

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. 8

[Period from 1 to 30 April 2013]

(May 2013)

Verified by: Tom Chapman 

Position: Independent Environmental Checker

Date: 13 May 2013

MTR Corporation Limited

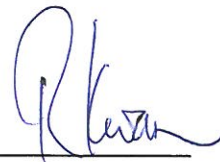
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Certified by: Richard Kwan



Position: Environmental Team Leader

Date: 13 May 2013



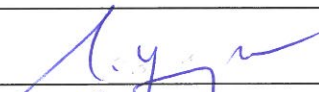

**MTR Corporation Limited**

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. 8**

[Period from 1 to 30 April 2013]

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Version:	A	Date: 10 May 2013
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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/C) was issued by Director of Environmental Protection (DEP) on 30 April 2013.

### 1.2 Project Programme

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

**Table 1.1 Summary of Awarded Works Contracts**

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1101	Ma On Shan Line Modification Works <sup>(1)</sup>	December 2012	Sun Fook Kong Joint Venture (SFKJV)	EDMS Consulting Ltd. (EDMS)
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	Chun Wo – Kaden Joint Venture	To be confirmed
1108A	Kai Tak Barging Point Facilities	September 2012	Concentric – Hong Kong River Joint Venture (CCL-HKR JV)	Cinotech Consultants Ltd. (Cinotech)
1109	Stations and Tunnels of Kowloon City Section	September 2012	Samsung-Hsin Chong JV (SHJV)	ERM-Hong Kong Limited (ERM)
1111	Hung Hom North Approach Tunnels	January 2013	Gammon-Kaden SCL1111 JV	AECOM Asia Co. Ltd.

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1112	Hung Hom Station and Stabling Sidings	To be constructed	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 eighth EM&A Report for the Project which summarises the EM&A works undertaken by the respective Contractor's ET during the period from 1 to 30 April 2013.

## 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/C. 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/C
1103	Hin Keng to Diamond Hill Tunnels	EP-438/2012/C
1106	Diamond Hill Station	EP-438/2012/C
1108A	Kai Tak Barging Point Facilities	EP-438/2012/C
1109	Stations and Tunnels of Kowloon City Section	EP-438/2012/C
1111	Hung Hom North Approach Tunnels	EP-437/2012 & EP-438/2012/C

- 2.1.2 The EM&A Reports for Works Contracts 1108A, 1109, 1101, 1111, 1103 and 1106 prepared by the respective Contractor's ETs are provided in **Appendices A to F**, 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	Tai Wai Mei Tin Road, To Shek Storage Yard, Shek Mun Storage Yard and Tai Shui Hang Storage Yard	<ul style="list-style-type: none"> <li>Construction of noise cover over the viaduct at Tai Wai Mei Tin Road.</li> </ul>
1102 <sup>(1)</sup>	N/A	N/A
1103	Diamond Hill Area	<ul style="list-style-type: none"> <li>Diaphragm Wall Construction and Site Office Erection.</li> </ul>
	Hin Keng Area	<ul style="list-style-type: none"> <li>Pipe Piling, Site Office Erection and Ground Investigation.</li> </ul>
	Fung Tak Area	<ul style="list-style-type: none"> <li>Ground Investigation and Utilities Detection and Diversion.</li> </ul>
	Ma Chai Hang Area	<ul style="list-style-type: none"> <li>Platform Construction, Tree Transplant and</li> </ul>

		Removal, Ground Investigation and Site Formation.
1106	Diamond Hill Station Area	<ul style="list-style-type: none"> <li>• D-wall construction;</li> <li>• Building of site office;</li> <li>• Building of Transformer Room near site office;</li> <li>• Hoarding work;</li> <li>• Tree pruning; and</li> <li>• Archaeological survey-cum-excavation.</li> </ul>
1107 <sup>(1)</sup>	N/A	N/A
1108 <sup>(1)</sup>	N/A	N/A
1108A	Kai Tak Barging Point Facilities	<ul style="list-style-type: none"> <li>• Full commissioning and operation of the whole Barging Point Facilities with two (2) conveyor belt systems and one (1) floating jetty barge;</li> <li>• Completion of site hoardings, entrance gate, project signboard and surface drainage works in Works Area 1108A.W1; and</li> <li>• Completion of chain link fences for temporary haul roads leading to Concorde Road.</li> </ul>
1109	Ma Tau Wai (MTW) Works Area	<ul style="list-style-type: none"> <li>• TKW/MTW Road Garden – Operation of bentonite plant; and</li> <li>• Along Ma Tau Wai Road - Construction of D-wall panel, predrilling for D-wall and trial pits for location of utilities.</li> </ul>
	To Kwan Wan (TKW) Works Area	<ul style="list-style-type: none"> <li>• Olympic Playground Area – Diversion of existing water pipe and cable ducts laying;</li> <li>• Olympic Garden – Trial pits for existing UU diversion and pre-drilling;</li> <li>• Olympic Avenue – Pre-drilling and erection of hoarding;</li> <li>• Tam Kung Road – Pre-drilling;</li> <li>• Nam Kok Road – Cable ducts laying; and</li> <li>• TKW Station –Archaeological survey, construction of grout curtain, sheet pile and bored pile, and installation of socket steel H-piling.</li> </ul>
1111	Mong Kok Freight Terminal	<ul style="list-style-type: none"> <li>• Base slab demolition, base slab and building construction.</li> </ul>
	Hung Hom Area	<ul style="list-style-type: none"> <li>• Excavation work, demolition, man hole and drainage construction;</li> <li>• Drain / sewage pipe construction, building footing / RC structure construction;</li> <li>• Hoarding erection, cross track duct construction, cable trough installation, existing track removal;</li> <li>• Pre-grouting, trial pit, TAM grout; and</li> <li>• Installation of waterdown pipe.</li> </ul>
1112 <sup>(1)</sup>	N/A	N/A

Note:

(1) Construction works under the contract have not yet commenced

N/A Not applicable

2.1.4 Impact monitoring for air quality and construction noise were conducted in accordance with the EM&A Manual in the reporting period. Under Works Contract 1103 and 1109, continuous noise monitoring were also 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 F**.

- 2.1.5 The monitoring results indicated that no exceedance of the Action/Limit Levels of 24-hr TSP due to the Project construction was recorded during the reporting period. One Limit Level exceedance for noise was recorded at NM1 on 3 April 2013. An investigation had been conducted to review the potential causes of the exceