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

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. : 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 _A max				200 ms	105.0	-1.0 ± 1.0
	L _A	Slow	Continuous		106.0	Ref.	
	L _A max		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)

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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)

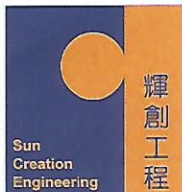
- The uncertainties are for a confidence probability of not less than 95 %.

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.

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. : C153242

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-1330)

Date of Receipt / 收件日期 : 10 June 2015

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 : 14 June 2015

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).

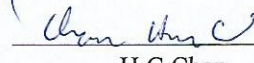
The test equipment used for calibration are traceable to National Standards via :

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

Tested By :
測試


K C Lee
Project Engineer

Certified By :
核證


H C Chan
Engineer

Date of Issue : 16 June 2015
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

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Website/網址: www.suncreation.com

Page 1 of 4

Certificate of Calibration

校正證書

Certificate No. : C153242

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 form 6.1.1.2 to 6.4.
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	C150014
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 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	93.4	± 0.7

- 6.1.1.2 After Adjustment

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	94.0	± 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	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

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.

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Certificate of Calibration

校正證書

Certificate No. : C153242

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)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L _A	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 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)	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	54.3	-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	90.8	-3.2 ± 1.0
					1 kHz	94.0	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	90.1	-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. : C153242
證書編號

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	90.6	-3.0 ± 1.5
					63 Hz	93.0	-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	93.9	-0.2 ± 1.0
					4 kHz	93.4	-0.8 ± 1.0
					8 kHz	91.1	-3.0 (+1.5; -3.0)
					12.5 kHz	88.2	-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)	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.					1/10 ²	90	90.0	± 0.5
								1/10 ³	80	80.0	± 1.0
								5 min.	1/10 ⁴	70	70.0

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	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)
	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.

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. : 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 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

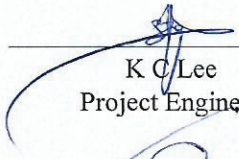
DATE OF TEST / 測試日期 : 5 July 2014

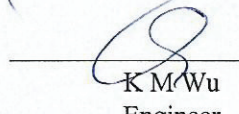
TEST RESULTS / 測試結果

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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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.

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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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*

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

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

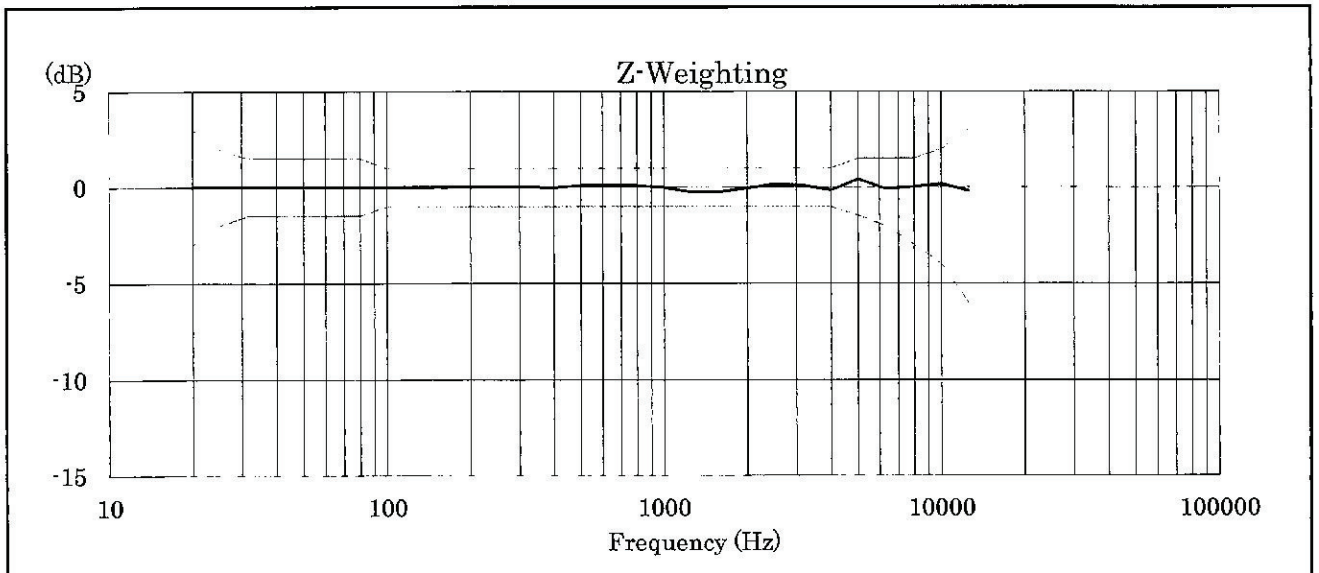
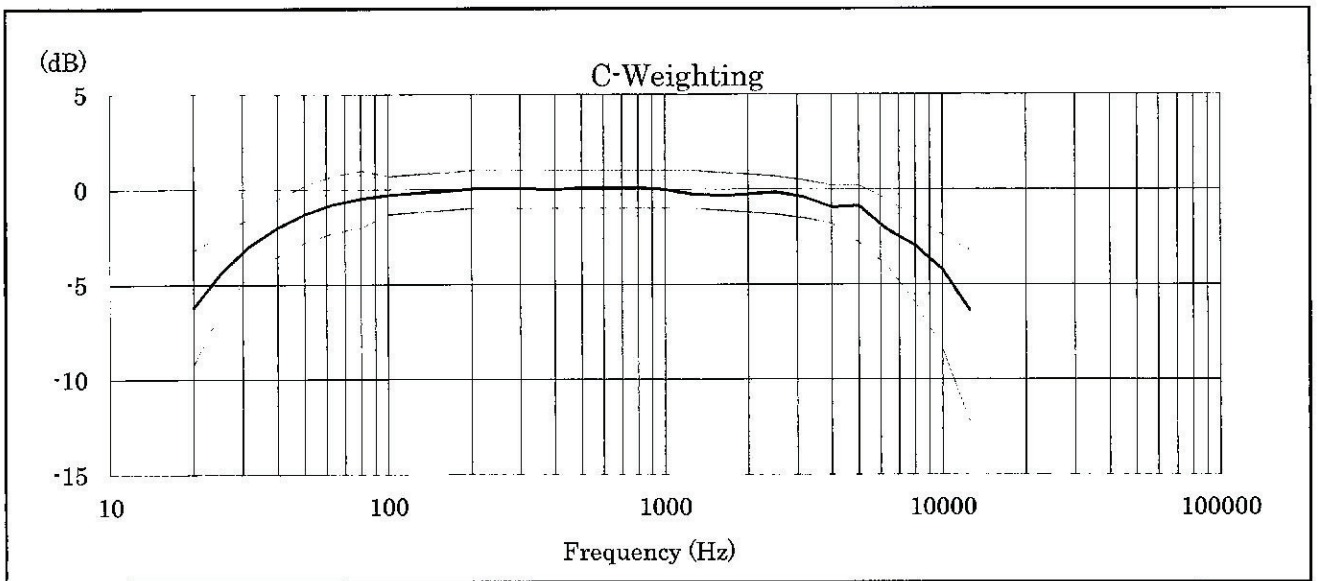
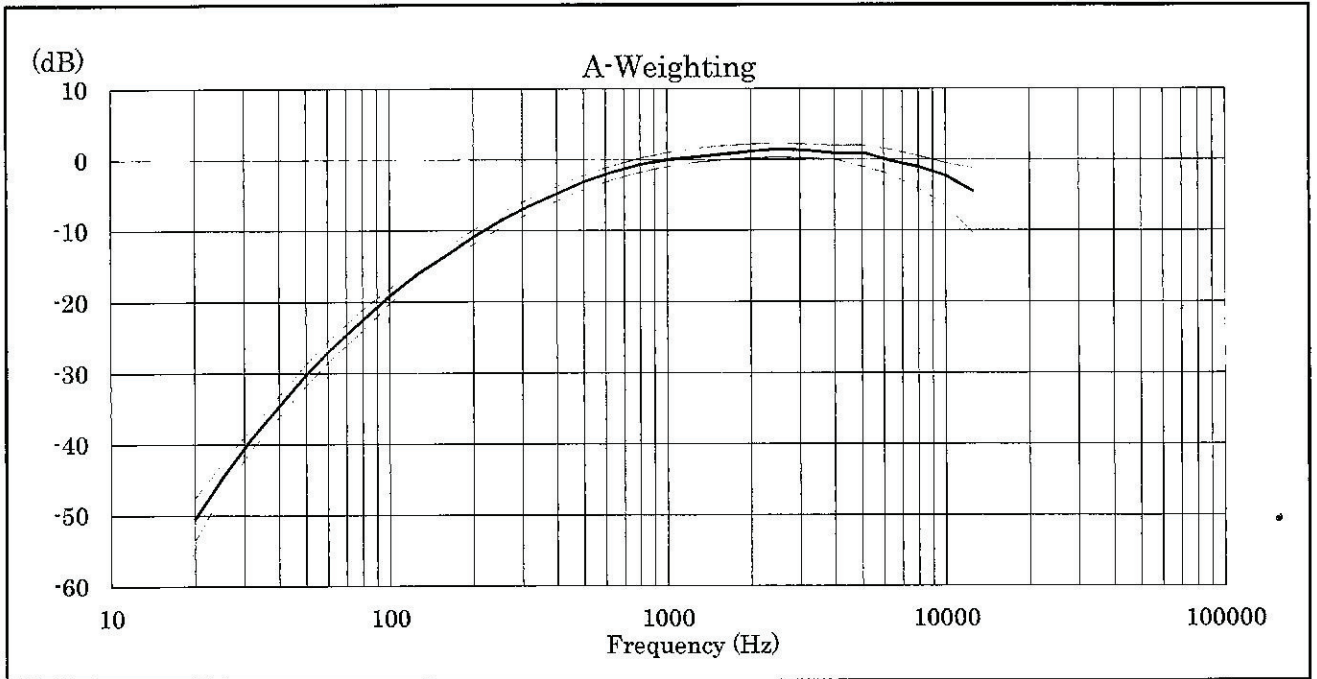
ANSI S1.43-1997 Type 1

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

Frequency	Indicated value	Difference with Reference signal level (dB)					
		25.0	74.0	94.0	98.0	114.0	136.0
31.5 Hz	-0.2	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

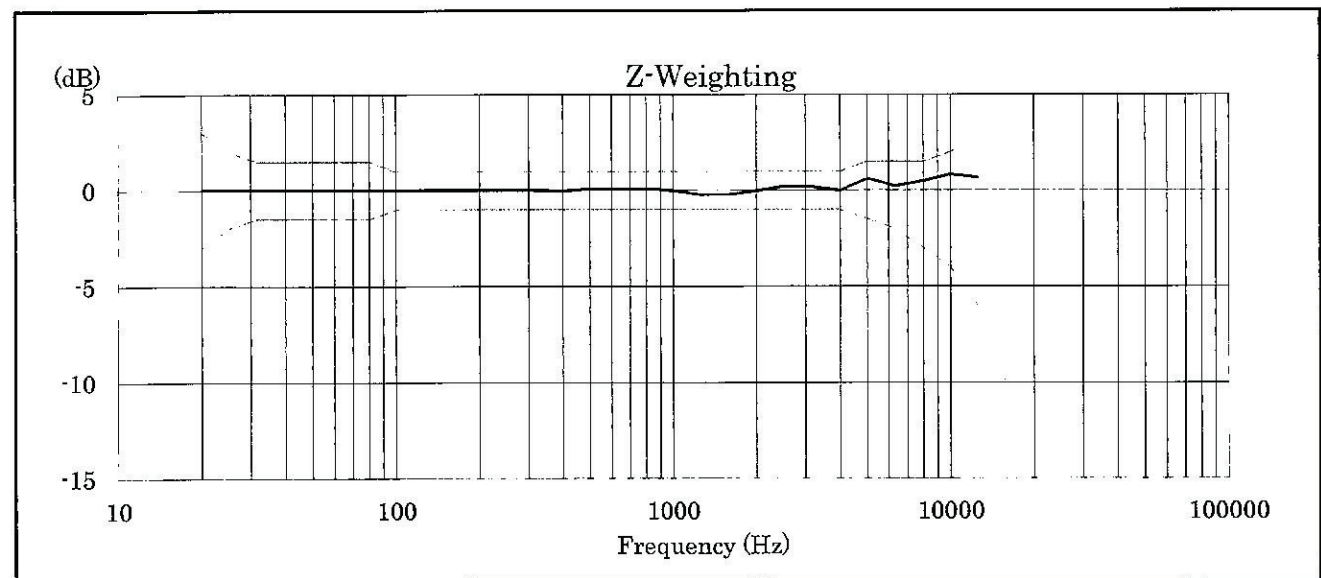
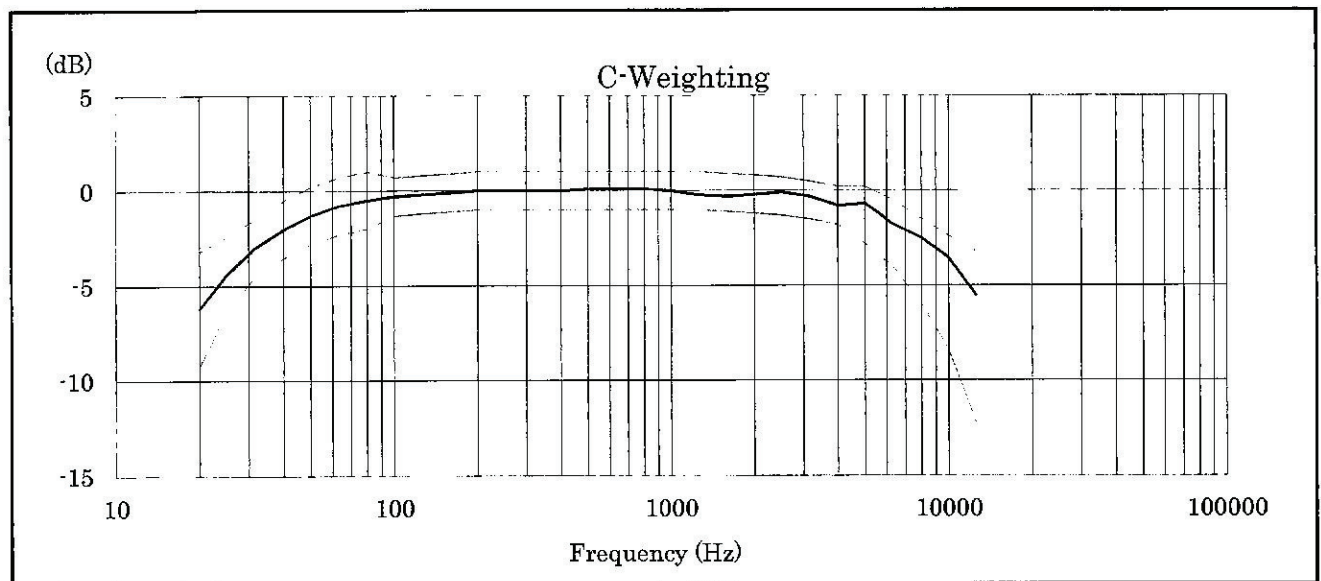
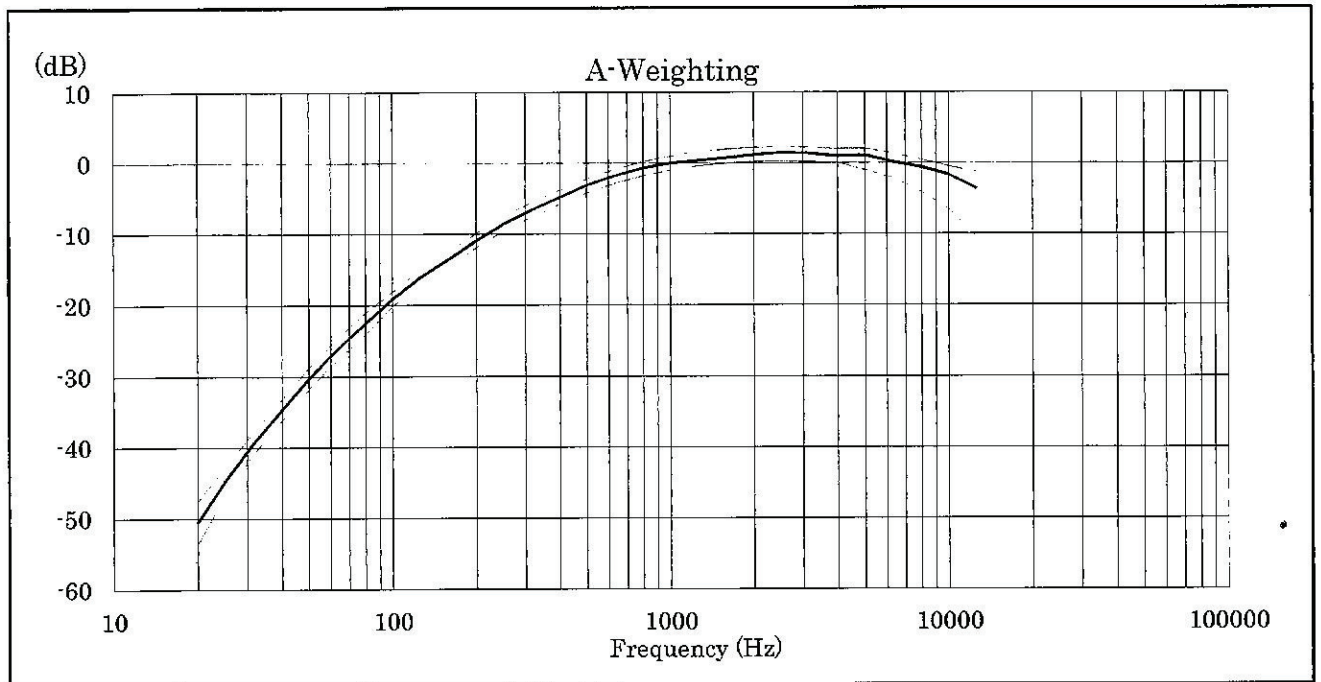
ANSI S1.43-1997 Type 1

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

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 : 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.

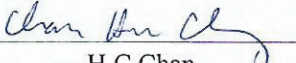
The results are detailed in the subsequent page(s).

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

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Page 1 of 2



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Sun Creation Engineering Limited
Calibration and Testing Laboratory

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.

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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



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.

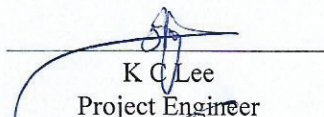
All results are within manufacturer's specification. (after adjustment)

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

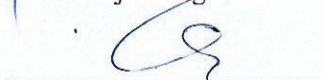
The test equipment used for calibration are traceable to National Standards via :

- 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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Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C144808
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 the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
- 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 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.

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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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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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Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

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.					
		<u>No-intrusion Zone</u>					
		<ul style="list-style-type: none"> To maximize protection to existing trees, ground vegetation and associated understorey 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. 					
		<u>Protection of Retained Trees</u>					
		<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 					

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>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></p> <p>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. <p>Participation in a local collection scheme</p>	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
02-Jun-15	10:50	11:20	Fine	64.1	76.1	-(b)	-	Traffic noise	30	0.5	NL-18 00360030	NC-73 10997142
08-Jun-15	11:00	11:30	Fine	64.7	76.1	-(b)	-	Traffic noise	31	0.5	NL-18 00360030	NC-73 10786708
18-Jun-15	10:58	11:28	Sunny	64.2	76.1	-(b)	-	Traffic noise	31	0.5	NL-18 00360030	NC-73 10786708
24-Jun-15	10:40	11:10	Cloudy	64.1	76.1	-(b)	-	Traffic noise	29	0.5	NL-18 00360030	NC-73 10786708
29-Jun-15	10:58	11:28	Sunny	62.6	76.1	-(b)	-	Traffic noise	30	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
02-Jun-15	9:52	10:22	Fine	65.9	70.0	-(b)	-	Traffic noise	30	0.5	NL-18 00360030	NC-73 10997142
08-Jun-15	9:58	10:28	Fine	65.0	70.0	-(b)	-	Traffic noise	31	0.5	NL-18 00360030	NC-73 10997142
18-Jun-15	9:57	10:27	Sunny	64.7	70.0	-(b)	-	Traffic noise	31	0.5	NL-18 00360030	NC-73 10997142
24-Jun-15	9:55	10:25	Cloudy	65.9	70.0	-(b)	-	Traffic noise	29	0.5	NL-18 00360030	NC-73 10997142
29-Jun-15	10:00	10:30	Sunny	64.8	70.0	-(b)	-	Traffic noise	30	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
02-Jun-15	15:15	15:45	Fine	80.0	75.4	78.2	-	Traffic noise	30	0.5	NL-31 00320533	NC-73 10997142
08-Jun-15	12:07	12:37	Fine	78.3	75.4	75.1	-	Traffic noise	31	0.5	NL-31 00320533	NC-73 10997142
18-Jun-15	12:15	12:45	Sunny	75.1	75.4	-(b)	-	Traffic noise	31	0.5	NL-31 00320533	NC-73 10997142
24-Jun-15	14:03	14:33	Cloudy	80.1	75.4	78.4	-	Traffic noise	29	0.5	NL-31 00320533	NC-73 10997142
29-Jun-15	11:35	12:05	Sunny	76.7	75.4	70.6	-	Traffic noise	30	0.5	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
02-Jun-15	8:00	8:30	Fine	74.7	69.2	73.3	Breaker	Traffic noise	30	0.5	NL-18 00360030	NC-73 10997142
08-Jun-15	8:00	8:30	Fine	73.2	69.2	71.0	Breaker	Traffic noise	31	0.5	NL-18 00360030	NC-73 10997142
18-Jun-15	8:00	8:30	Sunny	74.5	69.2	73.0	Breaker	Traffic noise	31	0.5	NL-18 00360030	NC-73 10997142
24-Jun-15	8:00	8:30	Cloudy	73.2	69.2	71.0	Breaker	Traffic noise	29	0.5	NL-18 00360030	NC-73 10997142
29-Jun-15	8:00	8:30	Sunny	74.2	69.2	72.5	Breaker, Backhoe	Traffic noise	30	0.5	NL-18 00360030	NC-73 10997142

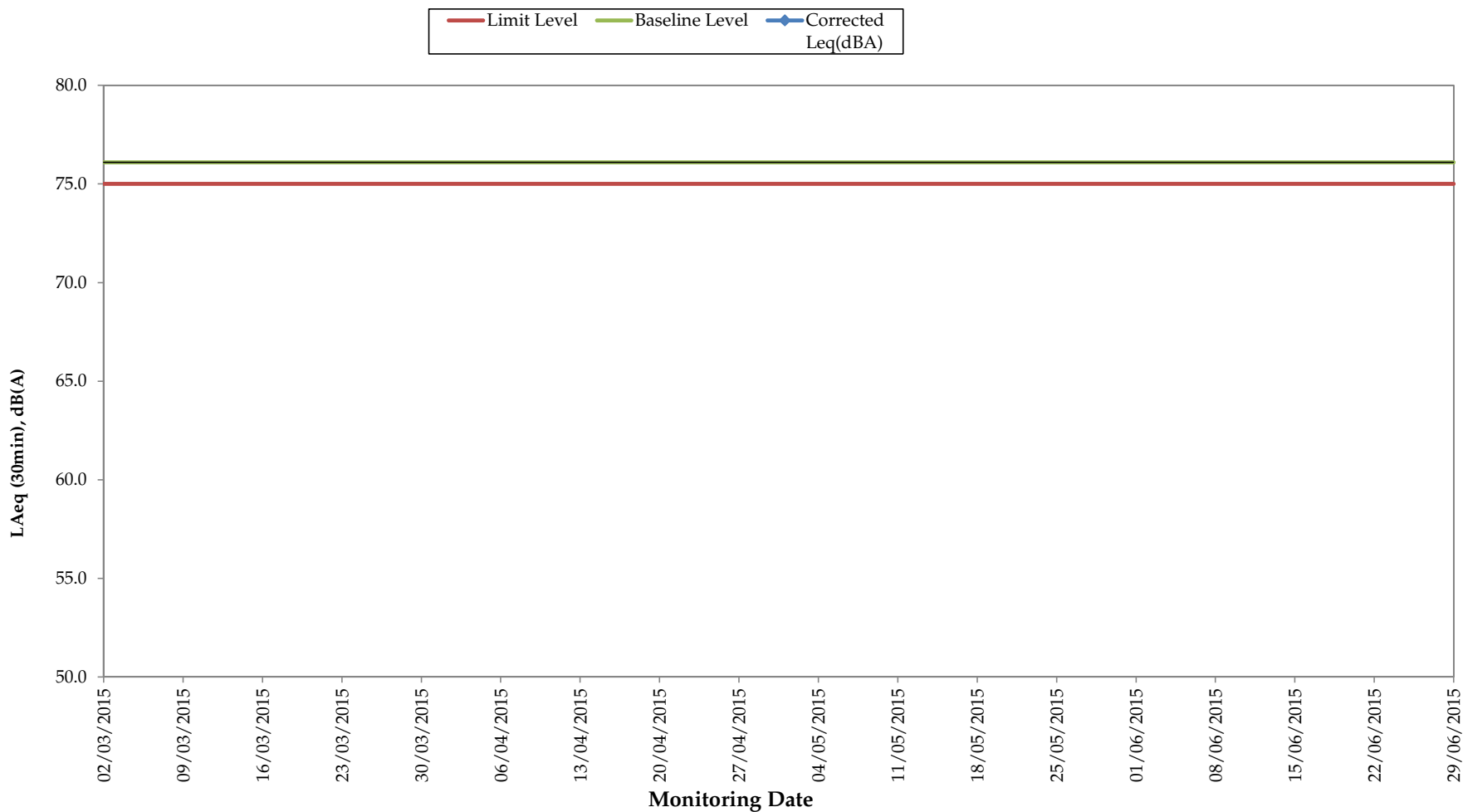
Station NMS-CA-10 Chat Ma Mansion

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
02-Jun-15	8:40	9:10	Fine	76.4	76.6	-(b)	Backhoe	Traffic noise	30	0.5	NL-18 00360030	NC-73 10997142
08-Jun-15	8:40	9:10	Fine	75.9	76.6	-(b)	Breaker	Traffic noise	31	0.5	NL-18 00360030	NC-73 10997142
18-Jun-15	8:40	9:10	Sunny	75.3	76.6	-(b)	Breaker	Traffic noise	31	0.5	NL-18 00360030	NC-73 10997142
24-Jun-15	8:40	9:10	Cloudy	76.0	76.6	-(b)	Backhoe	Traffic noise	29	0.5	NL-18 00360030	NC-73 10997142
29-Jun-15	8:40	9:10	Sunny	76.1	76.6	-(b)	Backhoe	Traffic noise	30	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 results carried out at NMS-CA-8 on 2 and 24 June 2015 and at NMS-CA-10 on 2, 8, 24 and 29 June 2015 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.

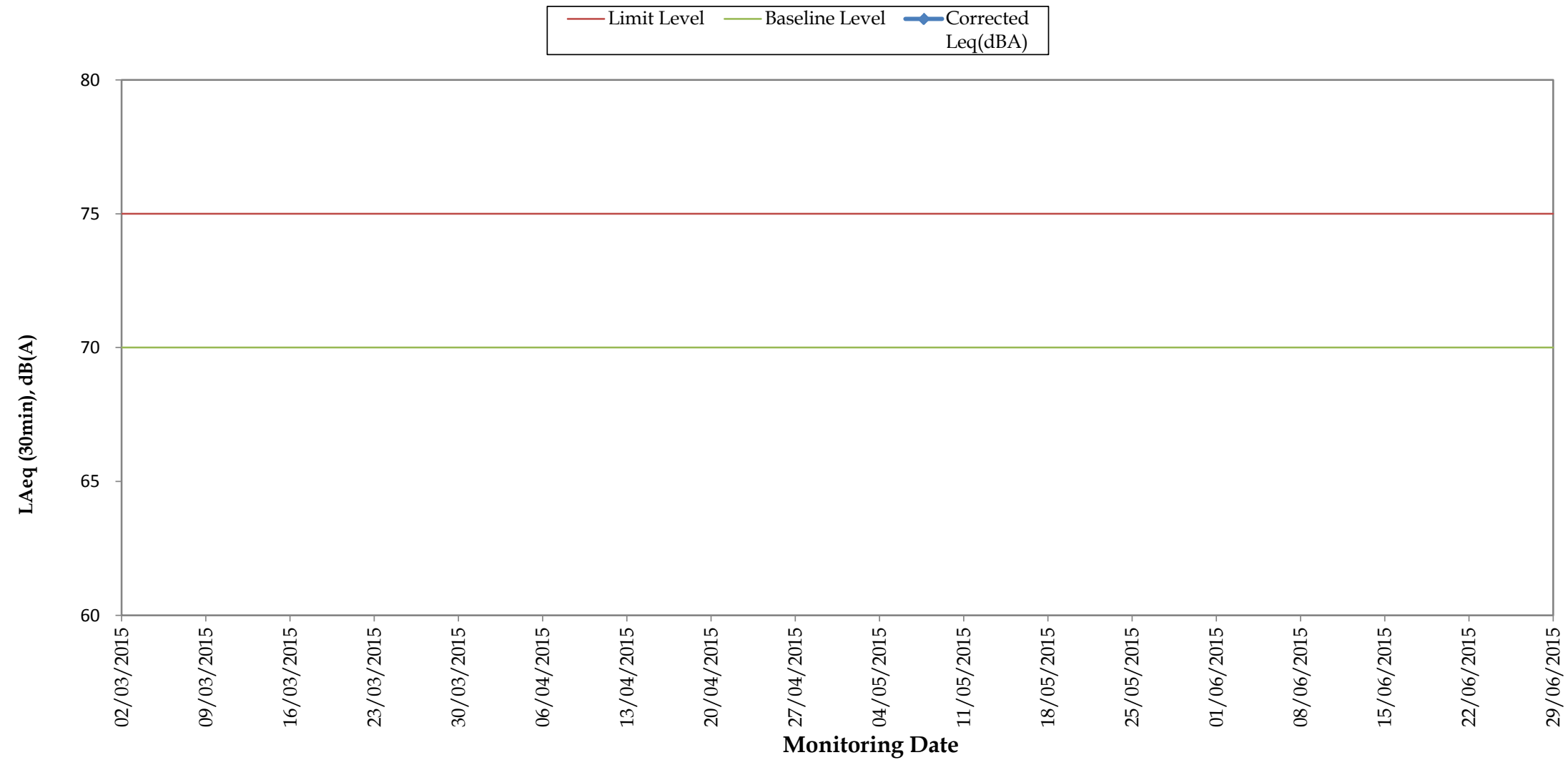
Regular Noise Monitoring Results at NMS-CA-6 (No. 16-23 Nam Kok Road) (LAeq, 30min) for the Past 4 Months



Remarks:

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

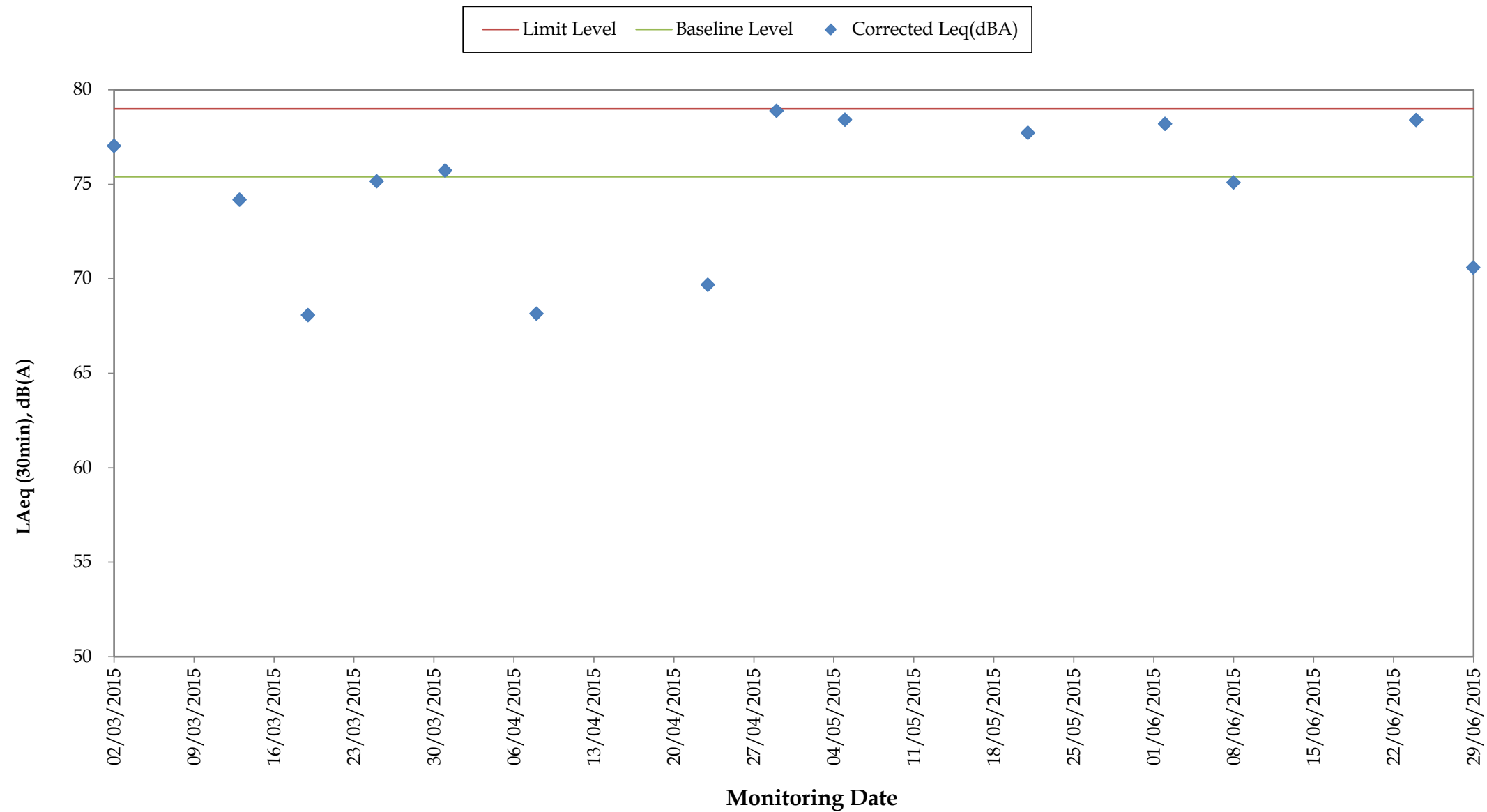
Regular Noise Monitoring Results at NMS-CA-7 (Skytower Tower 2) (LAeq, 30min) for the Past 4 Months



Remarks:

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

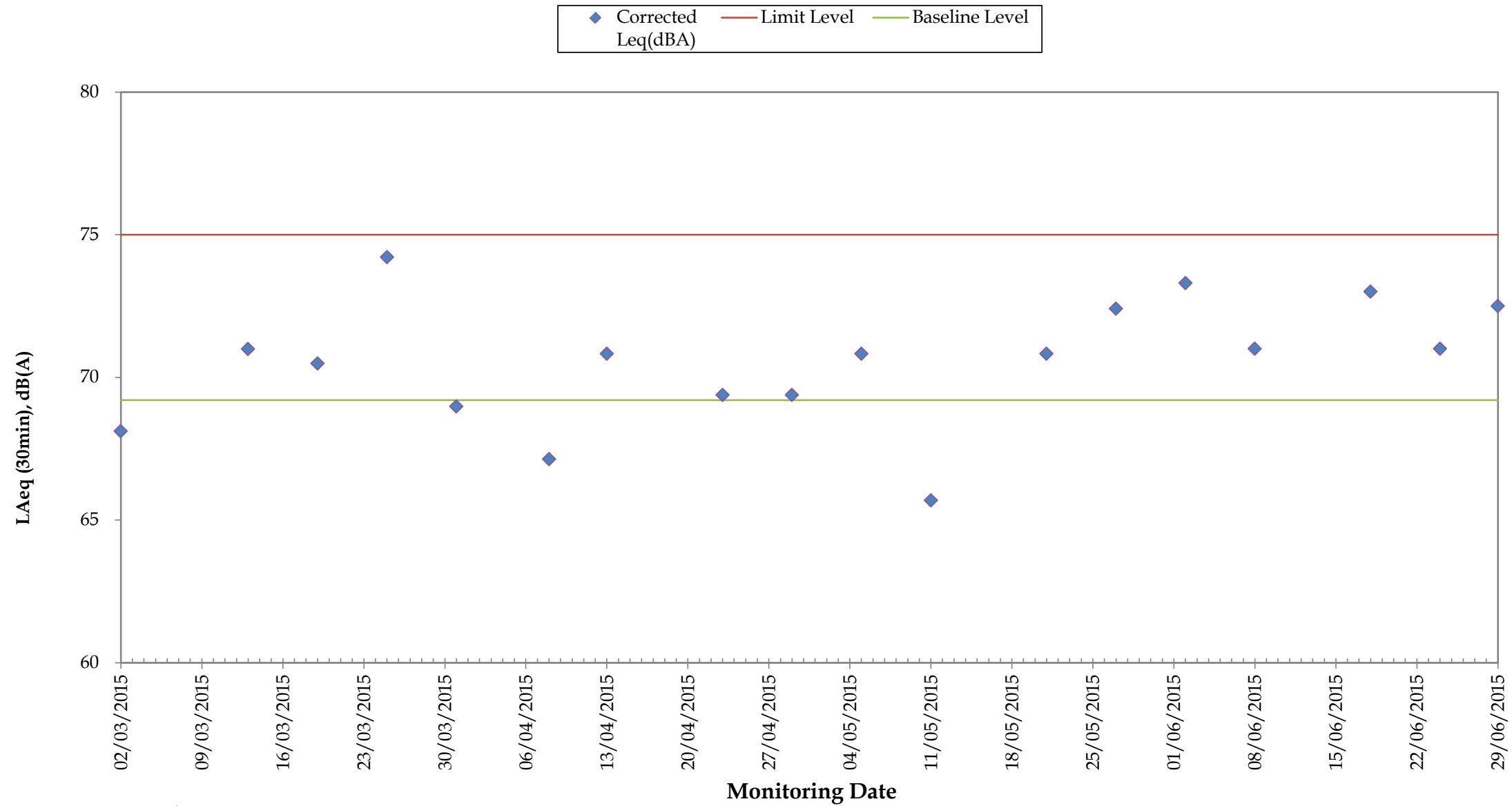
Regular Noise Monitoring Results at NMS-CA- 8 (SKH Good Shepherd Primary School) (LAeq, 30min) for the Past 4 Months



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.

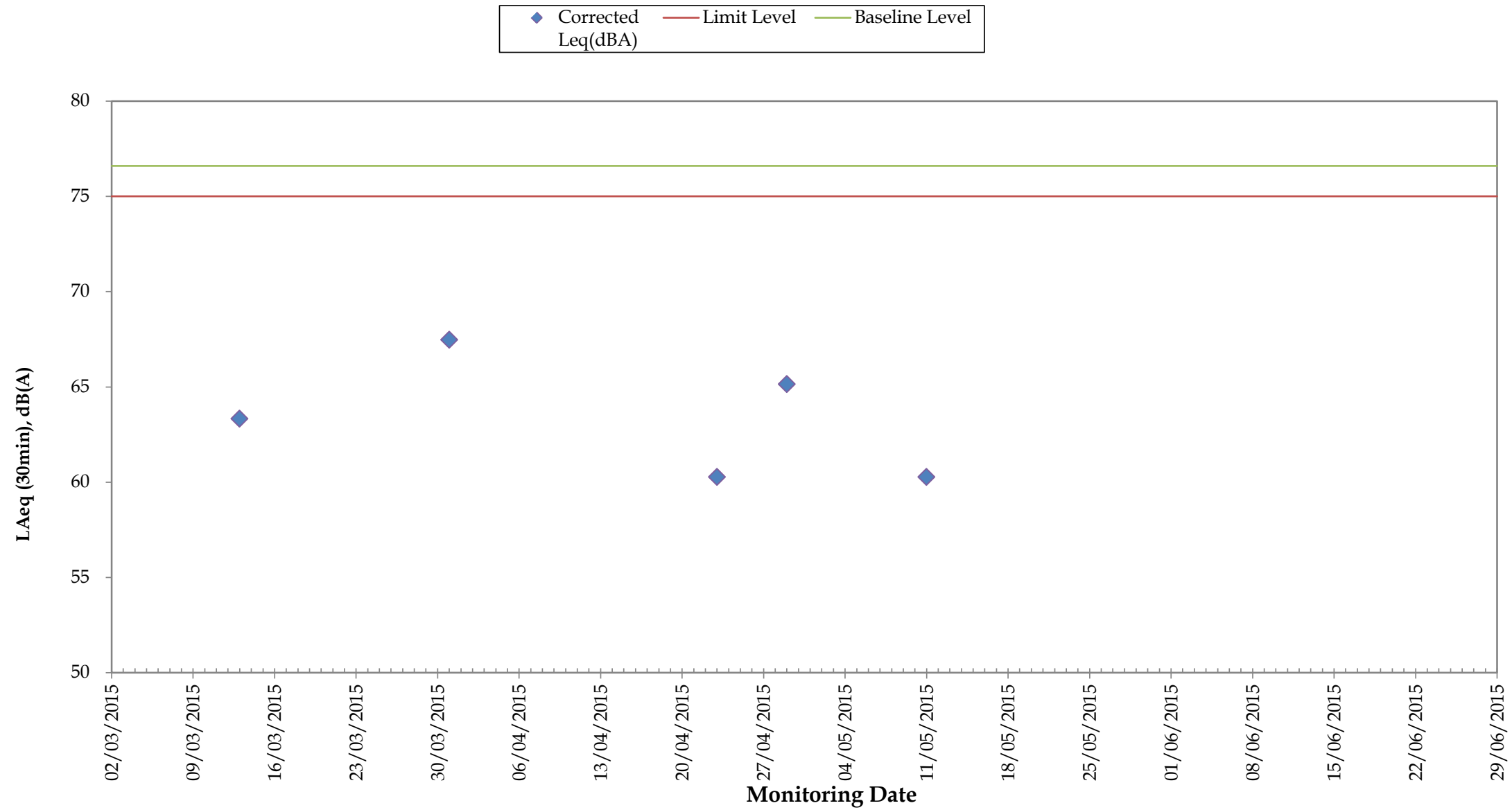
Regular Noise Monitoring Results at NMS-CA-9 (Kong Yiu Mansion) (LAeq, 30min)) for the Past 4 Months



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:

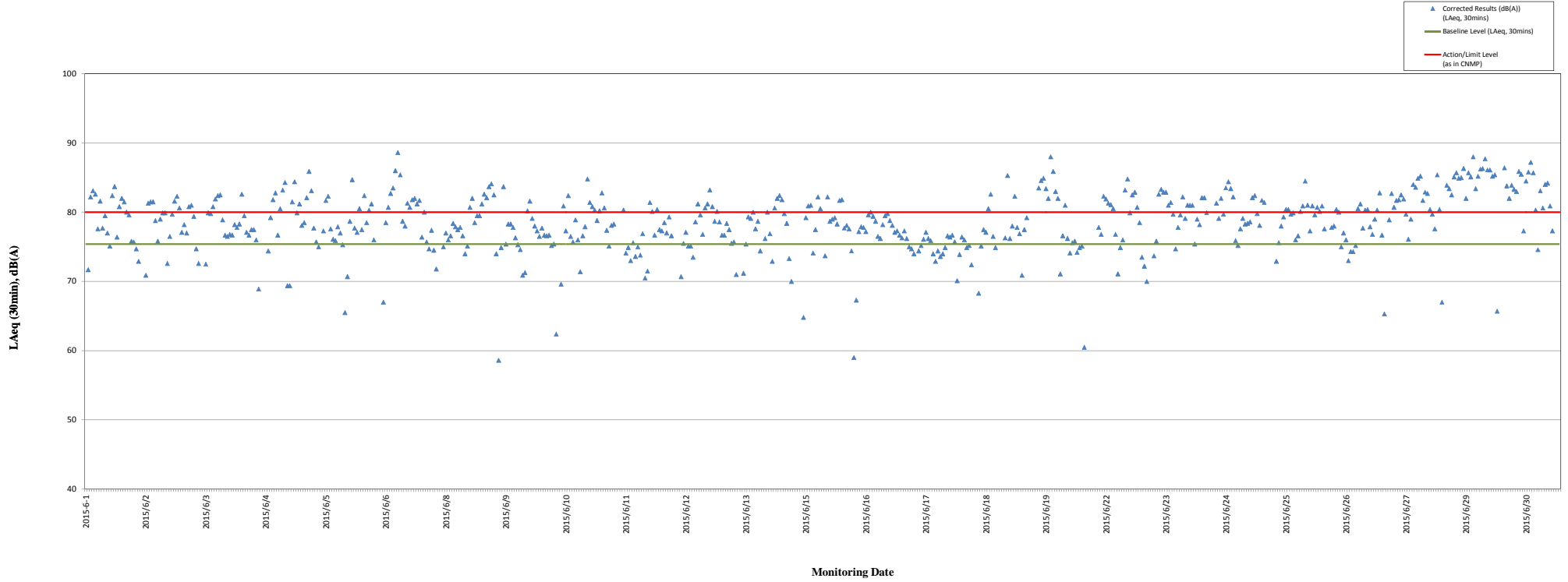
- For those corrected noise levels that are not shown in this graph, the measured noise levels are below baseline level.

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
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 11	0	81.1	75.4	79.7	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 11	30	78.7	75.4	76.1	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 12	0	80.5	75.4	79	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 12	30	84.6	75.4	84	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 13	0	84.2	75.4	83.6	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 13	30	85.3	75.4	84.9	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 14	0	85.6	75.4	85.2	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 14	30	82.6	75.4	81.7	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 15	0	83.6	75.4	82.9	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 15	30	83.4	75.4	82.7	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 16	0	81.6	75.4	80.4	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 16	30	81.1	75.4	79.7	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 17	0	79.7	75.4	77.6	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 17	30	85.8	75.4	85.4	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 18	0	81.6	75.4	80.4	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 27 18	30	76.0	75.4	67	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 7	0	72.4	75.4	<Baseline Level	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 7	30	84.5	75.4	83.9	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 8	0	84.1	75.4	83.4	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 8	30	83.2	75.4	82.5	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 9	0	85.5	75.4	85.1	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 9	30	86.1	75.4	85.7	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 10	0	85.4	75.4	84.9	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 10	30	85.4	75.4	85	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 11	0	86.6	75.4	86.3	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 11	56	82.9	75.4	82	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 12	26	86.0	75.4	85.7	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 12	56	85.5	75.4	85.1	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 13	26	88.2	75.4	88	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 13	56	84.0	75.4	83.4	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 14	26	85.7	75.4	85.2	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 14	56	86.6	75.4	86.2	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 15	26	86.7	75.4	86.3	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 15	56	87.9	75.4	87.7	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 16	26	86.5	75.4	86.1	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 16	56	86.5	75.4	86.1	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 17	26	85.7	75.4	85.2	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 17	56	85.8	75.4	85.4	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 18	26	75.8	75.4	65.7	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 29 18	56	75.3	75.4	<Baseline Level	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 6	56	71.8	75.4	<Baseline Level	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 7	26	86.8	75.4	86.4	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 7	56	84.4	75.4	83.8	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 8	26	82.9	75.4	82	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 8	56	84.5	75.4	83.9	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 9	26	83.9	75.4	83.3	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 9	56	83.7	75.4	83	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 10	26	86.2	75.4	85.9	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 10	56	85.9	75.4	85.5	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 11	26	79.5	75.4	77.3	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 11	56	85.0	75.4	84.5	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 12	26	86.2	75.4	85.8	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 12	56	87.5	75.4	87.2	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 13	26	86.1	75.4	85.7	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 13	56	81.6	75.4	80.3	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 14	26	78.0	75.4	74.6	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 14	56	83.8	75.4	83.1	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 15	26	81.8	75.4	80.6	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 15	56	84.6	75.4	84	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 16	26	84.8	75.4	84.2	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 16	56	82.0	75.4	80.9	80	Y	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 17	26	79.5	75.4	77.3	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 17	56	71.9	75.4	<Baseline Level	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 18	26	71.9	75.4	<Baseline Level	80	N	
MTW-12-3 (A)	SKH Good Shepherd Primary School	2015 6 30 18	56	71.5	75.4	<Baseline Level	80	N	

Continuous Noise Monitoring at MTW-12-3 (A) (SKH Good Shepherd Primary School) in June 2015- (LAeq, 30min)

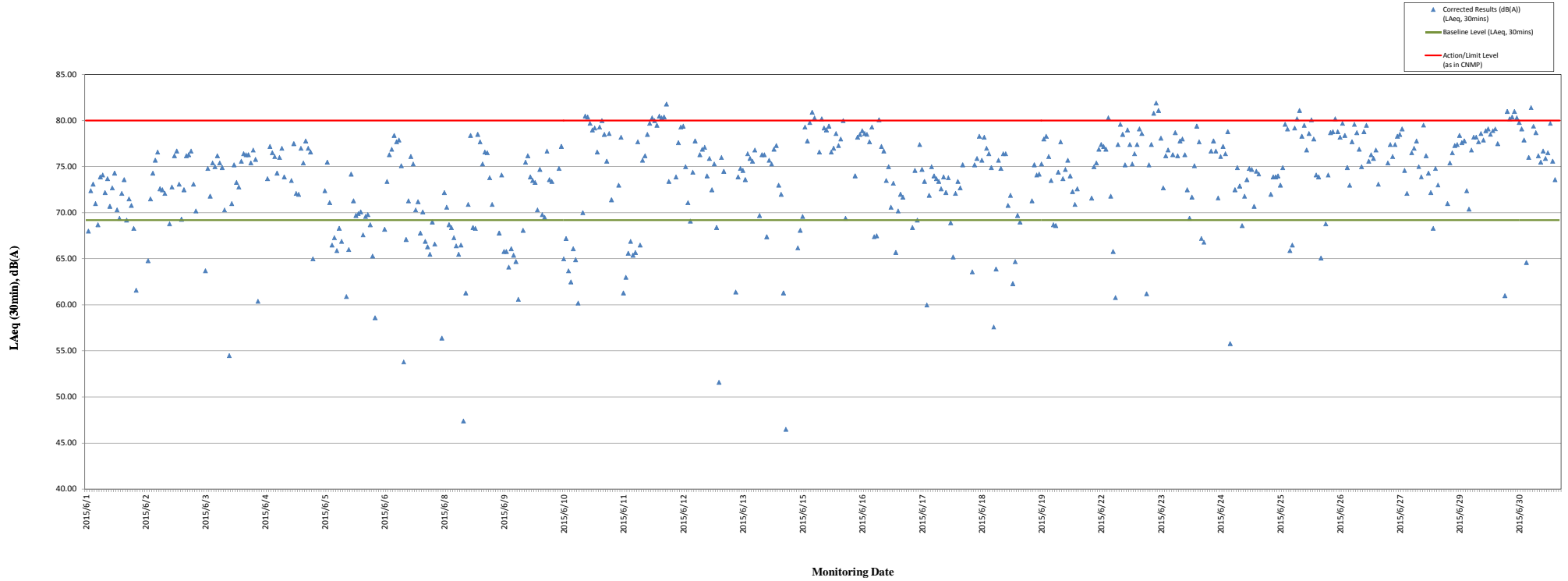


Remarks:

- 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	2015 6 27 9	54	79.0	69.2	78.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 10	24	79.5	69.2	79.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 10	54	75.7	69.2	74.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 11	24	73.9	69.2	72.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 11	54	69.2	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 12	24	77.2	69.2	76.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 12	54	77.7	69.2	77	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 13	24	78.3	69.2	77.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 13	54	76.0	69.2	75	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 14	24	75.2	69.2	73.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 14	54	79.9	69.2	79.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 15	24	77.0	69.2	76.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 15	54	75.5	69.2	74.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 16	24	74.0	69.2	72.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 16	54	71.8	69.2	68.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 17	24	75.9	69.2	74.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 17	54	74.5	69.2	73	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 18	24	67.4	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 27 18	54	67.8	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 6	54	66.6	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 7	24	73.2	69.2	71	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 7	54	76.4	69.2	75.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 8	24	77.2	69.2	76.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 8	54	77.9	69.2	77.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 9	24	78.0	69.2	77.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 9	54	78.9	69.2	78.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 10	24	78.2	69.2	77.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 10	54	78.4	69.2	77.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 11	24	74.1	69.2	72.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 11	54	72.9	69.2	70.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 12	34	77.5	69.2	76.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 13	4	78.8	69.2	78.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 13	34	78.7	69.2	78.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 14	4	78.3	69.2	77.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 14	34	79.1	69.2	78.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 15	4	78.4	69.2	77.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 15	34	79.4	69.2	78.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 16	4	79.6	69.2	79.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 16	34	79.0	69.2	78.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 17	4	79.4	69.2	78.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 17	34	79.5	69.2	79.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 18	4	78.1	69.2	77.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 29 18	34	67.5	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 6	34	65.6	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 7	4	69.8	69.2	61	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 7	34	81.3	69.2	81	80	Y	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 8	4	80.5	69.2	80.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 8	34	80.7	69.2	80.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 9	4	81.3	69.2	81	80	Y	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 9	34	80.7	69.2	80.3	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 10	4	80.1	69.2	79.8	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 10	34	79.5	69.2	79.1	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 11	4	78.5	69.2	77.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 11	34	70.5	69.2	64.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 12	4	76.8	69.2	76	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 12	34	81.7	69.2	81.4	80	Y	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 13	4	79.8	69.2	79.4	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 13	34	79.1	69.2	78.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 14	4	77.0	69.2	76.2	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 14	34	76.4	69.2	75.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 15	4	77.4	69.2	76.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 15	34	76.8	69.2	75.9	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 16	4	77.2	69.2	76.5	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 16	34	80.1	69.2	79.7	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 17	4	76.5	69.2	75.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 17	34	74.9	69.2	73.6	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 18	4	66.7	69.2	<Baseline Level	80	N	
MTW-12-4(A)	Kong Yiu Mansion	2015 6 30 18	34	66.3	69.2	<Baseline Level	80	N	

Continuous Noise Monitoring at MTW-12-4 (A) (Kong Yiu Mansion) in June 2015- (LAeq, 30min)

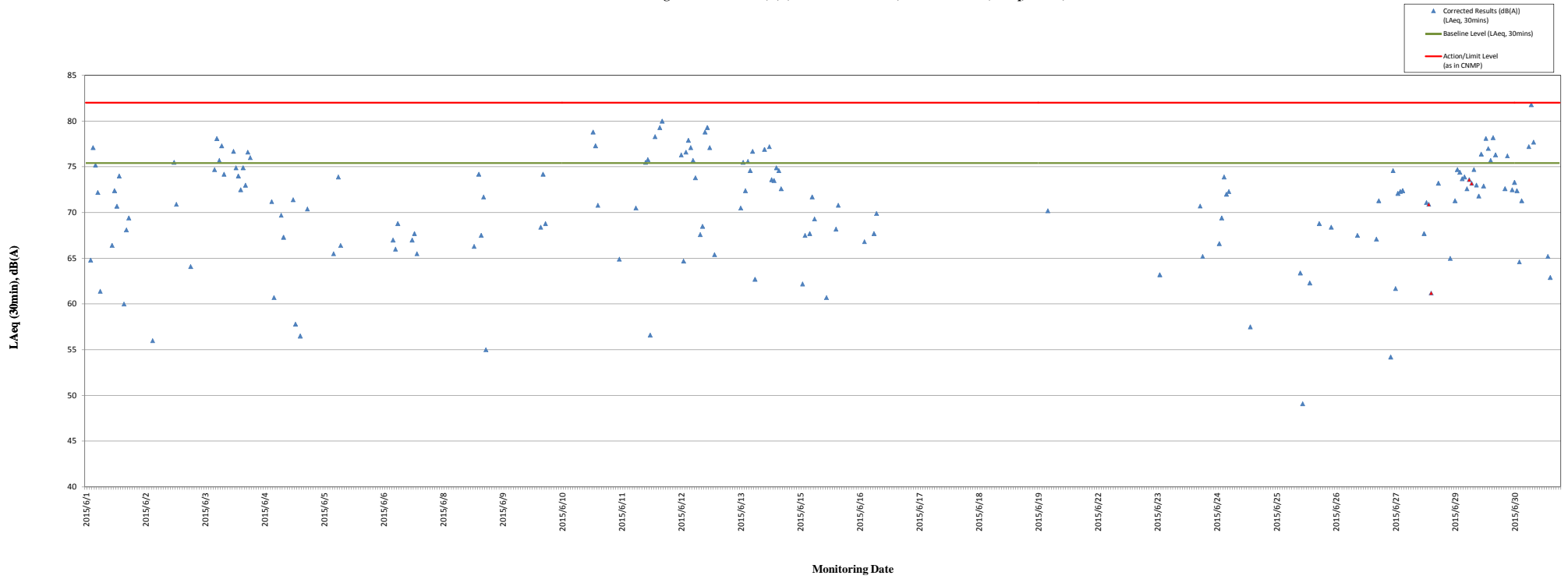


Remarks:

- 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	2015 6 27 8	8	45	75.6	75.4	61.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 9	9	15	77.1	75.4	72.1	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 9	9	45	77.1	75.4	72.3	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 10	10	15	77.2	75.4	72.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 10	10	45	74.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 11	11	15	74.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 11	11	45	70.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 12	12	15	73.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 12	12	45	75.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 13	13	15	74.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 13	13	45	74.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 14	14	15	74.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 14	14	45	76.1	75.4	67.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 15	15	15	76.8	75.4	71.1	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 15	15	45	76.7	75.4	70.9	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 16	16	15	75.6	75.4	61.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 16	16	45	73.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 17	17	15	75.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 17	17	45	77.5	75.4	73.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 18	18	15	68.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 27 18	18	45	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 6	6	45	65.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 7	7	15	70.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 7	7	45	75.8	75.4	65	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 8	8	15	74.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 8	8	45	76.8	75.4	71.3	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 9	9	15	78.1	75.4	74.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 9	9	45	77.9	75.4	74.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 10	10	15	77.6	75.4	73.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 10	10	45	77.7	75.4	73.9	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 11	11	15	77.2	75.4	72.6	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 12	12	18	77.6	75.4	73.6	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 12	12	48	77.5	75.4	73.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 13	13	18	78.1	75.4	74.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 13	13	48	77.4	75.4	73	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 14	14	18	77.0	75.4	71.8	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 14	14	48	78.9	75.4	76.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 15	15	18	77.3	75.4	72.9	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 15	15	48	80.0	75.4	78.1	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 16	16	18	79.3	75.4	77	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 16	16	48	78.6	75.4	75.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 17	17	18	80.0	75.4	78.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 17	17	48	78.9	75.4	76.3	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 18	18	18	67.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 29 18	18	48	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 6	6	48	65.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 7	7	18	77.2	75.4	72.6	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 7	7	48	78.8	75.4	76.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 8	8	18	73.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 8	8	48	77.2	75.4	72.5	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 9	9	18	77.5	75.4	73.3	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 9	9	48	77.2	75.4	72.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 10	10	18	75.7	75.4	64.6	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 10	10	48	76.8	75.4	71.3	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 11	11	18	73.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 11	11	48	72.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 12	12	18	79.4	75.4	77.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 12	12	48	82.7	75.4	81.8	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 13	13	18	79.7	75.4	77.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 13	13	48	73.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 14	14	18	74.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 14	14	48	75.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 15	15	18	72.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 15	15	48	75.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 16	16	18	75.8	75.4	65.2	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 16	16	48	75.6	75.4	62.9	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 17	17	18	73.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 17	17	48	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 18	18	18	64.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 6 30 18	18	48	64.9	75.4	<Baseline Level	82	N

Continuous Noise Monitoring at MTW-12-4-1 (A) (59 Maidstone Road) in June 2015 - (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	2015 6 1 6	35	71.5	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 7	5	76.9	75.4	71.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 7	35	83.0	75.4	82.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 8	5	83.8	75.4	83.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 8	35	83.3	75.4	82.6	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 9	5	79.7	75.4	77.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 9	35	82.5	75.4	81.6	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 10	5	79.7	75.4	77.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 10	35	80.9	75.4	79.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 11	5	79.3	75.4	77	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 11	35	78.3	75.4	75.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 12	5	83.2	75.4	82.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 12	35	84.3	75.4	83.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 13	5	78.9	75.4	76.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 13	35	81.9	75.4	80.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 14	5	82.8	75.4	82	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 14	35	82.5	75.4	81.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 15	5	81.3	75.4	80	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 15	35	81.0	75.4	79.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 16	45	78.6	75.4	75.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 17	15	78.5	75.4	75.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 17	45	78.1	75.4	74.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 18	15	77.3	75.4	72.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 1 18	45	72.4	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 6	45	70.5	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 7	15	76.7	75.4	70.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 7	45	82.3	75.4	81.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 8	15	82.4	75.4	81.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 8	45	82.5	75.4	81.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 9	15	80.4	75.4	78.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 9	45	78.6	75.4	75.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 10	15	80.6	75.4	79	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 10	45	81.2	75.4	79.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 11	15	81.2	75.4	79.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 11	45	77.2	75.4	72.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 12	15	79.0	75.4	76.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 12	45	81.1	75.4	79.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 13	15	82.5	75.4	81.6	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 13	45	83.1	75.4	82.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 14	15	81.7	75.4	80.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 14	45	79.3	75.4	77.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 15	15	80.0	75.4	78.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 15	45	79.3	75.4	77	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 16	15	81.9	75.4	80.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 16	45	82.0	75.4	81	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 17	15	80.9	75.4	79.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 17	45	78.1	75.4	74.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 18	15	77.2	75.4	72.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 2 18	45	72.6	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 6	45	72.4	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 7	15	77.2	75.4	72.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 7	45	81.2	75.4	79.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 8	15	81.2	75.4	79.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 8	45	81.9	75.4	80.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 9	15	82.8	75.4	81.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 9	45	83.2	75.4	82.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 10	15	83.3	75.4	82.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 10	45	80.5	75.4	78.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 11	15	79.1	75.4	76.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 11	45	79.0	75.4	76.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 12	15	79.2	75.4	76.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 12	45	79.1	75.4	76.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 13	15	80.0	75.4	78.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 13	45	79.8	75.4	77.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 14	15	80.1	75.4	78.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 14	45	83.3	75.4	82.6	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 15	15	80.9	75.4	79.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 15	45	79.3	75.4	77.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 16	15	79.1	75.4	76.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 16	45	79.6	75.4	77.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 17	15	79.6	75.4	77.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 17	45	78.7	75.4	76	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 18	15	76.3	75.4	68.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 3 18	45	74.3	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 6	45	70.5	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 7	15	74.1	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 7	45	77.9	75.4	74.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 8	15	80.7	75.4	79.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 8	45	82.7	75.4	81.8	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 9	15	83.6	75.4	82.8	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 9	45	79.1	75.4	76.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 10	15	81.7	75.4	80.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 10	45	83.8	75.4	83.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 11	15	84.8	75.4	84.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 11	45	76.4	75.4	69.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 12	15	76.4	75.4	69.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 12	45	82.4	75.4	81.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 13	15	84.9	75.4	84.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 13	45	81.2	75.4	79.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 14	15	82.2	75.4	81.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 14	45	80.0	75.4	78.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 15	15	80.2	75.4	78.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 15	45	83.0	75.4	82.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 16	37	86.2	75.4	85.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 17	7	83.8	75.4	83.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 17	37	79.7	75.4	77.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 18	7	78.5	75.4	75.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 4 18	37	78.2	75.4	75	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 6	37	72.6	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 7	7	79.4	75.4	77.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 7	37	82.6	75.4	81.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 8	7	83.1	75.4	82.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 8	37	79.7	75.4	77.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 9	7	78.7	75.4	76.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 9	37	78.7	75.4	75.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 10	7	79.8	75.4	77.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 10	37	79.3	75.4	77	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 11	7	78.4	75.4	75.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 11	37	75.8	75.4	65.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 5 12	7	76.7	75.4	70.7	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	2015	6	5	12	37	80.3	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	13	7	85.2	75.4	84.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	13	37	79.7	75.4	77.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	14	7	79.4	75.4	77.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	14	37	81.6	75.4	80.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	15	7	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	15	37	83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	16	7	80.2	75.4	78.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	16	37	81.5	75.4	80.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	17	7	82.3	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	17	37	78.7	75.4	76	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	18	7	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	5	18	37	72.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	6	37	72.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	7	7	76.0	75.4	67	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	7	37	80.2	75.4	78.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	8	7	81.9	75.4	80.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	8	37	83.5	75.4	82.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	9	7	84.1	75.4	83.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	9	37	86.3	75.4	86	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	10	7	88.8	75.4	88.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	10	37	85.8	75.4	85.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	11	7	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	11	37	79.9	75.4	78	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	12	7	82.3	75.4	81.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	12	37	81.8	75.4	80.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	13	7	82.7	75.4	81.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	13	37	82.8	75.4	82	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	14	7	82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	14	37	82.6	75.4	81.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	15	7	78.9	75.4	76.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	15	37	81.3	75.4	80	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	16	7	78.6	75.4	75.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	16	37	78.1	75.4	74.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	17	7	79.5	75.4	77.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	17	37	78.0	75.4	74.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	18	7	77.0	75.4	71.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	6	18	37	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	6	37	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	7	7	78.2	75.4	75	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	7	37	79.3	75.4	77	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	8	7	78.7	75.4	76	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	8	37	79.0	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	9	7	80.2	75.4	78.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	9	37	79.9	75.4	77.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	10	7	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	10	37	79.8	75.4	77.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	11	7	79.0	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	11	37	77.8	75.4	74	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	12	7	78.3	75.4	75.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	12	59	81.8	75.4	80.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	13	29	82.9	75.4	82	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	13	59	80.2	75.4	78.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	14	29	80.9	75.4	79.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	14	59	80.9	75.4	79.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	15	29	82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	15	59	83.4	75.4	82.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	16	29	82.9	75.4	82.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	16	59	84.3	75.4	83.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	17	29	84.7	75.4	84.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	17	59	83.2	75.4	82.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	18	29	77.8	75.4	74	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	8	18	59	75.5	75.4	58.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	6	59	78.1	75.4	74.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	7	29	84.3	75.4	83.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	7	59	78.4	75.4	75.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	8	29	80.1	75.4	78.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	8	59	80.1	75.4	78.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	9	29	79.8	75.4	77.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	9	59	78.9	75.4	76.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	10	29	78.4	75.4	75.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	10	59	78.0	75.4	74.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	11	29	76.7	75.4	70.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	11	59	76.8	75.4	71.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	12	29	81.5	75.4	80.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	12	59	82.6	75.4	81.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	13	29	80.7	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	13	59	79.9	75.4	78	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	14	29	79.5	75.4	77.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	14	59	79.0	75.4	76.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	15	29	79.7	75.4	77.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	15	59	79.1	75.4	76.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	16	29	79.1	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	16	59	79.1	75.4	76.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	17	29	78.3	75.4	75.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	17	59	78.4	75.4	75.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	18	29	75.6	75.4	62.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	9	18	59	72.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	6	59	76.4	75.4	69.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	7	29	82.0	75.4	80.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	7	59	79.5	75.4	77.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	8	29	83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	8	59	79.0	75.4	76.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	9	29	78.6	75.4	75.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	9	59	80.5	75.4	78.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	10	29	78.7	75.4	76	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	10	59	76.9	75.4	71.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	11	29	79.1	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	11	59	79.8	75.4	77.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	12	29	85.2	75.4	84.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	12	59	82.3	75.4	81.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	13	29	81.9	75.4	80.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	13	59	81.5	75.4	80.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	14	29	80.5	75.4	78.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	14	59	81.5	75.4	80.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	15	29	83.5	75.4	82.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	15	59	81.7	75.4	80.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	16	29	79.5	75.4	77.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	16	59	78.3	75.4	75.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	6	10	17	29	80.0	75.4	78.1	81	N

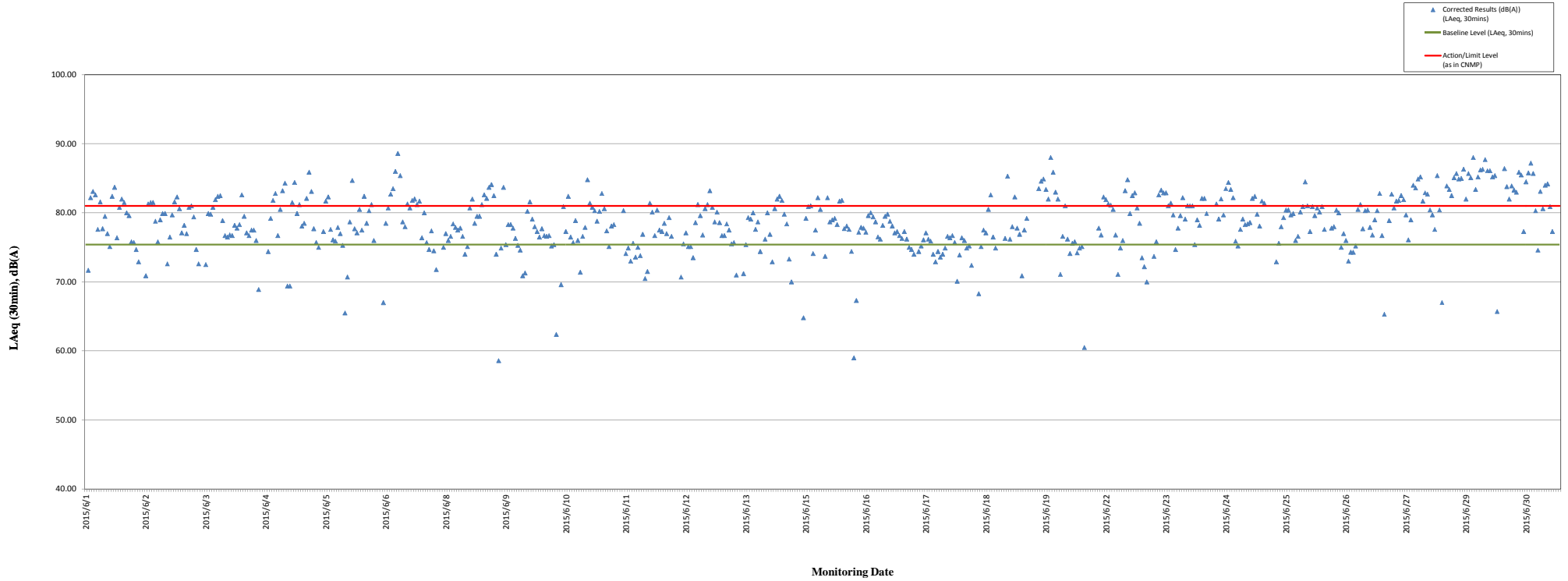
Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 10 17	17	59	80.1	75.4	78.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 10 18	18	29	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 10 18	18	59	72.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 6	6	59	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 7	7	29	81.5	75.4	80.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 7	7	59	77.8	75.4	74.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 8	8	29	78.2	75.4	74.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 8	8	59	77.4	75.4	73	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 9	9	29	78.5	75.4	75.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 9	9	59	77.6	75.4	73.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 10	10	29	78.2	75.4	75	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 10	10	59	77.7	75.4	73.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 11	11	29	79.2	75.4	76.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 11	11	59	76.6	75.4	70.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 12	12	29	76.9	75.4	71.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 12	12	59	82.4	75.4	81.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 13	13	29	81.4	75.4	80.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 14	14	23	79.1	75.4	76.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 14	14	53	81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 15	15	23	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 15	15	53	79.5	75.4	77.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 16	16	23	80.3	75.4	78.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 16	16	53	79.3	75.4	77	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 17	17	23	80.8	75.4	79.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 17	17	53	79.0	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 18	18	23	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 11 18	18	53	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 6	6	53	72.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 7	7	23	76.7	75.4	70.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 7	7	53	78.5	75.4	75.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 8	8	23	79.4	75.4	77.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 8	8	53	78.2	75.4	75.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 9	9	23	78.3	75.4	75.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 9	9	53	77.6	75.4	73.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 10	10	23	80.3	75.4	78.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 10	10	53	82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 11	11	23	81.0	75.4	79.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 11	11	53	79.2	75.4	76.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 12	12	23	81.7	75.4	80.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 12	12	53	82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 13	13	23	83.8	75.4	83.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 13	13	53	81.9	75.4	80.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 14	14	23	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 14	14	53	81.4	75.4	80.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 15	15	23	80.3	75.4	78.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 15	15	53	79.1	75.4	76.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 16	16	23	79.1	75.4	76.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 16	16	53	80.2	75.4	78.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 17	17	23	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 17	17	53	78.5	75.4	75.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 18	18	23	78.5	75.4	75.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 12 18	18	53	76.7	75.4	71	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 6	6	53	72.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 7	7	23	75.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 7	7	53	76.8	75.4	71.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 8	8	23	78.4	75.4	75.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 8	8	53	80.8	75.4	79.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 9	9	23	80.6	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 9	9	53	81.3	75.4	80	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 10	10	23	79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 10	10	53	80.3	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 11	11	23	77.9	75.4	74.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 11	11	53	74.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 12	12	23	78.8	75.4	76.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 12	12	53	81.3	75.4	80	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 13	13	23	79.2	75.4	76.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 13	13	53	77.3	75.4	72.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 14	14	23	81.7	75.4	80.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 14	14	53	82.9	75.4	82	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 15	15	23	83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 15	15	53	82.7	75.4	81.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 16	16	23	81.1	75.4	79.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 16	16	53	80.1	75.4	78.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 17	17	23	77.5	75.4	73.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 17	17	53	76.5	75.4	70	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 18	18	23	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 13 18	18	53	70.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 6	6	33	70.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 7	7	3	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 7	7	33	75.8	75.4	64.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 8	8	3	80.7	75.4	79.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 8	8	33	82.0	75.4	80.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 9	9	3	82.1	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 9	9	33	77.8	75.4	74.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 10	10	3	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 10	10	33	83.0	75.4	82.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 11	11	3	81.7	75.4	80.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 11	11	33	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 12	12	3	77.7	75.4	73.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 12	12	33	83.1	75.4	82.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 13	13	3	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 13	13	33	80.6	75.4	79	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 14	14	3	80.7	75.4	79.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 15	15	15	80.1	75.4	78.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 15	15	45	82.6	75.4	81.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 16	16	15	82.7	75.4	81.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 16	16	45	79.7	75.4	77.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 17	17	15	80.0	75.4	78.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 17	17	45	79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 18	18	15	77.9	75.4	74.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 15 18	18	45	75.5	75.4	59	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 6	6	45	76.0	75.4	67.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 7	7	15	79.4	75.4	77.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 7	7	45	79.8	75.4	77.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 8	8	15	79.8	75.4	77.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 8	8	45	79.4	75.4	77.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 9	9	15	81.0	75.4	79.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 9	9	45	81.3	75.4	80	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 10	10	15	80.9	75.4	79.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 10	10	45	80.4	75.4	78.7	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	2015 6 16 11	15	79.0	75.4	76.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 11	45	78.8	75.4	76.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 12	15	80.0	75.4	78.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 12	45	80.9	75.4	79.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 13	15	81.2	75.4	79.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 13	45	80.4	75.4	78.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 14	15	80.0	75.4	78.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 14	45	79.4	75.4	77.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 15	15	79.4	75.4	77.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 15	45	79.1	75.4	76.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 16	15	78.9	75.4	76.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 16	45	79.5	75.4	77.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 17	15	78.8	75.4	76.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 17	45	78.2	75.4	75	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 18	15	78.1	75.4	74.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 16 18	45	77.8	75.4	74	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 6	45	72.8	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 7	15	77.9	75.4	74.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 7	45	78.3	75.4	75.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 8	15	78.8	75.4	76.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 8	45	79.4	75.4	77.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 9	15	78.8	75.4	76.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 9	45	78.7	75.4	75.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 10	15	77.8	75.4	74	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 10	45	77.3	75.4	72.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 11	15	78.0	75.4	74.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 11	45	77.6	75.4	73.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 12	15	77.8	75.4	74	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 12	45	78.2	75.4	74.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 13	15	79.1	75.4	76.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 13	45	78.9	75.4	76.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 14	15	79.1	75.4	76.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 14	45	78.6	75.4	75.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 15	15	76.5	75.4	70.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 15	45	77.7	75.4	73.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 16	15	78.9	75.4	76.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 16	45	78.7	75.4	76	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 17	15	78.2	75.4	74.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 17	45	78.3	75.4	75.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 18	15	77.2	75.4	72.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 17 18	45	74.0	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 6	45	72.6	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 7	15	76.2	75.4	68.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 7	45	78.3	75.4	75.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 8	15	79.6	75.4	77.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 8	45	79.3	75.4	77.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 9	15	81.6	75.4	80.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 9	45	83.3	75.4	82.6	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 10	15	79.0	75.4	76.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 10	45	78.2	75.4	74.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 11	15	75.3	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 11	45	74.3	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 12	15	75.1	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 12	45	78.9	75.4	76.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 13	15	85.8	75.4	85.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 14	11	78.8	75.4	76.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 14	41	79.9	75.4	78	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 15	11	83.1	75.4	82.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 15	41	79.8	75.4	77.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 16	11	79.2	75.4	76.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 16	41	76.7	75.4	70.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 17	11	79.6	75.4	77.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 17	41	80.7	75.4	79.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 18	11	73.6	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 18 18	41	74.1	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 6	41	72.9	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 7	11	74.8	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 7	41	84.2	75.4	83.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 8	11	85.1	75.4	84.6	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 8	41	85.4	75.4	84.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 9	11	84.0	75.4	83.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 9	41	82.9	75.4	82	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 10	11	88.2	75.4	88	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 10	41	86.3	75.4	85.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 11	11	83.7	75.4	83	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 11	41	82.9	75.4	82	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 12	11	76.8	75.4	71.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 12	41	79.1	75.4	76.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 13	11	82.0	75.4	81	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 13	41	78.8	75.4	76.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 14	11	77.8	75.4	74.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 14	41	78.5	75.4	75.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 15	11	78.6	75.4	75.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 15	41	77.9	75.4	74.2	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 16	11	78.2	75.4	74.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 16	41	78.3	75.4	75.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 17	11	75.5	75.4	60.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 17	41	74.1	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 18	11	72.9	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 19 18	41	73.0	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 6	41	73.5	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 7	11	74.2	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 7	41	79.8	75.4	77.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 8	11	79.1	75.4	76.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 8	41	83.1	75.4	82.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 9	11	82.8	75.4	81.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 9	41	82.3	75.4	81.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 10	11	82.1	75.4	81.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 10	41	81.6	75.4	80.5	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 11	11	79.2	75.4	76.8	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 11	41	76.8	75.4	71.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 12	11	78.1	75.4	74.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 12	41	78.7	75.4	76	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 13	11	83.8	75.4	83.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 13	41	85.3	75.4	84.8	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 14	11	81.2	75.4	79.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 14	41	83.2	75.4	82.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 15	11	83.6	75.4	82.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 15	41	81.8	75.4	80.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 16	33	80.3	75.4	78.5	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	2015 6 22 17	3		77.6	75.4	73.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 17	33		77.1	75.4	72.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 18	3		76.5	75.4	70	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 22 18	33		73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 6	33		74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 7	3		77.7	75.4	73.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 7	33		78.6	75.4	75.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 8	3		83.4	75.4	82.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 8	33		83.9	75.4	83.3	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 9	3		83.6	75.4	82.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 9	33		83.6	75.4	82.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 10	3		82.0	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 10	33		82.3	75.4	81.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 11	3		81.0	75.4	79.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 11	33		78.1	75.4	74.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 12	3		79.8	75.4	77.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 12	33		81.0	75.4	79.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 13	3		83.0	75.4	82.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 13	33		80.7	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 14	3		82.0	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 14	33		82.1	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 15	3		82.1	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 15	33		78.4	75.4	75.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 16	3		80.6	75.4	79	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 16	33		80.0	75.4	78.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 17	3		83.0	75.4	82.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 17	33		82.9	75.4	82.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 18	3		81.2	75.4	79.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 23 18	33		73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 6	33		73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 7	3		73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 7	33		82.3	75.4	81.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 8	3		80.7	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 8	33		82.9	75.4	82	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 9	3		81.1	75.4	79.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 9	33		84.1	75.4	83.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 10	3		84.9	75.4	84.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 10	33		84.0	75.4	83.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 11	3		83.0	75.4	82.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 11	33		78.7	75.4	75.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 12	3		78.3	75.4	75.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 12	33		79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 13	3		80.7	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 13	33		80.1	75.4	78.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 14	3		80.1	75.4	78.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 14	33		80.3	75.4	78.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 15	3		82.9	75.4	82.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 15	33		83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 16	3		81.1	75.4	79.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 16	33		80.0	75.4	78.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 17	3		82.6	75.4	81.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 17	33		82.4	75.4	81.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 18	3		73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 24 18	33		73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 6	33		73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 7	3		74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 7	33		77.3	75.4	72.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 8	3		78.5	75.4	75.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 8	33		79.9	75.4	78	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 9	3		80.8	75.4	79.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 9	33		81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 10	3		81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 10	33		81.1	75.4	79.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 11	3		81.2	75.4	79.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 11	33		78.7	75.4	76	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 12	3		79.1	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 12	33		81.3	75.4	80.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 13	3		82.0	75.4	80.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 13	33		85.0	75.4	84.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 14	3		82.0	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 15	0		79.5	75.4	77.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 15	30		82.0	75.4	80.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 16	0		81.0	75.4	79.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 16	30		81.8	75.4	80.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 17	0		81.4	75.4	80.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 17	30		82.0	75.4	80.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 18	0		79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 25 18	30		73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 7	0		75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 7	30		79.8	75.4	77.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 8	0		79.9	75.4	78	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 8	30		81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 9	0		81.3	75.4	80	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 9	30		78.2	75.4	75	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 10	0		79.3	75.4	77	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 10	30		78.7	75.4	76	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 11	0		77.4	75.4	73	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 11	30		77.9	75.4	74.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 12	0		77.9	75.4	74.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 12	30		78.3	75.4	75.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 13	0		81.7	75.4	80.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 13	30		82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 14	0		79.7	75.4	77.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 14	30		81.5	75.4	80.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 15	0		81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 15	30		79.9	75.4	77.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 16	0		79.2	75.4	76.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 16	30		80.6	75.4	79	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 17	0		81.5	75.4	80.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 17	30		83.5	75.4	82.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 18	0		79.1	75.4	76.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 26 18	30		75.8	75.4	65.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 7	0		71.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 7	30		80.5	75.4	78.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 8	0		83.4	75.4	82.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 8	30		81.8	75.4	80.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 9	0		82.6	75.4	81.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 9	30		82.7	75.4	81.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 10	0		83.3	75.4	82.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 10	30		82.8	75.4	81.9	81	Y

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	2015 6 27 11	0	81.1	75.4	79.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 11	30	78.7	75.4	76.1	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 12	0	80.5	75.4	79	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 12	30	84.6	75.4	84	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 13	0	84.2	75.4	83.6	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 13	30	85.3	75.4	84.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 14	0	85.6	75.4	85.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 14	30	82.6	75.4	81.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 15	0	83.6	75.4	82.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 15	30	83.4	75.4	82.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 16	0	81.6	75.4	80.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 16	30	81.1	75.4	79.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 17	0	79.7	75.4	77.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 17	30	85.8	75.4	85.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 18	0	81.6	75.4	80.4	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 27 18	30	76.0	75.4	67	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 7	0	72.4	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 7	30	84.5	75.4	83.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 8	0	84.1	75.4	83.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 8	30	83.2	75.4	82.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 9	0	85.5	75.4	85.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 9	30	86.1	75.4	85.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 10	0	85.4	75.4	84.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 10	30	85.4	75.4	85	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 11	0	86.6	75.4	86.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 11	56	82.9	75.4	82	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 12	26	86.0	75.4	85.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 12	56	85.5	75.4	85.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 13	26	88.2	75.4	88	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 13	56	84.0	75.4	83.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 14	26	85.7	75.4	85.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 14	56	86.6	75.4	86.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 15	26	86.7	75.4	86.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 15	56	87.9	75.4	87.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 16	26	86.5	75.4	86.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 16	56	86.5	75.4	86.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 17	26	85.7	75.4	85.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 17	56	85.8	75.4	85.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 18	26	75.8	75.4	65.7	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 29 18	56	75.3	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 6	56	71.8	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 7	26	86.8	75.4	86.4	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 7	56	84.4	75.4	83.8	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 8	26	82.9	75.4	82	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 8	56	84.5	75.4	83.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 9	26	83.9	75.4	83.3	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 9	56	83.7	75.4	83	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 10	26	86.2	75.4	85.9	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 10	56	85.9	75.4	85.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 11	26	79.5	75.4	77.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 11	56	85.0	75.4	84.5	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 12	26	86.2	75.4	85.8	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 12	56	87.5	75.4	87.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 13	26	86.1	75.4	85.7	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 13	56	81.6	75.4	80.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 14	26	78.0	75.4	74.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 14	56	83.8	75.4	83.1	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 15	26	81.8	75.4	80.6	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 15	56	84.6	75.4	84	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 16	26	84.8	75.4	84.2	81	Y	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 16	56	82.0	75.4	80.9	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 17	26	79.5	75.4	77.3	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 17	56	71.9	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 18	26	71.9	75.4	<Baseline Level	81	N	
MTW-12-11(A)	SKH Good Shepherd Primary School	2015 6 30 18	56	71.5	75.4	<Baseline Level	81	N	

Continuous Noise Monitoring at MTW-12-11(A) (SKH Good Shepherd Primary School) in June 2015- (LAeq, 30min)

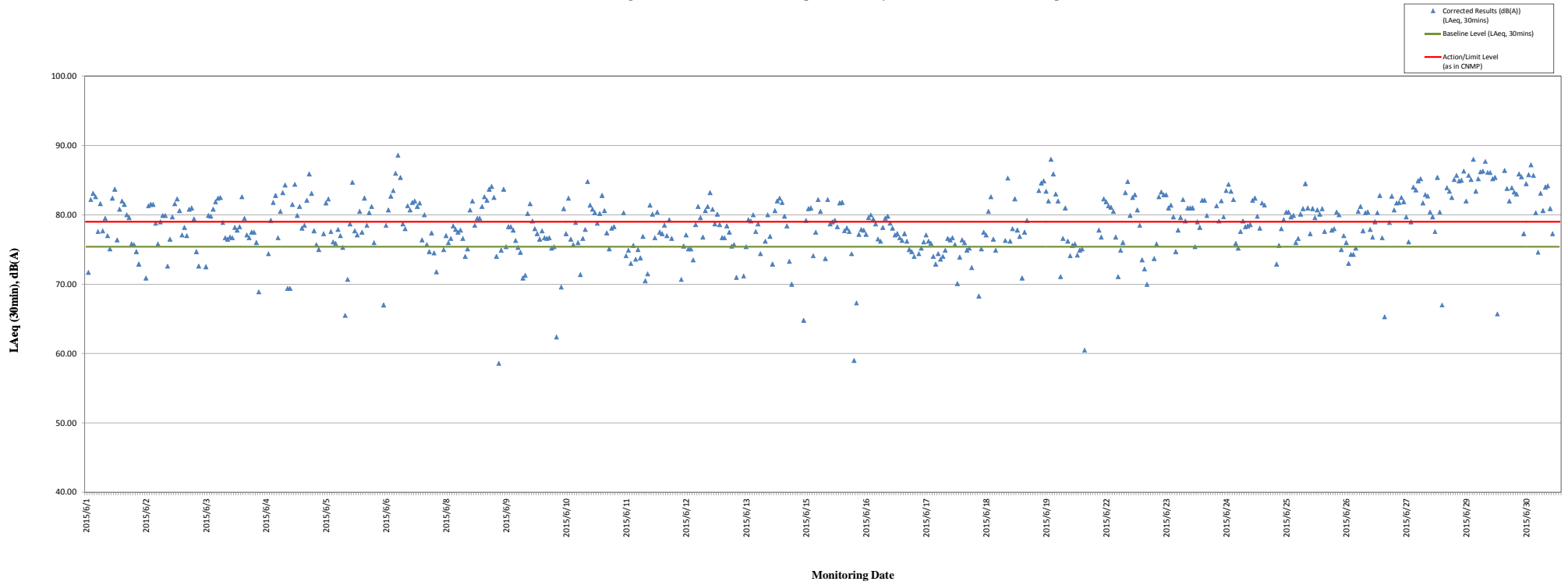


Remarks:

- 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	2015 6 27 11	0	81.1	75.4	79.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 11	30	78.7	75.4	76.1	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 12	0	80.5	75.4	79	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 12	30	84.6	75.4	84	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 13	0	84.2	75.4	83.6	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 13	30	85.3	75.4	84.9	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 14	0	85.6	75.4	85.2	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 14	30	82.6	75.4	81.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 15	0	83.6	75.4	82.9	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 15	30	83.4	75.4	82.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 16	0	81.6	75.4	80.4	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 16	30	81.1	75.4	79.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 17	0	79.7	75.4	77.6	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 17	30	85.8	75.4	85.4	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 18	0	81.6	75.4	80.4	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 27 18	30	76.0	75.4	67	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 7	0	72.4	75.4	<Baseline Level	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 7	30	84.5	75.4	83.9	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 8	0	84.1	75.4	83.4	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 8	30	83.2	75.4	82.5	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 9	0	85.5	75.4	85.1	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 9	30	86.1	75.4	85.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 10	0	85.4	75.4	84.9	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 10	30	85.4	75.4	85	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 11	0	86.6	75.4	86.3	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 11	56	82.9	75.4	82	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 12	26	86.0	75.4	85.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 12	56	85.5	75.4	85.1	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 13	26	88.2	75.4	88	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 13	56	84.0	75.4	83.4	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 14	26	85.7	75.4	85.2	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 14	56	86.6	75.4	86.2	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 15	26	86.7	75.4	86.3	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 15	56	87.9	75.4	87.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 16	26	86.5	75.4	86.1	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 16	56	86.5	75.4	86.1	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 17	26	85.7	75.4	85.2	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 17	56	85.8	75.4	85.4	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 18	26	75.8	75.4	65.7	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 29 18	56	75.3	75.4	<Baseline Level	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 6	56	71.8	75.4	<Baseline Level	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 7	26	86.8	75.4	86.4	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 7	56	84.3566	75.4	83.8	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 8	26	82.8539	75.4	82	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 8	56	84.478	75.4	83.9	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 9	26	83.9191	75.4	83.3	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 9	56	83.7321	75.4	83	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 10	26	86.2361	75.4	85.9	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 10	56	85.9182	75.4	85.5	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 11	26	79.4501	75.4	77.3	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 11	56	85.0068	75.4	84.5	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 12	26	86.1954	75.4	85.8	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 12	56	87.4824	75.4	87.2	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 13	26	86.0842	75.4	85.7	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 13	56	81.5534	75.4	80.3	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 14	26	78.0094	75.4	74.6	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 14	56	83.8063	75.4	83.1	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 15	26	81.7681	75.4	80.6	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 15	56	84.5613	75.4	84	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 16	26	84.7675	75.4	84.2	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 16	56	81.9815	75.4	80.9	79	Y	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 17	26	79.4639	75.4	77.3	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 17	56	71.9263	75.4	<Baseline Level	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 18	26	71.8573	75.4	<Baseline Level	79	N	
MTW-16-1	SKH Good Shepherd Primary School	2015 6 30 18	56	71.4706	75.4	<Baseline Level	79	N	

Continuous Noise Monitoring at MTW-16-1(SKH Good Shepherd Primary School) in June 2015- (L_{Aeq}, 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		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m ³ /min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(µg/m ³)	(µg/m ³)	(µg/m ³)		ID	ID
02-Jun-15	10:35	03-Jun-15	10:35	Fine	2.8687	2.9559	14312.30	14336.30	24.00	1.32	1.32	1.32	46	156.8	260	-	0107	6160
08-Jun-15	10:45	09-Jun-15	10:45	Fine	2.9221	3.0201	14336.30	14360.30	24.00	1.32	1.32	1.32	52	156.8	260	-	0107	6229
12-Jun-15	8:50	13-Jun-15	8:50	Fine	2.9073	3.0045	14360.30	14384.30	24.00	1.32	1.32	1.32	51	156.8	260	-	0107	6253
18-Jun-15	10:42	19-Jun-15	10:42	Sunny	2.8477	2.9521	14384.30	14408.30	24.00	1.32	1.32	1.32	55	156.8	260	-	0107	6401
24-Jun-15	10:35	25-Jun-15	10:35	Cloudy	2.8531	2.9449	14408.30	14432.30	24.00	1.32	1.32	1.32	48	156.8	260	-	0107	6419
29-Jun-15	10:42	30-Jun-15	10:42	Sunny	2.8225	2.9212	14432.30	14456.30	24.00	1.32	1.32	1.32	52	156.8	260	-	0107	6435
													Minimum	46				
													Average	51				
													Maximum	55				

Station DMS-7 Parc 22

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m ³ /min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(µg/m ³)	(µg/m ³)	(µg/m ³)		ID	ID
02-Jun-15	9:45	03-Jun-15	9:45	Fine	2.8686	2.9550	4496.17	4520.17	24.00	1.22	1.22	1.22	49	166.7	260	-	3574	6159
08-Jun-15	9:45	09-Jun-15	9:45	Fine	2.9204	3.0197	4520.17	4544.17	24.00	1.22	1.22	1.22	57	166.7	260	-	3574	6228
12-Jun-15	8:35	13-Jun-15	8:35	Fine	2.8767	2.9669	4544.17	4568.17	24.00	1.22	1.22	1.22	51	166.7	260	-	3574	6252
18-Jun-15	9:45	19-Jun-15	9:45	Sunny	2.9038	3.0071	4568.17	4592.17	24.00	1.22	1.22	1.22	59	166.7	260	-	3574	6272
24-Jun-15	9:43	25-Jun-15	9:43	Cloudy	2.8464	2.9337	4592.17	4616.17	24.00	1.22	1.22	1.22	50	166.7	260	-	3574	6418
29-Jun-15	9:42	30-Jun-15	9:42	Sunny	2.8266	2.9211	4616.17	4640.17	24.00	1.22	1.22	1.22	54	166.7	260	-	3574	6434
													Minimum	49				
													Average	53				
													Maximum	59				

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							
02-Jun-15	9:30	03-Jun-15	9:30	Fine	2.8705	2.9700	4445.11	4469.11	24.00	1.25	1.25	1.25	55	152.2	260	-	3572	6158
08-Jun-15	9:30	09-Jun-15	9:30	Fine	2.9194	3.0071	4469.11	4493.11	24.00	1.25	1.25	1.25	49	152.2	260	-	3572	6227
12-Jun-15	8:20	13-Jun-15	8:20	Fine	2.8805	2.9709	4493.11	4517.11	24.00	1.25	1.25	1.25	50	152.2	260	-	3572	6251
18-Jun-15	9:30	19-Jun-15	9:30	Sunny	2.8812	2.9867	4517.11	4541.11	24.00	1.25	1.25	1.25	59	152.2	260	-	3572	6271
24-Jun-15	9:28	25-Jun-15	9:28	Cloudy	2.8614	2.9522	4541.11	4565.11	24.00	1.25	1.25	1.25	50	152.2	260	-	3572	6417
29-Jun-15	9:28	30-Jun-15	9:28	Sunny	2.8174	2.9221	4565.11	4589.11	24.00	1.25	1.25	1.25	58	152.2	260	-	3572	6433
													Minimum	49				
													Average	54				
													Maximum	59				

Station DMS-9 No. 12 Pau Chung Street

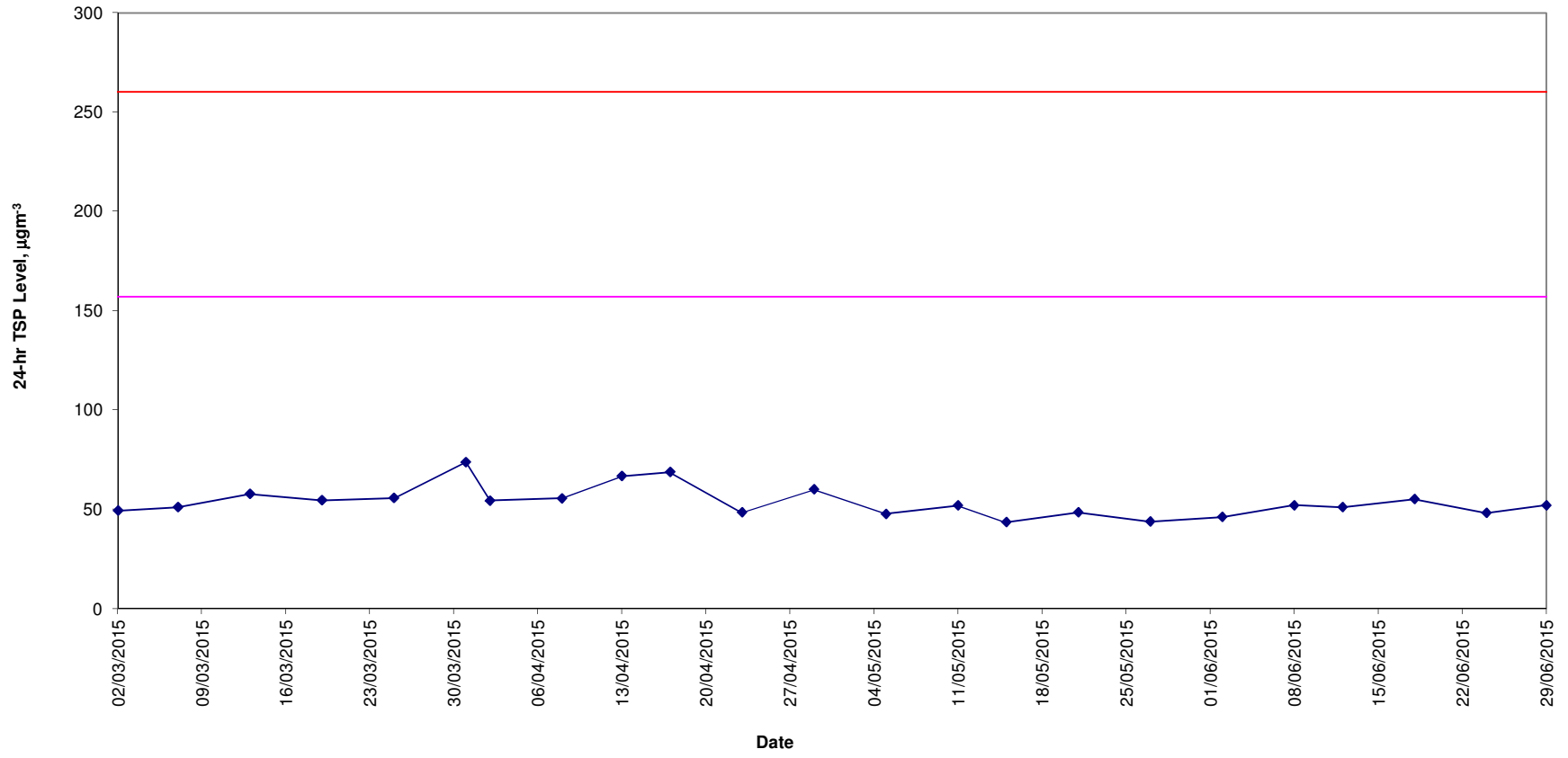
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)		Average	TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final							
02-Jun-15	9:20	03-Jun-15	9:20	Fine	2.8957	2.9900	14745.40	14769.40	24.00	1.24	1.24	1.24	53	160.9	260	-	0814	6157
08-Jun-15	9:20	09-Jun-15	9:20	Fine	2.9060	3.0011	14769.40	14793.40	24.00	1.24	1.24	1.24	53	160.9	260	-	0814	6226
12-Jun-15	8:10	13-Jun-15	8:10	Fine	2.8743	2.9771	14793.40	14817.40	24.00	1.24	1.24	1.24	58	160.9	260	-	0814	6250
18-Jun-15	9:20	19-Jun-15	9:20	Sunny	2.8731	2.9906	14817.40	14841.40	24.00	1.24	1.24	1.24	66	160.9	260	-	0814	6270
24-Jun-15	9:20	25-Jun-15	9:20	Cloudy	2.8587	2.9603	14841.40	14865.40	24.00	1.24	1.24	1.24	57	160.9	260	-	0814	6416
29-Jun-15	9:20	30-Jun-15	9:20	Sunny	2.8305	2.9411	14865.40	14889.40	24.00	1.24	1.24	1.24	62	160.9	260	-	0814	6432
													Minimum	53				
													Average	58				
													Maximum	66				

Station DMS-10 Chat Ma Mansion

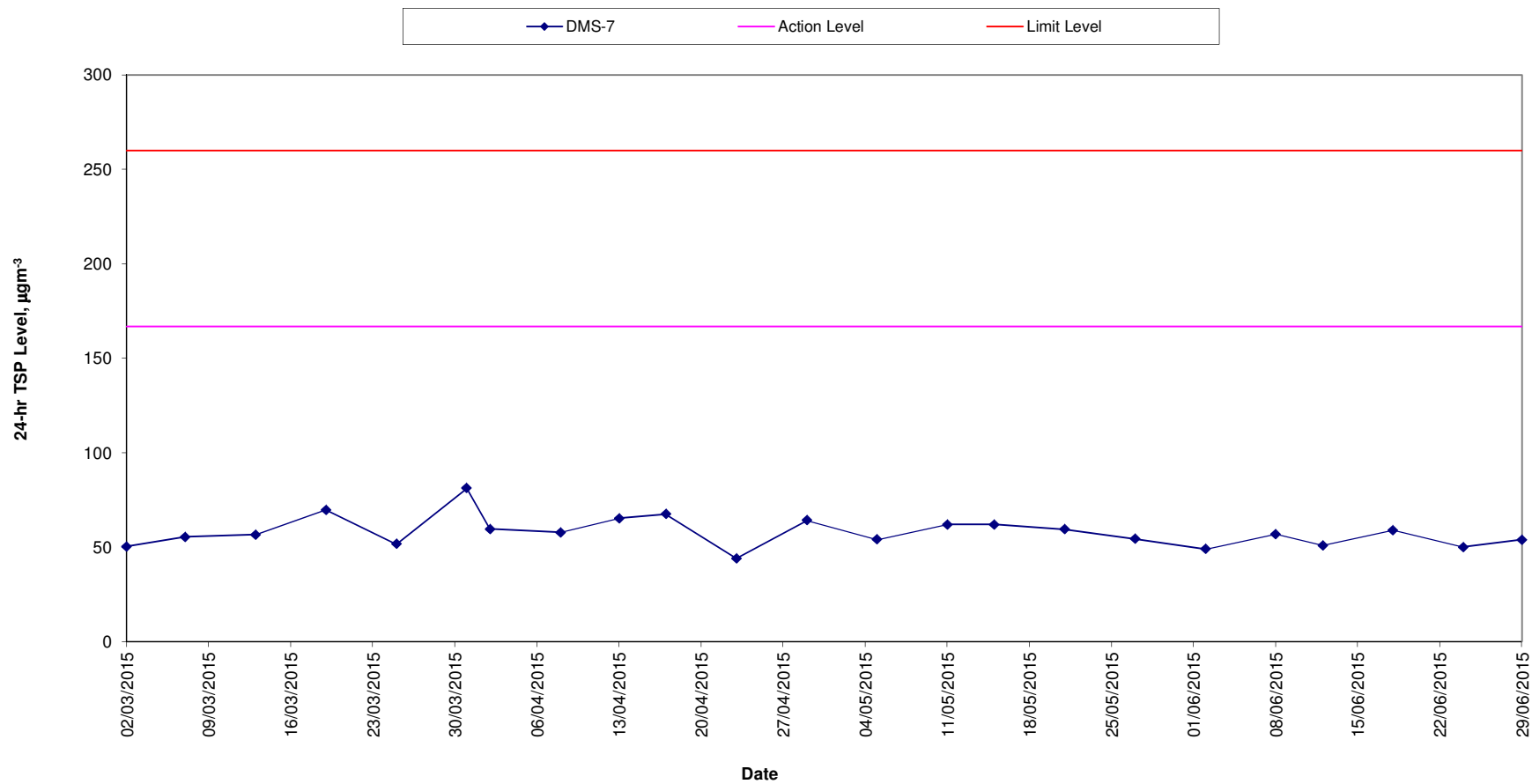
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)		Average	TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final							
02-Jun-15	8:45	03-Jun-15	8:45	Fine	2.8975	2.9904	5077.20	5101.20	24.00	1.25	1.25	1.25	52	170.4	260	-	3573	6156
08-Jun-15	8:45	09-Jun-15	8:45	Fine	2.8920	2.9779	5101.20	5125.20	24.00	1.25	1.25	1.25	48	170.4	260	-	3573	6225
12-Jun-15	8:00	13-Jun-15	8:00	Fine	2.8648	2.9566	5125.20	5149.20	24.00	1.25	1.25	1.25	51	170.4	260	-	3573	6249
18-Jun-15	8:45	19-Jun-15	8:45	Sunny	2.8734	2.9679	5149.20	5173.20	24.00	1.25	1.25	1.25	53	170.4	260	-	3573	6269
24-Jun-15	8:42	25-Jun-15	8:42	Cloudy	2.8500	2.9441	5173.20	5197.20	24.00	1.25	1.25	1.25	52	170.4	260	-	3573	6415
29-Jun-15	8:42	30-Jun-15	8:42	Sunny	2.8045	2.9066	5197.20	5221.20	24.00	1.25	1.25	1.25	57	170.4	260	-	3573	6431
													Minimum	48				
													Average	52				
													Maximum	57				

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

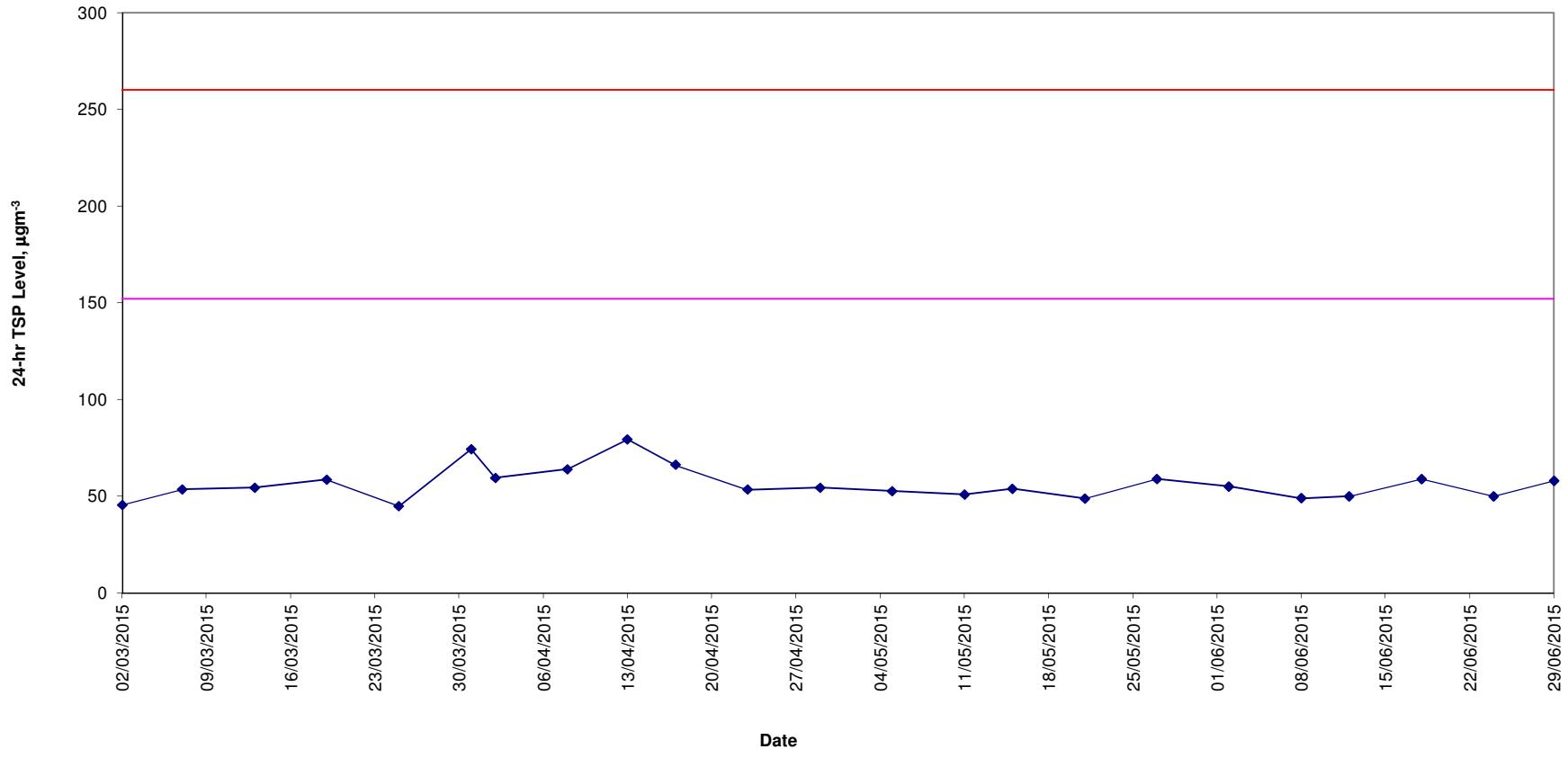
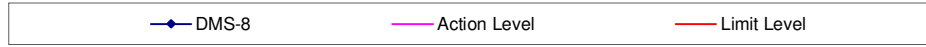
◆ DMS-6 — Action Level — Limit Level



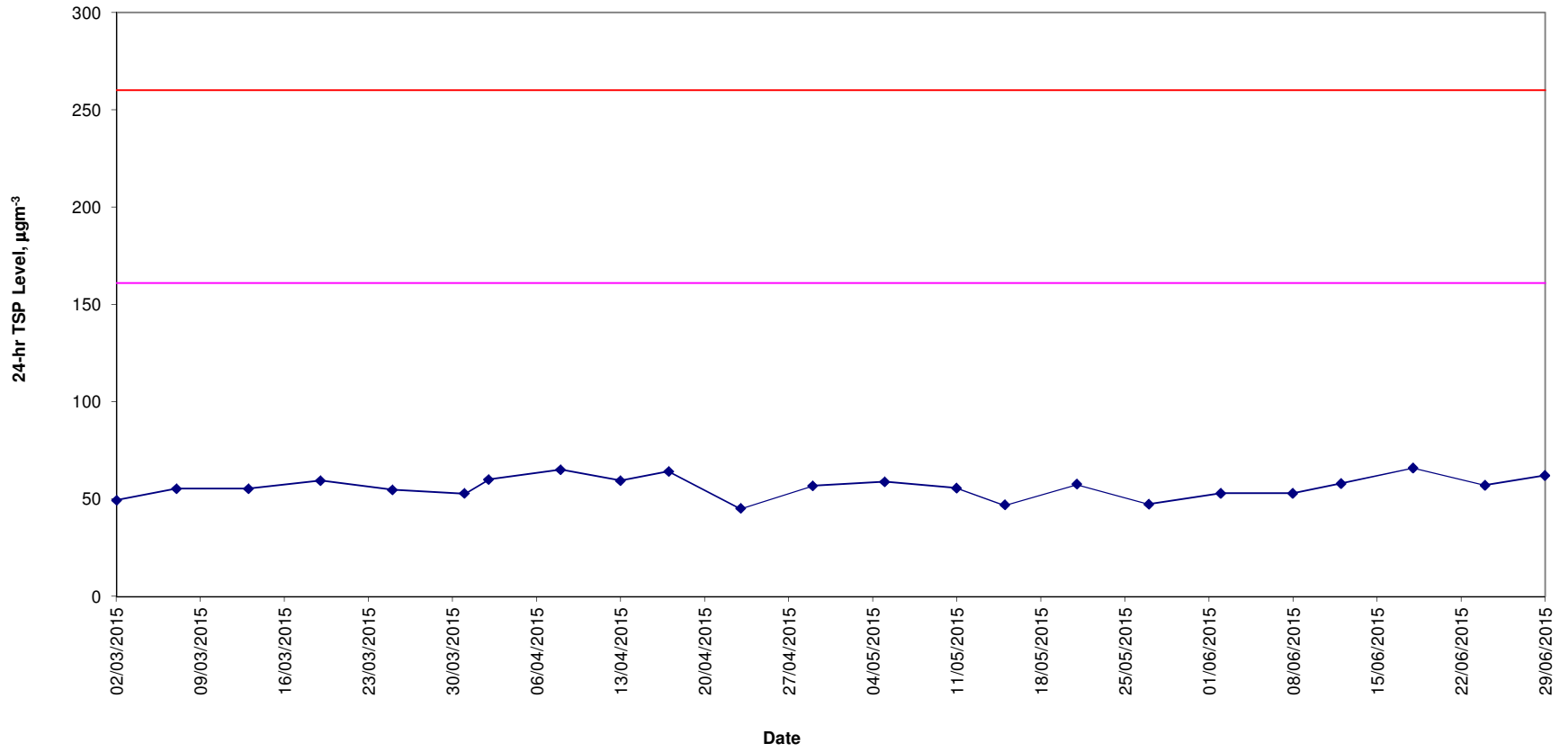
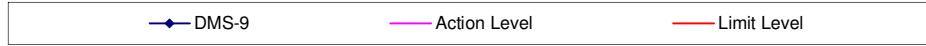
Construction Dust Monitoring Results for the Past 4 Months DMS- 7 (Parc 22)



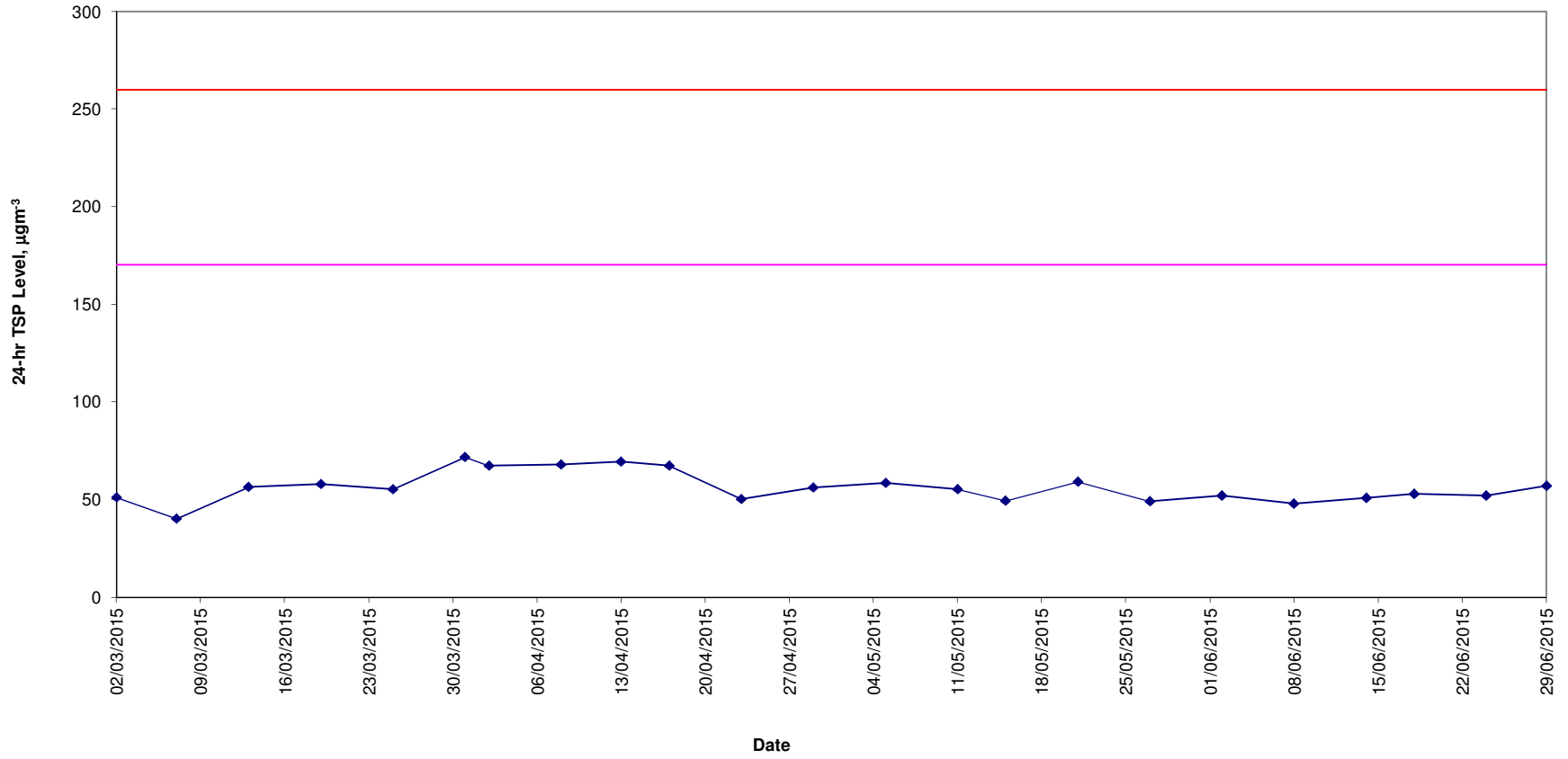
**Construction Dust Monitoring Results for the Past 4 Months
DMS-8 (SKH Good Shepherd Primary School)**



**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)

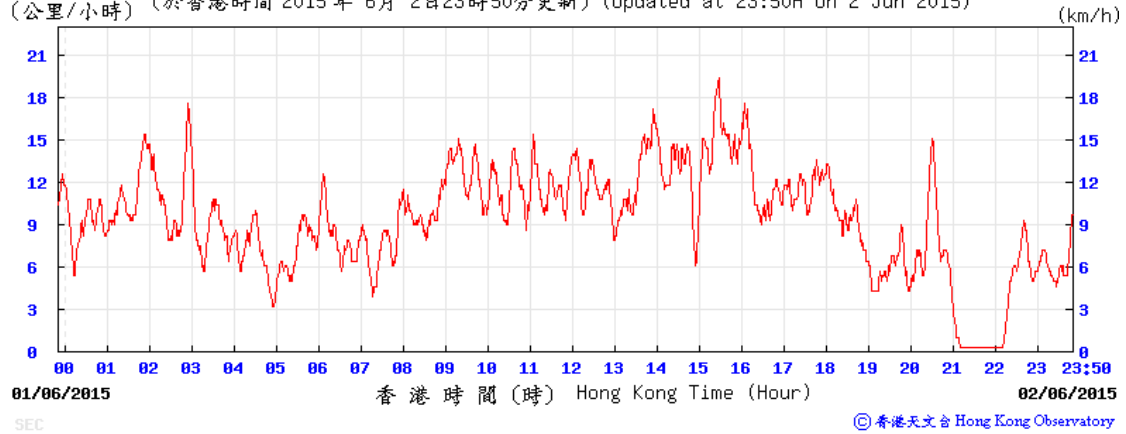


Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 June 2015

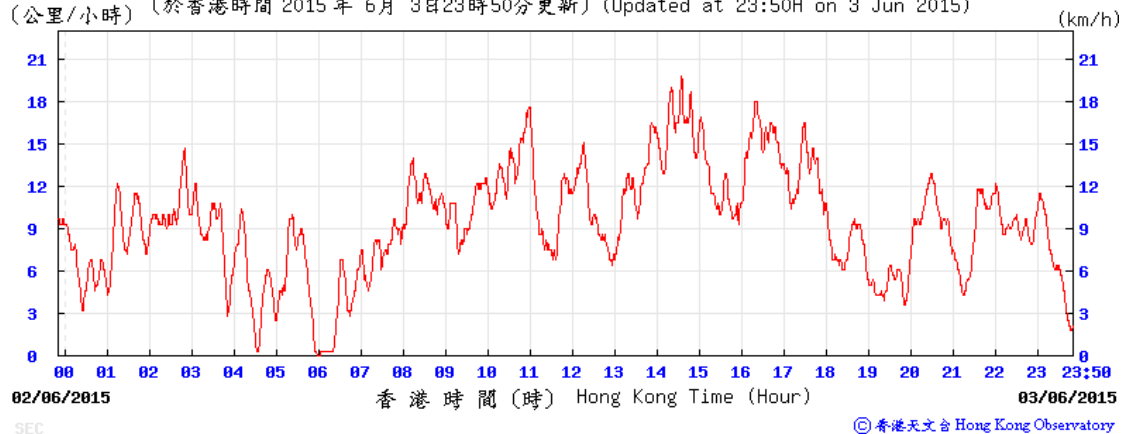
Wind Speed:

(公里/小時) (於香港時間 2015 年 6 月 2 日 23 時 50 分更新) (Updated at 23:50H on 2 Jun 2015)



Wind Speed:

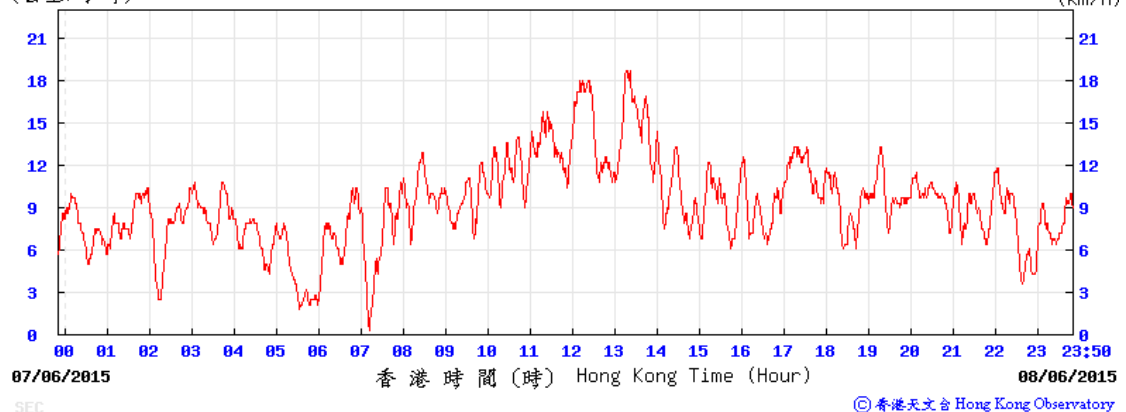
(公里/小時) (於香港時間 2015 年 6 月 3 日 23 時 50 分更新) (Updated at 23:50H on 3 Jun 2015)



8-9 June 2015

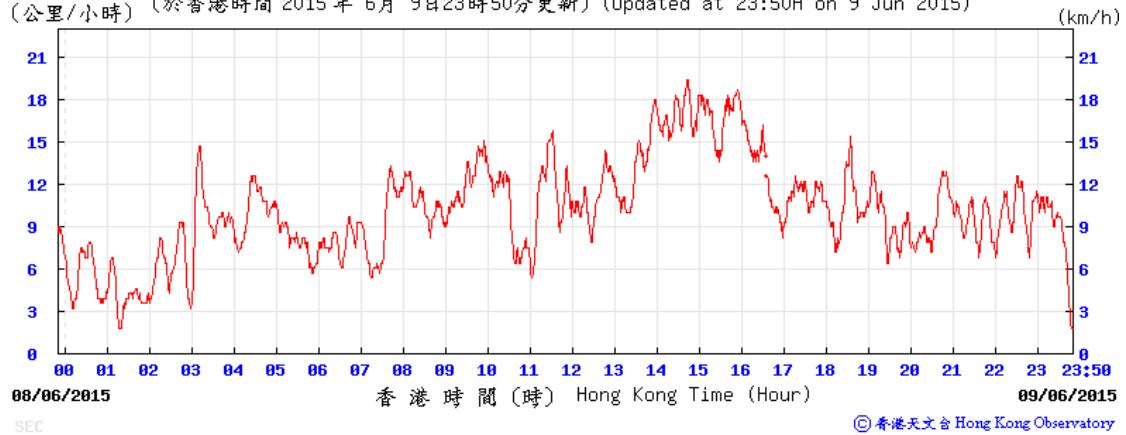
Wind Speed:

(公里/小時) (於香港時間 2015 年 6 月 8 日 23 時 50 分更新) (Updated at 23:50H on 8 Jun 2015)



Wind Speed:

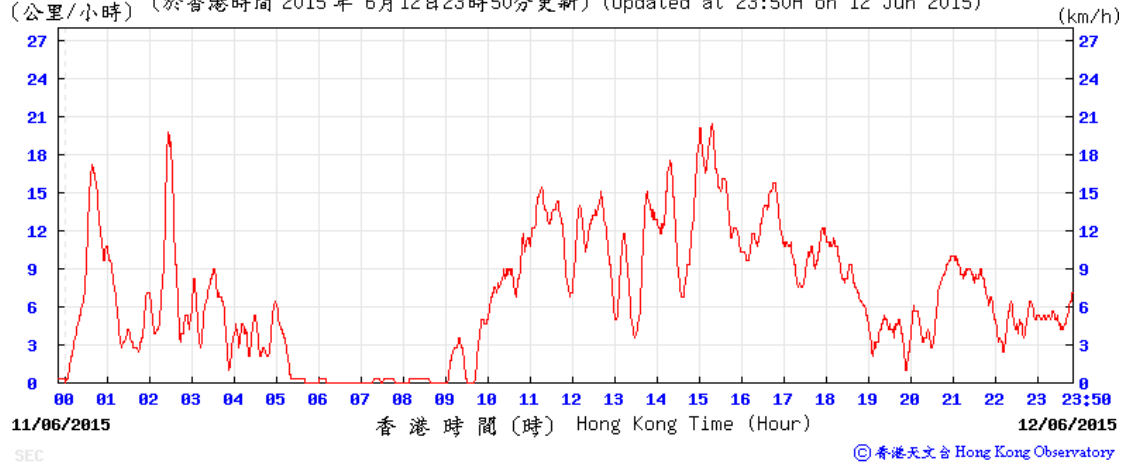
(公里/小時) (於香港時間 2015 年 6 月 9 日 23 時 50 分更新) (Updated at 23:50H on 9 Jun 2015)



12-13 June 2015

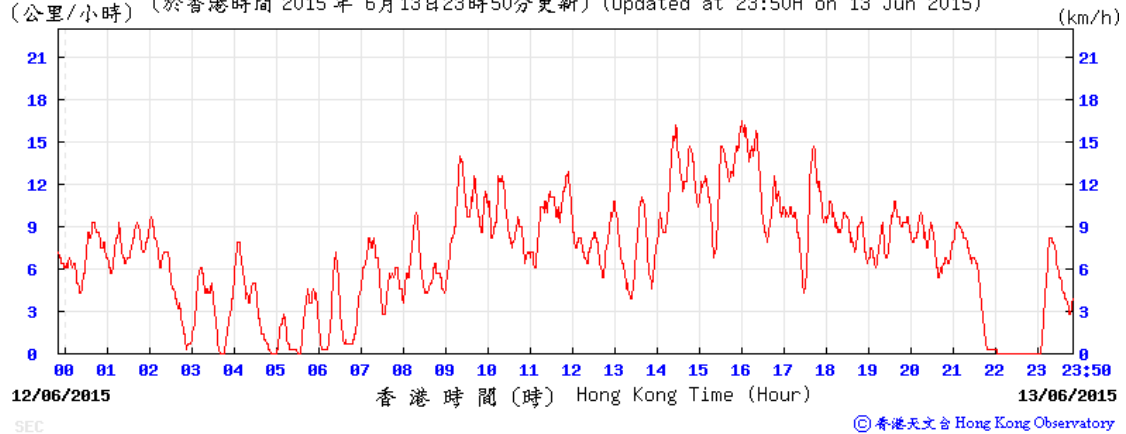
Wind Speed:

(公里/小時) (於香港時間 2015 年 6 月 12 日 23 時 50 分更新) (Updated at 23:50H on 12 Jun 2015)



Wind Speed:

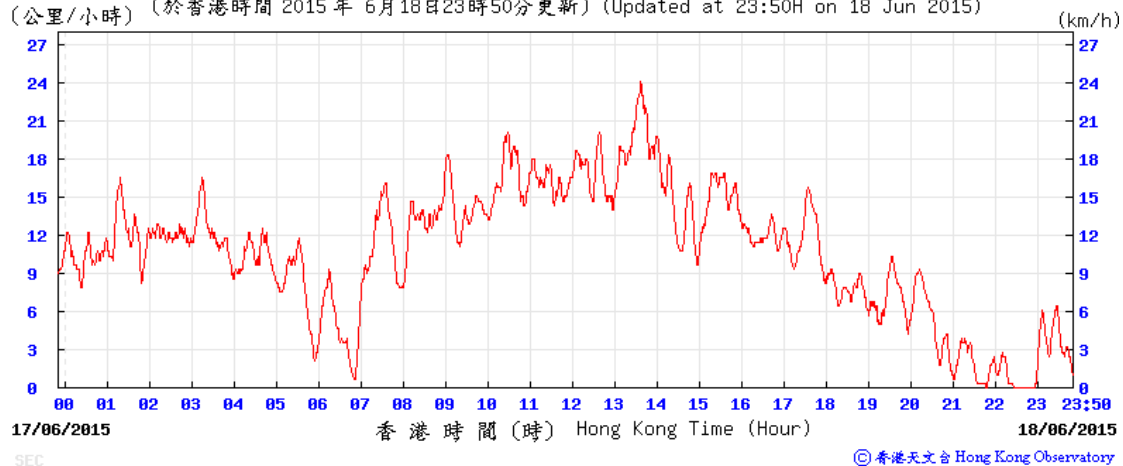
(公里/小時) (於香港時間 2015 年 6 月 13 日 23 時 50 分更新) (Updated at 23:50H on 13 Jun 2015)



18-19 June 2015

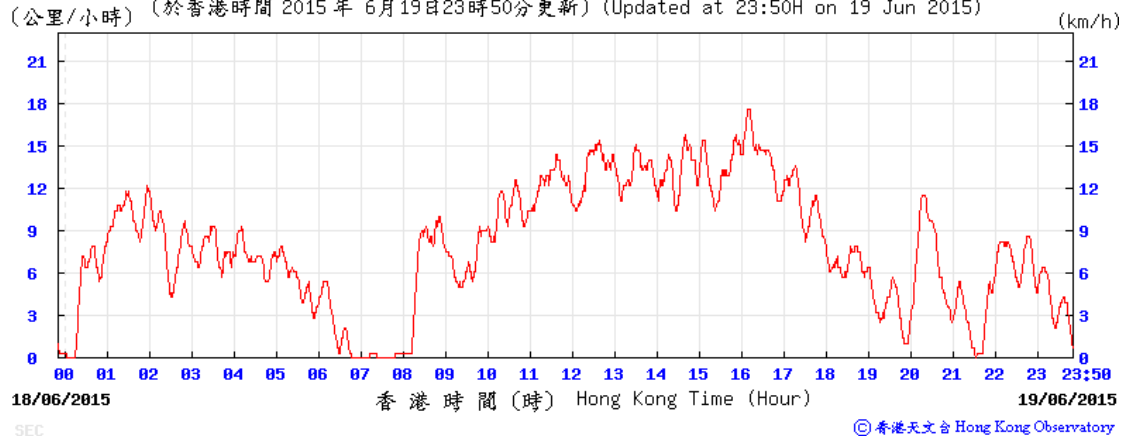
Wind Speed:

(公里/小時) (於香港時間 2015 年 6月18日23時50分更新) (Updated at 23:50H on 18 Jun 2015)



Wind Speed:

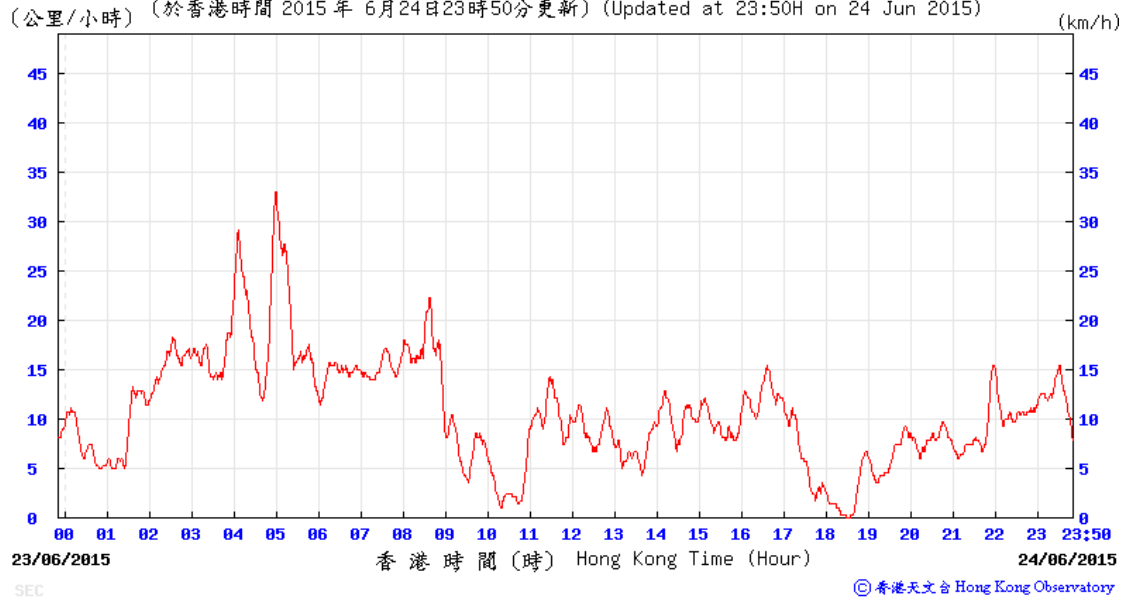
(公里/小時) (於香港時間 2015 年 6月19日23時50分更新) (Updated at 23:50H on 19 Jun 2015)



24-25 June 2015

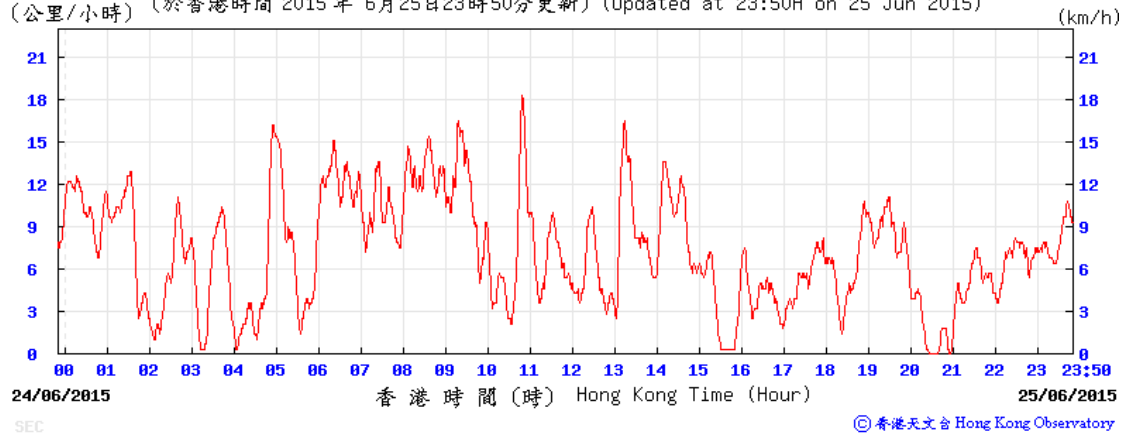
Wind Speed:

(公里/小時) (於香港時間 2015 年 6月24日23時50分更新) (Updated at 23:50H on 24 Jun 2015)



Wind Speed:

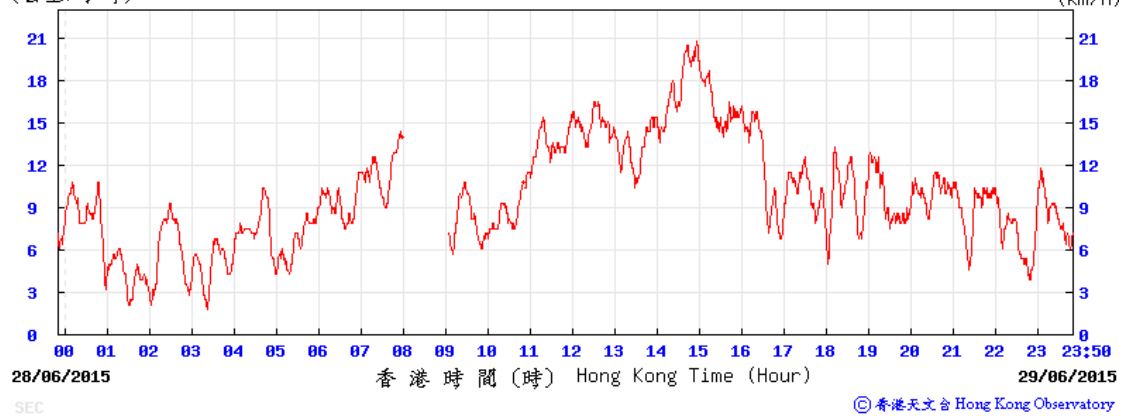
(公里/小時) (於香港時間 2015 年 6 月 25 日 23 時 50 分更新) (Updated at 23:50H on 25 Jun 2015)



29-30 June 2015

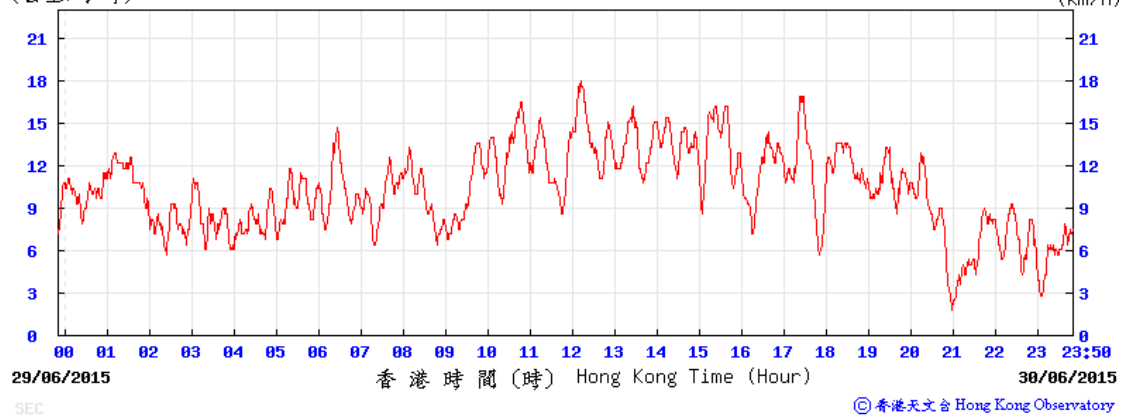
Wind Speed:

(公里/小時) (於香港時間 2015 年 6 月 29 日 23 時 50 分更新) (Updated at 23:50H on 29 Jun 2015)



Wind Speed:

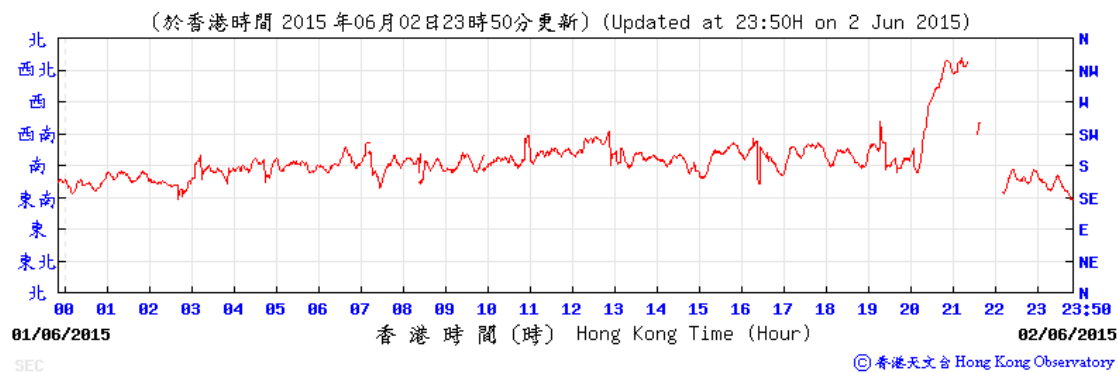
(公里/小時) (於香港時間 2015 年 6 月 30 日 23 時 50 分更新) (Updated at 23:50H on 30 Jun 2015)



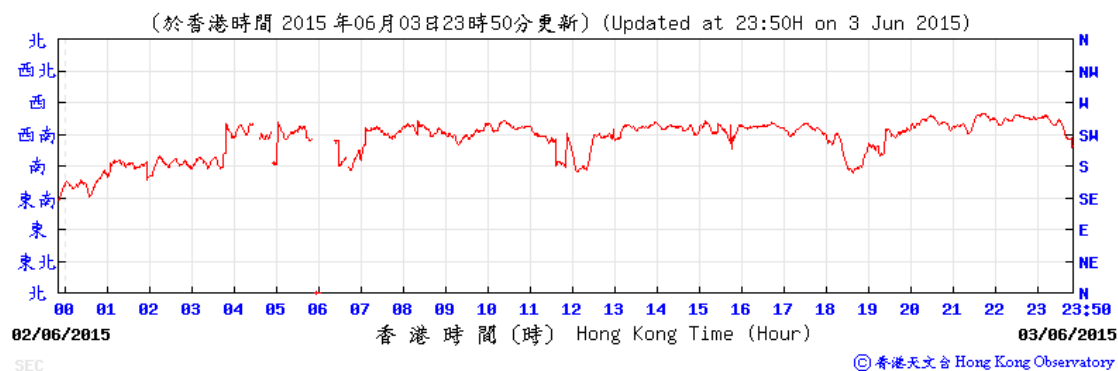
Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 June 2015

Wind Direction:

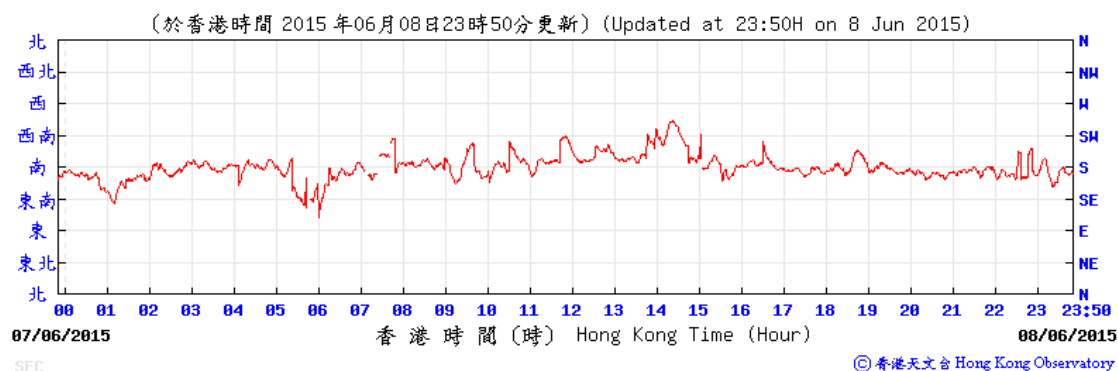


Wind Direction:

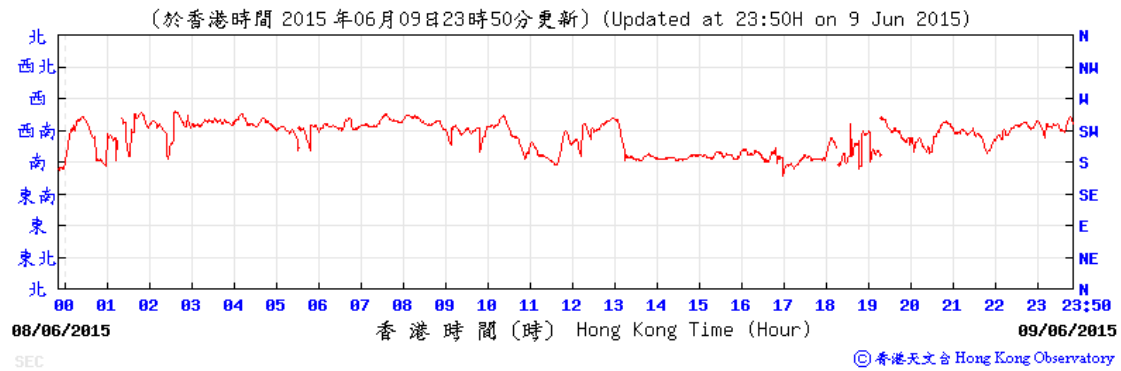


8-9 June 2015

Wind Direction:

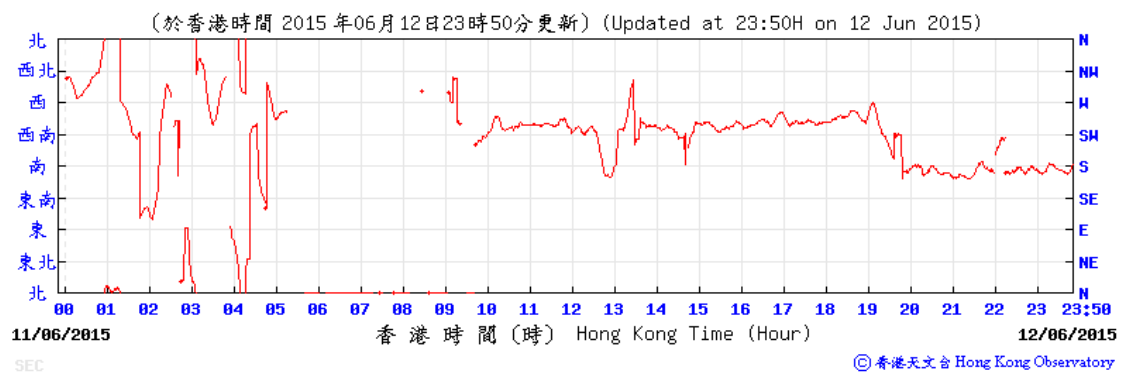


Wind Direction:

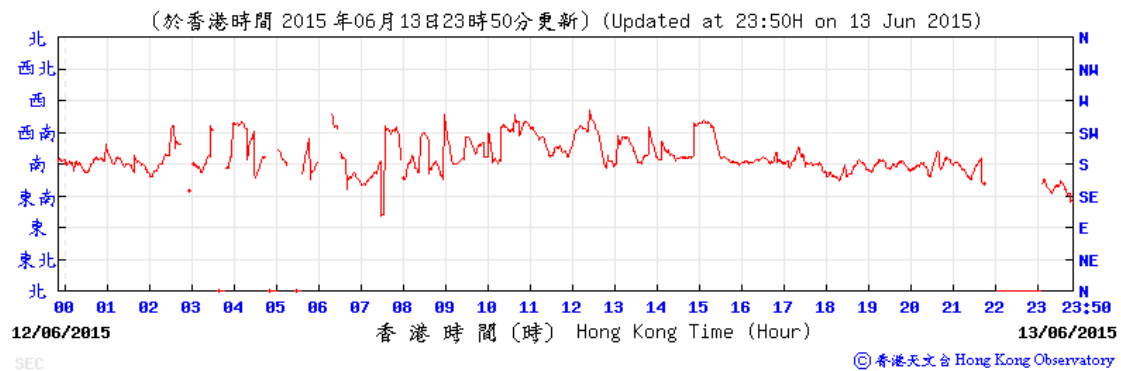


12-13 June 2015

Wind Direction:

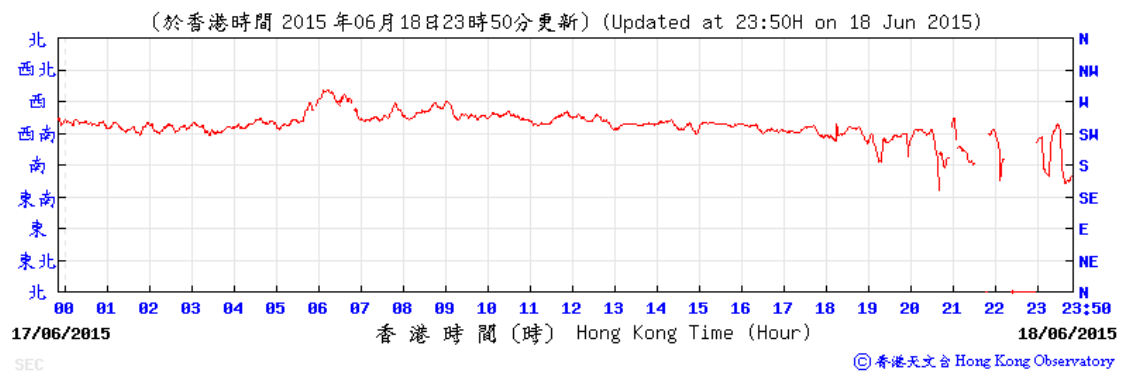


Wind Direction:

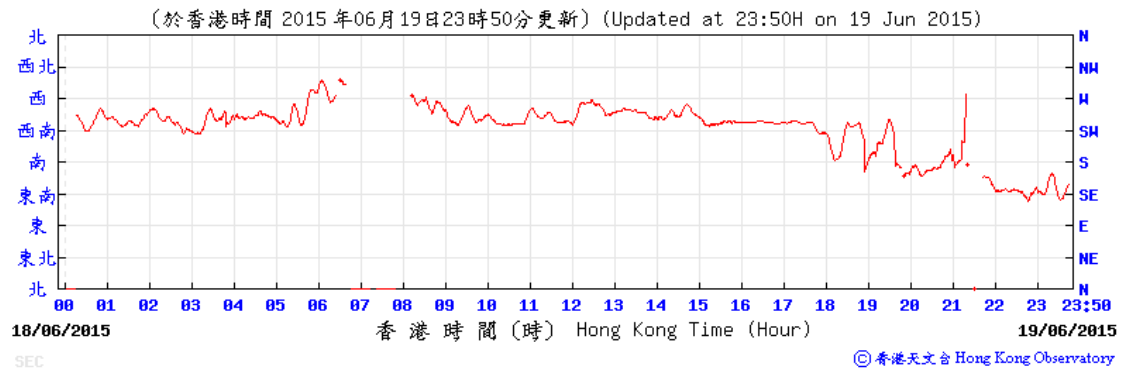


18-19 June 2015

Wind Direction:

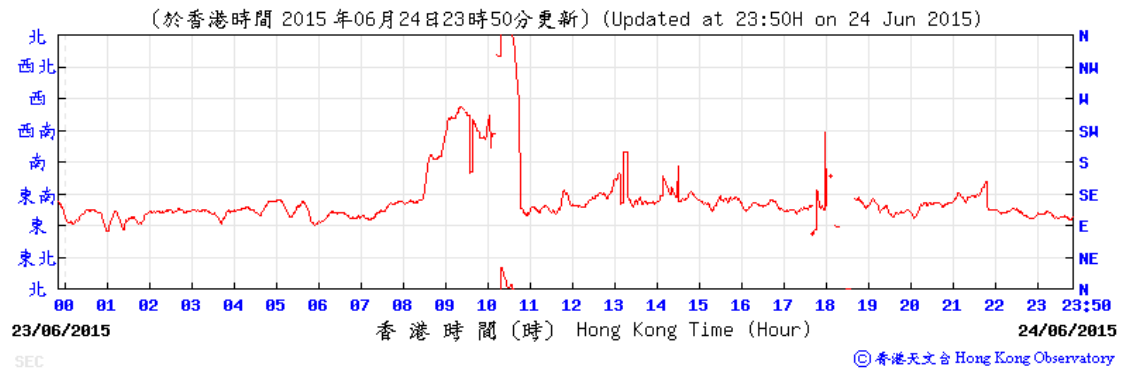


Wind Direction:

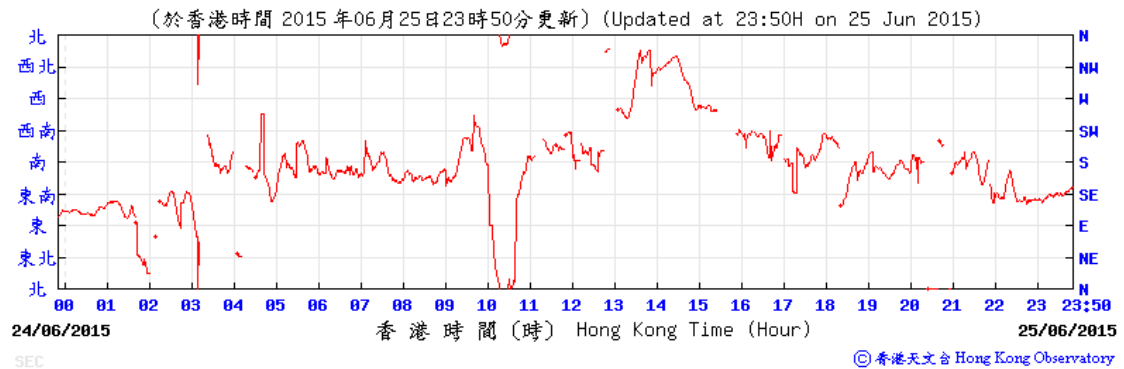


24-25 June 2015

Wind Direction:

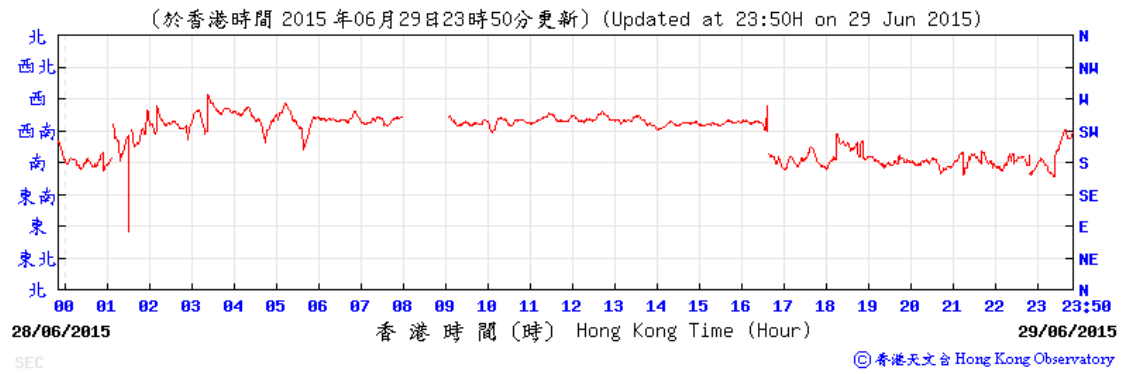


Wind Direction:

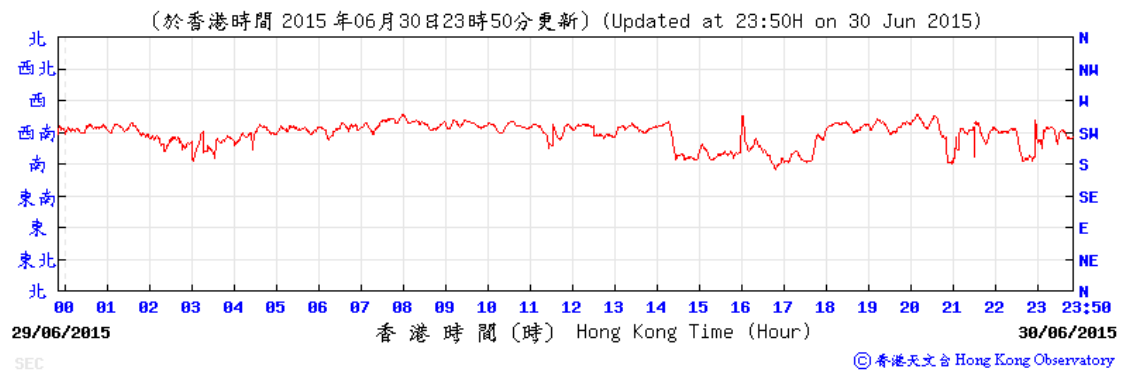


29-30 June 2015

Wind Direction:



Wind Direction:



Annex K

Waste Flow Table

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
	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 '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)	
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	1.314	0.000

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly					Imported Fill
	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 '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg)	(in '000m ³)	
Jan 2015	64.165	0.000	0.000	0.266	0.000	63.899	0.000	0.077	0.328	0.180	0.150	0.000
Feb 2015	46.884	0.000	0.000	2.599	0.000	44.285	0.000	0.090	3.102	0.000	0.106	0.000
Mar 2015	41.498	0.000	0.000	0.000	0.000	41.498	0.000	0.072	2.321	0.600	0.126	0.000
Apr 2015	13.049	0.000	0.000	0.000	0.000	13.049	0.000	0.081	1.598	0.000	0.119	0.000
May 2015	54.559	0.000	0.000	0.000	0.000	54.559	0.000	0.063	0.548	0.000	0.099	0.000
Jun 2015	48.857	0.000	0.000	0.000	0.000	48.857	0.000	0.041	0.880	0.000	0.144	0.000
Sub-total	269.012	0.000	0.000	2.865	0.000	266.147	0.000	0.424	8.777	0.780	0.744	0.000
Total	590.711	0.000	0.605	2.865	0.064	587.176	12.800	2.409	24.491	3.835	5.674	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	1 June 2015
Time	07:35-08:05; 08:05-08:35; 08:35-09:05; 12:05-12:35; 12:35-13:05; 13:35-14:05; 14:05-14:35; and 14:35-15:05.
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)	82.2 dB(A) (07:35-08:05); 83.1 dB(A) (08:05-08:35); 82.6 dB(A) (08:35-09:05); 82.4 dB(A) (12:05-12:35); 83.7 dB(A) (12:35-13:05); 80.8 dB(A) (13:35-14:05); 82 dB(A) (14:05-14:35); 81.5 dB(A) (14:35-15:05).
Possible reason	<p>Based on the site record on 1 June 2015, the potential noise sources from the Project works included drilling works, pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and toe grout works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 1 mobile crane, 6 backhoes and 4 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 1 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	1 June 2015
Time	07:35-08:05; 08:05-08:35; 08:35-09:05; 12:05-12:35; 12:35-13:05; 14:05-14:35; and 14:35-15:05.
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)	82.2 dB(A) (07:35-08:05); 83.1 dB(A) (08:05-08:35); 82.6 dB(A) (08:35-09:05); 82.4 dB(A) (12:05-12:35); 83.7 dB(A) (12:35-13:05); 82 dB(A) (14:05-14:35); 81.5 dB(A) (14:35-15:05).
Possible reason	<p>Based on the site record on 1 June 2015, the potential noise sources from the Project works included drilling works, pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and toe grout works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 1 mobile crane, 6 backhoes and 4 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 1 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	1 June 2015
Time	07:35-08:05; 08:05-08:35; 08:35-09:05; 12:05-12:35; 12:35-13:05; 13:35-14:05; 14:05-14:35; 14:35-15:05; 15:05-15:35; and 15:35-16:05.
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)	82.2 dB(A) (07:35-08:05); 83.1 dB(A) (08:05-08:35); 82.6 dB(A) (08:35-09:05); 82.4 dB(A) (12:05-12:35); 83.7 dB(A) (12:35-13:05); 80.8 dB(A) (13:35-14:05); 82 dB(A) (14:05-14:35); 81.5 dB(A) (14:35-15:05); 80 dB(A) (15:05-15:35); 79.6 dB(A) (15:35-16:05).
Possible reason	<p>Based on the site record on 1 June 2015, the potential noise sources from the Project works included drilling works, pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and toe grout works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 1 mobile crane, 6 backhoes and 4 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 1 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work.

	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	2 June 2015
Time	07:45-08:15; 08:15-08:45; 08:45-09:15; 13:15-13:45; 13:45-14:15; 14:15-14:45; 16:15-16:45; and 16:45-17:15.
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) (07:45-08:15); 81.5 dB(A) (08:15-08:45); 81.5 dB(A) (08:45-09:15); 81.6 dB(A) (13:15-13:45); 82.3 dB(A) (13:45-14:15); 80.6 dB(A) (14:15-14:45); 80.8 dB(A) (16:15-16:45); 81 dB(A) (16:45-17:15).
Possible reason	<p>Based on the site record on 2 June 2015, the potential noise sources from the Project works included drilling works, pumping test, casting concrete pedestrian decking, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and plant maintenance works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes and 2 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 2 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	2 June 2015
Time	08:15-08:45; 08:45-09:15; 13:15-13:45; and 13:45-14:15.
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)	81.5 dB(A) (08:15-08:45); 81.5 dB(A) (08:45-09:15); 81.6 dB(A) (13:15-13:45); 82.3 dB(A) (13:45-14:15).
Possible reason	<p>Based on the site record on 2 June 2015, the potential noise sources from the Project works included drilling works, pumping test, casting concrete pedestrian decking, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and plant maintenance works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes and 2 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 2 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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

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	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	2 June 2015
Time	07:45-08:15; 08:15-08:45; 08:45-09:15; 10:45-11:15; 11:15-11:45; 12:45-13:15; 13:15-13:45; 13:45-14:15; 14:15-14:45; 16:15-16:45; and 16:45-17:15.
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)	81.3 dB(A) (07:45-08:15); 81.5 dB(A) (08:15-08:45); 81.5 dB(A) (08:45-09:15); 79.9 dB(A) (10:45-11:15); 79.9 dB(A) (11:15-11:45); 79.7 dB(A) (12:45-13:15); 81.6 dB(A) (13:15-13:45); 82.3 dB(A) (13:45-14:15); 80.6 dB(A) (14:15-14:45); 80.8 dB(A) (16:15-16:45); 81 dB(A) (16:45-17:15).
Possible reason	<p>Based on the site record on 2 June 2015, the potential noise sources from the Project works included drilling works, pumping test, casting concrete pedestrian decking, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and plant maintenance works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes and 2 drill rigs.</p> <p>The above-mentioned construction works were continuously operating on 2 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work.

	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	3 June 2015
Time	08:45-09:15; 09:15-09:45; 09:45-10:15; 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)	80.8 dB(A) (08:45-09:15); 81.9 dB(A) (09:15-09:45); 82.4 dB(A) (09:45-10:15); 82.5 dB(A) (10:15-10:45).
Possible reason	<p>Based on the site record on 3 June 2015, the potential noise sources from the Project works included drilling works, pumping test, concrete casting for blinding layer, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and concrete casting in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 10 backhoes, 1 concrete pump truck and 3 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 3 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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

Samsung - Hsin Chong Joint Venture
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	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	3 June 2015
Time	09:15-09:45; 09:45-10:15; and 10:15-10:45.
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)	81.9 dB(A) (09:15-09:45); 82.4 dB(A) (09:45-10:15); 82.5 dB(A) (10:15-10:45).
Possible reason	<p>Based on the site record on 3 June 2015, the potential noise sources from the Project works included drilling works, pumping test, concrete casting for blinding layer, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and concrete casting in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 10 backhoes, 1 concrete pump truck and 3 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 3 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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.

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	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	3 June 2015
Time	07:45-08:15; 08:15-08:45; 08:45-09:15; 09:15-09:45; 09:45-10:15; 10:15-10:45; 14:45-15:15; and 15:15-15:45.
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)	79.9 dB(A) (07:45-08:15); 79.8 dB(A) (08:15-08:45); 80.8 dB(A) (08:45-09:15); 81.9 dB(A) (09:15-09:45); 82.4 dB(A) (09:45-10:15); 82.5 dB(A) (10:15-10:45); 82.6 dB(A) (14:45-15:15); 79.5 dB(A) (15:15-15:45).
Possible reason	<p>Based on the site record on 3 June 2015, the potential noise sources from the Project works included drilling works, pumping test, concrete casting for blinding layer, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and concrete casting in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 10 backhoes, 1 concrete pump truck and 3 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 3 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work.

	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	4 June 2015
Time	08:45-09:15; 09:15-09:45; 10:15-10:45; 10:45-11:15; 11:15-11:45; 12:45-13:15; 13:15-13:45; 15:45-16:15; 16:37-17:07; and 17:07-17:37.
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)	81.8 dB(A) (08:45-09:15); 82.8 dB(A) (09:15-09:45); 80.5 dB(A) (10:15-10:45); 83.2 dB(A) (10:45-11:15); 84.3 dB(A) (11:15-11:45); 81.5 dB(A) (12:45-13:15); 84.4 dB(A) (13:15-13:45); 82.1 dB(A) (15:45-16:15); 85.9 dB(A) (16:37-17:07); 83.1 dB(A) (17:07-17:37).
Possible reason	<p>Based on the site record on 4 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and drilling works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 4 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections twice a day since the issue of this NOE, to

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	4 June 2015
Time	08:45-09:15; 09:15-09:45; 10:45-11:15; 11:15-11:45; 12:45-13:15; 13:15-13:45; 15:45-16:15; 16:37-17:07; and 17:07-17:37.
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)	81.8 dB(A) (08:45-09:15); 82.8 dB(A) (09:15-09:45); 83.2 dB(A) (10:45-11:15); 84.3 dB(A) (11:15-11:45); 81.5 dB(A) (12:45-13:15); 84.4 dB(A) (13:15-13:45); 82.1 dB(A) (15:45-16:15); 85.9 dB(A) (16:37-17:07); 83.1 dB(A) (17:07-17:37).
Possible reason	<p>Based on the site record on 4 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and drilling works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 4 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections twice a day since the issue of this NOE, to

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	4 June 2015
Time	08:45-09:15; 09:15-09:45; 10:15-10:45; 10:45-11:15; 11:15-11:45; 12:45-13:15; 13:15-13:45; 13:45-14:15; 14:15-14:45; 15:45-16:15; 16:37-17:07; and 17:07-17:37.
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)	81.8 dB(A) (08:45-09:15); 82.8 dB(A) (09:15-09:45); 80.5 dB(A) (10:15-10:45); 83.2 dB(A) (10:45-11:15); 84.3 dB(A) (11:15-11:45); 81.5 dB(A) (12:45-13:15); 84.4 dB(A) (13:15-13:45); 79.9 dB(A) (13:45-14:15); 81.2 dB(A) (14:15-14:45); 82.1 dB(A) (15:45-16:15); 85.9 dB(A) (16:37-17:07); 83.1 dB(A) (17:07-17:37).
Possible reason	<p>Based on the site record on 4 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and drilling works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 4 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work.

	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	5 June 2015
Time	07:37-08:07; and 08:07-8:37.
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)	81.7 dB(A) (07:37-08:07); 82.3 dB(A) (08:07-08:37).
Possible reason	<p>Based on the site record on 5 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and drilling works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 5 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	5 June 2015
Time	07:37-08:07; and 08:07-8:37.
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)	81.7 dB(A) (07:37-08:07); 82.3 dB(A) (08:07-08:37).
Possible reason	<p>Based on the site record on 5 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and drilling works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 5 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	5 June 2015
Time	07:37-08:07; 08:07-08:37; 16:37-17:07; and 17:07-17:37.
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)	81.7 dB(A) (07:37-08:07); 82.3 dB(A) (08:07-08:37); 80.3 dB(A) (16:37-17:07); 81.2 dB(A) (17:07-17:37).
Possible reason	<p>Based on the site record on 5 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and drilling works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 5 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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

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	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	6 June 2015
Time	08:07-08:37; 08:37-09:07; 09:07-09:37; 09:37-10:07; 10:07-10:37; 10:37-11:07; 12:07-12:37; 12:37-13:07; 13:07-13:37; 13:37-14:07; 14:07-14:37; and 14:37-15:07.
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)	80.7 dB(A) (08:07-08:37); 82.7 dB(A) (08:37-09:07); 83.5 dB(A) (09:07-09:37); 86 dB(A) (09:37-10:07); 88.6 dB(A) (10:07-10:37); 85.4 dB(A) (10:37-11:07); 81.3 dB(A) (12:07-12:37); 80.7 dB(A) (12:37-13:07); 81.8 dB(A) (13:07-13:37); 82 dB(A) (13:37-14:07); 81.2 dB(A) (14:07-14:37); 81.7 dB(A) (14:37-15:07).
Possible reason	<p>Based on the site record on 6 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and shear pin installation in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 6 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work.

	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	6 June 2015
Time	08:37-09:07; 09:07-09:37; 09:37-10:07; 10:07-10:37; 10:37-11:07; 13:07-13:37; and 13:37-14:07.
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)	82.7 dB(A) (08:37-09:07); 83.5 dB(A) (09:07-09:37); 86 dB(A) (09:37-10:07); 88.6 dB(A) (10:07-10:37); 85.4 dB(A) (10:37-11:07); 81.8 dB(A) (13:07-13:37); 82 dB(A) (13:37-14:07).
Possible reason	<p>Based on the site record on 6 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and shear pin installation in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 6 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 3. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	6 June 2015
Time	08:07-08:37; 08:37-09:07; 09:07-09:37; 09:37-10:07; 10:07-10:37; 10:37-11:07; 12:07-12:37; 12:37-13:07; 13:07-13:37; 13:37-14:07; 14:07-14:37; and 14:37-15:07.
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)	80.7 dB(A) (08:07-08:37); 82.7 dB(A) (08:37-09:07); 83.5 dB(A) (09:07-09:37); 86 dB(A) (09:37-10:07); 88.6 dB(A) (10:07-10:37); 85.4 dB(A) (10:37-11:07); 81.3 dB(A) (12:07-12:37); 80.7 dB(A) (12:37-13:07); 81.8 dB(A) (13:07-13:37); 82 dB(A) (13:37-14:07); 81.2 dB(A) (14:07-14:37); 81.7 dB(A) (14:37-15:07).
Possible reason	<p>Based on the site record on 6 June 2015, the potential noise sources from the Project works included drilling works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, and shear pin installation in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 6 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work.

	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader

Date 10-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	8 June 2015
Time	12:59-13:29; 13:29-13:59; 15:29-15:59; 15:59-16:29; 16:29-16:59; 16:59-17:29; 17:29-17:59; and 17:59-18:29.
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)	80.7 dB(A) (12:59-13:29); 82 dB(A) (13:29-13:59); 81.2 dB(A) (15:29-15:59); 82.6 dB(A) (15:59-16:29); 82.1 dB(A) (16:29-16:59); 83.7 dB(A) (16:59-17:29); 84.1 dB(A) (17:29-17:59); 82.5 dB(A) (17:59-18:29).
Possible reason	<p>Based on the site record on 8 June 2015, the potential noise sources from the Project works included sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 8 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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

Samsung - Hsin Chong Joint Venture
 SCL 1109 - Shatin to Central Link - Stations and Tunnels of Kowloon City Section

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 16-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	8 June 2015
Time	15:59-16:29; 16:29-16:59; 16:59-17:29; 17:29-17:59; and 17:59-18:29.
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)	82.6 dB(A) (15:59-16:29); 82.1 dB(A) (16:29-16:59); 83.7 dB(A) (16:59-17:29); 84.1 dB(A) (17:29-17:59); 82.5 dB(A) (17:59-18:29).
Possible reason	<p>Based on the site record on 8 June 2015, the potential noise sources from the Project works included sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 8 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 16-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	8 June 2015
Time	12:59-13:29; 13:29-13:59; 14:29-14:59; 14:59-15:29; 15:29-15:59; 15:59-16:29; 16:29-16:59; 16:59-17:29; 17:29-17:59; and 17:59-18:29.
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)	80.7 dB(A) (12:59-13:29); 82 dB(A) (13:29-13:59); 79.5 dB(A) (14:29-14:59); 79.5 dB(A) (14:59-15:29); 81.2 dB(A) (15:29-15:59); 82.6 dB(A) (15:59-16:29); 82.1 dB(A) (16:29-16:59); 83.7 dB(A) (16:59-17:29); 84.1 dB(A) (17:29-17:59); 82.5 dB(A) (17:59-18:29).
Possible reason	<p>Based on the site record on 8 June 2015, the potential noise sources from the Project works included sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 8 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 16-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	9 June 2015
Time	12:29-12:59; and 12:59-13:29.
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)	80.2 dB(A) (12:29-12:59); 81.6 dB(A) (12:59-13:29).
Possible reason	<p>Based on the site record on 9 June 2015, the potential noise sources from the Project works included casting portion of blinding layer, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 8 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 9 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. The Contractor will continue to provide sufficient and necessary mitigation measures

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 16-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	10 June 2015
Time	12:29-12:59; 12:59-13:29; 13:29-13:59; 15:29-15:59; and 15:59-16:29.
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)	84.8 dB(A) (12:29-12:59); 81.4 dB(A) (12:59-13:29); 80.8 dB(A) (13:29-13:59); 82.8 dB(A) (15:29-15:59); 80.6 dB(A) (15:59-16:29).
Possible reason	<p>Based on the site record on 10 June 2015, the potential noise sources from the Project works included pump installation, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, rock-filling works, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 8 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 10 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 16-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	10 June 2015
Time	12:29-12:59; 12:59-13:29; 13:29-13:59; 13:59-14:29; 14:59-15:29; 15:29-15:59; and 15:59-16:29.
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)	84.8 dB(A) (12:29-12:59); 81.4 dB(A) (12:59-13:29); 80.8 dB(A) (13:29-13:59); 80.3 dB(A) (13:59-14:29); 80.2 dB(A) (14:59-15:29); 82.8 dB(A) (15:29-15:59); 80.6 dB(A) (15:59-16:29).
Possible reason	<p>Based on the site record on 10 June 2015, the potential noise sources from the Project works included pump installation, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, rock-filling works, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 8 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 10 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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

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	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 16-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	12 June 2015
Time	12:23-12:53; 12:53-13:23; 13:23-13:53; and 13:53-14:23.
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)	80.6 dB(A) (12:23-12:53); 81.2 dB(A) (12:53-13:23); 83.2 dB(A) (13:23-13:53); 80.8 dB(A) (13:53-14:23).
Possible reason	<p>Based on the site record on 12 June 2015, the potential noise sources from the Project works included preparation for sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, rock-filling works, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 12 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	12 June 2015
Time	10:53-11:23; 11:23-11:53; 12:23-12:53; 12:53-13:23; 13:23-13:53; and 13:53-14:23.
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)	81.2 dB(A) (10:53-11:23); 79.6 dB(A) (11:23-11:53); 80.6 dB(A) (12:23-12:53); 81.2 dB(A) (12:53-13:23); 83.2 dB(A) (13:23-13:53); 80.8 dB(A) (13:53-14:23).
Possible reason	<p>Based on the site record on 12 June 2015, the potential noise sources from the Project works included preparation for sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, rock-filling works, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 9 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 12 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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

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	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	13 June 2015
Time	14:23-14:53; 14:53-15:23; 15:23-15:53; and 15:53-16:23.
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)	80.6 dB(A) (14:23-14:53); 82 dB(A) (14:53-15:23); 82.4 dB(A) (15:23-15:53); 81.8 dB(A) (15:53-16:23).
Possible reason	<p>Based on the site record on 13 June 2015, the potential noise sources from the Project works included pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 6 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 13 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	13 June 2015
Time	14:53-15:23; 15:23-15:53; and 15:53-16:23.
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)	82 dB(A) (14:53-15:23); 82.4 dB(A) (15:23-15:53); 81.8 dB(A) (15:53-16:23).
Possible reason	<p>Based on the site record on 13 June 2015, the potential noise sources from the Project works included pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 6 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 13 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance

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	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader
Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	13 June 2015
Time	14:23-14:53; 14:53-15:23; 15:23-15:53; 15:53-16:23; and 16:23-16:53.
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)	80.6 dB(A) (14:23-14:53); 82 dB(A) (14:53-15:23); 82.4 dB(A) (15:23-15:53); 81.8 dB(A) (15:53-16:23); 79.8 dB(A) (16:23-16:53).
Possible reason	<p>Based on the site record on 13 June 2015, the potential noise sources from the Project works included pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 6 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 13 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	15 June 2015
Time	08:33-09:03; 09:03-09:33; 10:33-11:03; 11:03-11:33; 15:45-16:15; and 16:15-16:45.
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)	80.9 dB(A) (08:33-09:03); 81 dB(A) (09:03-09:33); 82.2 dB(A) (10:33-11:03); 80.5 dB(A) (11:03-11:33); 81.7 dB(A) (15:45-16:15); 81.8 dB(A) (16:15-16:45).
Possible reason	<p>Based on the site record on 15 June 2015, the potential noise sources from the Project works included pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 7 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 15 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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.

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	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader
Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	15 June 2015
Time	15:45-16:15; and 16:15-16:45.
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)	81.7 dB(A) (15:45-16:15); 81.8 dB(A) (16:15-16:45).
Possible reason	<p>Based on the site record on 15 June 2015, the potential noise sources from the Project works included pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 7 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 15 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	15 June 2015
Time	08:33-09:03; 09:03-09:33; 10:33-11:03; 11:03-11:33; 15:45-16:15; and 16:15-16:45.
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)	80.9 dB(A) (08:33-09:03); 81 dB(A) (09:03-09:33); 82.2 dB(A) (10:33-11:03); 80.5 dB(A) (11:03-11:33); 81.7 dB(A) (15:45-16:15); 81.8 dB(A) (16:15-16:45).
Possible reason	<p>Based on the site record on 15 June 2015, the potential noise sources from the Project works included pumping test, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 7 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 15 June 2015 (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 and in the vicinity of the ELS. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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.

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	<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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader
 Date 22-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	16 June 2015
Time	09:15-09:45; 09:45-10:15; 12:45-13:15; and 13:15-13:45.
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)	79.6 dB(A) (09:15-09:45); 80 dB(A) (09:45-10:15); 79.5 dB(A) (12:45-13:15); 79.8 dB(A) (13:15-13:45).
Possible reason	<p>Based on the site record on 16 June 2015, the potential noise sources from the Project works included roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, concrete casting, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 7 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 16 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 24-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	18 June 2015
Time	09:15-09:45; and 09:45-10:15.
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)	80.5 dB(A) (09:15-09:45); 82.6 dB(A) (09:45-10:15).
Possible reason	<p>Based on the site record on 18 June 2015, the potential noise sources from the Project works included roof-slab excavation and construction, and diversion of storm drain in E3 works area; roof-slab excavation and construction, toe grouting works, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 7 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 18 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide sufficient and necessary mitigation measures

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 24-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	18 June 2015
Time	09:15-09:45; and 09:45-10:15.
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)	80.5 dB(A) (09:15-09:45); 82.6 dB(A) (09:45-10:15).
Possible reason	<p>Based on the site record on 18 June 2015, the potential noise sources from the Project works included roof-slab excavation and construction, and diversion of storm drain in E3 works area; roof-slab excavation and construction, toe grouting works, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 7 backhoes, and 2 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 18 June 2015 (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 and in the vicinity of the ELS. 2. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. 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. 4. The Contractor will continue to provide sufficient and necessary mitigation measures

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 24-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	19 June 2015
Time	07:41-08:11; 08:11-08:41; 08:41-09:11; 09:11-09:41; 09:41-10:11; 10:11-10:41; 10:41-11:11; 11:11-11:41; and 11:41-12:11.
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)	83.5 dB(A) (07:41-08:11); 84.6 dB(A) (08:11-08:41); 84.9 dB(A) (08:41-09:11); 83.4 dB(A) (09:11-09:41); 82.0 dB(A) (09:41-10:11); 88.0 dB(A) (10:11-10:41); 85.9 dB(A) (10:41-11:11); 83.0 dB(A) (11:11-11:41); and 82.0 dB(A) (11:41-12:11).
Possible reason	<p>Based on the site record on 19 June 2015, the potential noise sources from the Project works included storm drain diversion works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, toe grouting works, casting screeding, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 8 backhoes, and 3 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 19 June 2015 (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. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 26-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	19 June 2015
Time	07:41-08:11; 08:11-08:41; 08:41-09:11; 09:11-09:41; 09:41-10:11; 10:11-10:41; 10:41-11:11; 11:11-11:41; and 11:41-12:11.
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)	83.5 dB(A) (07:41-08:11); 84.6 dB(A) (08:11-08:41); 84.9 dB(A) (08:41-09:11); 83.4 dB(A) (09:11-09:41); 82.0 dB(A) (09:41-10:11); 88.0 dB(A) (10:11-10:41); 85.9 dB(A) (10:41-11:11); 83.0 dB(A) (11:11-11:41); and 82.0 dB(A) (11:41-12:11).
Possible reason	<p>Based on the site record on 19 June 2015, the potential noise sources from the Project works included storm drain diversion works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, toe grouting works, casting screeding, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 8 backhoes, and 3 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 19 June 2015 (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. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 26-June-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	19 June 2015
Time	07:41-08:11; 08:11-08:41; 08:41-09:11; 09:11-09:41; 09:41-10:11; 10:11-10:41; 10:41-11:11; 11:11-11:41; and 11:41-12:11.
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)	83.5 dB(A) (07:41-08:11); 84.6 dB(A) (08:11-08:41); 84.9 dB(A) (08:41-09:11); 83.4 dB(A) (09:11-09:41); 82.0 dB(A) (09:41-10:11); 88.0 dB(A) (10:11-10:41); 85.9 dB(A) (10:41-11:11); 83.0 dB(A) (11:11-11:41); and 82.0 dB(A) (11:41-12:11).
Possible reason	<p>Based on the site record on 19 June 2015, the potential noise sources from the Project works included storm drain diversion works, sheet pile extraction, and roof-slab excavation and construction in E3 works area; roof-slab excavation and construction, toe grouting works, casting screeding, drilling works and shear pin works in E6 works area.</p> <p>The construction equipment used during the exceedance period included 2 mobile crane, 8 backhoes, and 3 drilling rigs.</p> <p>The above-mentioned construction works were continuously operating on 19 June 2015 (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. Tailor-made movable noise barriers would be erected on site when carrying out noisy work. The Contractor has conducted site inspections

	<p>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 strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.</p>
Remarks	-

Prepared by: Winnie Ko, 1109 ET Leader

Date 26-June-2015

Details of Findings

Project	SCL 1109
Date	2 June 2015
Time	--
EPD Reference No	15-13442, dated 9 June 2015
Description of the Complaint	A complaint was referred to MTR by EPD regarding noise and dust emission from construction work affecting the complainant.
Site Activity Summary	Based on the site record on 2 June 2015, internal transfer of wet spoil, spoil disposal and spoil handling within CEDD Kai Tak Development Area were conducted.
Actions taken/ to be taken	<ol style="list-style-type: none">1. Regular watering of site haul road and stockpiling area had been carried out by using water tanker and automatic water cannon.2. Provision of stockpile cover has been implemented during site operation time.3. The frequency of car washing activities had been increased.4. Load of dusty materials in the dump trucks had been entirely covered with clean impervious sheeting.
Remarks	There is no adverse observation on dust aspect regarding stockpiling for the weekly site inspection on 1 June 2015. The impact noise and dust data recorded adjacent to To Kwa Wan Station works area within CEDD Kai Tak Development Area on 2 June 2015 have been reviewed and no action/limit level was triggered.

Details of Findings

Project	SCL 1109
Date	21 May 2015
Time	--
EPD Reference No	15-12472, dated 13 June 2015
Description of the Complaint	A complaint was referred to MTR by EPD regarding dust emission from construction work affecting the complainant; the stockpiles were not fully covered.
Site Activity Summary	Based on the site record on 21 May 2015, internal transfer of wet spoil, spoil disposal and spoil handling within CEDD Kai Tak Development Area were conducted.
Actions taken/ to be taken	Regular watering of site haul road and stockpiling area by using water tanker and water cannon, and provision of stockpile cover has been implemented during site operation time.
Remarks	There is no adverse observation on dust aspect regarding stockpiling for the weekly site inspection on 26 May 2015. The impact dust data recorded adjacent to To Kwa Wan Station works area within CEDD Kai Tak Development Area on 21 May 2015 have been reviewed and no action/limit level was triggered. 12.6mm daily rainfall was recorded on 21 May 2015 from the Hong Kong Observatory.

Details of Findings

Project	SCL 1109
Date	27 May 2015
Time	--
EPD Reference No	15-13459, dated 16 June 2015
Description of the Complaint	A complaint was referred to MTR by EPD regarding noise and dust emission from non-stop construction work (7am to 7pm) including the concrete mixing plant inside the Kai Tak Development Area and Ma Tau Wai affecting the complainant.
Site Activity Summary	Based on the site record on 27 May 2015, internal transfer of wet spoil, spoil disposal and spoil handling within CEDD Kai Tak Development Area were conducted. Roof-slab construction (including drilling works and sheet pile extraction) were carried out in Ma Tau Wai.
Actions taken/ to be taken	<ol style="list-style-type: none">1. The concrete mixing plant inside Kai Tak Development Area is fully covered by the enclosure.2. Regular watering of site haul road, stockpiling area and other active exposed works area have been carried out by using water tanker and automatic water cannon in Kai Tak Development Area and Ma Tau Wai.3. Provision of stockpile cover has been implemented during site operation time.4. Noise fabrics as barrier had been erected on the site hoarding in Ma Tau Wai.5. Tailor-made movable noise barriers would be erected on site when carrying out noisy work.
Remarks	There is no adverse observation on dust aspect regarding stockpiling for the weekly site inspection on 26 May 2015. The impact noise and dust data recorded adjacent to To Kwa Wan and Kong Yiu Mansion Station within CEDD Kai Tak Development Area and Ma Tau Wai on 27 May 2015 have been reviewed and no action/limit level was triggered. The continuous noise data at Lucky Building (East Façade) on 27 May 2015 have been reviewed and there is no exceedance during site operation time.

Details of Findings

Project	SCL 1109
Date	10 June 2015
Time	--
EPD Reference No	15-14258, dated 17 June 2015
Description of the Complaint	A complaint was referred to MTR by EPD regarding dust emission from construction work affecting the complainant; the stockpiles was not covered properly such that dust emission was observed; some muddy water was found in To Kwa Wan Typhoon Shelter.
Site Activity Summary	Based on the site record on 10 June 2015, internal transfer of wet spoil, spoil disposal and spoil handling within CEDD Kai Tak Development Area were conducted.
Actions taken/ to be taken	<ol style="list-style-type: none">1. Regular watering of site haul road and stockpiling area had been carried out by using water tanker and automatic water cannon.2. Provision of stockpile cover has been implemented during site operation time.
Remarks	There is no adverse observation on dust aspect regarding stockpiling for the weekly site inspection on 8 and 15 June 2015. The impact dust data recorded adjacent to To Kwa Wan Station works area within CEDD Kai Tak Development Area on 8 and 12 June 2015 have been reviewed and no action/limit level was triggered. 8.1mm daily rainfall was recorded on 10 June 2015 from Hong Kong Observatory. SCL1109 does not have any discharge point at the concerned area (To Kwa Wan Typhoon Shelter).

Details of Findings

Project	SCL 1109
Date	4 June 2015
Time	--
EPD Reference No	15-13695, dated 19 June 2015
Description of the Complaint	A complaint was referred by EPD through above letter reference regarding noise generated from excavation work near the Nam Kok Road works area affecting the complainant.
Action/Limit Levels	Since a documented complaint was received, the Action Level of Noise was triggered.
Possible reason	<p>Traffic noise and /or construction noise from the construction works in vicinity of Nam Kok Road.</p> <p>Based on the site record on 4 June 2015, the potential noise sources from the Project works included watermain works, pipe piling and excavation works along Nam Kok Road.</p>
Actions taken/ to be taken	<p>The following actions have been taken:</p> <ol style="list-style-type: none">1. The results from the weekly impact noise monitoring conducted at No. 16-23 Nam Kok Road on 2 and 8 June have also been reviewed and no exceedance to the limit level was recorded.2. For weekly inspections, as well as a joint inspection with the IEC were conducted. There was no adverse comment or observation recorded from the inspection team.
Remarks	Concurrent building demolition works at Chow Tai Fok as well as renovation works at 3 Nam Kok Road are noted.

Details of Findings

Project	SCL 1109
Date	07 May 2015
Time	--
EPD Reference No	15-11050, dated 19 June 2015
Description of the Complaint	A complaint was referred by EPD through above letter reference regarding noise generated from percussive piling work at the Olympic Garden works area affecting the complainant.
Action/Limit Levels	Since a documented complaint was received, the Action Level of Noise was triggered.
Possible reason	<p>Traffic noise and /or construction noise from the construction works in vicinity of Olympic Garden.</p> <p>Based on the site record on 7 May 2015, the potential noise sources from the Project works included pipe piling, and grouting works at Olympic Garden; No percussive piling works were carried out.</p>
Actions taken/ to be taken	<p>The following actions have been taken:</p> <ol style="list-style-type: none">1. The results from the weekly impact noise monitoring conducted at No. 16-23 Nam Kok Road on 5 and 11 May have also been reviewed and no exceedance to the limit level was recorded.2. For weekly inspections, as well as a joint inspection with the IEC were conducted. There was no adverse comment or observation recorded from the inspection team.
Remarks	--

Details of Findings

Project	SCL 1109
Date	8 May 2015
Time	--
EPD Reference No	15-11163, dated 19 June 2015
Description of the Complaint	A complaint was referred to MTR by EPD regarding unpleasant smell was scented from the Nam Kok Road works area affecting the complainant.
Site Activity Summary	Based on the site record on 8 May 2015, utilities works (CLP/HKBN), pipe piling and excavation works along the Nam Kok Road were conducted.
Actions taken/ to be taken	<ol style="list-style-type: none">1. General refuse is removed off-site regularly.2. All plants and equipment are regularly checked and maintained in good conditions.
Remarks	There is no adverse observation on odor aspect for the weekly site inspection on 4 and 11 May 2015. Concurrent building demolition works at Chow Tai Fok as well as renovation works at 3 Nam Kok Road are noted.

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
January 2015	3	0
February 2015	0	0
March 2015	0	0
April 2015	3	0
May 2015	2	0
June 2015	7	0
Overall Total	16	0

Appendix C

**31st EM&A Report for Works Contract 1101 –
Ma On Shan Line Modification Works**

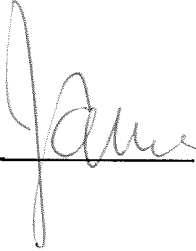
MTR Corporation Limited

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

Monthly EM&A Report
[Period from 1 to 30 June 2015]

Works Contract 1101
Ma On Shan Modification Works

(July 2015)

Certified by: James Choi 

Position: Environmental Team Leader

Date: 10 July 2015

SCL Contract No. 1101

Ma On Shan Line Modification Works

Monthly EM&A Report (SCL) (June 2015)

for

Sun Fook Kong Joint Venture


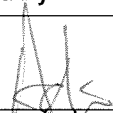
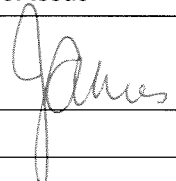
Prepared By	Checked By	Approved for Issue
F So 	A Lee 	J Choi 
Version	0	Date
		3 July 2015
<p>The information contained in this report is, to the best of our knowledge, correct at the time of printing. The interpretation and recommendations in the report are based on our experience, using reasonable 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 ANewR Consulting Limited accepts no responsibility for its use by others.</p> <p>This report is copyright and may not be reproduced in whole or in part without prior written permission. All rights reserved.</p>		

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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 4 site inspections were conducted and the joint site inspection with IEC was conducted on 23 June 2015. 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

42.25 m³ of general refuse was disposed of to NENT Landfill in the reporting month. 42.25 m³ inert C&D materials were disposed of to Tuen Mun Area 38 Fill Bank in the reporting month. No chemical waste was disposed 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 32nd 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 June 2015.

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	42.25 m ³	416.00 m ³
Inert C&D materials recycled	0	0
Non-inert C&D materials disposed	0	0
Non-inert C&D materials recycled	0	68.00 m ³
General waste disposed of to NENT Landfill	42.25 m ³	390.25 m ³
Chemical waste disposed of to CWTC or collected by licenced collector	0	1552.10 kg

4. SITE INSPECTION

Weekly site inspections were carried out at the sites on 3, 10, 17 and 23 June 2015. The joint site inspection with IEC was carried out on 23 June 2015. 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	10 June 2015	At To Shek Storage Yard – Construction wastes storage area without covering was observed. The contractor was advised to cover it properly with tarpaulin sheet. (Remark was raised on 10.06.2015)	At To Shek Storage Yard – General waste and construction waste were disposed on 17.06.2015. Last observation raised on 10.06.2015 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.

4 numbers of environmental site inspections were carried out in June 2015.

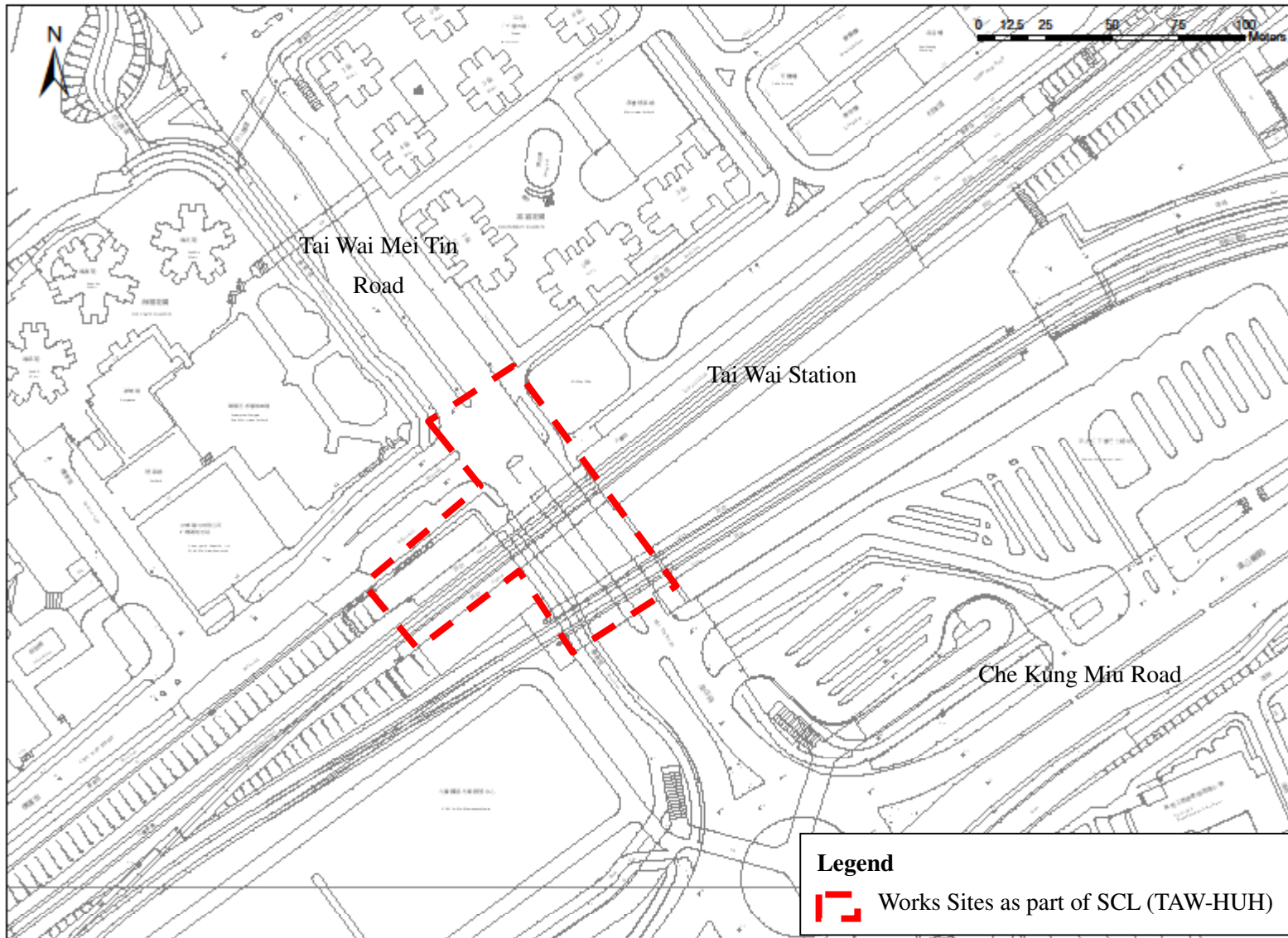
Recommendations for follow-up actions were given to the Contractor for the deficiencies identified during the site audit as following:

Waste Management


- Implement effective measures to enhance waste management.

APPENDIX A

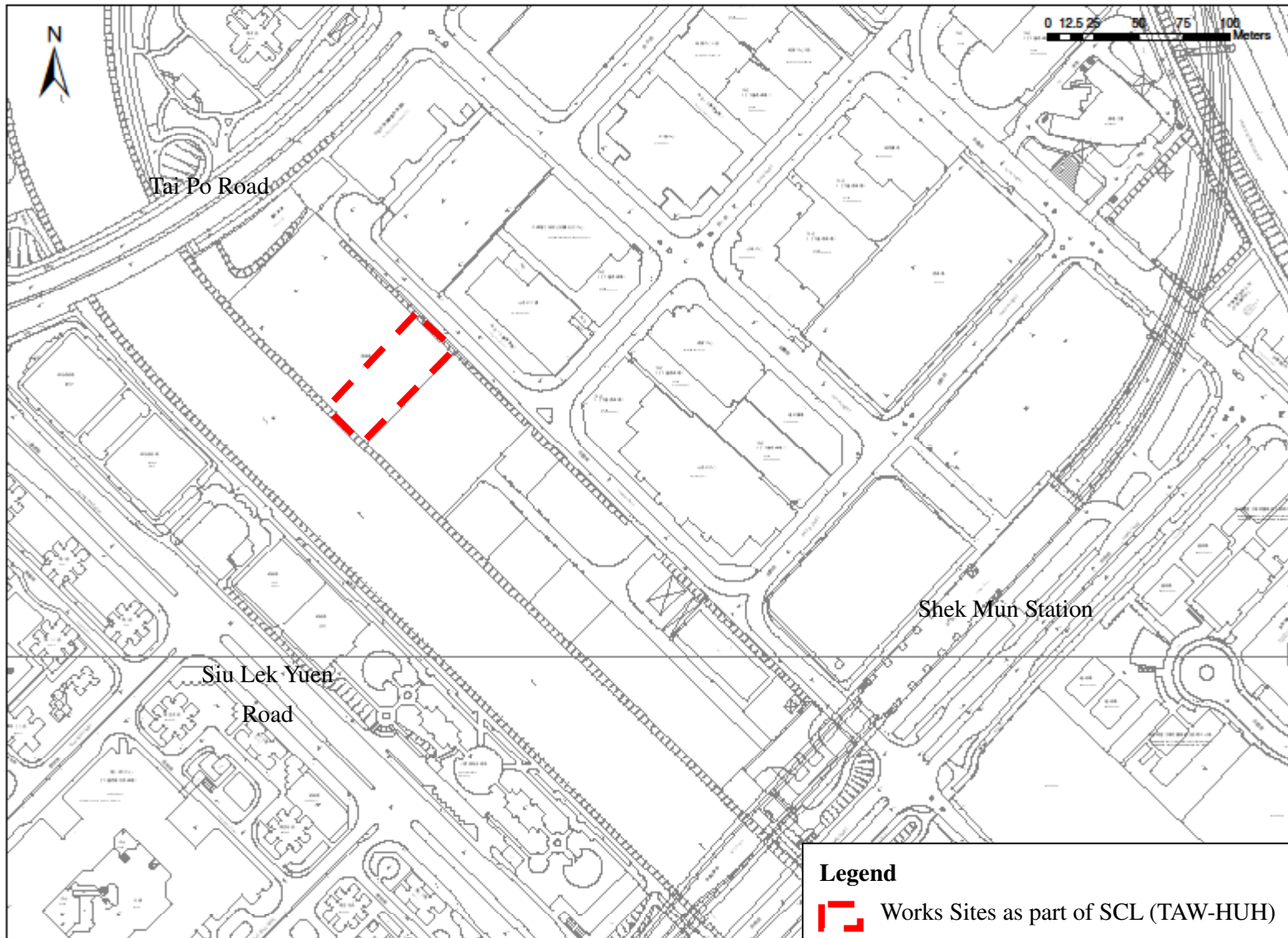
LOCATION PLAN OF WORKS AREA AND STORAGE YARD



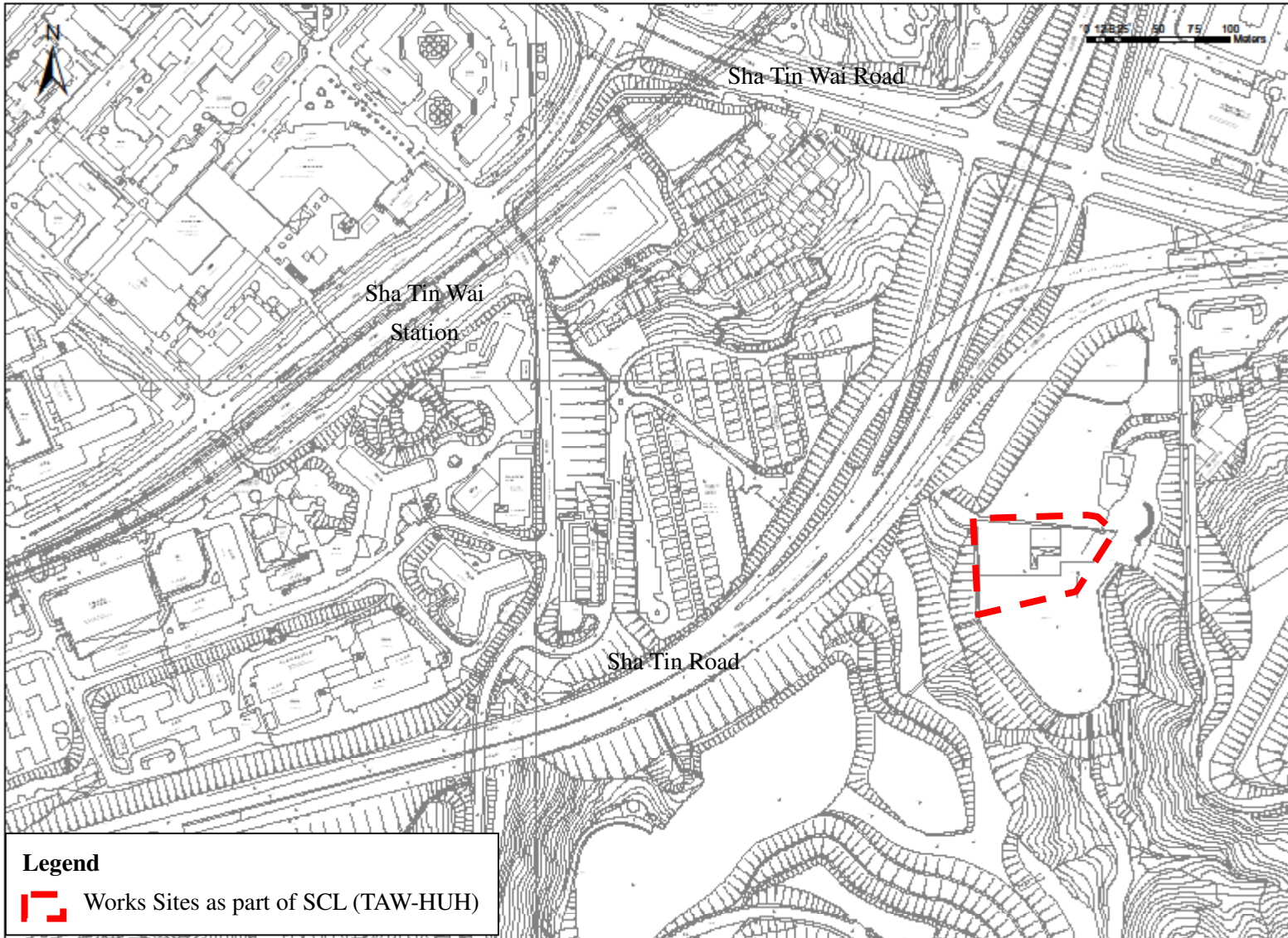
Legend

 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 1 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 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)

		2012				2013												2014												2015												2016							
Work site	Activities	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	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	I																																			

Note:

1. Abbreviation:

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

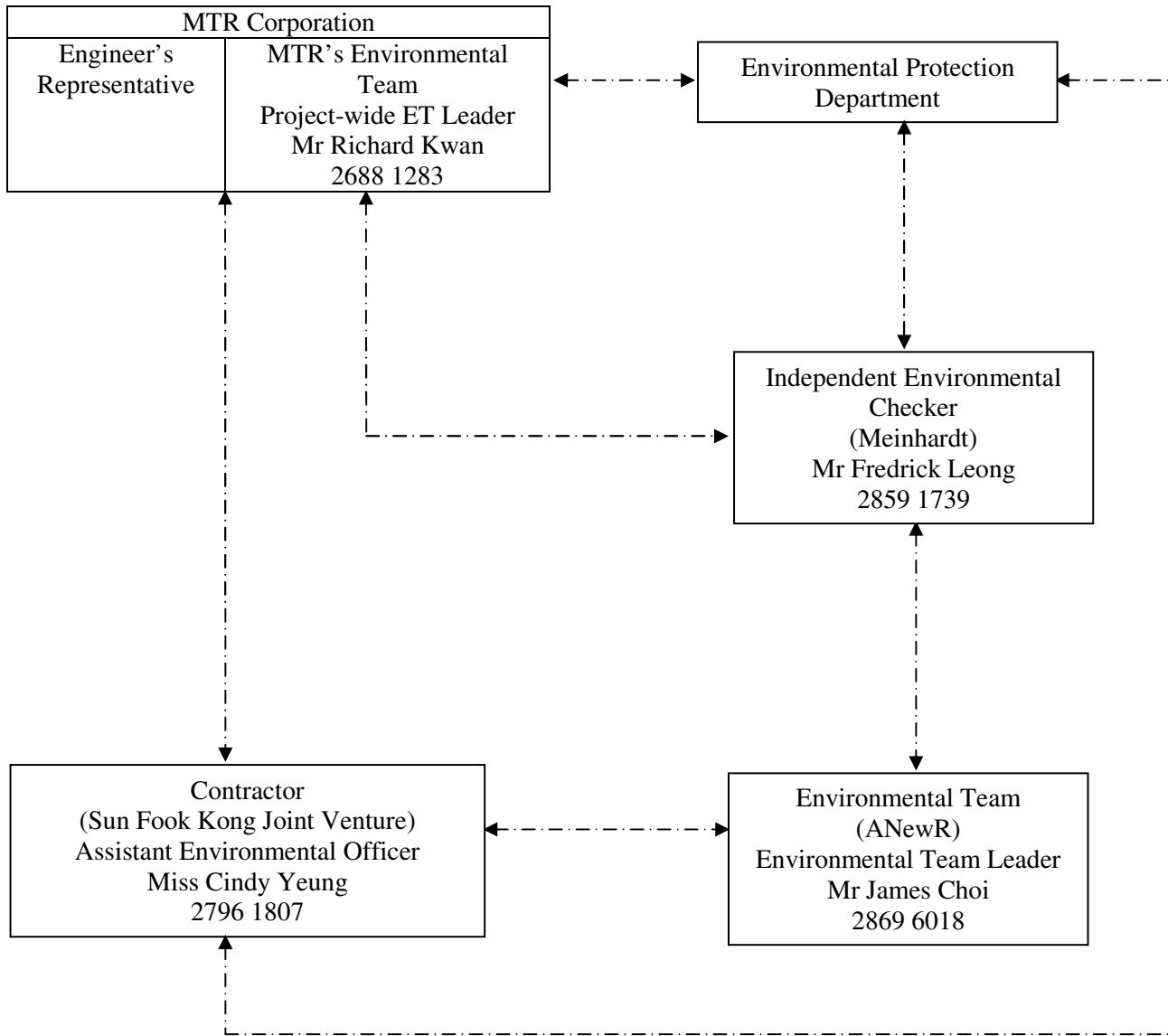
2 No construction activity had been carried out at To Shek Storage Yard and Shek Mun Storage Yard.

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-RN0186-15	13 March 2015	02 April 2015	20 April 2015	19 October 2015
To Shek Storage Yard	GW-RN0007-15	30 December 2014	16 January 2015	27 February 2015	26 August 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 (May 2015)	11 June 2015

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								
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
Sub-total for 2012	13.00	0.00	0.00	0.00	13.00	0.00	26.00	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	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	3.50	0.00
March	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.00
April	0.00	0.00	0.00	0.00	0.00	3.00	16.25	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	35.75	0.00
June	0.00	0.00	0.00	0.00	0.00	0.00	22.75	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.00
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	58.50	0.00
November	19.50	0.00	0.00	0.00	19.50	0.00	48.75	0.00
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-total for 2013	19.50	0.00	0.00	0.00	19.50	3.00	198.50	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	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	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
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
Sub-total for 2014	117.00	0.00	0.00	0.00	117.00	65.00	61.75	1400.00
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.

Waste Flow Table for 2015 (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	13.00	0.00
February	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.00
March	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.00
April	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.00
May	224.25	0.00	0.00	0.00	224.25	0.00	35.75	152.10
June	42.25	0.00	0.00	0.00	42.25	0.00	42.25	0.00
July								
August								
September								
October								
November								
December								
Sub-total for 2015	266.50	0.00	0.00	0.00	266.50	0.00	104.00	152.10
Cumulative Total	416.00	0.00	0.00	0.00	416.00	68.00	390.25	1552.10

- 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	<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, 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. The following good site practices should also be implemented: <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	<ul style="list-style-type: none"> ProPECC PN 1/94 	 ^ ^ ^

Remarks:
^ Implement mitigation measure in the reporting month x Non-compliance of mitigation measure
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
		<ul style="list-style-type: none"> No on-site burning of waste; Waste and refuse in appropriate receptacles. 						<p>^</p> <p>^</p>
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	<p>N/A</p> <p>^</p>

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

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* 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
		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:

^ Implement mitigation measure in the reporting month

N/A Not Applicable in the reporting month

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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>

Remarks:

^ Implement mitigation measure in the reporting month

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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"> 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

Remarks:

^ Implement mitigation measure in the reporting month

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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)								

Remarks:

^ Implement mitigation measure in the reporting month

N/A Not Applicable in the reporting month

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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 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. 	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	<p>^</p> <p>^</p> <p>^</p> <p>N/A</p> <p>^</p> <p>^</p>
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	^

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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
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 	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 	^

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
		<p>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 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. 						<p>^</p> <p>^</p>

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		<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 surface 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 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 						<p>^</p> <p>^</p> <p>^</p> <p>^</p>

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		<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 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 						<p>^</p> <p>^</p> <p>^</p> <p>^</p>

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		<p>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 						<p>^</p> <p>^</p> <p>^</p> <p>^</p>

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
		(April to September) as far as practicable. <ul style="list-style-type: none"> Adopt best management practices. 						^
S10.7.1	W3	<u>Sewage Effluent</u> <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	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 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 	^ ^ ^
Waste Management (Construction Waste)								
S11.4.1.1	WM1	<u>On-site sorting of C&D material</u>	Separation of	Contractor	All	Construction	<ul style="list-style-type: none"> DEVB TC(W) 	

Remarks:

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		<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 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. 	unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use		construction sites	stage	No.6/2010	^
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; 	Good site practice to minimize the waste generation and recycle	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) 	N/A

Remarks:

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		<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 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. 	the 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 N/A 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 	Good site practice to minimize the waste generation and recycle the C&D materials as	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance	N/A

Remarks:
^ Implement mitigation measure in the reporting month x Non-compliance of mitigation measure
N/A Not Applicable in the reporting month * Not satisfactory but rectified by the contractor

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		<p>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.</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. 	far as practicable so as to reduce the amount for final disposal				<ul style="list-style-type: none"> Waste Disposal Ordinance ETWB TCW No.19/2005 	N/A
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 	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>

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
		<p>law.</p> <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 labeled 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>N/A</p> <p>^</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 	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:

^ 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
		<p>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> <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 	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

x Non-compliance of mitigation measure

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
		the requirements given in the EM&A Manual are fully complied with.						

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

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

**30th 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
June 2015**

[July 2015]

	Name	Signature
Prepared & Checked:	Lemon Lam	
Reviewed, Approved & Certified:	Y T Tang (Contractor's Environmental Team Leader)	

Version: 0

Date: 9 July 2015

Disclaimer

This report is prepared for Gammon-Kaden SCL1111 JV and is given for its sole benefit in relation to and pursuant to SCL1111 and may not be disclosed to, quoted to or relied upon by any person other than Gammon-Kaden SCL1111 JV without our prior written consent. No person (other than Gammon-Kaden SCL1111 JV) into whose possession a copy of this report comes may rely on this report without our express written consent and Gammon-Kaden SCL1111 JV may not rely on it for any purpose other than as described above.

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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 30 June 2015. As informed by the Contractor, major activities in the reporting period were:

Hung Hom Area

- Excavation work, site clearance, slope work, cable detection, excavation lateral support, form work erection, reinforcement fixing,
- Construction of drainage and man hole, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, scaffolding platform, erection of utility temporary supports, erection of temporary link walkway
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation, installation of temporary support for OB2, modification work for OB2,
- Removal of pipe, dismantling of scaffolding,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- All construction activities were completed in May 2015. No construction work was carried out in the reporting month.

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

As the construction works identified by the Construction Noise Mitigation Measures Plan (CNMMP) to be potentially causing exceedance of noise criteria have been completed, no continuous noise monitoring was carried out during this 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, slope work, cable detection, excavation lateral support, form work erection, reinforcement fixing,
- Construction of drainage and man hole, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, abutment works, pre-split,
- Erection of hoarding, scaffolding platform,
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation, installation of temporary support for OB2, modification work for OB2, erection of utility temporary supports, erection of temporary link walkway, abandoned utilities, utilities protection,
- Dismantling of scaffolding, pumping test,
- 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 fourteenth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 to 30 June 2015.

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, slope work, cable detection, excavation lateral support, form work erection, reinforcement fixing,
- Construction of drainage and man hole, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, scaffolding platform, erection of utility temporary supports, erection of temporary link walkway
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation, installation of temporary support for OB2, modification work for OB2,
- Removal of pipe, dismantling of scaffolding,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- All construction activities were completed in May 2015. No construction work was carried out in the reporting month.

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	Ms. Michelle Tang	3904 9663	
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-RE1489-14	30 Jan 2015	29 Jul 2015	Valid	For General and Re-provisioning Works at Hung Hom Station
GW-RE0132-15	7 Feb 2015	6 Aug 2015	Valid	For General works for steel decking at EWL8
GW-RE0156-15	24 Feb 2015	23 Aug 2015	Valid	For Pumping Test at NSL6
GW-RE0194-15	9 Mar 2015	8 Sep 2015	Valid	For General Work at NSL 3-5
GW-RE0190-15	10 Mar 2015	9 Sep 2015	Valid	For Grouting Station and Desandar at EWL8
GW-RE0237-15	14 Mar 2015	13 Aug 2015	Valid	For General Work at Oi Sen Path and Ho Man Tin Siding
GW-RE0274-15	29 Mar 2015	28 Jun 2015	Valid	For TB1 & TB2 Maintenance Work at Chatham Rd North
GW-RE0262-15	1 Apr 2015	30 Jun 2015	Valid	For Hoarding Erection at NSL 3-5
GW-RE0346-15	13 Apr 2015	12 Oct 2015	Valid	For dewatering and welding at NSL6
GW-RE0356-15	15 Apr 2015	31 Jun 2015	Valid	For Concrete Removal Works Adjacent to East Rail near OSP
GW-RE0374-15	21 Apr 2015	12 Jul 2015	Valid	For Scaffolding and 2.4m Hoarding Erection at Ho Man Tin and Oi Sen Path
GW-RE0394-15	25 Apr 2015	30 Jun 2015	Valid	For Noise Enclosure and Steel Platform Erection Work at Oi Sen Path
GW-RE0410-15	30 Apr 2015	29 Oct 2015	Valid	For General Work at NSL 3-5
GW-RE0456-15	12 May 15	5 Aug 15	Valid	For TB1 & TB2 Maintenance Work at Chatham Rd North
GW-RE0451-15	12 May 15	11 Jul 15	Valid	For Bar Fencing Erection near Railway Trackside Area at Ho Man Tin Sidings
GW-RE0457-15	15 May 15	14 Jul 15	Valid	For 6m Hoarding Erection in NSL 6
GW-RE0502-15	23 May 15	22 Nov 15	Valid	For General works for steel decking at EWL8
GW-RE0508-15	25 May 15	30 Aug 15	Valid	For 6m Hoarding in NSL 9 and Demolition of Scaffolding Platform at Oi Sen Path
GW-RE0540-15	2 Jun 15	31 Jul 15	Valid	For Concrete Removal Works Adjacent to East Rail near Workfront 7
GW-RE0626-15	30 Jun 15	30 Sep 15	Valid	For Noise Enclosure and Steel Platform Erection Work at Oi Sen Path
GW-RE0637-15	25 Jun 15	23 Dec 15	Valid	For Pumping Test / System and General Work at NSL 9

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
GW-RE0634-15	26 Jun 15	23 Dec 15	Valid	For Pumping Test / System and General Work at NSL 7- 8
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
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
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
5213-213-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 June 2015 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 June 2015 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)
Acoustic Calibrator	Rion (Model No. NC-73)

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 Programme

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⁾ Mar 2015 ⁽⁴⁾
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 was conducted in January and February 2015.
 (4) Additional continuous noise monitoring was conducted in March 2015 according to the latest 2014-2015 Calendar of Carmel Secondary School.

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 May 2015	11 June 2015

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	34.3	26.2 – 41.5	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 – 61.1	70 (65) ⁽¹⁾
NM 2 ⁽²⁾	<Baseline	75

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.

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 As the construction works that have been identified by the CNMMP to be potentially causing exceedance of noise criteria have not commenced during this reporting month, no continuous noise monitoring was carried out.

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, 6,640m³ of inert C&D material was generated. 1,502m³ and 95m³ were disposed as public fills at TKO137 and TM38 respectively. 5,043m³ of public fills was delivered to Hung Hom Barging Point and handled by other project. While 63,680kg of general refuse was disposed at NENT landfill in the reporting month. No paper/cardboard packaging material, no metals and plastic was collected by recycling contractor in the reporting month. 9,711m³ of Type 1 marine dumping was delivered to Hung Hom Barging Point. No 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 11 and 25 June 2015. 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 25 June 2015. The one held on 18 June 2015 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	25 June 2015	<ul style="list-style-type: none"> Surface runoff of silty water was observed under the staircase of NSL6 during rainstorm event. The Contractor should review the preventive measures to prevent any surface runoff from site. 	The item was rectified by the Contractor on 2 July 2015.
		<ul style="list-style-type: none"> No preventive measure was provided for the manhole at NSL4. The Contractor should provide preventive measures (e.g. sandbags bunding) to prevent runoff from site. 	
Air Quality	11 June 2015	<ul style="list-style-type: none"> Mud trail was observed at the entrance of EWL9. The Contractor should remove the mud trail and wash the vehicle's wheel properly to avoid carrying mud from the site. The coverage set up of cement mixing facility at NSL4 was observed insufficient. The Contractor should improve the set up to minimize dust impact. 	The item was rectified by the Contractor on 17 June 2015.
	18 June 2015	<ul style="list-style-type: none"> Site areas at EWL7 and EWL8 were observed dry. The Contractor should water the exposed site area timely. 	
Noise	N/A	N/A	N/A
Waste/ Chemical Management	4 June 2015	<ul style="list-style-type: none"> Water and grit accumulated inside the drip tray were observed at NSL4 and NSL9. The Contractor should clear the water and grit, and dispose of them as chemical waste properly. 	The item was rectified by the Contractor on 10 June 2015.
		<ul style="list-style-type: none"> Oil stains were observed on the ground at NSL4 and EWL9. The Contractor should clear the oil stains and dispose of them as chemical waste properly. 	
	18 June 2015	<ul style="list-style-type: none"> Oil patch was found on ground at NSL4. The Contractor should remove the oil and dispose of as chemical waste properly. 	The item was rectified by the Contractor on 24 June 2015.
	25 June 2015	<ul style="list-style-type: none"> Oil stain was observed at EWL8. The Contractor should remove the oil and dispose of as chemical waste properly. 	The item was rectified by the Contractor on 2 July 2015.
Landscape & Visual	N/A	N/A	N/A
Permits/ Licenses	N/A	N/A	N/A

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.

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 As the construction works that have been identified by the CNMMP to be potentially causing exceedance of noise criteria have not commenced during this reporting month, no continuous noise monitoring was carried out.

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 July 2015 and August 2015 will be:

Hung Hom Area

- Excavation work, site clearance, slope work, cable detection, excavation lateral support, form work erection, reinforcement fixing,
- Construction of drainage and man hole, emergency vehicular access,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, abutment works, pre-split,
- Erection of hoarding, scaffolding platform,
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation, installation of temporary support for OB2, modification work for OB2, erection of utility temporary supports, erection of temporary link walkway, abandoned utilities, utilities protection,
- Dismantling of scaffolding, pumping test,
- 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 July 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 As the construction works that have been identified by the CNMMP to be potentially causing exceedance of noise criteria have not commenced during this reporting month, no continuous noise monitoring was carried out.
- 9.1.6 4 nos. of environmental site inspections were carried out in June 2015. 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

- Implement effective measures to avoid dust impact.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- Implement proper drainage system management.
- Implement proper preventive measures to avoid runoff from site.

Chemical/ Waste Management

- Provide proper chemical and general waste management.

Landscape and Visual Impact

- No specific observation was identified in the reporting month.

Permits/Licenses

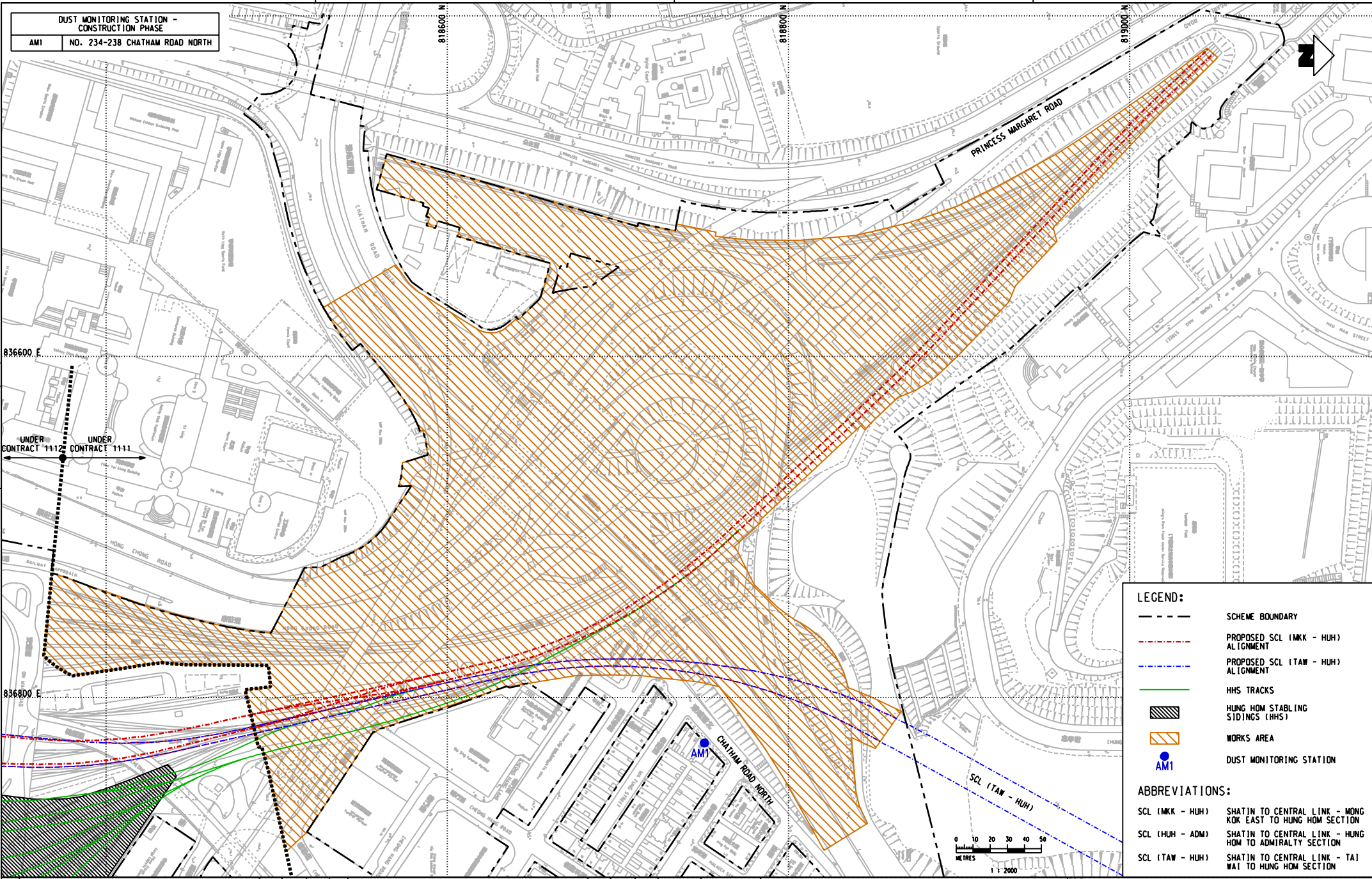
- No specific observation was identified in the reporting month.

FIGURES

DUST MONITORING STATION - CONSTRUCTION PHASE
 AM1 NO. 234-238 CHATHAM ROAD NORTH

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PLOT DATA: PLOT NO. 14/6, CHATHAM ROAD NORTH, HONG KONG
 FILE NAME: M4C418



LEGEND:

- SCHEME BOUNDARY
- PROPOSED SCL (MKK - HUH) ALIGNMENT
- PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- HUNG HOM STABLING SIDINGS (HHS)
- WORKS AREA
- AM1 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	 SHATIN TO CENTRAL LINK	CONTRACTOR	ORIGINATOR
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CHECKED	L CLL			
APPROVED	LMW			
DATE	08/JAN/2013			
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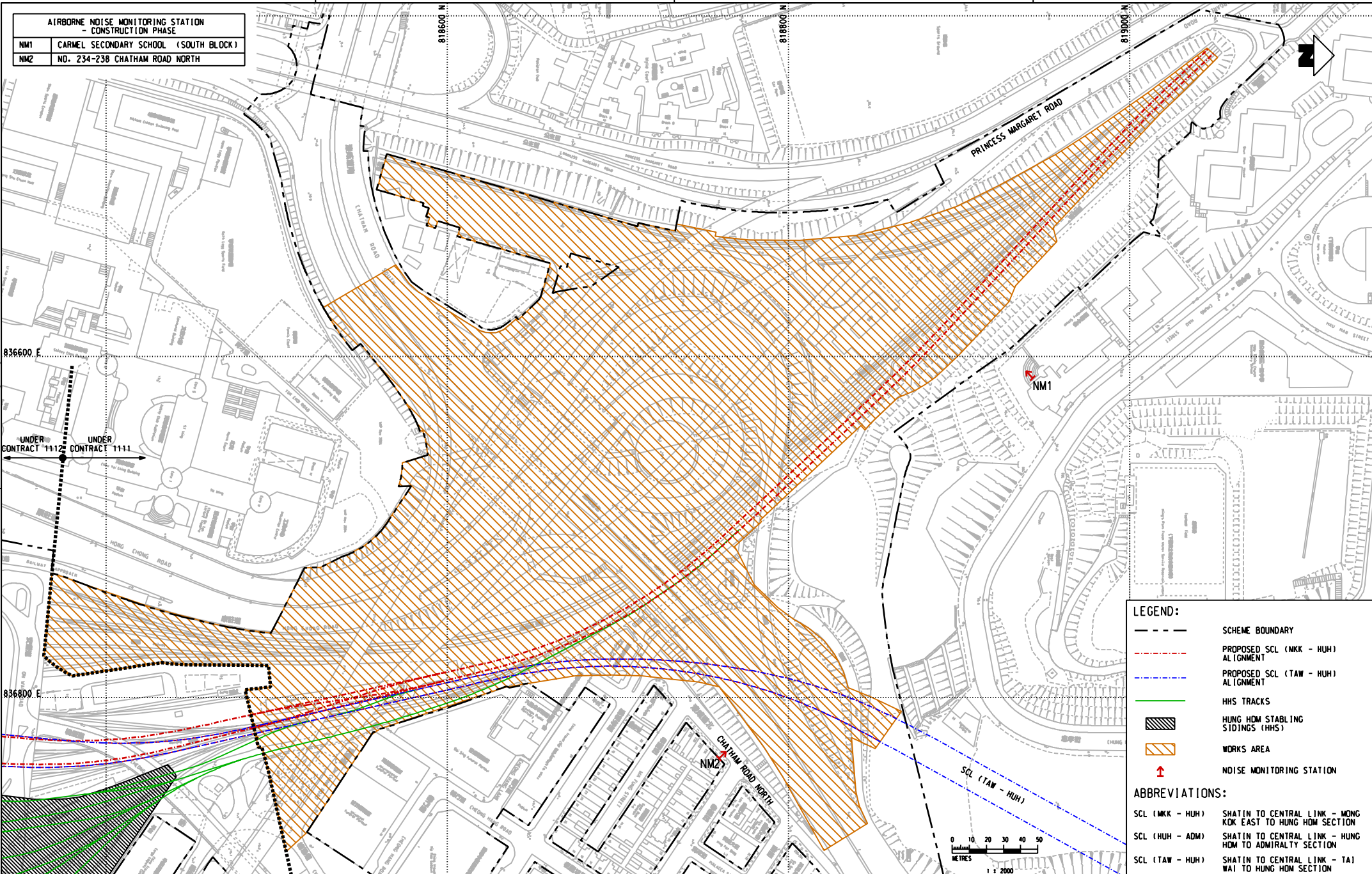
CONTRACT 1111 HUNG HOM NORTH APPROACH TUNNELS LOCATION OF AIR QUALITY MONITORING STATION	
SCALE 1 : 2000 (A3)	FIGURE NO. FIGURE 2.1
TITLE	REV. -

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: DRAWING NO. 1111-01-001, SHEET 4/16
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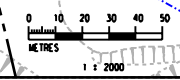


LEGEND:

- 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



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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																																																																	

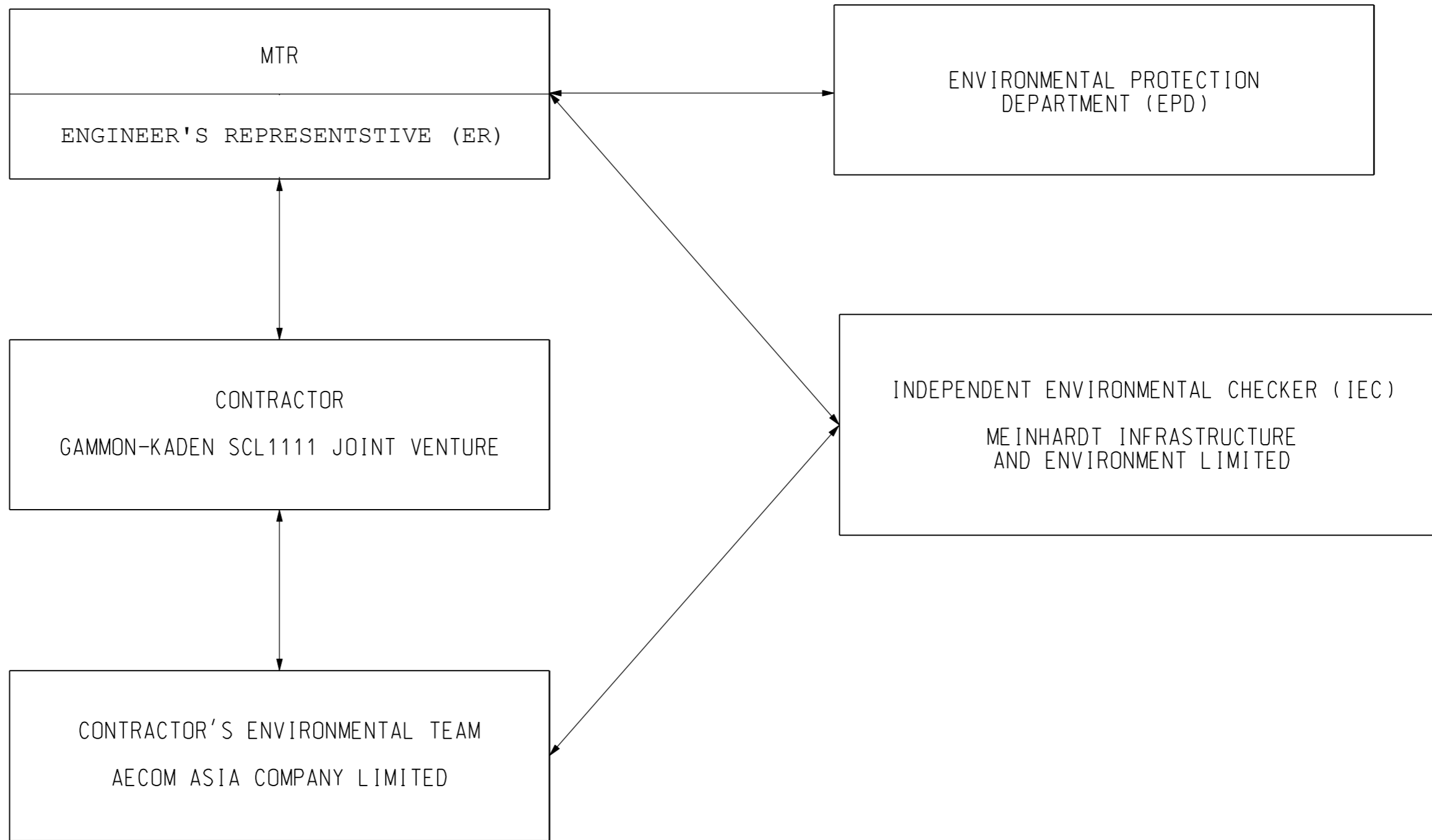
 Early Bar
 Progress Bar
 Critical Activity

**SCL 1111
SUMMARY PROGRAMME**

Date	Revision	Checked	Approved
19/09/12			

APPENDIX B

Project Organization Structure



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CHECKED		LCLL			Appendix B				HUNG HOM NORTH APPROACH TUNNELS		
APPROVED		IMW							PROJECT ORGANISATION		
DATE		08/JAN/2013		CADD REF.		Appendix B		SCALE		FIGURE NO.	
								N.T.S.		Appendix B	
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REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED		

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	@
		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	@
		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	@
		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	V

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	@
		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	@
		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	V
		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	N/A

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 dB(A)

Note:

(1) Daytime noise Limit Level of 70dB(A) applies to education institutions while 65dB(A) applies during school examination period.

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: 27-Apr-15 Next Due Date: 27-Jun-15
 Equipment No.: --- Serial No. 8259

Ambient Condition			
Temperature, Ta (K)	298.1	Pressure, Pa (mmHg)	763.0

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	7.8	2.80	1.42	42.0	42.08
13	6.1	2.47	1.26	36.0	36.06
10	5.3	2.31	1.17	32.0	32.06
7	4.0	2.00	1.02	26.0	26.05
5	3.0	1.74	0.88	22.0	22.04

By Linear Regression of Y on X

Slope, mw = 37.9985 Intercept, bw = -12.0799
 Correlation Coefficient* = 0.9961

*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} = 37.25

Remarks: _____

QC Reviewer: Y Y Chung

Signature: 

Date: 27-4-15



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELS, 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

$$\text{Vstd} = \text{Diff. Vol} [(\text{Pa} - \text{Diff. Hg}) / 760] (298 / \text{Ta})$$

$$\text{Qstd} = \text{Vstd} / \text{Time}$$

$$\text{Va} = \text{Diff Vol} [(\text{Pa} - \text{Diff Hg}) / \text{Pa}]$$

$$\text{Qa} = \text{Va} / \text{Time}$$

For subsequent flow rate calculations:

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

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



CERTIFICATE OF CALIBRATION

Certificate No.: 15CA0317 03 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	,	2791211
Adaptors used:	-	,	-

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 17-Mar-2015

Date of test: 18-Mar-2015

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: 1010 ± 5 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.

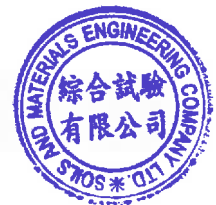
Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 19-Mar-2015

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.: 15CA0317 03 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	
	A	Pass	0.3	
	C	Pass	0.3	
Frequency weightings	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

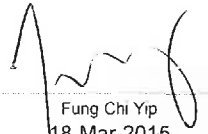
The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

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	

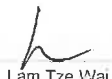
3, Response to associated sound calibrator

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: 18-Mar-2015

- End -

Checked by: 
Date: 19-Mar-2015

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	A	Pass	0.3
Time weightings	C	Pass	0.3	
	Lin	Pass	0.3	
	Single Burst Fast	Pass	0.3	
Peak response	Single Burst Slow	Pass	0.3	
	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
Time averaging	Repeated at frequency of 100 Hz	Pass	0.3	
	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:  - End -
Date: 03-Jul-2014
Checked by: 
Date: 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.: 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	A	Pass	0.3
Time weightings	C	Pass	0.3	
	Lin	Pass	0.3	
	Single Burst Fast	Pass	0.3	
Peak response	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	
	Repeated at frequency of 100 Hz	N/A	N/A	
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 -

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

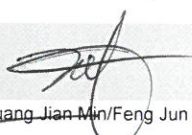
- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results 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.

- End -

Calibrated by:

Date:

Fung Chi Yip
07-Nov-2014

Checked by:

Date:

Lam Tze Wai
08-Nov-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.

APPENDIX F

EM&A Monitoring Schedules

**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Impact Monitoring Schedule for June 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Jun	2-Jun	3-Jun	4-Jun	5-Jun	6-Jun
				24-hour TSP (AM1)	Noise (NM1, NM2)	
7-Jun	8-Jun	9-Jun	10-Jun	11-Jun	12-Jun	13-Jun
			24-hour TSP (AM1)	Noise (NM1, NM2)		
14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun
		24-hour TSP (AM1)	Noise (NM1, NM2)			
21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun
	24-hour TSP (AM1)	Noise (NM1, NM2)				24-hour TSP (AM1)
28-Jun	29-Jun	30-Jun				

**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Tentative Impact Monitoring Schedule for July 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jul	2-Jul	3-Jul	4-Jul
				24-hour TSP (AM1)	Noise (NM1, NM2)	
5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul
			24-hour TSP (AM1)	Noise (NM1, NM2)		
12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul
		24-hour TSP (AM1)	Noise (NM1, NM2)			
19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul
	24-hour TSP (AM1)	Noise (NM1, NM2)				24-hour TSP (AM1)
26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	
		Noise (NM1, NM2)			24-hour TSP (AM1)	

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

APPENDIX G

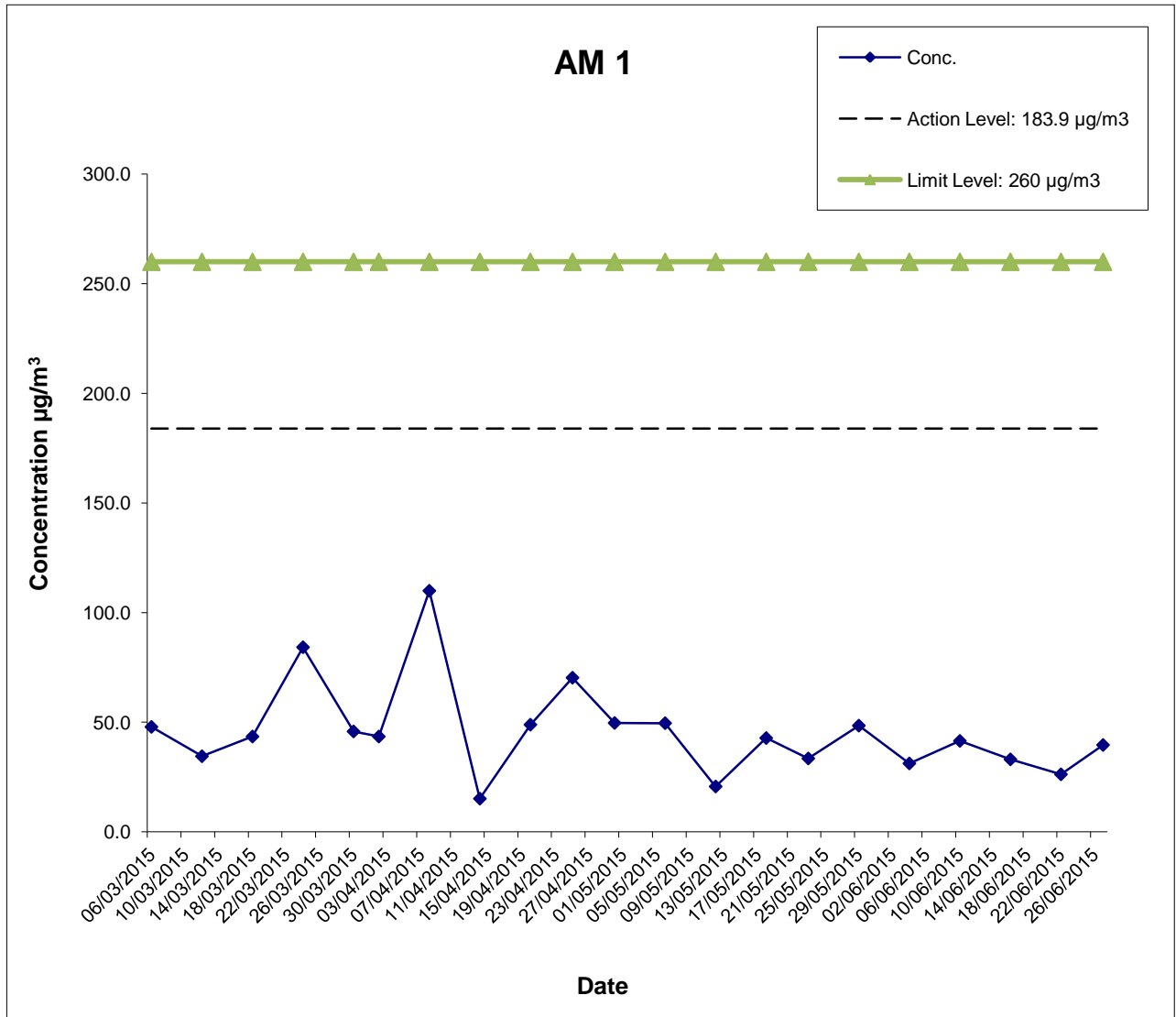
**Air Quality Monitoring Results and
their Graphical Presentations**

**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		
4-Jun-15	0:00	5-Jun-15	0:00	Sunny	29.8	1008.9	1.31	1.31	1.31	1890.7	2.7612	2.8202	0.0590	10436.04	10460.04	24.00	31.2
10-Jun-15	0:00	11-Jun-15	0:00	Sunny	29.9	1007.3	1.31	1.31	1.31	1890.7	2.8899	2.9683	0.0784	10460.04	10484.04	24.00	41.5
16-Jun-15	0:00	17-Jun-15	0:00	Sunny	30.1	1008.2	1.31	1.31	1.31	1890.7	2.8641	2.9266	0.0625	10484.04	10508.04	24.00	33.1
22-Jun-15	0:00	23-Jun-15	0:00	Fine	27.9	1003.2	1.31	1.31	1.31	1890.7	2.8586	2.9082	0.0496	10508.04	10532.04	24.00	26.2
27-Jun-15	0:00	28-Jun-15	0:00	Sunny	30.4	1008.3	1.31	1.31	1.31	1890.7	2.8300	2.9049	0.0749	10532.04	10556.04	24.00	39.6
Average																34.3	
Minimum																26.2	
Maximum																41.5	

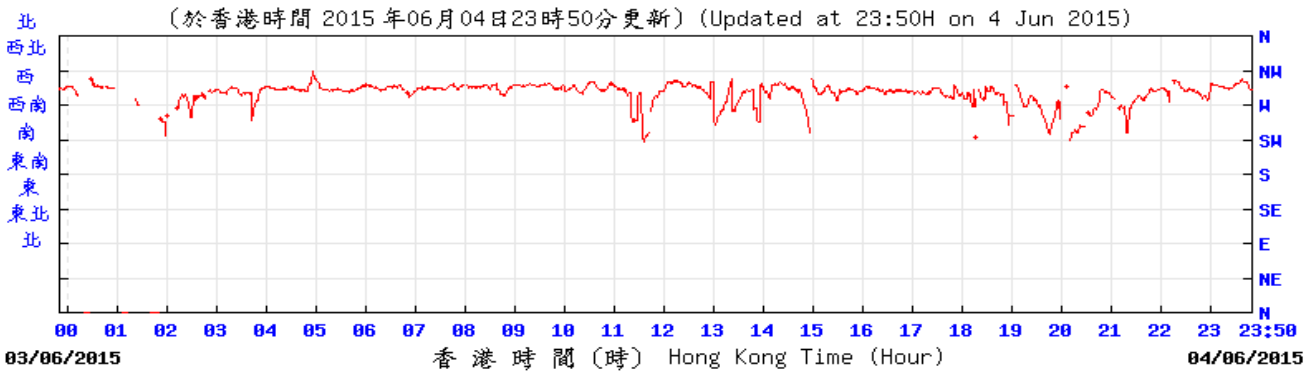
Appendix G Air Quality Monitoring Results



	<u>Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels</u>	SCALE	N.T.S.	DATE	Jul-15
	Graphical Presentations of Impact 24-hour TSP Monitoring Results	CHECK	TYUT	DRAWN	LLMC
		JOB NO.	60284101	APPENDIX No. G	Rev. -

Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, June 2015

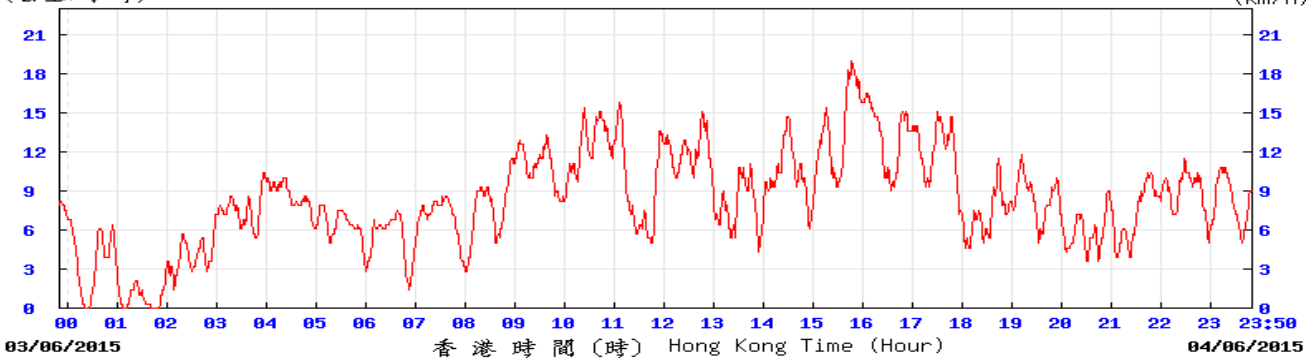
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KPC

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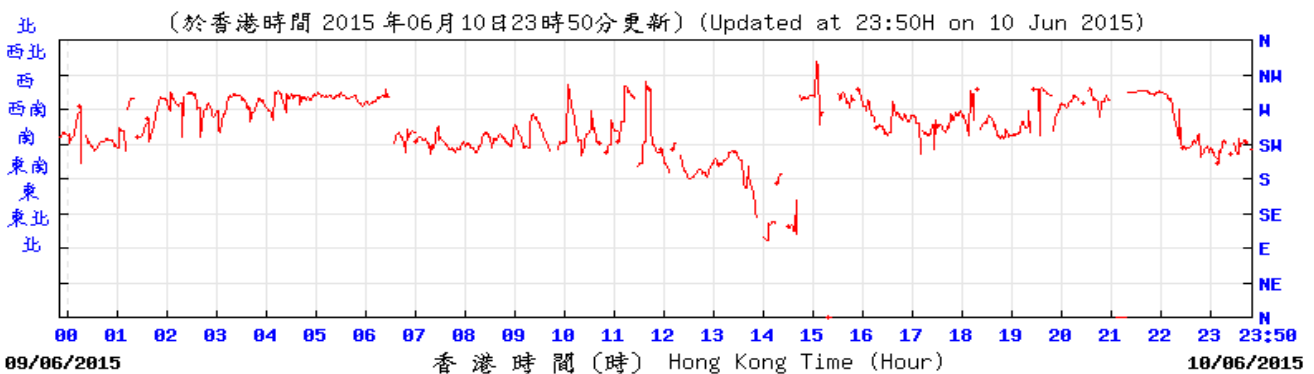
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KPC

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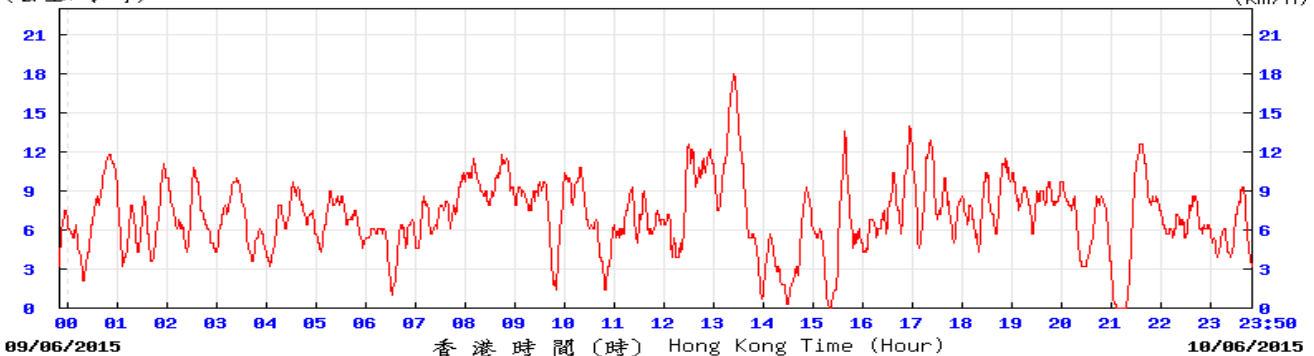
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KPC

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(公里/小時) (於香港時間 2015 年 6月 10日23時50分更新) (Updated at 23:50H on 10 Jun 2015) (km/h)

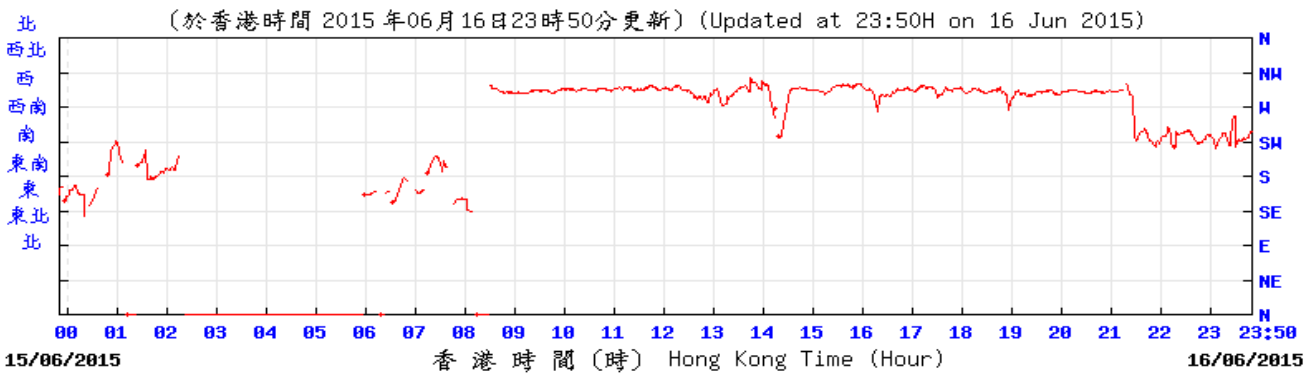


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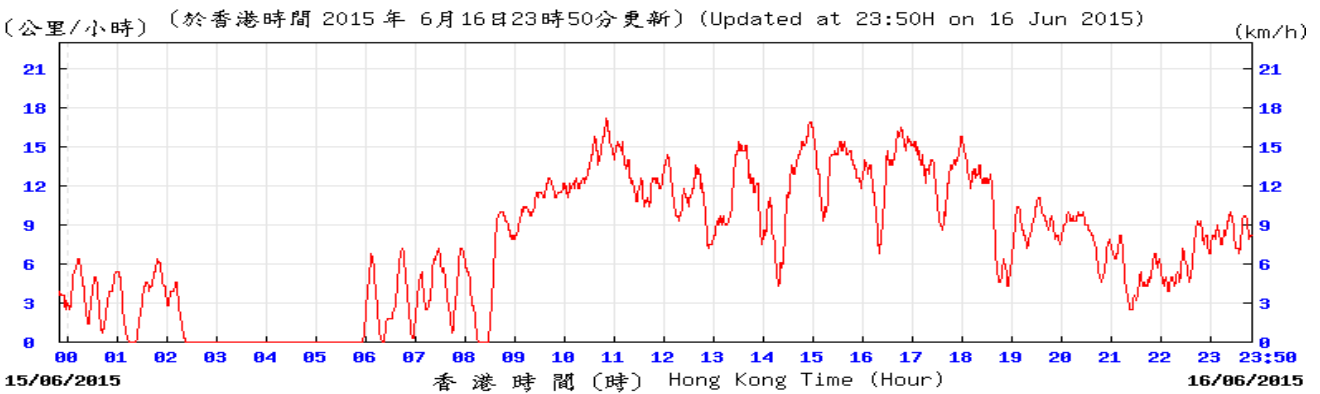
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Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, June 2015

16-Jun-15

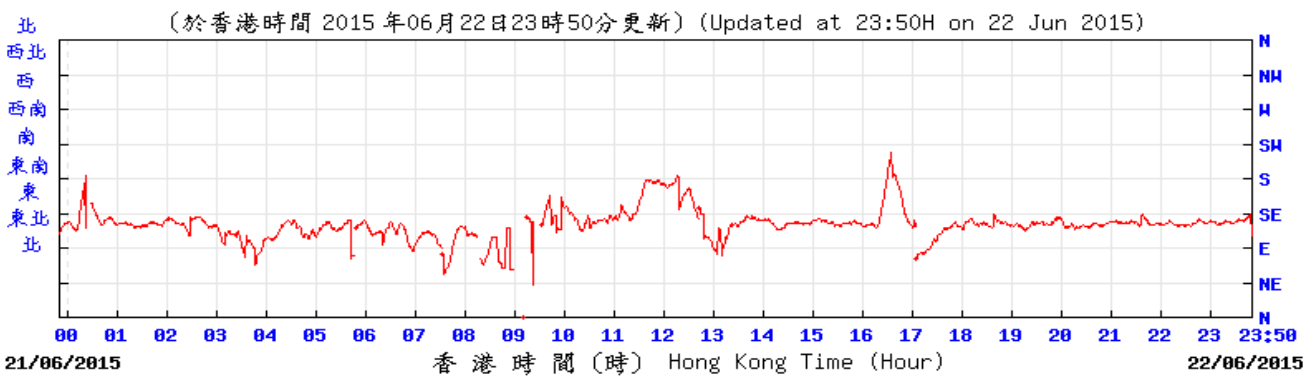


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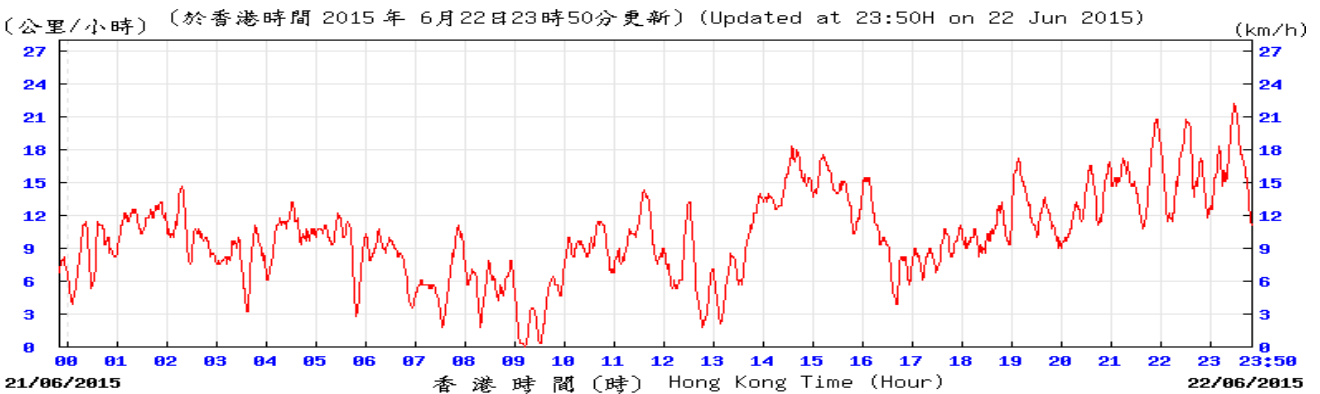


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22-Jun-15



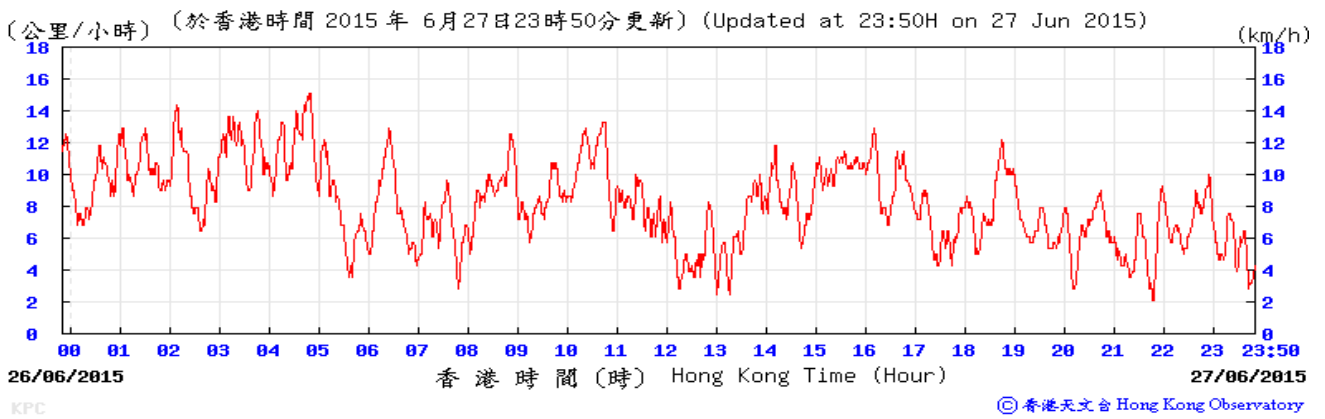
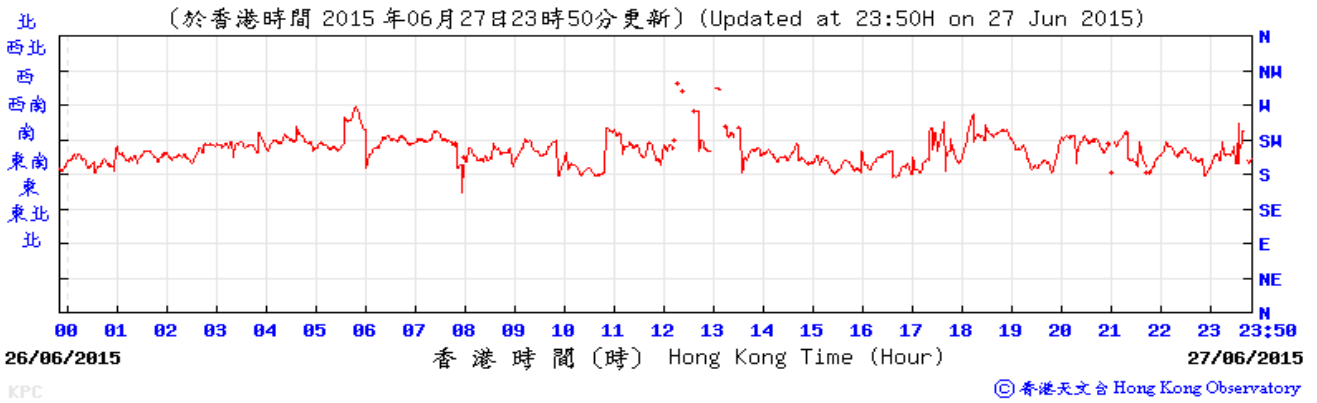
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Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, June 2015

27-Jun-15



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 Level, dB(A)	Baseline Noise Level, dB(A)	Limit Level*, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
5-Jun-15	Sunny	9:50	63.5	68.5	66.5	<Baseline	68.0	70	N
11-Jun-15	Sunny	13:10	66.5	70.5	68.8	61.1	68.0	70	N
17-Jun-15	Sunny	10:00	65.8	70.0	67.2	<Baseline	68.0	70	N
23-Jun-15	Fine	10:40	65.0	69.0	67.2	<Baseline	68.0	70	N

Daytime Noise Monitoring Results at Station NM 2 (No. 234 – 238 Chatham Road North)

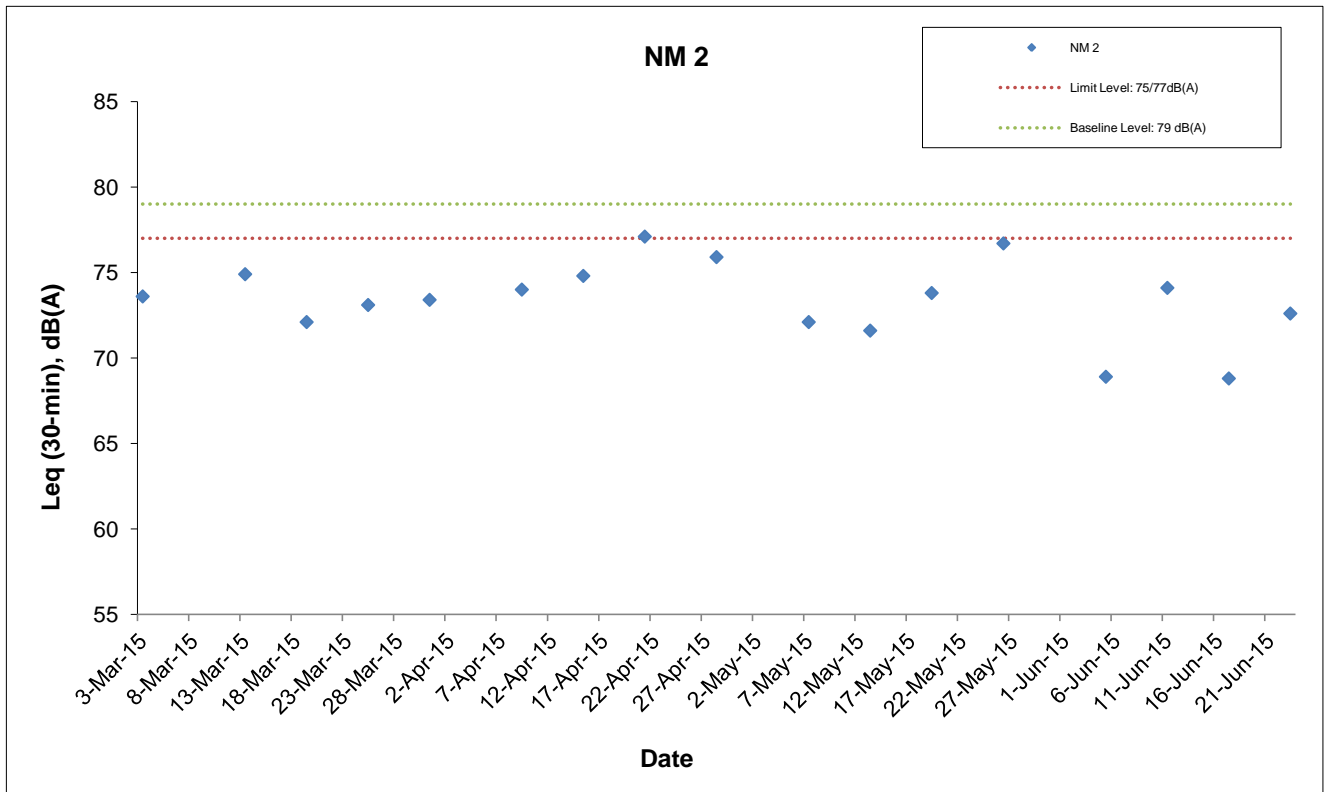
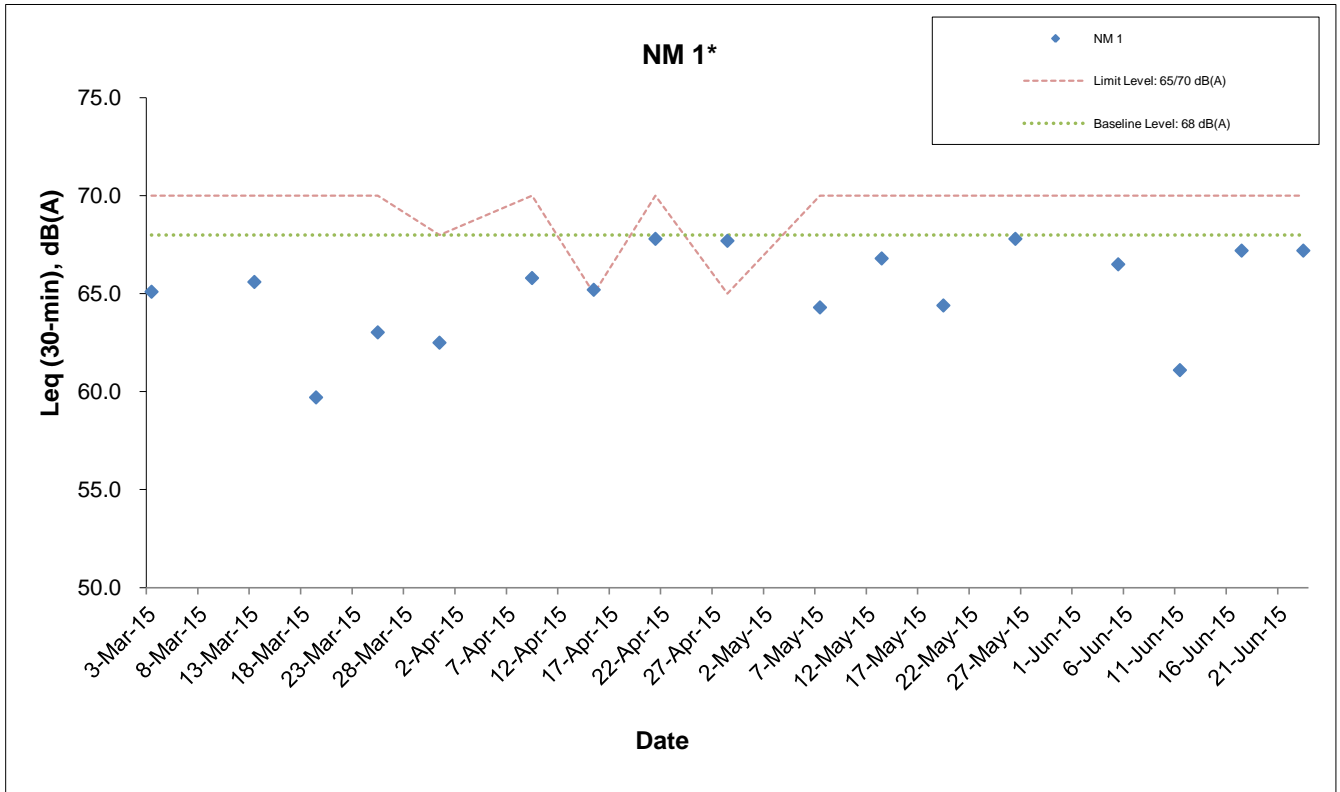
Date	Weather Condition	Noise Level for 30-min, dB(A) ⁺⁺				Baseline Corrected Level, dB(A)	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
5-Jun-15	Sunny	10:30	66.5	70.0	68.9	<Baseline	79.0	77	N
11-Jun-15	Sunny	14:05	71.5	76.0	74.1	<Baseline	79.0	77	N
17-Jun-15	Sunny	10:46	66.1	71.1	68.8	<Baseline	79.0	77	N
23-Jun-15	Fine	11:28	69.0	74.0	72.6	<Baseline	79.0	77	N

⁺ - Façade measurement

⁺⁺ - Free field measurement

* - Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

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	Jul-15
	Graphical Presentations of Noise Monitoring Results	CHECK	TYUT	DRAWN	LLMC
		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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<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; 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	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; and 6. Assess effectiveness of Contractor's remedial actions and keep IEC and ER informed of the results.	1. Check monitoring data submitted by the Works Contract 1111 ET; 2. Check the Contractor's working method; 3. Discuss with the ER, Works Contract 1111 ET and Contractor on the potential remedial measures; and 4. Review and advise the Works Contract 1111 ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the Works Contract 1111 ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Ensure the proper 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 with the Works Contract 1111 ET; 2. If exceedance is confirmed, investigation 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; and 7. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Landscape and Visual during Construction Stage

EVENT	ET	IEC	ER	Contractor
ACTION LEVEL				
Non-conformity on one occasion	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	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.	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	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	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	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	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.	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					Actual Quantities of Marine Dumping Monthly		
	Generated					Disposed				Reused				Recycled			Disposed		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)	Disposed as MD at HH Barging Point	
		Soil and Rock	Broken Concrete	Asphalt							Building Debris	Tolo								WIL 705	Type 1
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)	('000m ³)	('000m ³)	
Jan	6.832	0.008	0.004	0.000	6.843	3.102	0.002	0.000	3.104	0.010	0.010	0.000	3.719	3.739	0.000	0.084	0.000	0.000	50.820	0.000	2.216
Feb	4.779	0.096	0.000	0.005	4.880	1.848	0.000	0.000	1.848	0.000	0.000	0.000	3.032	3.032	0.000	0.112	0.000	0.000	37.630	1.292	0.000
Mar	8.652	0.035	0.000	0.004	8.691	3.009	0.004	0.000	3.013	0.000	0.000	0.000	5.678	5.678	0.000	0.112	0.000	0.400	49.940	3.168	0.000
Apr	6.370	0.031	0.009	0.015	6.426	1.715	0.000	0.000	1.715	0.000	0.000	0.000	4.711	4.711	2.750	0.063	0.000	0.000	33.930	3.970	0.000
May	6.319	0.000	0.000	0.000	6.319	1.658	0.039	0.000	1.697	0.000	0.000	0.000	4.622	4.622	0.000	0.073	0.000	0.000	46.740	8.255	0.000
Jun	6.633	0.004	0.004	0.000	6.640	1.502	0.095	0.000	1.598	0.000	0.000	0.000	5.043	5.043	0.000	0.000	0.000	0.000	63.680	9.711	0.000
SUB-TOTAL	39.585	0.174	0.017	0.024	39.800	12.834	0.140	0.000	12.975	0.010	0.010	0.000	26.805	26.825	2.750	0.444	0.000	0.400	282.740	26.397	2.216
Jul																					
Aug																					
Sep																					
Oct																					
Nov																					
Dec																					
2015 TOTAL	39.585	0.174	0.017	0.024	39.800	12.834	0.140	0.000	12.975	0.010	0.010	0.000	26.805	26.825	2.750	0.444	0.000	0.400	282.740	26.397	2.216

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

**29th 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. 29

[Period from 1 to 30 June 2015]

Works Contract 1103 – Hin Keng to Diamond Hill Tunnels

(June 2015)

Certified by:  Coleman Ng

Position: Environmental Team Leader

Date: 10 June 2015

MTR Corporation Limited

**SCL1103 Hin Keng to Diamond
Hill Tunnels Construction Stage -
Environmental Services**

Monthly Environmental Monitoring
and Audit Report – June 2015

228105-27

July 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

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ARUP

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Appendices

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- Appendix B: Environmental Monitoring Programme in the Reporting Month
- Appendix C: Environmental Mitigation Implementation Schedule (EMIS)
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- 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-ninth 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 June 2015 (1 to 30 June 2015).

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

No exceedance of Action or 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 41,083m³ were generated and disposed of at public fill in TKO137FB and Kai Tak Barging Point Facility (Contract 1108A). 170m³ of general refuse was generated and disposed of at NENT landfill whilst 9,190kg of chemical waste was generated and disposed of by a licensed collector.

Environmental Auditing

A total of 4 environmental site audits were conducted on a weekly basis in the reporting month. The first site inspection was on 3 June 2015 and the final was undertaken on 25 June 2015. An IEC joint site audit was undertaken on 17 June 2015. No non-conformance to the environmental requirements was identified during the reporting period.

Complaint Log

No complaints related to environmental issues were received during the reporting month.

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	Thomas Barrett	2163 6181
SCL Project-wide Environmental Team Leader	Richard Kwan	2688 1283
Independent Environmental Checker: Meinhardt Infrastructure & Environment Ltd.		
Independent Environmental Checker	Fredrick Leong	2859 1739
Contractor: VINCI Constructions Grand Projects		
Project Director	Francois Dudouit	3765 5610
IMS Manager	L K Mak	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-RE1346-14	Ma Chai Hang	2 Dec 2014	Superseded
	GW-RE0415-15	Ma Chai Hang	5 May 2015	4 Nov 2015
	GW-RE0197-15	Fung Tak	4 Mar 2015	3 Sept 2015
	GW-RN0139-15	Hin Keng	17 Mar 2015	16 Sept 2015
	GW-RN0006-15	Hin Keng	1 Feb 2015	31 July 2015
	GW-RN0008-15	Hin Keng	1 Feb 2015	31 July 2015

Types of Permits / Licenses	Reference No.	Site	Valid from	Valid to
	GW-RE0509-15	Diamond Hill	10 June 2015	10 Sept 2015
	GW-RE0510-15	Diamond Hill	1 June 2015	29 Aug 2015
	GW-RE0117-15	Diamond Hill	8 Feb 2015	2 Aug 2015
	GW-RE0259-15	Diamond Hill	7 April 2015	8 Sept 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-ninth 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 30 June 2015.

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 (May 2015)	11 June 2015

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 m³/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

June 2015 was characterised at times by gloomy and rainy conditions associated with low a trough of low pressure.

Hot and humid conditions associated with a sub-tropical ridge were also present throughout the month of June.

3.3.2 Air Quality Monitoring Results

Monitoring of 24-hour TSP was conducted on 5, 11, 17, 23 and 27 June 2015. 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	35.3	21.6	148.7	260
DMS-2	14.6	32.0	167.4	260
DMS-3 / DMS-4	14.1	12.9	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 airborne 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

June 2015 was characterised at times by gloomy and rainy conditions associated with low a trough of low pressure.

Hot and humid conditions associated with a sub-tropical ridge were also present throughout the month of June.

4.3.2 Noise Monitoring Results

Impact Monitoring

Monitoring of the construction noise level was conducted on 1, 12, 18, 24 and 29 June 2015. 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)
1 June 15	16:40-17:10	61.3	57.0	59.3	70/65
12 June 15	10:30-11:00	59.4		55.7	
18 June 15	10:00-10:30	58.1		51.6	
24 June 15	13:00-13:30	60.2		57.4	
29 June 15	13:00-13:30	59.6		56.1	

Notes:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.
2. For normal day-time working hours, the noise criteria is 75 dB(A) and 70 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)
1 June 15	13:45-14:15	68.8	66.0	65.6	70/65
12 June 15	08:30-09:00	68.4		64.7	
18 June 15	13:00-13:30	68.1		63.9	
24 June 15	08:30-09:00	67.9		63.4	
29 June 15	15:00-15:30	67.8		63.1	

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

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)
1 June 15	15:15-15:45	71.4	73.0	< Baseline Level	70/65
12 June 15	13:00-13:30	71.3		< Baseline Level	
18 June 15	14:40-15:10	70.6		< Baseline Level	
24 June 15	10:15-10:45	70.9		< Baseline Level	
29 June 15	16:25-16:55	69.8		< 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 60 dB(A) for normal teaching periods and examination periods respectively.

4.3.3 Exceedance of Limit and Action Levels for Construction Noise

No exceedance of the Action or 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 and 17 June 2015. 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	41,083m ³	TKO137FB and Kai Tak Barging Point Facility (1108A)
Chemical Waste	9,190kg	Disposed of by a licensed collector
Paper / cardboard packaging	0kg	-
Plastic	0kg	
Metal	0kg	
General Refuse	170m ³	NENT Landfill

7 Cultural Heritage

In accordance with the EM&A Manual, appropriate vibration monitoring on the identified built heritage has been agreed with the Building Department (BD)/Geotechnical Engineering Office (GEO) under the requirement of Buildings Ordinance and/or Blasting Permit as appropriate. Vibration monitoring was not conducted during the reporting month at Wong Tai Sin Temple since the TBM had passed through the vicinity 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 June 2015, 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
Waste				
28 May 2015	Diamond Hill	The contractor is reminded to ensure that chemical containers used for the WWTP are properly stored after use.	Agreed with ET's Advice.	The contractor rectified the issues and ensured proper storage. Closed 3 June 2015.
3 June 2015	Hin Keng	The contractor is reminded to ensure that oil drums are returned to the designated storage area after use.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that that oil drums are returned to the designated storage area after use. Closed 10 June 2015.
10 June 2015	Ma Chai Hang	The contractor is reminded to ensure that empty oil containers are placed in the designated storage area after use.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that that empty oil containers are placed in the designated storage area after use. Closed 17 June 2015.
17 June 2015	Diamond Hill	The contractor is reminded to ensure that the chemical waste storage area is secured after use.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that that the chemical waste storage area is secured after use. Closed 24 June 2015.

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
17 June 2015	Hin Keng	The contractor is reminded to ensure that empty chemical containers are placed in the designated storage area after use.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that that empty chemical containers are placed in the designated storage area after use. Closed 24 June 2015.
24 June 2015	Diamond Hill	The contractor is reminded to ensure that chemical containers are placed in their designated storage area after use.	Agreed with ET's Advice.	The contractor noted the issue and will report the status in the next reporting month.
Noise				
10 June 2015	Fung Tak	The contractor is reminded to ensure that breakers operating in the tunnel shaft have the provision of an acoustic blanket.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that that operations in the tunnel shaft had the provision of an acoustic blanket. Closed 17 June 2015.
Water				
3 June 2015	Hin Keng	The contractor is reminded to enhance the water barrier in order to prevent water seepage.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that enhance the water barrier in order to prevent water seepage. Closed 10 June 2015.
10 June 2015	Ma Chai Hang	The contractor is reminded to ensure that the pH meter of the WWTP is within the acceptable range.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that that the pH meter at the WWTP was within the acceptable range. Closed 17 June 2015.

8.2 Summary of Environmental Complaint

There were no complaints regarding environmental issues 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		
01/06/15– 30/06/15	0	9	-	-

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.

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

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.

No 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.

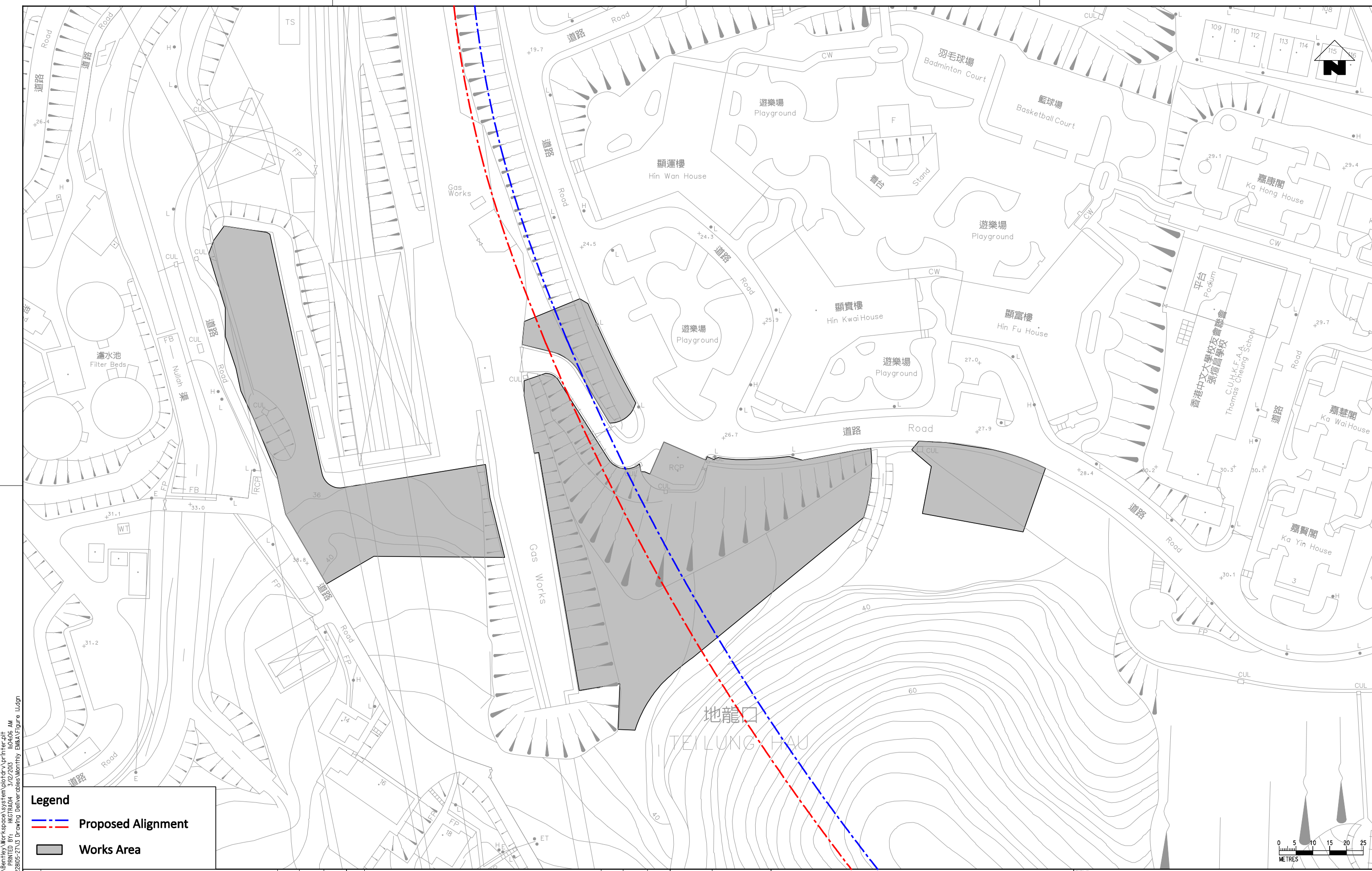
Construction dust is also key environmental issue. The implemented construction dust mitigation measures including covering of exposed slope / soil with tarpaulin

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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- --- Proposed Alignment
- Works Area

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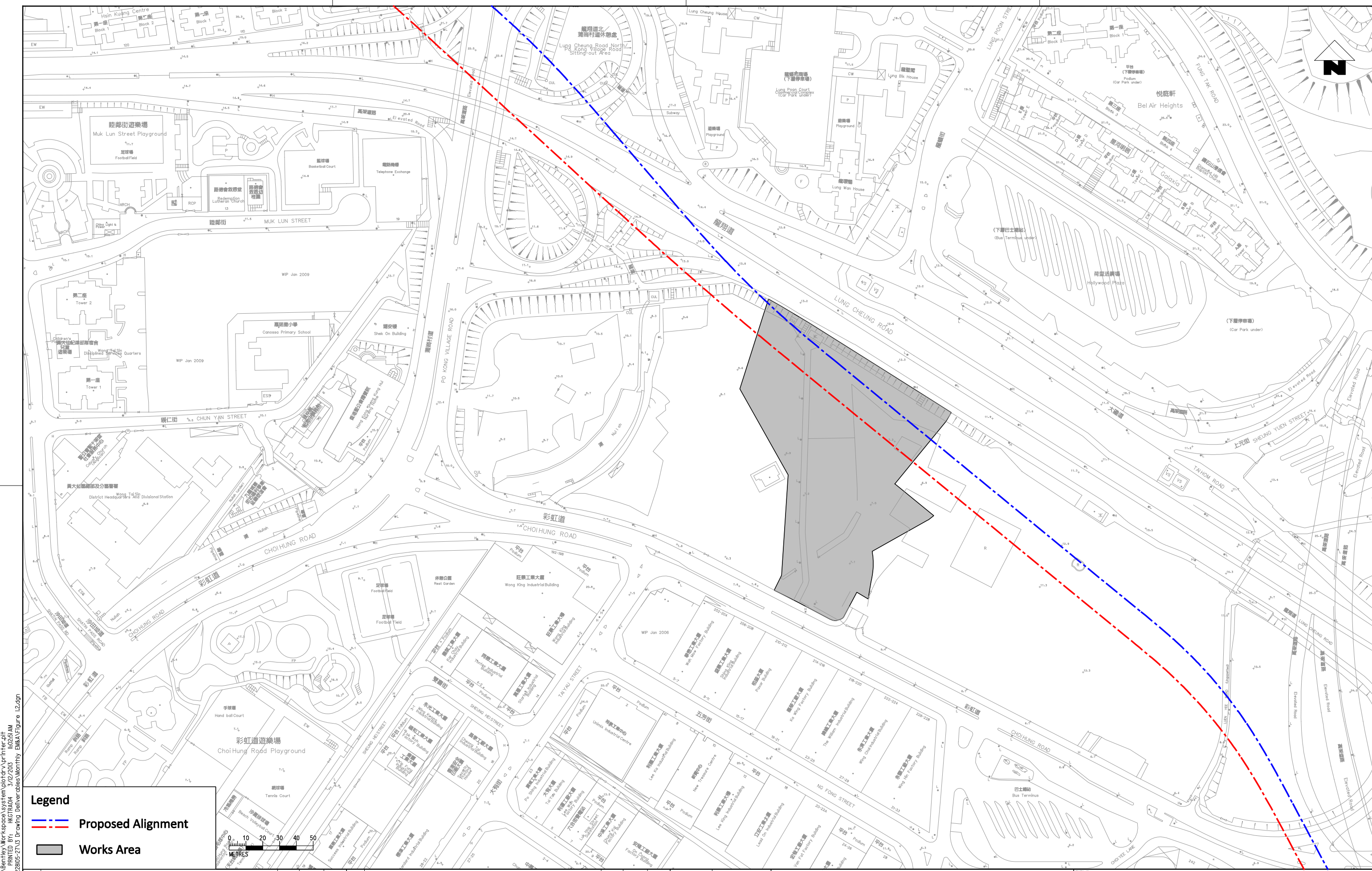
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TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Project Works Areas
 - General Site Layout of Hin Keng Works Area
 (Sheet 1 of 6)

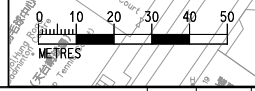
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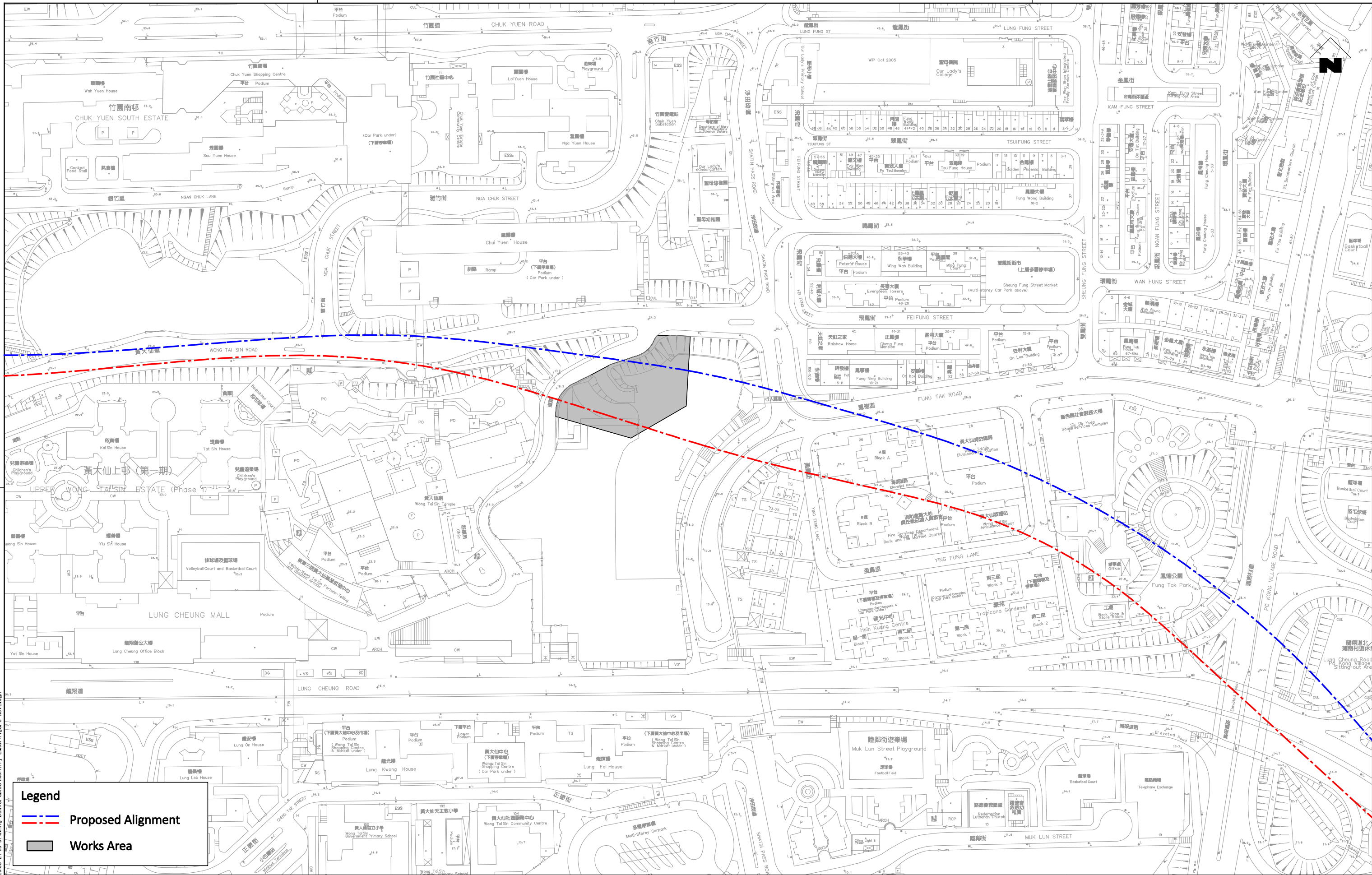
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				DRAWN GL DESIGNED GL CHECKED CN APPROVED ST DATE 12/12 <small>DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. (C) MTR CORPORATION LIMITED 2008. COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED 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>		 SHATIN TO CENTRAL LINK ORIGINATOR Ove Arup & Partners Hong Kong Limited		TITLE CONTRACT 1103 HIN KENG TO DIAMOND HILL TUNNELS Locations of Project Works Areas - General Site Layout of Diamond Hill Works Area (Sheet 2 of 6)				
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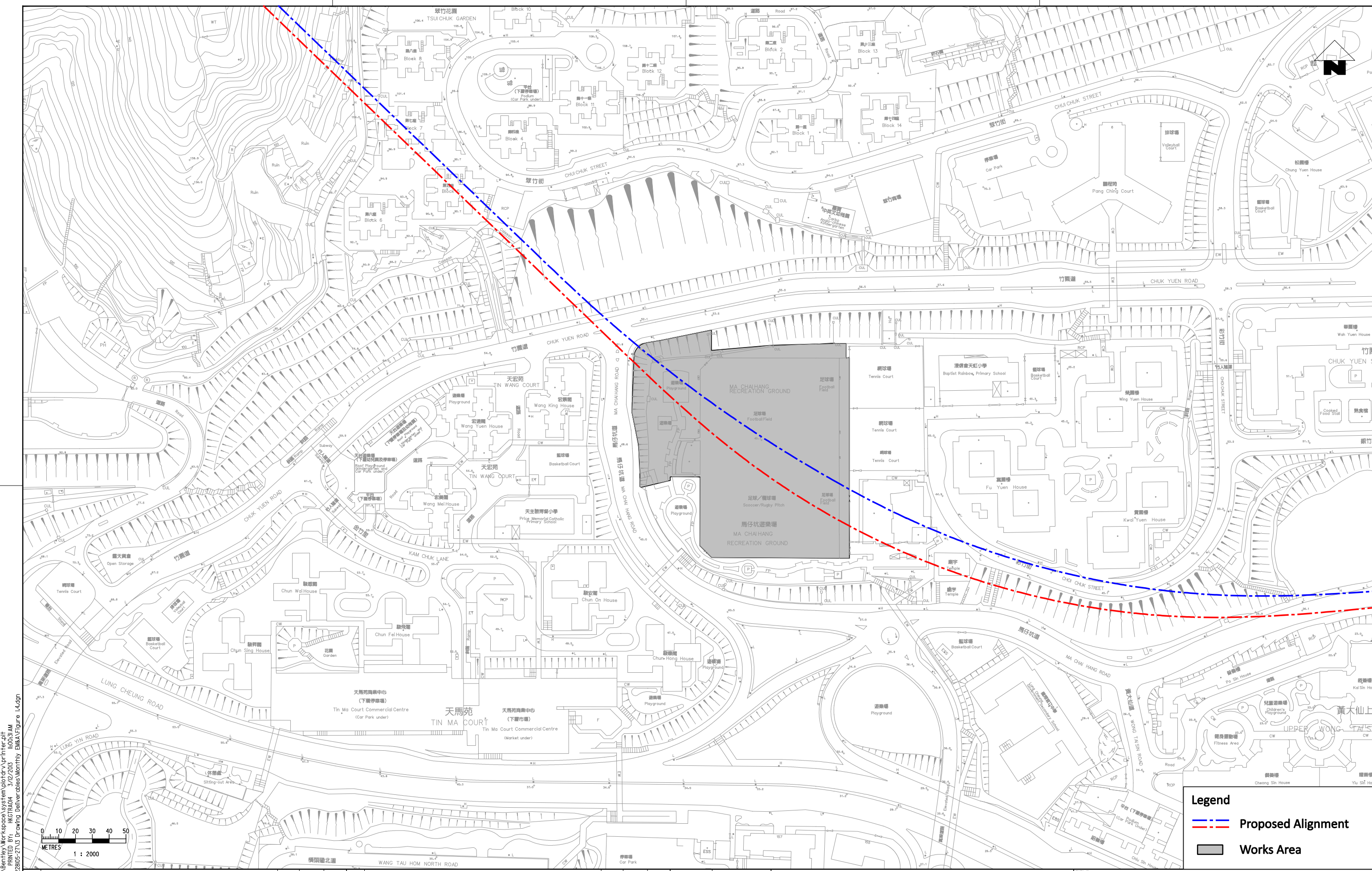
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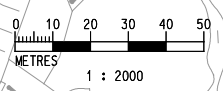
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TITLE		CONTRACT 1103		REV.	
		HIN KENG TO DIAMOND HILL TUNNELS		A	
		Locations of Project Works Areas - Site Layout Plan of Fung Tak EAP/EEP Building (Sheet 3 of 6)			
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- --- Proposed Alignment
- Works Area

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TITLE
 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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 Figure 1.4

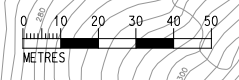
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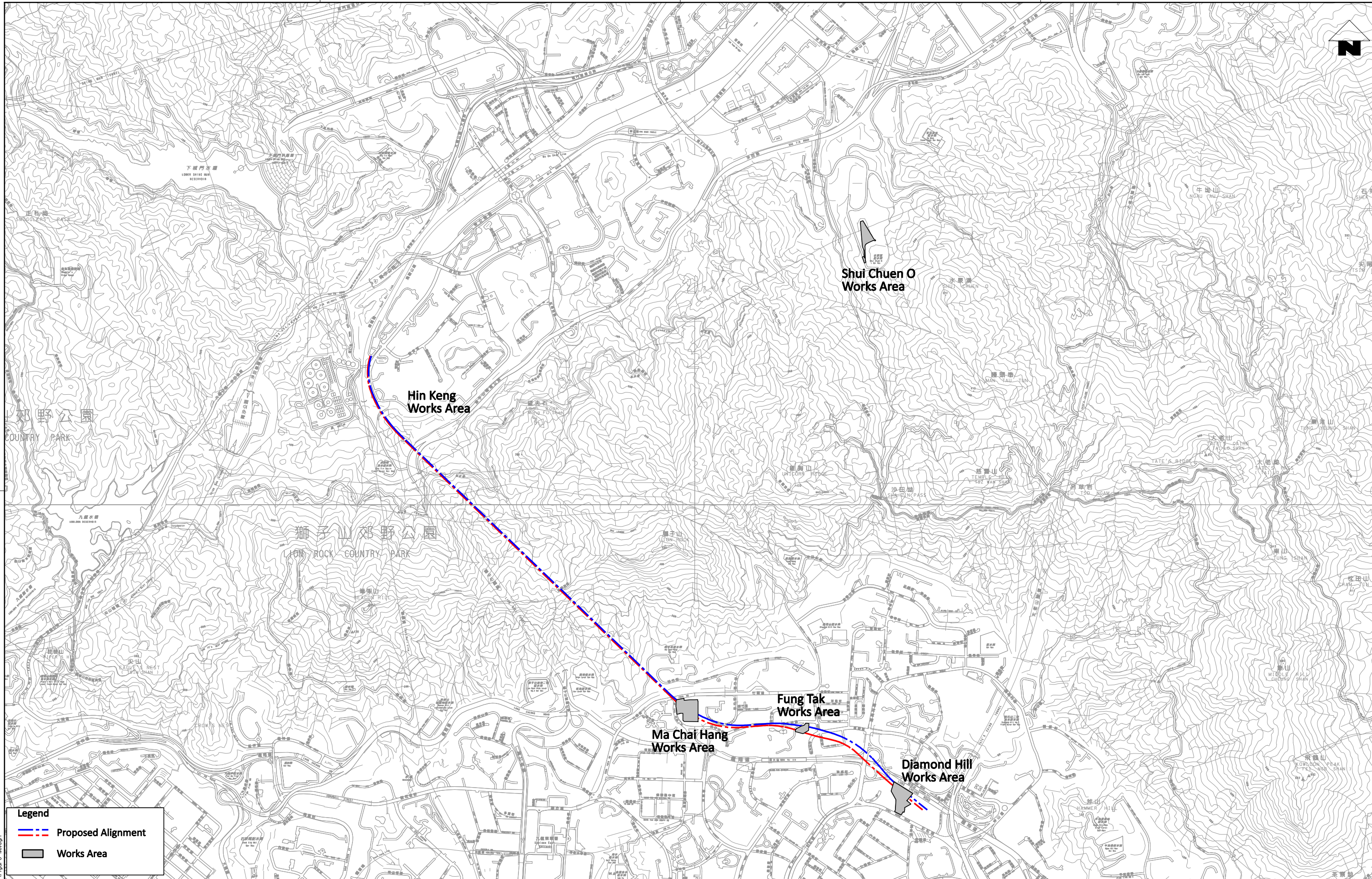
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Works Area



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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		SCALE 1 : 2000 (A3)		DRAWING NO. Figure 1.5		REV. A
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- --- Proposed Alignment
- Works Area

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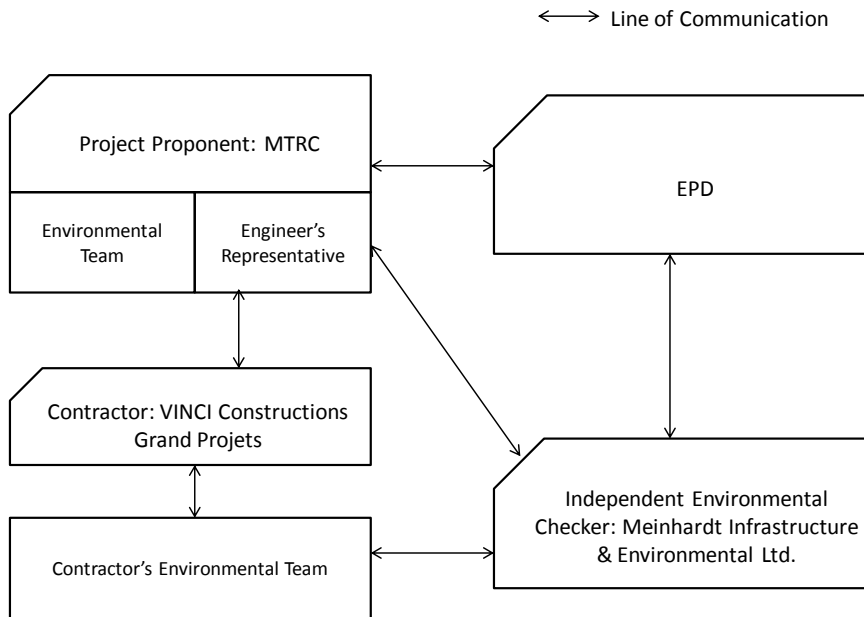
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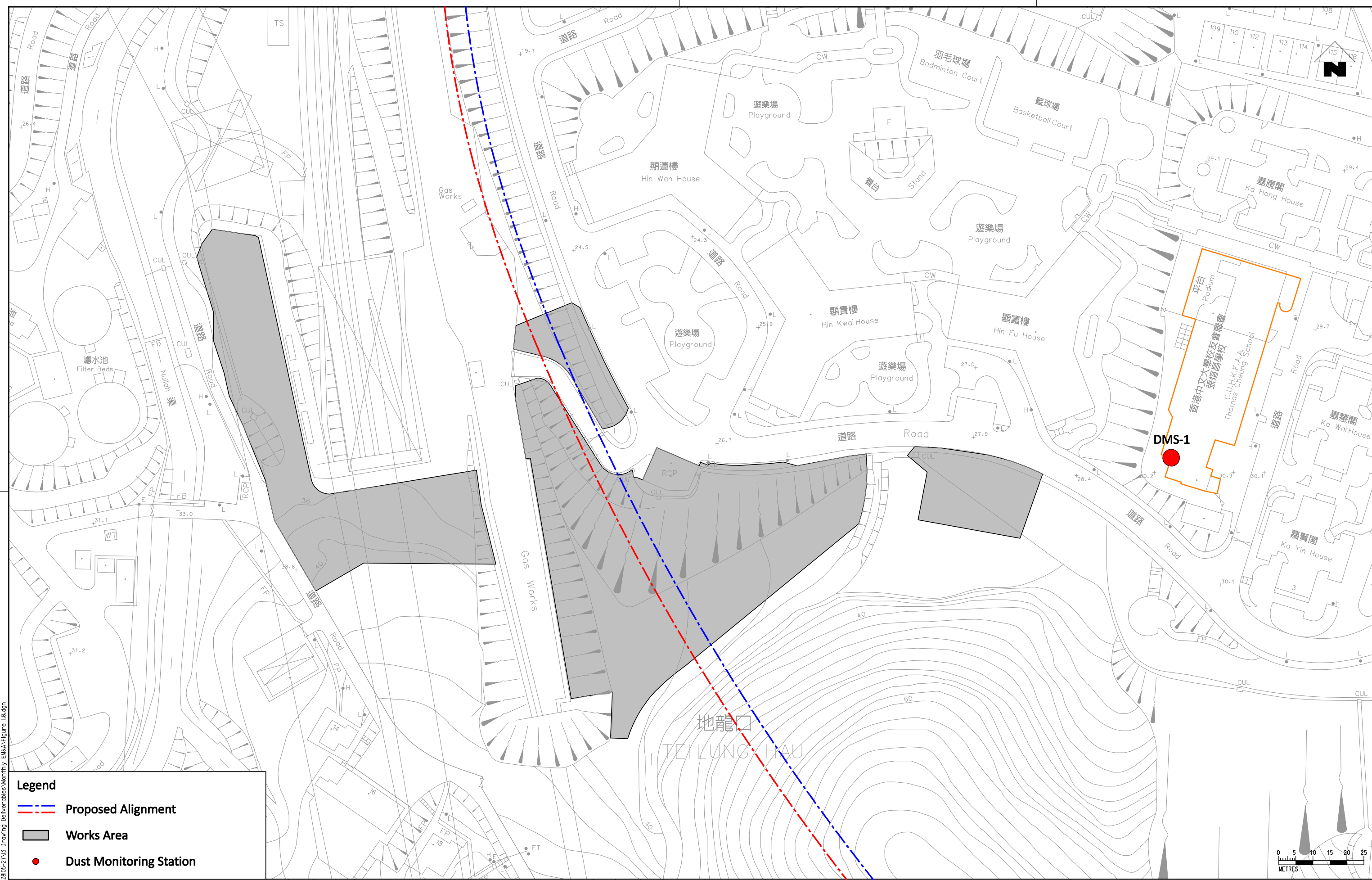
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Figure 1.7 - Project Organisation for Environmental Works



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- Legend**
- Proposed Alignment
 - Works Area
 - Dust Monitoring Station

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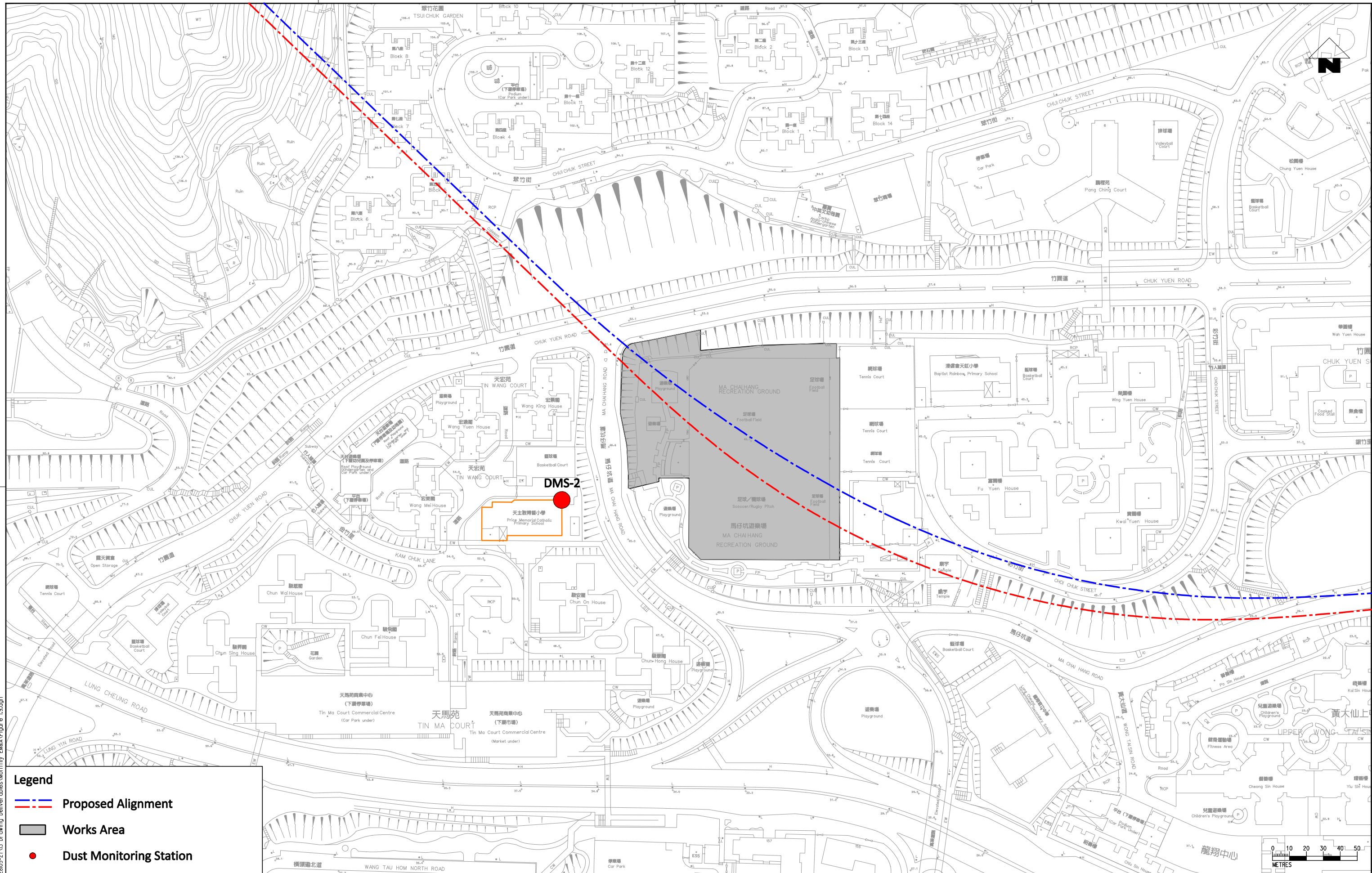
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TITLE		CONTRACT 1103	
		HIN KENG TO DIAMOND HILL TUNNELS	
		Locations of Proposed Dust Monitoring Stations	
		(Sheet 1 of 3)	
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- Legend**
- - - Proposed Alignment
 - Works Area
 - Dust Monitoring Station

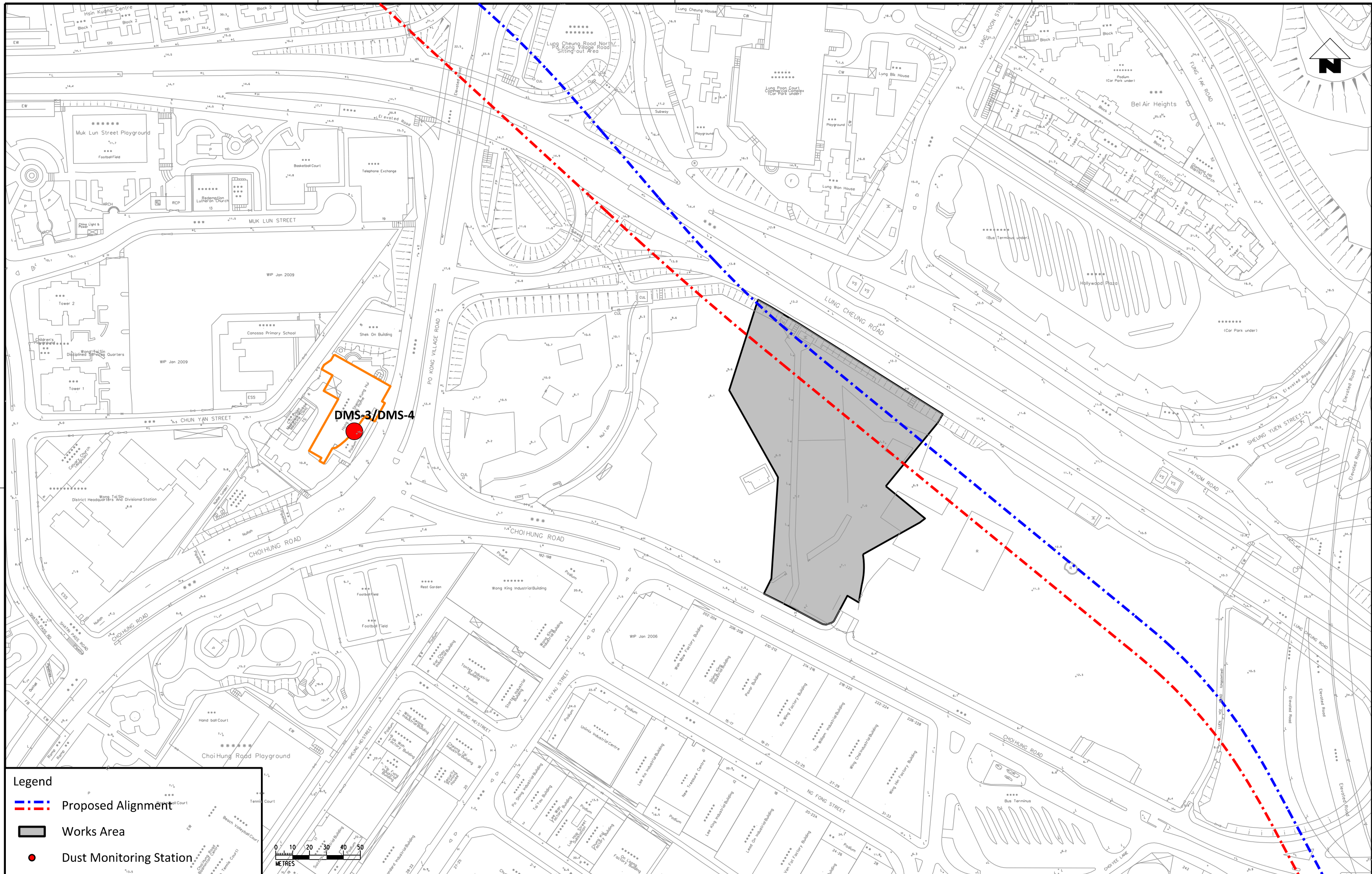
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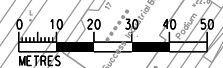
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- --- Proposed Alignment
- Works Area
- Dust Monitoring Station



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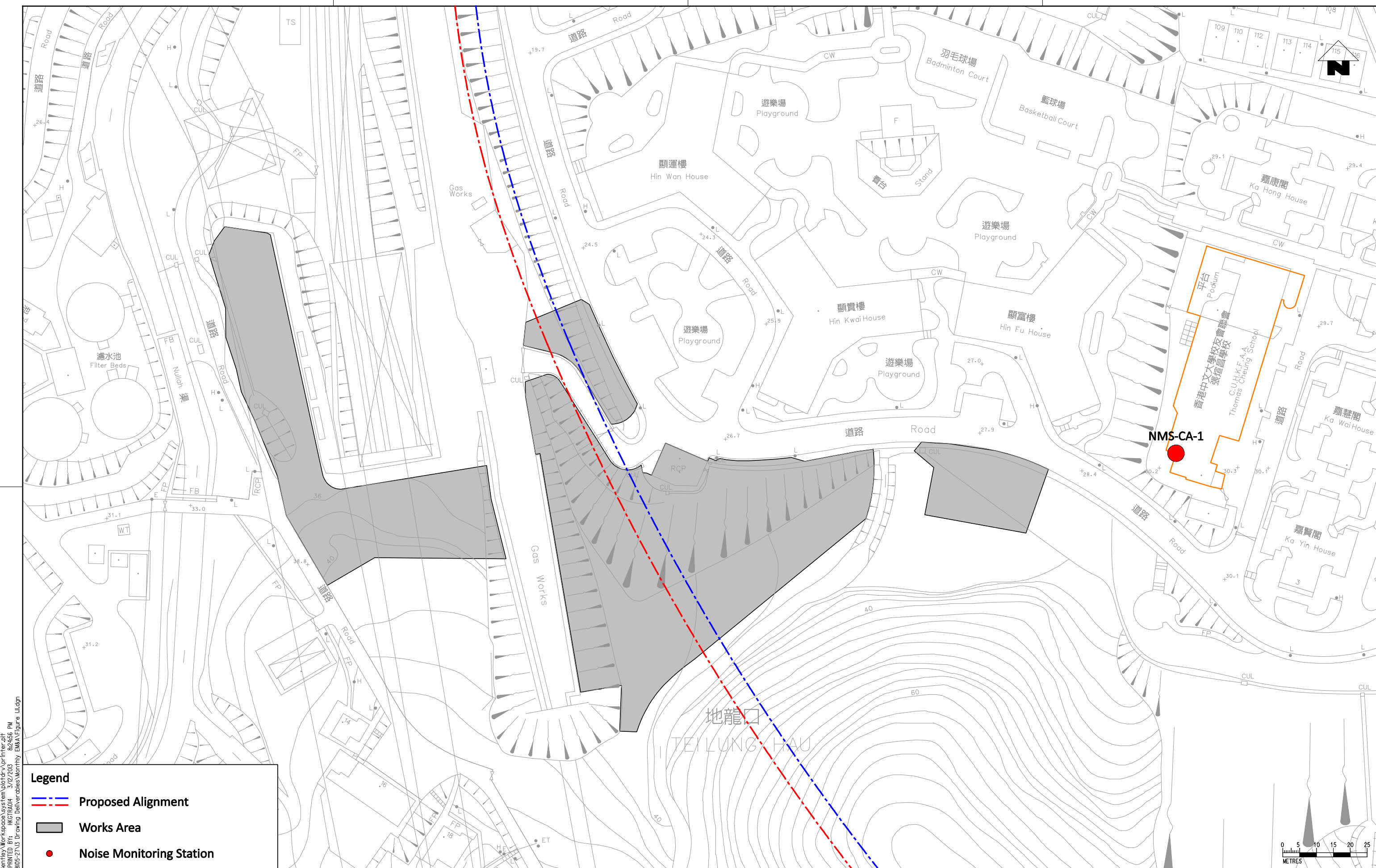
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CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Proposed Dust Monitoring Stations
 (Sheet 3 of 3)

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- --- **Proposed Alignment**
- Works Area**
- **Noise Monitoring Station**

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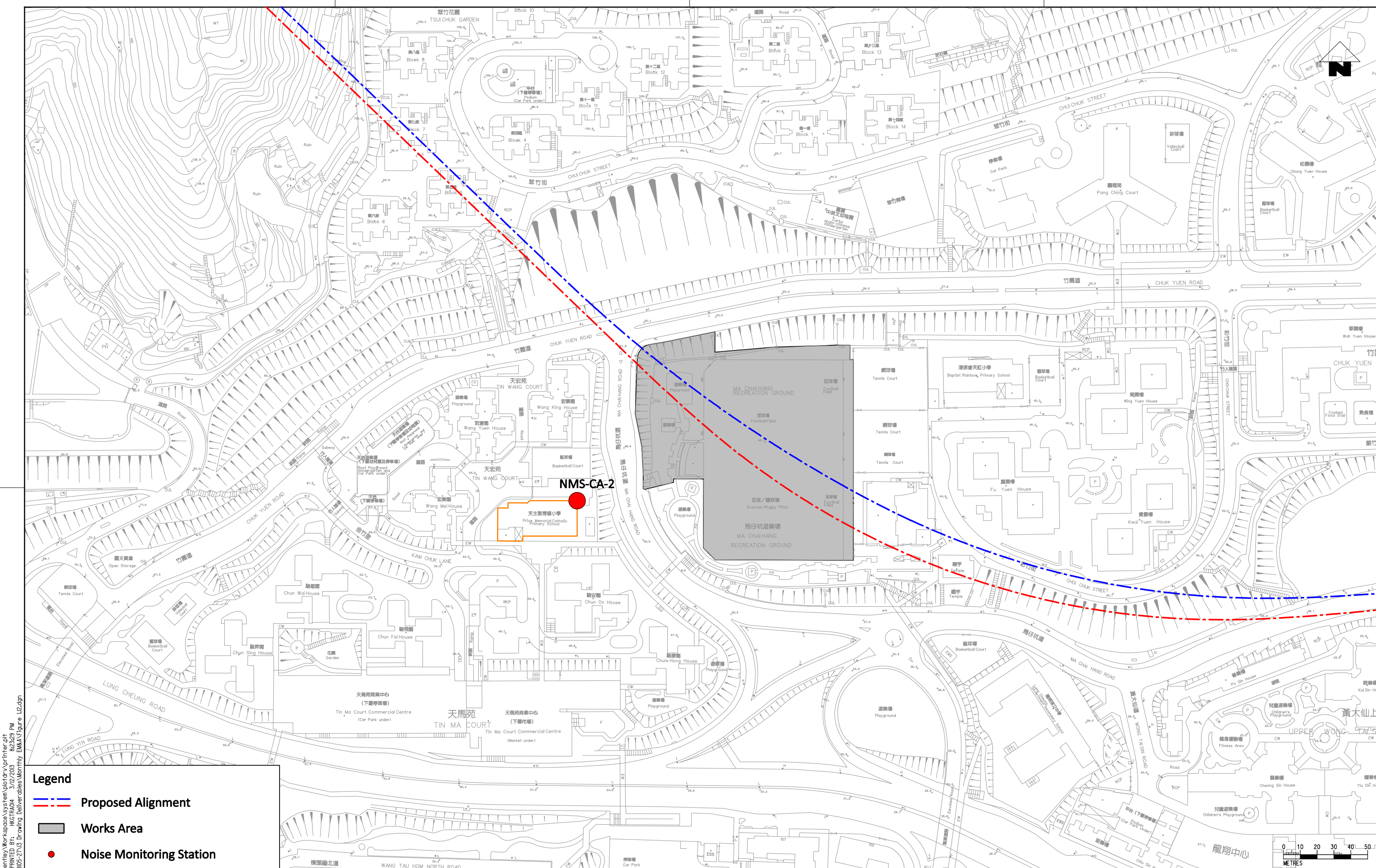
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TITLE
 CONTRACT 1103
 HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Noise Monitoring Stations
 (Construction Airborne Noise)
 (Sheet 1 of 3)

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- Legend**
- --- Proposed Alignment
 - Works Area
 - Noise Monitoring Station

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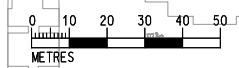
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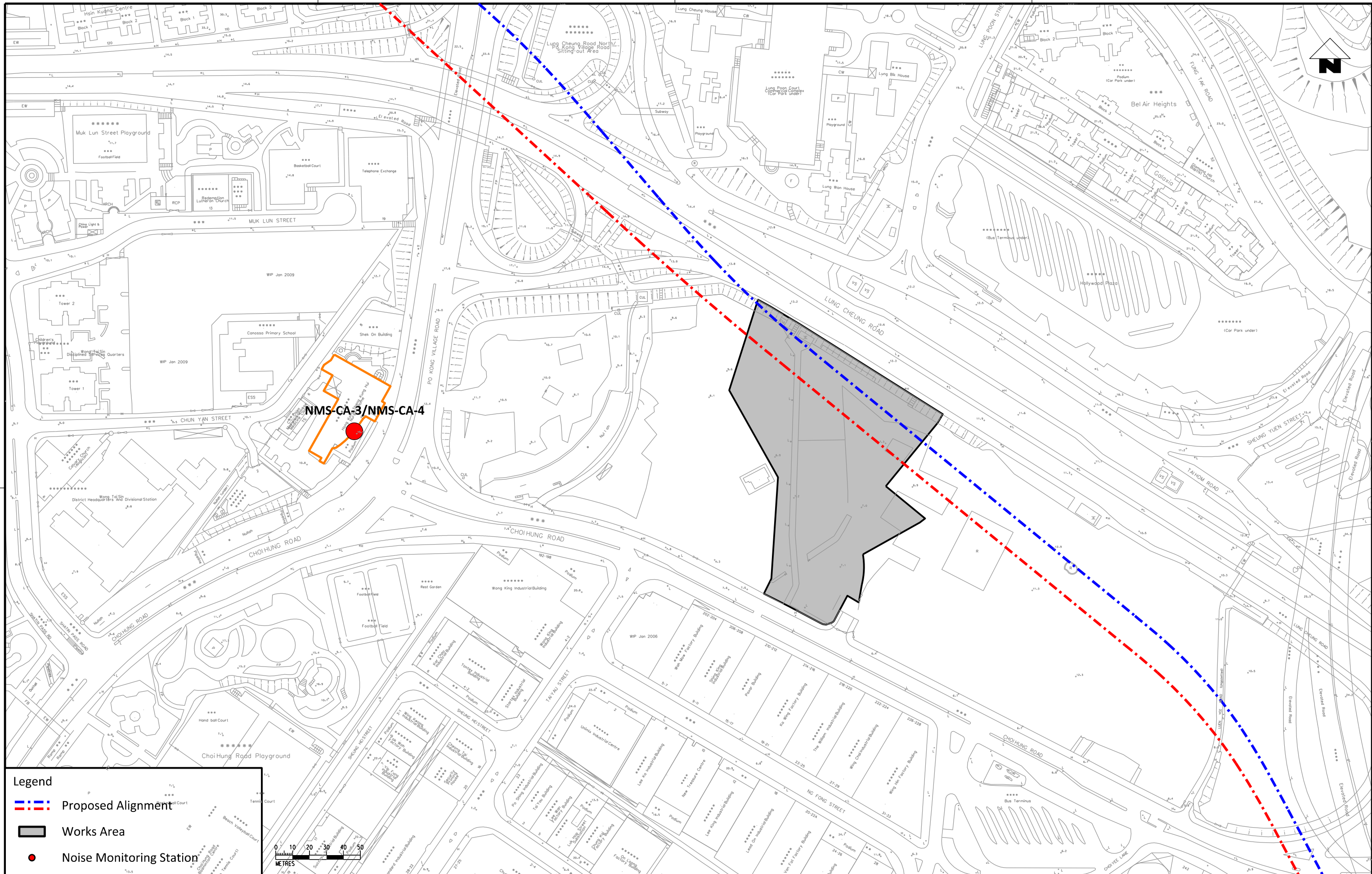
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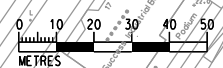
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HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Noise Monitoring Stations
 (Construction Airborne Noise)
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- Legend**
- --- Proposed Alignment
 - Works Area
 - Noise Monitoring Station



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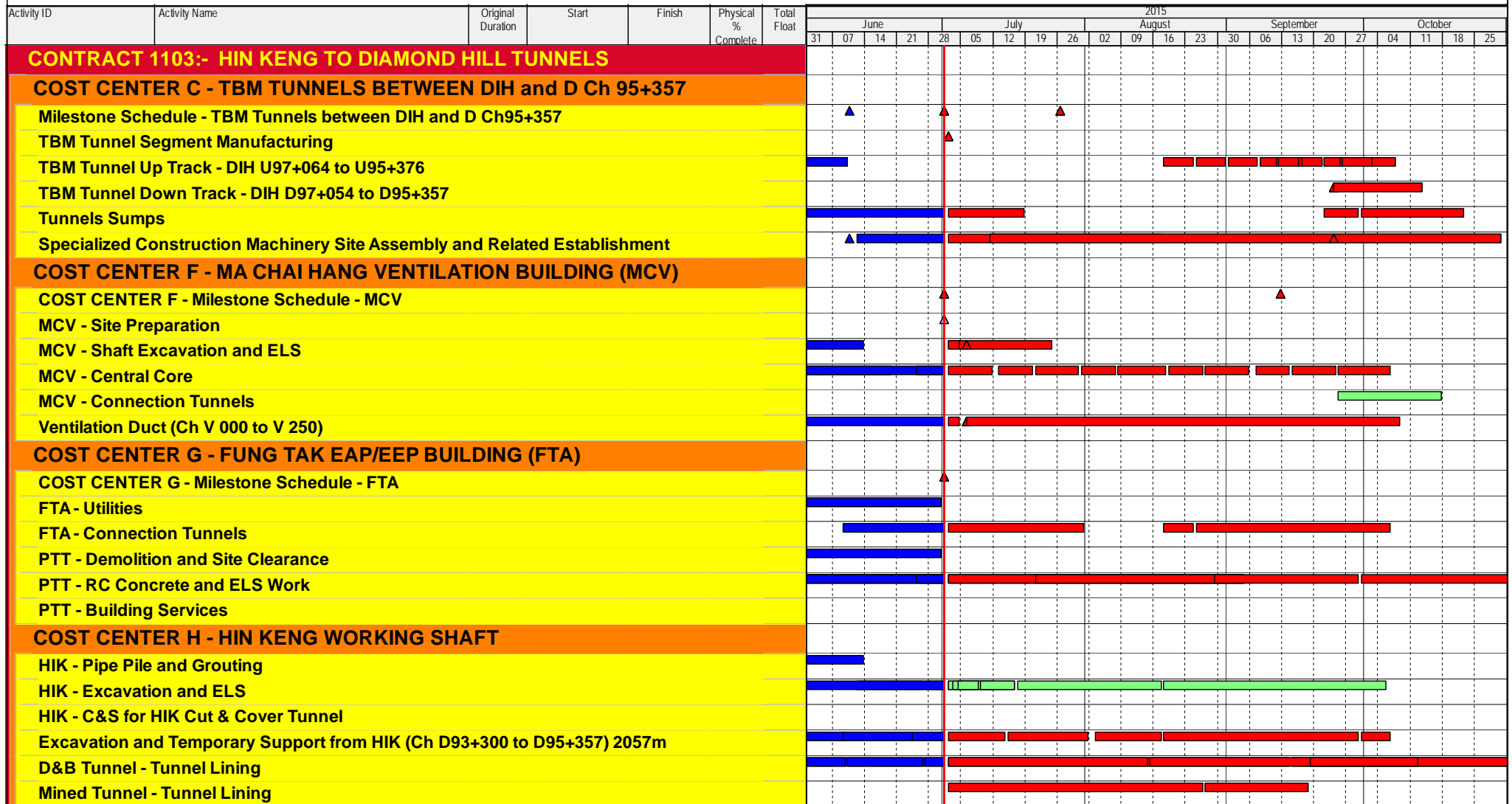
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TITLE CONTRACT 1103 HIN KENG TO DIAMOND HILL TUNNELS Locations of Noise Monitoring Stations (Construction Airborne Noise) (Sheet 3 of 3)		SCALE 1:2000 (A3)	DRAWING NO. Figure 1.13	REV. A
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Appendix A

Construction Programme



GRANDS PROJETS

**Three Month Rolling Programme
As of 1-Jul-2015**

Date	Revision	Checked	Approved
2-Jul-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 - June 2015**

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L _{Aeq} , 30 min	
1-Jun-15	Mon		
2-Jun-15	Tues		
3-Jun-15	Wed		
4-Jun-15	Thu		
5-Jun-15	Fri		
6-Jun-15	Sat		
7-Jun-15	Sun		
8-Jun-15	Mon		
9-Jun-15	Tue		
10-Jun-15	Wed		
11-Jun-15	Thu		
12-Jun-15	Fri		
13-Jun-15	Sat		
14-Jun-15	Sun		
15-Jun-15	Mon		
16-Jun-15	Tue		
17-Jun-15	Wed		
18-Jun-15	Thu		
19-Jun-15	Fri		
20-Jun-15	Sat		
21-Jun-15	Sun		
22-Jun-15	Mon		
23-Jun-15	Tue		
24-Jun-15	Wed		
25-Jun-15	Thu		
26-Jun-15	Fri		
27-Jun-15	Sat		
28-Jun-15	Sun		
29-Jun-15	Mon		
30-Jun-15	Tue		

	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>

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
		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 1048 639">• <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="353 655 1048 831">• <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="353 847 1048 1086">• <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>

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
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	✓
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	✓

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
		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">✓</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">Rdr</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">Rdr</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 	<p align="center">N/A</p> <p align="center">N/A</p> <p align="center">N/A</p>

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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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		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.	

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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">✓</p> <p align="center">✓</p>

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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	<p>1) An Environmental Team needs to be employed as per the EM&A Manual.</p> <p>2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</p> <p>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.</p>	Perform environmental monitoring & auditing	All construction sites	Construction stage	<ul style="list-style-type: none"> • EIAO Guidance Note No.4/2010 • TM-EIAO 	<p>✓</p> <p>✓</p> <p>✓</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
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

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	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

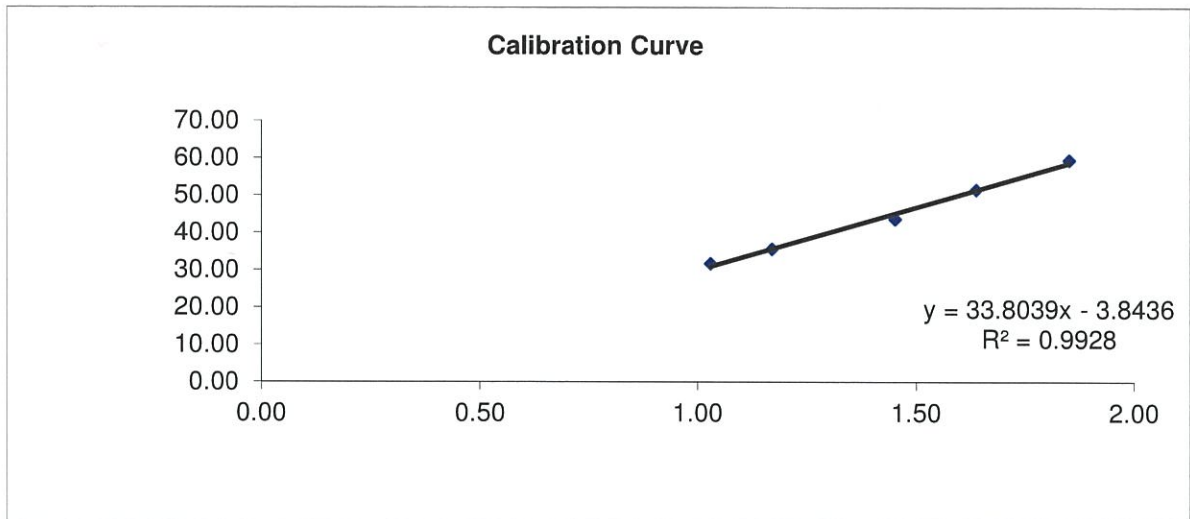
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	16-Apr-15	Barometric pressure	755 mm Hg
Next Calibration date	15-Jun-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	3.60	32.00	1.03	31.74
7	4.80	36.00	1.17	35.70
10	7.70	44.00	1.45	43.64
13	10.00	52.00	1.64	51.57
18	13.00	60.00	1.85	59.50



Linear Regression

Sampler slope (m) : **33.8039**
 Sampler intercept (b) : **-3.8436**
 Correlation coefficient (R²) : **0.9928**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by:

Date:

Checked by:

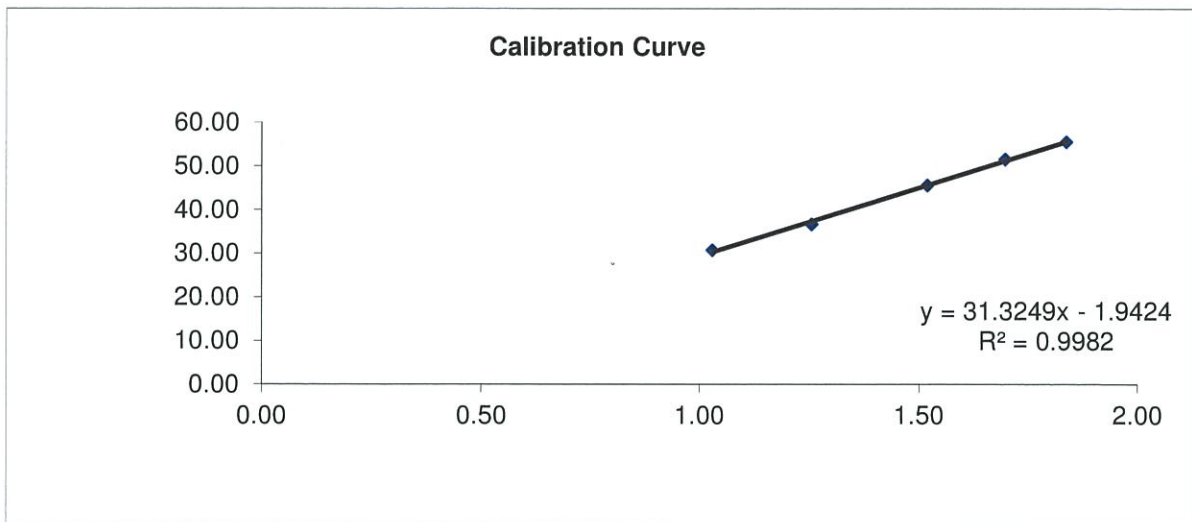
Date:

Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	16-Apr-15	Barometric pressure	755 mm Hg
Next Calibration date	15-Jun-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	3.60	31.00	1.03	30.74
7	5.60	37.00	1.26	36.69
10	8.50	46.00	1.52	45.62
13	10.80	52.00	1.70	51.57
18	12.80	56.00	1.84	55.54



Linear Regression

Sampler slope (m) : **31.3249**
 Sampler intercept (b) : **-1.9424**
 Correlation coefficient (R²) : **0.9982**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: *Amey*

Date: 16/4/15

Checked by: *J. Keller*

Date: 16 April 15

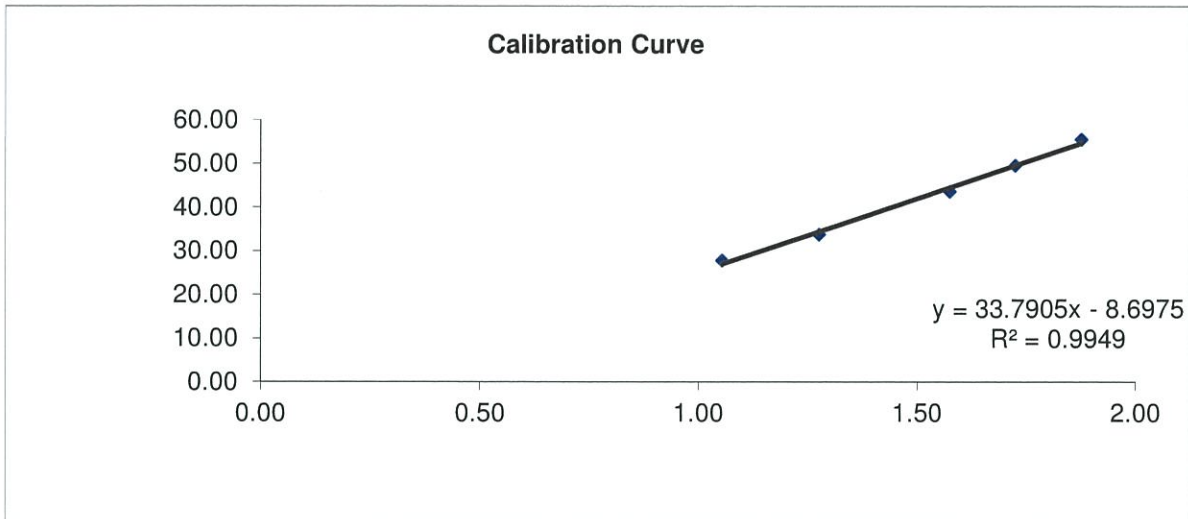
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	16-Apr-15	Barometric pressure	755 mm Hg
Next Calibration date	15-Jun-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	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	28.00	1.05	27.77
7	5.80	34.00	1.28	33.72
10	9.20	44.00	1.58	43.64
13	11.20	50.00	1.73	49.59
18	13.40	56.00	1.88	55.54



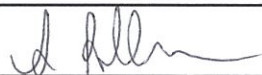
Linear Regression

Sampler slope (m) :	33.7905
Sampler intercept (b) :	-8.6975
Correlation coefficient (R ²) :	0.9949

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Date: 16/4/15

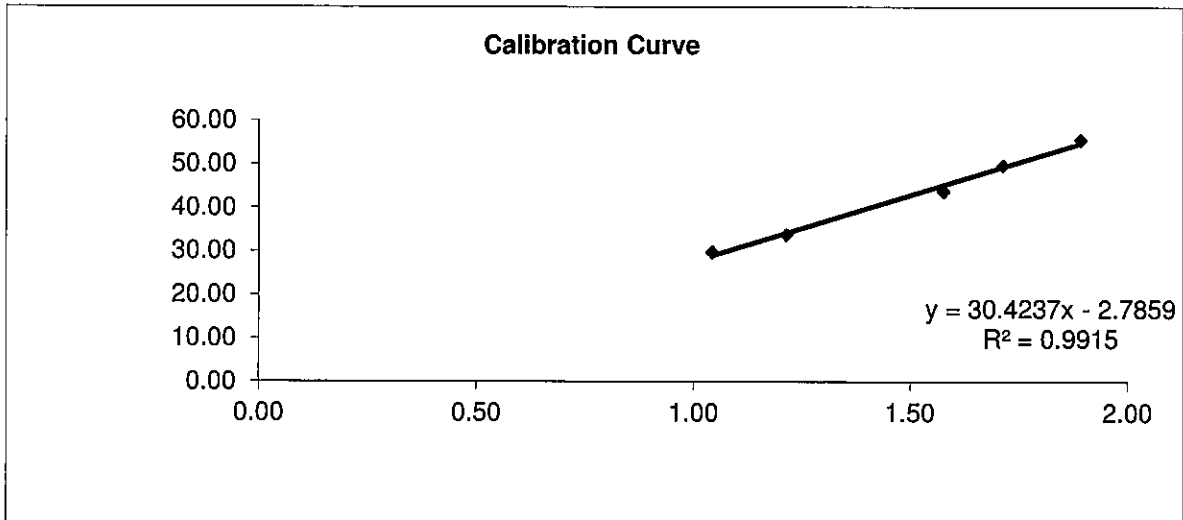
Checked by: 

Date: 16 April 15

Ove Arup Partners (Hong Kong) Limited
High Volume Air Sampler Calibration Worksheet

Calibration date	12-Jun-15	Barometric pressure	756 mm Hg
Next Calibration date	11-Aug-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	3.70	30.00	1.04	29.77
7	5.20	34.00	1.21	33.74
10	9.20	44.00	1.58	43.66
13	11.00	50.00	1.71	49.62
18	13.60	56.00	1.89	55.57



Linear Regression

Sampler slope (m) : **30.4237**
 Sampler intercept (b) : **-2.7859**
 Correlation coefficient (R²) : **0.9915**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by:

Date: 12/6/2015

Checked by:

Date: 12/6/2015

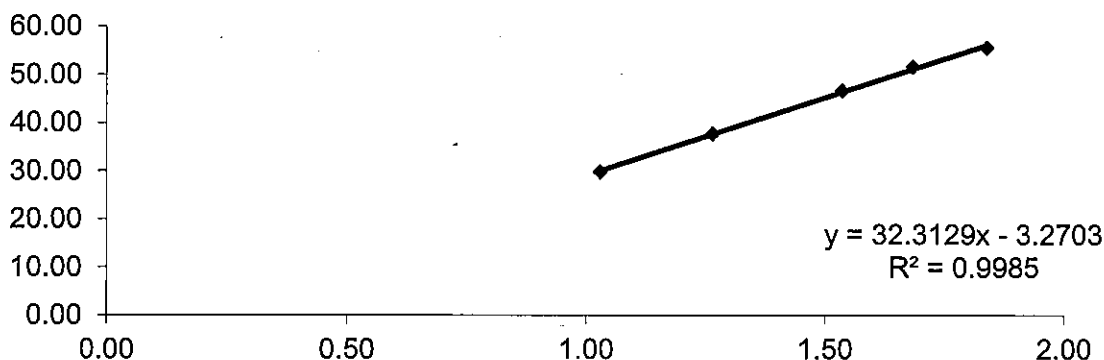
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	12-Jun-15	Barometric pressure	756 mm Hg
Next Calibration date	11-Aug-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	3.60	30.00	1.03	29.77
7	5.70	38.00	1.27	37.71
10	8.70	47.00	1.54	46.64
13	10.60	52.00	1.68	51.60
18	12.80	56.00	1.84	55.57

Calibration Curve



Linear Regression

Sampler slope (m) : **32.3129**
 Sampler intercept (b) : **-3.2703**
 Correlation coefficient (R²) : **0.9985**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____

Date: 12/6/2015

Checked by: [Signature]

Date: 12/6/2015

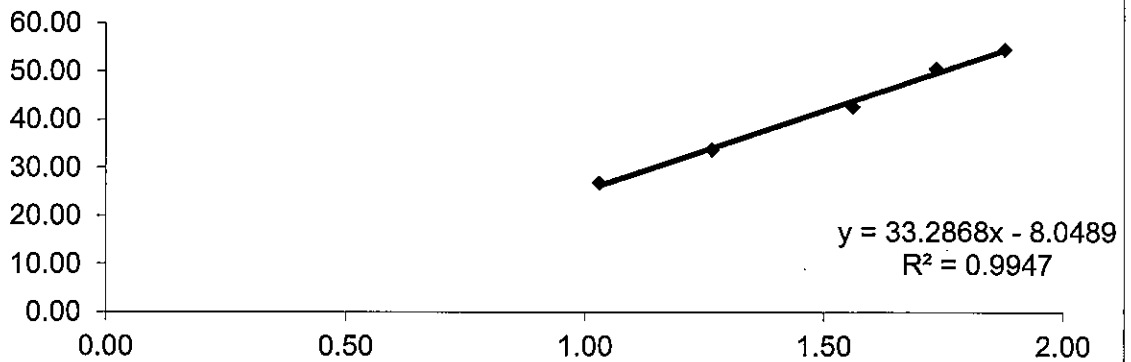
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	12-Jun-15	Barometric pressure	756 mm Hg
Next Calibration date	11-Aug-15	Tempature (°C)	28 °C
Sampler location	DMS3 - Sheng Kung Hui Nursing H	Tempature (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	3.60	27.00	1.03	26.79
7	5.70	34.00	1.27	33.74
10	9.00	43.00	1.56	42.67
13	11.30	51.00	1.73	50.61
18	13.40	55.00	1.88	54.58

Calibration Curve



Linear Regression

Sampler slope (m) : **33.2868**
 Sampler intercept (b) : **-8.0489**
 Correlation coefficient (R²) : **0.9947**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Date: 12/6/2015

Checked by: 

Date: 12/6/2015



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 20, 2015 Rootmeter S/N 0438320 Ta (K) - 293
 Operator Tisch Orifice I.D. - 2421 Pa (mm) - 749.3

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	1.4130	3.2	2.00
2	NA	NA	1.00	1.0060	6.3	4.00
3	NA	NA	1.00	0.9020	7.8	5.00
4	NA	NA	1.00	0.8590	8.7	5.50
5	NA	NA	1.00	0.7090	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9984	0.7066	1.4162	0.9957	0.7047	0.8843
0.9943	0.9884	2.0027	0.9916	0.9857	1.2507
0.9922	1.1000	2.2391	0.9895	1.0970	1.3983
0.9911	1.1538	2.3484	0.9884	1.1506	1.4665
0.9858	1.3905	2.8323	0.9831	1.3867	1.7687

Qstd slope (m) = 2.07308 Qa slope (m) = 1.29813
 intercept (b) = -0.04607 intercept (b) = -0.02877
 coefficient (r) = 0.99995 coefficient (r) = 0.99995

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:

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

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		Initial	Final		Start	Finish					
131322	Jun-15	5-Jun-15	0:00	0:00	DMS1	Fine	Normal Operation	755.3	755.3	27.3	27.3	40.0	40.0	2.7864	2.8478	0.0614	1.2838	1.2838	1.2838	3373.28	3397.28	1440.00	1848.67	40.9	148.7	260.0
131325	Jun-15	11-Jun-15	0:00	0:00	DMS1	Fine	Normal Operation	755.3	755.3	27.4	27.6	38.0	38.0	2.7437	2.8016	0.0579	1.2266	1.2262	1.2264	3397.29	3421.29	1440.00	1766.02	32.8	148.7	260.0
131328	Jun-15	17-Jun-15	0:00	0:00	DMS1	Fine	Normal Operation	754.5	754.5	28.1	28.2	38.0	38.0	2.7766	2.8542	0.0776	1.2248	1.2246	1.2247	3421.30	3445.30	1440.00	1763.57	44.0	148.7	260.0
131329	Jun-15	23-Jun-15	0:00	0:00	DMS1	Fine	Normal Operation	753.8	753.8	28.6	28.6	40.0	40.0	2.7797	2.8210	0.0413	1.2803	1.2803	1.2803	3445.31	3469.31	1440.00	1843.63	22.4	148.7	260.0
131332	Jun-15	27-Jun-15	0:00	0:00	DMS1	Fine	Normal Operation	754.5	754.5	28.5	28.5	40.0	40.0	2.7560	2.8228	0.0668	1.2810	1.2810	1.2810	3469.32	3493.32	1440.00	1844.64	36.2	148.7	260.0

Average (µg/m3)	35.3
Max (µg/m3)	44.0
Min (µg/m3)	22.4

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		Initial	Final		Start	Finish					
131323	Jun-15	5-Jun-15	0:00	0:00	DMS2	Fine	Normal Operation	755.3	755.3	27.3	27.3	38.0	38.0	2.7748	2.7905	0.0157	1.2673	1.2673	1.2673	2760.3	2784.3	1440.00	1824.9	10.6	167.4	260.0
131326	Jun-15	11-Jun-15	0:00	0:00	DMS2	Fine	Normal Operation	755.3	755.3	27.4	27.6	38.0	38.0	2.7601	2.7856	0.0255	1.2671	1.2668	1.2670	2784.3	2808.3	1440.00	1824.4	14.0	167.4	260.0
131330	Jun-15	17-Jun-15	0:00	0:00	DMS2	Fine	Normal Operation	754.5	754.5	28.1	28.2	36.0	36.0	2.7880	2.7973	0.0093	1.2055	1.2054	1.2055	2808.33	2832.33	1440.00	1735.85	5.4	167.4	260.0
131333	Jun-15	23-Jun-15	0:00	0:00	DMS2	Fine	Normal Operation	753.8	753.8	28.6	28.6	38.0	38.0	2.7727	2.8407	0.0680	1.2638	1.2638	1.2638	2832.34	2856.34	1440.00	1819.87	37.4	167.4	260.0
131302	Jun-15	27-Jun-15	0:00	0:00	DMS2	Fine	Normal Operation	754.5	754.5	28.5	28.5	43.0	43.0	2.8938	2.9048	0.0110	1.4137	1.4137	1.4137	2856.35	2880.35	1440.00	2035.73	5.4	167.4	260.0

Average (µg/m3)	14.6
Max (µg/m3)	37.4
Min (µg/m3)	5.4

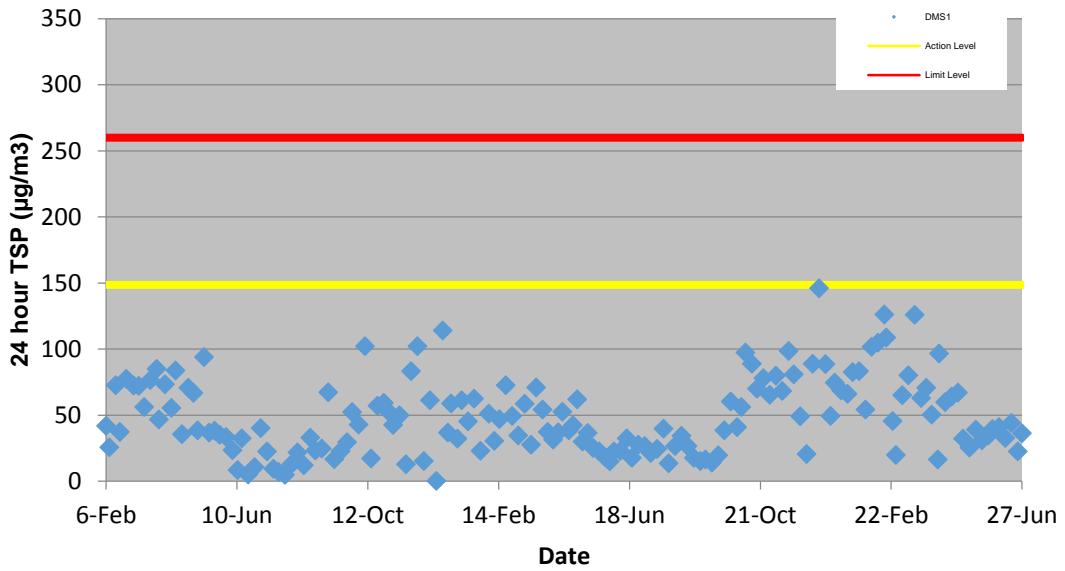
Location: DMS-3/DMS-4 - Hong Kong Sheng Kung Hui Nursing Home

Details of 24-Hour TSP Monitoring

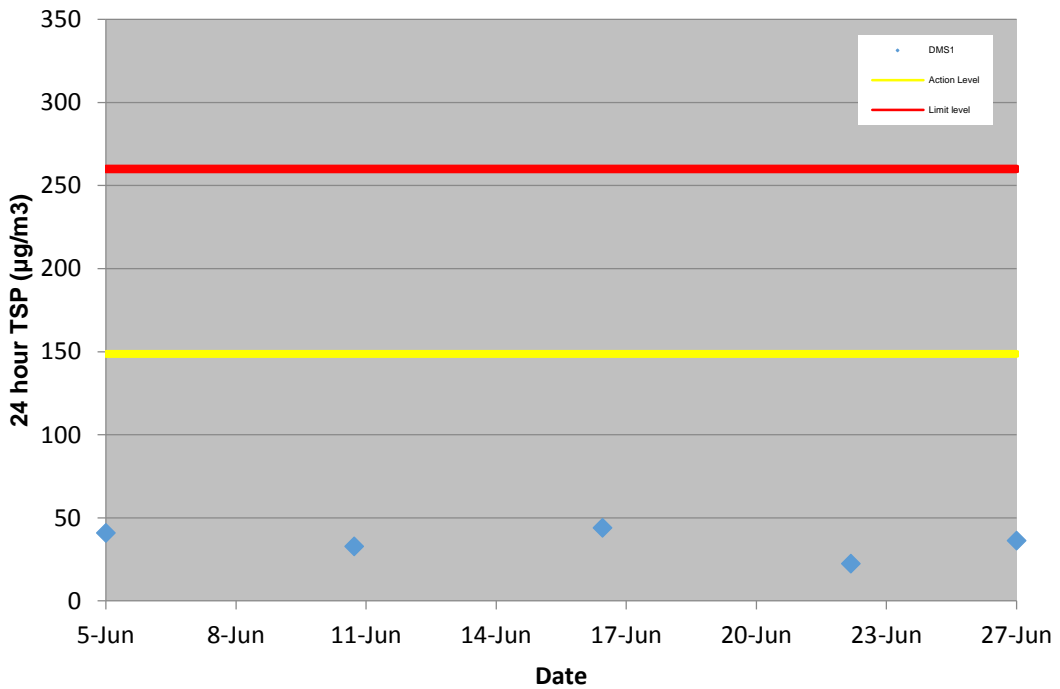
Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)	TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m ³)	24-hour TSP Level (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	
			Start	Finish				Initial	Final	Initial	Final	Initial	Final			Initial	Final		Start	Finish						
131324	Jun-15	5-Jun-15	0:00	0:00	DMS3	Fine	Normal Operation	755.3	755.3	27.3	27.3	40.0	40.0	2.7585	2.7808	0.0223	1.2857	1.2857	1.2857	2888.78	2912.78	1440.00	1851.41	16.8	159.1	260.0
131325	Jun-15	11-Jun-15	0:00	0:00	DMS3	Fine	Normal Operation	755.3	755.3	27.4	27.6	38.0	38.0	2.7753	2.8028	0.0275	1.1989	1.1984	1.1987	2912.79	2936.79	1440.00	1726.06	15.9	159.1	260.0
131331	Jun-15	17-Jun-15	0:00	0:00	DMS3	Fine	Normal Operation	754.5	754.5	28.1	28.2	40.0	40.0	2.7701	2.7912	0.0211	1.2825	1.2823	1.2824	2936.80	2960.80	1440.00	1846.66	11.4	159.1	260.0
131334	Jun-15	23-Jun-15	0:00	0:00	DMS3	Fine	Normal Operation	753.8	753.8	28.6	28.6	40.0	40.0	2.7684	2.8046	0.0362	1.2803	1.2803	1.2803	2960.81	2984.81	1440.00	1843.63	19.6	159.1	260.0
131335	Jun-15	27-Jun-15	0:00	0:00	DMS3	Fine	Normal Operation	754.5	754.5	28.5	28.5	38.0	38.0	2.7630	2.7745	0.0115	1.1951	1.1951	1.1951	2984.82	3008.82	1440.00	1720.94	6.7	159.1	260.0

Average (µg/m3)	14.1
Max (µg/m3)	19.6
Min (µg/m3)	6.7

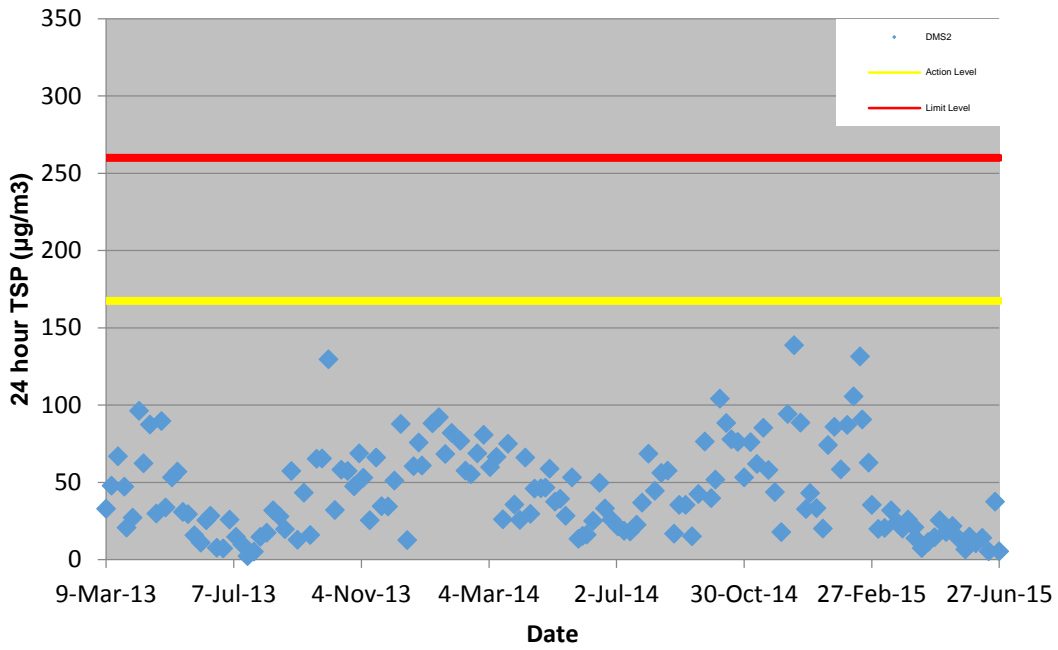
**Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-1
From February 2013 to June 2015**



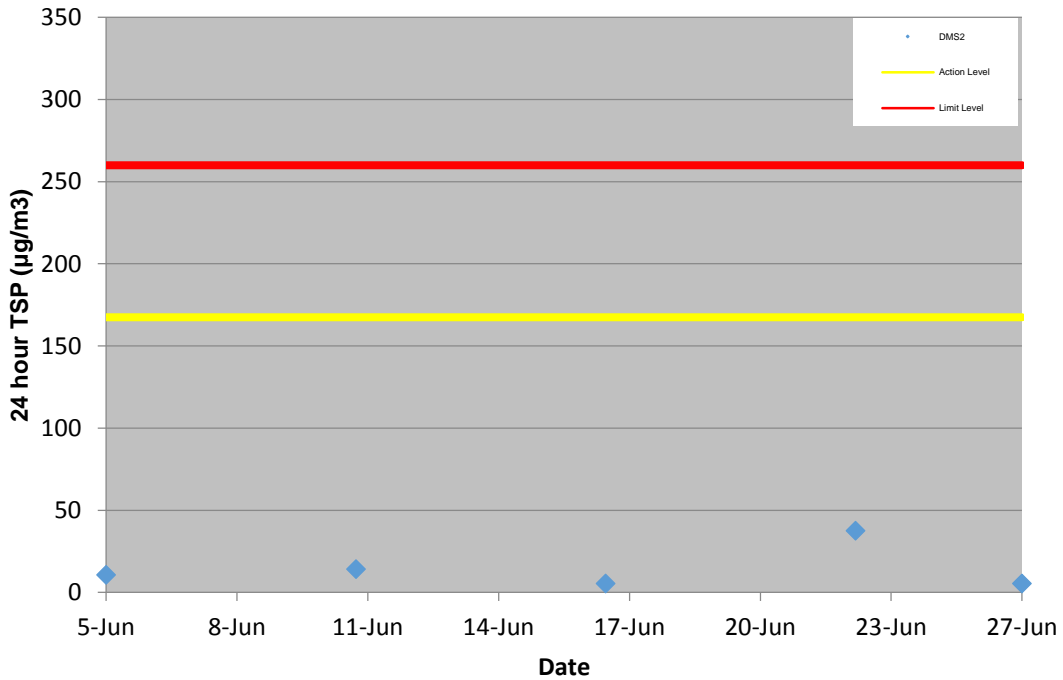
Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-1

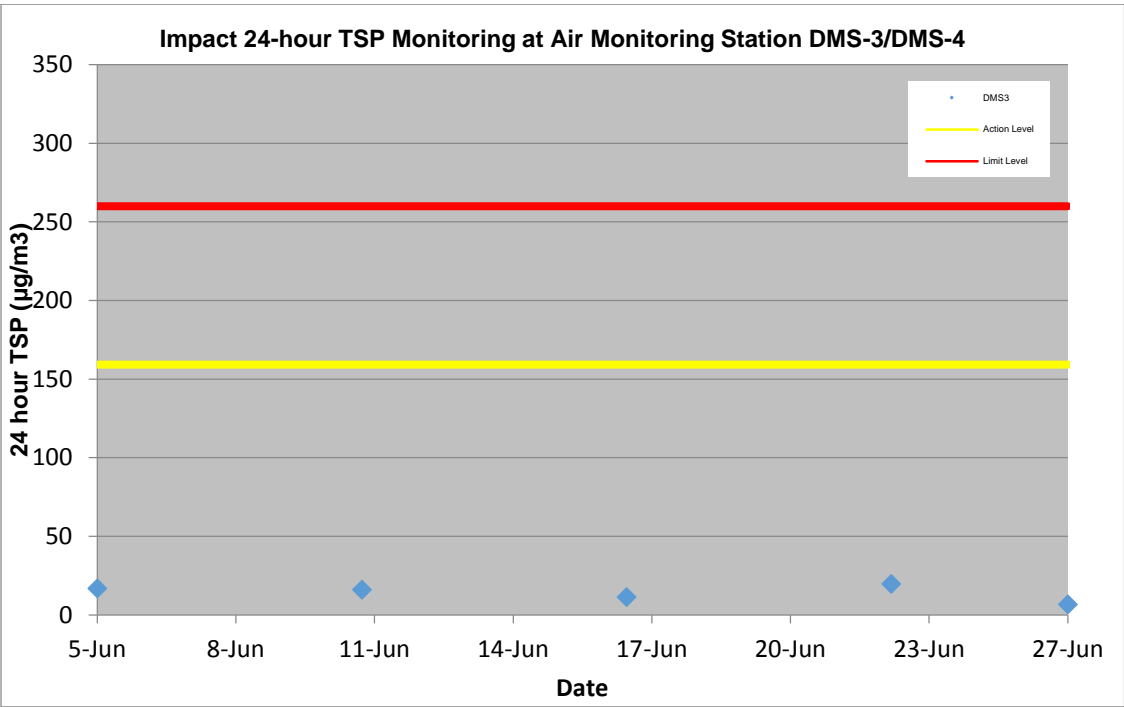
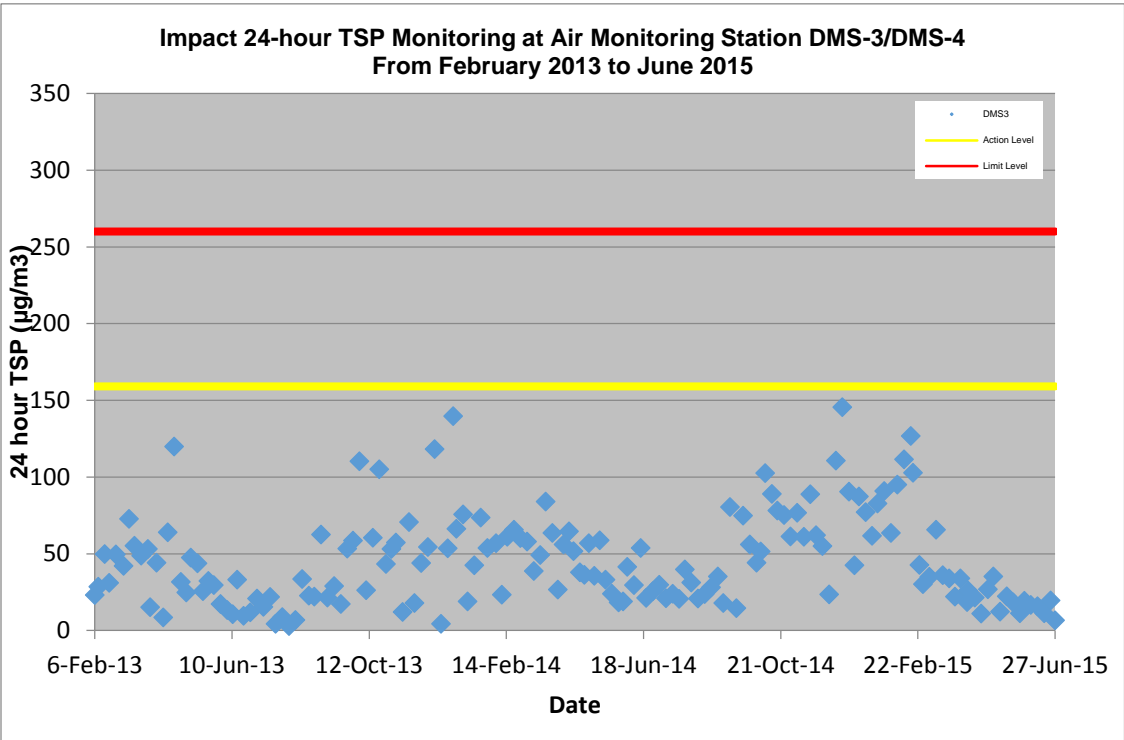


**Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-2
From March 2013 to June 2015**



Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-2



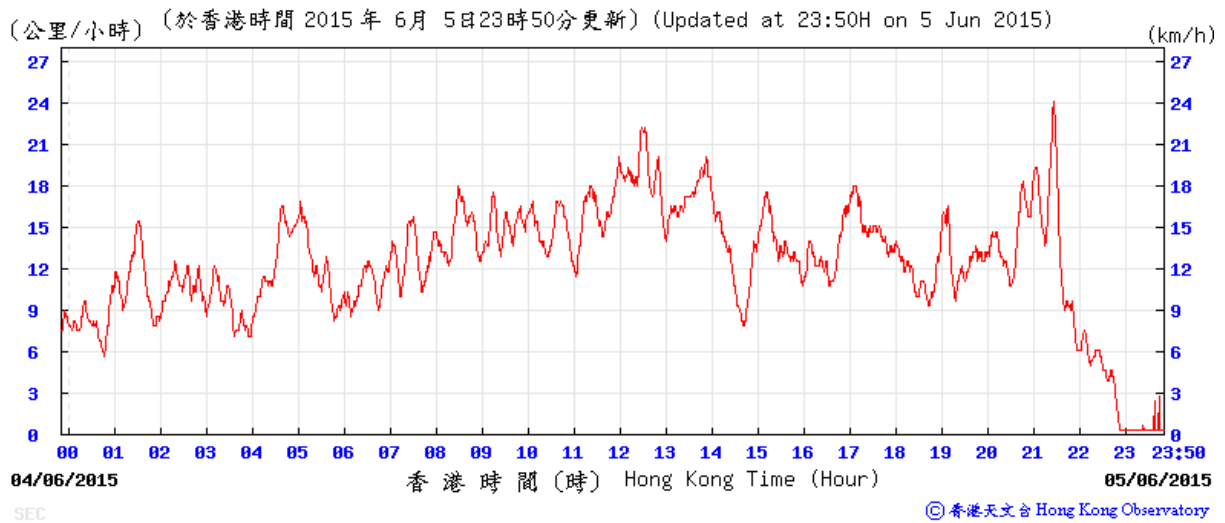


Appendix F

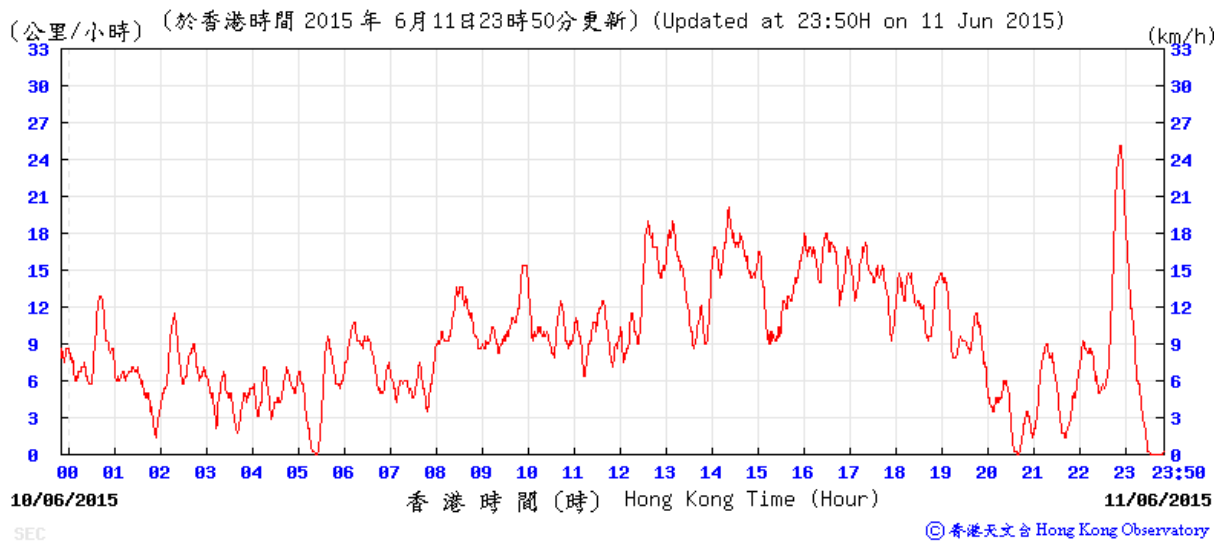
Wind data

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

5 June 2015

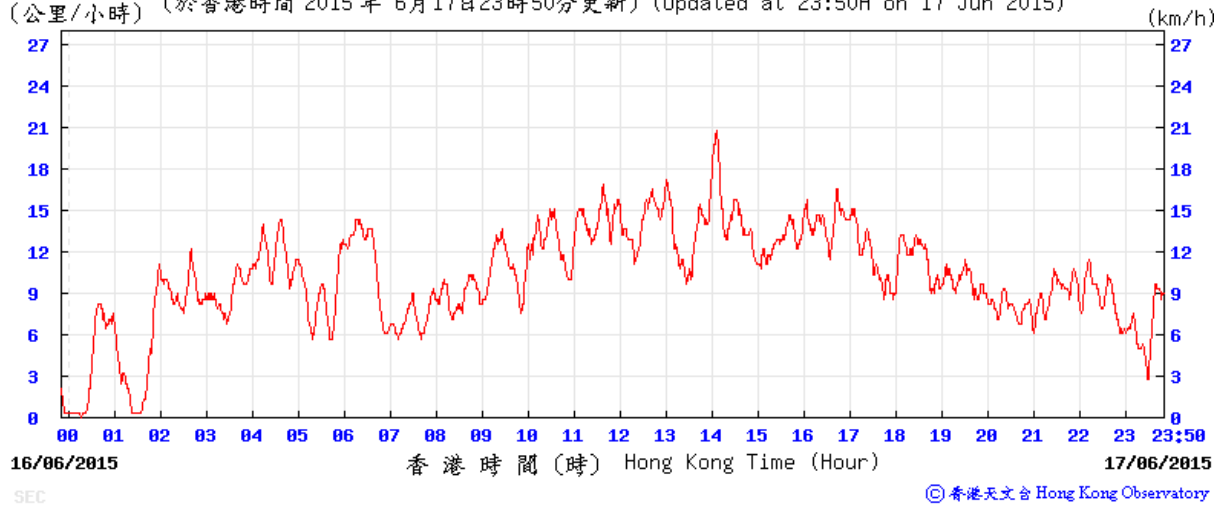


11 June 2015



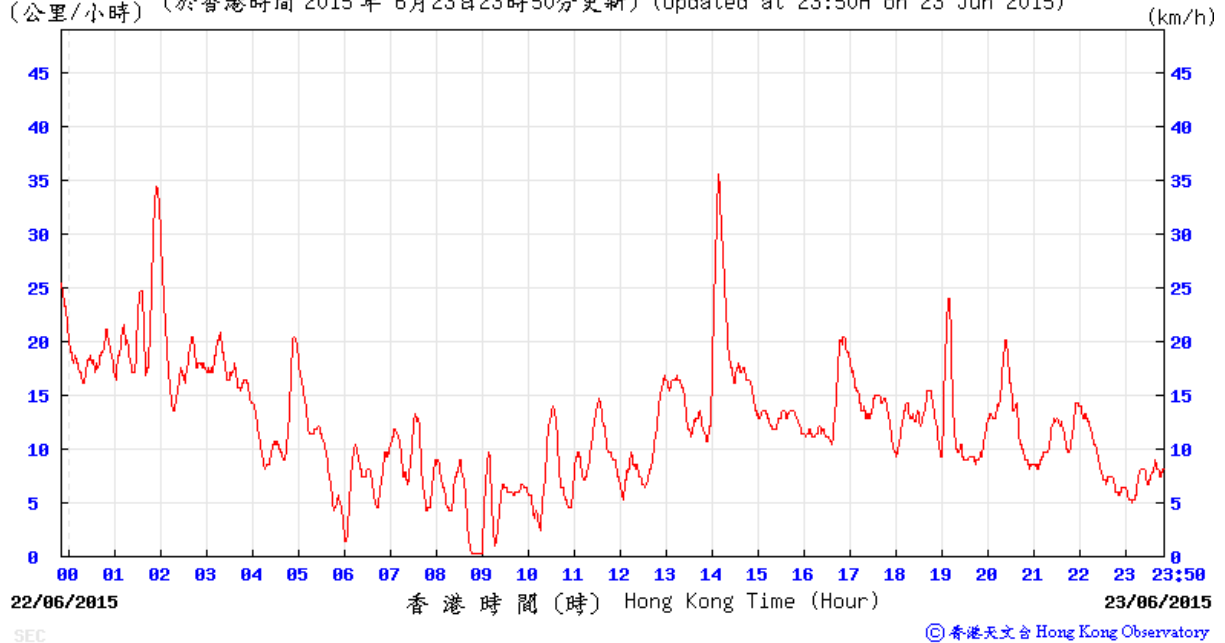
17 June 2015

(公里/小時) (於香港時間 2015 年 6月17日23時50分更新) (Updated at 23:50H on 17 Jun 2015)

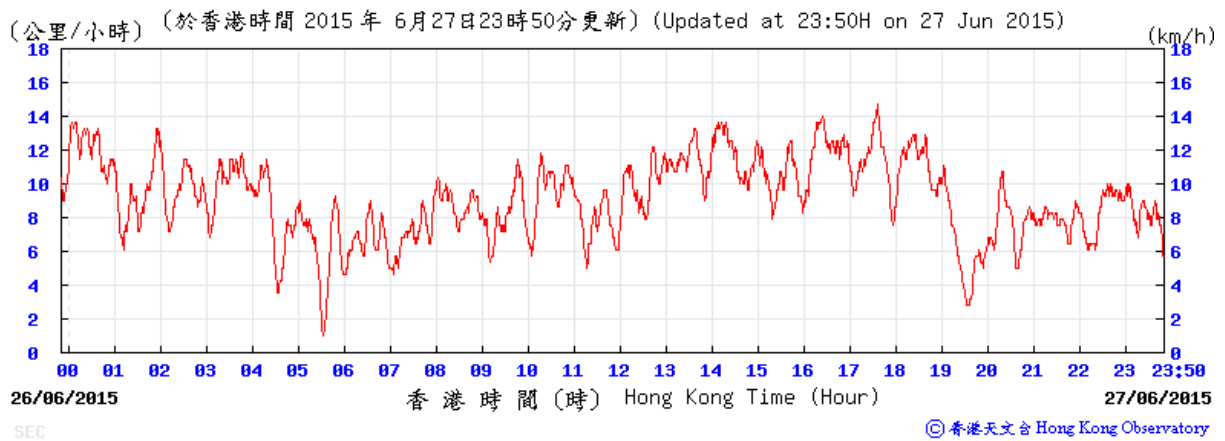


23 June 2015

(公里/小時) (於香港時間 2015 年 6月23日23時50分更新) (Updated at 23:50H on 23 Jun 2015)

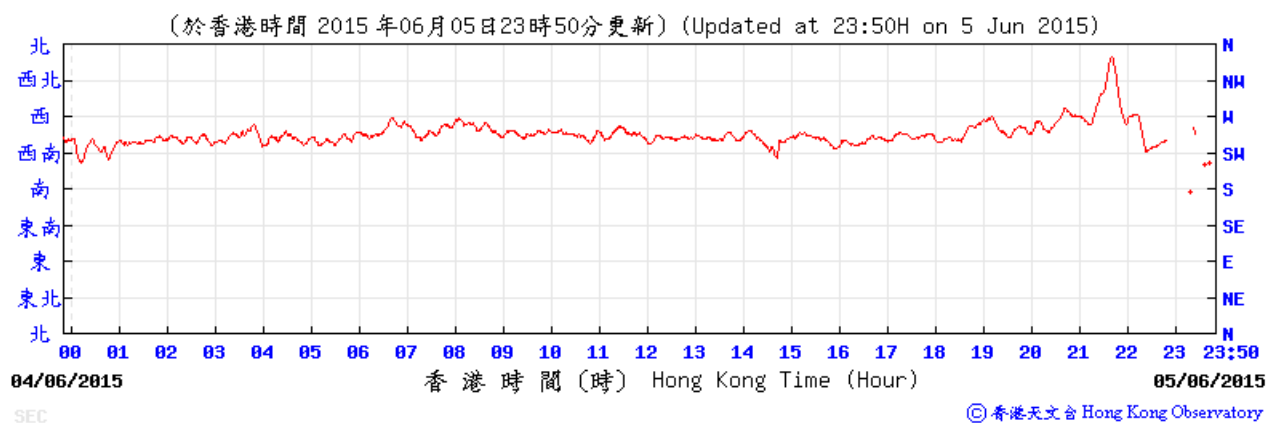


27 June 2015

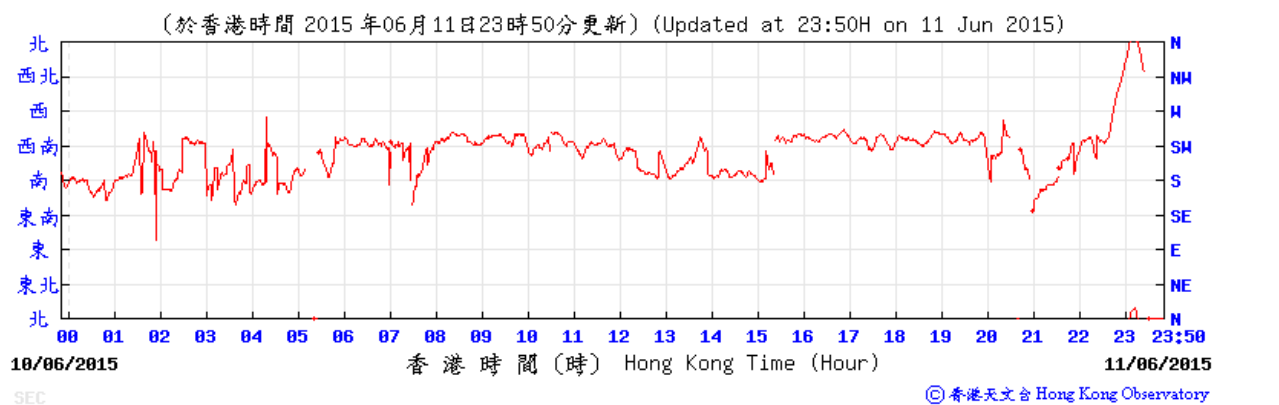


Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

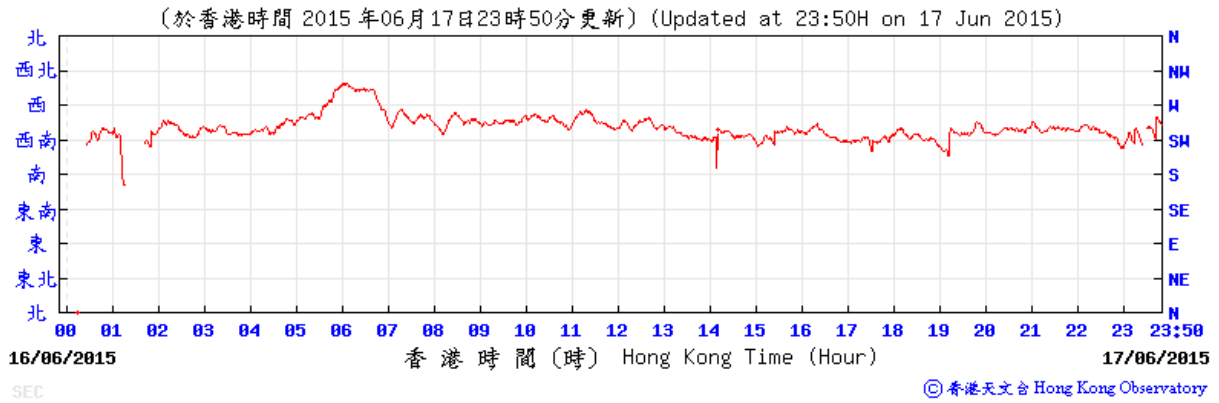
5 June 2015



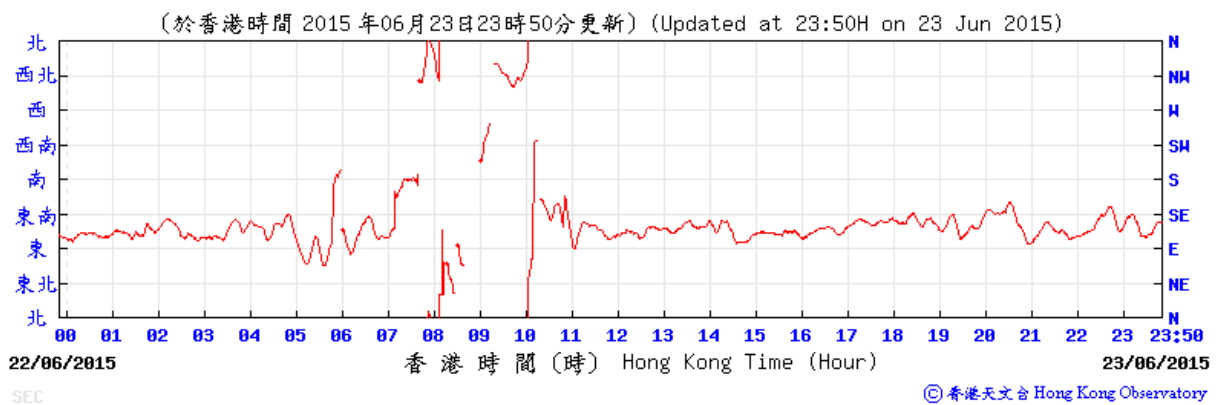
11 June 2015



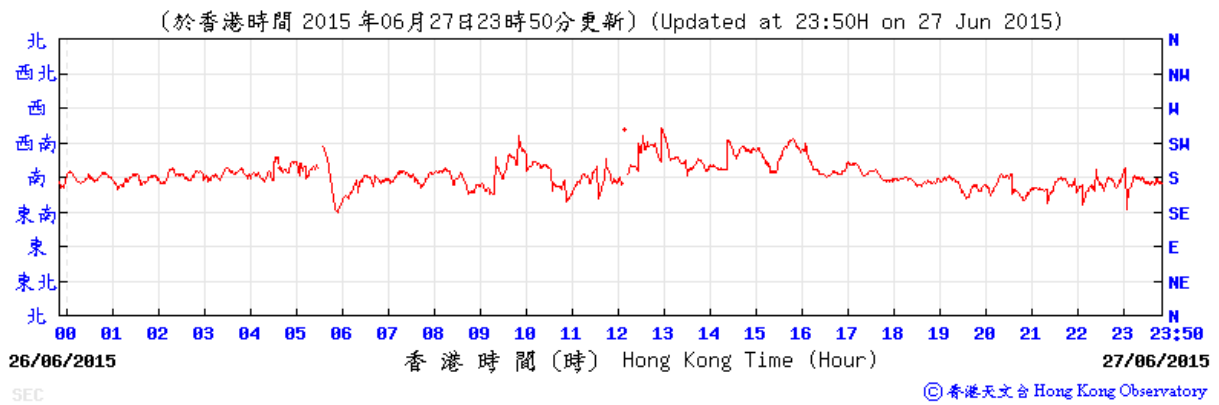
17 June 2015



23 June 2015

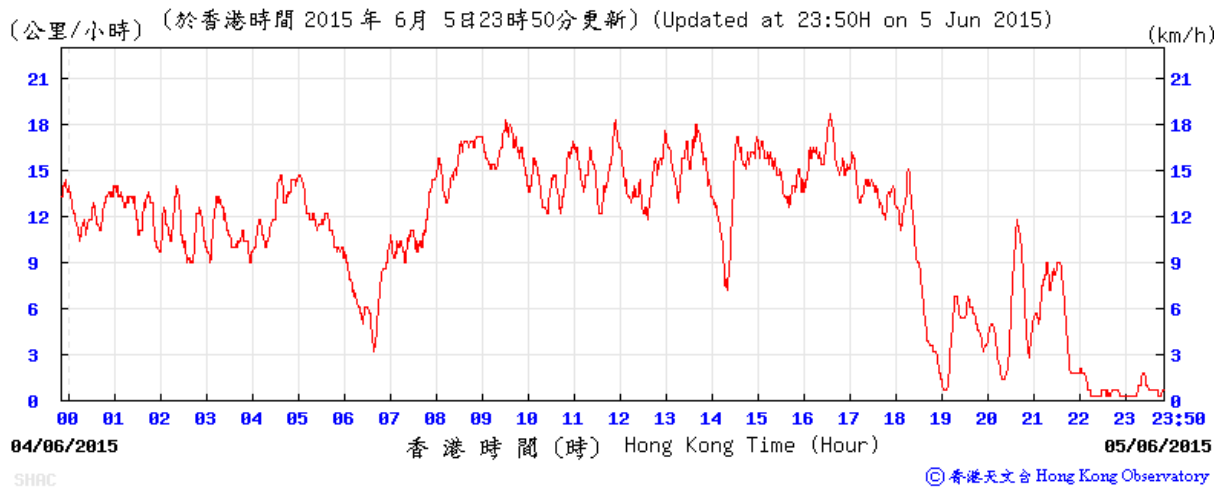


27 June 2015

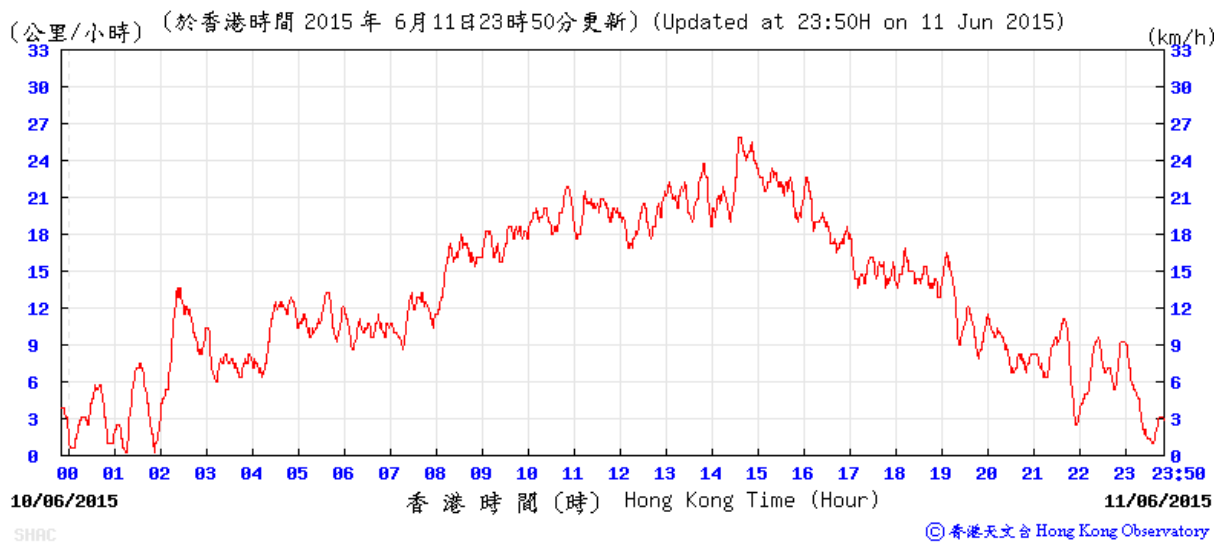


Average wind speed obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

5 June 2015

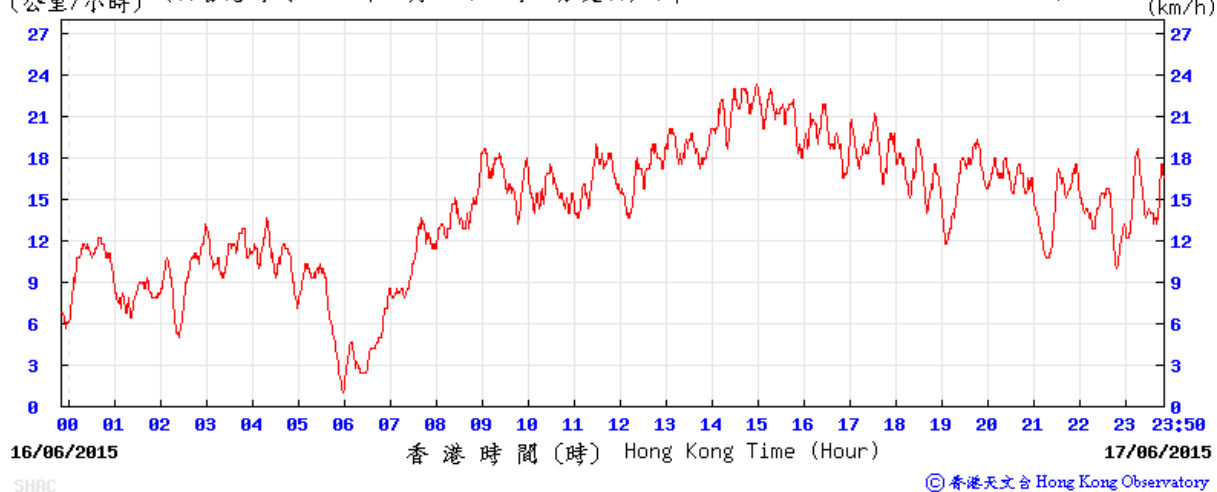


11 June 2015



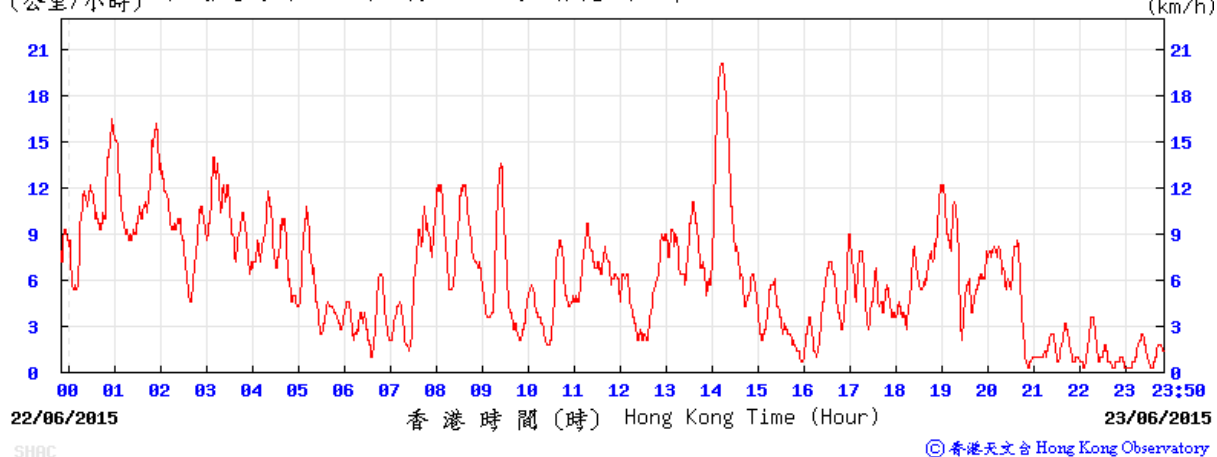
17 June 2015

(公里/小時) (於香港時間 2015 年 6月17日23時50分更新) (Updated at 23:50H on 17 Jun 2015)



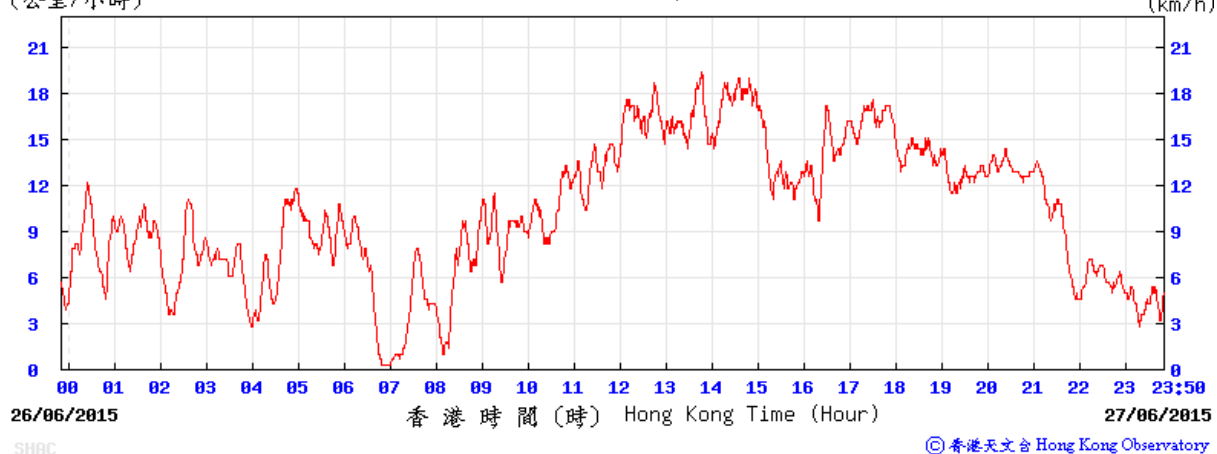
23 June 2015

(公里/小時) (於香港時間 2015 年 6月23日23時50分更新) (Updated at 23:50H on 23 Jun 2015)



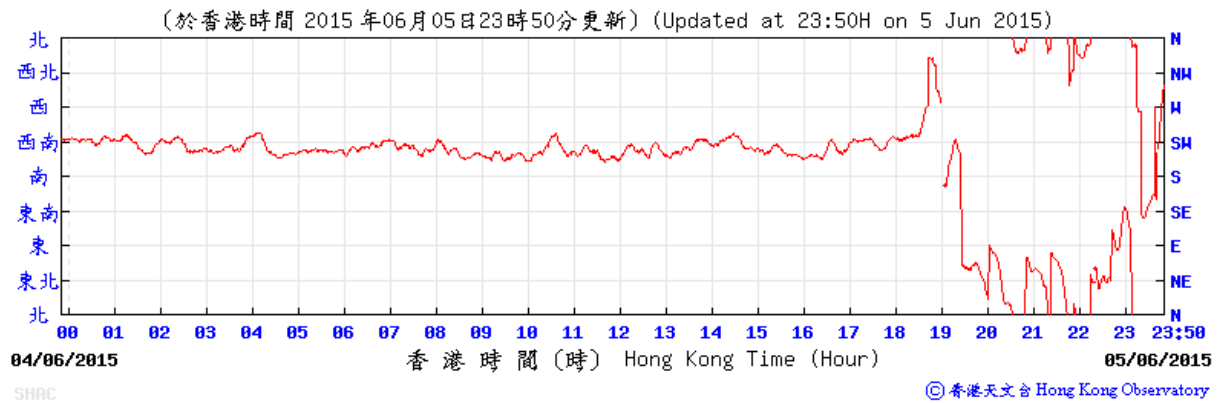
27 June 2015

(公里/小時) (於香港時間 2015 年 6月27日23時50分更新) (Updated at 23:50H on 27 Jun 2015)

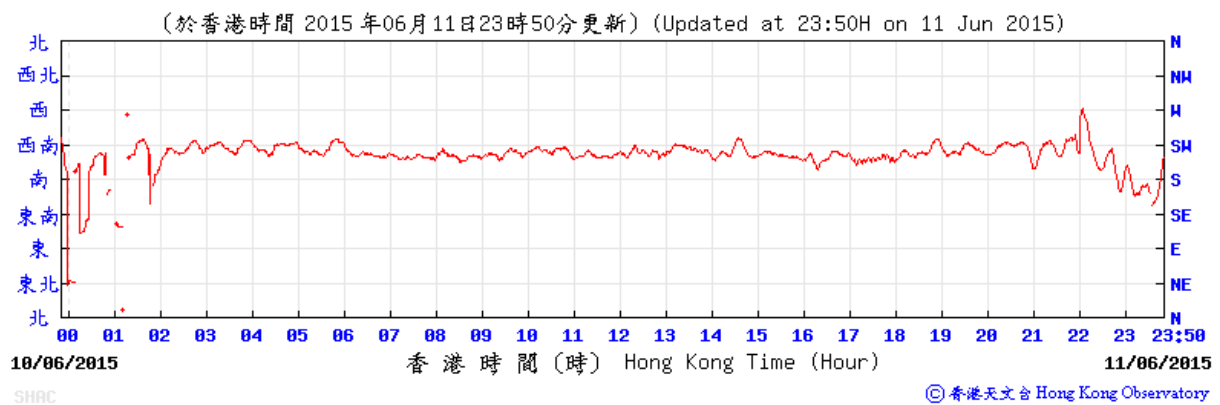


Average wind direction obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

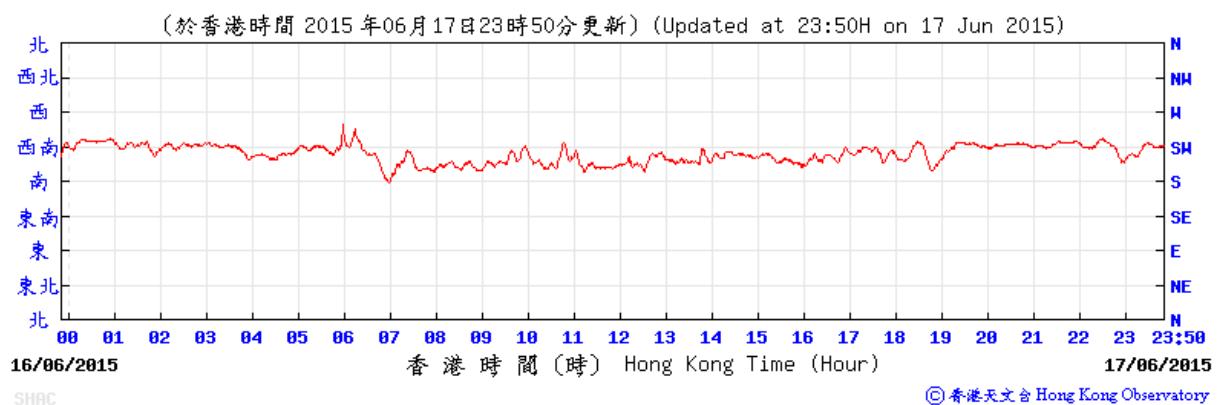
5 June 2015



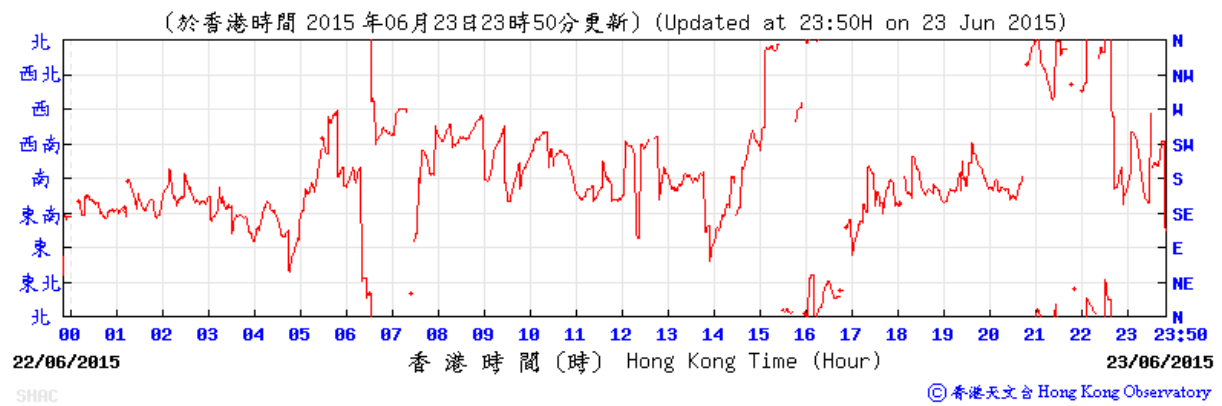
11 June 2015



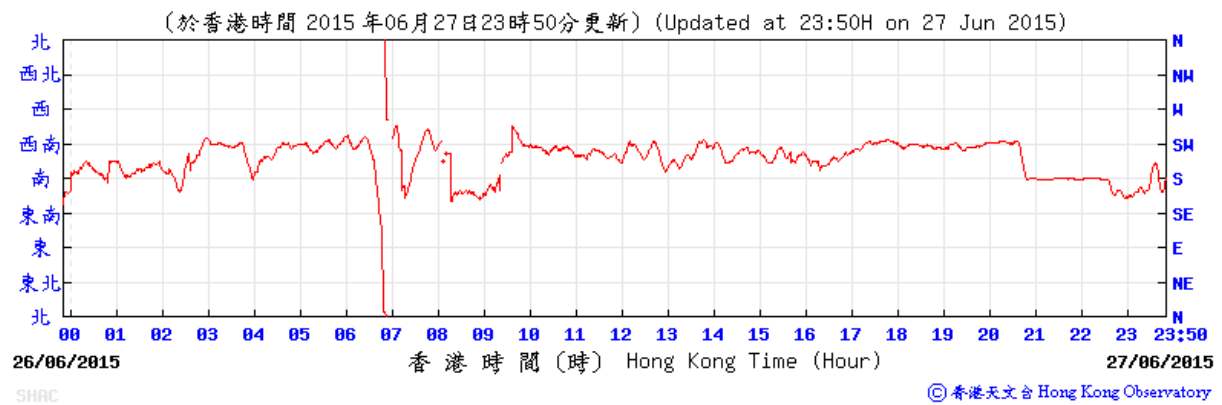
17 June 2015



23 June 2015



27 June 2015



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

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 laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.
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

- 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.

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Certificate of Calibration

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Certificate No. : C145333
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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)

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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.					90	89.9	± 0.5
			5 min.					80	79.2	± 1.0
								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.

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. : 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.

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。

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}	L _{Aeq,30min}	L _{Aeq,30min}
1-Jun-15	16:40-17:10	61.3	70.0	63.5	57.5	57.0	59.3
12-Jun-15	10:30-11:00	59.4	65.0	61.5	53.5	57.0	55.7
18-Jun-15	10:00-10:30	58.1	70.0	61.5	54.5	57.0	51.6
24-Jun-15	13:00-13:30	60.2	70.0	62.5	55.5	57.0	57.4
29-Jun-15	13:00-13:30	59.6	70.0	62.5	53.5	57.0	56.1

Notes: (*) : Façade correction is included

Average L _{Aeq,30min}	59.7
Max L _{Aeq,30min}	61.3
Min L _{Aeq,30min}	58.1

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}	L _{Aeq,30min}	L _{Aeq,30min}
1-Jun-15	13:45-14:15	68.8	70.0	71.0	64.5	66.0	65.6
12-Jun-15	08:30-09:00	68.4	65.0	70.0	63.5	66.0	64.7
18-Jun-15	13:00-13:30	68.1	65.0	70.5	64.5	66.0	63.9
24-Jun-15	08:30-09:00	67.9	70.0	70.0	65.0	66.0	63.4
29-Jun-15	15:00-15:30	67.8	70.0	69.5	63.0	66.0	63.1

Notes: (*) : Façade correction is included

(#) : Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

Average L _{Aeq,30min}	68.2
Max L _{Aeq,30min}	68.8
Min L _{Aeq,30min}	67.8

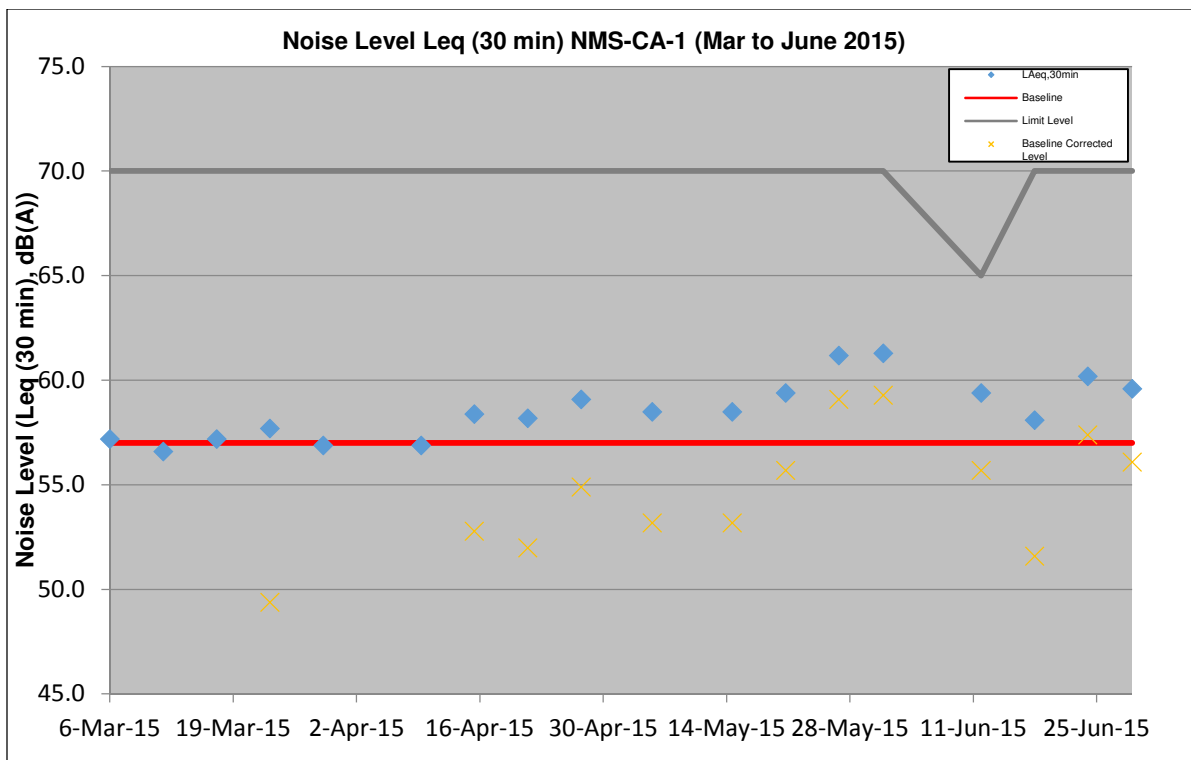
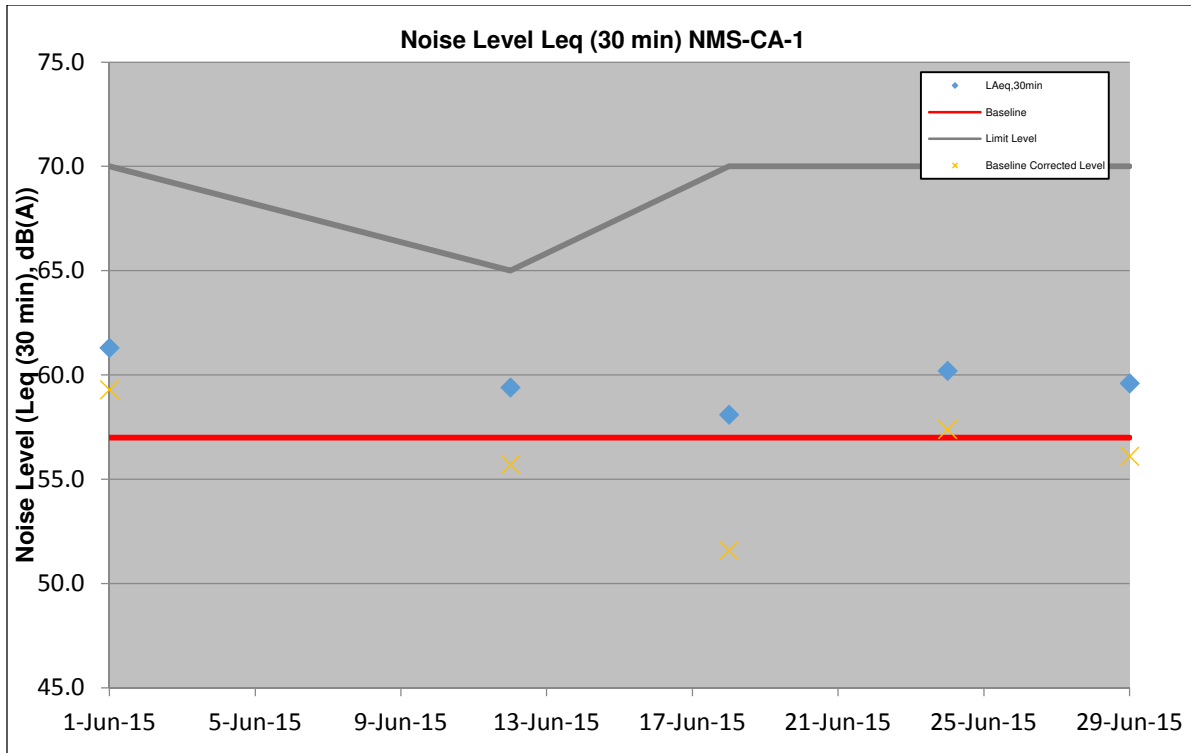
Location: NMS-CA-3 / NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home

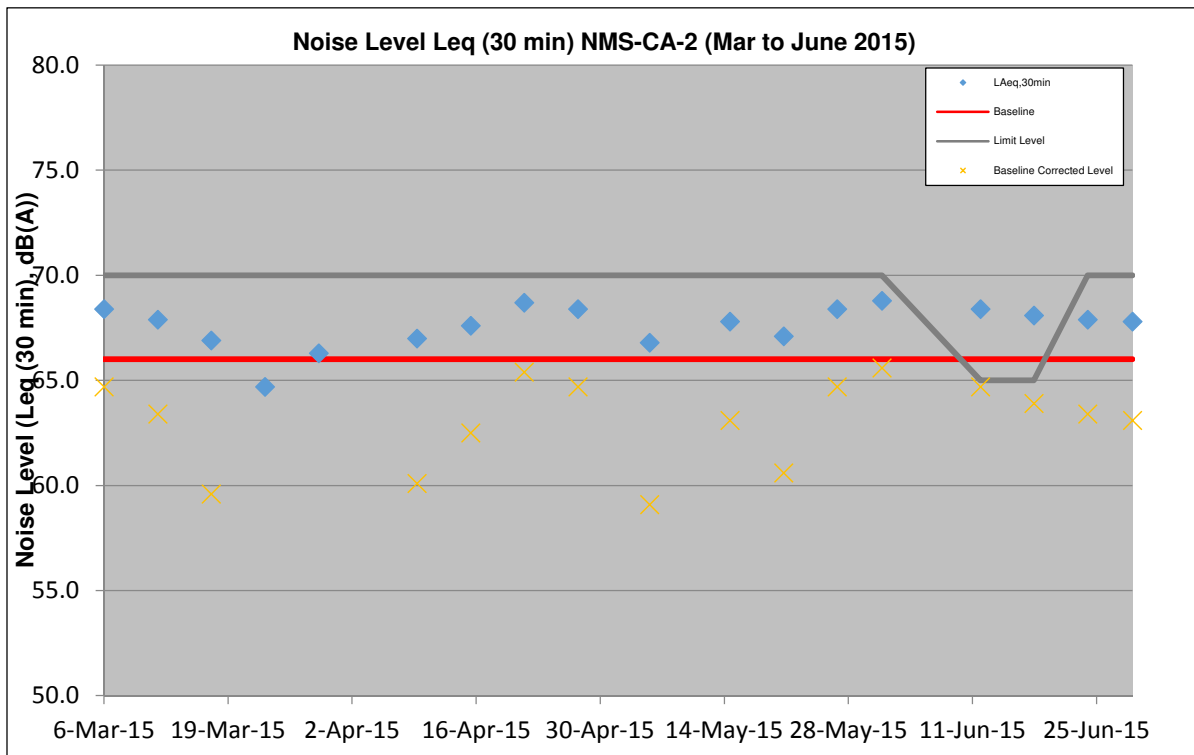
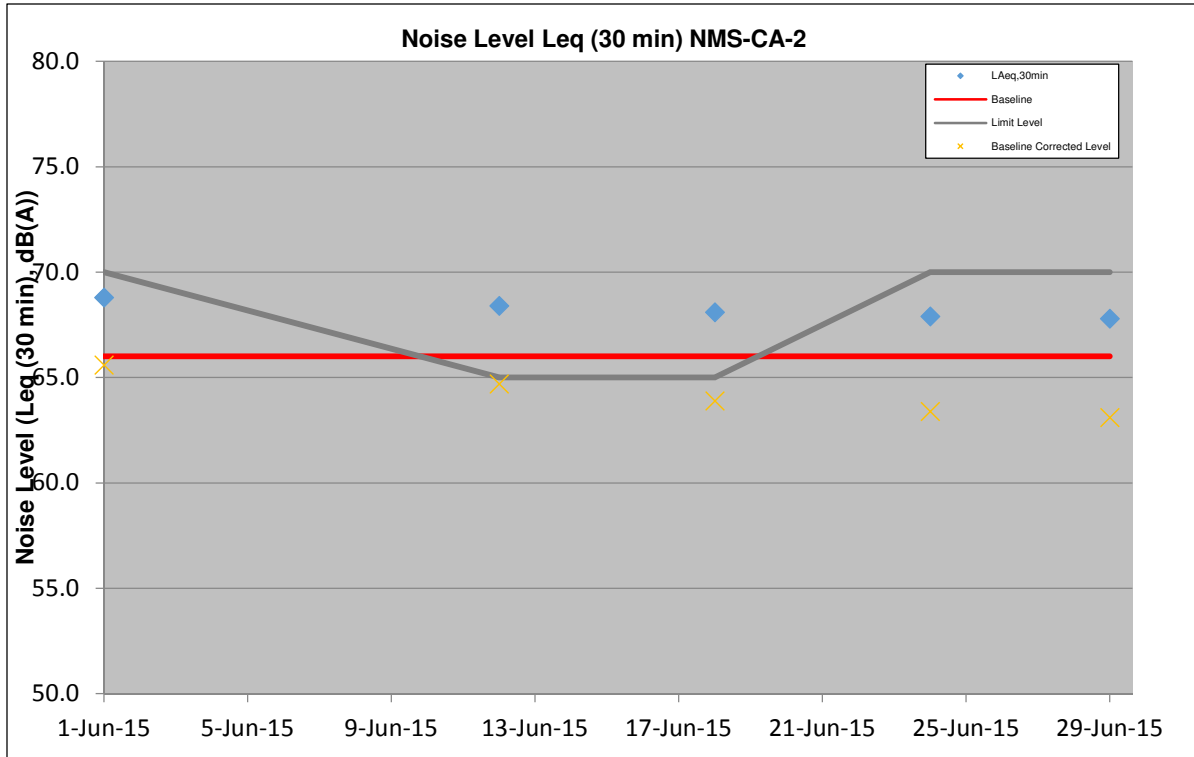
Daytime Noise Monitoring Results

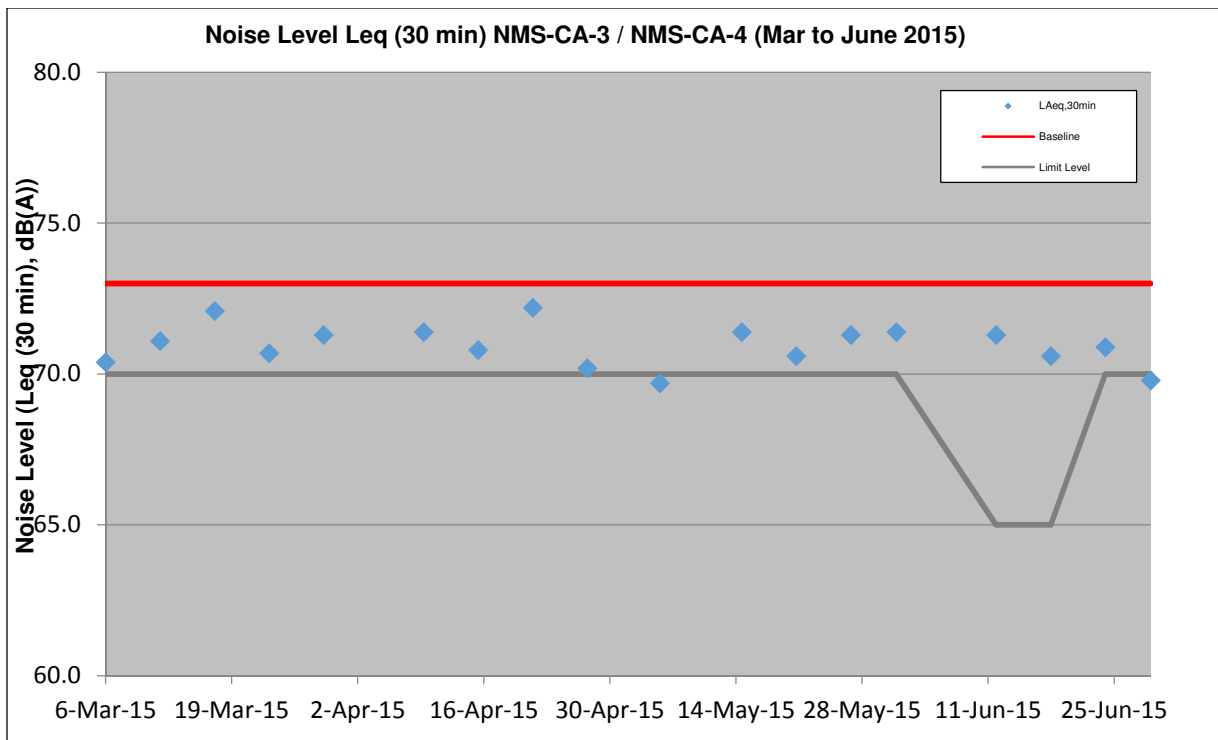
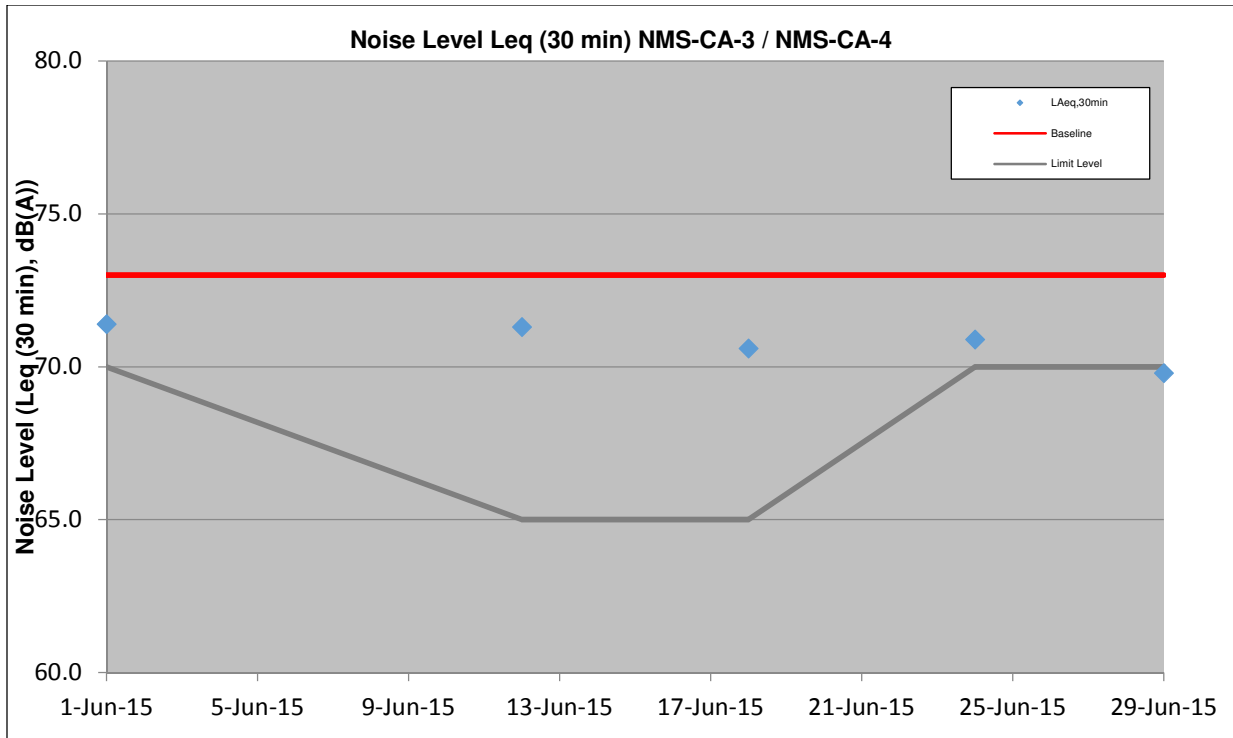
Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L _{Aeq,30min}	Limit	L _{10,30min}	L _{90,30min}	L _{Aeq,30min}	L _{Aeq,30min}
1-Jun-15	15:15-15:45	71.4	70.0	73.0	66.0	73.0	< Baseline Level
12-Jun-15	13:00-13:30	71.3	65.0	73.5	66.5	73.0	< Baseline Level
18-Jun-15	14:40-15:10	70.6	65.0	73.0	65.5	66.0	< Baseline Level
24-Jun-15	10:15-10:45	70.9	70.0	72.5	66.0	73.0	< Baseline Level
29-Jun-15	16:25-16:55	69.8	70.0	73.0	65.0	73.0	< Baseline Level

Notes: (*) : Façade correction is included

Average L _{Aeq,30min}	70.8
Max L _{Aeq,30min}	71.4
Min L _{Aeq,30min}	69.8







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 2015

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	36.897	0.000	0.000	31.770	5.127	0.000	0.000	0.086	0.000	1.400	0.194
Feb	34.994	0.000	0.000	28.434	6.559	0.000	0.000	0.138	0.000	0.800	0.153
Mar	51.076	0.000	0.788	41.125	9.164	0.000	0.000	0.000	0.000	1.260	0.151
Apr	47.056	0.000	3.593	38.123	5.340	0.000	0.000	0.000	0.000	0.000	0.114
May	45.841	0.000	0.023	44.351	1.468	0.000	0.000	0.000	0.000	1.500	0.166
Jun	41.083	0.000	0.000	37.969	3.114	0.000	0.000	0.000	0.000	9.190	0.170
Sub-total	256.947	0.000	4.403	221.772	30.772	0.000	0.000	0.224	0.000	14.150	0.948
July											
August											
September											
October											
November											
December											
Total	256.947	0.000	4.403	221.772	30.772	0.000	0.000	0.224	0.000	14.150	0.948

Comments:

- 1) Assumption: The densities of Rock, Soil, Mixed 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 Jun is 30/6/2015 for TKO137FB/TM38FB, NENT landfill, Kai Tak 1108A, Nam Cheong 820 and KWP Quarry.
- 3) The amounts of waste in Jun are 170.25 tons for NENT Landfill, 6228.28 tons for TKO137FB/TM38FB, 0 tons for Kai Tak Contract 1108A, 8650.07 tons for Contract 820 and 67288 tons for KWP Quarry.
- 4) The amount of C&D waste reused in the Contract in Jun is 0 trucks, approximately 0 tons, for cut-off date as 30/6/2015.
- 5) The amount of chemical waste in Jun is 9190kg for cut-off date as 30/6/2015.

Appendix K

Environmental
Monitoring
Programme for
Coming Month

**SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels
Tentative Impact Monitoring Schedule - July 2015**

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L _{Aeq} , 30 min	
1-Jul-15	Wed		
2-Jul-15	Thu		
3-Jul-15	Fri		
4-Jul-15	Sat		
5-Jul-15	Sun		
6-Jul-15	Mon		
7-Jul-15	Tue		
8-Jul-15	Wed		
9-Jul-15	Thu		
10-Jul-15	Fri		
11-Jul-15	Sat		
12-Jul-15	Sun		
13-Jul-15	Mon		
14-Jul-15	Tue		
15-Jul-15	Wed		
16-Jul-15	Thu		
17-Jul-15	Fri		
18-Jul-15	Sat		
19-Jul-15	Sun		
20-Jul-15	Mon		
21-Jul-15	Tue		
22-Jul-15	Wed		
23-Jul-15	Thu		
24-Jul-15	Fri		
25-Jul-15	Sat		
26-Jul-15	Sun		
27-Jul-15	Mon		
28-Jul-15	Tue		
29-Jul-15	Wed		
30-Jul-15	Thu		
31-Jul-15	Fri		

	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

Ove Arup and Partners HK Ltd.

SCL 1103 Hin Keng to Diamond Hill Tunnels Construction Stage Environmental Complaint Log (June 2015)

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date Complaint Received from EPD	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date Complaint Received by ET	ET's Investigation Date	Investigation/Mitigation Measures	Status
-	-	-	-	-	-	-	-	-	-	-	

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
January 2015	0	0	0
February 2015	3	0	0
March 2015	3	0	0
April 2015	0	0	0
May 2015	0	0	0
June 2015	0	0	0
Total	9	0	0

Appendix F

**28th EM&A Report for Works Contract 1106 –
Diamond Hill Station**

MTR Corporation Limited

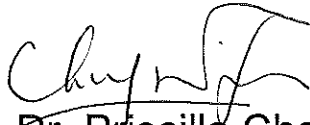
**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 28

[Period from 1 to 30 June 2015]

Works Contract 1106 – Diamond Hill Station

(July 2015)

Certified by: 
_____ Dr. Priscilla Choy _____

Position: Environmental Team Leader

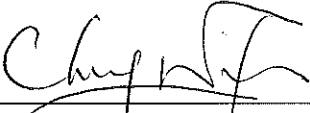
Date: 8th July 2015

Sembawang – Leader Joint Venture

Shatin to Central Link – Contract 1106 Diamond Hill Station

Monthly Environmental Monitoring and Audit Report For June 2015

(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.

CINOTECH CONSULTANTS LTD

Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

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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 Shatin to Central Link (SCL) Works Contract 1106 – Diamond Hill Station**. This report documents the findings of EM&A Works conducted from 1 to 30 June 2015.

Summary of Construction Works undertaken during the Reporting Month

2. The major site activities undertaken in the reporting month include:
 - Structural works: concrete curing & strut removal; earthmat, blinding and waterproof laying; construct track base slab and sump pit; construct platform wall/column; falsework and trolley works & OTE slab/wall; scaffolding erection;
 - Interchange Adit: Construct base slab;
 - West Unpaid Link Adit: Strut remedial works and water proofing membrane application; construct base slab; construct column, walls and bulk head;
 - East MOE: Preparation of piling works and pre-drilling works; and
 - Entrance A1: Construct base slab; construct stub column/ wall.

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))	4 times
• NMS-CA-5 ⁽¹⁾ /NMS-CA-2 ⁽²⁾ (Block 1, Rhythm Garden (northern façade))	4 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)	5 times
• DMS-4 ⁽¹⁾ / DMS-3 ⁽²⁾ (Block 1, Rhythm Garden)	5 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. A revised draft report was submitted to AMO in April 2015 for their further review.

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 275m³ of inert C&D materials were generated from the Project and were sent to Tseung Kwan O 137 and Tuen Mun Area 38 Fill Bank during the reporting month. 35m³ 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 and metal, but 420kg 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 June 2015. 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, 12, 18 and 25 June 2015. The representative of the IEC joined the site inspection on 25 June 2015. 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:
- Structural works: Concrete curing and strut removal; construct track base slab, earthmat, blinding and waterproof membrane application; construct platform wall and column; falsework and trolley works; scaffolding erection; construct beam, slab and wall;
 - Interchange Adit: Construct base slab; construct column, walls and bulk head wall; construct top slab;
 - West Unpaid Link Adit: Construct column, walls and bulk head; Construct top slab and concrete upstand;
 - East MOE: Preparation of piling works and pre-drilling works; and
 - Entrance A1: Construct stub column/ wall; construct shaft wall.

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 28th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 30 June 2015.

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**.
- Structural works: concrete curing & strut removal; earthmat, blinding and waterproof laying; construct track base slab and sump pit; construct platform wall/column; falsework and trolley works & OTE slab/wall; scaffolding erection;
 - Interchange Adit: Construct base slab;
 - West Unpaid Link Adit: Strut remedial works and water proofing membrane application; construct base slab; construct column, walls and bulk head;
 - East MOE: Preparation of piling works and pre-drilling works; and
 - Entrance A1: Construct base slab; construct stub column/ wall.

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.: 378656	28/08/2014	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-S3711-02	28/01/2015	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-RE0449-15	26/05/2015	25/11/2015	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**, compile 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, 14303)
Calibrator	SV30A (Serial no.: 24780, 24791)

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 CNMMP prepared and submitted under EP Condition 2.9 and 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: 2896	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 m^3/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.

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 (May 2015)	11 th June 2015

5 MONITORING RESULTS

Regular Construction Noise Monitoring

- 5.1 A total of 8 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 The noise monitoring results recorded at NMS-CA-5⁽¹⁾/NMS-CA-2⁽²⁾ (Block 1, Rhythm Garden (northern façade)) in June all exceeded the daytime construction noise criterion. However, the results are not considered as exceedance since the results were below the baseline noise level. The noise monitoring results recorded at NMS-CA-4⁽¹⁾/NMS-CA-3⁽²⁾ (Block 1, Rhythm Garden (north-eastern façade)) in June did not exceed the daytime construction noise criterion.
- 5.3 Based on observation during the on-site monitoring, road traffic nearby and breaking works in other construction site at 210-212 Choi Hung Road are considered as 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. The summary of exceedance in this reporting month is provided in **Appendix G**

Regular Dust Monitoring

- 5.6 A total of 5 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⁾)	6.7	19.6	14.1	159.1	260
24-hr TSP (DMS-4 ⁽¹⁾ / DMS-3 ⁽²⁾)	23.7	41.7	32.0	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 and

breaking works in other construction site at 210-212 Choi Hung Road are considered as 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. The summary of exceedance in this reporting month is provided in **Appendix G**.

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. A revised draft report was submitted to AMO in April 2015 for their further review.
- 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**. 275m³ of C&D materials, 35m³ of general refuse were generated. No chemical waste was collected by licensed collector during the reporting month. No plastics and metal but 420kg 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		
June 2015	275m ³	35m ³	0kg	420kg	0kg	0kg

Notes:

- (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil, which were delivered to Tseung Kwan O 137 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 June 2015. 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, 12, 18 and 25 June 2015. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 25 June 2015. No site inspection was conducted by the EPD in June 2015. The details of observations during site audits 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>	25 Jun 2015	<u>Reminder:</u> The Contractor was reminded to provide sand bags surrounding covered stockpile at A1 to prevent silty runoff leakage out of the site area during rain.	The follow up action will be reported in the next reporting month.
<i>Noise</i>	18 Jun 2015	<u>Observation:</u> The generator was observed not covered at A1. The Contractor was reminded to cover the machine to reduce noise nuisance.	As observed on 25 Jun 2015, the generator at A1 was removed.
<i>Landscape and Visual</i>	28 May 2015	<u>Observation:</u> Construction materials inside the tree protection zone at A1 works area could still be observed. The Contractor should remove the materials and properly set up the tree protection zone in order to protect the trees.	As observed on 4 Jun, construction materials were found inside the tree protection zone. Please refer to the item on 4 Jun.
	4 Jun 2015	<u>Observation:</u> Construction materials inside the tree protection zone at A1 work area should be properly removed.	As observed on 12 Jun, construction materials the tree protection zone at A1 work area was removed.
	12 Jun 2015	<u>Observation:</u> Material was observed near retained tree in W8 area. The Contractor should remove the materials and properly set the tree protection zone to protect retained tree.	As observed on 18 Jun, the material was removed the retained tree was fenced off.
<i>Cultural Heritage</i>	---	---	---
<i>Air Quality</i>	4 Jun 2015	<u>Reminder:</u> Dusty stockpile at A1 work area should be properly covered to suppress dust generation.	As observed on 12 Jun, dusty stockpile at A1 work area was removed.

Parameters	Date	Observations and Recommendations	Follow-up
	12 Jun 2015	<u>Reminder:</u> Coverage for dusty stockpile in West Unpaid Link area should be improved to suppress dust generation.	As observed on 18 Jun, the dusty stockpile was covered by tarpaulin
	18 Jun 2015	<u>Reminder:</u> Dust generation was observed on dusty haul road. The Contractor was reminded to provide water spray more frequently.	As observed on 25 Jun, the haul road was observed wet.
<i>Waste/ Chemical Management</i>	---	---	---
<i>Permits/ Licenses</i>	---	---	---

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 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:
- Structural works: Concrete curing and strut removal; construct track base slab, earthmat, blinding and waterproof membrane application; construct platform wall and column; falsework and trolley works; scaffolding erection; construct beam, slab and wall;
 - Interchange Adit: Construct base slab; construct column, walls and bulk head wall; construct top slab;
 - West Unpaid Link Adit: Construct column, walls and bulk head; Construct top slab and concrete upstand;
 - East MOE: Preparation of piling works and pre-drilling works; and
 - Entrance A1: Construct stub column/ wall; construct shaft wall.

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 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

- 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 30 June 2015 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

- All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times.
- Tarpaulin coverage and sand bag bund should be provided to stockpile of dusty material to reduce silty runoff and prevent potential runoff leakage during rain.

Construction Noise

- Plant and equipment on site should be operated with doors closed where possible to reduce noise nuisance.

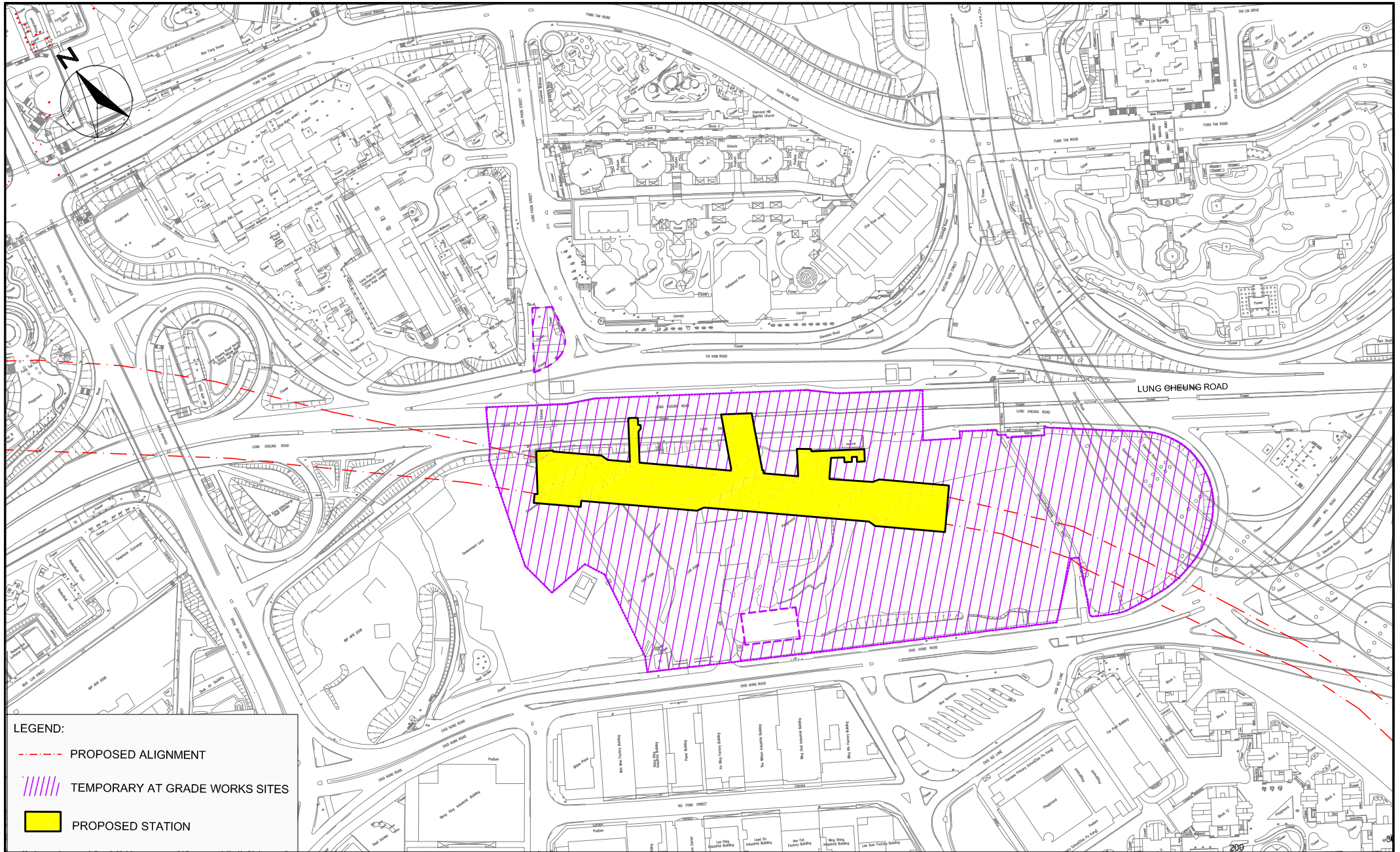
Landscape and Visual

- “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

- Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet.
- Regular water spraying should be provided to haul road to reduce dust generation by vehicle movement.

FIGURES



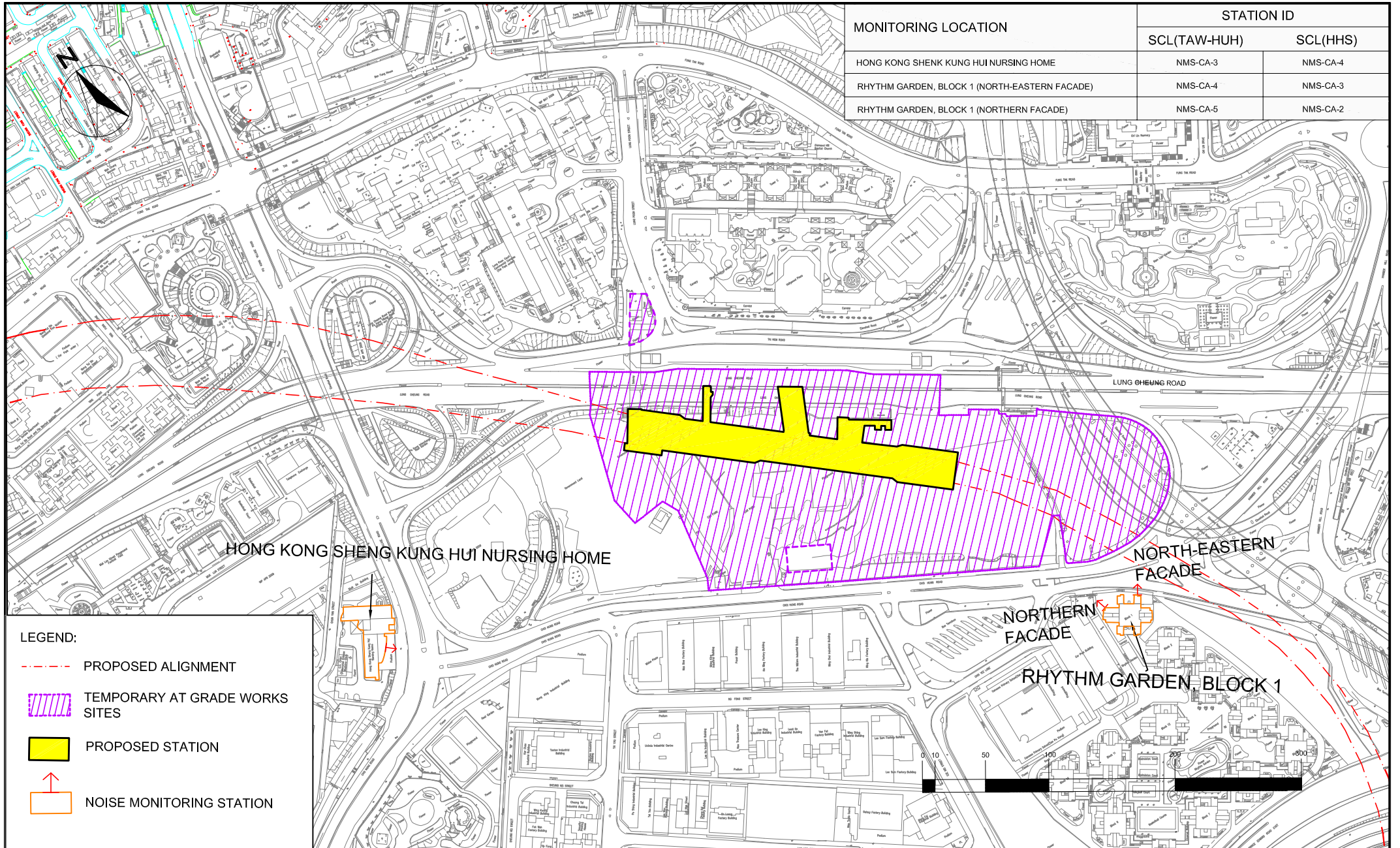
- LEGEND:**
- - - PROPOSED ALIGNMENT
 - ||||| TEMPORARY AT GRADE WORKS SITES
 - PROPOSED STATION

SHATIN TO CENTRAL LINK CONTRACT 1106
DIAMOND HILL STATION

SITE LAYOUT PLAN



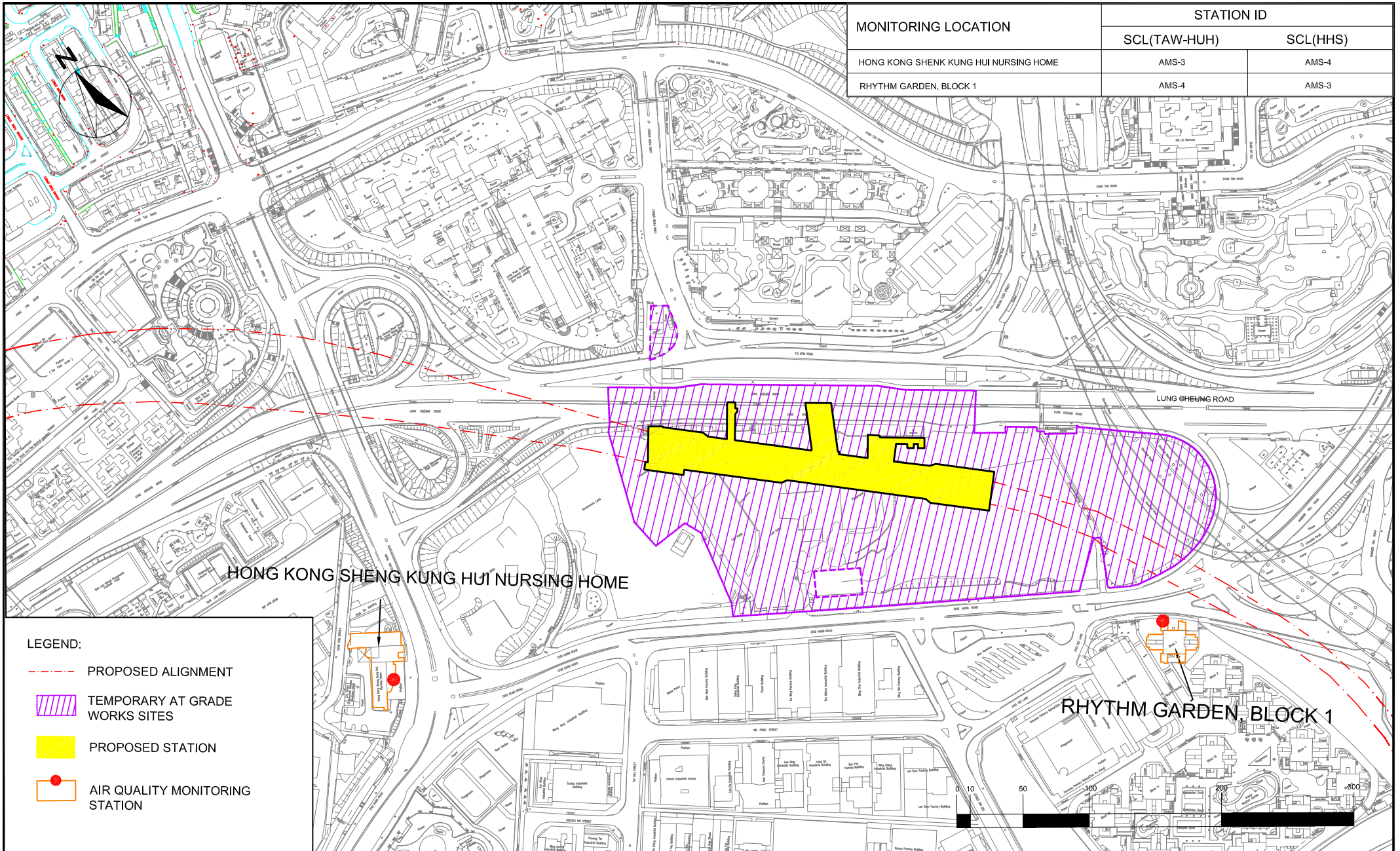
SCALE	1:80	DATE	MAY 2013	
CHECK	KC	DRAWN	JW	
JOB No.	MA12051	FIGURE NO.	1	REV
				-



LEGEND:

- - - PROPOSED ALIGNMENT
- TEMPORARY AT GRADE WORKS SITES
- PROPOSED STATION
- ↑ NOISE MONITORING STATION

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

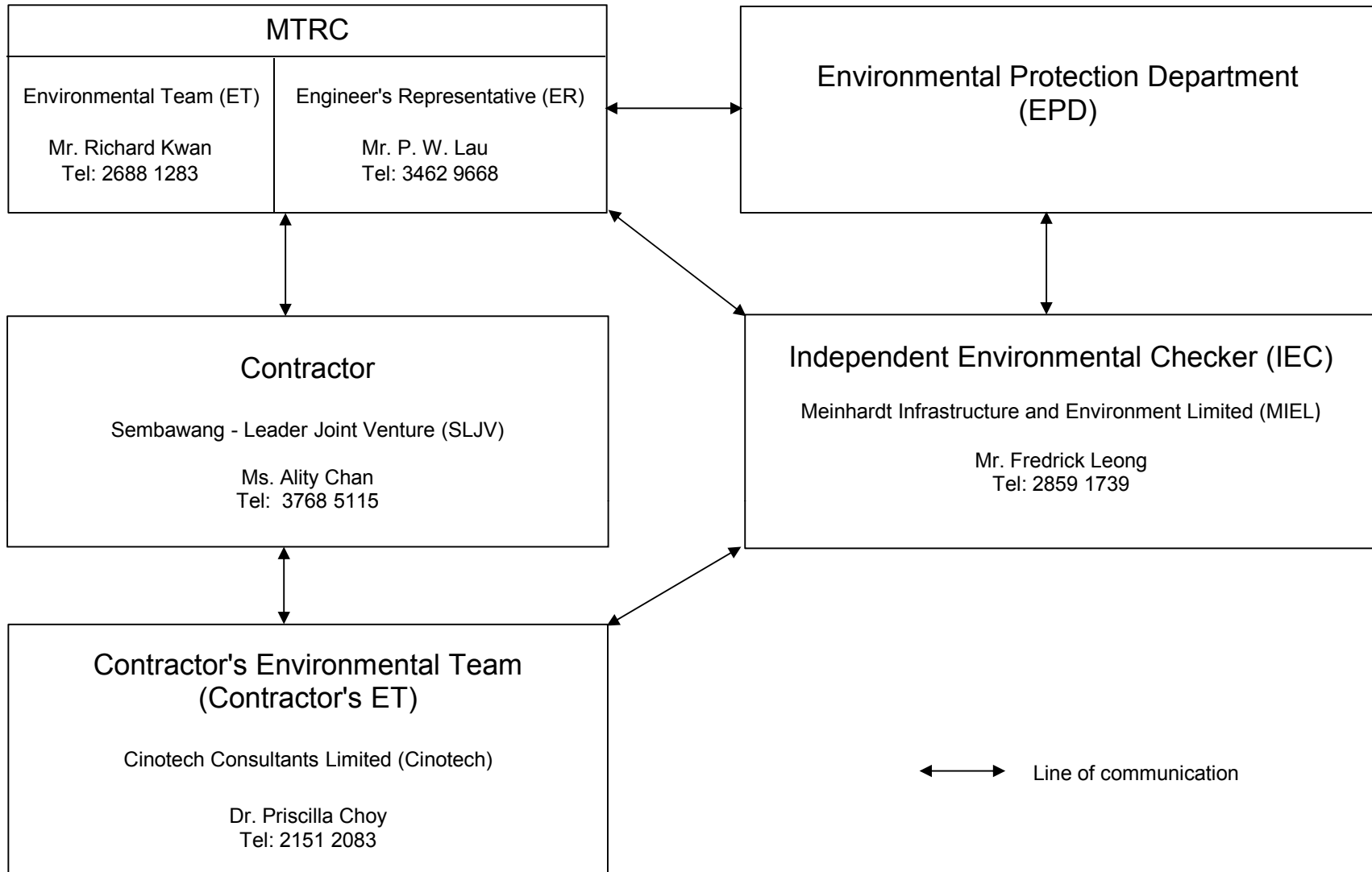
LEGEND:

- - - 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	June					July					August				September				
						01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28	
Contract Dates																								
Milestone Dates																								
Cost Centre A Milestones																								
Preliminaries																								
C1106.MSA11	A11: Engineer's Confirmation of Satisfactory Implementation of Safety & En	0	22-Jul-15	0%	A11: Engineer's Confirmation of Satisfactory Implementation of Safety & Environmental Requirements																			
Cost Centre A - Preliminaries																								
General Requirements																								
Submissions																								
General																								
C1106.GS0278	Prepare & Submit Preliminary ABWF Programme	28	15-Dec-14 A	22-Jun-15 A	100%	Prepare & Submit Preliminary ABWF Programme																		
C1106.GS0282	Review & Approve Preliminary ABWF Programme	28	23-Jun-15 A	20-Jul-15	30%	Review & Approve Preliminary ABWF Programme, Review & Approve Preliminary ABWF Programme																		
C1106.GS0285	Prepare & Submit CSD/SEM Drwg GL 31-53	28	20-Aug-15*	17-Sep-15	0%	Prepare & Submit CSD/SEM																		
C1106.GS0290	Review & Approve CSD/SEM Drwg GL 31-53	28	17-Sep-15	15-Oct-15	0%	Review & Approve CSD/SEM Drwg GL 31-53																		
C1106.GS0337	3rd Safety Management & Environmental Monitoring Audit -A11	90	25-Apr-15 A	22-Jul-15	75%	3rd Safety Management & Environmental Monitoring Audit -A11, 3rd Safety Management & Environmental Monitoring Audit -A11																		
C1106.GS0340	3rd Progress Monitoring & Programming Management System Audit - A12	90	23-Jul-15	20-Oct-15	0%	3rd Progress Monitoring & Programming Management System Audit - A12																		
Cost Centre B: SCL- DIH Station, Entrances and Adits																								
TTMS Implementation																								
Submissions																								
TTM Submission																								
C1106.TMS0335	Submit Draft PR Notice to MTR Review & PR Notification to Public (Stage 1)	24	17-Aug-15*	09-Sep-15	0%	Submit Draft PR Notice to MTR Review & PR N																		
Lung Cheung Road																								
Implement TTA for Diversion of CLP Cables																								
C1106.BLC0494	TTM Implementation TTA for CLP CLP Cable Diversion	1	03-Aug-15*	03-Aug-15	0%	TTM Implementation TTA for CLP CLP Cable Diversion																		
C1106.BLC0496	Trench Excavation & Laying Temp. Cable & Connect Existing CLP (by CLP)	45	04-Aug-15	24-Sep-15	0%	Trench Excavation & Laying Temp. Cable & Connect Existing CLP (by CLP)																		
C1106.BLC0498	Construct Temporary Diversion Footpath & Erect Site Hoarding/ Traffic Sigr	30	05-Sep-15	12-Oct-15	0%	Construct Temporary Diversion Footpath & Erect Site Hoarding/ Traffic Sigr																		
Tai Hom Road																								
TTA Implementation																								
C1106.TMS0337	TTA for Foundation Works at Tai Hom Road (SCKSLG/1106/004/DIH/013/1)	110	07-May-15 A	30-Oct-15	30%	TTA for Foundation Works at Tai Hom Road (SCKSLG/1106/004/DIH/013/1)																		
Structural Works																								
Track Slab/ Bottom Level																								
Base Slab																								
C1106.BBS1272	GL 39-41 Concrete Curing & remove Temp. Strut S6 &S8	12	15-May-15 A	13-Jun-15 A	100%	GL 39-41 Concrete Curing & remove Temp. Strut S6 &S8																		
C1106.BBS1279	GL 41-42.5 FRP Track Base Slab	24	23-May-15 A	05-Jun-15 A	100%	GL 41-42.5 FRP Track Base Slab																		
C1106.BBS1281	GL 41-42.5 Concrete Curing & remove Temp. Strut S6 &S8	9	06-Jun-15 A	22-Jun-15 A	100%	GL 41-42.5 Concrete Curing & remove Temp. Strut S6 &S8																		
C1106.BBS1287	GL 42.5-44 Earthmat/ Waterproofing	8	09-Jun-15 A	12-Jun-15 A	100%	GL 42.5-44 Earthmat/ Waterproofing																		
C1106.BBS1289	GL 42.5-44 FRP Track Base Slab	12	13-Jun-15 A	23-Jun-15 A	100%	GL 42.5-44 FRP Track Base Slab																		
C1106.BBS1291	GL 42.5-44 Concrete Curing & remove Temp. Strut S6 &S8	9	24-Jun-15 A	14-Jul-15	30%	GL 42.5-44 Concrete Curing & remove Temp. Strut S6 &S8, GL 42.5-44 Concrete Curing & remove Temp. Strut S6 &S8																		
C1106.BBS1307	GL 46-48 Earthmat / Waterproofing	8	01-Jul-15 A	04-Jul-15 A	100%	GL 46-48 Earthmat / Waterproofing																		
C1106.BBS1309	GL 46-48 FRP Track Base Slab	12	05-Jun-15 A	16-Jun-15 A	100%	GL 46-48 FRP Track Base Slab																		
C1106.BBS1310	GL 46-48 Concrete Curing and Removal of Struts	6	17-Jun-15 A	04-Jul-15	85%	GL 46-48 Concrete Curing and Removal of Struts, GL 46-48 Concrete Curing and Removal of Struts																		
C1106.BBS1313	GL 48-50 Earthmat/ Waterproofing	12	28-May-15 A	07-Jul-15	85%	GL 48-50 Earthmat/ Waterproofing, GL 48-50 Earthmat/ Waterproofing																		
C1106.BBS1315	GL 48-50 FRP Track Base Slab	12	13-Jul-15	25-Jul-15	0%	GL 48-50 FRP Track Base Slab																		
C1106.BBS1317	GL 50-51 Lay Binding /Earthmat/ Waterproofing	6	01-Jun-15 A	29-Jun-15 A	100%	GL 50-51 Lay Binding /Earthmat/ Waterproofing																		
C1106.BBS1319	GL 50-51 FRT Track Slab and Sump Pit	18	30-Jun-15 A	18-Jul-15	5%	GL 50-51 FRT Track Slab and Sump Pit, GL 50-51 FRT Track Slab and Sump Pit																		
C1106.BBS1321	GL 50-51 Concrete Curing and Removal of Struts	9	20-Jul-15	29-Jul-15	0%	GL 50-51 Concrete Curing and Removal of Struts																		
Platform Level (Level L5)																								
Wall & Column																								
C1106.BPL2109	GL 36.7-38.3 Scaffolding Erection (Track Slab to OTE Slab)	12	23-May-15 A	09-Jun-15 A	100%	GL 36.7-38.3 Scaffolding Erection (Track Slab to OTE Slab)																		
C1106.BPL2111	GL 36.7-38.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4)	12	18-Jun-15 A	15-Jul-15	50%	GL 36.7-38.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4), GL 36.7-38.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4)																		
C1106.BPL2115	GL 37.5-39 Construct Platform Column (Track Level to Mezzanine)	18	16-May-15 A	09-Jun-15 A	100%	GL 37.5-39 Construct Platform Column (Track Level to Mezzanine)																		
C1106.BPL2120	GL 38.3-40.3 Scaffolding Erection (Track Level to OTE Slab)	6	10-Jun-15 A	06-Jul-15	60%	GL 38.3-40.3 Scaffolding Erection (Track Level to OTE Slab), GL 38.3-40.3 Scaffolding Erection (Track Level to OTE Slab)																		
C1106.BPL2122	GL 38.3-40.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4)	12	18-Jun-15 A	13-Jul-15	50%	GL 38.3-40.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4), GL 38.3-40.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4)																		
C1106.BPL2135	GL 39-40 Construct Platform Column (Track Level to Mezzanine)	12	30-May-15 A	09-Jun-15 A	100%	GL 39-40 Construct Platform Column (Track Level to Mezzanine)																		
C1106.BPL2142	GL 40-41 Construct Platform Column (Track Level to Mezzanine)	15	22-Jun-15 A	04-Jul-15	80%	GL 40-41 Construct Platform Column (Track Level to Mezzanine), GL 40-41 Construct Platform Column (Track Level to Mezzanine)																		
C1106.BPL2145	GL 40.3-41.7 Scaffolding Erection (Track Level to OTE Slab)	6	16-Jul-15	22-Jul-15	0%	GL 40.3-41.7 Scaffolding Erection (Track Level to OTE Slab)																		
C1106.BPL2147	GL 40.3-41.7 Falsework for L4 Middle Parts & trolley Works (L5-L4)	12	23-Jul-15	05-Aug-15	0%	GL 40.3-41.7 Falsework for L4 Middle Parts & trolley Works (L5-L4)																		
C1106.BPL2155	GL 41-42.5 Construct Platform Column (Track Level to Mezzanine)	10	06-Jul-15	16-Jul-15	0%	GL 41-42.5 Construct Platform Column (Track Level to Mezzanine)																		
C1106.BPL2156	GL 41-42.5 Construct Platform Wall (Track Level to Mezzanine)	6	17-Jul-15	23-Jul-15	0%	GL 41-42.5 Construct Platform Wall (Track Level to Mezzanine)																		
C1106.BPL2157	GL 41.7-43.3 Scaffolding Erection (Track Level to OTE Slab)	6	24-Jul-15	30-Jul-15	0%	GL 41.7-43.3 Scaffolding Erection (Track Level to OTE Slab)																		
C1106.BPL2159	GL 41.7-43.3 Falsework for L4 Middle Parts & Trolley Works (L4-L3)	10	06-Aug-15*	17-Aug-15	0%	GL 41.7-43.3 Falsework for L4 Middle Parts & Trolley Works (L4-L3)																		
C1106.BPL2161	GL 42.5-44 Construct Platform Column (Track Level to Mezzanine)	8	17-Jul-15	25-Jul-15	0%	GL 42.5-44 Construct Platform Column (Track Level to Mezzanine)																		
C1106.BPL2162	GL 42.5-44 Construct Platform Wall (Track Level to Mezzanine)	8	27-Jul-15	04-Aug-15	0%	GL 42.5-44 Construct Platform Wall (Track Level to Mezzanine)																		
C1106.BPL2163	GL 43.3-44.7 Scaffolding Erection (Track Level to OTE Slab)	6	05-Aug-15	11-Aug-15	0%	GL 43.3-44.7 Scaffolding Erection (Track Level to OTE Slab)																		

- █ Remaining Work
- █ Critical Remaining Work
- Baseline (PMP)
- Actual Work
- ◆ Baseline Milestone
- ◆ Milestone

MTR Contract 1106 - Diamond Hill Station Three Month Rolling Programme As of 30 June 2015

3 Month Rolling Programme			
Date	Revision	Checked	Approved
02-Jul-15	C-1106-3MRP/ 30		



Contract 1106 - Diamond Hill Station



Activity ID	Activity Name	Orig Dur	Forecast Start	Forecast Finish	% Complete	June												July				August				September							
						01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28										
C1106.BPL2165	GL 43.3-44.7 Falsework for L4 Middle Parts & Trolley Works (L5-L4)	12	15-Aug-15	28-Aug-15	0%	GL 43.3-44.7 Falsework for L4 Middle Parts & Trolley Works (L5-L4)																											
C1106.BPL2170	GL 44-45 Construct Platform Wall/Column (Track Level to Mezzanine)	16	10-Jun-15 A	16-Jun-15 A	100%	GL 44-45 Construct Platform Wall/Column (Track Level to Mezzanine)																											
C1106.BPL2172	GL 44.7-45.8 Scaffolding Erection (Track Level to OTE Slab)	6	25-Jun-15 A	04-Jul-15	85%	GL 44.7-45.8 Scaffolding Erection (Track Level to OTE Slab)																											
C1106.BPL2174	GL 44.7-45.8 Falsework for L4 Middle Parts & Trolley Works (L5-L4)	12	24-Jul-15	06-Aug-15	0%	GL 44.7-45.8 Falsework for L4 Middle Parts & Trolley Works (L5-L4)																											
C1106.BPL2175	GL 45-46.5 Construct Platform Column (Track Level to Mezzanine)	15	08-Jun-15 A	13-Jun-15 A	100%	GL 45-46.5 Construct Platform Column (Track Level to Mezzanine)																											
C1106.BPL2177	GL 45.8-47.1 Scaffolding Erection (Track Level to OTE Slab)	6	06-Jul-15	11-Jul-15	0%	GL 45.8-47.1 Scaffolding Erection (Track Level to OTE Slab)																											
C1106.BPL2179	GL 45.8-47.1 Falsework for L4 Middle Parts & Trolley Works (L5-L4)	12	20-Jul-15*	01-Aug-15	0%	GL 45.8-47.1 Falsework for L4 Middle Parts & Trolley Works (L5-L4)																											
C1106.BPL2182	GL 46.5-47.5 Construct Platform Column (Track Level to Mezzanine)	7	16-Jul-15*	23-Jul-15	0%	GL 46.5-47.5 Construct Platform Column (Track Level to Mezzanine)																											
C1106.BPL2184	GL 45-46.5 Construct Platform Wall (Track Level to Mezzanine)	6	03-Aug-15	08-Aug-15	0%	GL 45-46.5 Construct Platform Wall (Track Level to Mezzanine)																											
C1106.BPL2186	GL 46.5-47.5 Construct Platform Wall (Track Level to Mezzanine)	6	10-Aug-15	15-Aug-15	0%	GL 46.5-47.5 Construct Platform Wall (Track Level to Mezzanine)																											
C1106.BPL2190	GL 47.5-49 Construct Platform Column (Track Level to Mezzanine)	10	14-Aug-15*	25-Aug-15	0%	GL 47.5-49 Construct Platform Column (Track Level to Mezzanine)																											
C1106.BPL2192	GL 47.1-48.6 Scaffolding Erection (Track Level to OTE Slab)	6	03-Aug-15	08-Aug-15	0%	GL 47.1-48.6 Scaffolding Erection (Track Level to OTE Slab)																											
C1106.BPL2194	GL 47.1-48.6 Falsework for L4 Middle Parts & Trolley Works (L5-L4)	12	07-Aug-15	20-Aug-15	0%	GL 47.1-48.6 Falsework for L4 Middle Parts & Trolley Works (L5-L4)																											
C1106.BPS2105	GL 49-50 Construct Platform Column (Track Level to Mezzanine)	7	17-Aug-15	24-Aug-15	0%	GL 49-50 Construct Platform Column (Track Level to Mezzanine)																											
C1106.BPS2107	GL 48.6-50.3 Scaffolding Erection (Track Level to OTE Slab)	6	26-Aug-15	01-Sep-15	0%	GL 48.6-50.3 Scaffolding Erection (Track Level to OTE Slab)																											
C1106.BPS2125	GL 50-51 Construct Platform Column (Track Level to Mezzanine)	6	30-Jul-15*	05-Aug-15	0%	GL 50-51 Construct Platform Column (Track Level to Mezzanine)																											
C1106.BPS2126	GL 50-51 Construct Platform Wall (Track Level to Mezzanine)	6	27-Aug-15	02-Sep-15	0%	GL 50-51 Construct Platform Wall (Track Level to Mezzanine)																											
C1106.BPS2127	GL 50.3-51.3 Scaffolding Erection (Track Level to OTE Slab)	6	06-Aug-15	12-Aug-15	0%	GL 50.3-51.3 Scaffolding Erection (Track Level to OTE Slab)																											
C1106.BPS2129	GL 50.3-51.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4)	12	13-Aug-15	26-Aug-15	0%	GL 50.3-51.3 Falsework for L4 Middle Parts & Trolley Works (L5-L4)																											
C1106.BPS2130	GL 51-53 Construct Platform Column (Track Level to Mezzanine)	15	22-Jun-15 A	04-Jul-15	70%	GL 51-53 Construct Platform Column (Track Level to Mezzanine)																											
C1106.BPS2132	GL 51-53 Scaffolding Erection (Track Level to Mezzanine)	6	30-Jul-15	05-Aug-15	0%	GL 51-53 Scaffolding Erection (Track Level to Mezzanine)																											
Slab																																	
C1106.BPS2210	GL 36-38.2 Construct Platform Suspended Slab & Bearing Wall	17	08-Aug-15*	27-Aug-15	0%	GL 36-38.2 Construct Platform Suspended Slab & Bearing Wall																											
C1106.BPS2215	GL 38.2-40.0 Construct Platform Suspended Slab & Bearing Wall	17	28-Aug-15	16-Sep-15	0%	GL 38.2-40.0 Construct Platform Suspended Slab & Bearing Wall																											
C1106.BPS2218	GL 40.0-41.3 Construct Platform Suspended Slab & Bearing Wall	17	17-Sep-15	08-Oct-15	0%	GL 40.0-41.3 Construct Platform Suspended Slab & Bearing Wall																											
OTE Slab																																	
OTE Duct																																	
C1106.BOS4301	GL 36.7-37.5 Construct OTE Slab/Wall	7	06-Jun-15 A	16-Jun-15 A	100%	GL 36.7-37.5 Construct OTE Slab/Wall																											
C1106.BOS4305	GL 37.5-39 Construct OTE Slab/Wall	7	17-Jun-15 A	27-Jun-15 A	100%	GL 37.5-39 Construct OTE Slab/Wall																											
C1106.BOS4310	GL 39-40 Construct OTE Slab/Wall	7	06-Jul-15*	13-Jul-15	0%	GL 39-40 Construct OTE Slab/Wall																											
C1106.BOS4312	GL 40-41 Construct OTE Slab/Wall	7	14-Jul-15	21-Jul-15	0%	GL 40-41 Construct OTE Slab/Wall																											
C1106.BOS4316	GL 41-42.5 Construct OTE Slab/Wall	7	06-Aug-15	13-Aug-15*	0%	GL 41-42.5 Construct OTE Slab/Wall																											
C1106.BOS4340	GL 42.5-44 Construct OTE Slab/Wall	7	14-Aug-15	21-Aug-15	0%	GL 42.5-44 Construct OTE Slab/Wall																											
C1106.BOS4345	GL 44-45 Construct OTE Slab/Wall	7	22-Aug-15	29-Aug-15	0%	GL 44-45 Construct OTE Slab/Wall																											
C1106.BOS4347	GL 45-46.5 Construct OTE Slab/Wall	7	09-Jul-15	16-Jul-15	0%	GL 45-46.5 Construct OTE Slab/Wall																											
C1106.BOS4349	GL 46.5-47.5 Construct OTE Slab/Wall	7	22-Jul-15	29-Jul-15	0%	GL 46.5-47.5 Construct OTE Slab/Wall																											
C1106.BOS4350	GL 47.5-49 Construct OTE Slab/Wall	7	30-Jul-15	06-Aug-15	0%	GL 47.5-49 Construct OTE Slab/Wall																											
C1106.BOS4351	GL 49-50 Construct OTE Slab/Wall	7	02-Sep-15	09-Sep-15	0%	GL 49-50 Construct OTE Slab/Wall																											
C1106.BOS4352	GL 50-51 Construct OTE Slab/Wall	7	15-Aug-15	22-Aug-15	0%	GL 50-51 Construct OTE Slab/Wall																											
Mezzanine Level (Level L3 & L4)																																	
Beam & Slab																																	
C1106.BMZ4354	GL 36.7-38.3 Construct Mezzanine Beam/Slab	12	02-Jul-15*	15-Jul-15	0%	GL 36.7-38.3 Construct Mezzanine Beam/Slab																											
C1106.BMZ4355	GL 36.7-38.3 Concrete Curing & Remove Temp Strut S3 & S5	18	16-Jul-15	05-Aug-15	0%	GL 36.7-38.3 Concrete Curing & Remove Temp Strut S3 & S5																											
C1106.BMZ4356	GL 38.3-40.0 Construct Mezzanine Beam/Slab	10	16-Jul-15	27-Jul-15	0%	GL 38.3-40.0 Construct Mezzanine Beam/Slab																											
C1106.BMZ4358	GL 38.3-40.3 Concrete Curing & remove Temp Strut S3 & S5	18	28-Jul-15	17-Aug-15	0%	GL 38.3-40.3 Concrete Curing & remove Temp Strut S3 & S5																											
C1106.BMZ4362	GL 40.0-41.3 Construct Mezzanine Beam/Slab	10	06-Aug-15	17-Aug-15	0%	GL 40.0-41.3 Construct Mezzanine Beam/Slab																											
C1106.BMZ4364	GL 40.3-41.7 Concrete Curing & Remove Temp Struts S3 & S5	18	18-Aug-15	07-Sep-15	0%	GL 40.3-41.7 Concrete Curing & Remove Temp Struts S3 & S5																											
C1106.BMZ4365	GL 41.3-42.7 Construct Mezzanine Beam/Slab	10	18-Aug-15	28-Aug-15	0%	GL 41.3-42.7 Construct Mezzanine Beam/Slab																											
C1106.BMZ4368	GL 42.7-43.8 Construct Mezzanine Beam/Slab	13	29-Aug-15	12-Sep-15	0%	GL 42.7-43.8 Construct Mezzanine Beam/Slab																											
C1106.BMZ4370	GL 43.3-44.8 Construct Mezzanine Beam/Slab	13	15-Sep-15	30-Sep-15	0%	GL 43.3-44.8 Construct Mezzanine Beam/Slab																											
C1106.BMZ4372	GL 41.7-43.3 Concrete Curing & Remove Temp Struts S3 & S5	14	13-Sep-15	26-Sep-15	0%	GL 41.7-43.3 Concrete Curing & Remove Temp Struts S3 & S5																											
C1106.BMZ4375	GL 44.8-46.2 Construct Mezzanine Beam/Slab	12	30-Jul-15*	12-Aug-15	0%	GL 44.8-46.2 Construct Mezzanine Beam/Slab																											
C1106.BMZ4378	GL 46.2-47.6 Construct Mezzanine Beam/Slab	10	13-Aug-15	24-Aug-15	0%	GL 46.2-47.6 Construct Mezzanine Beam/Slab																											
C1106.BMZ4379	GL 47.6-48.5 Construct Mezzanine Beam/Slab	10	09-Sep-15*	19-Sep-15	0%	GL 47.6-48.5 Construct Mezzanine Beam/Slab																											
C1106.BMZ4380	GL 48.5-49.8 Construct Mezzanine Beam/Slab	10	15-Sep-15	25-Sep-15	0%	GL 48.5-49.8 Construct Mezzanine Beam/Slab																											
C1106.BMZ4381	GL 49.8-51.3 Construct Mezzanine Beam/Slab	10	28-Aug-15	08-Sep-15	0%	GL 49.8-51.3 Construct Mezzanine Beam/Slab																											
C1106.BMZ4382	GL 44.8-46.2 Concrete Curing & Remove Temp Struts S3 & S5	14	13-Aug-15	28-Aug-15	0%	GL 44.8-46.2 Concrete Curing & Remove Temp Struts S3 & S5																											
C1106.BMZ4383	GL 51.3-53 Construct Mezzanine Beam/Slab (with hole)	10	17-Aug-15*	27-Aug-15	0%	GL 51.3-53 Construct Mezzanine Beam/Slab (with hole)																											
C1106.BMZ4390	GL 51-53 Concrete Curing for Mezzanine Beam/Slab (with hole)	12	26-Sep-15	07-Oct-15	0%	GL 51-53 Concrete Curing for Mezzanine Beam/Slab (with hole)																											
C1106.BMZ4392	GL 46.2-47.6 Concrete Curing & Remove Temp Struts S3 & S5	18	13-Aug-15	30-Aug-15	0%	GL 46.2-47.6 Concrete Curing & Remove Temp Struts S3 & S5																											
C1106.BMZ4394	GL 45.8-47.1 Concrete Curing & Remove Temp Struts S3 & S5	18	25-Aug-15	11-Sep-15	0%	GL 45.8-47.1 Concrete Curing & Remove Temp Struts S3 & S5																											
C1106.BMZ4396	GL 51.3-53 Concrete Curing & Remove Temp Struts S3 & S5	18	24-Jul-15*	13-Aug-15	0%	GL 51.3-53 Concrete Curing & Remove Temp Struts S3 & S5																											
Wall & Column																																	
C1106.BMZ4705	GL 36.7-38.2 Construct Wall & Column Mezzanine to L2 Concourse Level	18	24-Jul-15	13-Aug-15	0%	GL 36.7-38.2 Construct Wall & Column Mezzanine to L2 Concourse Level																											
C1106.BMZ4710	GL 36.7-38.2 Scaffold Erection to L2 Concourse Level	10	14-Aug-15	25-Aug-15	0%	GL 36.7-38.2 Scaffold Erection to L2 Concourse Level																											
C1106.BMZ4720	GL 38.2-40.0 Construct Wall & Column Mezzanine to L2 Concourse Level	18	05-Aug-15	25-Aug-15	0%	GL 38.2-40.0 Construct Wall & Column Mezzanine to L2 Concourse Level																											
C1106.BMZ4725	GL 38.3-40.0 Scaffold Erection to L2 Concourse Level	10	26-Aug-15	05-Sep-15	0%	GL 38.3-40.0 Scaffold Erection to L2 Concourse Level																											

- Remaining Work
- Critical Remaining Work
- Baseline (PMP)
- Actual Work
- Baseline Milestone
- Milestone

2 of 3

MTR Contract 1106 - Diamond Hill Station Three Month Rolling Programme As of 30 June 2015

3 Month Rolling Programme			
Date	Revision	Checked	Approved
02-Jul-15	C-1106-3MRP/ 30		

Activity ID	Activity Name	Orig Dur	Forecast Start	Forecast Finish	% Complete	June					July					August					September												
						01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28										
C1106.BMZ4730	GL 40.0-41.3 Construct Wall & Column Mezzanine to L2 Concourse Level	16	26-Aug-15	12-Sep-15	0%																												
C1106.BMZ4732	GL 40.0-41.3 Scaffold Erection to L2 Concourse Level	10	14-Sep-15	24-Sep-15	0%																												
C1106.BMZ4734	GL 41.3-42.7 Construct Wall & Column Mezzanine to L2 Concourse Level	18	14-Sep-15	06-Oct-15	0%																												
C1106.BMZ4736	GL 42.7-43.8 Construct Wall & Column Mezzanine to L2 Concourse Level	18	25-Sep-15	17-Oct-15	0%																												
C1106.BMZ4740	GL 44.8-46.2 Construct Wall & Column Mezzanine to L2 Concourse Level	18	20-Aug-15	09-Sep-15	0%																												
C1106.BMZ4742	GL 44.8-46.2 Scaffold Erection to L2 Concourse Level	10	10-Sep-15	21-Sep-15	0%																												
C1106.BMZ4745	GL 46.2-47.6 Construct Wall & Column Mezzanine to L2 Concourse Level	18	02-Sep-15	22-Sep-15	0%																												
C1106.BMZ4747	GL 49.8-51.3 Construct Wall & Column Mezzanine to L2 Concourse Level	14	26-Sep-15*	14-Oct-15	0%																												
Concourse Level (Level L2)																																	
Beam & Slab																																	
C1106.BCS4302	GL 36.7-38.35 Construct Concourse Beam & Slab	12	14-Aug-15	27-Aug-15	0%																												
C1106.BCS4308	GL 38.35-40 Construct Concourse Beam & Slab	12	28-Aug-15	10-Sep-15	0%																												
C1106.BCS4312	GL 44.8-46.2 Construct Concourse Beam & Slab	12	11-Sep-15	24-Sep-15	0%																												
C1106.BCS4317	GL 36.7-38.35 Concrete Curing & Remove Temp Strut S1 & S2	14	28-Aug-15	12-Sep-15	0%																												
C1106.BCS4320	GL 38.35-40 Concrete Curing & Remove Temp Strut S1 & S2	14	14-Sep-15	30-Sep-15	0%																												
Wall & Column																																	
C1106.BCW4407	GL 36.7-38.2 Construct Wall & Column to Public Access Level	16	14-Sep-15	03-Oct-15	0%																												
Construction of Interchange Adit																																	
Gridline U-V																																	
C1106.BIA7050	Interchange Adit - Construct Base Slab	18	01-Jun-15 A	03-Jul-15	90%																												
C1106.BIA7055	Interchange Adit - Construct Column & Walls and Bulk Head Wall	20	04-Jul-15	27-Jul-15	0%																												
C1106.BIA7060	Interchange Adit - Construct Top Slab	20	28-Jul-15	19-Aug-15	0%																												
C1106.BIA7070	Interchange Adit - Re-propping and Backfill Formation Level at LCR - Stage	14	20-Aug-15	04-Sep-15	0%																												
Construction of West Unpaid Link Adit																																	
West Adit Link - South Section																																	
Civil & Structural Works																																	
C1106.BWA8317	WU Link Adit - SA3 Strut Remedial Works & Waterproofing Membrane	10	30-Apr-15 A	10-Jun-15 A	100%																												
C1106.BWA8320	West Unpaid Link Adit - Construct Base Slab	18	11-Jun-15 A	19-Jun-15 A	100%																												
C1106.BWA8330	West Unpaid Link Adit - Construct Column & Walls and Bulk Head	20	20-Jun-15 A	11-Jul-15	45%																												
C1106.BWA8340	West Unpaid Link Adit - Construct Top Slab and Concrete Upstand	25	13-Jul-15	10-Aug-15	0%																												
C1106.BWA8345	WU Link Adit - Install Preprops and Backfill to Formation Level of LCR Road	14	11-Aug-15	26-Aug-15	0%																												
Construction of East MOE (Entrance B)																																	
Submissions																																	
General																																	
C1106.BEB8700	Prepare Cofferdam Design, ICE Check & Submit	25	15-Apr-15 A	20-Jul-15	75%																												
C1106.BEB8710	Review & Approve Cofferdam Design	30	21-Jul-15	19-Aug-15	0%																												
East MOE																																	
Piling Works																																	
C1106.BEB8730	Mobilize & Set-up and Pre-drilling Works	24	02-May-15 A	14-Jul-15	75%																												
C1106.BEB8735	East MOE - Construct Pre-bored socket H-Piles 610mm (10 nos.)	25	05-Sep-15	06-Oct-15	0%																												
Cost Centre C: KTL - DIH Entrance A1 Works																																	
Entrance A1 (24 hr Walkway and New Lift)																																	
Structural Works																																	
Excavation & Structural Works																																	
C1106.CEA3315	Construct Base Slab 600mm at +4.57mPD, +5.57mPD & +7.47mPD	14	04-May-15 A	18-Jun-15 A	100%																												
C1106.CEA3320	Construct Stub Column / Wall +11.47mPD, +10.92mPD	8	19-Jun-15 A	16-Jul-15	62%																												
C1106.CEA3330	Construct RC Shaft Wall +11.98mPD	10	17-Jul-15	28-Jul-15	0%																												
C1106.CEA3333	Construct Stub Column / Wall +12.00mPD	18	29-Jul-15	18-Aug-15	0%																												
C1106.CEA3338	Backfill and Extract Sheet Pile	12	19-Aug-15	01-Sep-15	0%																												
C1106.CEA3344	Erect Structure Metalwork Frames from +14.36mPD to +19.415mPD	12	19-Aug-15	01-Sep-15	0%																												
C1106.CEA3348	Installation of Aluminum Cladding and Glazing Wall and Roofing System	25	02-Sep-15	02-Oct-15	0%																												

- Remaining Work
- Critical Remaining Work
- Baseline (PMP)
- Actual Work
- Baseline Milestone

MTR Contract 1106 - Diamond Hill Station
Three Month Rolling Programme
As of 30 June 2015

3 Month Rolling Programme			
Date	Revision	Checked	Approved
02-Jul-15	C-1106-3MRP/ 30		

**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. MA12051/57/0013

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 15-Apr-15 Next Due Date: 14-Jun-15
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	294.5	Pressure, Pa (mmHg)	765.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.47	58.87	8.0	2.85
2	9.4	3.09	52.59	6.3	2.53
3	7.3	2.73	46.38	5.0	2.26
4	5.2	2.30	39.21	3.3	1.83
5	3.4	1.86	31.77	2.1	1.46

By Linear Regression of Y on X

Slope, mw = 0.0516 Intercept, bw : -0.1737

Correlation coefficient* = 0.9993

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.11

Remarks: _____

Conducted by: Wk Tang Signature: [Signature] Date: 15/4/15
 Checked by: [Signature] Signature: [Signature] Date: 15 April 2015

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0014

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 11-Jun-15 Next Due Date: 10-Aug-15
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	302.7	Pressure, Pa (mmHg)	759.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	3-Feb-16				

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.9	3.42	58.10	8.0	2.80
2	9.6	3.07	52.22	6.4	2.51
3	7.5	2.72	46.20	5.1	2.24
4	5.2	2.26	38.53	3.3	1.80
5	3.4	1.83	31.23	2.1	1.44

By Linear Regression of Y on X

Slope, mw = 0.0511 Intercept, bw = -0.1561

Correlation coefficient* = 0.9994

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.24

Remarks: _____

Conducted by: Wk Tang Signature: Kwan
 Checked by: [Signature] Signature: [Signature]

Date: 11/6/15
 Date: 11 June 2015



Equipment No A-04-06

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 - Feb 04, 2015 Rootsmeter S/N 0438320 Ta (K) - 293
 Operator Tisch Orifice I.D. - 2896 Pa (mm) - 756.92

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	1.4590	3.2	2.00
2	NA	NA	1.00	1.0330	6.4	4.00
3	NA	NA	1.00	0.9250	7.9	5.00
4	NA	NA	1.00	0.8800	8.8	5.50
5	NA	NA	1.00	0.7260	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0086	0.6913	1.4233	0.9958	0.6825	0.8799
1.0044	0.9723	2.0129	0.9916	0.9599	1.2443
1.0023	1.0835	2.2505	0.9895	1.0697	1.3912
1.0011	1.1377	2.3603	0.9884	1.1231	1.4591
0.9959	1.3718	2.8467	0.9832	1.3542	1.7598

Qstd slope (m) = 2.09317
 intercept (b) = -0.02195
 coefficient (r) = 0.99997

Qa slope (m) = 1.31071
 intercept (b) = -0.01357
 coefficient (r) = 0.99997

y axis = $\text{SQRT}[\text{H2O}(\text{Pa}/760) (298/\text{Ta})]$ y axis = $\text{SQRT}[\text{H2O}(\text{Ta}/\text{Pa})]$

CALCULATIONS

$V_{std} = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$
 $Q_{std} = V_{std} / \text{Time}$

$V_a = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$
 $Q_a = V_a / \text{Time}$

For subsequent flow rate calculations:

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

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/150103-v1
Date of Issue:	2015-06-04
Date Received:	2015-01-03
Date Tested:	2015-01-03
Date Completed:	2015-01-05
Next Due Date:	2016-01-04

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	: 20 degree Celsius
Relative Humidity	: 54%

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 2015/01/05 with certificate number C/N/150103.

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

APPENDIX D
IMPACT MONITORING SCHEDULE

**Shatin to Central Link – Contract 1106 Diamond Hill Station
Impact Air Quality and Noise Monitoring Schedule for June 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Jun	2-Jun	3-Jun	4-Jun	5-Jun	6-Jun
				24 hr TSP	Noise	
7-Jun	8-Jun	9-Jun	10-Jun	11-Jun	12-Jun	13-Jun
			24 hr TSP	Noise		
14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun
		24 hr TSP	Noise			
21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun
	24 hr TSP	Noise			24 hr TSP	
28-Jun	29-Jun	30-Jun				

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 July 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jul	2-Jul	3-Jul	4-Jul
				24 hr TSP	Noise	
5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul
			24 hr TSP	Noise		
12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul
		24 hr TSP		Noise		
19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul
	24 hr TSP	Noise				24 hr TSP
26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	
	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

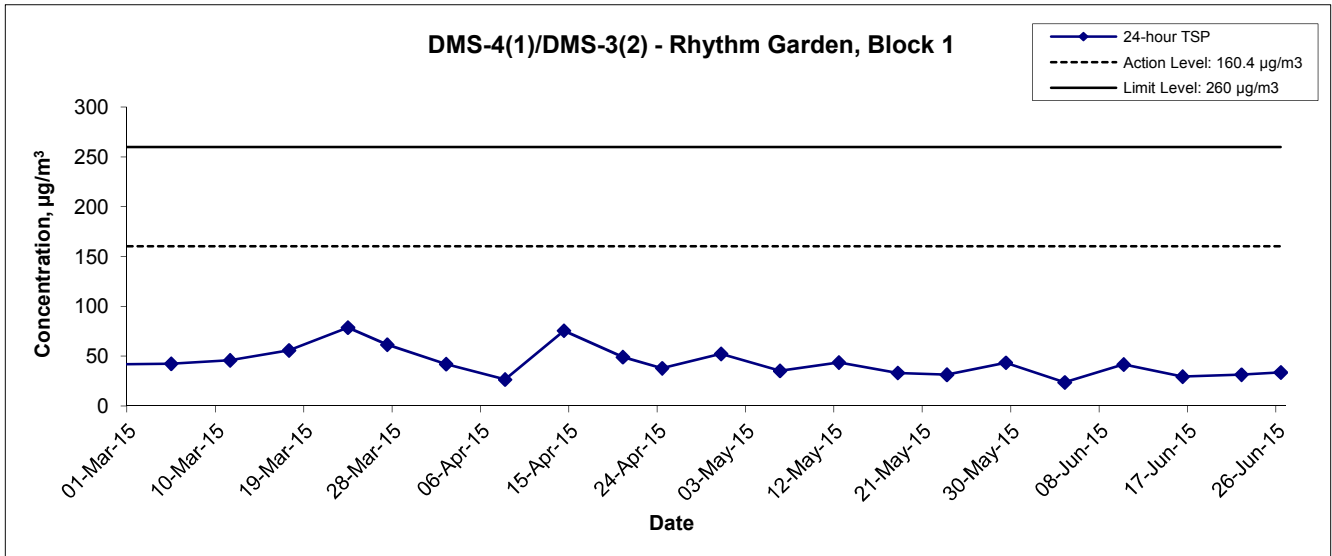
Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

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			
4-Jun-15	09:00	Sunny	303.1	759.9	3.2751	3.3160	0.0409	4286.2	4310.2	24.0	1.20	1.20	1.20	1722.7	23.7
10-Jun-15	09:00	Cloudy	304.1	758.3	3.2449	3.3165	0.0716	4310.2	4334.2	24.0	1.19	1.19	1.19	1718.4	41.7
16-Jun-15	09:00	Cloudy	302.7	759.5	3.2530	3.3045	0.0515	4316.7	4340.7	24.0	1.21	1.21	1.21	1745.6	29.5
22-Jun-15	09:00	Cloudy	300.7	755.3	3.2686	3.3237	0.0551	4340.7	4364.7	24.0	1.21	1.21	1.21	1747.1	31.5
26-Jun-15	09:00	Cloudy	302.1	756.9	3.2357	3.2946	0.0589	4364.7	4388.7	24.0	1.21	1.21	1.21	1744.4	33.8
														Min	23.7
														Max	41.7
														Average	32.0

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



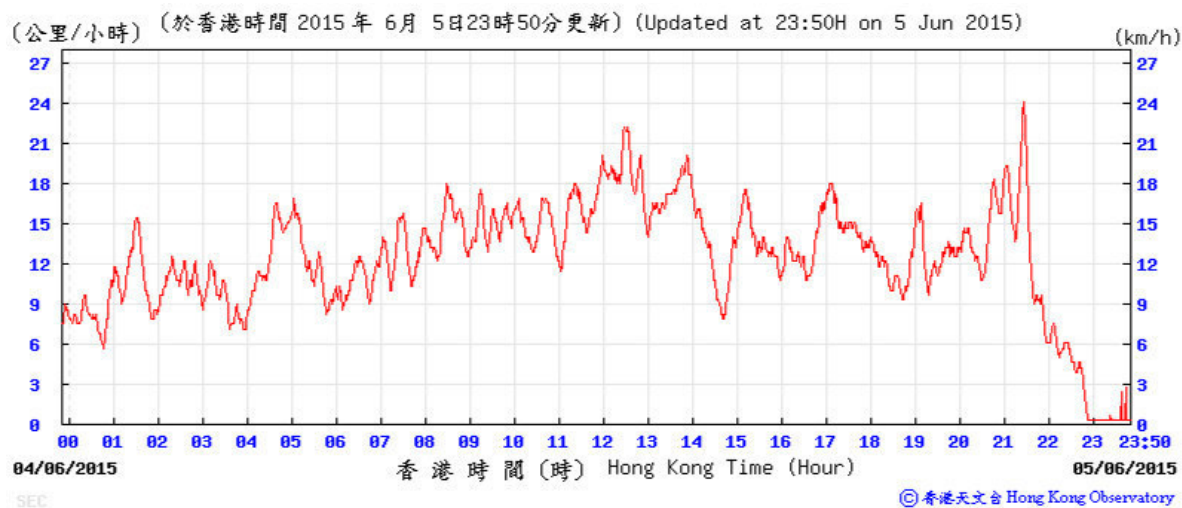
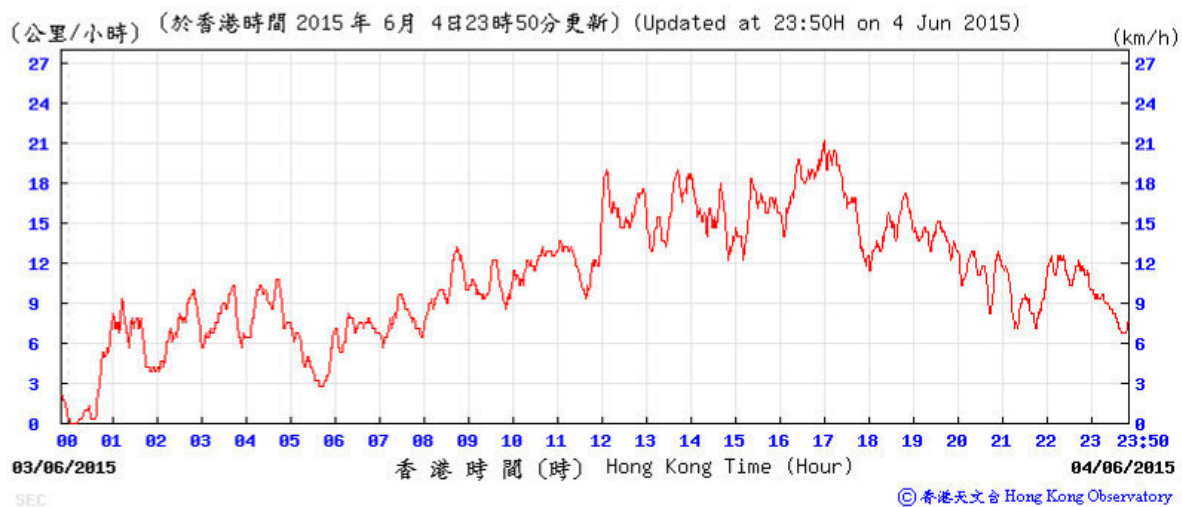
Remarks:

- (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 N.T.S	Project No. MA12051	CINOTECH
	Date Jun 15	Appendix E	

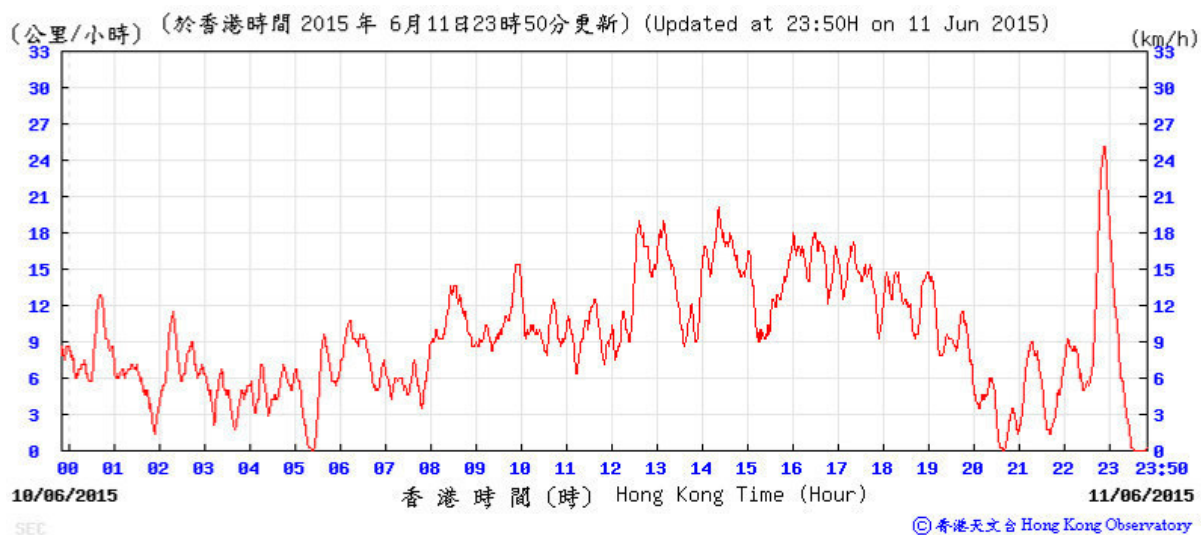
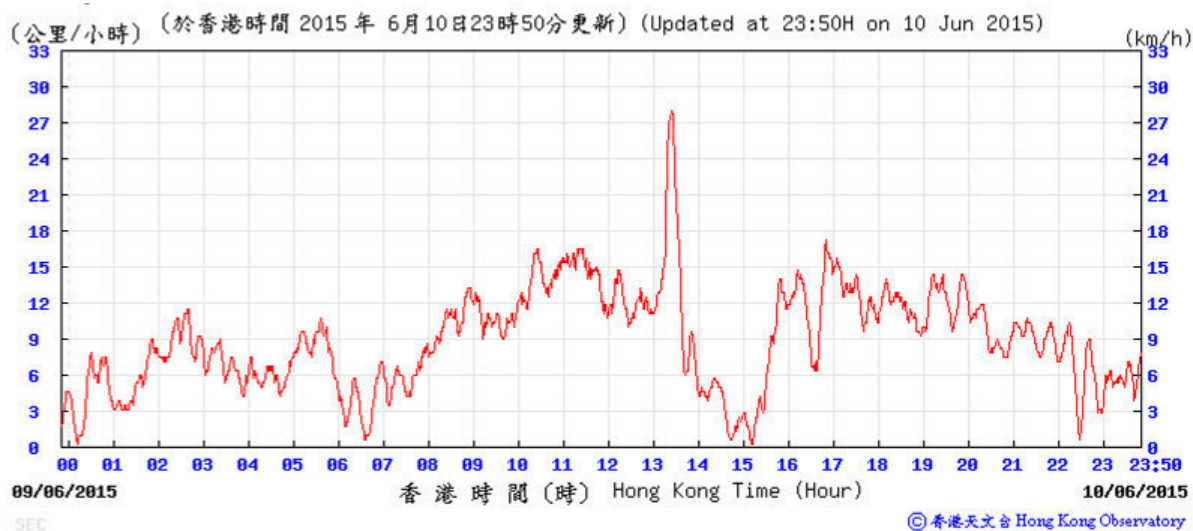
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

4-5 June 2015



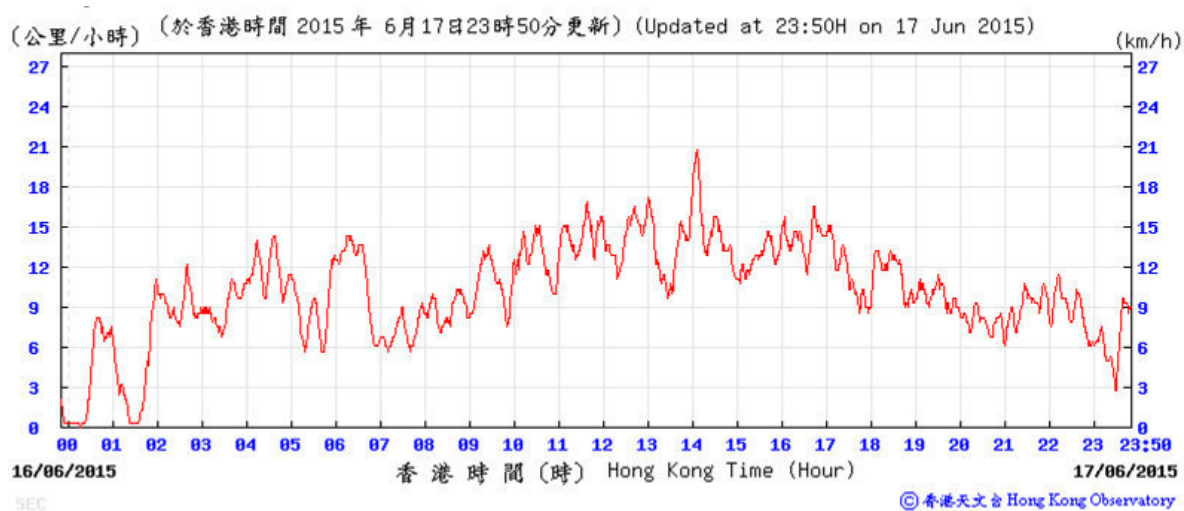
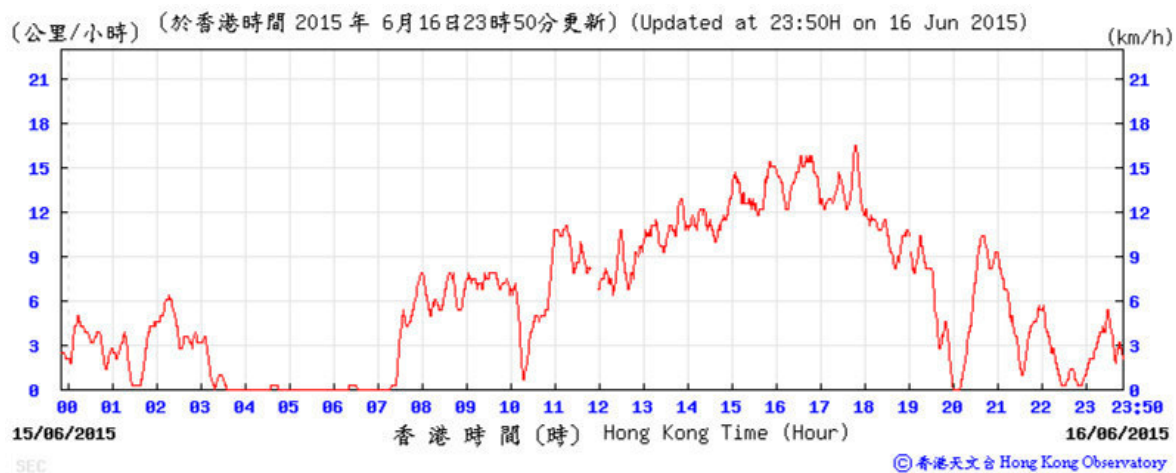
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

10-11 June 2015



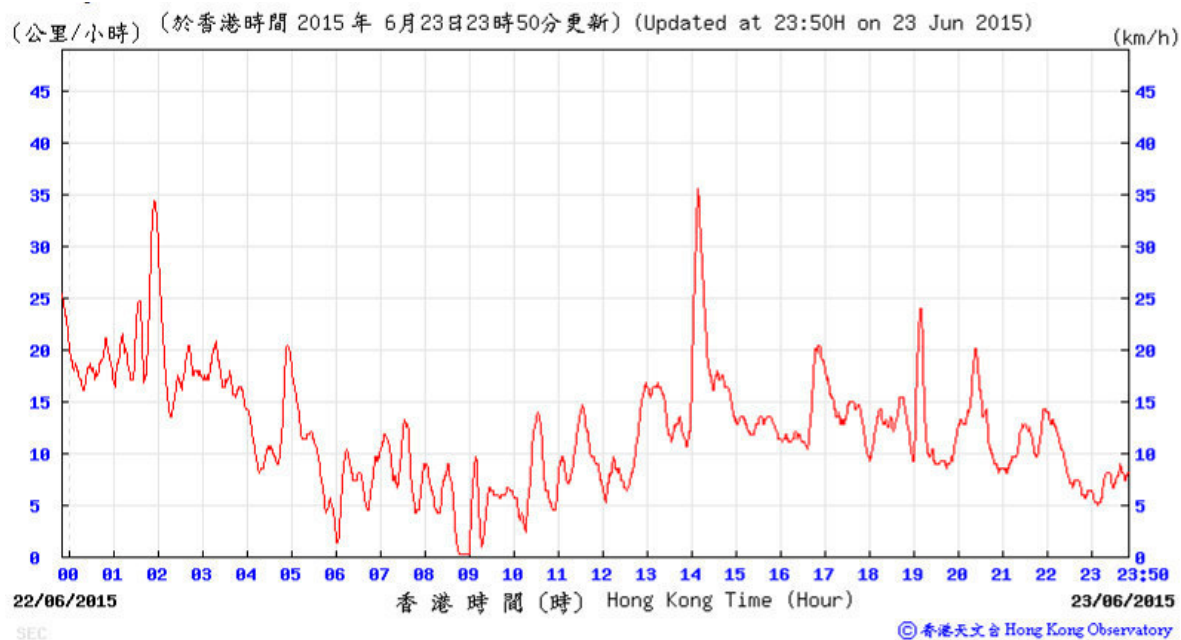
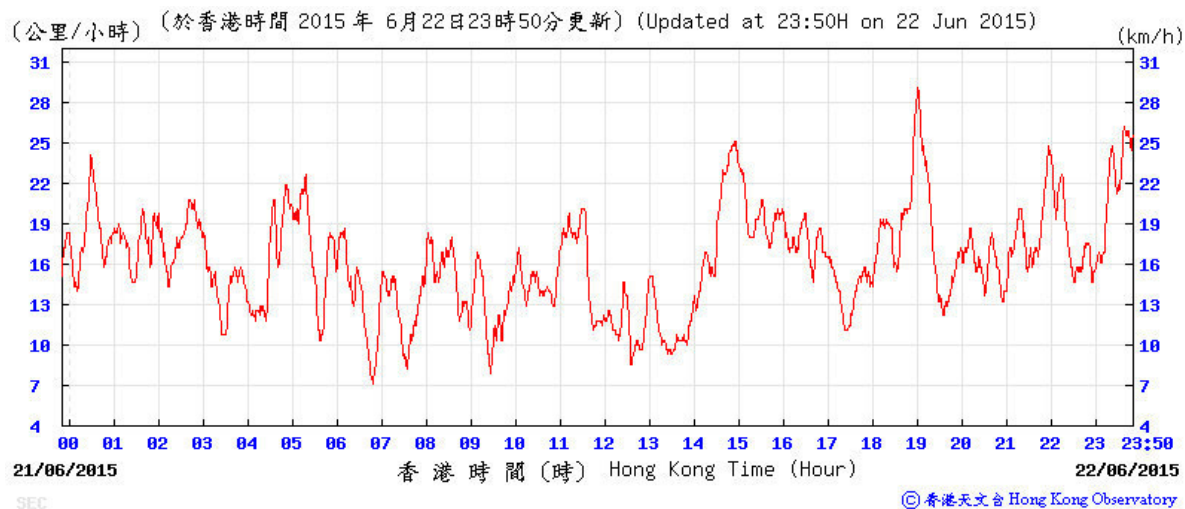
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

16-17 June 2015



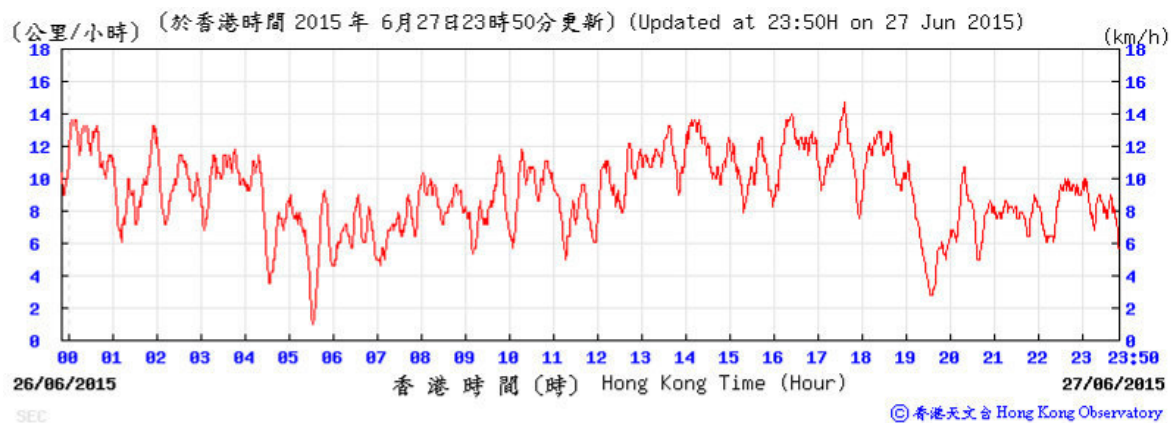
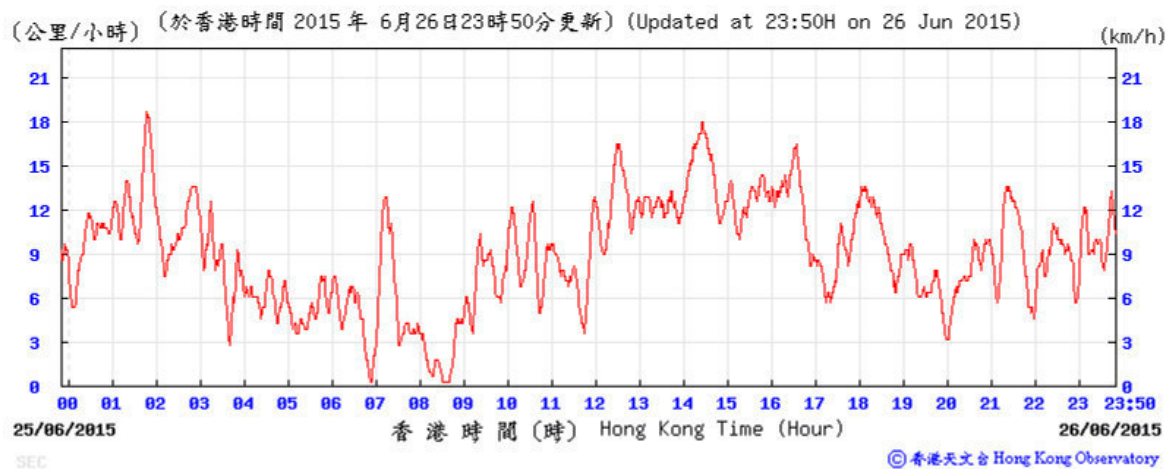
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

22-23 June 2015



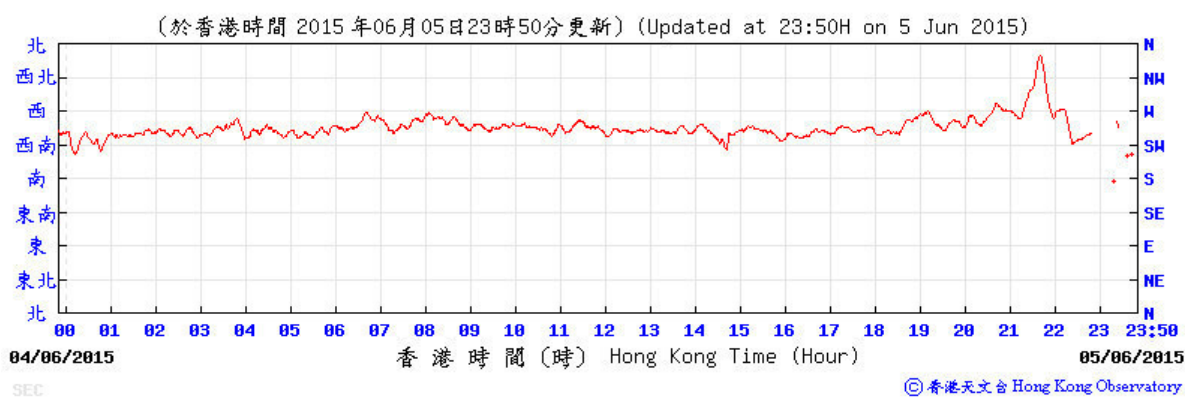
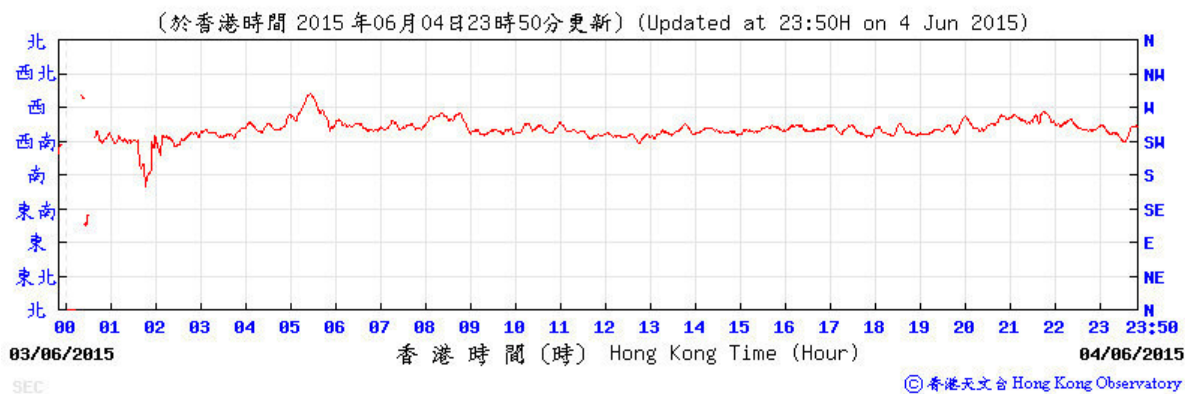
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

26-27 June 2015



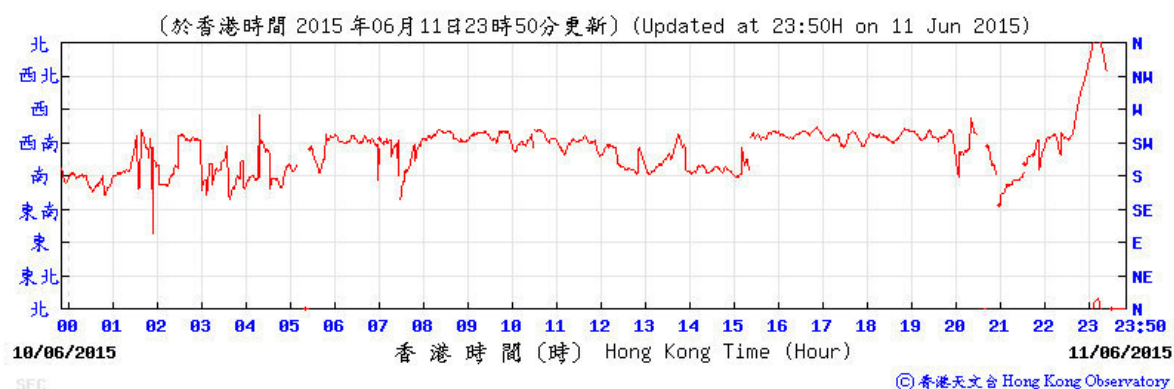
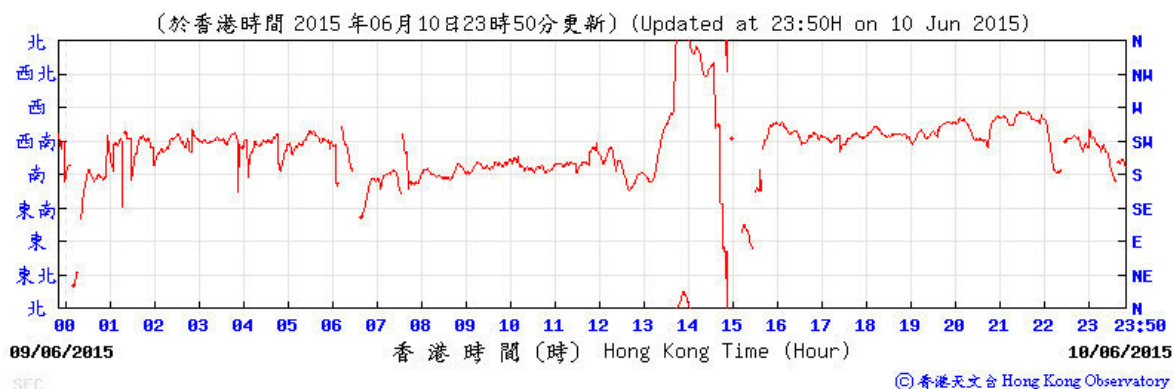
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

4-5 June 2015



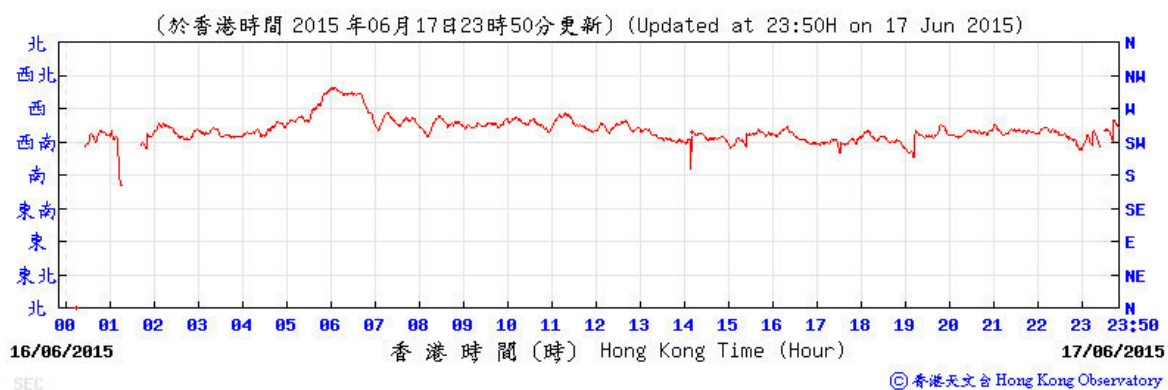
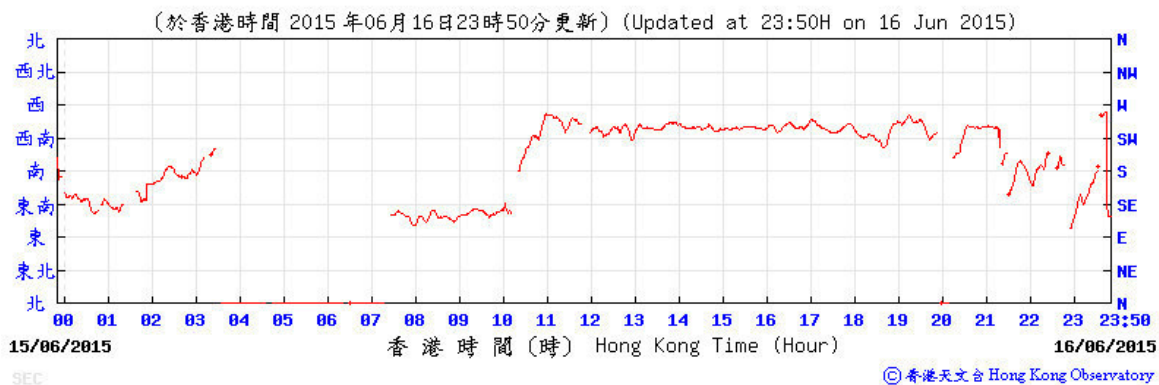
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

10-11 June 2015



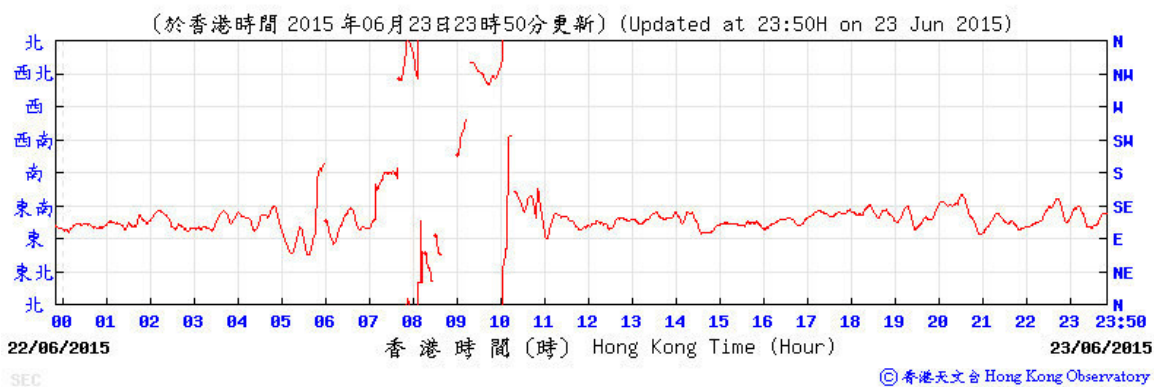
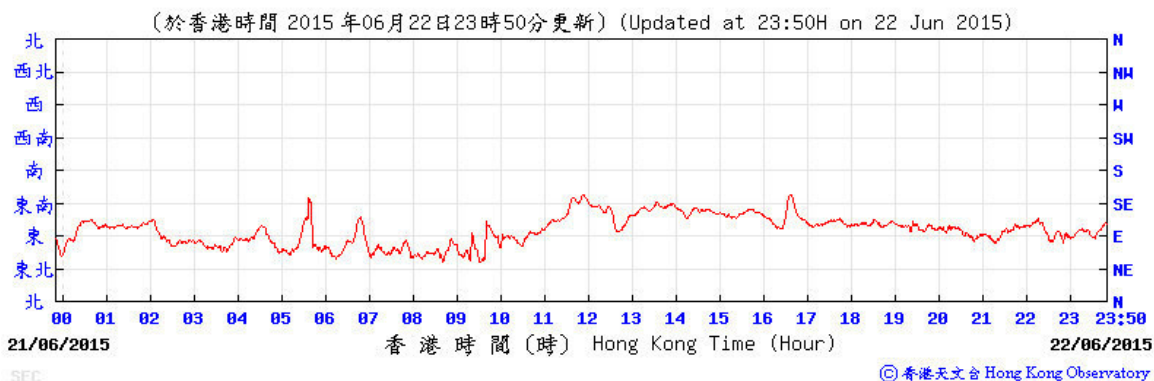
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

16-17 June 2015



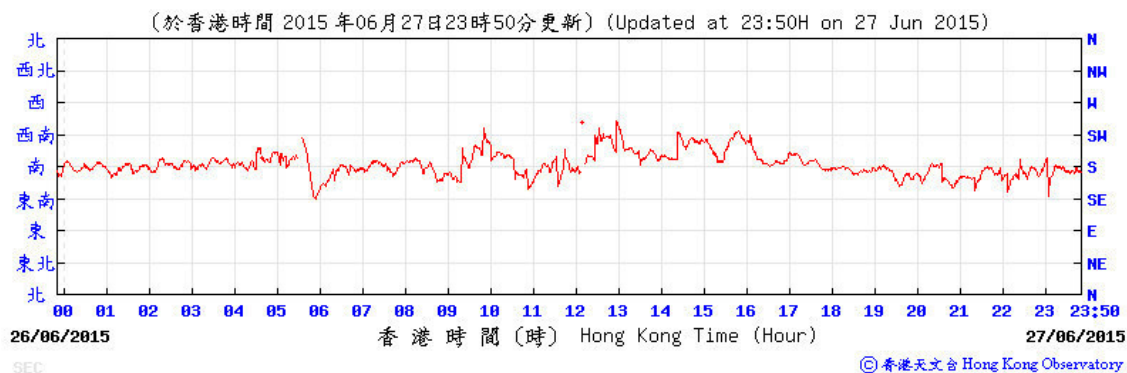
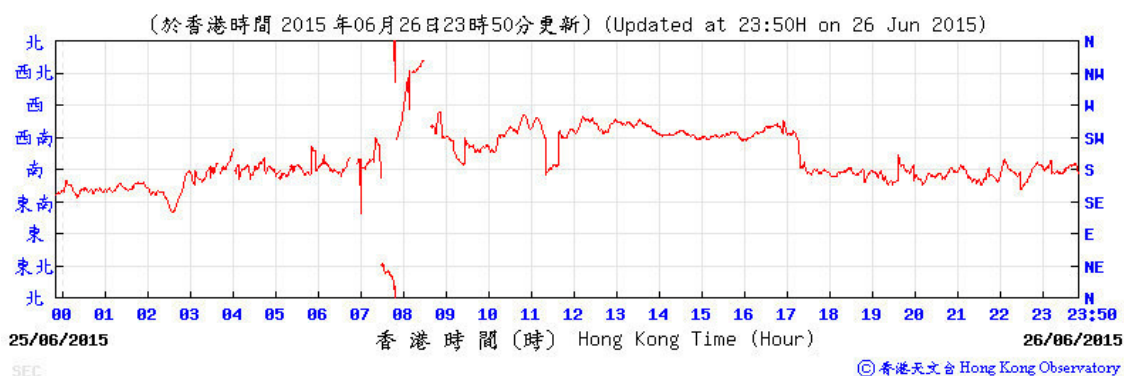
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

22-23 June 2015



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

26-27 June 2015



**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}
5-Jun-15	Sunny	10:00	72.5	73.6	71.1	73.4	71	69.7
		10:05	73.3	74.5	71.3			
		10:10	73.4	74.5	71.2			
		10:15	73.3	74.4	71.1			
		10:20	73.8	74.4	71.1			
		10:25	73.8	74.4	71.2			
11-Jun-15	Sunny	14:05	73.2	74.6	71.8	72.8	71	68.1
		14:10	72.7	74.0	71.2			
		14:15	72.7	73.9	71.3			
		14:20	72.7	74.0	71.2			
		14:25	72.7	74.1	71.2			
		14:30	72.8	74.0	71.2			
17-Jun-15	Sunny	11:05	72.5	73.6	70.9	72.6	71	67.5
		11:10	72.5	73.6	70.9			
		11:15	72.6	73.6	70.9			
		11:20	72.6	73.7	70.9			
		11:25	72.7	73.8	70.9			
		11:30	72.7	73.8	70.9			
23-Jun-15	Cloudy	14:30	73.3	74.4	72.0	72.9	71	68.4
		14:35	72.8	73.7	71.7			
		14:40	72.7	73.9	71.2			
		14:45	72.8	73.8	71.6			
		14:50	73.0	74.3	71.8			
		14:55	72.8	74.1	71.4			

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).

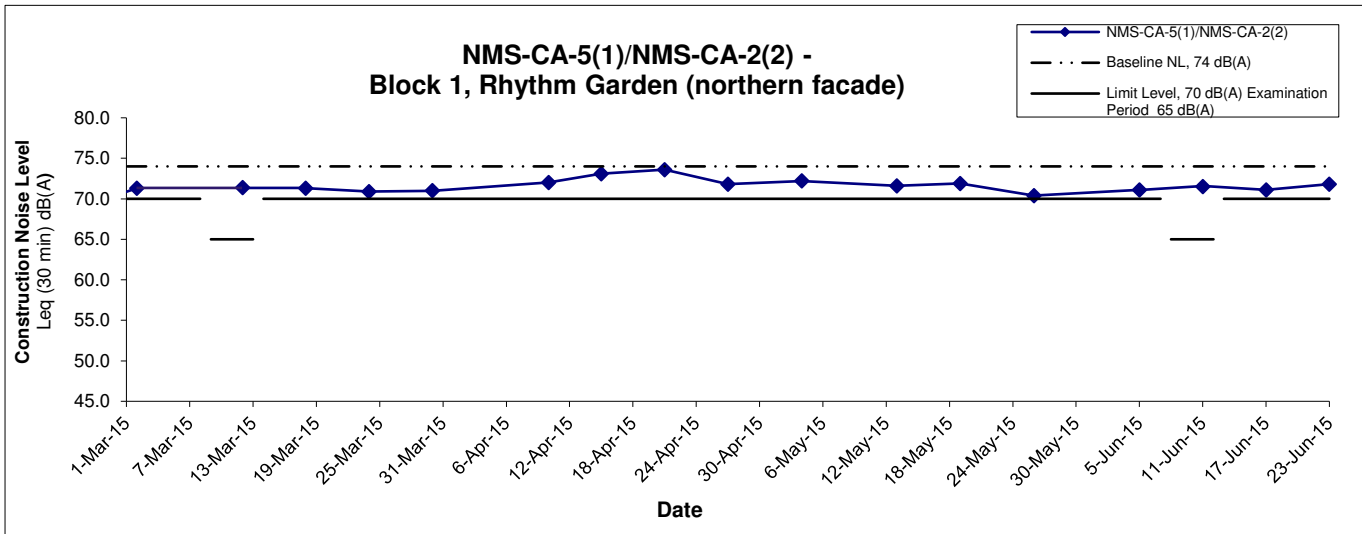
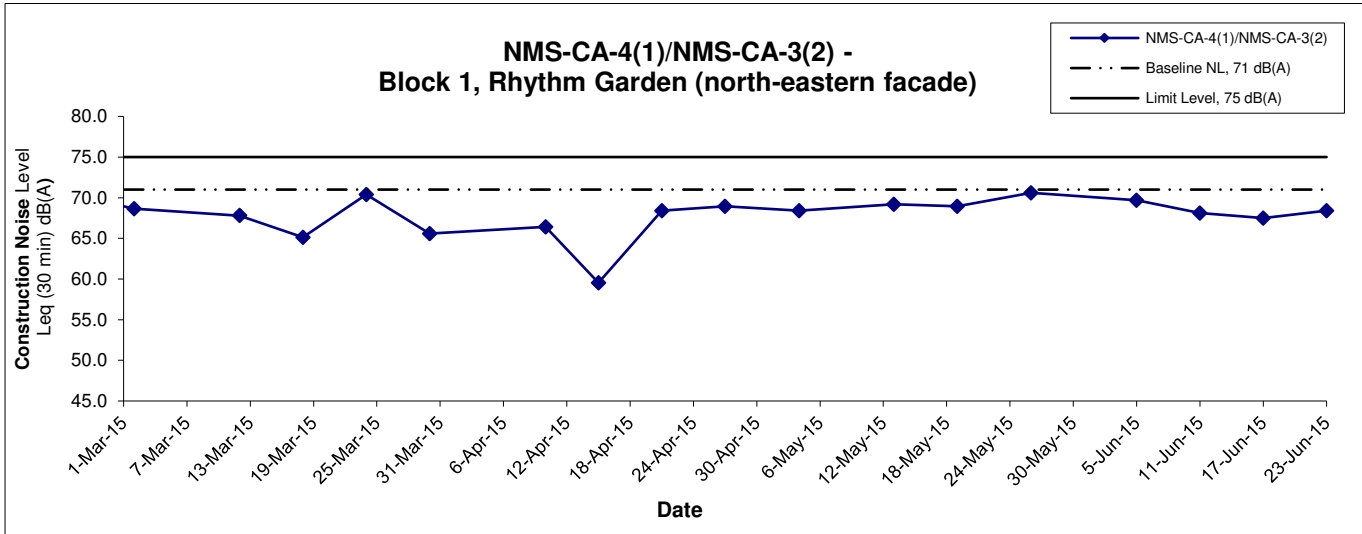
Appendix F - Noise Monitoring Results

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}
5-Jun-15	Sunny	11:05	70.9	71.6	69.9	71.1	74	71.1 Measured ≤ Baseline Level
		11:10	71.1	72.2	69.9			
		11:15	71.1	72.2	69.9			
		11:20	71.1	72.2	69.8			
		11:25	71.1	72.5	69.8			
		11:30	71.1	72.5	69.8			
11-Jun-15	Sunny	13:30	71.5	72.8	69.9	71.5	74	71.5 Measured ≤ Baseline Level
		13:35	71.5	72.8	70.0			
		13:40	71.5	73.0	69.9			
		13:45	71.4	72.6	69.9			
		13:50	71.4	72.6	70.0			
		13:55	71.4	72.5	70.0			
17-Jun-15	Sunny	10:30	71.1	72.3	69.9	71.1	74	71.1 Measured ≤ Baseline Level
		10:35	71.0	72.3	69.8			
		10:40	71.0	72.3	69.8			
		10:45	71.1	72.4	69.8			
		10:50	71.1	72.4	69.8			
		10:55	71.0	72.4	69.8			
23-Jun-15	Cloudy	15:06	71.0	72.7	69.3	71.8	74	71.8 Measured ≤ Baseline Level
		15:11	71.4	72.9	69.9			
		15:16	71.8	73.4	70.0			
		15:21	72.2	74.2	70.1			
		15:26	72.4	73.9	70.3			
		15:31	71.8	73.4	69.8			

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 Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA12051	CINOTECH
	Date Jun 15	Appendix F	

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: June 2015

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX H
SITE AUDIT SUMMARY

**Shatin to Central Link -
Contract 1106 Diamond Hill Station**

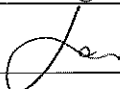
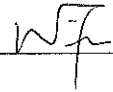
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150604
Date	4 June 2015 (Thursday)
Time	13:30 – 14:30

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

Ref. No.	Remarks/Observations	Related Item No.
150604-O01	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 3
150604-R02	<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"> Construction materials inside the tree protection zone at A1 works area should be properly removed. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> Dusty stockpile at A1 work area should be properly covered to suppress 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.: 150528), 150528-O01 is marked as 150604-O01 and follow up action is needed to be reviewed. 	

	Name	Signature	Date
Recorded by	Jason Lai		4 June 2015
Checked by	Dr. Priscilla Choy		4 June 2015

**Shatin to Central Link -
Contract 1106 Diamond Hill Station**


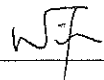
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150612
Date	12 June 2015 (Friday)
Time	10:30 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
150612-001	<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"> Material was observed near retained tree in W8 area. The Contractor should remove the materials and properly set the tree protection zone to protect retained tree. 	D 2 & D 3
150612-R02	<p>Part E – Air Quality</p> <ul style="list-style-type: none"> Coverage for dusty stockpile in West Unpaid Link area should be improved to suppress 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.: 150604), all items were observed to be improved/rectified by the Contractor. 	E 6

	Name	Signature	Date
Recorded by	Jason Lai		12 June 2015
Checked by	Dr. Priscilla Choy		12 June 2015

Shatin to Central Link -

Contract 1106 Diamond Hill Station

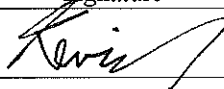

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150618
Date	18 June 2015 (Thursday)
Time	13:30 – 14:30

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

Ref. No.	Remarks/Observations	Related Item No.
150618-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"> Dust generation was observed on dusty haul road. The Contractor was reminded to provide water spray more frequently. 	E 5
150618-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"> The generator was observed not covered at A1. The Contractor was reminded to cover the machine to reduce noise nuisance. <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.: 150612), all items were observed to be improved/rectified by the Contractor. 	G 9

	Name	Signature	Date
Recorded by	Kevin Lam		18 June 2015
Checked by	Dr. Priscilla Choy		18 June 2015

Shatin to Central Link -

Contract 1106 Diamond Hill Station

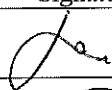
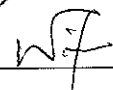
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150625
Date	25 June 2015 (Thursday)
Time	13:30 – 14:30

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

Ref. No.	Remarks/Observations	Related Item No.
150625-R01	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> The Contractor was reminded to provide sand bags surrounding covered stockpile at A1 to prevent silty runoff leakage out of the site area during rain. <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 – 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.: 150618), all items were observed to be improved/rectified by the Contractor. 	B 20

	Name	Signature	Date
Recorded by	Jason Lai		25 June 2015
Checked by	Dr. Priscilla Choy		25 June 2015

**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

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 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 from sites of ecological value and the provision of sanitary facilities for	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>control on the height and disposition/ arrangement of all facilities on 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. <p>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.</p>						^
<i>Air Quality (Construction Phase)</i>								
/	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) 	<p>Reduce air pollution emission from construction vehicles and plants</p>	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	A2	Open burning shall be prohibited	<p>Reduce air pollution emission from work site</p>	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	<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 	*

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
							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 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 	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>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 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 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
		<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 						<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;">^</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
		<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. 						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	^
<i>Construction Airborne Noise</i>								
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 	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
		<p>and practicable;</p> <ul style="list-style-type: none"> material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 						^
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	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
			noise					
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	<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 site runoff and 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 	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>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.</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 						<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>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> <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 						<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
		<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 						<p style="text-align: center;">^</p> <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>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.</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;">^</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 	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 	^

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
		appropriate disposal and maintenance.						
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 	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
<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 	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>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>						
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; 	<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) • Waste Disposal Ordinance 	<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"> 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 	disposal				<ul style="list-style-type: none"> ETWB TCW No. 19/2005 	N/A ^ ^ ^
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 	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 	^

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>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. 					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 easily accessible. Separate labelled bins for their deposit should be 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	^ ^ ^

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

Contract No: MTR SCL 1106 - Diamond Hill Station
Date of Report: June,2015

Monthly Summary Waste Flow Table for 2015

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	26.502	0.000	0.000	25.020	1.482	0.000	0.000	0.389	0.000	0.000	0.062	
Feb	17.022	0.000	0.000	14.903	2.119	0.000	0.000	0.000	0.000	0.000	0.085	
Mar	17.378	0.000	0.000	14.941	2.437	0.000	0.000	0.300	0.000	0.000	0.133	
Apr	4.879	0.000	0.000	4.129	0.750	0.000	0.000	0.400	0.000	0.000	0.041	
May	2.624	0.000	0.000	1.553	1.071	0.000	0.000	0.200	0.000	0.000	0.063	
Jun	0.275	0.000	0.000	0.000	0.2750	0.000	0.000	0.420	0.000	0.000	0.035	
Sub-total	68.680	0.000	0.000	60.546	8.134	0.000	0.000	1.709	0.000	0.000	0.419	
Jul												
Aug												
Sept												
Oct												
Nov												
Dec												
Total	68.680	0.000	0.000	60.546	8.134	0.000	0.000	1.709	0.000	0.000	0.419	

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.
- 4) figures are rounded up to 3 decimal places

**APPENDIX L
CUMULATIVE LOG FOR COMPLAINT
LOGS, NOTIFICATION OF SUMMONS
AND SUCCESSFUL PROSECUTIONS**

Appendix L - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecution

Reporting Month	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Number of Prosecutions in Reporting Month
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	0	0	0
December 2014	0	0	0
January 2015	0	0	0
February 2015	3	0	0
March 2015	0	0	0
April 2015	0	0	0
May 2015	0	0	0
June 2015	0	0	0
Total	3	0	0

Environmental Complaint Log (June 2015)

Contractor Log Ref.	Complaint Location/ Nature	Incoming Complaint Reference no.	Complainant/ Date or Period of Complaint Received	Date of Complaint received from EPD	Details of Complaint	Investigation/ Mitigation Action	Status
--	--	--	--	--	--	--	--

Log for Notifications of Summons (June 2015)

Log Ref.	Location/Nature	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
--	--	--	--	--	--

Log for Successful Prosecutions (June 2015)

Log Ref.	Location/Nature	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
--	--	--	--	--	--

Appendix G

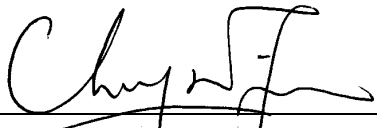
**26th EM&A Report for Works Contract 1107 –
Diamond Hill to Kai Tak Tunnels**

Chun Wo – SELI Joint Venture

**Shatin to Central Link –
Contract 1107
Diamond Hill to Kai Tak Tunnels**

**Monthly Environmental
Monitoring and Audit Report
For June 2015**

(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 26th 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 1st to 30th June 2015.

Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month include:
 - Tunnel construction at cut and cover tunnels;
 - Site preparation works for TBM excavation; and
 - Re-provision of Box culvert.

Variation in Construction Method

3. Environmental Monitoring and Audit Progress:

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)) 4 times
 - NMS-CA-5⁽¹⁾⁽⁴⁾/NMS-CA-2⁽²⁾⁽⁴⁾ (Block 1, Rhythm Garden (northern façade)) 4 times
- Construction Dust (24-hour TSP) Monitoring
Dust Monitoring Station ID
 - DMS-4⁽¹⁾⁽⁵⁾/ DMS-3⁽²⁾⁽⁵⁾ (Block 1, Rhythm Garden) 5 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 4th and 18th June 2015. 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 4th, 11th, 18th and 25th June 2015. The representative of the IEC joined the site inspection on 11th June 2015. Details of the audit findings and implementation status are presented in Section 6.

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

8. One Action Level exceedances of regular construction noise monitoring were recorded as one complaint related to construction noise was received in June 2015. No Limit Level of regular construction noise monitoring exceedance was recorded.
9. No non-compliance event was recorded during the reporting period.
10. No Project related notification of summons/ a successful prosecution was received in this reporting period. Two notifications of complaint on construction dust and noise were received in June 2015. Investigation for the complaint received on 30th June 2015 was in progress and the outcome will be presented in the next reporting month.

Future Key Issues

11. Major site activities for the coming reporting month will include:
 - Tunnel construction at cut and cover tunnels;
 - Backfilling works at cut and cover tunnels;
 - TBM excavation; and
 - Reprovision of Box culvert.

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 26th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1st to 30th June 2015. The major construction works for Contract 1107 commenced on 27th 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**.
- Tunnel construction at cut and cover tunnels;
 - Site preparation works for TBM excavation; and
 - Re-provision of Box culvert.

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 Construction Noise Permits (CNP): GW- RE1496-14 and GW-RE0158-15 expired and one new CNP (GW-RE0645-15) was granted in the 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-RE1496-14	05/01/2015	28/06/2015	Expired
GW-RE0085-15	31/01/2015	30/07/2015	Valid
GW-RE0158-15	17/02/2015	11/06/2015	Expired
GW-RE0364-15	16/04/2015	13/09/2015	Valid
GW-RE0366-15	20/04/2015	30/06/2015	Valid
GW-RE0645-15	01/07/2015	30/09/2015	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.: 14303)
Calibrator	SV30A (Serial no.: 24791)

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: 2896	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 (May 2015)	11 th June 2015

5 MONITORING RESULTS

Regular Construction Noise Monitoring

- 5.1 A total of 8 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 The noise monitoring results recorded at NMS-CA-5⁽¹⁾/NMS-CA-2⁽²⁾ (Block 1, Rhythm Garden (northern façade)) in June all exceeded the daytime construction noise criterion. However, the results are not considered as exceedance since the results were below the baseline noise level. All noise monitoring results recorded at NMS-CA-4⁽¹⁾/NMS-CA-3⁽²⁾ (Block 1, Rhythm Garden (north-eastern façade)) in June did not exceed the daytime construction noise criterion.
- 5.3 Based on observation during the on-site monitoring, road traffic nearby and breaking works at 210-212 Choi Hung Road are 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 One Action Level exceedances of regular construction noise monitoring were recorded as one complaint related to construction noise was received in June 2015. The summary of exceedance in this reporting month is provided in **Appendix G** and the details of previous complaints are presented in **Appendix L**.

Regular Dust Monitoring

- 5.6 A total of 5 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⁾)	23.7	41.7	32.0	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**. 3,240m³ of C&D materials, 65m³ of general refuse, and no chemical waste were generated and disposed; No plastics and paper/cardboard but 8,590kg of metals 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
June 2015	3,240 m ³	65 m ³	0 kg	0 kg	0 kg	8,590 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 4th and 18th June 2015. 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**.
- 6.2 Site audits were conducted on 4th, 11th, 18th, and 25th June 2015 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 11th June 2015. No site inspection was conducted by EPD in the reporting month. 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 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>	11 th June 2015	<u>Observation:</u> Water in the water sedimentation tank was observed turbid. The Contractor was reminded to check and properly maintain the treatment facility to ensure discharge water quality.	As observed on 18 June, water in sedimentation tank was kept clear.
<i>Noise</i>	---	---	---
<i>Landscape and Visual</i>	27 th May 2015	<u>Observation:</u> The tree: A02 near the soil mixing area was waterlogged. To properly protect the tree, water pump should be provided to pump out the water.	As observed on 4 June, the water inside the tree protection zone was cleared for tree A02.
<i>Air Quality</i>	11 th June 2015	<u>Reminder:</u> Stockpile of material was observed not covered completely. The Contractor was reminded to cover the stockpile or provide water spray to the uncovered part.	The follow up action will be reported in the next reporting month.
	18 th June 2015	<u>Observation:</u> Stockpile of material was observed not covered. The Contractor was reminded to cover the stockpile with impervious sheet.	The follow up action will be reported in the next reporting month.
	18 th June 2015	<u>Observation:</u> Dusty haul road was observed near stockpile area. The Contractor was reminded to provide water spray to haul roads more frequently.	As observed on 25 June, the haul road was observed wet during the site inspection.

Parameters	Date	Observations and Recommendations	Follow-up
	25 th June 2015	<u>Observation:</u> Stockpile of dusty material was observed not covered. The Contractor was reminded to cover the stockpile with dust protective screen.	The follow up action will be reported in the next reporting month.
Waste / Chemical Management	21 st May 2015	<u>Reminder:</u> The stand water inside the drip trays at upstream area and at external yard A should be removed.	As observed on 18 June, stand water inside drip trays of upstream area and external yard A were cleared.
	27 th May 2015	<u>Reminder:</u> Stand water inside the drip trays at external yard A and upstream area could still be observed. The Contractor should remove the stand water to prevent oil/chemical spillage.	As observed on 18 June, stand water inside drip trays of upstream area and external yard A were cleared.
	4 th June 2015	<u>Reminder:</u> Stand water was observed in drip tray at external yard A. The Contractor was reminded to clear the stand water accordingly.	As observed on 11 June, stand water inside drip tray at external yard A was cleared.
	4 th June 2015	<u>Reminder:</u> The oil drum at external yard A was observed without a drip tray. The Contractor was reminded to properly provide a drip tray for the container.	As observed on 11 June, the oil drum at external yard A was removed.
	11 th June 2015	<u>Observation:</u> Stand water was observed inside drip tray near shaft B. The Contractor was reminded to properly clear the wastewater and properly seal the drain hole.	As observed on 18 June, stand water was cleared and the drain hole was sealed properly.
	25 th June 2015	<u>Reminder:</u> Stand water was observed in drip trays near shaft B. The Contractor was reminded to properly clear the stand water.	The follow up action will be reported in the next reporting month.
Permits/Licenses	---	---	---

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

- 7.1 One Action Level exceedances of regular construction noise monitoring were recorded as one complaint related to construction noise was received in June 2015. The detail of the complaint is presented in **Appendix L**. No exceedance of Limit Levels of the regular construction noise monitoring was recorded during the reporting month.
- 7.2 No exceedance of the Action and Limit Levels of the regular 24-hour TSP monitoring was recorded during the reporting month.
- 7.3 The summary of exceedance in this reporting month is provided in **Appendix G**.

Summary of Environmental Non-Compliance

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

Summary of Environmental Complaint

- 7.5 Two notifications of complaint on construction dust and noise was received in the reporting month. Investigation for the complaint received on 30th June 2015 was in progress and the outcome will be presented in the next reporting month. The detail of the environmental complaint received in the reporting month is shown in the Environmental Complaint Log in **Appendix L**. The Cumulative Complaint Log since the commencement of the Project is also presented in **Appendix L**.

Summary of Environmental Summon and Successful Prosecution

- 7.6 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:

- Tunnel construction at cut and cover tunnels;
- Backfilling works at cut and cover tunnels;
- TBM excavation; and
- Re-provision of Box culvert.

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 1st to 30th June 2015 in accordance with EM&A Manual and the requirement under EP.
- 9.2 One Action Level exceedance of regular construction noise monitoring was recorded as one complaint related to construction noise was received in June 2015. No exceedance of the Limit Level of regular construction noise monitoring was recorded during the reporting month. No exceedance of the Action and Limit Levels of regular 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 Two notifications of complaint on construction dust and noise was received in the reporting month. Investigation for the complaint received on 30th June 2015 was in progress and the outcome will be presented in the next reporting month. No 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

- The contractor should implement appropriate measures such as providing temporary ditches facilitate the runoff discharge into an appropriate watercourse, via site/sediment trap.

Landscape and Visual

- N/A

Noise

- N/A

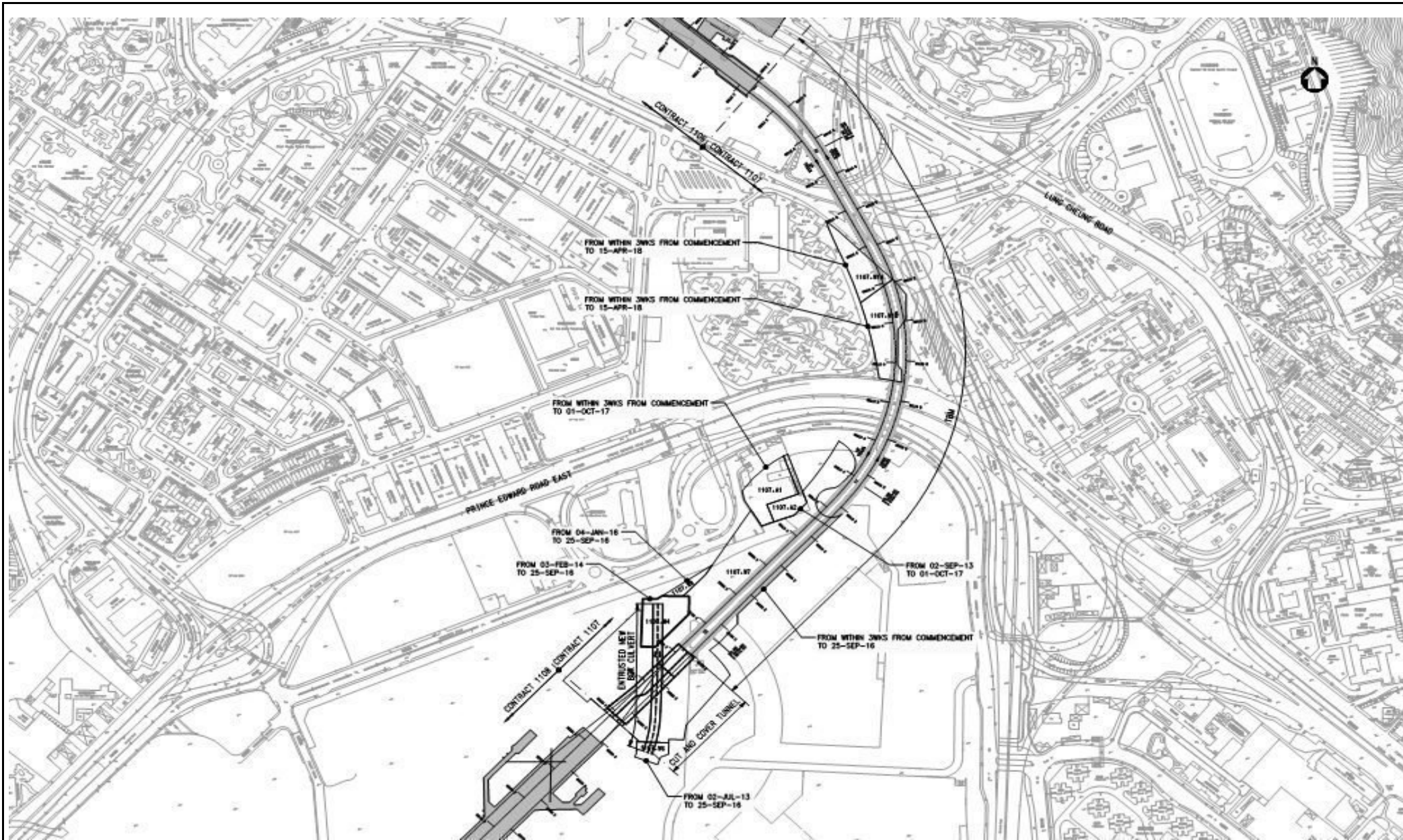
Air Quality

- Any excavated or stockpile of dusty material should be covered entirely by dust protective screen or sprayed with water to maintain the entire surface wet.

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.
- Stand water inside drip trays should be cleared properly as chemical waste.

FIGURES



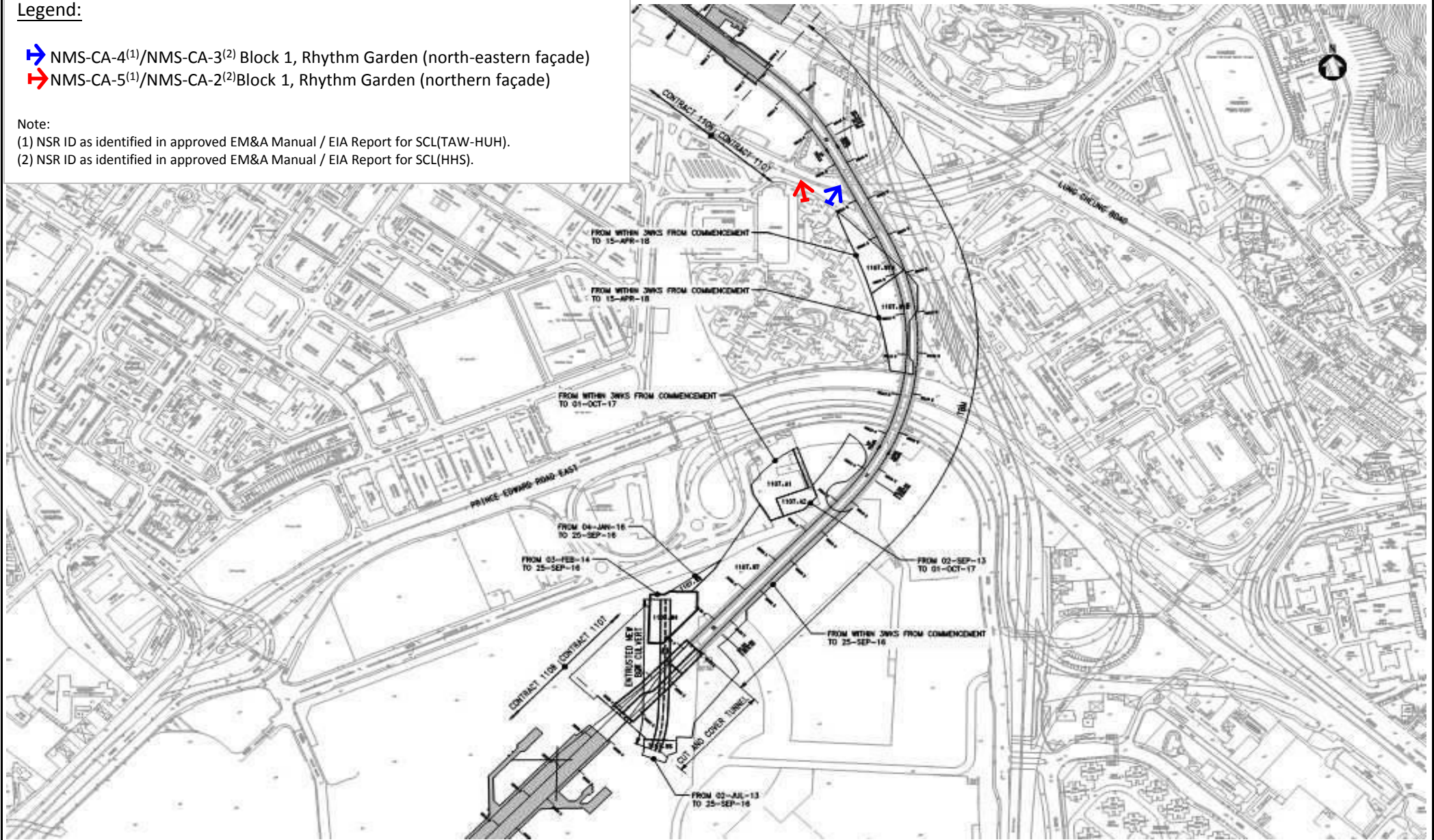
Title	MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Site Layout Plan	Scale	N.T.S	Project No.	MA13018	CINOTECH
		Date	May-13	Figure	1	

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).



Title MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Locations of Constrction Noise Monitoring	Scale	N.T.S	Project No.	MA13018
	Date	May-13	Figure	2

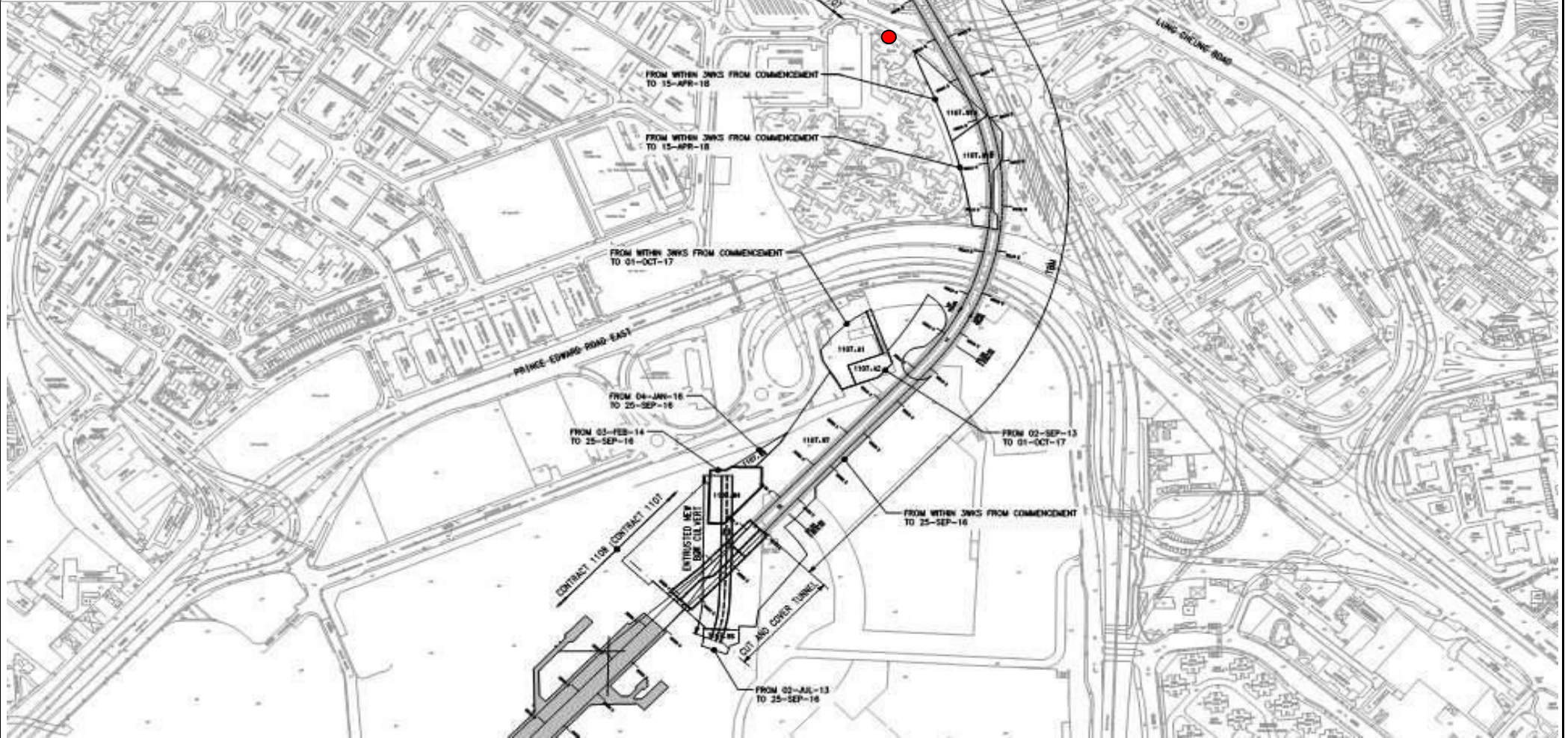


Legend:

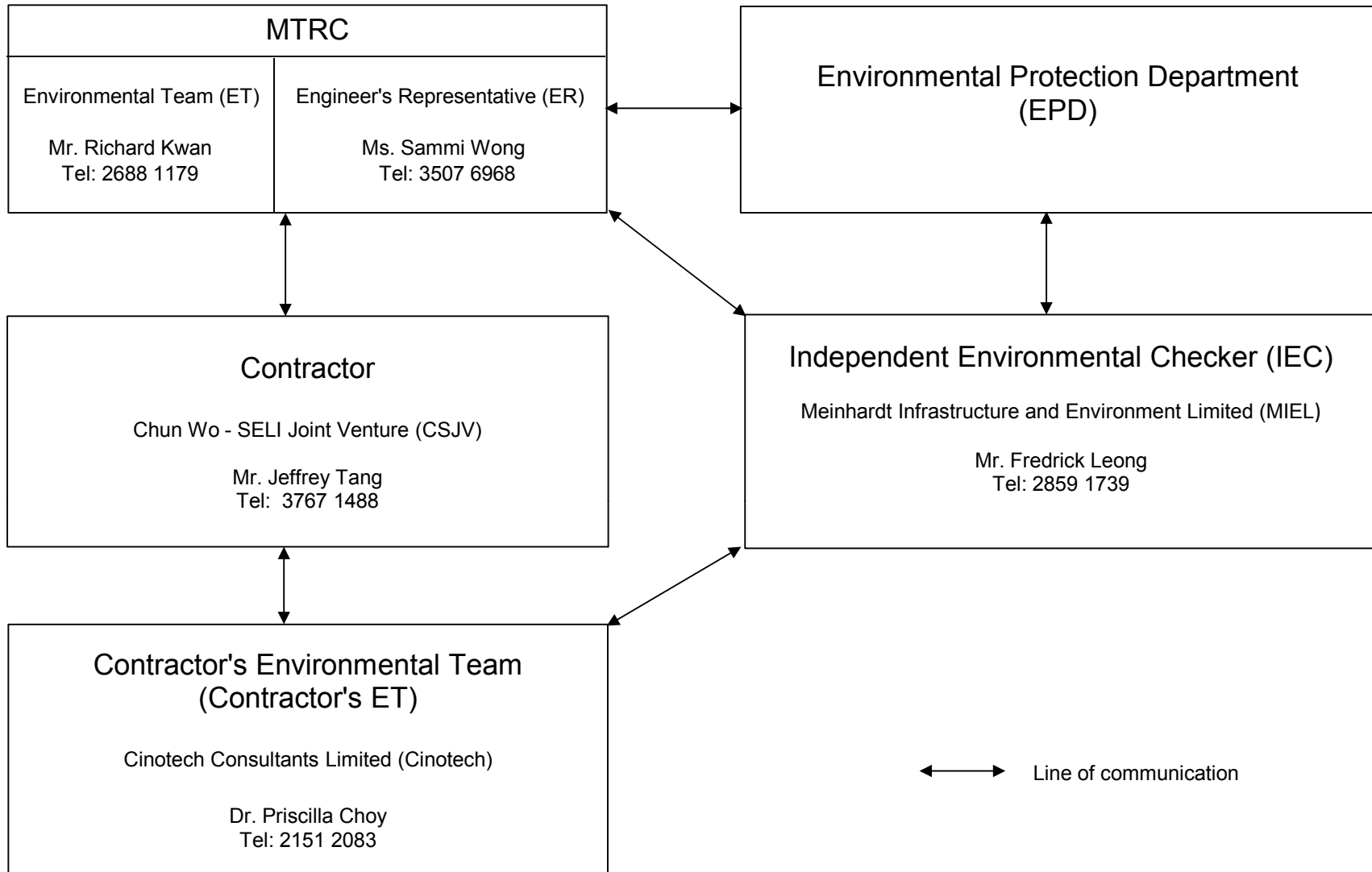
- DMS-4⁽¹⁾/DMS-3⁽²⁾ Block 1, Rhythm Garden

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	CINOTECH
		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	2015				
									May	Jun	Jul	Aug	Sep
MTRC SCL 1107 DIH to KAT Tunnels 3 M													
Schedule of Completion Obligation & Otl													
Table 3 Completion of Specified Parts of the V													
1107.CD10070	3D Complete 1st tunnel drive (UP) retrieval and vacated from DIH East relevant works area 25JAN15	0		08-Jan-15		25-Jun-15		28-May-15 A					
Table 4 Specified Degrees of Completion													
1107.CD10090	4A Deg 1 Tunnel (UP track) from KAT to DIH and Box 2A with Pway access opening 22MAR15	0		21-Mar-15		31-Jul-15		27-Aug-15*					
1107.CD10110	4C Deg 1 KAT cut and cover tunnel (UP Track) Box 2B 22MAR15	0		21-Mar-15		30-May-15		12-Jun-15*					
Schedule of Milestone Dates - Cost Centre A													
1107.MS10240	A9 Engr confirm satisfactory implementation of safety & environmental req's in accordance with Specified Plans	0		28-Jun-15		28-Jun-15		28-Jun-15					
Schedule of Milestone Dates - Cost Centre B													
1107.MS10370	B4 Assembly, testing and commissioning of the TBM complete and ready for tunnel driving (DN track) 30AUG15	0		27-Jan-15		06-Aug-15		11-Jul-15*					
Schedule of Milestone Dates - Cost Centre C													
1107.MS10440	C6a Manufacturing of pre-cast tunnel lining segment 70% by number complete and delivery to site 28DEC14	0		19-Dec-14		01-Jul-15		28-Jul-15*					
1107.MS10460	C6c Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH 50% by plan length complete 28DEC14	0		08-Nov-14		21-May-15		03-Jun-15*					
1107.MS10470	C7a Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH complete 22MAR15	0		09-Dec-14		17-Jun-15		30-Jun-15*					
1107.MS10490	C8a DN track TBM tunnel drive from Kai Tak to DIH 25% by plan length complete 31MAY15	0		14-Feb-15		21-Aug-15		27-Aug-15*					
Schedule of Milestone Dates - Cost Centre D													
1107.MS10600	D6 Box 2A rf slab & Pway access opg & bkill'g complete ready for Box 1A exc'n commencement 22FEB15 prop to 22MAR15	0		14-Mar-15		31-Jul-15		27-Aug-15*					
Schedule of Milestone Dates - Cost Centre I (f													
1107.MS10810	I6a Manufacturing of pre-cast tunnel lining segment 70% by number complete and delivery to site 28DEC14	0		19-Dec-14		01-Jul-15		28-Jul-15*					
1107.MS10830	I6c Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH 50% by plan length complete 28DEC14	0		08-Nov-14		21-May-15		03-Jun-15*					
1107.MS10840	I7a Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH complete 22MAR15	0		09-Dec-14		17-Jun-15		30-Jun-15*					
1107.MS10860	I8a DN track TBM tunnel drive from Kai Tak to DIH 25% by plan length complete 31MAY15	0		14-Feb-15		21-Aug-15		27-Aug-15*					
Programme Data													
1107.ID10960	3.0b 1106 Start closing access opening at platform roof after TBM removal at DIH (Up track) 25JAN15	0		09-Jan-15		21-May-15		21-May-15 A					
Schedule of Access Dates for Designated Cor													
1120 Trackwork & Overhead Line													
1107.AD11180	UP track tunnel from KAT shaft to DIH(E)	0		30-Mar-15		01-Aug-15		28-Aug-15*					
Cost Centre A - Preliminaries													
Project Audit													
1107.12510	2nd Audit of System Assurance & Risk Management & Design for Safety & Constructability plans	24		24-Aug-15		19-Sep-15		24-Aug-15*					
1107.12520	3rd Audit of safety & environmental plans	24		26-May-15		23-Jun-15		26-May-15 A					
Site Enabling Works													
Site Setup													

	Data Date 01-Jun-15	MTRC SCL 1107 DIH to KAT Tunnels 3 Month Rolling Programme 027 with Phase 1 DRM Data Date 01-Jun-15	Date	Revision	Checked	Approved
	Page 1 of 6		See 2nd Col	0	KCL	KCL
SCL1107 M-3MR-027						
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-  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	2015				
									May	Jun	Jul	Aug	Sep
Misc Items		123	01-Apr-15	30-Sep-15	17-Apr-15	11-Sep-15	17-Apr-15 A	11-Sep-15					
1107.19030	Provision of Site General Staff (Drivers, Amahs, etc) - 17-Apr-15 to 5-May-15	15	01-Apr-15	30-Jun-15	17-Apr-15	05-May-15	17-Apr-15 A	05-May-15 A	Provision of Site General Staff (Drivers, Amahs, etc) - 17-Apr-15 to 5-May-15				
1107.19031	Provision of Site General Staff (Drivers, Amahs, etc) - 6-May-15 to 22-May-15	15			06-May-15	22-May-15	06-May-15 A	22-May-15 A	Provision of Site General Staff (Drivers, Amahs, etc) - 6-May-15 to 22-May-15				
1107.19032	Provision of Site General Staff (Drivers, Amahs, etc) - 23-May-15 to 10-Jun-15	15			23-May-15	10-Jun-15	23-May-15 A	10-Jun-15	Provision of Site General Staff (Drivers, Amahs, etc) - 23-May-15 to 10-Jun-15				
1107.19033	Provision of Site General Staff (Drivers, Amahs, etc) - 11-Jun-15 to 30-Jun-15	16			11-Jun-15	30-Jun-15	11-Jun-15	30-Jun-15	Provision of Site General Staff (Drivers, Amahs, etc) - 11-Jun-15 to 30-Jun-15				
1107.19040	Provision of Site General Staff (Drivers, Amahs, etc) - 2-Jul to 20-Jul-15	16	02-Jul-15	30-Sep-15	02-Jul-15	20-Jul-15	02-Jul-15	20-Jul-15	Provision of Site General Staff (Drivers, Amahs, etc) - 2-Jul to 20-Jul-15				
1107.19041	Provision of Site General Staff (Drivers, Amahs, etc) - 21-Jul-15 to 6-Aug-15-15	15			21-Jul-15	06-Aug-15	21-Jul-15	06-Aug-15	Provision of Site General Staff (Drivers, Amahs, etc) - 21-Jul-15 to 6-Aug-15-15				
1107.19042	Provision of Site General Staff (Drivers, Amahs, etc) - 7-Aug-15-15 to 24-Aug-15	15			07-Aug-15	24-Aug-15	07-Aug-15	24-Aug-15	Provision of Site General Staff (Drivers, Amahs, etc) - 7-Aug-15-15 to 24-Aug-15				
1107.19043	Provision of Site General Staff (Drivers, Amahs, etc) - 26-Aug-15 to 11-Sep-15	16			25-Aug-15	11-Sep-15	25-Aug-15	11-Sep-15	Provision of Site General Staff (Drivers, Amahs, etc) - 26-Aug-15 to 11-Sep-15				
1107.19220	Provision of Site General Labour for Temporary Works - 17-Apr-15 to 5-May-15	15	01-Apr-15	30-Jun-15	17-Apr-15	05-May-15	17-Apr-15 A	05-May-15 A	Provision of Site General Labour for Temporary Works - 17-Apr-15 to 5-May-15				
1107.19221	Provision of Site General Staff (Drivers, Amahs, etc) - 6-May-15 to 22-May-15	15			06-May-15	22-May-15	06-May-15 A	22-May-15 A	Provision of Site General Staff (Drivers, Amahs, etc) - 6-May-15 to 22-May-15				
1107.19222	Provision of Site General Staff (Drivers, Amahs, etc) - 23-May-15 to 10-Jun-15	15			23-May-15	10-Jun-15	23-May-15 A	10-Jun-15	Provision of Site General Staff (Drivers, Amahs, etc) - 23-May-15 to 10-Jun-15				
1107.19223	Provision of Site General Staff (Drivers, Amahs, etc) - 11-Jun-15 to 30-Jun-15	16			11-Jun-15	30-Jun-15	11-Jun-15	30-Jun-15	Provision of Site General Staff (Drivers, Amahs, etc) - 11-Jun-15 to 30-Jun-15				
1107.19230	Provision of Site General Labour for Temporary Works - 2-Jul-15 to 20-Jul-15	16	02-Jul-15	30-Sep-15	02-Jul-15	20-Jul-15	02-Jul-15	20-Jul-15	Provision of Site General Labour for Temporary Works - 2-Jul-15 to 20-Jul-15				
1107.19231	Provision of Site General Labour for Temporary Works - 21-Jul to 6-Aug-15	15			21-Jul-15	06-Aug-15	21-Jul-15	06-Aug-15	Provision of Site General Labour for Temporary Works - 21-Jul to 6-Aug-15				
1107.19232	Provision of Site General Labour for Temporary Works - 7-Aug-15 to 25-Aug-15	16			07-Aug-15	25-Aug-15	07-Aug-15	25-Aug-15	Provision of Site General Labour for Temporary Works - 7-Aug-15 to 25-Aug-15				
1107.19233	Provision of Site General Labour for Temporary Works -26-Aug-15 to 11-Sep-15	15			26-Aug-15	11-Sep-15	26-Aug-15	11-Sep-15	Provision of Site General Labour for Temporary Works -26-Aug-15 to 11-Sep-15				
Cost Centre C - Tunnel Construction by Site Enabling Works for TBM		136	12-Feb-14	30-Aug-15	18-Apr-15	17-Sep-15	18-Apr-15 A	29-Sep-15					
OPTION 3 - Obstruction Removal		73	12-Feb-14	22-Apr-14	23-Apr-15	10-Jul-15	23-Apr-15 A	22-Jul-15	22-Jul-15, OPTION 3 - Obstruction Removal				
Removal of Abandoned Airport Admin Bldg Foundations I		73	12-Feb-14	22-Apr-14	23-Apr-15	10-Jul-15	23-Apr-15 A	22-Jul-15	22-Jul-15, Removal of Abandoned Airport Admin				
1107.13560j	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2g)	12			23-Apr-15	07-May-15	23-Apr-15 A	29-Apr-15 A	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2g)				
1107.13570	Reinstatement of Area (PROVISIONAL, To be Confirmed)) (Portion 1)	10	12-Feb-14	18-Feb-14	02-May-15	13-May-15	02-May-15 A	13-May-15 A	Reinstatement of Area (PROVISIONAL, To be Confirmed)) (Portion 1)				
1107.13580	Approx date of TBM Pass Through (DN Track)	0	22-Apr-14		10-Jul-15		22-Jul-15*		◆ Approx date of TBM Pass Through (DN Track)				
Ground Treatment		98			11-May-15	13-Aug-15	11-May-15 A	04-Sep-15					
Jet Grouting Treatment for KAT TBM Launch Shaft		0			10-Jul-15	10-Jul-15	22-Jul-15	22-Jul-15	▼ 22-Jul-15, Jet Grouting Treatment for KAT TBM				
1107.20670	Approx date of TBM Break Through (Dn Track)	0			10-Jul-15		22-Jul-15*		◆ Approx date of TBM Break Through (Dn Track)				
Pressure Grouting Treatment for DIH TBM Retrieval Shaft		98			11-May-15	13-Aug-15	11-May-15 A	04-Sep-15					
1107.13430d	1107 Allowed access to Retrieval Shaft Grout Block Area DN Track (ERF no. 1107-ERFC-SCONE-PLP-001030)	0			11-May-15		11-May-15 A		◆ 1107 Allowed access to Retrieval Shaft Grout Block Area DN Track (ERF no. 1107-ERFC-SCONE-PLP-001030)				
1107.13430e	GI Boreholes	12			11-May-15	21-May-15	01-Jun-15	13-Jun-15	GI Boreholes				
1107.13430f	Design of Grouting	12			22-May-15	05-Jun-15	15-Jun-15	29-Jun-15	Design of Grouting				
1107.13431a	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines	14			06-Jun-15	23-Jun-15	30-Jun-15	16-Jul-15	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines				
1107.13431a10	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines	14			24-Jun-15	10-Jul-15	17-Jul-15	01-Aug-15	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines				



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MTRC SCL 1107 DIH to KAT Tunnels 3
Month Rolling Programme 027 with Phase 1
DRM
Data Date 01-Jun-15

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	2015				
									May	Jun	Jul	Aug	Sep
1107.13431a20	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines	14			11-Jul-15	27-Jul-15	03-Aug-15	18-Aug-15					Pressure Grouting
1107.13431a30	Pressure Grouting DN Track (57 nos) Average 4 Points/day with 2 machines	15			28-Jul-15	13-Aug-15	19-Aug-15	04-Sep-15					P
Tunnel Boring Construction - UP Track		108	07-Oct-14	22-Mar-15	20-Apr-15	31-Jul-15	27-Apr-15 A	27-Aug-15	▶ 27-Aug-15				
1107.14065	TBM Retrieval at 1106/DIH- Tail Shield & Erector	7			27-Apr-15	05-May-15	27-Apr-15 A	05-May-15 A	TBM Retrieval at 1106/DIH- Tail Shield & Erector				
1107.14071	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Drill & Install dowels	5	09-Dec-14	08-Jan-15	02-May-15	07-May-15	02-May-15 A	07-May-15 A	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Drill & Install dowels				
1107.140710	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Formwork, Rebar & Concrete	12			29-Apr-15	13-May-15	29-Apr-15 A	27-May-15 A	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Formwork, Rebar & Concrete				
1107.140720	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Clear debris	1			20-May-15	20-May-15	20-May-15 A	28-May-15 A	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Clear debris				
1107.14074	3D Complete 1st tunnel drive (UP) retrieval and vacated from DIH East relevant works area	0		25-Jan-15		25-Jun-15		28-May-15 A	◆ 3D Complete 1st tunnel drive (UP) retrieval and vacated from DIH East relevant works area				
1107.14080	UP Track Tunnel Invert & Walkway- Ring 527 to 1106 Retrieval shaft	9	07-Oct-14	08-Nov-14	20-Apr-15	29-Apr-15	02-May-15 A	14-May-15 A	UP Track Tunnel Invert & Walkway- Ring 527 to 1106 Retrieval shaft				
1107.14081	UP Track Tunnel Invert & Walkway- Rings 421 to 526	8			30-Apr-15	09-May-15	15-May-15 A	23-May-15 A	UP Track Tunnel Invert & Walkway- Rings 421 to 526				
1107.14082	UP Track Tunnel Invert & Walkway- Rings 315 to 420 (50% complete)	8			13-May-15	21-May-15	13-May-15 A	03-Jun-15	UP Track Tunnel Invert & Walkway- Rings 315 to 420 (50% complete)				
1107.14090	C6c Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH 50% by plan length complete	0		28-Dec-14		21-May-15		03-Jun-15*	◆ C6c Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH 50% by plan length complete				
1107.14100	UP Track Tunnel Invert & Walkway- Rings 211 to 314	8	10-Nov-14	09-Dec-14	22-May-15	01-Jun-15	04-Jun-15	12-Jun-15	UP Track Tunnel Invert & Walkway- Rings 211 to 314				
1107.14101	UP Track Tunnel Invert & Walkway- Rings 106 to 210	7			02-Jun-15	09-Jun-15	13-Jun-15	22-Jun-15	UP Track Tunnel Invert & Walkway- Rings 106 to 210				
1107.14102	UP Track Tunnel Invert & Walkway- 1107 Launch shaft to Ring 105 (100% Complete)	7			10-Jun-15	17-Jun-15	23-Jun-15	30-Jun-15	UP Track Tunnel Invert & Walkway- 1107 Launch shaft to Ring 105 (100% Complete)				
1107.14110	C7a Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH complete	0		22-Mar-15		17-Jun-15		30-Jun-15*	◆ C7a Tunnel invert and walkway of UP Track tunnel from Kai Tak to DIH complete				
1107.14120	4A Deg 1 Tunnel (UP track) from KAT to DIH and Box 2A with Pway access opening	0		22-Mar-15		31-Jul-15		27-Aug-15*	◆ 4A Deg 1 Tunnel (UP track) from KAT to DIH and Box 2A with Pway access opening				
Tunnel Boring Construction - DN Track		101	07-Oct-14	30-Aug-15	06-May-15	17-Sep-15	27-May-15 A	29-Sep-15	▶ 29-Sep-15				
1107.14140	Re-assembly of TBM in Shaft- Front shield, cutterhead, & screw conveyor Pt 1	12	07-Oct-14	10-Nov-14	06-May-15	19-May-15	27-May-15 A	05-Jun-15	Re-assembly of TBM in Shaft- Front shield, cutterhead, & screw conveyor Pt 1				
1107.14141	Re-assembly of TBM in Shaft- Intermediate shield, Erector & screw conveyor Pt 2	8			20-May-15	03-Jun-15	06-Jun-15	15-Jun-15	Re-assembly of TBM in Shaft- Intermediate shield, Erector & screw conveyor Pt 2				
1107.14142	Re-assembly of TBM in Shaft- Tail Shield, Gantries & Services Connections	14			04-Jun-15	16-Jun-15	16-Jun-15	03-Jul-15	Re-assembly of TBM in Shaft- Tail Shield, Gantries & Services Connections				
1107.14143	Re-assembly of TBM Shield in Shaft- Thrust frame, PLC setup & Tests	7			17-Jun-15	29-Jun-15	04-Jul-15	11-Jul-15	Re-assembly of TBM Shield in Shaft- Thrust frame, PLC setup & Tests				
1107.14150	B4 Assembly, testing and commissioning of the TBM complete and ready for tunnel driving (DN track)	0		30-Aug-15		30-Aug-15		30-Aug-15*	◆ B4 Assembly, testing and commissioning of the TBM complete and ready for tunnel driving (DN track)				
1107.14160	TBM Initial 90m Driving - Install Ring -9 to Ring +6	8	11-Nov-14	20-Jan-15	30-Jun-15	09-Jul-15	13-Jul-15	21-Jul-15	TBM Initial 90m Driving - Install Ring -9 to Ring +6				
1107.14161	TBM Initial 90m Driving - Install Rings 7 to 21	7			10-Jul-15	17-Jul-15	22-Jul-15	29-Jul-15	TBM Initial 90m Driving - Install Rings 7 to 21				
1107.14162	TBM Initial 90m Driving - Install Rings 22 to 41	6			18-Jul-15	24-Jul-15	30-Jul-15	05-Aug-15	TBM Initial 90m Driving - Install Rings 22 to 41				
1107.14163	TBM Initial 90m Driving - Install Rings 42 to 65 -TBM Fully Embedded	5			25-Jul-15	30-Jul-15	06-Aug-15	11-Aug-15	TBM Initial 90m Driving - Install Rings 42 to 65 -TBM Fully Embedded				
1107.14170	Shaft Final Set-up, Ready for Tunnel Drive	1	21-Jan-15	27-Jan-15	31-Jul-15	06-Aug-15	12-Aug-15	12-Aug-15	Shaft Final Set-up, Ready for Tunnel Drive				
1107.14180	TBM Boring Next 114m (25% complete)	13	28-Jan-15	14-Feb-15	07-Aug-15	21-Aug-15	13-Aug-15	27-Aug-15	TBM Boring Next 114m (25% complete)				
1107.14190	C8a DN track TBM tunnel drive from Kai Tak to DIH 25% by plan length complete	0		31-May-15		21-Aug-15		27-Aug-15*	◆ C8a DN track TBM tunnel drive from Kai Tak to DIH 25% by plan length complete				

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2015											
									May	Jun	Jul	Aug	Sep							
1107.14200	TBM Boring Next 21m	2	16-Feb-15	17-Feb-15	22-Aug-15	24-Aug-15	28-Aug-15	29-Aug-15												
1107.14210	Special Cutterhead Maintenance Intervention (approx Ch 97864)	2	18-Feb-15	23-Feb-15	25-Aug-15	26-Aug-15	31-Aug-15	01-Sep-15												
1107.14220	TBM Boring Next 225m	23	24-Feb-15	23-Mar-15	27-Aug-15	17-Sep-15	02-Sep-15	29-Sep-15												
Cross Passages		63	11-Oct-14	22-Mar-15	13-May-15	31-Jul-15	13-Jun-15	27-Aug-15												
Phase 1 - From UP Track		63	11-Oct-14	22-Mar-15	13-May-15	31-Jul-15	13-Jun-15	27-Aug-15												
DIH 001		6	11-Oct-14	14-Oct-14	13-May-15	19-May-15	13-Jun-15	19-Jun-15												
1107.14360	Frame Installation	6	11-Oct-14	14-Oct-14	13-May-15	19-May-15	13-Jun-15	19-Jun-15												
DIH 002		6	11-Oct-14	14-Oct-14	02-Jun-15	08-Jun-15	22-Jun-15	27-Jun-15												
1107.14410	Frame Installation	6	11-Oct-14	14-Oct-14	02-Jun-15	08-Jun-15	22-Jun-15	27-Jun-15												
DIH 003		49	03-Nov-14	22-Mar-15	18-Jun-15	31-Jul-15	02-Jul-15	27-Aug-15												
1107.14460	Frame Installation	6	03-Nov-14	05-Nov-14	18-Jun-15	25-Jun-15	02-Jul-15	08-Jul-15												
1107.14500	UP Track Tunnel Clean up	12	25-Nov-14	08-Dec-14	26-Jun-15	10-Jul-15	09-Jul-15	22-Jul-15												
1107.14510	4A Deg 1 Tunnel (UP track) from KAT to DIH and Box 2A with Pway access opening	0		22-Mar-15		31-Jul-15		27-Aug-15*												
Production of Pre - Cast Tunnel Lining		113	28-Dec-14	21-Apr-15	18-Apr-15	05-Aug-15	18-Apr-15 A	01-Sep-15												
Production of Segments		113	28-Dec-14	21-Apr-15	18-Apr-15	05-Aug-15	18-Apr-15 A	01-Sep-15												
1107.14740c	48 Rings of Segment Production (Culmalative 1074) (RC)	12			18-Apr-15	02-May-15	18-Apr-15 A	02-May-15 A												
1107.14740d	48 Rings of Segment Production (Culmalative 1122) (RC)	12			06-May-15	19-May-15	06-May-15 A	19-May-15 A												
1107.14750	48 Rings of Segment Production (Culmalative 1170) (RC)	12	12-Mar-15	21-Apr-15	20-May-15	03-Jun-15	20-May-15 A	03-Jun-15												
1107.14750a	48 Rings of Segment Production (Culmalative 1218) (RC)	12			04-Jun-15	17-Jun-15	04-Jun-15	17-Jun-15												
1107.14750b	48 Rings of Segment Production (Culmalative 1266) (RC) (90%)	12			18-Jun-15	03-Jul-15	18-Jun-15	03-Jul-15												
1107.14750c	27 Rings of Segment Production (Culmalative 1293) (RC) (100%)	7			04-Jul-15	11-Jul-15	04-Jul-15	11-Jul-15												
1107.14800	C6a Manufacturing of pre-cast tunnel lining segment 70% by number complete and delivery to site	0		28-Dec-14		01-Jul-15		28-Jul-15*												
1107.20920	Delivery of Rings 691 - 720 (24th)	2			14-May-15	15-May-15	06-May-15 A	07-May-15 A												
1107.20930	Delivery of Rings 721 - 750 (25th)	2			20-May-15	21-May-15	16-Jun-15	17-Jun-15												
1107.20940	Delivery of Rings 751 - 780 (26th)	2			26-May-15	27-May-15	22-Jun-15	23-Jun-15												
1107.20950	Delivery of Rings 781 - 810 (27th)	2			02-Jun-15	03-Jun-15	29-Jun-15	30-Jun-15												
1107.20960	Delivery of Rings 811 - 840 (28th)	2			09-Jun-15	10-Jun-15	06-Jul-15	07-Jul-15												
1107.20970	Delivery of Rings 841 - 870 (29th)	2			16-Jun-15	17-Jun-15	13-Jul-15	14-Jul-15												
1107.20980	Delivery of Rings 871 - 900 (30th)	2			23-Jun-15	24-Jun-15	20-Jul-15	21-Jul-15												
1107.20990	Delivery of Rings 901 - 930 (31st) (70%)	2			30-Jun-15	01-Jul-15	27-Jul-15	28-Jul-15												
1107.21000	Delivery of Rings 931 - 960 (32nd)	2			07-Jul-15	08-Jul-15	03-Aug-15	04-Aug-15												
1107.21010	Delivery of Rings 961 - 990 (33rd)	2			13-Jul-15	14-Jul-15	07-Aug-15	10-Aug-15												



Data Date 01-Jun-15
Page 4 of 6
SCL1107 M-3MR-027
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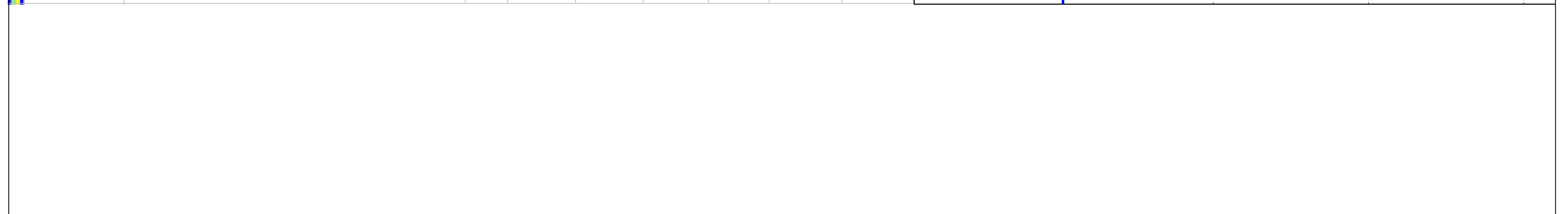
**MTRC SCL 1107 DIH to KAT Tunnels 3
Month Rolling Programme 027 with Phase 1
DRM**
Data Date 01-Jun-15

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	2015					
									May	Jun	Jul	Aug	Sep	
1107.21020	Delivery of Rings 991 - 1020 (34th)	2			17-Jul-15	20-Jul-15	13-Aug-15	14-Aug-15					■ Delivery of Rings 991 -	
1107.21030	Delivery of Rings 1021 - 1050 (35th)	2			23-Jul-15	24-Jul-15	19-Aug-15	20-Aug-15					■ Delivery of Rings	
1107.21040	Delivery of Rings 1051 - 1080 (36th)	2			29-Jul-15	30-Jul-15	25-Aug-15	26-Aug-15					■ Delivery of	
1107.21050	Delivery of Rings 1081 - 1110 (37th)	2			04-Aug-15	05-Aug-15	31-Aug-15	01-Sep-15					■ Deliv	
Cost Centre D - KAT Cut & Cover Tunne		106	19-Dec-14	22-Mar-15	09-Apr-15	05-Sep-15	02-May-15 A	16-Sep-15						
Excavation & C&C Tunnel Structure		106	19-Dec-14	22-Mar-15	09-Apr-15	05-Sep-15	02-May-15 A	16-Sep-15						
Launch Shaft (UP Track) - Post TBM Works		74	19-Dec-14	22-Mar-15	09-Apr-15	31-Jul-15	02-May-15 A	27-Aug-15						
1107.16170	U10 Demolish Cradle & Construction Base Slab	18	19-Dec-14	09-Jan-15	09-Apr-15	29-Apr-15	02-May-15 A	12-Jun-15	U10 Demolish Cradle & Construction Base Slab					
1107.16180	U10 Walls & Roof	14	10-Jan-15	23-Jan-15	30-Apr-15	16-May-15	13-Jun-15	30-Jun-15	U10 Walls & Roof					
1107.16190	U11 Demolish Cradle & Construction Base Slab	22	24-Jan-15	13-Feb-15	30-Apr-15	27-May-15	25-May-15 A	19-Jun-15	U11 Demolish Cradle & Construction Base Slab					
1107.16200	U11 Walls & Roof	14	14-Feb-15	24-Feb-15	22-May-15	08-Jun-15	22-Jun-15	08-Jul-15	U11 Walls & Roof					
1107.16210	U12 Demolish Cradle & Construction Base Slab	18	25-Feb-15	03-Mar-15	22-May-15	12-Jun-15	02-Jul-15	22-Jul-15	U12 Demolish Cradle & Construction Base Slab					
1107.16220	U12 Walls & Roof	10	04-Mar-15	14-Mar-15	13-Jun-15	25-Jun-15	23-Jul-15	03-Aug-15	U12 Walls & Roof					
1107.16222	U13 Demolish Cradle & Construction Base Slab	11			18-Jun-15	04-Jul-15	23-Jul-15	04-Aug-15	U13 Demolish Cradle & Construct					
1107.16224	U13 Walls & Roof	12			06-Jul-15	21-Jul-15	05-Aug-15	18-Aug-15	U13 Walls & Roof					
1107.16226	Walkways & Track Slab	8			22-Jul-15	31-Jul-15	19-Aug-15	27-Aug-15	Walkway					
1107.16240	4A Deg 1 Tunnel (UP track) from KAT to DIH	0		22-Mar-15		31-Jul-15		27-Aug-15*	◆ 4A Deg 1					
C&C Tunnel Structure (Previously Boxes 2B & 1B)		106	24-Dec-14	22-Mar-15	02-May-15	05-Sep-15	13-May-15 A	16-Sep-15						
Tunnel Structure		106	24-Dec-14	22-Mar-15	02-May-15	05-Sep-15	13-May-15 A	16-Sep-15						
1107.16230	4C Deg 1 KAT cut and cover tunnel (UP Track) Box 2B (With P-Way Opening)	0		22-Mar-15		07-Jul-15		08-Jul-15*	◆ 4C Deg 1 KAT cut and cover tunnel (UP Track) Box 2B (With					
1107.17190	Roof Slab Section 7	9	02-Feb-15	11-Feb-15	13-May-15	22-May-15	13-May-15 A	22-May-15 A	Roof Slab Section 7					
1107.17210	Waterproofing, Backfill & Remove Strut S2 Section 2	12	24-Dec-14	03-Jan-15	02-May-15	15-May-15	05-Jun-15	18-Jun-15	Waterproofing, Backfill & Remove Strut S2 Section 2					
1107.17220	Waterproofing, Backfill & Remove Strut S2 Section 3	12	06-Jan-15	13-Jan-15	02-May-15	15-May-15	10-Jun-15	24-Jun-15	Waterproofing, Backfill & Remove Strut S2 Section 3					
1107.17230	Waterproofing, Backfill & Remove Strut S2 Section 4	12	15-Jan-15	22-Jan-15	24-Aug-15	05-Sep-15	29-Aug-15	11-Sep-15						
1107.17240	Waterproofing, Backfill & Remove Strut S2 Section 5	12	24-Jan-15	31-Jan-15	24-Aug-15	05-Sep-15	03-Sep-15	16-Sep-15						
1107.17340	Strip Formwork & Undertrack/Walkway Slab - UP Track	14	03-Feb-15	18-Feb-15	14-May-15	30-May-15	14-May-15 A	30-May-15 A	Strip Formwork & Undertrack/Walkway Slab - UP Track					
1107.17350	Strip Formwork & Undertrack/Walkway Slab - DN Track	14	23-Feb-15	10-Mar-15	01-Jun-15	16-Jun-15	01-Jun-15	16-Jun-15	Strip Formwork & Undertrack/Walkway Slab - DN Track					
1107.17360	Degree 1 Works - UP Track	11	23-Feb-15	03-Mar-15	01-Jun-15	09-Jun-15	01-Jun-15	12-Jun-15	Degree 1 Works - UP Track					
1107.17370	Degree 1 Works - DN Track	10	11-Mar-15	21-Mar-15	17-Jun-15	29-Jun-15	17-Jun-15	29-Jun-15	Degree 1 Works - DN Track					
1107.17380	P-Way Opening Retaining Walls to S1 Level	9	05-Jan-15	17-Jan-15	16-May-15	30-May-15	01-Jun-15	10-Jun-15	P-Way Opening Retaining Walls to S1 Level					
1107.17390	Waterproofing & Backfill to S1 Level & Remove Strut S1 Section 1 - 3	5	23-Jan-15	05-Feb-15	01-Jun-15	13-Jun-15	25-Jun-15	30-Jun-15	Waterproofing & Backfill to S1 Level & Remove Strut S1 Section 1 - 3					

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish	2015					
									May	Jun	Jul	Aug	Sep	
1107.17400	P-Way Opening Retaining Walls to OGL	8	06-Feb-15	23-Feb-15	15-Jun-15	29-Jun-15	11-Jun-15	19-Jun-15						
1107.17408	Backfill to Original Ground Level Section 1 - 3	6	24-Feb-15	04-Mar-15	30-Jun-15	07-Jul-15	02-Jul-15	08-Jul-15						
1107.17420	4C Deg 1 KAT cut and cover tunnel (UP Track) Box 2B	0		22-Mar-15			30-May-15	12-Jun-15*						
1107.21150	Construct Walls & Roof of Bay D5 after TBM DN track Initial Drive	14			07-Aug-15	22-Aug-15	13-Aug-15	28-Aug-15						
Cost Centre G CEDD Entrusted Works		104	26-May-14	04-Nov-15	06-May-15	09-Dec-15	28-Apr-15 A	07-Sep-15						
New Reprovisioned Culvert		104	26-May-14	04-Nov-15	06-May-15	09-Dec-15	28-Apr-15 A	07-Sep-15						
Mid Section of Culvert (Over C&C Tunnel)		22	19-Mar-15	26-Jun-15	07-Aug-15	01-Sep-15	13-Aug-15	07-Sep-15						
1107.18129	Excavation for Mid Section of New Culvert	8	19-Mar-15	27-Mar-15	07-Aug-15	15-Aug-15	13-Aug-15	21-Aug-15						
1107.18160	Bay 6 Sub base, Blinding & Base Slab	4	14-May-15	26-May-15	17-Aug-15	20-Aug-15	22-Aug-15	26-Aug-15						
1107.18170	Bay 6 Walls	4	27-May-15	09-Jun-15	21-Aug-15	25-Aug-15	27-Aug-15	31-Aug-15						
1107.18180	Bay 6 Roof Slab	6	10-Jun-15	26-Jun-15	26-Aug-15	01-Sep-15	01-Sep-15	07-Sep-15						
North Section of Culvert		56	26-May-14	19-Aug-14	06-May-15	09-Dec-15	28-Apr-15 A	13-Jul-15						
1107.18295	Bay 4 Excavation & Demolition of Ex Nullah Bay	14			22-May-15	08-Jun-15	22-May-15 A	30-May-15 A						
1107.18300	Bay 4 Sub base, Blinding & Base Slab	5	26-May-14	06-Jun-14	09-Jun-15	12-Jun-15	12-Jun-15	17-Jun-15						
1107.18310	Bay 4 Walls	8	07-Jun-14	20-Jun-14	13-Jun-15	17-Jun-15	18-Jun-15	27-Jun-15						
1107.18320	Bay 4 Roof Slab	12	21-Jun-14	08-Jul-14	18-Jun-15	25-Jun-15	29-Jun-15	13-Jul-15						
1107.18335	Bay 3 Excavation & Demolition of Ex Nullah Bay	8			01-Dec-15	09-Dec-15	28-Apr-15 A	05-May-15 A						
1107.18340	Bay 3 Sub base, Blinding & Base Slab	4	09-Jul-14	19-Jul-14	06-May-15	09-May-15	06-May-15 A	01-Jun-15						
1107.18350	Bay 3 Walls	9	21-Jul-14	02-Aug-14	11-May-15	14-May-15	02-Jun-15	11-Jun-15						
1107.18360	Bay 3 Roof Slab	10	04-Aug-14	19-Aug-14	15-May-15	21-May-15	12-Jun-15	24-Jun-15						
South Section of Culvert		22	23-Aug-14	04-Nov-15	07-Aug-15	01-Sep-15	13-Aug-15	07-Sep-15						
1107.18250	Bay 9 Sub base, Blinding & Base Slab	4	21-Sep-15	03-Oct-15	17-Aug-15	20-Aug-15	22-Aug-15	26-Aug-15						
1107.18260	Bay 9 Walls	4	05-Oct-15	17-Oct-15	21-Aug-15	25-Aug-15	27-Aug-15	31-Aug-15						
1107.18270	Bay 9 Roof Slab	6	19-Oct-15	04-Nov-15	26-Aug-15	01-Sep-15	01-Sep-15	07-Sep-15						
1107.18440	Excavation for South Section of New Culvert	8	23-Aug-14	01-Sep-14	07-Aug-15	15-Aug-15	13-Aug-15	21-Aug-15						



**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. MA12051/57/0013

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 15-Apr-15 Next Due Date: 14-Jun-15
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	294.5	Pressure, Pa (mmHg)	765.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.8	3.47	58.87	8.0	2.85
2	9.4	3.09	52.59	6.3	2.53
3	7.3	2.73	46.38	5.0	2.26
4	5.2	2.30	39.21	3.3	1.83
5	3.4	1.86	31.77	2.1	1.46

By Linear Regression of Y on X

Slope, mw = 0.0516 Intercept, bw : -0.1737

Correlation coefficient* = 0.9993

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.11

Remarks: _____

Conducted by: Wk Tang Signature: [Signature] Date: 15/4/15
 Checked by: [Signature] Signature: [Signature] Date: 15 April 2015

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0014

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 11-Jun-15 Next Due Date: 10-Aug-15
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	302.7	Pressure, Pa (mmHg)	759.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	3-Feb-16				

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.9	3.42	58.10	8.0	2.80
2	9.6	3.07	52.22	6.4	2.51
3	7.5	2.72	46.20	5.1	2.24
4	5.2	2.26	38.53	3.3	1.80
5	3.4	1.83	31.23	2.1	1.44

By Linear Regression of Y on X

Slope, mw = 0.0511 Intercept, bw = -0.1561

Correlation coefficient* = 0.9994

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.24

Remarks: _____

Conducted by: Wk Tang Signature: Kwan Date: 11/6/15
 Checked by: [Signature] Signature: [Signature] Date: 11 June 2015



Equipment No A-04-06

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 - Feb 04, 2015 Rootsmeter S/N 0438320 Ta (K) - 293
 Operator Tisch Orifice I.D. - 2896 Pa (mm) - 756.92

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	1.4590	3.2	2.00
2	NA	NA	1.00	1.0330	6.4	4.00
3	NA	NA	1.00	0.9250	7.9	5.00
4	NA	NA	1.00	0.8800	8.8	5.50
5	NA	NA	1.00	0.7260	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0086	0.6913	1.4233	0.9958	0.6825	0.8799
1.0044	0.9723	2.0129	0.9916	0.9599	1.2443
1.0023	1.0835	2.2505	0.9895	1.0697	1.3912
1.0011	1.1377	2.3603	0.9884	1.1231	1.4591
0.9959	1.3718	2.8467	0.9832	1.3542	1.7598

Qstd slope (m) = 2.09317
 intercept (b) = -0.02195
 coefficient (r) = 0.99997

Qa slope (m) = 1.31071
 intercept (b) = -0.01357
 coefficient (r) = 0.99997

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}

TEST REPORT

APPLICANT: Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/150103
Date of Issue:	2015-01-05
Date Received:	2015-01-03
Date Tested:	2015-01-03
Date Completed:	2015-01-05
Next Due Date:	2016-01-04

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	: 20 degree Celsius
Relative Humidity	: 54%

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/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

APPENDIX D
IMPACT MONITORING SCHEDULE

**Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tak Tunnels
Impact Air Quality and Noise Monitoring Schedule for June 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Jun	2-Jun	3-Jun	4-Jun	5-Jun	6-Jun
				24 hr TSP	Noise	
7-Jun	8-Jun	9-Jun	10-Jun	11-Jun	12-Jun	13-Jun
			24 hr TSP	Noise		
14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun
		24 hr TSP	Noise			
21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun
	24 hr TSP	Noise			24 hr TSP	
28-Jun	29-Jun	30-Jun				

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)

**Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tak Tunnels
Tentative Impact Air Quality and Noise Monitoring Schedule for July 2015**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jul	2-Jul	3-Jul	4-Jul
				24 hr TSP	Noise	
5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul
			24 hr TSP	Noise		
12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul
		24 hr TSP		Noise		
19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul
	24 hr TSP	Noise				24 hr TSP
26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	
	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

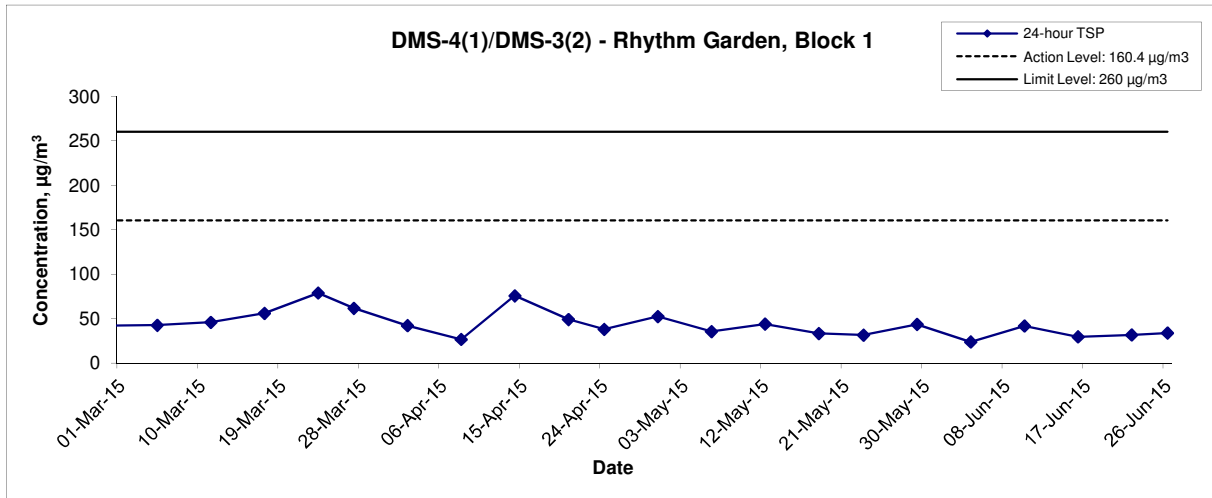
Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

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			
4-Jun-15	9:00	Sunny	303.1	759.9	3.2751	3.3160	0.0409	4286.2	4310.2	24.0	1.20	1.20	1.20	1722.7	23.7
10-Jun-15	9:00	Cloudy	304.1	758.3	3.2449	3.3165	0.0716	4310.2	4334.2	24.0	1.19	1.19	1.19	1718.4	41.7
16-Jun-15	9:00	Cloudy	302.7	759.5	3.2530	3.3045	0.0515	4316.7	4340.7	24.0	1.21	1.21	1.21	1745.6	29.5
22-Jun-15	9:00	Cloudy	300.7	755.3	3.2686	3.3237	0.0551	4340.7	4364.7	24.0	1.21	1.21	1.21	1747.1	31.5
26-Jun-15	9:00	Cloudy	302.1	756.9	3.2357	3.2946	0.0589	4364.7	4388.7	24.0	1.21	1.21	1.21	1744.4	33.8
														Min	23.7
														Max	41.7
														Average	32.0

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



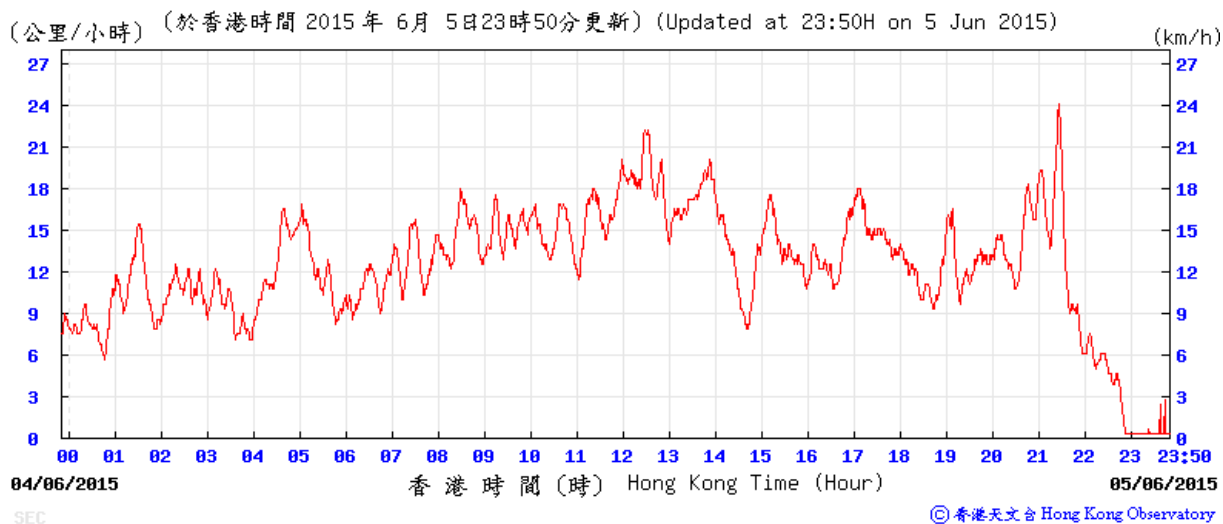
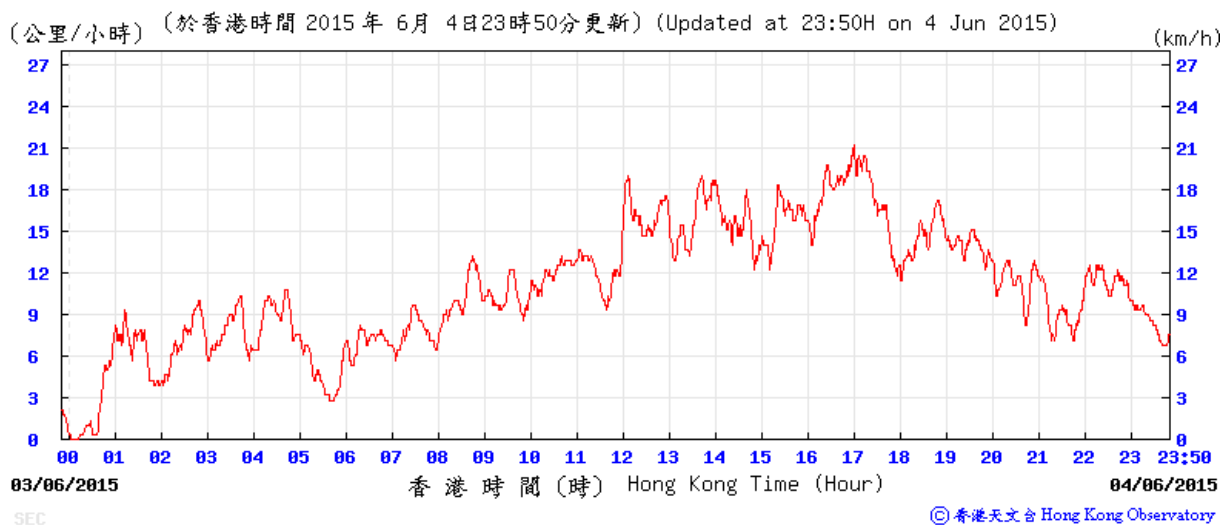
Remarks:

- (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 Tak Tunnels Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA13018	CINOTECH
	Date Jun 15	Appendix E	

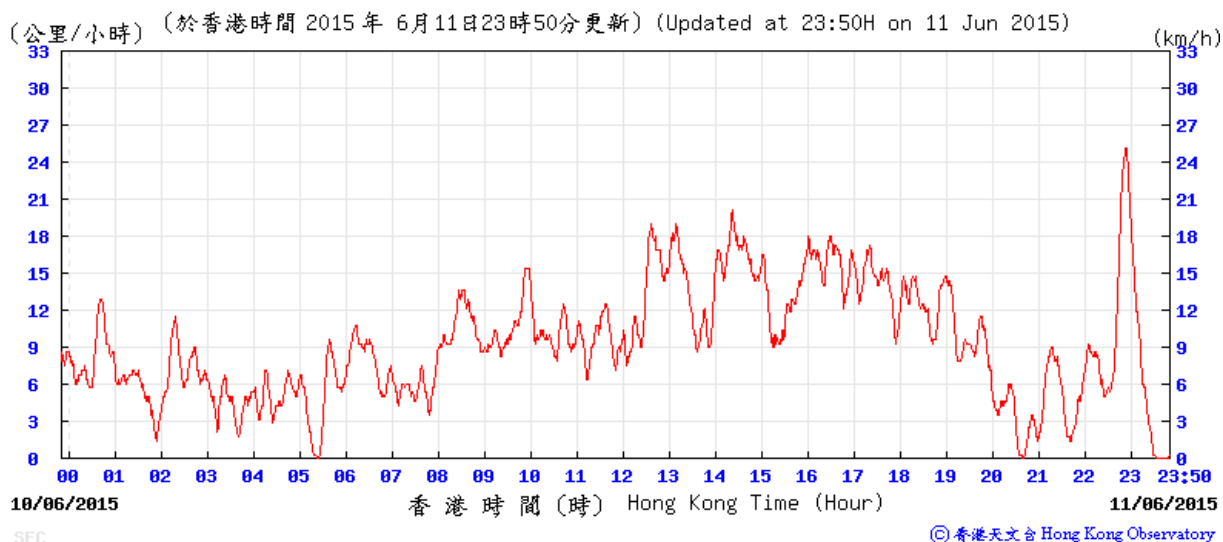
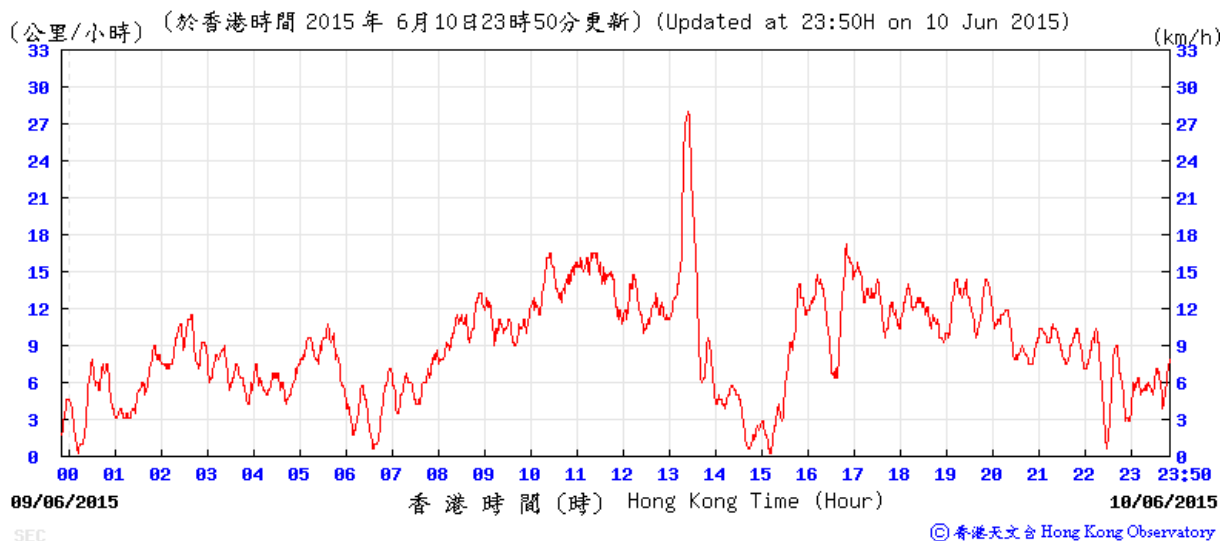
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

4-5 June 2015



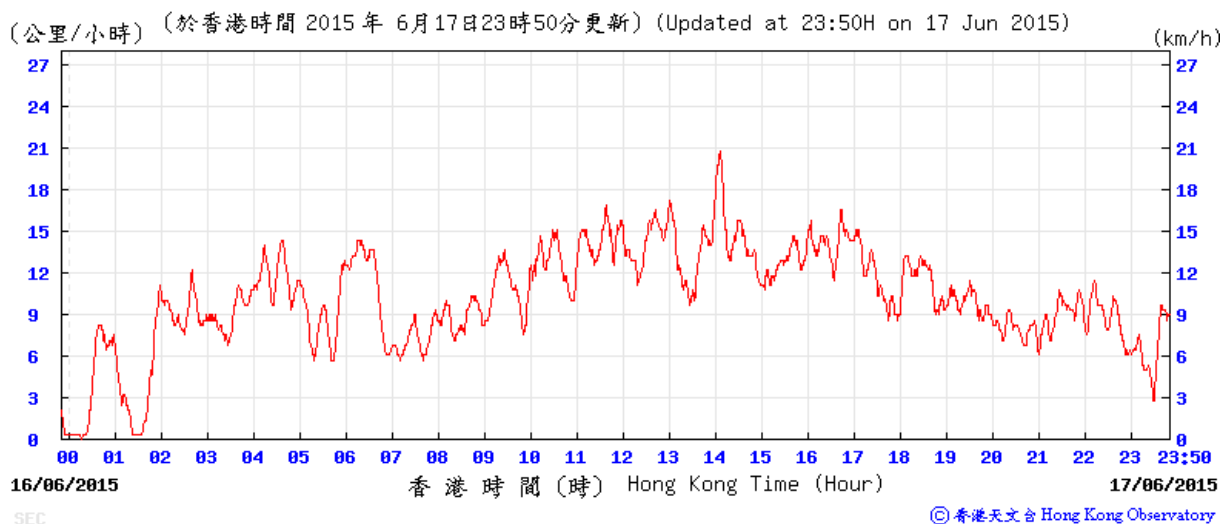
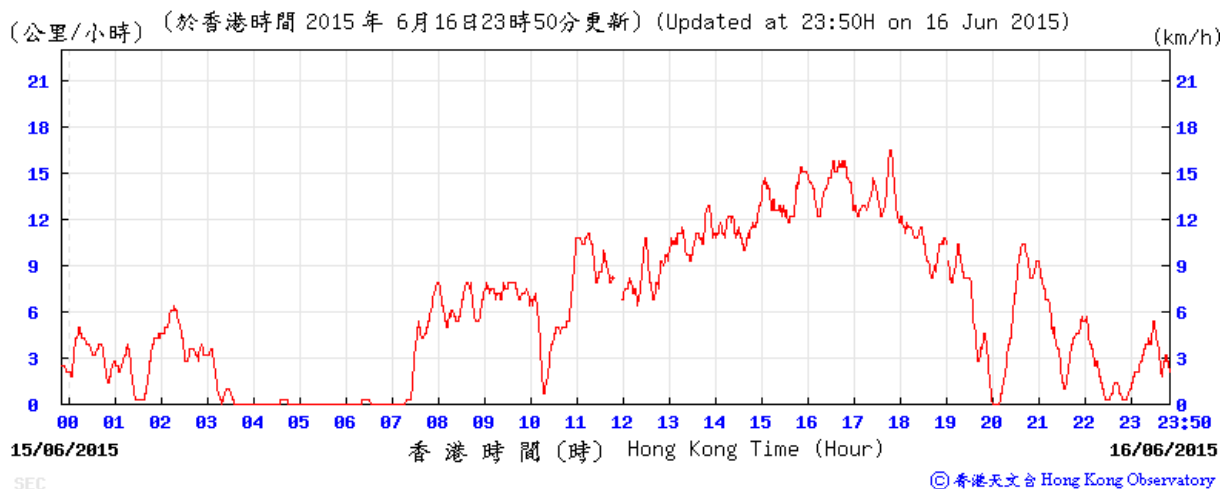
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

10-11 June 2015



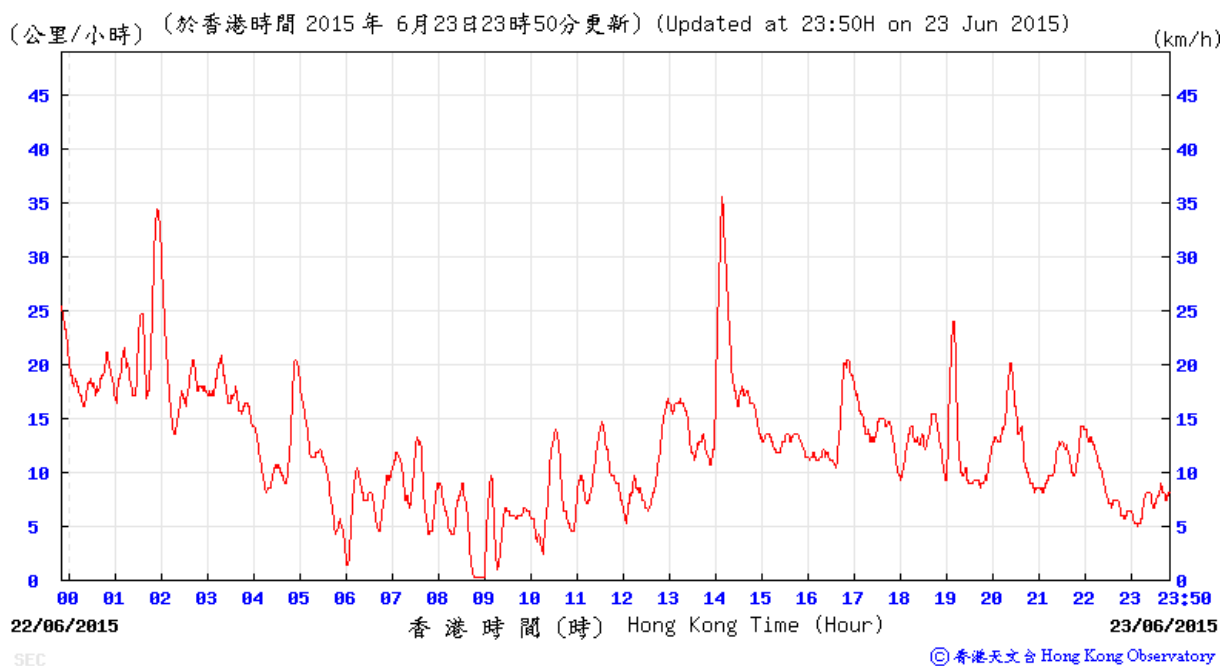
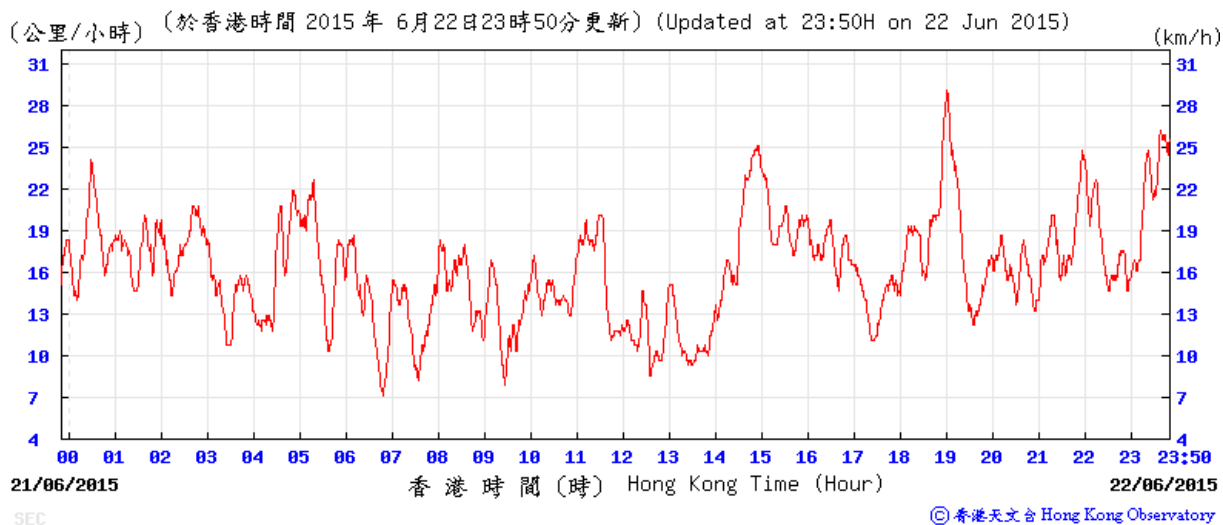
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

16-17 June 2015



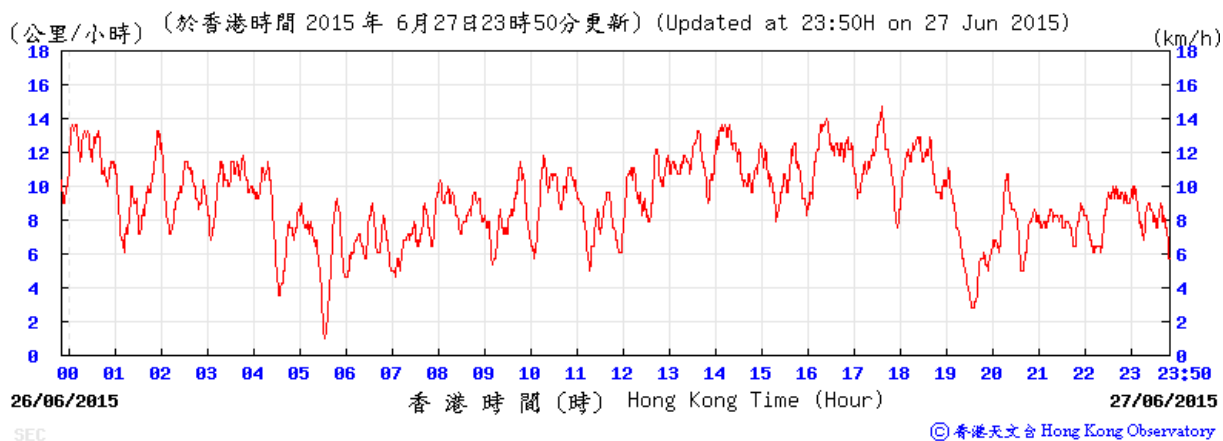
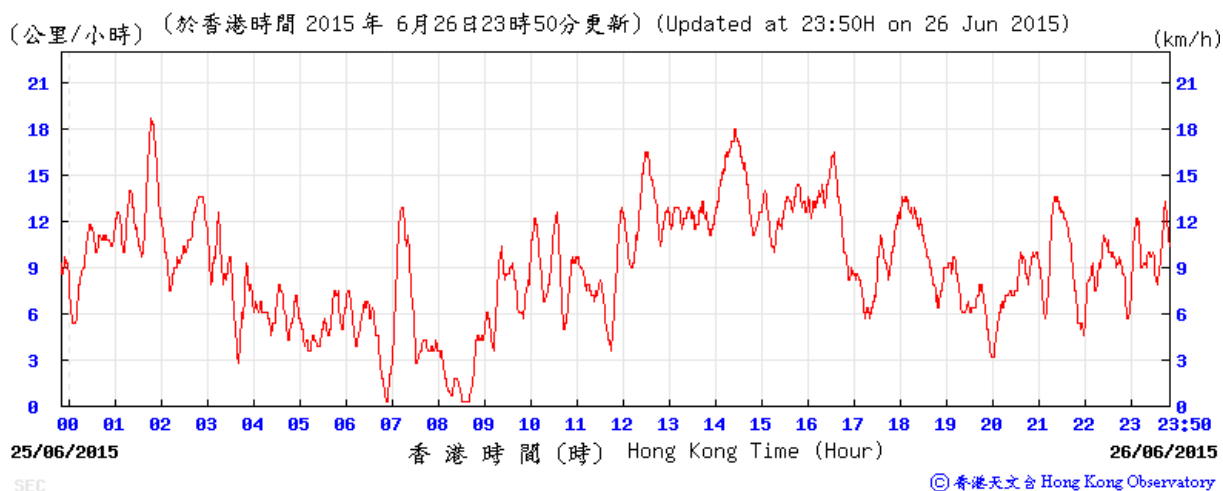
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

22-23 June 2015



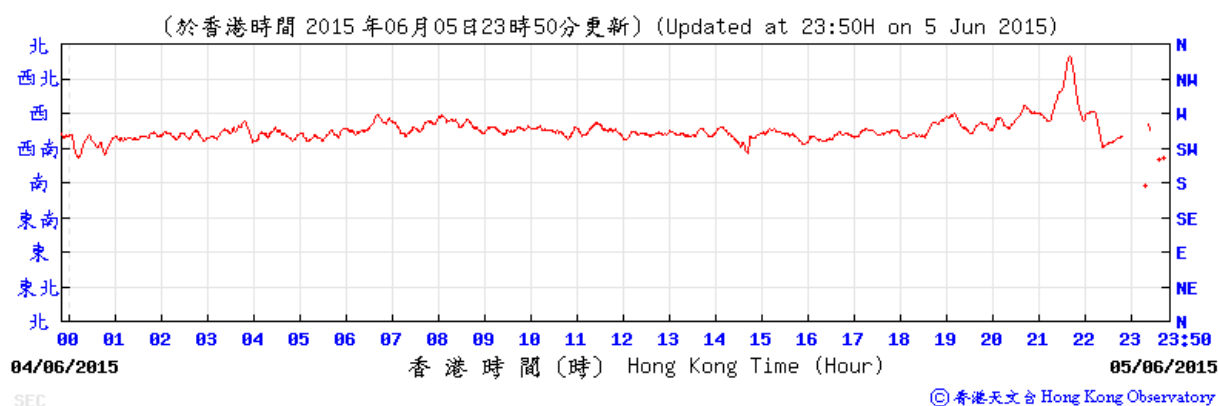
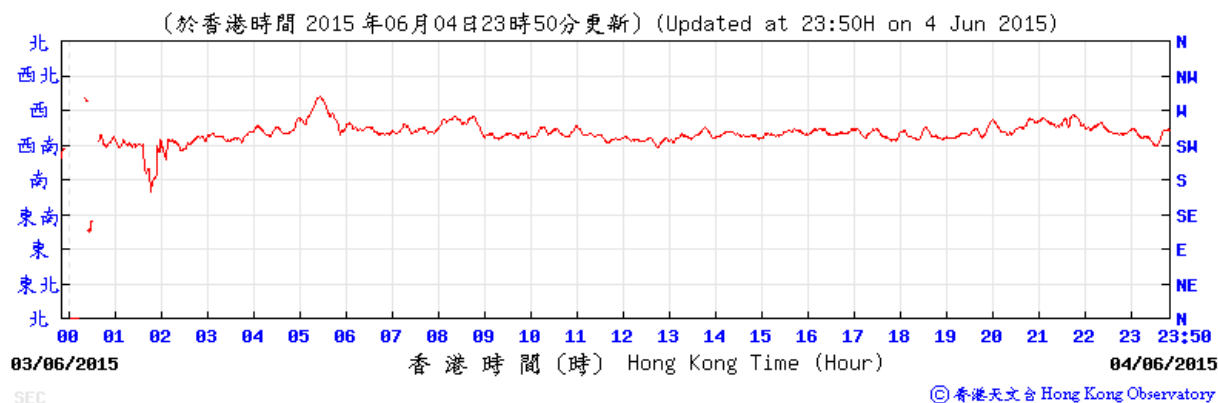
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

26-27 June 2015



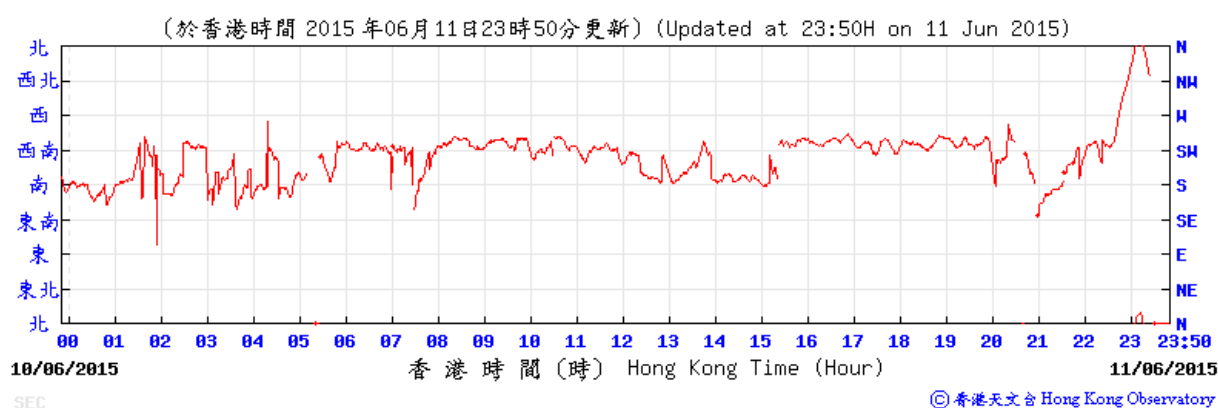
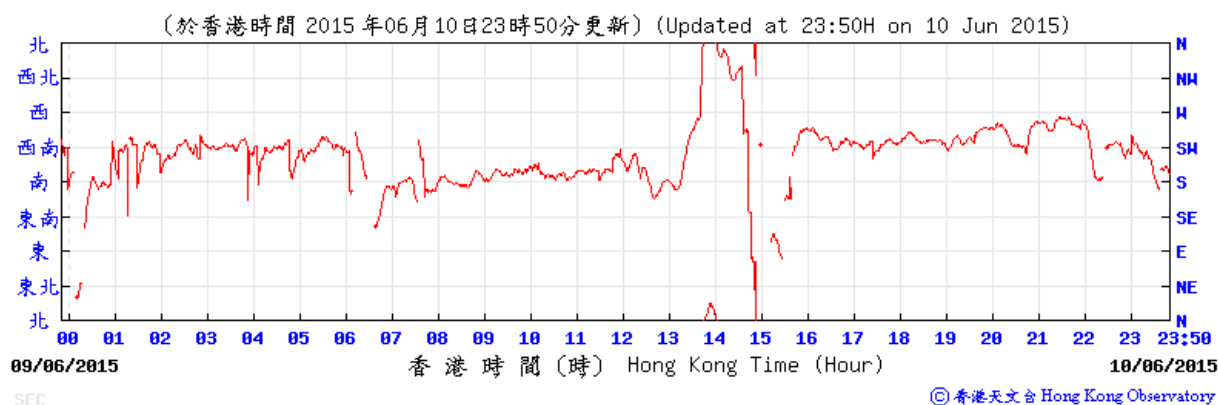
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

4-5 June 2015



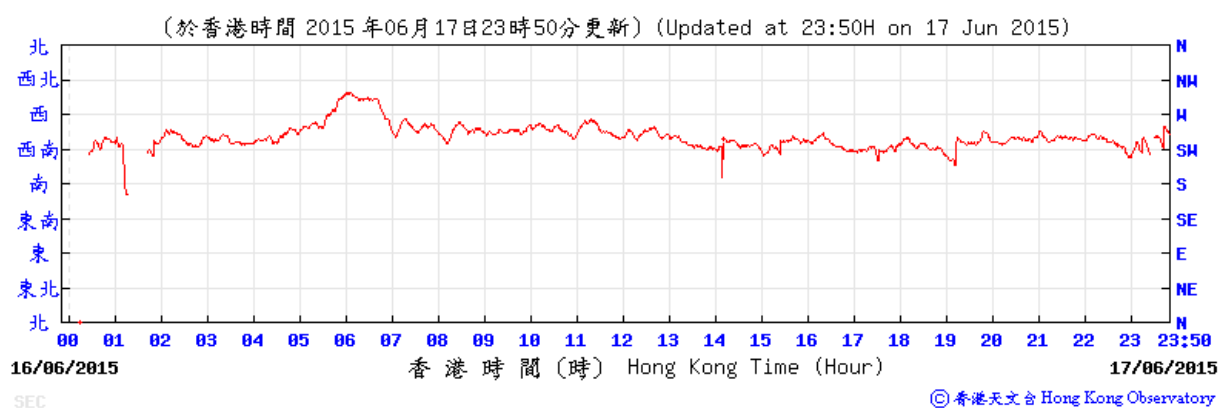
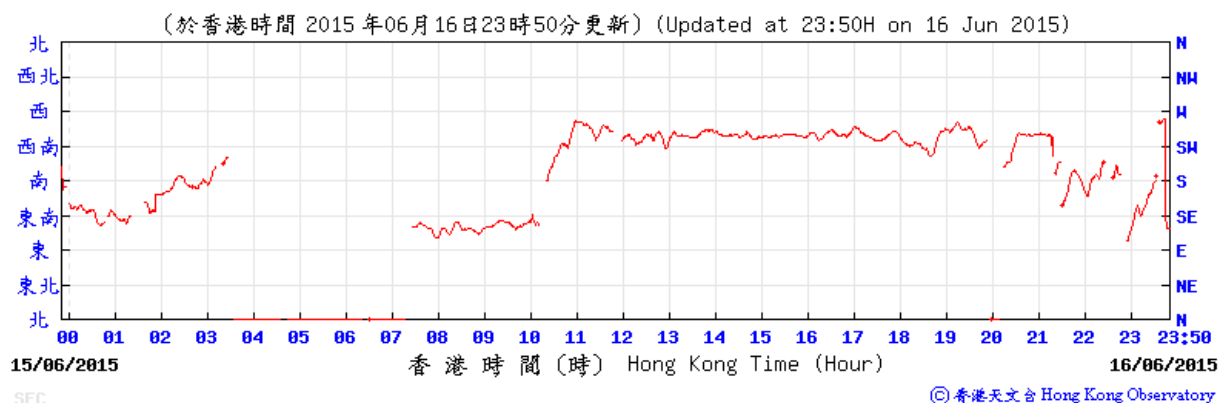
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

10-11 June 2015



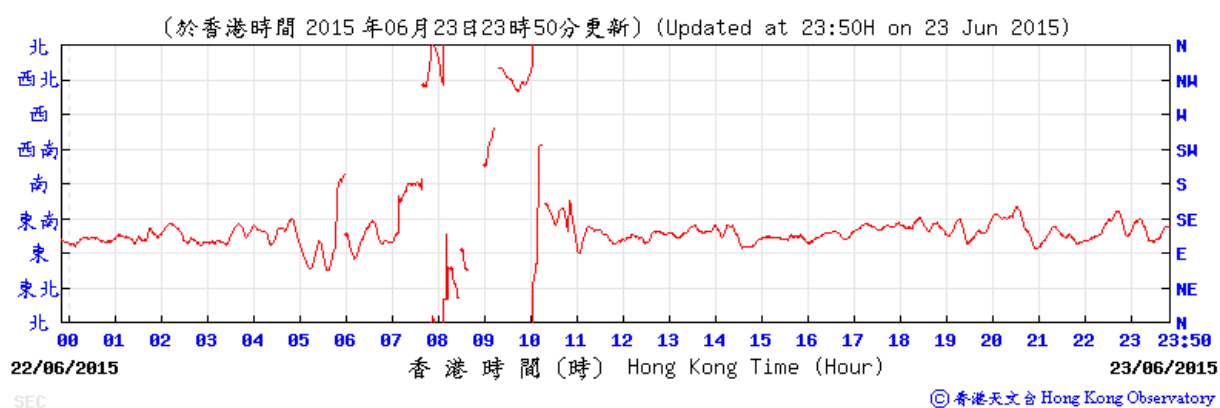
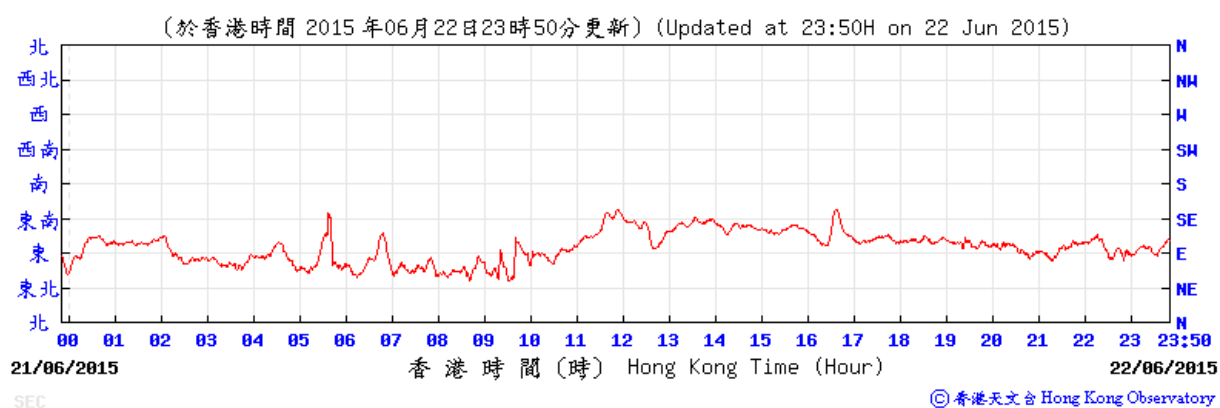
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

16-17 June 2015



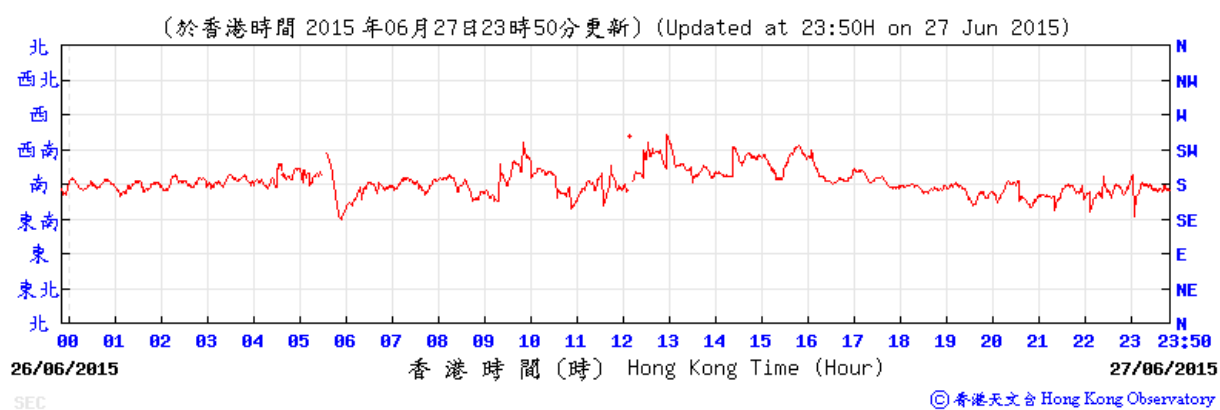
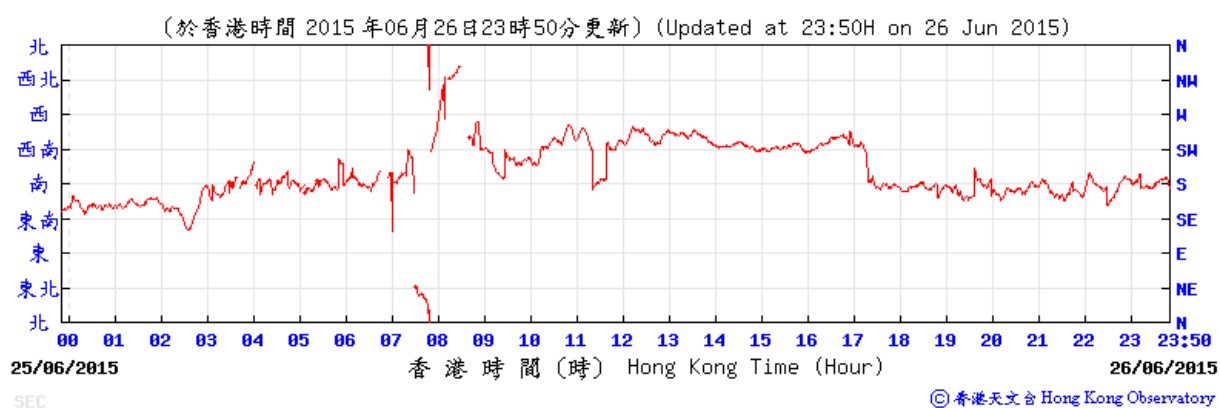
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

22-23 June 2015



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

26-27 June 2015



**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}
5-Jun-15	Sunny	10:00	72.5	73.6	71.1	73.4	71	69.7
		10:05	73.3	74.5	71.3			
		10:10	73.4	74.5	71.2			
		10:15	73.3	74.4	71.1			
		10:20	73.8	74.4	71.1			
		10:25	73.8	74.4	71.2			
11-Jun-15	Sunny	14:05	73.2	74.6	71.8	72.8	71	68.1
		14:10	72.7	74.0	71.2			
		14:15	72.7	73.9	71.3			
		14:20	72.7	74.0	71.2			
		14:25	72.7	74.1	71.2			
		14:30	72.8	74.0	71.2			
17-Jun-15	Sunny	11:05	72.5	73.6	70.9	72.6	71	67.5
		11:10	72.5	73.6	70.9			
		11:15	72.6	73.6	70.9			
		11:20	72.6	73.7	70.9			
		11:25	72.7	73.8	70.9			
		11:30	72.7	73.8	70.9			
23-Jun-15	Cloudy	14:30	73.3	74.4	72.0	72.9	71	68.4
		14:35	72.8	73.7	71.7			
		14:40	72.7	73.9	71.2			
		14:45	72.8	73.8	71.6			
		14:50	73.0	74.3	71.8			
		14:55	72.8	74.1	71.4			

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).

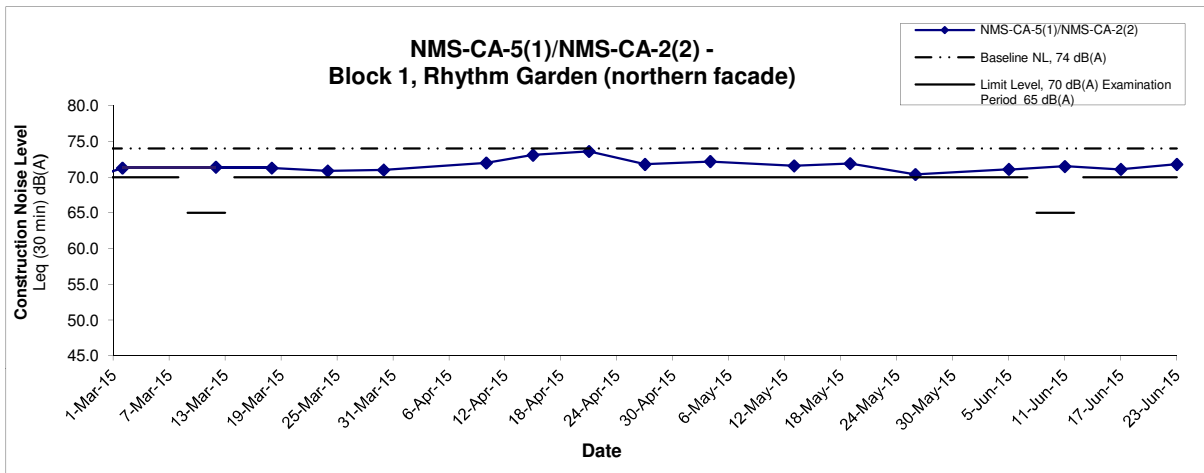
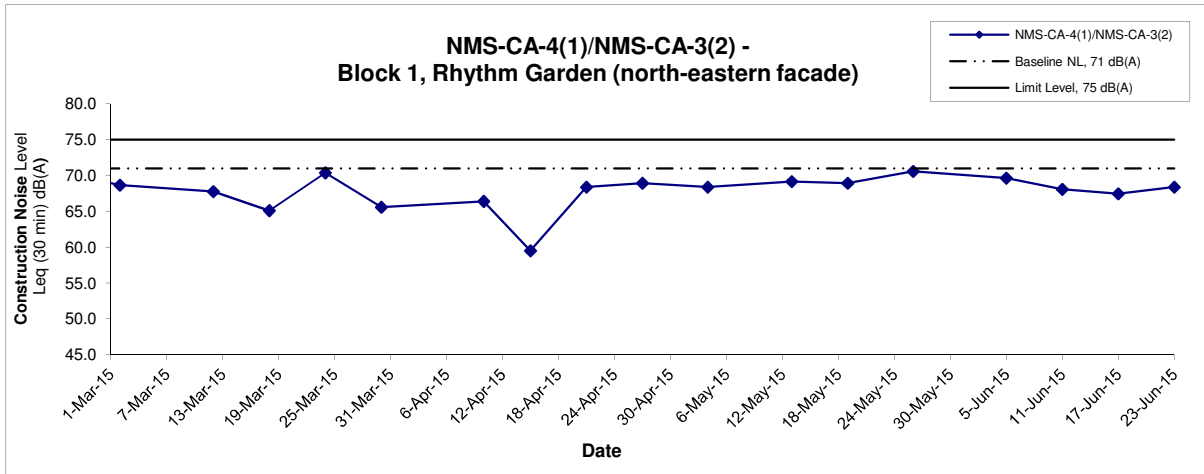
Appendix F - Noise Monitoring Results

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}
5-Jun-15	Sunny	11:05	70.9	71.6	69.9	71.1	74	71.1 Measured ≤ Baseline Level
		11:10	71.1	72.2	69.9			
		11:15	71.1	72.2	69.9			
		11:20	71.1	72.2	69.8			
		11:25	71.1	72.5	69.8			
		11:30	71.1	72.5	69.8			
11-Jun-15	Sunny	13:30	71.5	72.8	69.9	71.5	74	71.5 Measured ≤ Baseline Level
		13:35	71.5	72.8	70.0			
		13:40	71.5	73.0	69.9			
		13:45	71.4	72.6	69.9			
		13:50	71.4	72.6	70.0			
		13:55	71.4	72.5	70.0			
17-Jun-15	Sunny	10:30	71.1	72.3	69.9	71.1	74	71.1 Measured ≤ Baseline Level
		10:35	71.0	72.3	69.8			
		10:40	71.0	72.3	69.8			
		10:45	71.1	72.4	69.8			
		10:50	71.1	72.4	69.8			
		10:55	71.0	72.4	69.8			
23-Jun-15	Cloudy	15:06	71.0	72.7	69.3	71.8	74	71.8 Measured ≤ Baseline Level
		15:11	71.4	72.9	69.9			
		15:16	71.8	73.4	70.0			
		15:21	72.2	74.2	70.1			
		15:26	72.4	73.9	70.3			
		15:31	71.8	73.4	69.8			

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 Tak Tunnels Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA13018	
	Date Jun 15	Appendix F	

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: June 2015

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring

(One Action Level exceedance was recorded as one complaint related to construction noise was received in June 2015. No Limit Level exceedance was recorded.)

APPENDIX H
SITE AUDIT SUMMARY

Shatin to Central Link -

Contract 1107 Diamond Hill to Kai Tak Tunnels

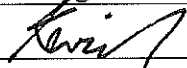

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150604
Date	4 June 2015 (Thursday)
Time	09:00 – 11:00

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

Ref. No.	Remarks/Observations	Related Item No.
150604-R02	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> Stand water was observed in drip tray at external yard A. The Contractor was reminded to clear the stand water accordingly. <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. 	B 12
150604-R01	<p>Part F - Waste/Chemical Management</p> <ul style="list-style-type: none"> The oil drum at external yard A was observed without a drip tray. The Contractor was reminded to properly provide a drip tray for the container. <p>Part G - Permit / 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.: 150527), item 1505271-O01 was observed rectified and item 150527-R01 is marked as a new item and review is needed in next site inspection. 	F 9, 10

	Name	Signature	Date
Recorded by	Kevin Lam		4 June 2015
Checked by	Dr. Priscilla Choy		4 June 2015

Shatin to Central Link -

Contract 1107 Diamond Hill to Kai Tak Tunnels

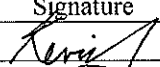

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150611
Date	11 June 2015 (Thursday)
Time	09:00 – 10:30

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

Ref. No.	Remarks/Observations	Related Item No.
150611-O01	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> Water in the water sedimentation tank was observed turbid. The Contractor was reminded to check and properly maintain the treatment facility to ensure discharge water quality. 	B 6ii, 6iii
150611-O02	<ul style="list-style-type: none"> Stand water was observed inside drip tray near shaft B. The Contractor was reminded to properly clear the wastewater and properly seal the drain hole. 	B 12
	<p>Part C - Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
150611-R03	<p>Part D - Air Quality</p> <ul style="list-style-type: none"> Stockpile of material was observed not covered completely. The Contractor was reminded to cover the stockpile or provide water spray to the uncovered part. 	D 6
	<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>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 150604), all environmental deficiencies were observed to be improved/rectified by the Contractor. 	

	Name	Signature	Date
Recorded by	Kevin Lam		11 June 2015
Checked by	Dr. Priscilla Choy		11 June 2015

Shatin to Central Link -

Contract 1107 Diamond Hill to Kai Tak Tunnels

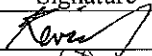

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150618
Date	18 June 2015 (Thursday)
Time	09:00 – 10:00

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

Ref. No.	Remarks/Observations	Related Item No.
150618-001	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	D 6
150618-002	<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"> Stockpile of material was observed not covered. The Contractor was reminded to cover the stockpile with impervious sheet. Dusty haul road was observed near stockpile area. The Contractor was reminded to provide water spray to haul roads more frequently. <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>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 150611), item 150611-R03 was remarked as 150618-001. Follow up action will be needed in the next site inspection. 	D 5

	Name	Signature	Date
Recorded by	Kevin Lam		18 June 2015
Checked by	Dr. Priscilla Choy		18 June 2015

Shatin to Central Link -

Contract 1107 Diamond Hill to Kai Tak Tunnels

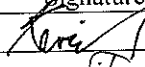

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150625
Date	25 June 2015 (Thursday)
Time	09:00 – 10:00

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

Ref. No.	Remarks/Observations	Related Item No.
150625-R02	<p>Part B - Water Quality</p> <ul style="list-style-type: none"> Stand water was observed in drip trays near shaft B. The Contractor was reminded to properly clear the stand water. 	B 12
150625-O01	<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"> Stockpile of dusty material was observed not covered. The Contractor was reminded to cover the stockpile with dust protective screen. <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>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 150618), item 150618-O01 was remarked as 150625-O01. Follow up action will be needed in the next site inspection. 	D 6

	Name	Signature	Date
Recorded by	Kevin Lam		25 June 2015
Checked by	Dr. Priscilla Choy		25 June 2015

**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
<i>Landscape & Visual (Construction Phase)</i>								
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 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 	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	•TM-EIAO	<p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</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>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 TCW No 3/2006. 	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 	<p>N/A</p> <p>N/A</p> <p>N/A</p>

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

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	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	• 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 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	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	*

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

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 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 	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 	* ^ ^ N/A ^ N/A ^ ^
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SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

		<p>or a dust suppression chemical continuously;</p> <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, 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>N/A</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>N/A</p>	
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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	<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 where practicable	Construction stage	• Annex 5, TM-EIA	^ ^ ^ ^ ^ N/A
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	^

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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 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 	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

		<p>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. <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. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at 					<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>	
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SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

		<p>all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.</p> <ul style="list-style-type: none"> • 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 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 					<p>N/A</p> <p>*</p> <p>*</p> <p>^</p> <p>^</p>
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SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

		<p>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.</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>N/A</p> <p>^</p> <p>N/A</p> <p>^</p> <p>^</p>
S10.7.1	W2	<p><u>Tunneling 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 	To minimize construction water quality impact from tunneling works	Contractor	All tunneling portion	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN 1/94 TM-water TM-EIAO 	<p>^</p> <p>^</p>

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		<ul style="list-style-type: none"> • 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. 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
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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 recommended:</p> <ul style="list-style-type: none"> Proper storage and handling facilities should be provided; All the tanks, containers, storage area should be banded 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 	<p>*</p> <p>*</p> <p>^</p> <p>N/A</p>
<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). 	Separation of unsuitable rock from ending up at concrete batching plants and be turned into	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> DEVB TC(W) No. 6/2010 	^

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

		<p>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 ending 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>	concrete for structural use					
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 	<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> <p>^</p> <p>^</p>

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

		<p>remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts.</p> <p>Burning of refuse on construction sites is prohibited by law.</p> <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: right;">^</p> <p style="text-align: right;">^</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 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 	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: right;">^</p> <p style="text-align: right;">^</p> <p style="text-align: right;">^</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 2015

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 3)		Chemical Waste		Others, e.g. general refuse	
	(a)		(b)		(c)		(d)		(e=a-b-c-d)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000litre)		(in '000m ³)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
January	10.400	9.730	0.000	0.000	0.000	0.000	6.000	8.515	4.400	1.215	0.000	0.000	0.100	0.168	1.000	1.600	0.000	0.000	0.100	0.060
February	6.400	2.295	0.000	0.000	0.000	0.000	2.000	1.700	4.400	0.595	0.000	7.370	0.100	0.120	0.000	0.000	0.000	0.000	0.100	0.045
March	4.000	2.005	0.000	0.000	0.000	0.000	2.000	1.780	2.000	0.225	0.000	0.000	0.100	0.000	0.000	0.000	0.000	2.415	0.100	0.070
April	4.000	0.645	0.000	0.000	0.000	0.000	2.000	0.625	2.000	0.020	0.000	0.000	0.100	0.283	0.000	0.000	0.100	0.000	0.100	0.070
May	4.000	1.110	0.000	0.000	0.000	0.000	2.000	0.640	2.000	0.470	0.000	0.000	0.100	0.232	0.000	0.000	0.000	0.000	0.100	0.045
June	4.000	3.240	0.000	0.000	0.000	0.000	2.000	1.610	2.000	1.630	0.000	8.590	0.100	0.000	0.000	0.000	0.000	0.000	0.100	0.065
July	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.100		0.000		0.100	
August	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.000		0.000		0.100	
September	9.000		0.000		0.000		7.000		2.000		1.000		0.100		0.000		0.000		0.100	
October	9.000		0.000		0.000		7.000		2.000		1.000		0.100		0.000		0.000		0.100	
November	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.000		0.100		0.100	
December	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.100		0.000		0.100	
Total	86.800	19.025	0.000	0.000	0.000	0.000	58.000	14.870	28.800	4.155	2.000	15.960	1.200	0.803	1.200	1.600	0.200	2.415	1.200	0.355

- 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

Complaint Location/ Nature	Incoming Complaint Reference no.	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	Status
SCL Contract 1107's Construction Site near Shaft A/ Construction Noise	14-29958	A resident living in Kai Ching Estate/ 8 December 2014	A resident of Kai Ching Estate complained about an incident of construction noise disturbance generated from operation of equipment, at the area adjacent to Shaft A in the night.	The Contractor had taken the following mitigation measures: <ul style="list-style-type: none"> • Hoardings and noise absorption blankets were erected along the site boundary to shield residents of Kai Ching Estate from noisy works during the time of the complaint; • The equipment involved in this complaint: the water pump, was removed immediately after the complaint was received to reduce noise nuisance to nearby noise sensitive receivers; • The low area near shaft A enclosure was backfilled to eliminate the flooding issue, thus the need of the water pump; 	Closed

<p>SCL Contract 1107's Construction Site near Site Entrance/ Construction Noise and Dust</p>	<p>14-31154</p>	<p>A resident living in Kai Ching Estate/ 15 December 2014</p>	<p>A resident of Kai Ching Estate complained about the noise disturbance generated from some sort of alarm noise at night from the construction site entrance; and dust nuisance from the construction site in general.</p>	<p>The alarm bell was installed to alert pedestrians of moving vehicles. During the time of complaint, vehicles might had moved in or out of the site, thus triggering the alarm.</p> <p>To avoid the same incident from happening again, the Contractor has agreed to permanently terminate the alarm bell.</p> <p>The Contractor has provided sufficient measures to minimize the smoke and dust emission. These measures include:</p> <ul style="list-style-type: none"> • Covering stockpile of bagged cements and other dusty material with impervious material. • Regularly conducting water spray on work sites and major haul road. • Washing every vehicle leaving the construction site. <p>The 24-hr TSP level monitoring conducted in December showed that the dust levels at Block 1, Rhythm Garden were under the Action and Limit Levels.</p>	<p>Closed</p>
--	-----------------	--	---	---	---------------

<p>SCL Contract 1107's Construction Site/ Construction Noise and Dust</p>	<p>15-04622</p>	<p>N/A / 12 March 2015</p>	<p>A public complaint about noise and dust nuisance from the Kai Tak Development Area was received. Since this Project is within the development area, the complaint was referred to the Contractor of SCL Contract 1107.</p>	<p>The Contractor had implemented appropriate and sufficient measures to minimise the noise and dust nuisance to adjacent sensitive receivers.</p> <p>The noise mitigation measures include:</p> <ul style="list-style-type: none"> • Installing noise absorption blankets on the hoarding at the site boundary near Kai Ching Estate; • Erecting acoustic enclosures to seal up the noisy PME and construction works (see Photo 2) in the shaft. <p>The dust mitigation measures include:</p> <ul style="list-style-type: none"> • Covering of stockpile of bagged cement and other dusty materials to reduce dust generation. • Water spraying stockpile of dusty materials as well as major haul roads and work sites to keep the surface wet. • Washing every vehicle leaving the construction site. • Regular cleaning of the access roads connecting public roads to vehicle washing areas. <p>There was also no non-compliance on construction noise and air quality recorded during the site inspections in March.</p> <p>The construction noise and 24-hr TSP level monitoring conducted in March also showed that the noise and dust levels at the monitoring stations were under the Action and Limit Levels.</p>	<p>Closed</p>
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<p>SCL Contract 1107's Construction Site/ Construction Noise and Dust</p>	<p>15-13442</p>	<p>N/A / 9 June 2015</p>	<p>A public complaint about noise and dust nuisance from the Kai Tak Development Area was received. Since this Project is within the development area, the complaint was referred to the Contractor of SCL Contract 1107.</p>	<p>Investigation conducted by the Contract ET and the results showed that sufficient mitigation measures were provided by the Contractor to minimize the noise and dust nuisance to adjacent sensitive receivers.</p> <p>The noise mitigation measures include:</p> <ul style="list-style-type: none"> • Noise absorption blankets were installed on the hoarding at the site boundary near Kai Ching Estate; • Acoustic enclosures were erected to seal up the noisy PME and construction works in the shaft; • The formwork erection was conducted inside the shaft which shield off the noisy operation. <p>The dust mitigation measures include:</p> <ul style="list-style-type: none"> • The stockpiles of dusty materials were covered by dust protective screens to reduce dust generation. Uncovered parts of the stockpile were provided with water spray to keep the dusty surface wet to reduce dust emission during stockpiling/backfilling work. • Watering on work sites and major haul roads was implemented regularly as stipulated in the Air Pollution Control Regulation and the Environmental Permit. Watering record is kept at the site entrance for easy inspection; • Vehicle movements were confined to designated haul roads. Automatic sprinkler system was installed at major haul roads to provide regular water spraying to reduce dust emission from vehicle movements; 	<p>Closed</p>
---	-----------------	------------------------------	---	--	---------------

				<ul style="list-style-type: none"> • Hoarding was provided along the entire length of the site boundary and beside roads or areas with public access; • Wheel washing facilities was provided at all vehicle exits and vehicle washing was provided for vehicles leaving the site. Access road leading to and exiting from vehicle washing areas were kept clean to ensure the public roads around site entrances were free from dust; <p>The construction noise and 24-hr TSP level monitoring conducted in May 2015 also showed that the noise and dust levels at the monitoring stations were under the Action and Limit Levels.</p>	
SCL Contract 1107's Construction Site/ Construction Noise and Dust	15-12472	N/A / 30 June 2015	A public complaint about dust nuisance from uncovered stockpile of the Project was received, the complaint was referred to the Contractor of SCL Contract 1107.	Investigation for the complaint was in progress and the outcome would be presented in the next reporting month.	In progress

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

**25th 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 30 June 2015]

(July 2015)

Certified by: Vivian Chan 

Position: Environmental Team Leader

Date: 8 July 2015



25th Monthly EM&A Report for June 2015

Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings

July 2015

Project/Deliverable No.	7076187 D58/02
Project Name	Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings
Report Name	25 th Monthly EM&A Report for June 2015
Report Date	July 2015
Report for	Leighton Contractors (Asia) Limited

PREPARATION, REVIEW AND AUTHORISATION

Revision #	Date	Prepared by	Reviewed by	Approved by
1.0 (Draft)	July 2015	Samantha KONG	Vivian CHAN	Alexi BHANJA
2.0 (Final)	July 2015	Samantha KONG	Vivian CHAN	Alexi BHANJA

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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 25th Monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 30 June 2015 in accordance with the EM&A manual.

During the reporting month, the following activity took place for the Project:

- Piling for foundation and noise enclosure at HUH, SAT and NAT
- D-wall construction for foundation at HUH
- Initial excavation at HUH and HHS
- Underpinning at HUH
- Barging point operation at SAT
- Jet grouting at SAT
- Utilities diversion at SAT
- Modification works at Concourse level
- Drainage diversion at NAT
- Operation of MBME at HUH
- Reconstruction of 1875 drainage at HHS Piling for HUH, NAT and SAT

Landscape and Visual Monitoring

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 10 and 24 June 2015. All necessary mitigation measures have been implemented by the Contractor.

Air Quality Monitoring

Air quality (24-hour TSP) monitoring was carried out on 4, 11, 18 and 25 June 2015. 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

258,010 kg of general refuse was generated from the Project and disposed of at NENT landfill. A total of 13,490 m³ inert construction and demolition (C&D) materials were generated from the Project, where 5,043 m³ was imported from SCL 1111, 6,290 m³ was reused in other projects, 7,200 m³ was disposed of at TM38 Public Fill. 200 kg of solid and 1,000 L of liquid chemical waste were disposed of. A total of 9,829 m³ Type 1 marine sediments marine were disposed, of which 9,711 m³ was generated from SCL1111 and 118 m³ was generated from SCL1112. 434 kg of paper/cardboard packaging and 317,140 kg of metals were recycled during the reporting month. No asphalt or plastic was recycled from the Project.

Environmental Auditing

A total of 4 weekly environmental site audits were conducted on 4, 11, 18 and 25 June 2015. The IEC joint site audit was undertaken on 18 June 2015.

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 foundation and noise enclosure at HUH, SAT and NAT
- D-wall construction for foundation at HUH
- Initial excavation at HUH and HHS
- Underpinning at HUH
- Barging point operation at SAT
- Jet grouting at SAT
- Utilities diversion at SAT
- Modification works at Concourse level
- Drainage diversion at NAT
- Operation of MBME at HUH
- Reconstruction of 1875 drainage at HHS Piling for HUH, NAT and SAT

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 March 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 25th EM&A report which summarizes the monitoring results and audit findings during the reporting period from 1 to 30 June 2015.

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 foundation and noise enclosure at HUH, SAT and NAT
- D-wall construction for foundation at HUH
- Initial excavation at HUH and HHS
- Underpinning at HUH
- Barging point operation at SAT
- Jet grouting at SAT
- Utilities diversion at SAT
- Modification works at Concourse level
- Drainage diversion at NAT
- Operation of MBME at HUH
- Reconstruction of 1875 drainage at HHS Piling for HUH, NAT and SAT

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 2-1**.

Table 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
Leighton	Environmental Manager	Mr Kevin	3973 0270	2356 9355

Company	Position	Name	Telephone	Fax
		HARMAN		
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				
PP-RE0001	9 Feb 2015	8 Aug 2015	Valid	Piling works
GW-RE0381-15	14 May 2015	22 Jul 2015	Valid	Modification works at concourse
GW-RE0419-15	06 May 2015	05 Nov 2015	Valid	Works in concourse and mid-level walkway
GW-RE0488-15	19 May 2015	18 Nov 2015	Valid	Modification works at concourse
GW-RE0614-15	20 Jun 2015	18 Dec 2015	Valid	Combined CNP for all area
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	-
Marine Dumping Permit				
EP/MD/14-238	2 Apr 2015	1 Oct 2015	Valid	Marine Dumping Permit - Excavated Sediment Requiring Type 1 - Open Sea

Permit / Licence No. / Notification / Reference No.	Valid Period		Status	Remark
	From	To		
				Disposal
EP/MD/16-017	1 Jun 2015	30 Jun 2015	Valid until cancellation on 30 Jun 2015	Marine Dumping Permit – Excavated Sediment Requiring 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

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)	1941

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 June 2015 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	11 June 2015	Submitted
	EP-438/2012/H	11 June 2015	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 10 and 24 June 2015. 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	32.3	23.4 – 41.4	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, 258,010 kg of general refuse was generated from the Project and disposed of at NENT landfill. A total of 13,490 m³ inert construction and demolition (C&D) materials were generated from the Project, where 5,043 m³ was imported from SCL 1111, 6,290 m³ was reused in other projects, 7,200 m³ was disposed of at TM38 Public Fill. 200 kg of solid and 1,000 L of liquid chemical waste were disposed.
- 5.4.2 A total of 9,829 m³ Type 1 marine sediments marine were disposed, of which 9,711 m³ was generated from SCL1111 and 118 m³ was generated from SCL1112. 434 kg of paper/cardboard packaging and 317,140 kg of metals were recycled. No asphalt or plastic was recycled from the Project. The waste flow table and marine sediment flow table were presented in *Appendix K*.
- 5.4.3 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. 4 site audits were carried out on 4, 11, 18 and 25 June 2015 during the reporting month. Representative of the IEC joined the site inspection on 18 June 2015. A summary of the implementation schedule of environmental mitigation measures is provided in [Appendix H](#).

6.1.2 No EPD inspection was conducted during the reporting month.

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
Noise	Air compressors were observed not fully enclosed during operation. The Contractor should ensure all the air compressors are fully enclosed when in operation in order to ensure acoustic performance of the enclosure.	SAT	11 June 2015	The item was rectified by the Contractor on 18 June 2015.
Air Quality	Dust curtain of grouting station was improperly installed. The Contractor should properly install the dust curtain at 3 sides and on top of the grouting station.	NAT	28 May 2015	The item was rectified by the Contractor on 4 June 2015.
		NAT	11 June 2015	The item was rectified by the Contractor on 25 June 2015.
	More than 20 bags of cement were observed without impervious sheeting. The Contractor should cover the cement bags entirely with impervious sheeting.	NAT	11 June 2015	The item was rectified by the Contractor on 25 June 2015.
		HUH (K20)	18 June 2015	The item was rectified by the Contractor on 25 June 2015.
Water Quality	Gullies were observed with inadequate protection. The Contractor should provide adequate protection for gullies to prevent muddy water entering the drainage system.	SAT	28 May 2015	The item was rectified by the Contractor on 4 June 2015.
		Gate 3	18 May 2015	The item will be followed-up in the next reporting month.
	Muddy water was discharged to the drainage channel diversion inside HHS works area. The	HHS	18 June 2015	The item was rectified by the Contractor on 25 June 2015.

	Contractor should implement proper and sufficient mitigation measures to avoid any muddy water from being discharged into the channel.			
Waste/ Chemicals Management	Chemical containers and machineries were observed without secondary containment. The Contractor should provide secondary containment to all chemical containers to prevent land contamination.	NAT	28 May 2015	The item was rectified by the Contractor on 4 June 2015.
		HHS	28 May 2015	The item was rectified by the Contractor on 4 June 2015.
		HHS	28 May 2015	The item was rectified by the Contractor on 4 June 2015.
		HHS (AH12)	4 June 2015	The item was rectified by the Contractor on 11 June 2015.
		HHS (Area B)	4 June 2015	The item was rectified by the Contractor on 11 June 2015.
		SAT	4 June 2015	The item was rectified by the Contractor on 11 June 2015.
		HHS (Ca19)	11 June 2015	The item was rectified by the Contractor on 18 June 2015.
		SAT	18 June 2015	The item was rectified by the Contractor on 25 June 2015.
		HUH (N35)	18 June 2015	The item was rectified by the Contractor on 25 June 2015.
		HHS (E24)	18 June 2015	The item was rectified by the Contractor on 25 June 2015.
		HHS (Cb24)	18 June 2015	The item was rectified by the Contractor on 25 June 2015.
Site Office	18 June 2015	The item will be followed-up in the next reporting month.		

		NAT	25 June 2015	The item will be followed-up in the next reporting month.
	Rubbish bin was observed full. The Contractor should clear the rubbish bins regularly.	HHS (Area B)	4 June 2015	The item was rectified by the Contractor on 11 June 2015.
	General refuse was observed scattered on ground. The Contractor should provide sufficient rubbish/recycling bin across site for proper collection and disposal of waste.	HHS	18 June 2015	The item was rectified by the Contractor on 25 June 2015.

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

6.1.4 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 public complaint was received during reporting month. 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 foundation and noise enclosure at HUH, SAT and NAT
- D-wall construction for foundation at HUH
- Initial excavation at HUH and HHS
- Underpinning at HUH
- Barging point operation at SAT
- Jet grouting at SAT
- Utilities diversion at SAT
- Modification works at Concourse level
- Drainage diversion at NAT
- Operation of MBME at HUH
- Reconstruction of 1875 drainage at HHS Piling for HUH, NAT and SAT

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 July 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 25th Monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 30 June 2015.
- 9.1.2 5 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 four 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 complaint was 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:

Noise Impact

- All the air compressors are fully enclosed when in operation in order to ensure acoustic performance of the enclosure.

Air Quality Impact

- Install the dust curtain at 3 sides and on top of the grouting station.
- Cover the cement bags entirely with impervious sheeting.

Water Quality Impact

- Provide adequate protection for gullies to prevent muddy water entering the drainage system.
- Implement proper and sufficient mitigation measures to avoid any muddy water from being discharged into the channel.

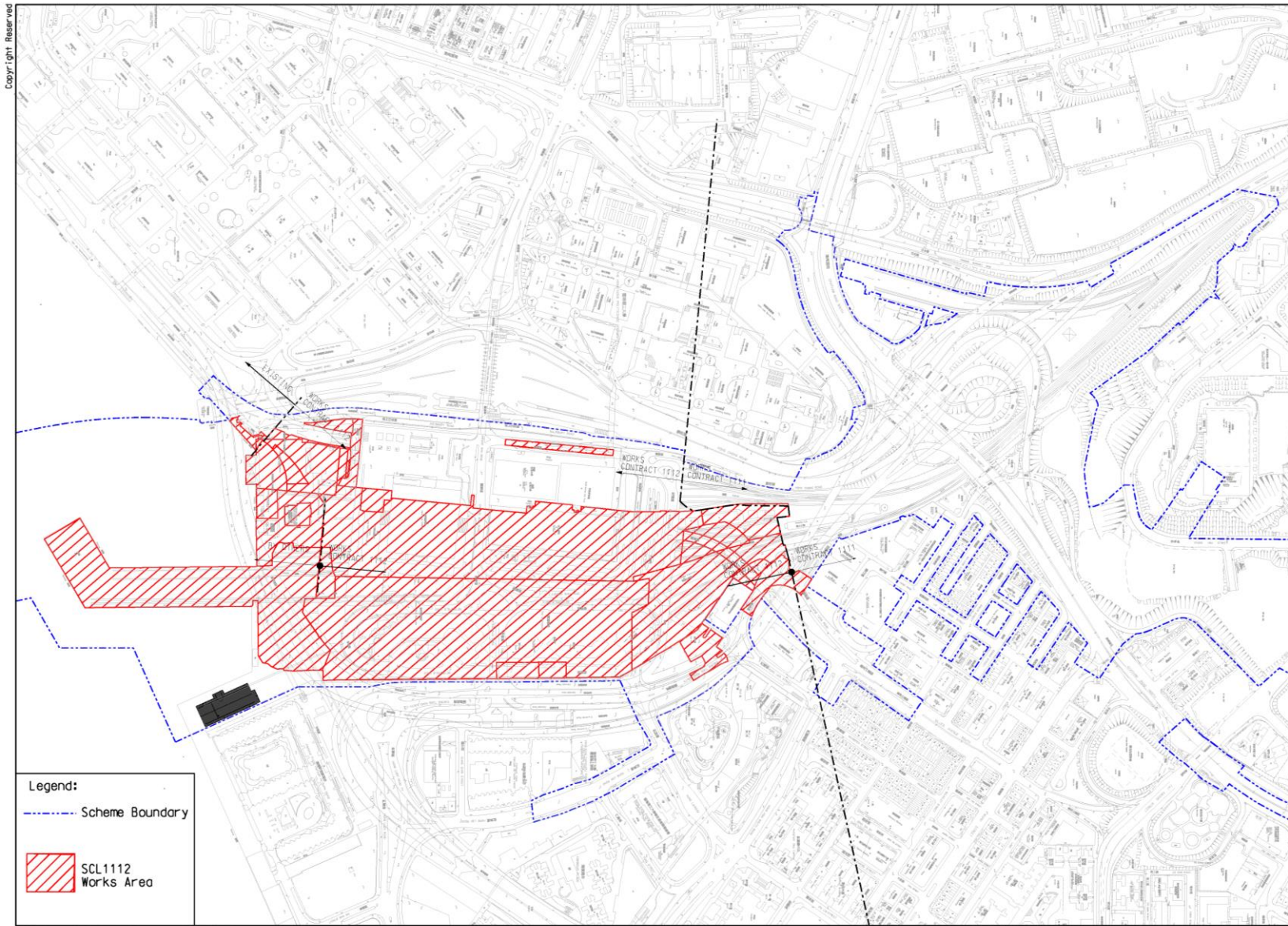
Chemical and Waste Management

- Provide secondary containment with proper maintenance and usage to prevent any land contamination.
- Clear the rubbish bins regularly.

- Provide sufficient rubbish/recycling bin across site for proper collection and disposal of waste.

APPENDIX A

Project Works Boundary



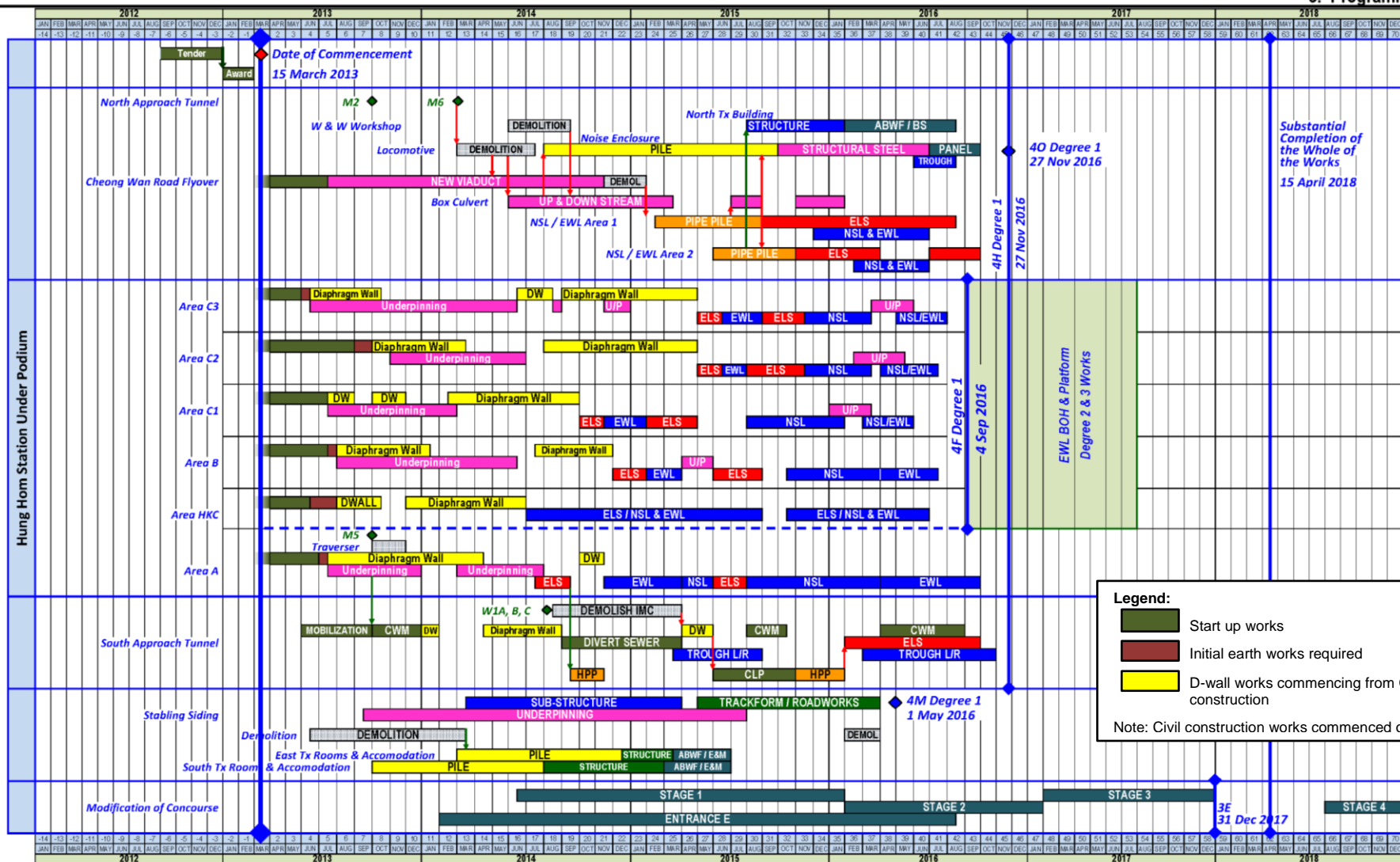
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APPENDIX B

Construction Programme

3. Programme



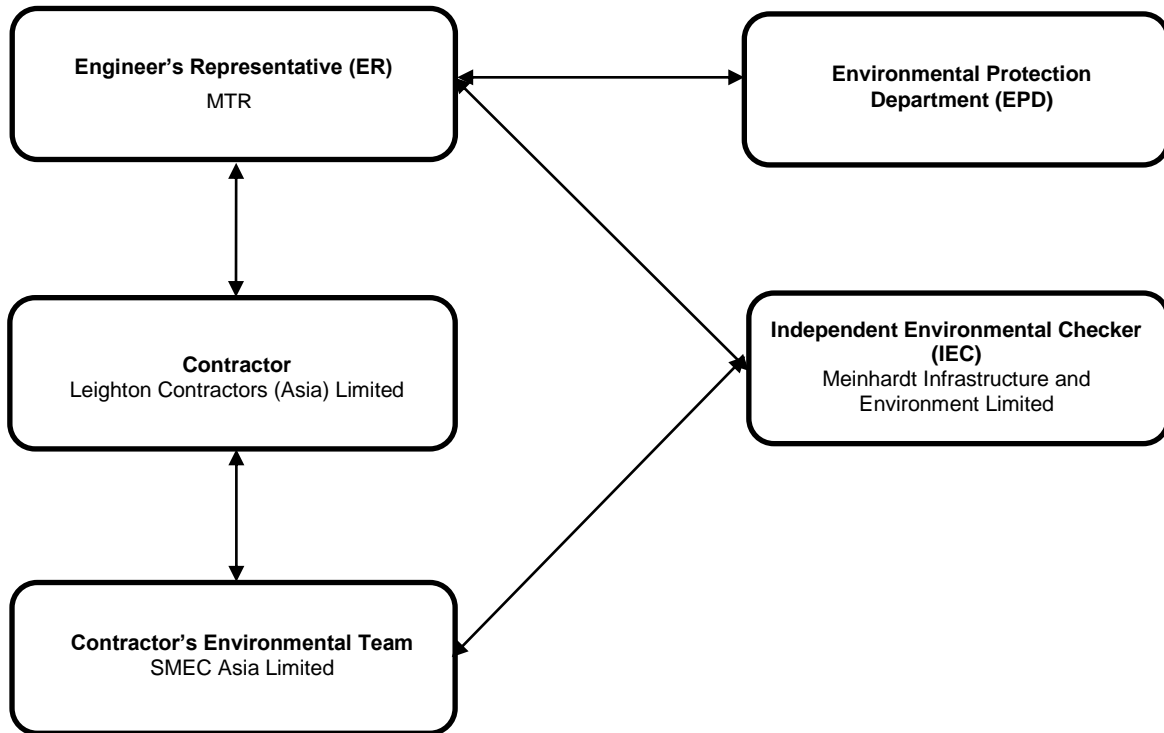
Legend:

- Start up works
- Initial earth works required
- D-wall works commencing from Guide wall construction

Note: Civil construction works commenced on 3 Jun 13

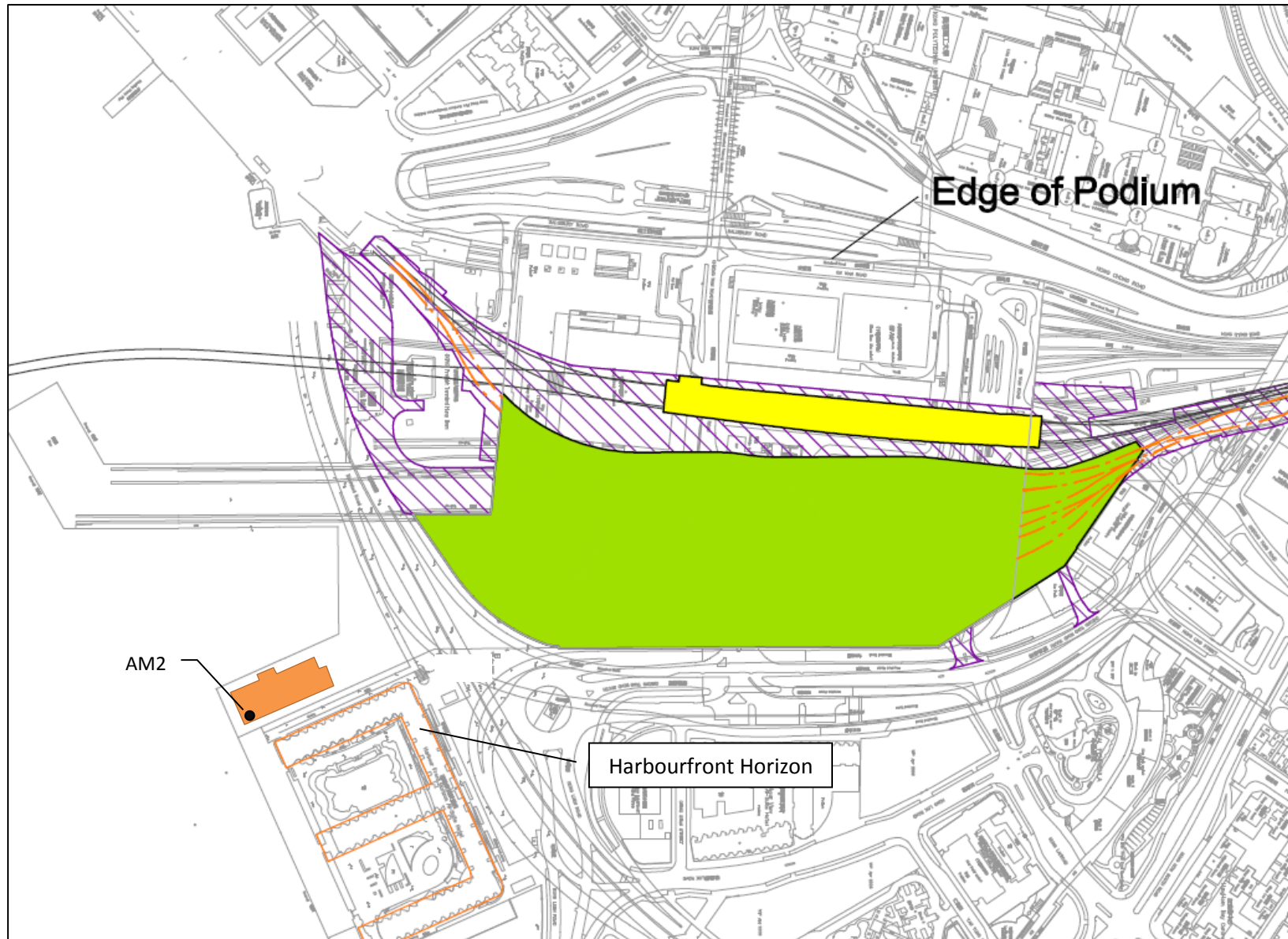
APPENDIX C

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: April 8, 2015
 Sampler: Hunghom MTR TSP Next Calibration Date: June 8, 2015
 Serial No 694-0665 Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg): 40.06 Corrected Pressure (mm Hg): 1018
 Temperature (deg F): 70 Temperature (deg K): 294
 Average Press. (in Hg): 40.06 Corrected Average (mm Hg): 1018
 Average Temp. (deg F): 70 Average Temp. (deg K): 294

CALIBRATION ORIFICE

Make: Tisch Qstd Slope: 2.10265
 Model: TE-5025A Qstd Intercept: -0.00335
 Serial#: 1941 Date Certified: March 24, 2015

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	11.80	1.904	60.0	69.88	Slope =	36.7239
2	10.00	1.753	54.0	62.89	Intercept =	-0.8297
3	7.80	1.549	48.0	55.91	Corr. coeff.=	0.9991
4	5.00	1.240	38.0	44.26		
5	3.00	0.961	30.0	34.94	# of Observations:	5

Calculations

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

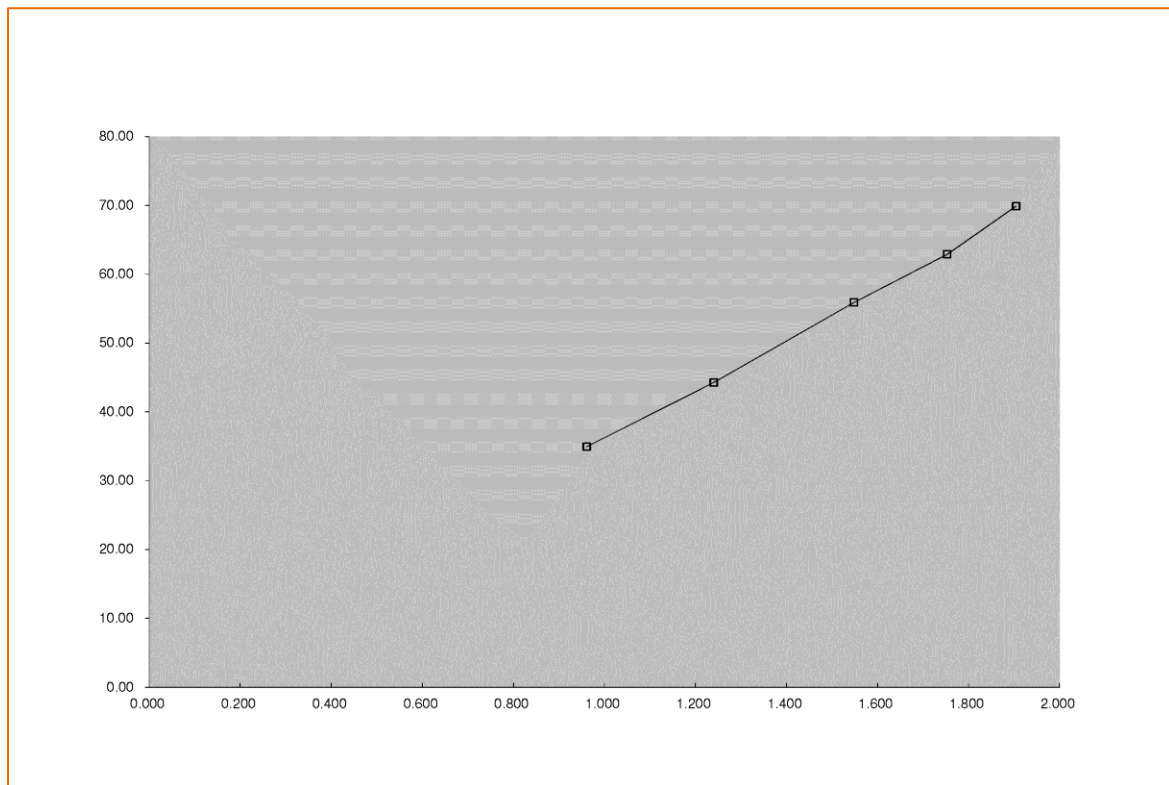
Qstd = standard flow rate
 IC = corrected chart response
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pa = actual pressure during calibration (mm Hg)
 Tstd = 298 deg K
 Pstd = 760 mm Hg
 For subsequent calculation 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: April 8, 2015



TSP Sampler Calibration

SITE

Location: Hung Hom
 Sampler: Hunghom MTR TSP
 Serial No 694-0665
 Calibration Date: June 10, 2015
 Next Calibration Date: August 10, 2015
 Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	39.73	Corrected Pressure (mm Hg):	1009
Temperature (deg F):	93	Temperature (deg K):	307
Average Press. (in Hg):	39.73	Corrected Average (mm Hg):	1009
Average Temp. (deg F):	93	Average Temp. (deg K):	307

CALIBRATION ORIFICE

Make: Tisch
 Model: TE-5025A
 Serial#: 1941
 Qstd Slope: 2.10265
 Qstd Intercept: -0.00335
 Date Certified: March 24, 2015

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION
1	11.80	1.857	60.0	68.13	Slope = 36.7239 Intercept = -0.8104 Corr. coeff.= 0.9991 # of Observations: 5
2	10.00	1.709	54.0	61.32	
3	7.80	1.510	48.0	54.50	
4	5.00	1.209	38.0	43.15	
5	3.00	0.937	30.0	34.06	

Calculations

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

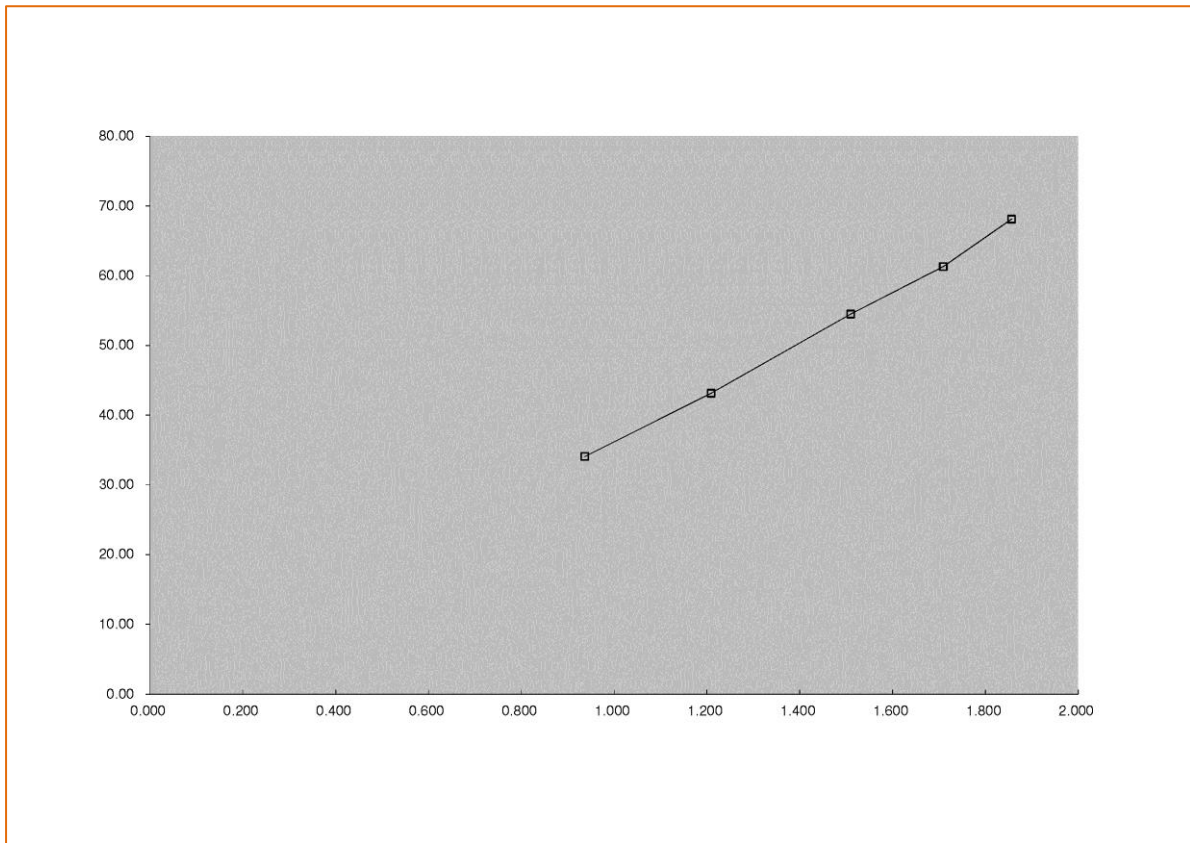
Qstd = standard flow rate
 IC = corrected chart response
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pa = actual pressure during calibration (mm Hg)
 Tstd = 298 deg K
 Pstd = 760 mm Hg
 For subsequent calculation 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: June 10, 2015





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, 2015 Rootmeter S/N 0438320 Ta (K) - 292
 Operator Tisch Orifice I.D. - 1941 Pa (mm) - 756.92

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	1.4880	3.2	2.00
2	NA	NA	1.00	1.0510	6.4	4.00
3	NA	NA	1.00	0.9360	7.9	5.00
4	NA	NA	1.00	0.8920	8.8	5.50
5	NA	NA	1.00	0.7360	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0121	0.6802	1.4258	0.9958	0.6692	0.8784
1.0078	0.9589	2.0163	0.9916	0.9434	1.2422
1.0057	1.0745	2.2543	0.9895	1.0571	1.3888
1.0046	1.1262	2.3644	0.9884	1.1080	1.4566
0.9993	1.3578	2.8515	0.9832	1.3358	1.7568

Qstd slope (m) = 2.10265
 intercept (b) = -0.00335
 coefficient (r) = 0.99999
 Va slope (m) = 1.31664
 intercept (b) = -0.00206
 coefficient (r) = 0.99999

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:

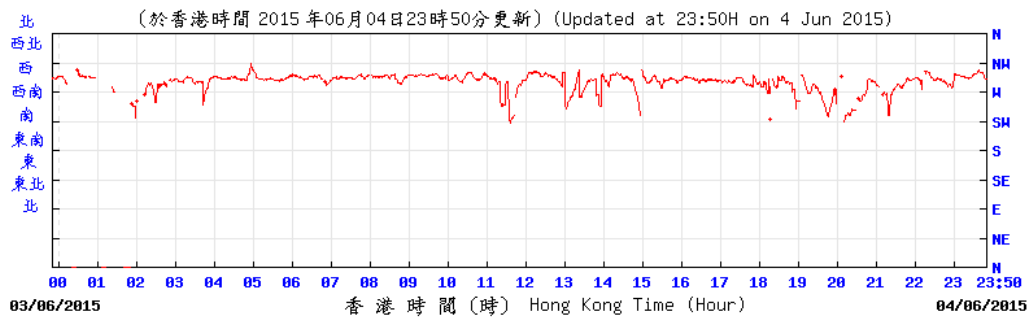
$$Qstd = 1/m \{ [\text{SQRT} (H2O (Pa/760) (298/Ta))] - b \}$$

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

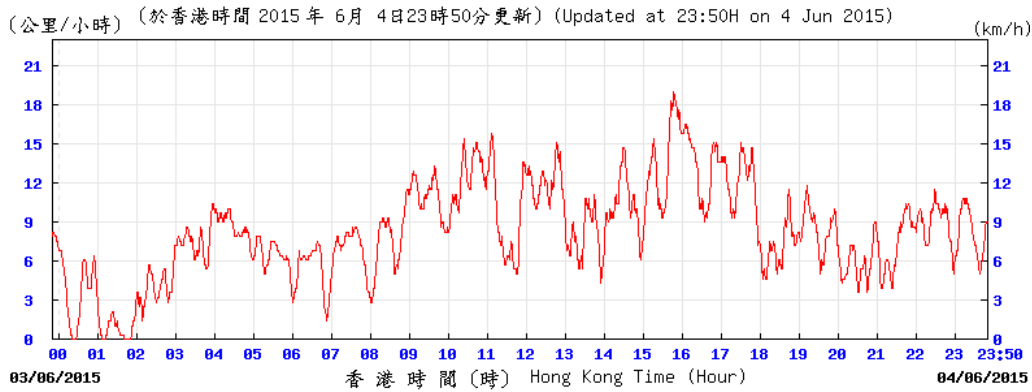
Appendix F

Wind Data

4 June 2015

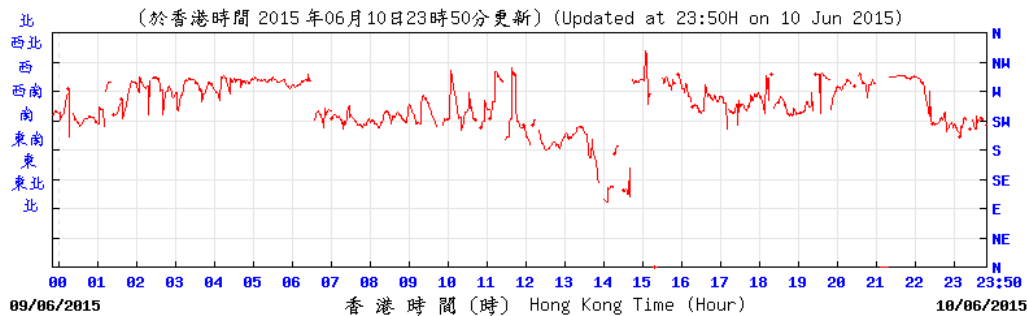


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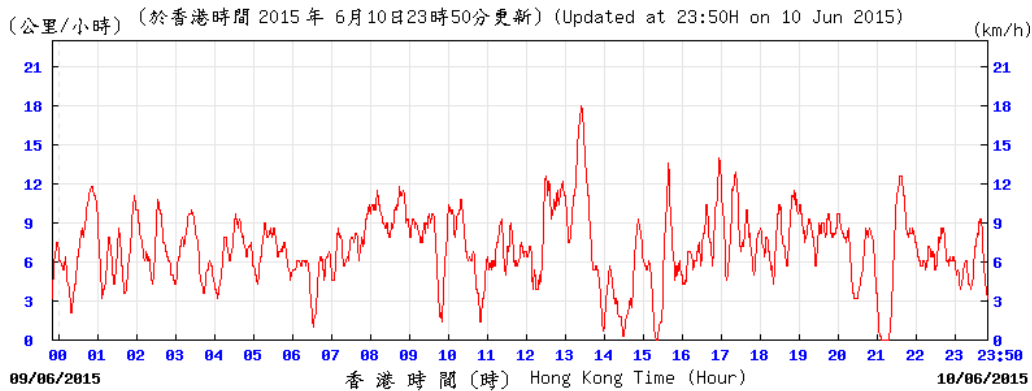


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10 June 2015

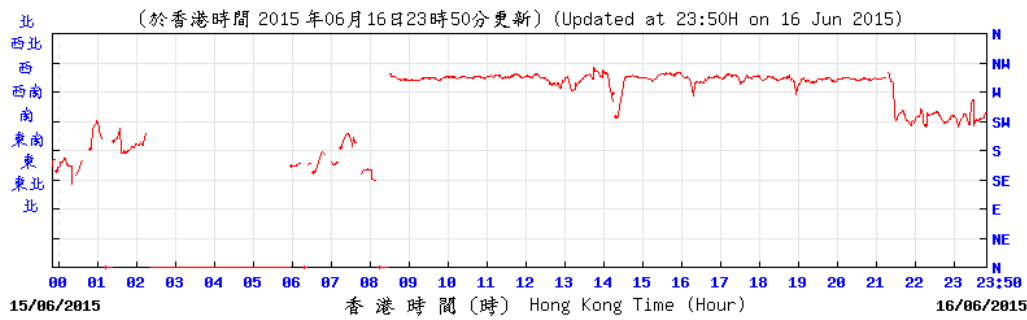


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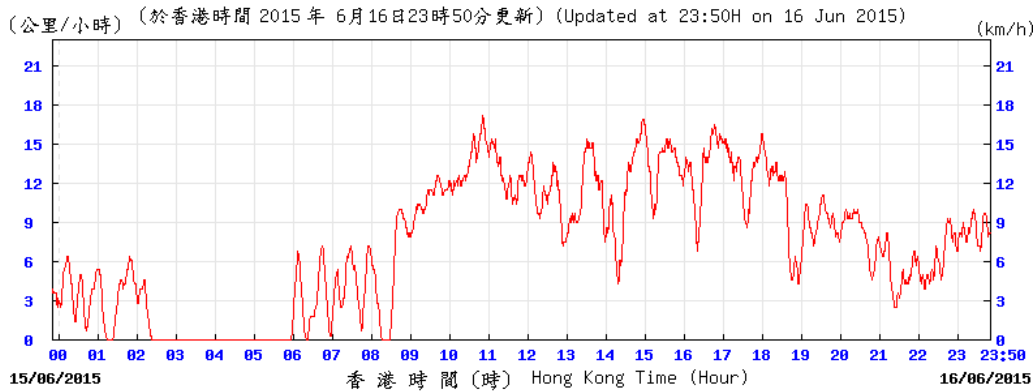


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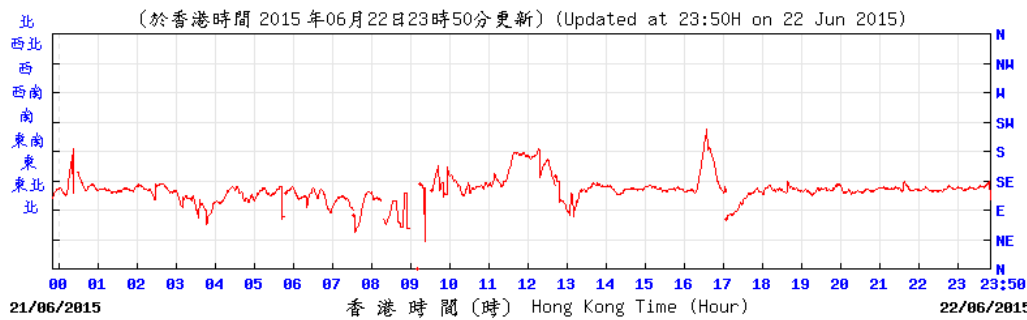


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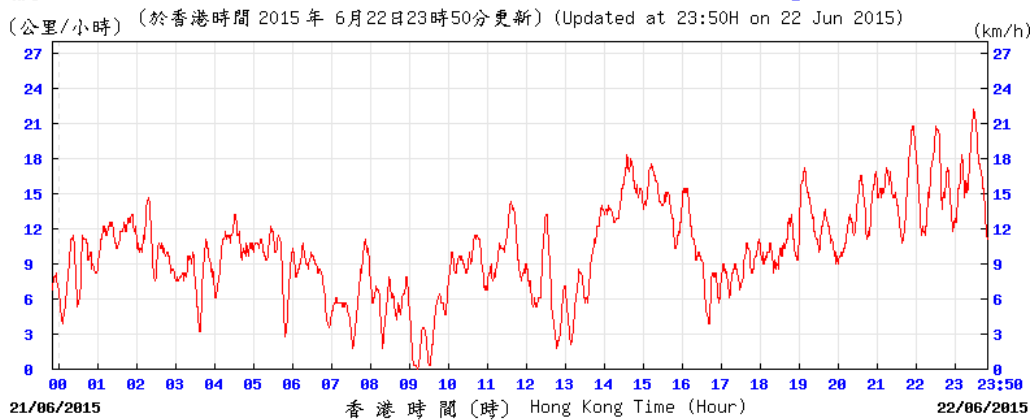


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22 June 2015

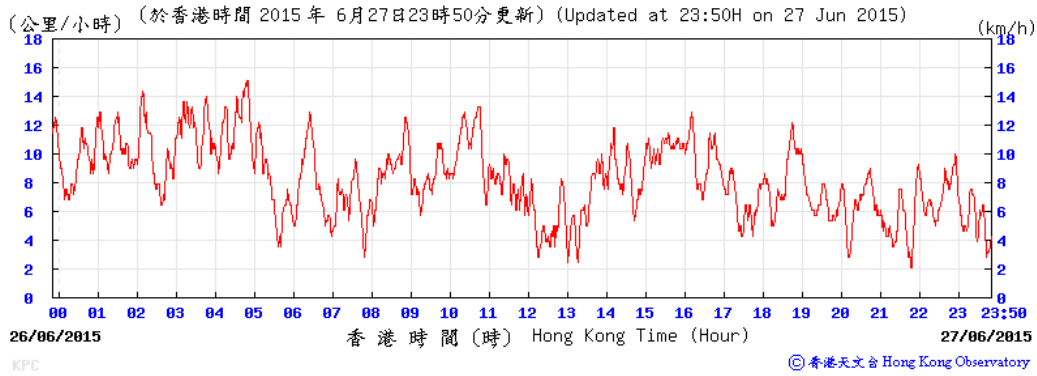
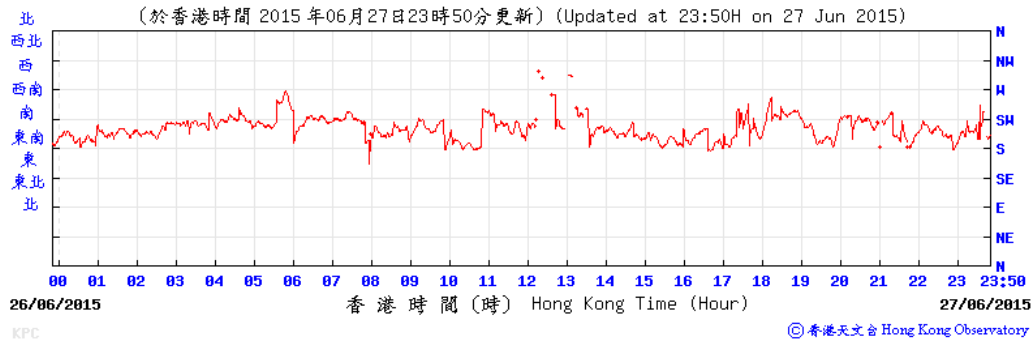


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27 June 2015



Appendix G

Environmental Monitoring Programme

Environmental Monitoring Schedule for SCL1112 in June 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
				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					24 hr TSP
28	29	30				

Environmental Monitoring Schedule for SCL1112 in July 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
					24 hr TSP	
5	6	7	8	9	10	11
				24 hr TSP		
12	13	14	15	16	17	18
			24 hr TSP			
19	20	21	22	23	24	25
		24 hr TSP				
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
	<ul style="list-style-type: none"> the oil interceptors to prevent flushing during heavy rain. 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
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

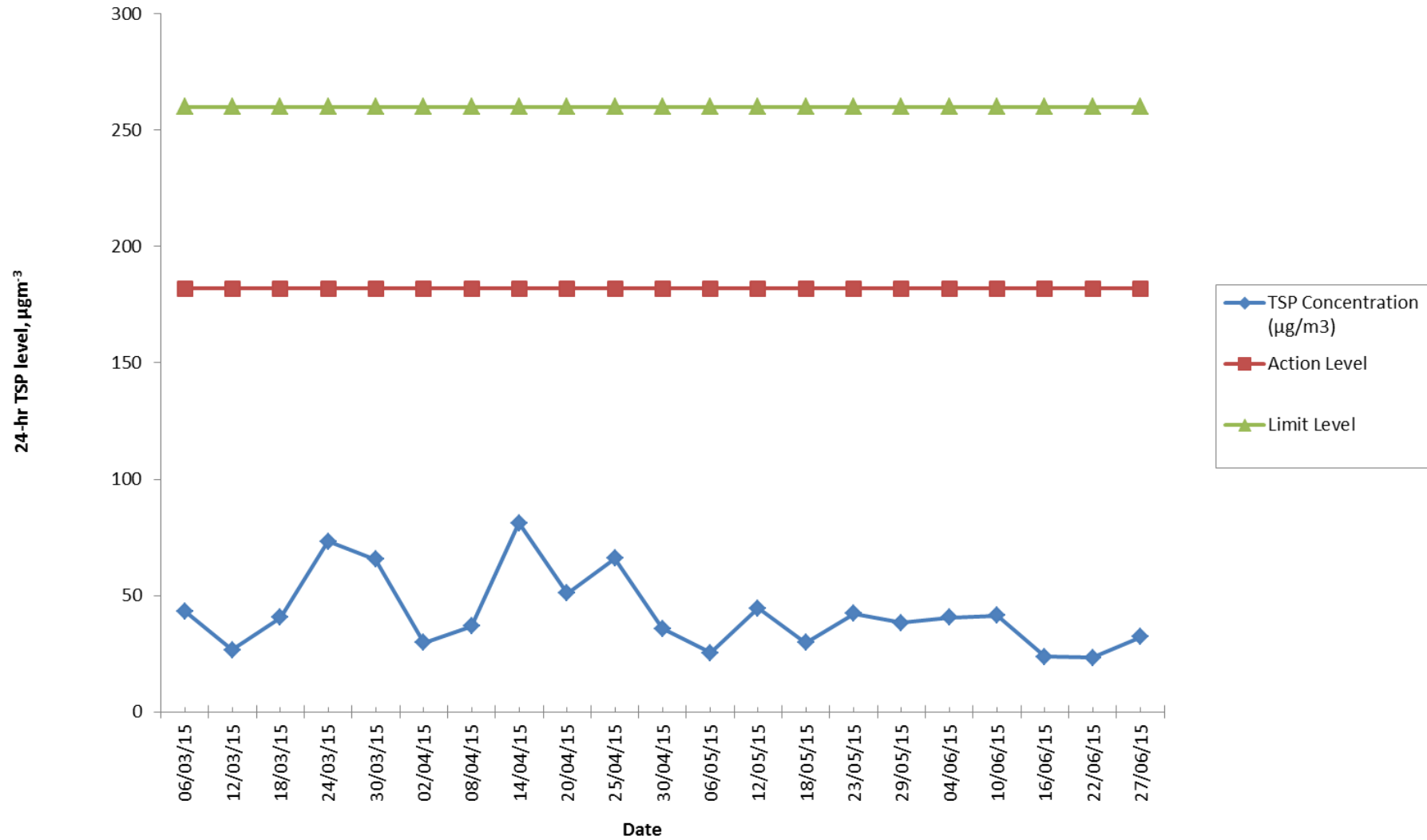
APPENDIX J

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				
04/06/15	B71	2.8121	2.8782	0.0661	12735.30	12759.30	24.00	40	40	40.0	1631.05	40.5260	Rainy	-
10/06/15	B72	2.8110	2.8785	0.0675	12759.30	12783.30	24.00	40	40	40.0	1631.05	41.3844	Sunny	-
16/06/15	B73	2.8203	2.8591	0.0388	12783.30	12807.30	24.00	40	40	40.0	1631.05	23.7884	Rainy	-
22/06/15	B74	2.7952	2.8334	0.0382	12807.30	12831.30	24.00	40	40	40.0	1631.05	23.4205	Rainy	-
27/06/15	B75	2.8162	2.8690	0.0528	12831.30	12855.30	24.00	40	40	40.0	1631.05	32.3718	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	
Unit	(in '000m ³)								(in '000Kg)				(in '000Kg)	(in '000L)	(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	385.80	0.53	166.98	0	5.4	-	130.83

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	
Unit	(in '000m ³)								(in '000Kg)				(in '000Kg)	(in '000L)	(in '000Kg)
Jan-15	3.72	19.29	0	0	10.03 ^[Note12]	0	0	9.26	543.40	0.80	179.01	0	0	1.60	318.66
Feb-15	3.03	13.96	0	0	8.41 ^[Note13]	0	0	5.54	263.10	0.46	168.82	0	0	0	180.27
Mar-15	5.68	22.28	0	0	12.45 ^[Note14]	0	0	9.82	346.70	0.61	11.45	0	0	0	429.13
Apr-15	4.71	18.51	0	0	11.25 ^[Note15]	0	0.23	7.26	275.99	0.32	0	0	0	0	376.98
May-15	4.62	20.64	0	0	11.53 ^[Note16]	0	0	9.10	353.88	0.67	0	0	0	0	266.43
Jun-15	5.04	13.49	0	0	6.29 ^[Note17]	0	0	7.20	317.14	0.43	0	0	0.20	1.00	258.01
TOTAL	33.74	226.19	0	0.43	99.88	4.85	3.53	118.34	4509.05	10.05	3790.76	2.76	6.20	2.60	2734.37

Note:

- 137 m³ of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904.
- 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.
- 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.
- 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.
- 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.
- 2,894 m³ of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
- 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).
12. 9,988.1 m³ of the Inert C&D materials were reused in WENT (SITA) and 46.34 m³ of the Inert C&D materials were reused in SIL Project Contract 904.
13. 8,212.8 m³ of the Inert C&D materials were reused in WENT (SITA) and 200.9 m³ of the Inert C&D materials were reused in SIL Project Contract 904.
14. 11,757 m³ of the Inert C&D materials were reused in WENT (SITA), 23.41 m³ of the Inert C&D materials were reused in SIL Project Contract 904 AND 672.78 m³ of the Inert C&D materials were reused in XRL822.
15. 10,633 m³ of the Inert C&D materials were reused in WENT (SITA), 0.61176 m³ of the Inert C&D materials were reused in XRL822.
16. 11,533 m³ of the Inert C&D materials were reused in WENT (SITA).
17. 6,290 m³ of the Inert C&D materials were reused in WENT (SITA).

Marine Sediment Flow Table						
Month	Actual Quantities of Marine Dumping Monthly					
	Type 1			Type 2		
	Generated from SCL1111 ^[Note1]	Generated from SCL1112	Disposed	Generated from SCL1111 ^[Note2]	Generated from SCL1112	Disposed
Unit	(in '000m ³)			(in '000m ³)		
Jan-15	0	0	0	2.22	0.06	2.28
Feb-15	1.29	0	0.82	0	0	0
Mar-15	2.43	0	2.48	0	0	0
Apr-15	3.97	0.136	5.27	0	0	0
May-15	8.26	0.090	8.35	0	0	0
Jun-15	9.71	0.118	9.83	0	0	0
TOTAL	26.40	0.344	26.74	2.22	0.06	2.28

Note:

1. Type 1 Marine Sediment generated from SCL1111 will be delivered to the Barging Point at SCL1112 for disposal.
2. Type 2 Marine Sediment generated from SCL1111 will be delivered to the Barging Point at SCL1112 for disposal.

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	10 March 2015	Public comment received by EPD, K01/RE/00005632-15	Complaint of malodour from Hung Hom Station (near Exit B1)	Hung Hom Station, Tsim Sha Tsui	<ul style="list-style-type: none"> ET conducted inspection to examine the environmental performance of the site on 12 Mar 2015 No odour was noticed by all attending parties. It was observed that excavation, predrilling, welding, box culvert construction and installation of TAM grout pipeworks were carried out at the NAT works area, located to the west and east of the footbridge The source of malodour could not be identified A barrier was erected on the eastern side of footbridge, with the barrier already in place on the western side of the footbridge since November 2014, so now both sides of the footbridge contain barriers to shield off any dust or odour from the site No noticeable malodour was observed and the air quality control was found to be satisfactory according to conversation between EPD and the Contractor Investigation Report submitted to EPD on 26 Mar 2015
Environmental complaints	7 Feb 2015	Public comment received by EPD, EPD's Ref. No. K01/RE/00003309-15	Complaint of construction dust from the construction site at MTR Hung Hom Building, 8-8 Cheong Wan Road, Tsim Sha Tsui	MTR Hung Hom Station Building, 8-8 Cheong Wan Road	<ul style="list-style-type: none"> ET conducted inspection to examine the environmental performance of the site on 10 Feb 2015 No demolition works carried out inside Hung Hom Station and Freight Operation Building during the complaint period Watering and dust screen (site enclosed with bamboo scaffold and tarpaulin sheet) were provided for the demolition work at International Mail Centre Renovation works on-going inside the Hung Hom Station with dust mitigation measures implemented A joint inspection was then conducted by the Contractor and EPD on 13 Feb 2015 and no adverse comment was provided by EPD Investigation Report submitted to EPD on 23 Feb 2015

	Date Received	Reference No.	Subject	Location of Concern	Status
	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

**25th 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. 25

[Period from 1 to 30 June 2015]

Works Contract 1108 – Kai Tak Station and
Associated Tunnels

(July 2015)

Certified by: Goldie Fung 

Position: Environmental Team Leader

Date: 13 July 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

June 2015

The Contents of this report have been certified by:



Ms. Goldie Fung
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Executive Summary

This is the twenty fifth 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 June 2015 to 30th June 2015.

Summary of the Construction Works undertaken during the Reporting Month

The major site activities in this reporting period were including:

- Open Cut Tunnel: roof and wall waterproofing, walkway formwork erection, staircase corridor baseslab cast
- Cut and Cover Tunnel: Defect rectification
- Package 4.5: Backfilling, sheetpile extraction, excavation, base slab construction
- Station structure: slab concreting, concourse slab concreting, waterproofing for Entrance B tunnel
- Launching Shaft: Base slab construction, strut installation
- Receiving Shaft: Backfilling, excavation for formation, boulders breaking, base slab construction

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, a total of 28,414 m³ of inert C&D materials were generated, which 8,078 m³ were disposed to the receiving facility of Contract 1108A and 20,336 m³ were reused in the contract. 264 m³ of general refuse were generated and disposed at landfill site. 14 kg of plastics, 168 kg of paper and 7,270 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 June 2015. The representative of the IEC joined the site inspection on 16th June 2015. 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

Two complaints received on 21st May and 2nd June 2015 were referred by EPD on 9th June and 13th June 2015 respectively regarding the noise impact, dust impact and muddy water. ET was carried out the investigation on 12th June and 16th June 2015 to resolve the concern.

No breaches of Action and Limits levels, non-compliance event, 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: excavation and breaking boulder, corridor wall formwork, interface area sheet piling works
- Cut and cover tunnel: external waterstop, walkway and final clearing, defect rectification
- Package 4.5: sheetpile extraction for seaside hydraulic cut off wall
- Station: concreting
- Mined tunnel: backfilling, strut installation, excavation, strut removal

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 twenty fifth monthly EM&A Report which summarises the audit findings for the EM&A programme during the reporting period from 1st June 2015 to 30th June 2015.

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**.

- Open Cut Tunnel: roof and wall waterproofing, walkway formwork erection, staircase corridor baseslab cast
- Cut and Cover Tunnel: Defect rectification
- Package 4.5: Backfilling, sheetpile extraction, excavation, base slab construction
- Station structure: slab concreting, concourse slab concreting, waterproofing for Entrance B tunnel
- Launching Shaft: Base slab construction, strut installation
- Receiving Shaft: Backfilling, excavation for formation, boulders breaking, base slab construction

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-RE0010-15	02/03/2015	31/07/2015	Valid	/
Construction Noise Permit for General Works				
GW-RE0029-15	16/01/2015	14/07/2015	Valid	/
GW-RE0136-15	14/02/2015	13/08/2015	Valid	/
GW-RE0146-15	16/02/2015	14/08/2015	Valid	/
GW-RE0225-15	13/03/2015	12/09/2015	Valid	/
GW-RE0226-15	14/03/2015	10/09/2015	Valid	/
GW-RE0352-15	15/04/2015	11/10/2015	Valid	/
GW-RE0307-15	16/04/2015	15/10/2015	Valid	/
GW-RE0376-15	27/04/2015	26/10/2015	Valid	/
GW-RE0385-15	24/04/2015	23/10/2015	Valid	/
Effluent Discharge License				
WT00020520-2014	07/01/2015	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	/

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	Twenty fourth Monthly EM&A Report	11 th June 2015

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. Inert C&D materials were disposed to the receiving facility of Contract 1108A or reused in the Contract. General refuse was disposed to designated landfill site. Plastics, paper and metal were sent to recycler for recycling. Chemical waste generated was 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
June 2015	28,414 m ³	264 m ³	0 kg	168 kg	14 kg	7,270 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 June 2015. The representative of the IEC joined the site inspection on 16th June 2015. 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	29 May 15 2 & 9 June 15	Insufficient noise mitigation measures for rock breaking work at Area 3 was noted.	Contractor was also advised to properly wrap the breaker tip with sound absorptive material and erect temporary noise barrier for noise mitigation.	The breaker tip was wrapped with sound absorptive material for noise reduction.	16 June 15	/
	16 June 2015	Insufficient noise mitigation measure for the concrete breaking work at Area 3 was noted.	Contractor was advised to wrap the breaker tip with sound absorptive material for noise reduction.	Breaker tip was wrapped with sound absorptive material for noise reduction at Area 3.	23 June 15	/
Air	29 May 15 2 & 9 June 15	Insufficient dust mitigation measures for rock breaking work at Area 3 was noted.	Contractor was advised to provide water spraying during rock breaking for dust suppression.	Water sprinkler were installed for water spraying during rock breaking work at Area 3	16 June 15	/

Parameters	Date	Findings	Advice from ET	Action taken	Closing date	Remarks
				for dust suppression.		
	29 May 15 2 June 15	The cement stockpile at Area 1 was not entirely covered.	Contractor was reminded to entirely cover the cement stockpile with tarpaulin for dust prevention.	The cement stockpile at Area 1 was removed.	9 June 15	/
	16 June 15	Water spraying was missing for the concrete breaking work at Area 3.	Contractor was advised to provide water spraying during concrete breaking for dust suppression.	Water spraying was implemented for breaking work at Area 3.	23 June 15	/
	9 June 15	Although water truck was assigned for wetting the haul road, the work site and a stockpile at Area 3 was exposed and dry.	Contractor was reminded to provide watering spraying frequently to exposed area to avoid dust generation.	Enhanced watering for exposed area and covering of stockpile was provided to dust generation.	16 June 15	/
	16 June 15	Dark smoke was observed emitting from an excavator at Area 3.	Contractor was reminded to repair and maintain the excavator to avoid further emission of dark smoke	Excavator was repaired to avoid emission of dark smoke.	23 June 15	/
	30 June 15	Dusty stockpile was observed at Area 3.	Contractor was advised to cover stockpile with tarpaulin sheets or spray with water for dust suppression.	Follow-up action will be inspected in next reporting month.	N/A	/
	30 June 15	Stockpile at Area 1 was covered in general	Contractor was reminded to cover the inactive stockpile entirely for dust reduction.	Follow-up action will be inspected in next reporting month.	N/A	/
Water Quality	2, 9 & 16 June 15	Silty water was observed discharging into the nullah.	Contractor was advised to divert all site water to treatment facilities and provide sufficient treatment before discharging.	Silty water was treated before discharging into nullah.	23 June 15	/
	16 & 23 June 15	Surface runoff was observed at Area 2 generated from pumping of ground water.	Although the effluent was clear, contractor was reminded to properly discharge site water to avoid generation of polluted runoff.	Sand bag bund was provided to prevent surface runoff from entering into nullah.	30 June 15	/
	23 June 15	Muddy water was observed discharging into nullah after heavy rain at Area 2.	Contractor was advised to divert all site water to water treatment facilities and provide sufficient treatment before discharge.	Site water was properly treated and no discharge of muddy water into the nullah was observed.	30 June 15	/
	29 May 15 2, 9 June 15	Secondary containment was missing for the oil containers at Area 1 & 2.	Contractor was advised to provide trip tray to contain leaked oil.	The oil container at Area 1 was removed on 9 June 15. The oil container at Area 2 was removed on 16 June 15.	16 June 15	/
	30 June 15	Drip tray was missing for chemical container at Area 1.	Contractor was reminded to place the chemical materials inside the drip tray.	Follow-up action will be inspected in next reporting month.	N/A	/
Waste / Chemical Management	29 May 15 2 & 9 June 15	General waste and accumulated water was observed within the waste container at Area 3.	Contractor was advised to remove the waste and accumulated water for proper hygiene within the site.	The waste container at Area 3 was removed.	16 June 15	/

Parameters	Date	Findings	Advice from ET	Action taken	Closing date	Remarks
	2 June 15	Oil stain was observed on the ground at the plant workshop in Area 3.	Contractor was advised to remove the oil stain as chemical waste. Contractor was suggested to place a tarpaulin sheet when carrying out maintenance of construction to avoid leaking oil on ground.	The oil stain on the ground at plant workshop was removed.	9 June 15	/
Cultural Heritage	16 June 15	A construction waste skip was observed within the FKCP fence-off area.	Contractor was advised to remove the skip and ensure the fence-off area is construction material	Construction container was removed from FKCP fence-off area.	23 June 2015	/
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

Two complaints received on 21st May and 2nd June 2015 were referred by EPD on 9th June and 13th June 2015 respectively regarding the noise impact, dust impact and muddy water. ET was carried out the investigation on 12th June and 16th June 2015 to resolve the concern.

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: excavation and breaking boulder, corridor wall formwork, interface area sheet piling works
- Cut and cover tunnel: external waterstop, walkway and final clearing, defect rectification
- Package 4.5: sheetpile extraction for seaside hydraulic cut off wall
- Station: concreting
- Mined tunnel: backfilling, strut installation, excavation, strut removal

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 twenty fifth monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during 1st June 2015 to 30th June 2015 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.

Two complaints received on 21st May and 2nd June 2015 were referred by EPD on 9th June and 13th June 2015 respectively regarding the noise impact, dust impact and muddy water. ET was carried out the investigation on 12th June and 16th June 2015 to resolve the concern.

No breaches of Action and Limits levels, non-compliance event, notification of summons and successful prosecution against the Project were received in this reporting month.

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:

Noise Impact

- Erect temporary noise barrier and wrap the breaker tip with sound absorptive material for rock breaking

Air Quality Impact

- Cover dusty stockpile entirely with tarpaulin or spray with water to maintain exposed surface wet
- Shelter the cement mixing area with the top and 3-sides enclosure
- Provide water spraying during boulder breaking

- Cover cement stock entirely with impervious sheet
- Maintain in good performance of excavator

Water Quality Impact

- Maintain the wastewater treatment facilities regularly for proper functioning
- Maintain sandbag barrier for blocking runoff of untreated water
- Provide proper secondary containment for chemical storage

Chemical Management

- Properly handle oil/chemical containing equipment

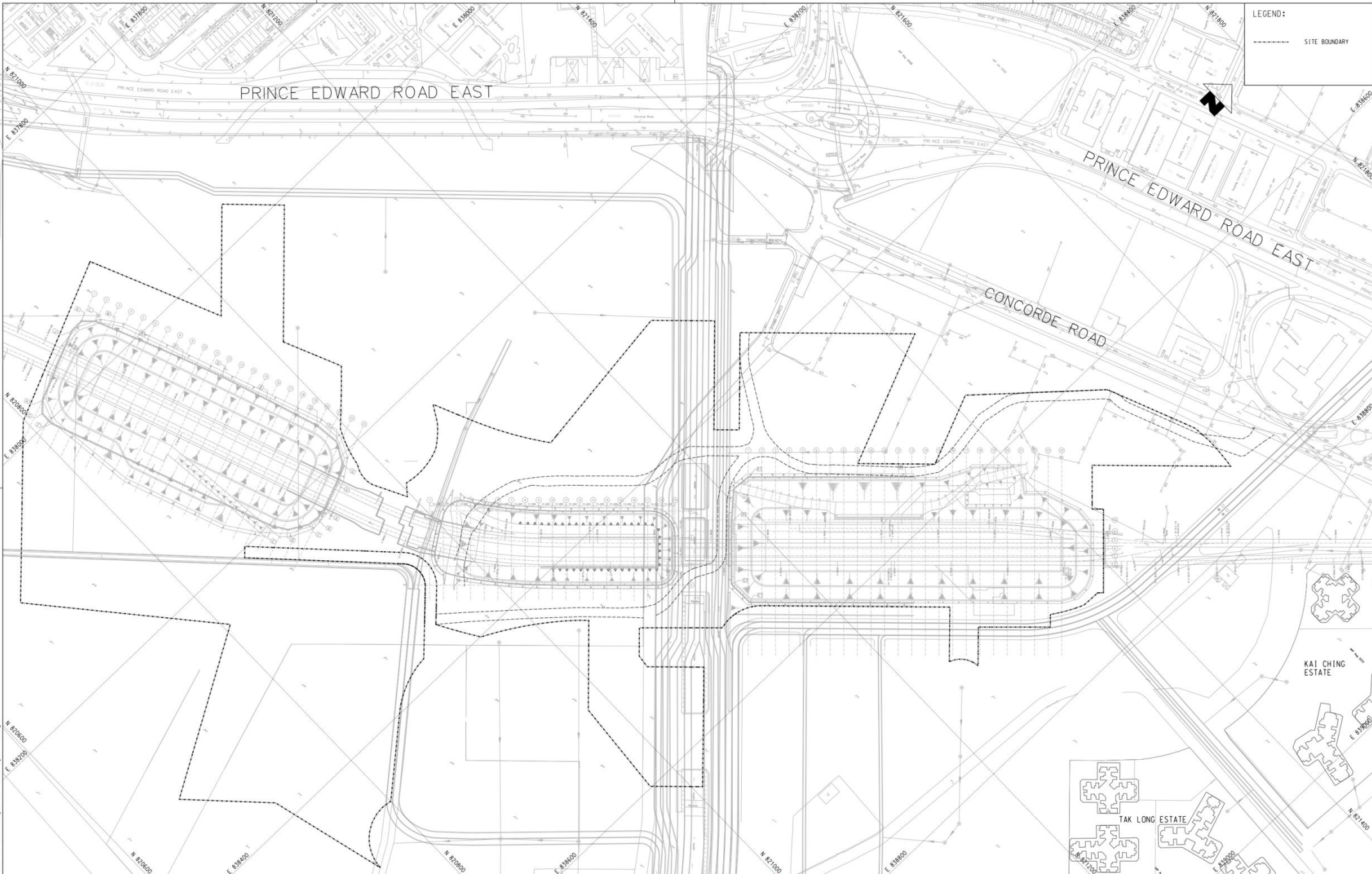
Waste Management

- Remove the waste and accumulated water within the skip regularly

Cultural Heritage

- Ensure the FKCP area is free of construction material and equipment

Appendix A – Site Location Plan



LEGEND:
 - - - - - SITE BOUNDARY

PLOT DIR: \\Site Layout Plan.dgn
 MODELNAME: E:\1008\1008\1008\1008.dwg
 DATE: 11/08/2014 11:08:14 AM
 USER: Calvin C

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED
A	FIRST SUBMISSION	KW	11/08/14	BW					

DRAWN	CC
DESIGNED	KW
CHECKED	ET
APPROVED	BW
DATE	11/AUG/2014


SHATIN TO CENTRAL LINK
 ORIGINATOR

 Kaden - Chun Wo Joint Venture

TITLE
CONTRACT 1108
KAI TAK STATION AND ASSOCIATED TUNNELS
 SITE LAYOUT PLAN

SCALE
 1 : 1500 (A1)

DRAWING NO.
SITE LAYOUT PLAN

REV. A

DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE
 VERIFIED ON SITE.
 IN THE EVENT OF A DISCREPANCY BETWEEN THE
 DIMENSIONS SHOWN ON THIS DRAWING AND THE
 DIMENSIONS SHOWN ON THE ORIGINAL DRAWING,
 THE DIMENSIONS SHOWN ON THIS DRAWING SHALL
 PREVAIL. THIS DRAWING IS THE PROPERTY OF
 THE MTR CORPORATION LIMITED. IT IS TO BE USED
 ONLY FOR THE PROJECT AND SITE SPECIFICALLY
 IDENTIFIED. NO REPRODUCTION OR PARTIAL
 REPRODUCTION OF THIS DRAWING OR ANY PART
 THEREOF IS PERMITTED WITHOUT THE WRITTEN
 CONSENT OF THE MTR CORPORATION LIMITED.

Appendix B – Construction Programme

Activity ID	Activity Name	Activity % Complete	Start	Finish	June				July				August				September				October	
					27		22		28		23		29		24		30		05		01	
					01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28
Contract 1108 Kai Tak Station and Associated Tunnels																						
Contractual Dates and Project Key Dates																						
Critical Dates																						
Schedule of Options																						
Latest Exercising Date																						
01108.CDO2a-ED	Option 2a - Roads L9 & L16 & Associated Works, except the works in Options 2b & 2c - Latest Exercising Date (31-Mar-15)	0%	30-Jun-15*																			
01108.CDO2c-ED	Option 2c - Establishment works of the landscape softworks in Option 2b - Latest Exercising Date (31-Mar-15)	0%	30-Jun-15*																			
01108.CDO2b-ED	Option 2b - Landscape hardwork, irrigation facilities, softworks & pavers - Latest Exercising Date (31-Mar-15)	0%	30-Jun-15*																			
Section of the Works Completion (General Damages Applicable)																						
01108.CD2A	2A - Complete works at Works Areas 1108.W8, W9 & W10 & ready for handover (Wk.22/15, 31-May-15) [Note for Option 3]	0%		13-Jul-15*																		
IPS Milestone Dates																						
Cost Centre B - Kai Tak Station, Entrances and Adits																						
01108.MSB07c	B7 - All floor, wall & ceiling finishes to all area on Platform Level completed (Week No. 33/15, 16-Aug-15)	0%		02-Jul-15																		
01108.MSB07a	B7 - Complete all structural works for Concourse Level(Week No. 33/15, 16-Aug-15)	0%		03-Aug-15																		
Cost Centre C - South Approach Tunnel																						
01108.MSC06	C6 - Complete excavation to tunnel formation levels & Complete Access Shafts structural works (Week No.52/14, 28-Dec-14)	0%		27-Aug-15																		
Cost Centre F - Option 2 - CEDD Works for Roads L9 & L16 and Associated Works																						
01108.MSF01	F1 - Contractor's d wgs submission schedule & All permanent works Material Control Schedule approved (WN.33/15,16-Aug-15)	0%		03-Aug-15																		
01108.MSF02	F2 - Shop drawings & material submissions approved (Week No. 50/15, 13-Dec-15)	0%		07-Sep-15																		
Programme Data																						
Interface with Contract 1109																						
01108.PD5-IF1109.1	Contract 1109 Provide access to Contract 1108 at interface area for tunnel construction (Week No. 27/15, 05-Jul-15)	0%	06-Jul-15*																			
Schedule of Access & Vacate Dates for Works Areas																						
Vacation Dates																						
Works Areas																						
01108.VAW08	Works Area 1108.W8 (31-Jul-15)	0%		13-Jul-15*																		
01108.VAW10	Works Area 1108.W10 (31-Jul-15)	0%		13-Jul-15*																		
A - Preliminaries																						
B - Kai Tak Station, Entrances and Adits																						
B1 KAT Station																						
B1.3 Station - U/G C&S Works (Below Concourse Level Soffit)																						
Metalworks, BWIC with Services and BS Works																						
01108.STN.BM12-24	GL 12~24 Installation of PSD support beam, 16.5 t	50%	24-Jun-15 A	03-Aug-15																		
01108.STN.BM04-12	GL 04~12 Installation of PSD support beam, 11 t	25%	29-Jun-15 A	17-Aug-15																		
01108.STN.BW12-24	GL 12~24 BWIC and BS works	0%	09-Jul-15	30-Sep-15																		
01108.STN.BW04-12	GL 04~12 BWIC and BS works	0%	05-Aug-15	15-Oct-15																		
01108.STN.BM00-04	GL 00~04 Installation of PSD support beam, 5.5 t	0%	18-Aug-15	21-Sep-15																		
B1.4 Station U/G C&S Works (Concourse Level and Above)																						
Internal Wall to Lower Ground																						
01108.STN.IG02-04	GL 02~04 Internal wal & column (196m with 6 teams in 10m panel)	75%	19-Mar-15 A	07-Jul-15																		
01108.STN.IG00-02	GL 00~02 Internal wal & column (196m with 6 teams in 10m panel)	0%	08-Jul-15	03-Aug-15																		
Lower Ground Slab																						
01108.STN.GS02-04	GL 02~04 Lower ground slab	75%	08-May-15 A	06-Jul-15																		
01108.STN.GS00-02	GL 00~02 Lower ground slab	40%	08-Jun-15 A	15-Aug-15																		
Mezzanine Level																						
Mezzanine Internal Wall																						
01108.MS07aP	B7 - Complete all structural works for Concourse Level (Week No. 33/15, 16-Aug-15) - Programmed	0%		03-Aug-15*																		
Waterproofing																						
Waterproofing to Concourse Level																						
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-Jul-15																		
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-Jul-15																		
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)	50%	17-Sep-14 A	04-Jul-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)	100%	04-Jun-15 A	12-Jun-15 A																		
01108.STN.WP00-00.1	GL00~00 Waterproofing works to external end wall up to concourse slab, 35.6mL x 7.66mH (273 m2)	0%	30-Jun-15	07-Jul-15																		

▲	▲ Milestone	—	PMP Rev C
▲	▲ Critical Milestone	▨	Last Report
▨	Critical Remaining Work	■	Actual Work
▨	Remaining Work		
▨	Remaining Level of Effort		

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (June 2015)



Activity ID	Activity Name	Activity % Complete	Start	Finish	June				July				August				September				October			
					27		29		28		27		29		30		31		31		31			
					01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28	05	
Waterproofing to Lower Ground Level																								
01108.STN.WP14-16.2	GL 14~16 Waterproofing works to external wall up to LGL, 2 x 30mL x 5.9mH (354 m2)	80%	22-Jan-15 A	03-Jul-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)	40%	05-Feb-15 A	09-Jul-15																				
01108.STN.WP24-24.2	GL 24~24 Waterproofing works to external end wall up to LGL, 22.4mL x 5.9mH (130 m2)	100%	04-Jun-15 A	12-Jun-15 A																				
01108.STN.WP21-24.2	GL 21~24 Waterproofing works to external wall up to LGL, 2 x 34mL x 5.9mH (401 m2)	30%	08-Jun-15 A	10-Jul-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%	30-Jun-15	07-Jul-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%	30-Jun-15	09-Jul-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%	08-Jul-15	16-Jul-15																				
Waterproofing at Lower Ground Level Slab																								
01108.STN.WP12-14.3	GL 12~14 Waterproofing works to roof, 856 m2	75%	01-Jun-15 A	02-Jul-15																				
01108.STN.WP02-04.3	GL 02~04 Waterproofing works to roof, 856 m2	0%	10-Jul-15	17-Jul-15																				
01108.STN.WP00-02.3	GL 00~02 Waterproofing works to roof, 700 m2	0%	18-Jul-15	25-Jul-15																				
Backfilling																								
Backfilling to Concourse Level																								
01108.STN.BF19-21.1	GL 19~21 Backfill and compaction, 7580 m3	80%	09-Feb-15 A	07-Jul-15																				
01108.STN.BF02-04.1	GL 02~04 Backfill and compaction, 6770 m3	60%	04-May-15 A	14-Jul-15																				
01108.STN.BF21-24.1	GL 21~24 Backfill and compaction, 6410 m3	40%	06-May-15 A	15-Jul-15																				
01108.STN.BF00-02.1	GL 00~02 Backfill and compaction, 4420 m3	0%	14-Jul-15	30-Jul-15																				
Backfilling to Lower Ground Level																								
01108.STN.BF12-14.2	GL 12~14 Backfill and compaction, 9710 m3	90%	16-Feb-15 A	03-Jul-15																				
01108.STN.BF04-06.2	GL 04~06 Backfill and compaction, 8410 m3	80%	03-Mar-15 A	08-Jul-15																				
01108.STN.BF14-16.2	GL 14~16 Backfill and compaction, 9710 m3	25%	04-May-15 A	31-Jul-15																				
01108.STN.BF16-19.2	GL 16~19 Backfill and compaction, 9710 m3	10%	01-Jun-15 A	06-Aug-15																				
01108.STN.BF19-21.2	GL 19~21 Backfill and compaction, 9400 m3	10%	11-Jun-15 A	17-Aug-15																				
01108.STN.BF00-02.2	GL 00~02 Backfill and compaction, 5490 m3	0%	08-Jul-15	31-Jul-15																				
01108.STN.BF21-24.2	GL 21~24 Backfill and compaction, 8710 m3	0%	10-Jul-15	21-Aug-15																				
01108.STN.BF02-04.2	GL 02~04 Backfill and compaction, 7410 m3	0%	14-Jul-15	07-Aug-15																				
Backfilling to Finish Ground Level																								
01108.STN.BF12-14.3	GL 12~14 Backfill and compaction, 8240 m3	70%	03-Mar-15 A	13-Jul-15																				
01108.STN.BF10-12.3	GL 10~12 Backfill and compaction, 8240 m3	90%	03-Mar-15 A	03-Jul-15																				
01108.STN.BF06-08.3	GL 06~08 Backfill and compaction, 8240 m3	80%	03-Mar-15 A	08-Jul-15																				
01108.STN.BF14-16.3	GL 14~16 Backfill and compaction, 8240 m3	20%	08-Apr-15 A	03-Aug-15																				
01108.STN.BF16-19.3	GL 16~19 Backfill and compaction, 8240 m3	20%	18-Apr-15 A	03-Aug-15																				
01108.STN.BF04-06.3	GL 04~06 Backfill and compaction, 8240 m3	0%	09-Jul-15	19-Aug-15																				
01108.STN.BF02-04.3	GL 02~04 Backfill and compaction, 7240 m3	0%	07-Aug-15	04-Sep-15																				
01108.STN.BF19-21.3	GL 19~21 Backfill and compaction, 7840 m3	0%	17-Aug-15	29-Sep-15																				
01108.STN.BF21-24.3	GL 21~24 Backfill and compaction, 7970 m3	0%	21-Aug-15	05-Oct-15																				
01108.STN.BF00-02.3	GL 00~02 Backfill and compaction, 6040 m3	0%	25-Aug-15	19-Sep-15																				
01108.MSB07bP	Completion of Station backfill and compaction for outside works - Programmed	0%		19-Sep-15																				
Water Tanks & CLP Transformer Rooms																								
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%	30-Jun-15	24-Sep-15																				
01108.STN.CP110	CLP Transformer Rooms 3~6 - BS Works	0%	15-Aug-15	06-Nov-15																				
01108.STN.CP020	CLP Transformer Rooms 1~2 (GL A1-A2/1-4) and Dedicated Access 1 (and LV Switch Room) - Walls, etc.	0%	15-Aug-15	27-Oct-15																				
01108.STN.CP210	CLP Transformer Rooms 3~6 - ABWF Works	0%	19-Sep-15	11-Dec-15																				
Metalworks, BWIC with Services and BS Works																								
01108.STN.BW110	KAT Concourse level - Elect hoisting beams, 5.99t	0%	15-Aug-15	13-Oct-15																				
01108.STN.BW120	KAT Concourse level - BWIC with services	0%	29-Aug-15	27-Oct-15																				
01108.STN.BW130	KAT Concourse level - BS works	0%	12-Sep-15	10-Nov-15																				
01108.STN.BW220	KAT Concourse level - BWIC with services	0%	12-Sep-15	27-Oct-15																				
01108.STN.BW230	KAT Concourse level - BS works	0%	26-Sep-15	10-Nov-15																				
B1.5 Station - A/G C&S Works (Vent Shaft)																								
Northern Vent Shaft																								
01108.STN.NS010	Suspended slabs and beams	30%	01-Jun-15 A	07-Aug-15																				
01108.STN.NS020	External walls, columns and walls	0%	07-Aug-15	05-Oct-15																				
Souther Vent Shaft																								

▲ Milestone
 ▲ Critical Milestone
 Critical Remaining Work
 Remaining Work
 Remaining Level of Effort
 PMP Rev C
 Last Report
 Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (June 2015)

基利
Kaden - Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish	June				July				August				September				October			
					27		28		29		30		01		02		03		04		05		06	
					01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28	05	12
01108.STN.EB050	Drainage	0%	22-Jul-15	24-Aug-15																				
01108.STN.EB060	Metal works and finishes	0%	25-Aug-15	18-Nov-15																				
B3.2 Entrance B and Adit - ABWF Works																								
Entrance B and Adit																								
01108.STN.EB110	ABWF Works	0%	25-Aug-15	04-Nov-15																				
C - South Approach Tunnel																								
C1 Open Cut Tunnels (U=341m; D=340m)																								
C1.2 Excavation																								
C1.2.2 Temporary Works																								
Temporary Works Design & Approval																								
01108.OCT.DN06.2.2	Open Cut (CH 99222 to 99257, Interface with C1109) - Design Revision, if required, & Submit to RDO/ BD/ GEO	0%	22-Apr-15 A	29-Jul-15																				
01108.OCT.DN06.2.3	Open Cut (CH 99222 to 99257, Interface with C1109) - Design - No-adverse-comment by RDO/ BD/ GEO	0%	30-Jul-15	01-Sep-15																				
Dewatering and Observation Wells																								
01108.OCT.DW9218	Ch 99185~99218 Dewatering wells, 13 nr PW1~PWQ13; Observation wells, 4 nr OW1~OW4; Piezometer, PZ9&PZ10 (2 Rigs)	0%	06-Jul-15	22-Jul-15																				
01108.OCT.DW9218t	Ch 99217~99258 Pumping tests	0%	23-Jul-15	11-Aug-15																				
Sheet Piles																								
Water Cut-off Wall Enclosure at C1109																								
01108.OCT.SP9258	At Ch 99258 Sheet piling, 230 nr x 12.5m (2875m, 190t, total)	50%	27-Apr-15 A	09-Jul-15																				
C1.2.3 Excavation CH 98975 to CH 99217																								
From Existing Ground Level to Formation Level																								
01108.OCT.EX9038	CH 99017~99038 Excavation	70%	28-Sep-13 A	13-Jul-15																				
01108.OCT.EX9206	CH 99185~99206 Excavation	95%	28-Sep-13 A	02-Jul-15																				
01108.OCT.EX9217	CH 99206~99217 Excavation 10.5mL	90%	28-Sep-13 A	03-Jul-15																				
01108.OCT.EX9017	CH 98996~99017 Excavation	20%	07-Oct-13 A	03-Aug-15																				
01108.OCT.EX8996	CH 98975~98996 Excavation	10%	18-Oct-13 A	06-Aug-15																				
C1.2.3 Excavation CH 99215 to CH99257 (Interface with C1109)																								
From Existing Ground Level to Formation Level																								
01108.OCT-IF1109.1	Contract 1109 to provide access to Contract 1108 at interface area for tunnel construction	0%	06-Jul-15																					
01108.OCT.EX9238	CH 99217~99238 Excavation	0%	02-Sep-15	21-Sep-15																				
01108.OCT.EX9257	CH 99238~99257 Excavation, 19.64mL	0%	22-Sep-15	14-Oct-15																				
C1.3 C&S Works																								
Tunnel Construction CH 98975 to CH99217																								
Base Slabs																								
01108.OCT.TS8996	CH 98975~98996 Base slabs, 2 x 2 x 10.5mL	50%	28-Apr-15 A	09-Jul-15																				
01108.OCT.TS9185	CH 99164~99185 Base slabs, 2 x 2 x 10.5mL	0%	30-Jun-15	18-Jul-15																				
01108.OCT.TS9206	CH 99185~99206 Base slabs, 2 x 2 x 10.5mL	0%	20-Jul-15	05-Aug-15																				
01108.OCT.TS9217	CH 99206~99217 Base slabs, 2 x 10.5mL	0%	06-Aug-15	24-Aug-15																				
Walls & Top Slabs																								
01108.OCT.TR9017	CH 98996~99017 Wall & top slabs, 2 x 2 x 10.5mL	50%	26-Apr-15 A	11-Jul-15																				
01108.OCT.TR8966	CH 98975~98996 Wall & top slabs, 2 x 2 x 10.5mL	0%	10-Jul-15	31-Jul-15																				
01108.OCT.TR9185	CH 99164~99185 Wall & top slabs, 2 x 2 x 10.5mL	0%	20-Jul-15	10-Aug-15																				
01108.OCT.TR9206	CH 99185~99206 Wall & top slabs, 2 x 2 x 10.5mL	0%	11-Aug-15	01-Sep-15																				
01108.OCT.TR9217	CH 99206~99217 Wall & top slabs, 2 x 10.5mL	0%	02-Sep-15	21-Sep-15																				
Internal C&S Works																								
01108.OCT.IC9144	CH 99122~99143 Track level concrete works & finishes	0%	30-Jun-15	11-Jul-15																				
01108.OCT.IC9164	CH 99143~99164 Track level concrete works & finishes	0%	13-Jul-15	23-Jul-15																				
01108.OCT.IC8966	CH 98975~98996 Track level concrete works & finishes	0%	29-Aug-15	11-Sep-15																				
01108.OCT.IC9185	CH 99164~99185 Track level concrete works & finishes	0%	08-Sep-15	18-Sep-15																				
01108.OCT.IC9017	CH 98996~99017 Track level concrete works & finishes	0%	12-Sep-15	23-Sep-15																				
01108.OCT.IC9038	CH 99017~99038 Track level concrete works & finishes	0%	24-Sep-15	07-Oct-15																				
Waterproofing Works																								
01108.OCT.WP9143	CH 99122~99143 2-coat spray, 75mm screed & 75mm mb bc kworks, 2 x 2 x 10.5mL	0%	30-Jun-15	18-Jul-15																				
01108.OCT.WP9164	CH 99143~99164 2-coat spray, 75mm screed & 75mm mb bc kworks, 2 x 2 x 10.5mL	0%	13-Jul-15	29-Jul-15																				
01108.OCT.WP8996	CH 98975~98996 2-coat spray, 75mm screed & 75mm mb bc kworks, 2 x 2 x 10.5mL	0%	29-Aug-15	16-Sep-15																				
01108.OCT.WP9185	CH 99164~99185 2-coat spray, 75mm screed & 75mm mb bc kworks, 2 x 2 x 10.5mL	0%	08-Sep-15	25-Sep-15																				
01108.OCT.WP9017	CH 98996~99017 2-coat spray, 75mm screed & 75mm mb bc kworks, 2 x 2 x 10.5mL	0%	10-Sep-15	29-Sep-15																				

▲	▲ Milestone	—	PMP Rev C
▲	▲ Critical Milestone	—	Last Report
■	■ Critical Remaining Work	■	Actual Work
■	■ Remaining Work		
■	■ Remaining Level of Effort		

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme (June 2015)



Activity ID	Activity Name	Activity % Complete	Start	Finish	June				July				August				September				October	
					27		29		28		27		29		30		31		31			
					01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28
Temporary Works and ELS from Westside (2 Workfronts, each 20mL)																						
01108.MIT.TW020w	U/T Flame cut holes in sheet piles	0%	05-Jul-15	06-Jul-15																		
01108.MIT.TW030w	U/T Drilling for grouting, 20mL	0%	06-Jul-15	30-Jul-15																		
01108.MIT.TW220w	D/T Flame cut holes in sheet piles	0%	13-Jul-15	14-Jul-15																		
01108.MIT.TW230w	D/T Drilling for grouting, 20mL	0%	14-Jul-15	07-Aug-15																		
01108.MIT.TW040w	U/T 2mT TAM grouting surrounding extrados of proposed steel tube periphery, 20mL	0%	26-Jul-15	19-Aug-15																		
01108.MIT.TW240w	D/T 2mT TAM grouting surrounding extrados of proposed steel tube periphery, 20mL	0%	03-Aug-15	27-Aug-15																		
01108.MIT.TW050w	U/T Install steel tube for full periphery	0%	19-Aug-15	12-Sep-15																		
01108.MIT.TW060w	U/T Pressure grouting to fill steel tube and drilled voids around steel tubes	0%	23-Aug-15	16-Sep-15																		
01108.MIT.TW250w	D/T Install steel tube for full periphery	0%	27-Aug-15	20-Sep-15																		
01108.MIT.TW260w	D/T Pressure grouting to fill steel tube and drilled voids around steel tubes	0%	31-Aug-15	24-Sep-15																		
01108.MIT.TW070w	U/T Weld steel arch rib in front of sheet pile wall & within steel tube canopy	0%	13-Sep-15	18-Sep-15																		
01108.MIT.TW080w	U/T Remove sheet pile sections and strutting for tunnel heading excavation	0%	18-Sep-15	20-Sep-15																		
01108.MIT.TW090w	U/T Measure ground water flow and supplementary grouting	0%	19-Sep-15	21-Sep-15																		
01108.MIT.TW100w	U/T Install tempoaray face support works	0%	19-Sep-15	22-Sep-15																		
01108.MIT.TW270w	D/T Weld steel arch rib in front of sheet pile wall & within steel tube canopy	0%	21-Sep-15	26-Sep-15																		
01108.MIT.TW280w	D/T Remove sheet pile sections and strutting for tunnel heading excavation	0%	26-Sep-15	28-Sep-15																		
01108.MIT.TW290w	D/T Measure ground water flow and supplementary grouting	0%	27-Sep-15	29-Sep-15																		
01108.MIT.TW295w	D/T Install tempoaray face support works	0%	27-Sep-15	30-Sep-15																		
C2.1.3 Earthworks																						
01108.MIT.EX0110	U/T CH 98870 Excavate 2 workfronts x 3 x 1.3m advance hedging, install steel ribs, tie rod and shotcrete side wall	0%	21-Aug-15	29-Aug-15																		
01108.MIT.EX8917	D/T CH 98870 Excavate 2 workfronts x 3 x 1.3m advance hedging, install steel ribs, tie rod and shotcrete side wall	0%	21-Aug-15	29-Aug-15																		
01108.MIT.EX0120	U/T Temporary Type S2 fibre-reinforced shotcrete to tunnel face & invert above bench	0%	29-Aug-15	30-Aug-15																		
01108.MIT.EX8927	D/T Temporary Type S2 fibre-reinforced shotcrete to tunnel face & invert above bench	0%	29-Aug-15	30-Aug-15																		
01108.MIT.EX0130	U/T Remove sheet pile sections and strutting for tunnel bench excavation	0%	30-Aug-15	01-Sep-15																		
01108.MIT.EX8937	D/T Remove sheet pile sections and strutting for tunnel bench excavation	0%	30-Aug-15	01-Sep-15																		
01108.MIT.EX0140	U/T Measure ground water flow and supplementary grouting	0%	01-Sep-15	02-Sep-15																		
01108.MIT.EX8947	D/T Measure ground water flow and supplementary grouting	0%	01-Sep-15	02-Sep-15																		
01108.MIT.EX0150	U/T Install tempoaray face support works	0%	02-Sep-15	05-Sep-15																		
01108.MIT.EX8957	D/T Install tempoaray face support works	0%	02-Sep-15	05-Sep-15																		
01108.MIT.EX0160	U/T CH98870 Excavate 2 workfronts x 3 x 1.3 m bench, install steel ribs, tie rod and shotcrete side wall	0%	05-Sep-15	13-Sep-15																		
01108.MIT.EX8967	D/T CH98870 Excavate 2 workfronts x 3 x 1.3 m bench, install steel ribs, tie rod and shotcrete side wall	0%	05-Sep-15	13-Sep-15																		
01108.MIT.EX0170	U/T Temporary Type S2 fibre-reinforced shotcrete to tunnel bench face	0%	13-Sep-15	15-Sep-15																		
01108.MIT.EX8977	D/T Temporary Type S2 fibre-reinforced shotcrete to tunnel bench face	0%	13-Sep-15	15-Sep-15																		
01108.MIT.EX8987	D/T CH 98874 Excavate 2 workfronts x 3 x 1.3m advance heading, bench & install temporary works	0%	15-Sep-15	04-Oct-15																		
01108.MIT.EX8874	U/T CH 98874 Excavate 2 workfronts x 3 x 1.3m advance heading, bench & install temporary works	0%	15-Sep-15	04-Oct-15																		
01108.MIT.EX8907	U/T CH 98907 Excavate 2 workfronts x 1.6m advance heading, bench & install temporary works	0%	22-Sep-15	11-Oct-15																		
01108.MIT.EX9077	D/T CH 98907 Excavate 2 workfronts x 1.6m advance heading, bench & install temporary works	0%	30-Sep-15	19-Oct-15																		
C3 Cut and Cover Tunnels (U=297m; D=307m)																						
C3.2 Excavation CH 98650 to CH 98866 and CH 98907 to CH 98975																						
C3.2.2 Temporary Works and ELS																						
Temporary Works Design & Approval																						
01108.CCT.DN05.1b.3	CCT ELS/ Hydraulic (CH 98650 to 98750) - No-adverse-comment by RDO/BD/GEO	90%	20-Aug-13 A	04-Jul-15																		
01108.CCT.DN05.2.3	CCT ELS (CH 98750 to 98976) - Design No-adverse-comment by RDO/BD/GEO	90%	23-Dec-13 A	02-Jul-15																		
C3.2.3 Earthworks																						
Partial Open Cut																						
Full Height Cofferdam Adjacent Mined Tunnel																						
01108.CCT.EX8985	CH 98840~98866 Excavation & struts, 2 x 10.5+ 5mL (East Shaft)	65%	08-Jul-14 A	14-Jul-15																		
01108.CCT.EX8995	CH 98906~98928 Excavation & struts, 2 x 10.5mL (West Shaft)	80%	28-Aug-14 A	06-Jul-15																		
Open Cut from Existing Ground Level to -3.5mPD																						
01108.CCT.EX8825c	CH 98818~98840 Excavation to -3.5mPD, 6688 m3	85%	06-Aug-14 A	06-Jul-15																		
Cofferdam below -3.5mPD																						
01108.CCT.EX8825s	CH 98818~98840 Excavation & struts, 6222m3	60%	06-Aug-14 A	10-Jul-15																		
Full Height Cofferdam																						
Excavation & ELS from Existing Groud Level to Formation Level																						

▲ Milestone
 ▲ Critical Milestone
 ■ Critical Remaining Work
 ■ Remaining Work
 ■ Remaining Level of Effort

— PMP Rev C
 ▨ Last Report
 ■ Actual Work

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Activity ID	Activity Name	Activity % Complete	Start	Finish	June					July					August					September					October	
					27					28					29					30					31	
					01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28	05			
01108.CCT.EX8975	CH 98967~98975 Excavation & struts, 9.5mL	80%	27-Dec-14 A	06-Jul-15																						
01108.CCT.EX8947	CH 98928~98947 Excavation & struts, 2 x 9.5mL	80%	27-Dec-14 A	08-Jul-15																						
01108.CCT.EX8966	CH 98947~98966 Excavation & struts, 2 x 9.5mL	80%	27-Dec-14 A	08-Jul-15																						
C3.3 C&S Works																										
Tunnel Construction CH 98650 to CH 98840																										
Base Slabs																										
01108.CCT.TB8783	CH98776~987797 Base slabs, 2 x 2 x 10.5mL	0%	30-Jun-15	18-Jul-15																						
01108.CCT.TB8804	CH98797~98818 Base slabs, 2 x 2 x 10.5mL	0%	20-Jul-15	05-Aug-15																						
01108.CCT.TB8825	CH98818~98840 Base slabs, 2 x 2 x 10.5mL	0%	06-Aug-15	24-Aug-15																						
External Walls and Top Slab																										
01108.CCT.TW8783	CH98776~98797 Walls and Top Slab, 2 x 2 x 10.5mL	0%	20-Jul-15	05-Aug-15																						
01108.CCT.TW8804	CH98797~98818 Walls and Top Slab, 2 x 2 x 10.5mL	0%	06-Aug-15	24-Aug-15																						
01108.CCT.TW8825	CH98818~98840 Walls and Top Slab, 2 x 2 x 10.5mL	0%	25-Aug-15	11-Sep-15																						
Internal C&C Works																										
01108.CCT.IC8657	CH98650~98671 Track level concrete works & finishes	50%	17-Apr-15 A	07-Jul-15																						
01108.CCT.IC8678	CH98671~98692 Track level concrete works & finishes	50%	17-Apr-15 A	13-Jul-15																						
01108.CCT.IC8699	CH98692~98713 Track level concrete works & finishes	0%	14-Jul-15	24-Jul-15																						
01108.CCT.IC8720	CH98713~98734 Track level concrete works & finishes	0%	25-Jul-15	04-Aug-15																						
01108.CCT.IC8741	CH98734~98755 Track level concrete works & finishes	0%	05-Aug-15	15-Aug-15																						
01108.CCT.IC8762	CH98755~98776 Track level concrete works & finishes	0%	17-Aug-15	27-Aug-15																						
01108.CCT.IC8783	CH98776~98797 Track level concrete works & finishes	0%	28-Aug-15	08-Sep-15																						
01108.CCT.IC8804	CH98797~98818 Track level concrete works & finishes	0%	09-Sep-15	19-Sep-15																						
01108.CCT.IC8825	CH98818~98840 Track level concrete works & finishes	0%	21-Sep-15	03-Oct-15																						
Waterproofing Works																										
01108.CCT.WP8741	CH98734~98755 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	85%	11-Sep-14 A	03-Jul-15																						
01108.CCT.WP8762	CH98755~98776 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	30-Jun-15	16-Jul-15																						
01108.CCT.WP8783	CH98776~98797 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	06-Aug-15	21-Aug-15																						
01108.CCT.WP8804	CH98797~98818 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	25-Aug-15	09-Sep-15																						
01108.CCT.WP8825	CH98818~98840 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	12-Sep-15	29-Sep-15																						
Drainage																										
01108.CCT.DR9005	CH98755~98840 U-channel, pipe laying, catch pits, 210mL	0%	17-Jul-15	14-Sep-15																						
Tunnel Construction CH 98928 to CH 98975																										
Base Slabs																										
01108.CCT.TB8947	CH98928~98947 Base slabs, 2 x 2 x 9.5mL	0%	08-Jul-15	30-Jul-15																						
01108.CCT.TB8966	CH98947~98966 Base slabs, 2 x 2 x 9.5mL	0%	30-Jul-15	22-Aug-15																						
01108.CCT.TB8975	CH98966~98975 Base slabs, 2 x 9.5mL	0%	22-Aug-15	08-Sep-15																						
External Walls																										
01108.CCT.TW8947	CH98928~98947 Walls, 2 x 2 x 9.5mL	0%	30-Jul-15	22-Aug-15																						
01108.CCT.TW8966	CH98947~98966 Walls, 2 x 2 x 9.5mL	0%	22-Aug-15	15-Sep-15																						
01108.CCT.TW8975	CH98966~98975 Walls, 2 x 9.5mL	0%	15-Sep-15	03-Oct-15																						
Top Slabs																										
01108.CCT.TR8947	CH98928~98947 Top slabs, 2 x 2 x 9.5mL	0%	22-Aug-15	15-Sep-15																						
01108.CCT.TR8966	CH98947~98966 Top slabs, 2 x 2 x 9.5mL	0%	15-Sep-15	10-Oct-15																						
Tunnel Construction CH 98840 to CH 98866 & CH 98907 to CH 98928																										
Base Slabs																										
01108.CCT.TB8928	CH98907~98928 Base slabs, 2 x 2 x 10.5mL	50%	10-Jun-15 A	13-Jun-16																						
01108.CCT.TB8866	CH98840~98866 Base slabs, 2 x 10.5+9.5mL	30%	27-Jun-15 A	10-Jun-16																						
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	07-Jul-15																						
01108.CCT.BF8720	CH98713~98734 Backfill, compaction & remove strut, 8470m3	75%	30-Sep-14 A	07-Jul-15																						
01108.CCT.BF8657	CH98650~98671 Backfill, compaction & remove strut, 8470m3	45%	30-Sep-14 A	14-Jul-15																						
01108.CCT.BF8741	CH98734~98755 Backfill, compaction & remove strut, 8470m3	45%	16-Oct-14 A	14-Jul-15																						
01108.CCT.BF8762	CH98755~98776 Backfill, compaction & remove strut, 8470m3	0%	04-Aug-15	27-Aug-15																						
01108.CCT.BF8783	CH98776~98797 Backfill, compaction & remove strut, 8470m3	0%	24-Aug-15	16-Sep-15																						
01108.CCT.BF8804	CH98797~98818 Backfill, compaction & remove strut, 8470m3	0%	17-Sep-15	15-Oct-15																						

▲ Milestone
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基利

 Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish	June				July				August				September				October	
					27		22		28		23		29		24		30		05		01	
					01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28
CSMM Backfill CH 98650 to CH 98840																						
01108.CCT.BF8720c	CH98707~98720 CSMM backfill, 13mL x 42m2, total 546 m3	0%	30-Jun-15	08-Jul-15																		
01108.CCT.BF8741c	CH98720~98741 CSMM backfill, 21mL x 42m2, total 882 m3	0%	09-Jul-15	21-Jul-15																		
01108.CCT.BF8757c	CH98741~98757 CSMM backfill, 16mL x 42m2, total 672 m3	0%	12-Aug-15	20-Aug-15																		
01108.CCT.BF8786c	CH98779~98786 CSMM backfill, 7mL x 42m2, total 294 m3	0%	17-Sep-15	22-Sep-15																		
01108.CCT.BF8804c	CH98786~98804 CSMM backfill, 18mL x 42m2, total 756 m3	0%	25-Sep-15	07-Oct-15																		
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.DN04.2.3	Stub Tunnel Interface with C1107 - Design No-adverse-comment by RDO/ BD/ GEO	100%	27-Jan-14 A	30-Jun-15																		
C4.2 Stub Tunnels - C&S Works																						
Backfill and Compaction																						
Backfill and Compaction CH98258 to CH98290																						
01108.STT.BF8273	CH98258~98273 Backfill, compaction & remove strut, 8159 m3	15%	16-Jun-15 A	27-Jul-15																		
01108.STT.BF8290	CH98273~98290 Backfill, compaction & remove strut, 8159 m3	15%	16-Jun-15 A	27-Jul-15																		
C5 SUA																						
C5.1 SUA - C&S Works																						
SUA Access at GL A1/A2																						
01108.OCT.SU030	At CH99088/GL A1~A2 SUA - Walls to top slabs	30%	13-Apr-15 A	15-Jul-15																		
01108.OCT.SU040	At CH99088/GL A1~A2 SUA - Mass concrete	50%	15-Jun-15 A	03-Jul-15																		
01108.OCT.SU050	At CH99088/GL A1~A2 SUA - Stairs & landings	0%	04-Jul-15	24-Jul-15																		
01108.OCT.SU060	At CH99088/GL A1~A2 SUA - Top slab	0%	25-Jul-15	13-Aug-15																		
C6 Access Shafts																						
C&S Works																						
C6.1.1 External Walls																						
01108.OCT.AS050	CH98746~98768 Access shaft - Temporary Wall 0.4mT 200mm above existing ground	0%	30-Jun-15	03-Aug-15																		
D - Associated Works																						
D2 Drainage																						
Sewerage and Stormwater																						
01108.AWD.F020	Foul sewer, F1.1~F1.3, 100m, 2 nr. MH	0%	04-Sep-15	18-Sep-15																		
01108.AWD.S020	Storm sewer, S1.1~S1.2: 35m, 1 nr. MH	0%	18-Sep-15	05-Oct-15																		
D3 Instrumentation and Monitoring																						
Instrumentation Installation and Monitoring																						
01108.AWM.0010	Installation of piezometers, inclinometers, ground/ bldg/ utility settlement markers	90%	02-Jul-13 A	07-Jul-15																		
01108.AWM.0030	Regular Monitorings and Submit Monitoring Reports (weekly for 50 months)	50%	01-Aug-13 A	11-Jun-17																		
D4 Landscape																						
Hard Landscape																						
Design of Irrigation Systems																						
01108.AWL.0010	Pop up sprinklers, dripline & water points irrigation system to green roof - Design and submission	0%	02-Jul-15	05-Aug-15																		
01108.AWL.0020	Pop up sprinklers, dripline & water points irrigation system to green - Approval	0%	05-Aug-15	16-Sep-15																		
D5 Utilities Diversion																						
Diversion of Existing Nullah																						
Temporary Works & Hydraulic Assessment																						
01108.AWD.DNA1.3	KTND Hydraulic Assessment - No-adverse-comment by DSD	90%	08-Aug-13 A	04-Jul-15																		
01108.AWD.DN09.5.3	KTND Temporary Channel - Design - No-adverse-comment by DSD & RDO/ BD/ GEO	90%	16-Jan-14 A	03-Jul-15																		
F Option 2 CEDD Entrusted Works for Roads L9 & L16 & Associated Works																						
Option 2a Roads L9 and L16 and Associated Works																						
Preliminaries																						
01108.O2A.PRE.010	Submission of drawings & permanent works material control schedules & Approval	0%	30-Jun-15	03-Aug-15																		
01108.CDO2a.EDP	Option 2a CEDD Entrusted Works - Roads L9 & L16 - Latest Exercising Date (31-Mar-15)	0%	30-Jun-15																			
01108.O2A.PRE.020	Submission of shop drawings & materials & Approval	0%	04-Aug-15	07-Sep-15																		
4. Sewage Works																						
01108.O2A.SEW020	FM50_10~DP23/24 Sewer pipe, 300d to 450d, 307mL; 13 nr MH	0%	30-Jun-15	07-Sep-15																		

▲ Milestone
 ▲ Critical Milestone
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 Remaining Level of Effort
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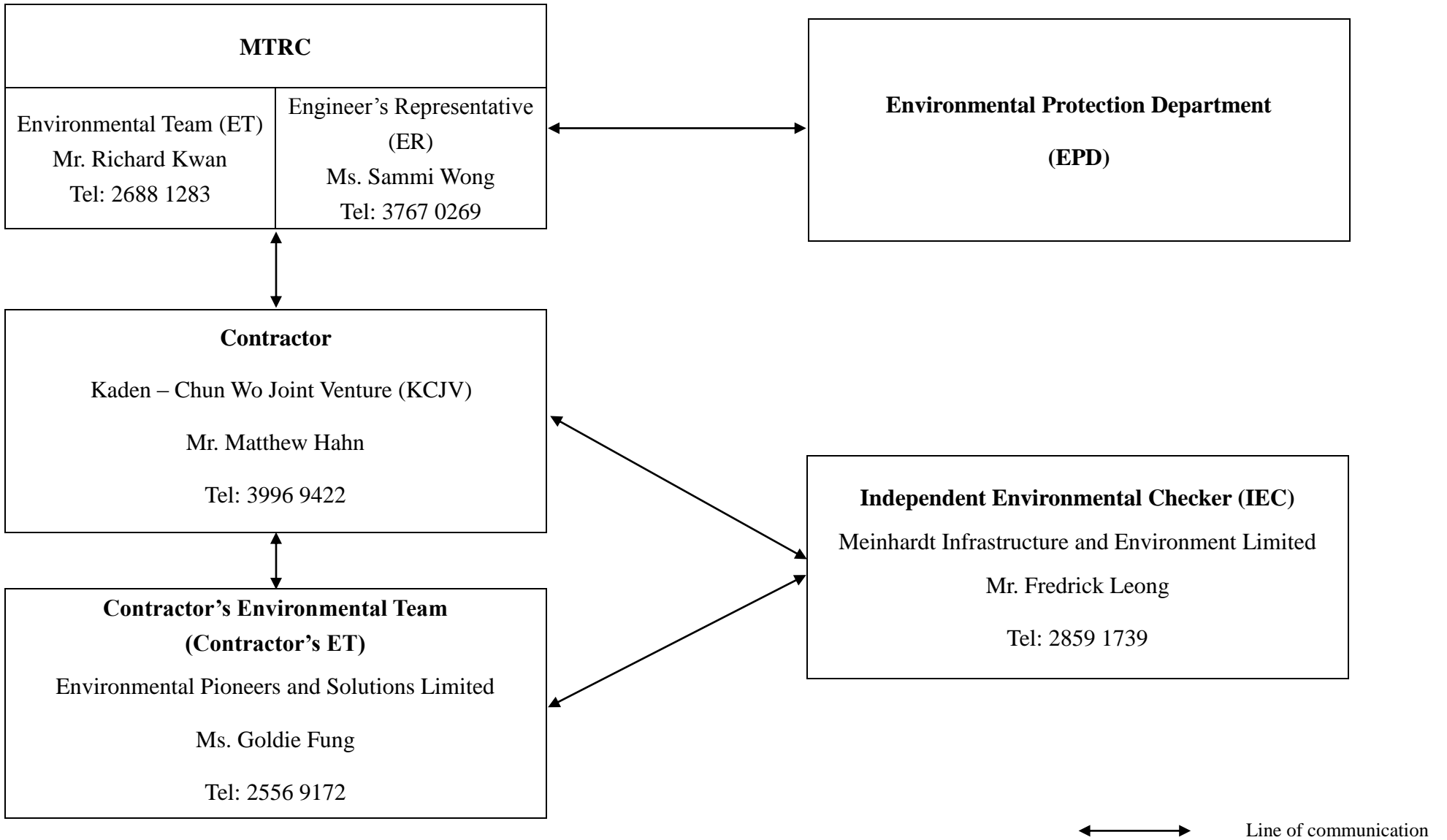
Activity ID	Activity Name	Activity % Complete	Start	Finish	June				July				August				September				October		
					27		29		28		27		29		30		31		31		05		
					01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	28	05
01108.O2A.SEW000	Remove disused pipes, 400mL	0%	30-Jun-15	08-Aug-15																			
01108.O2A.SEW025	FM50_10~DP23/24 Sewer pipe CCTV	0%	25-Aug-15	29-Sep-15																			
5. Waterworks																							
01108.O2A.FWM010	CH 342.7~661.7 Fresh watermain pipe, 200d, 250d, 300d, 600d -320mL; trust blocks, chambers, valve, bend, etc.	0%	08-Sep-15	05-Dec-15																			
11. Preservation & Protection of Trees																							
01108.O2A.PPT010	(Provisional) Preservataion & protection measures to preserved trees, survey & reporting (30 months)	0%	30-Jun-15	16-Oct-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%	30-Jun-15																				
9. Irrigation Facilities																							
01108.O2B.IRR000	Design & Approval of Irrigiati on Systems	0%	30-Jun-15	07-Sep-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%	30-Jun-15																				
G Option 3 CEDD Entrusted Works for Reconstruction of Kai Tak Nullah																							
Earthworks																							
Formation Level																							
01108.O3.ERW030	CH 98620~98636 Formation level of proposed nullah	40%	14-May-15 A	21-Jul-15																			
01108.O3.ERW010	Ch 98578~98599 Formation level of proposed nullah	5%	14-May-15 A	01-Aug-15																			
01108.O3.ERW020	Ch 98599~98620 Formation level of proposed nullah	15%	14-May-15 A	29-Jul-15																			
Construction of Nullah																							
Formation of Nullah Foundation with Rock Fill																							
01108.O3.FML010	Type 2 Geotextile, 500thk Grade 200 Rock fill, 3760 m3	0%	14-Jul-15	10-Oct-15																			
Nullah - Twin-cell Box Culvert (SOL 01)																							
01108.O3.SL3080	Base slab, 6 bays x 15 mL (within W9)	0%	25-Jul-15	25-Sep-15																			
01108.O3.SL1010	Base slab, 2 bays x 15 mL (within W10)	0%	25-Jul-15	14-Aug-15																			
01108.O3.SL3050	Base slab, 2 bays x 15 mL (within W8)	0%	25-Jul-15	14-Aug-15																			
01108.O3.SL3060	Walls & Top slab, 2 bays x 15mL (wtihin W8)	0%	11-Aug-15	02-Sep-15																			
01108.O3.SL1020	Walls & Top slab, 2 bays x 15mL (within W10)	0%	11-Aug-15	02-Sep-15																			
01108.O3.SL3090	Walls & Top slab, 3 bays x 15mL (within W9)	0%	09-Sep-15	13-Nov-15																			
Nullah - Open & Decked Channel (SOL 02)																							
01108.O3.SL3110	Base slab, 5 bays x 10mL typ. (within W9) Decked Channel	0%	16-Jul-15	11-Sep-15																			
01108.O3.SL3130	Base slab, 6 bays x 10mL typ. (within W10) Open Channel	0%	16-Jul-15	23-Sep-15																			
01108.O3.SL2010	Base slab, 4 bays x 10mL typ. (within W8) Open Channel	0%	16-Jul-15	30-Aug-15																			
01108.O3.SL3140	Walls, 6 bays x 10mL typ. (within W10) Open Channel	0%	01-Aug-15	13-Oct-15																			
01108.O3.SL2020	Walls, 4 bays x 10mL typ. (within W8) Open Channel	0%	01-Aug-15	17-Sep-15																			
01108.O3.SL3120	Walls & Top slab, 5 bays x 10mL typ. (within W9) Decked Channel	0%	11-Sep-15	11-Nov-15																			
Nullah - Twin-cell Box Culvert (SOL 03)																							
01108.O3.SL3150	Base slab, 2 bays x 15 mL (within W8)	0%	25-Jul-15	14-Aug-15																			
01108.O3.SL3170	Base slab, 6 bays x varib us 10 to 15 mL (within W9)	0%	25-Jul-15	25-Sep-15																			
01108.O3.SL3010	Base slab, 2 bays x 15 mL (within W10)	0%	25-Jul-15	14-Aug-15																			
01108.O3.SL3160	Walls & Top slab, 2 bays x 15mL (within W8)	0%	11-Aug-15	02-Sep-15																			
01108.O3.SL3020	Walls & Top slab, 2 bays x 15mL (within W10)	0%	11-Aug-15	02-Sep-15																			
01108.O3.SL3180	Walls & Top slab, 3 bays x 15mL (within W9)	0%	09-Sep-15	13-Nov-15																			

	Milestone		PMP Rev C
	Critical Milestone		Last Report
	Critical Remaining Work		Actual Work
	Remaining Work		
	Remaining Level of Effort		

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Appendix C –Project Organization Chart & Contact Details



MTRC	
Environmental Team (ET) Mr. Richard Kwan Tel: 2688 1283	Engineer's Representative (ER) Ms. Sammi Wong Tel: 3767 0269

Environmental Protection Department (EPD)
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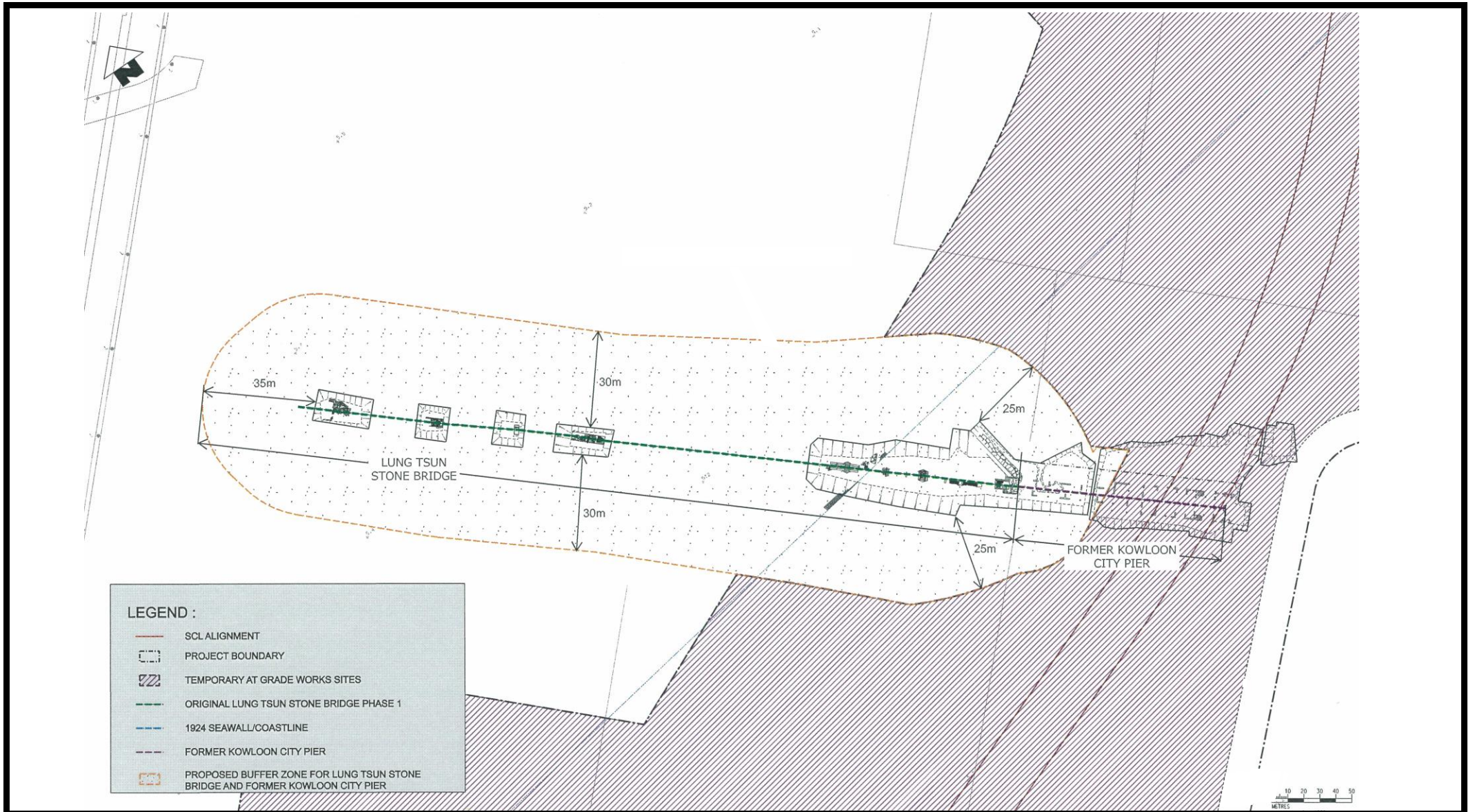
Contractor Kaden – Chun Wo Joint Venture (KCJV) Mr. Matthew Hahn Tel: 3996 9422

Contractor's Environmental Team (Contractor's ET) Environmental Pioneers and Solutions Limited Ms. Goldie Fung Tel: 2556 9172

Independent Environmental Checker (IEC) Meinhardt Infrastructure and Environment Limited Mr. Fredrick Leong Tel: 2859 1739
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Line of communication

***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 2015 (year)

Month	<u>Actual Quantities of Inert C&D Materials Generated Monthly</u>						<u>Actual Quantities of Non-inert 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 '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	21.421	0.000	21.421	0.000	0.000	0.000	18.530	0.075	0.000	0.640	0.203
Feb	32.137	0.000	31.290	0.000	0.847	0.000	15.590	0.060	0.006	0.000	0.136
Mar	31.149	0.000	28.783	0.000	2.366	0.000	36.260	0.072	0.009	0.000	0.186
Apr	40.033	0.000	26.285	0.000	13.748	0.000	27.190	0.056	0.015	0.000	0.232
May	11.639	0.000	9.525	0.000	2.114	0.000	25.250	0.057	0.020	0.000	0.159
Jun	28.414	0.000	20.336	0.000	8.078	0.000	7.270	0.168	0.014	0.000	0.264
Sub-total	164.793	0.000	137.640	0.000	27.153	0.000	130.090	0.488	0.064	0.640	1.180
July											
August											
September											
October											
November											
December											
Total	164.793	0.000	137.640	0.000	27.153	0.000	130.090	0.488	0.064	0.640	1.180
Year 2014	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	621.181	0.000	177.116	0.000	444.065		326.700	1.373	0.120	2.660	5.232

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>*</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	<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), 	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>

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>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.</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 					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 recharge operation or discharge of treated 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	* ✓ ✓
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 	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>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>					
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 	<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
		<p>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 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. • The Contractor should recycle as much of the C&D materials as 	<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>

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>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.</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 	<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
		local collection scheme should be considered by the Contractor.					
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; 	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>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
		<ul style="list-style-type: none"> • The Contractors shall comply with the conditions in the dumping licence. • 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>✓</p> <p>N/A</p> <p>N/A</p> <p>N/A</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
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 	Control the chemical waste and ensure proper storage, handling and disposal.	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
		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.					
<i>EM&A Project</i>							
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 2015	0	3	0	0
February 2015	0	2	0	0
March 2015	0	1	0	0
April 2015	0	0	0	0
May 2015	0	0	0	0
June 2015	0	2	0	0
Total	0	8	0	0
Year 2013	0	0	0	0
Year 2014	0	0	0	0
Grand Total	0	8	0	0


COMPLAINT / CONCERN LOG

Ref: KFMD0213-CL-150615

Log Ref	Event Date/Location	Complainant/Date of Contact	Details of Complaint	Investigation/Mitigation Action	File Closed
<p>Ref no.: KFMD0213-C L-150615</p> <p>EPD complaint ref.: 15-13442</p>	<p>Kai Tak Area</p>	<p>Complaint was received on 2nd June 2015.</p>	<p>Complaint received on 2nd June 2015 was referred from EPD on 9th June 2015 regarding noise and dust emission from the construction site.</p>	<p>1. Complaint received on 2nd June 2015 was referred from EPD on 9th June 2015 regarding noise and dust emission from the construction sites in Kai Tak Area affecting the health of the complainant. Environmental Team (ET) was informed via email by MTR.</p> <p>2. ET has conducted a site investigation with the representatives from Contractor on 12th & 16th June 2015 to resolve the concern. Routine weekly site inspection was also carried out on 2nd, 9th & 16th June 2015. The following mitigation measures were advised to contractor after the site inspection.</p> <ul style="list-style-type: none"> - Provide water spraying for dusty activities and cover the dusty materials with tarpaulin sheets for dust suppression. - Wrap the breaker tip with sound absorptive material and erect temporary noise barrier for noise mitigation. <p>3. During the investigation, the major site activities were rock breaking, concreting, excavation and backfilling. Dump trucks, excavators, tower cranes, mobile cranes, air compressors, power generators, compactors and concrete lorries were used on-site. Exposed stockpile was identified as the major dust source and rock breaking was identified as noise source.</p> <p>During the investigation, the following mitigation measures were observed.</p> <ul style="list-style-type: none"> - Water truck was assigned for providing water spraying to the haul road. - Slope was covered with tarpaulin or shotcreted with cement. - Stockpiles were covered in general and sprayed with water. - Automatic water spraying system was provided for dust 	<p>Yes</p>

				<p>suppression.</p> <ul style="list-style-type: none"> - Site hoarding was erected along the site boundary. - The transfer of dusty materials was covered with impervious sheeting in trucks. - Wheel washing facility and high pressure water jet were provided at the site entrance for dust removal. - Noise barriers were located improperly for rock breaking work. - Breaker tip was wrapped with damaged sound absorptive material. <p>It was also noticed that piling work was carried out in other construction project in Kai Tak Area. Noise and dust may also be arisen from the construction activities of adjacent projects.</p> <p>Contractor was reminded to implement the following mitigation measures.</p> <ul style="list-style-type: none"> - Ensure covering all inactive stockpile with tarpaulin sheets properly. - Increase the frequency of water spraying for the stockpile to prevent dust generation. - Locate noise barrier properly during the rock breaking work. - Replace the damaged sound absorptive material from the breaker tip to reduce noise impact. <p>4. The Contractor reported that the following measures will be further enforced to reduce dust and noise generation.</p> <ul style="list-style-type: none"> - Increase the frequency of water spraying for the active stockpile - Cover with tarpaulin sheet for the inactive stockpile entirely. - Cover or pave the exposed soil surface as far as practicable. - Provide water spraying for dust generating activities. - Erect noise barrier properly and move close to the noise source. - Replace the damaged sound absorptive material from the breaker tip. 	
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				5. The Contractor was seriously reminded to implement all necessary mitigation measure to minimize the noise and dust nuisance generated to sensitive receivers.	
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Filed by Environmental Team Leader: _____  _____


Date: 15th June 2015

COMPLAINT / CONCERN LOG

Ref: KFMD0213-CL-150613

Log Ref	Event Date/Location	Complainant/Date of Contact	Details of Complaint	Investigation/Mitigation Action	File Closed
<p>Ref no.: KFMD0213- CL-150613</p> <p>EPD complaint ref.: 15-12472</p>	<p>Kai Tak Area</p>	<p>A complaint was received on 21st May 2015</p>	<p>A complaint received on 21st May 2015 was referred from EPD on 13th June 2015 regarding the dust emission from construction work, partially exposed stockpile and suspected muddy water discharged to the Kai Tak Nullah.</p>	<ol style="list-style-type: none"> 1. A complaint received on 21st May 2015 was referred from EPD on 13th June 2015 regarding the dust emission from construction work, partially exposed stockpile and suspected muddy water discharged to the Kai Tak Nullah. Environmental Team (ET) was informed via email by the MTRC. 2. ET has conducted a site investigation with the representatives from Contractor and MTRC on 16th June 2015 to resolve the concern. 3. During the investigation, water sprinklers and water trucks were assigned for wetting of exposed area; inactive areas of stockpiles were generally covered. No fugitive dust was observed during the investigation. However, concrete breaking without water spraying was noticed. Besides, muddy water discharge into the Kai Tak Nullah was observed. Contractor turned off the pump to stop discharging muddy water as immediate action. Improper discharge of groundwater was also observed leading to runoff generation. 4. Contractor was seriously advised to provide sufficient treatment before discharge of site water and provide watering during concrete breaking for dust suppression. Contractor was also reminded to prevent surface run-off causing from site water and cover all area of inactive areas of stockpile as far as practicable. 5. The Contractor reported that the following measures will be further implemented after receiving the complaint from EPD to enhance prevention of dust and muddy water discharge. <p>- Increase the frequency of water spraying for the</p>	<p>Yes</p>

				<p>active stockpile;</p> <ul style="list-style-type: none"> - Cover with tarpaulin sheet for the inactive stockpile entirely; - Provide water spraying for dust generating activities; - Divert all site water to wastewater treatment facilities; - Provide sufficient treatment before discharge of site water <p>As similar complaint and observation were noted recently, the Contractor was seriously reminded to continue implementing all necessary mitigation measure to avoid generating dust nuisance and avoid discharge of sub-standard effluent.</p>	
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Filed by Environmental Team Leader: _____  _____

Date: 19th June 2015

Appendix J

**21st Monthly EM&A Report for Works Contract 1102 –
Hin Keng Station and Approach Structures**

MTR Corporation Limited

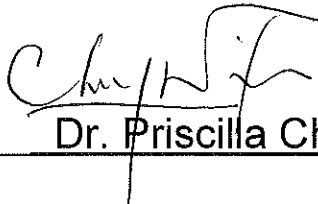
**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 21

[Period from 1 to 30 June 2015]

Works Contract 1102 –
Hin Keng Station and Approach Structures

(July 2015)

Certified by: 
_____ Dr. Priscilla Choy _____

Position: Environmental Team Leader

Date: 8th July 2015

Penta-Ocean Construction Co. Ltd.

Shatin to Central Link –

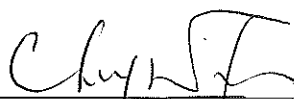
**Contract 1102
Hin Keng Station and Approach
Structures**

**Monthly Environmental Monitoring
and Audit Report**

(Version 1.0)

June 2015

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 21st 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 30 June 2015.

Summary of Construction Works undertaken during the Reporting Month

2. The major site activities undertaken in the reporting month include:
 - Slope Improvement Works;
 - Pumping Test;
 - ELS Structure Installation at At-grade Box;
 - Pier and Pile Cap Construction of Viaduct;
 - Steel Structure and ABWF Works at Hin Keng Station; and
 - Modification of Retaining Wall and Installation of Noise Barrier.

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) 5 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 2,413.4 m³ of inert C&D materials were generated from the Project and 2,410.5 m³ of the inert C&D materials were sent to Tuen Mun Area 38 Fill Bank during the reporting month. No non-recyclable non-inert C&D materials and 103.2 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, 18 and 30 June 2015. 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, 18, 23 and 30 June 2015. The representative of the IEC joined the site inspection on 18 June 2015. 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;
 - Pumping Test;
 - ELS Structure Installation at At-grade Box;
 - Pier and Pile Cap Construction of Viaduct;
 - Installation of Metal Frames and ABWF Works at Hin Keng Station; and
 - Modification of Retaining Wall and Installation of Noise Barrier.

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 21st EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 30 June 2015.

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;
 - Pumping Test;
 - ELS Structure Installation at At-grade Box;
 - Pier and Pile Cap Construction of Viaduct;
 - Steel Structure and ABWF Works at Hin Keng Station; and
 - Modification of Retaining Wall and Installation of Noise Barrier.

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-RN0708-14	30/12/2014	29/6/2015	Valid
GW-RN0214-15	15/4/2015	14/10/2015	Valid
GW-RN0354-15	30/6/2015	29/12/2015	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 (May 2015)	11 June 2015

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	51.6	59.3	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 5 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 µg/m ³	Maximum µg/m ³	Average µg/m ³	Action Level, µg/m ³	Limit Level, µg/m ³
24-hr TSP	22.4	44.0	35.3	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		
June 2015 ^(d)	2,413.4 m ³	103.2 m ³	0 kg	0 kg	0 kg	0 kg

Notes:

- (a) Inert C&D materials include excavated soil and rock. 2,410.5 m³ of inert C&D materials were delivered to Tuen Mun Area 38 Fill Bank during the reporting month.
- (b) No excavated soil was delivered to Contract 1108A Kai Tak Barging Point and would be reused in other project in reporting month.
- (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 table in reporting month was 28 June 2015.

Landscape and Visual

- 5.10 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 2, 18 and 30 June 2015. 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, 18, 23 and 30 June 2015 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 18 June 2015. 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>	28 May 2015	<u>Reminder:</u> The Contractor was reminded to cover exposed slope at A2 to reduce silty runoff generation	The exposed slope at A2 was covered by tarpaulin on 2 Jun 2015.
	2 Jun 2015	<u>Reminder:</u> Proper access road should be provided to the aquasud at At-Grade Box for inspection.	Access road was provided to the aquasud on 9 Jun 2015.
	9 Jun 2015	<u>Reminder:</u> Exposed slope surface at A2 should be properly covered by imperious sheet or tarpaulin.	The exposed slope was covered by tarpaulin on 18 Jun 2015.
	18 Jun 2015	<u>Reminder:</u> The Contractor was reminded to provide sand bag bund under fencing next to aquasud at At-Grade Box to retain any overflow water within site.	Sand bags were provided under fencing on 23 Jun 2015.
	23 Jun 2015	Runoff overflow from drain was observed and water at discharge pit appeared milky at Station area. The Contractor should improve the drainage and quality of effluent.	Runoff overflow from drain was not observed. Effluent was not observed. The quality of the water at discharge pit was improved on 30 Jun 2015.
	23 Jun 2015	Broken sand bags under water barrier at A2 should be replaced to prevent leakage of untreated runoff.	Please refer to the item on 30 Jun 2015.
	30 Jun 2015	Accumulated water under water barrier in A2 should be removed and sand bags should be provided to prevent untreated runoff leakage.	Follow up actions will be reported in the next month.
<i>Noise</i>	2 Jun 2015	<u>Reminder:</u> Noise mitigation measure should be enhanced for breaking work at A2.	Noise barrier was provided. Breaking work was not observed during site inspection on 9 Jun 2015.
	23 Jun 2015	<u>Reminder:</u> More noise blanket should be erected to fence off the work area at At-Grade Box.	Noise blanket and barrier was erected on 30 Jun 2015.
	30 Jun 2015	<u>Reminder:</u> In addition to noise barrier provided at At-Grade Box, noise blanket coverage for breaker head should be provided to reduce noise.	Follow up actions will be reported in the next month.
<i>Landscape and Visual</i>	N/A	There was no observation in the reporting period.	N/A
<i>Air Quality</i>	28 May 2015	Dusty stockpile should be properly covered to suppress dust generation. (At-Grade Box)	The stockpile at At-Grade Box was covered by tarpaulin on 2 Jun 2015.
	2 Jun 2015	Dust and saw dust at A3A4 should be removed to reduce windblown dust generation.	Saw dust was removed. Sawing work was not observed at A3A4 on 9 Jun 2015
	9 Jun 2015	<u>Reminder:</u> Bagged cement and PFA at Station area should be properly covered by tarpaulin.	The bagged cement and PFA were covered on 18 Jun 2015.

Parameters	Date	Observations and Recommendations	Follow-up
<i>Waste / Chemical Management</i>	2 Jun 2015	Dust and saw dust at A3A4 should be removed to reduce windblown dust generation.	Saw dust was removed. Sawing work was not observed at A3A4 on 9 Jun 2015
	9 Jun 2015	Chemical containers at Station area should be properly placed in storage area and provided with drip tray.	The chemical container was removed on 18 Jun 2015.
<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 Complaint Log in reporting month and cumulative summary table 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 Log for environmental summon and successful prosecution in reporting month and cumulative summary table 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;
- Pumping Test;
- ELS Structure Installation at At-grade Box;
- Pier and Pile Cap Construction of Viaduct;
- Installation of Metal Frames and ABWF Works at Hin Keng Station; and
- Modification of Retaining Wall and Installation of Noise Barrier.

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 30 June 2015 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, erosion and sediment control structures and discharge point should be regularly inspected and maintained to ensure proper and efficient operation at all times; Proper access road should be provided to the drainage facilities for inspection.
- Exposed slope should be properly covered by impervious sheeting or tarpaulin to reduce silty runoff generation during rainstorm;
- Sand bag bund should be provided with maintenance to prevent untreated runoff or overflow out of the site boundary; and
- Drainage system and site drain should be regularly maintained to prevent runoff overflow in site.

Air Quality

- Dust from dust-generating activities, like sawing work, should be regularly removed; and
- Bagged cement and PFA should be covered with tarpaulin or impervious sheet to reduce dust generation.

Construction Noise

- Regular review on the noise mitigation measures and the conditions of the implemented noise mitigation measures shall be properly maintained.

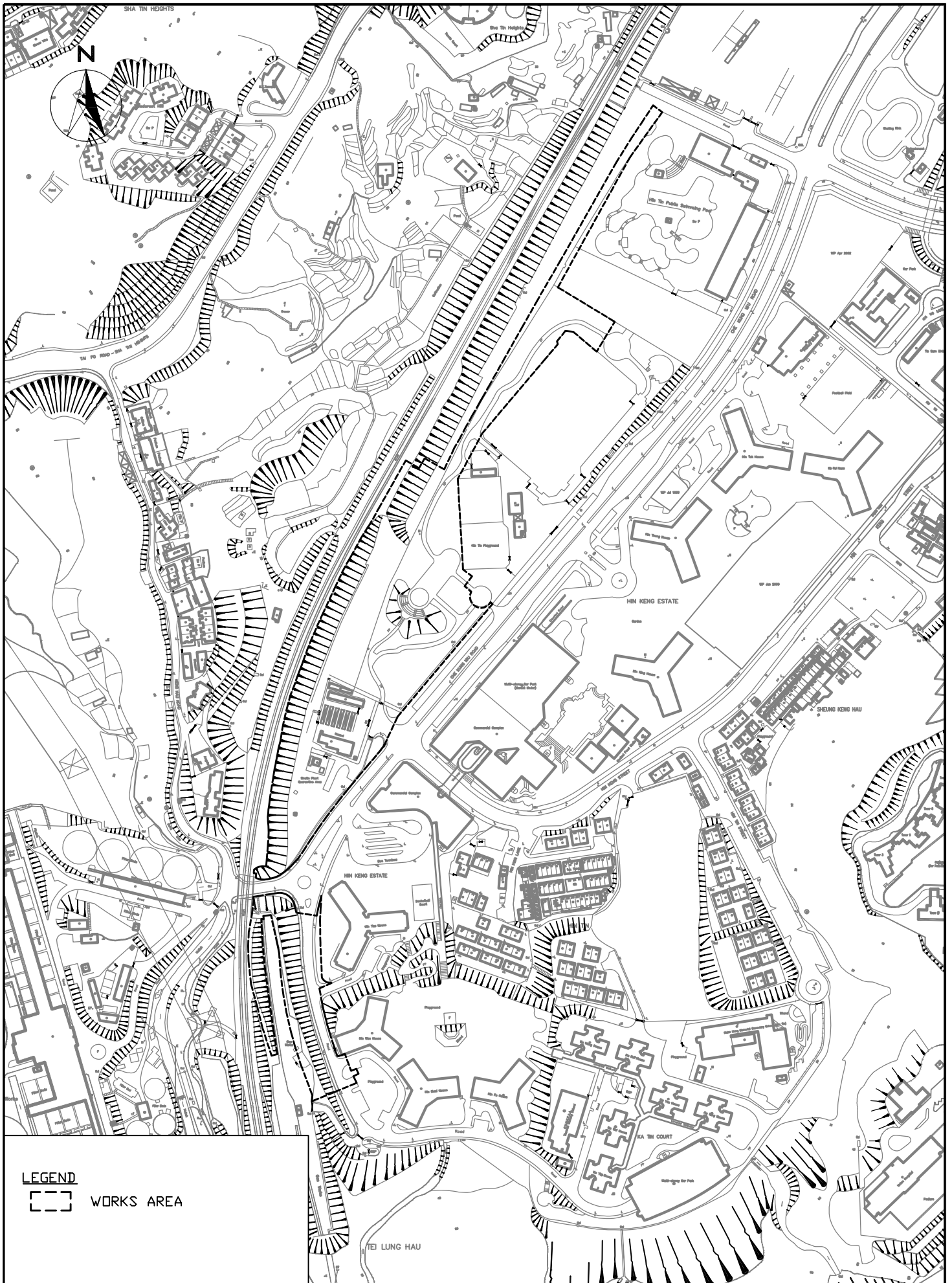
Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals shall be

sustained. Drip trays should be properly maintained and ensure enough capacity for the chemical containers.

- Dust and waste from dust-generating activities, like sawing work, should be regularly removed and disposed of.

FIGURES



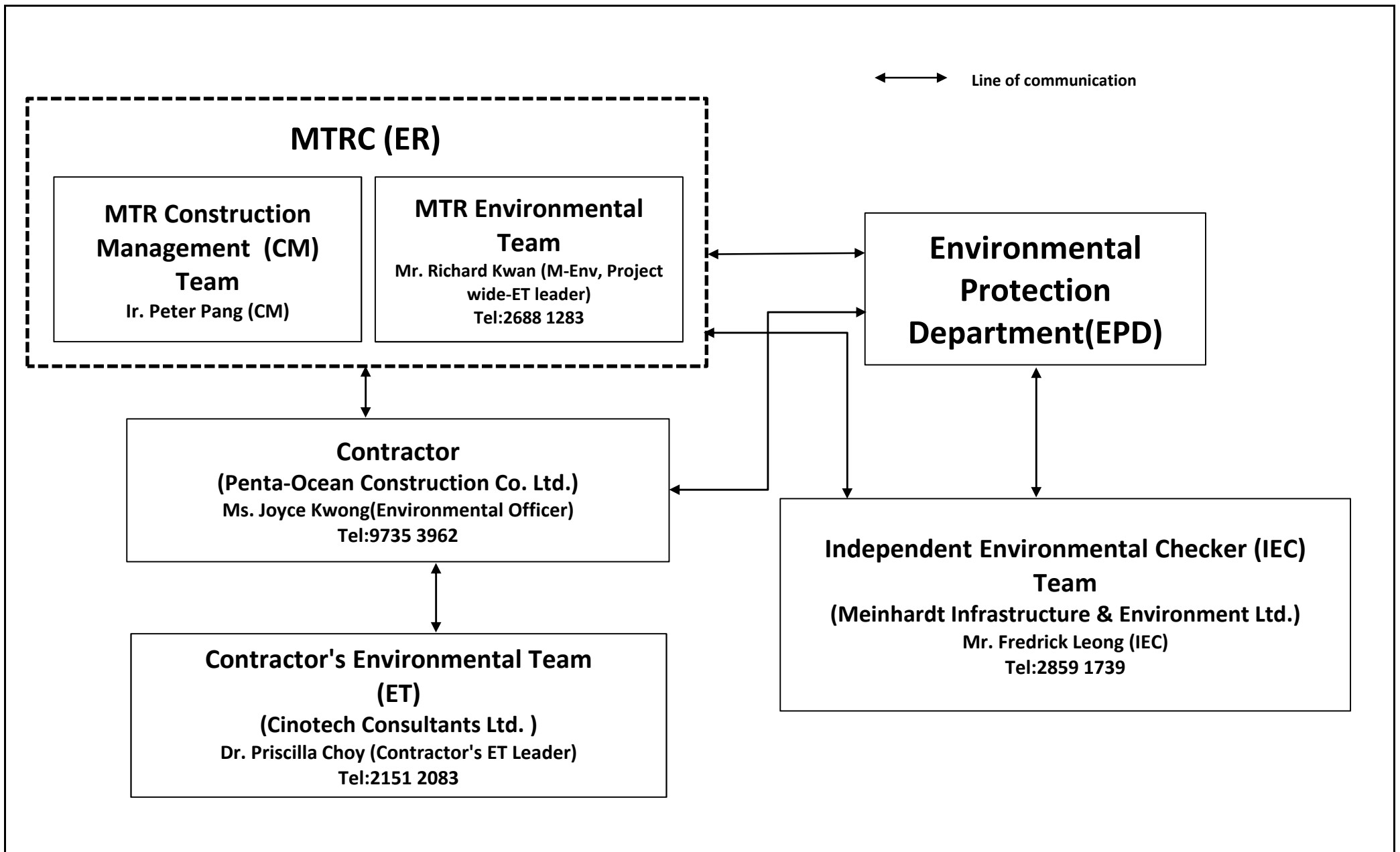
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 WORKS AREA



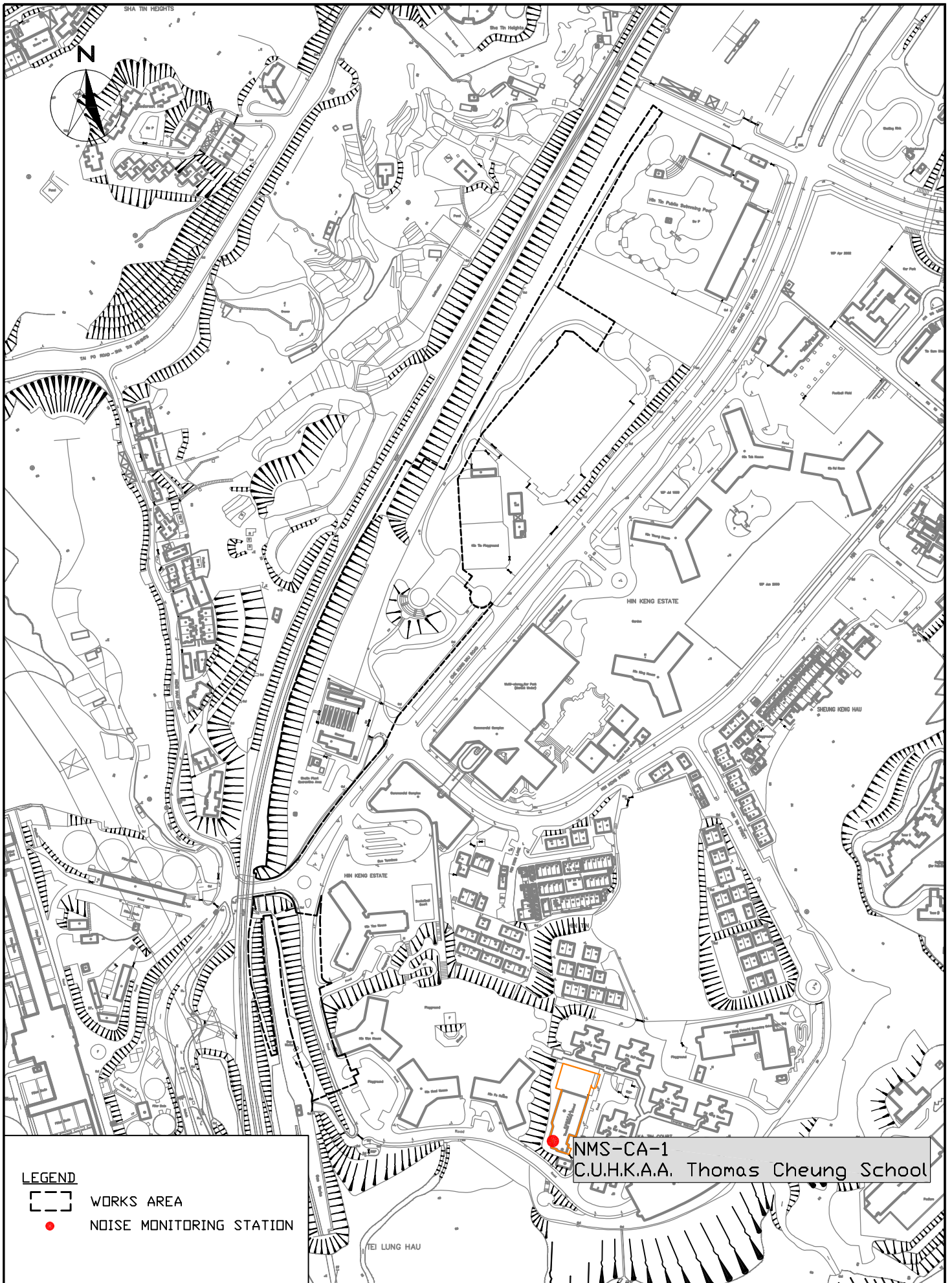
SCL CONTRACT 1102
 THE SHATIN TO CENTRAL LINK -
 HIN KENG STATION AND APPROACH STRUCTURES
**SITE LAYOUT PLAN OF
 WORKS CONTRACT 1102**

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

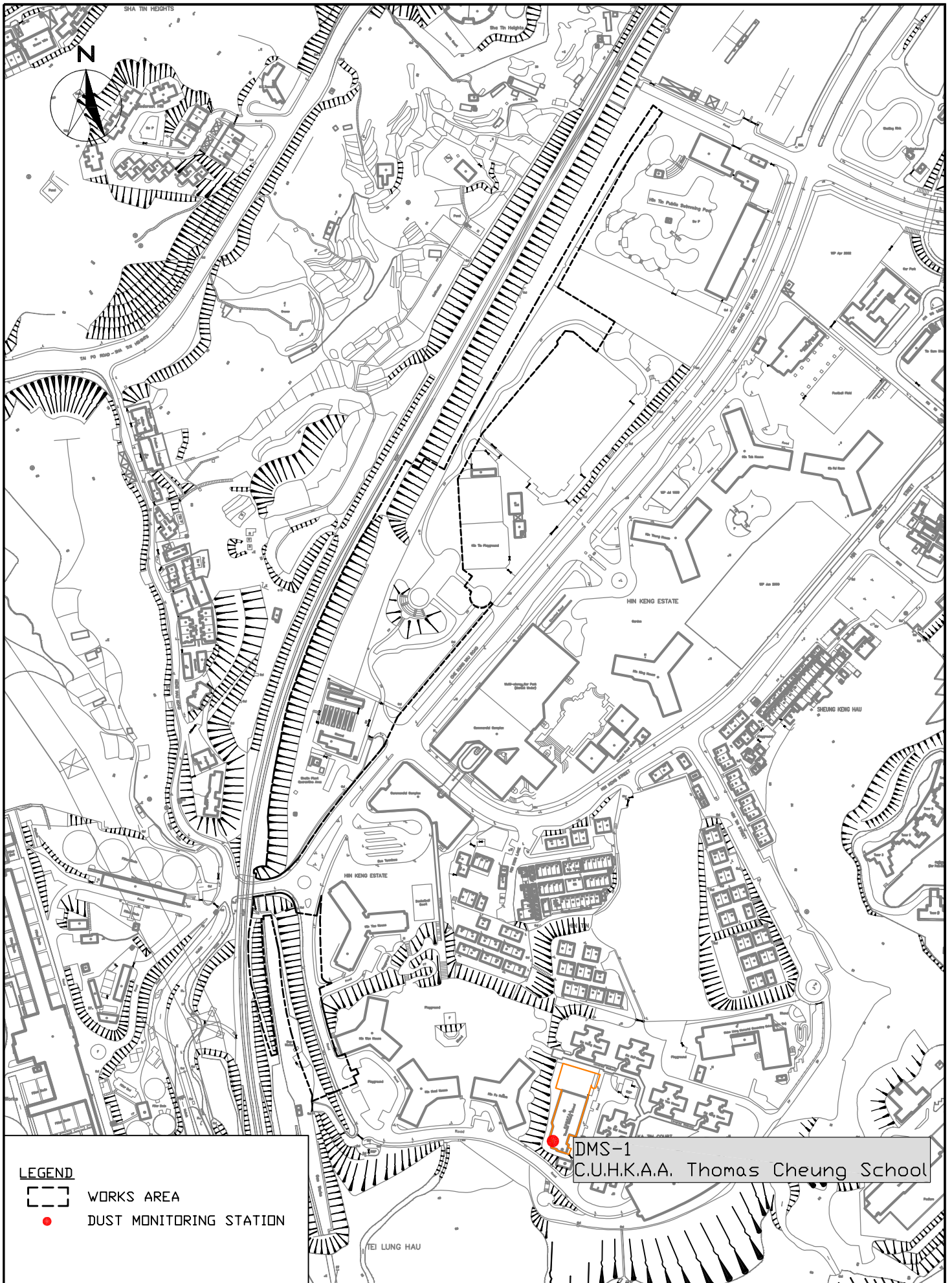
- WORKS AREA
- NOISE MONITORING STATION

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.	FIG 3
		REV	-



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	2015				
						Jun	Jul	Aug	Sep	Oct
3-month Rolling Programme Summary (Jul to Sep 2015)		823.00	211.75	21-Oct-13A	19-Mar-16					
Hin Keng Station		403.00	211.75	04-Mar-15A	19-Mar-16					
Sub-structure		403.00	211.75	04-Mar-15A	19-Mar-16					
Steel Structure		54.00	21.00	27-Apr-15A	25-Jul-15					
ABWF		403.00	211.75	04-Mar-15A	19-Mar-16					
Ma On Shan Line & Tail Track		378.00	90.08	21-Oct-13A	17-Oct-15					
Noise Barrier behind Hin Tin Swimming Pool		378.00	90.08	21-Oct-13A	17-Oct-15					
At-grade Box		129.67	129.67	21-May-15A	03-Dec-15					
ELS Works		83.00	83.00	21-May-15A	08-Oct-15					
Superstructure		115.00	115.00	18-Jul-15	03-Dec-15					
Hin Keng Viaduct		125.00	125.00	28-May-15A	27-Nov-15					
Pile Cap		10.00	10.00	25-Jul-15	05-Aug-15					
Pier & Abutment		43.00	43.00	06-Aug-15	24-Sep-15					
Superstructure		125.00	125.00	28-May-15A	27-Nov-15					
FR63 Slope		278.88	42.86	20-Aug-14A	20-Aug-15					
Pit by Pit Construction		278.88	42.86	20-Aug-14A	20-Aug-15					
Row 3		161.00	0.78	20-Aug-14A	02-Jul-15					
Row 4		145.00	2.32	11-Dec-14A	04-Jul-15					
Row 5		86.00	11.52	24-Dec-14A	17-Jul-15					
Row 6		52.00	21.01	11-Apr-15A	11-Aug-15					
Row 7		22.00	8.01	04-May-15A	20-Aug-15					
F320 Slope		42.00	42.00	02-Jul-15	19-Aug-15					
Row 1		24.00	24.00	02-Jul-15	29-Jul-15					
Row 2		18.00	18.00	30-Jul-15	19-Aug-15					



- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone
- % Complete

MTRC SCL Project Contract 1102
Hin Keng Station and Approach Structures

3 Months Rolling Programme
Summary
(Period - Jul to Sep 2015)

Date	Revisi...	Checked	Approved
02-Jul-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: June 2015

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*

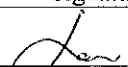
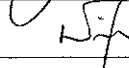
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150602
Date	2 June 2015 (Tuesday)
Time	09:00 – 11:00

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

Ref. No.	Remarks/Observations	Related Item No.
150602-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> Proper access road should be provided to the aquasud at At-Grade Box for inspection. 	B 9
150602-O01	<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"> Dust and saw dust at A3A4 should be removed to reduce windblown dust generation. 	E 6
150602-R03	<p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> Noise mitigation measure should be enhanced for breaking work at A2. 	F 7
150602-O01	<p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> Dust and saw dust at A3A4 should be removed to reduce windblown dust generation. <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 8

	Name	Signature	Date
Recorded by	Jason Lai		2 June 2015
Checked by	Dr. Priscilla Choy		2 June 2015

Shatin to Central Link -

Contract 1102 Hin Keng Station and Approach Structures

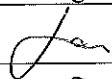

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150609
Date	9 June 2015 (Tuesday)
Time	09:00 – 11:00

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

Ref. No.	Remarks/Observations	Related Item No.
150609-R02	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> Exposed slope surface at A2 should be properly covered by imperious sheet or tarpaulin. 	B 9
150609-R03	<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"> Bagged cement and PFA at Station area should be properly covered by tarpaulin. 	E 16
150609-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"> Chemical containers at Station area should be properly placed in storage area and provided with drip tray. <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		9 June 2015
Checked by	Dr. Priscilla Choy		9 June 2015

***Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures***

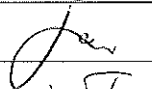
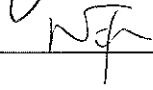
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150618
Date	18 June 2015 (Thursday)
Time	14:00 – 16:00

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

Ref. No.	Remarks/Observations	Related Item No.
150618-R01	<p><i>Part B – Water Quality</i></p> <ul style="list-style-type: none"> The Contractor was reminded to provide sand bag bund under fencing next to aquasud at At-Grade Box to retain any overflow water within site. <p><i>Part C – Ecology</i></p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p><i>Part D – Landscape & Visual</i></p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p><i>Part E – Air Quality</i></p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p><i>Part F – Construction Noise Impact</i></p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p><i>Part G – Waste/Chemical Management</i></p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p><i>Part H – Permits/Licenses</i></p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p><i>Part I – Others</i></p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	B 20

	Name	Signature	Date
Recorded by	Jason Lai		18 June 2015
Checked by	Dr. Priscilla Choy		18 June 2015

**Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures**



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150623
Date	23 June 2015 (Tuesday)
Time	09:00 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
150623-001	Part B – Water Quality • Runoff overflow from drain was observed and water at discharge pit appeared milky at Station area. The Contractor should improve the drainage and quality of effluent.	B 6iii & B 7
150623-002	• Broken sand bags under water barrier at A2 should be replaced to prevent leakage of untreated runoff.	B 20
150623-R03	Part C – Ecology • No environmental deficiency was identified during the site inspection. Part D – Landscape & Visual • No environmental deficiency was identified during the site inspection. Part E – Air Quality • No environmental deficiency was identified during the site inspection. Part F – Construction Noise Impact • More noise blanket should be erected to fence off the work area at At-Grade Box. Part G – Waste/Chemical Management • No environmental deficiency was identified during the site inspection. Part H – Permits/Licenses • No environmental deficiency was identified during the site inspection. Part I – Others • No environmental deficiency was identified during the site inspection.	F 7

	Name	Signature	Date
Recorded by	Jason Lai		23 June 2015
Checked by	Dr. Priscilla Choy		23 June 2015

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150630
Date	30 June 2015 (Tuesday)
Time	09:00 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
150630-001	<p>Part B – Water Quality</p> <ul style="list-style-type: none"> Accumulated water under water barrier in A2 should be removed and sand bags should be provided to prevent untreated runoff leakage. 	B 12 & B 20
150630-R02	<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"> In addition to noise barrier provided at At-Grade Box, noise blanket coverage for breaker head should be provided to reduce noise. <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. 	F 5

	Name	Signature	Date
Recorded by	Jason Lai		30 June 2015
Checked by	Dr. Priscilla Choy		30 June 2015

**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
Ecology (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	Minimise ecological impacts	Contractor	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 	^
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 	Minimise ecological impacts	Contractor	All construction sites	During construction	<ul style="list-style-type: none"> • ProPECC PN 1/94 	^
								N/A

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

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		<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	<ul style="list-style-type: none"> • 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
<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	^

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>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: 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 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	^

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>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>

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
		<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>

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
		<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>

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>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 	^

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
		<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 						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-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. 	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>

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
		<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 	* ^ ^ ^

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

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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								

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
					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

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 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 2015

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated (in '000m ³)	Broken Concrete (in '000m ³)	Reused in the Contract (in '000m ³)	Reused in other Projects (See Note 2) (in '000m ³)	Disposed as Public Fill (See Note 1) (in '000m ³)	Disposed as Sorting Facility (in '000m ³)	Metals (in '000 kg)	Paper/ cardboard packaging (in '000kg)	Plastics (in '000kg)	Chemical Waste (in '000kg)	Others, e.g. general refuse (in '000m ³)
Jan-15	1.5370	0	0	0	1.5277	0.0093	0	0	0	0	0.1224
Feb-15	1.3199	0	0	0	1.3156	0.0045	0	0	0	0	0.0876
Mar-15	2.0981	0	0	0.3023	1.7724	0.0235	0	0	0	0	0.1674
Apr-15	0.5166	0	0	0	0.5058	0.0109	0	0	0	0	0.1784
May-15*	0.4987	0	0	0	0.4948	0.0039	0	0	0	0	0.1224
Jun-15 (See Note 3)	2.4134	0	0	0	2.4105	0.0029	0	0	0	0	0.1032
Sub-total	8.3837	0	0	0.3023	8.0268	0.0550	0	0	0	0	0.7814
Jul-15											
Aug-15											
Sep-15											
Oct-15											
Nov-15											
Dec-15											
Total	8.3837	0	0	0.3023	8.0268	0.055	0	0	0	0	0.7814

Note: (1) Inert C&D materials include excavated soil and rock. 2410.5m³ of inert C&D materials were delivered to Tuen Mun Area 38 Fill Bank 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 table in reporting month was 28 June 2015.

Remark: (*) The quantity of inert and non-inert C&D materials in May 2015 was updated in waste flow table.

**APPENDIX H
LOG AND CUMULATIVE SUMMARY
TABLE FOR COMPLAINTS,
NOTIFICATIONS OF SUMMONS AND
SUCCESSFUL PROSECUTIONS**

Appendix H - Log and Cumulative Summary Table for Complaints, Notifications of Summons and Successful Prosecutions**Reporting Month:** June 2015**Complaint Log**

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	Status
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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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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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Cumulative Summary Table for Complaints, Notifications of Summons and Successful Prosecution

Reporting Month	Number of Complaints	Number of Notifications of Summons	Number of Successful Prosecution
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	0	0	0

Reporting Month	Number of Complaints	Number of Notifications of Summons	Number of Successful Prosecution
January 2015	0	0	0
February 2015	0	0	0
March 2015	0	0	0
April 2015	0	0	0
May 2015	0	0	0
June 2015	0	0	0
Total	1	0	0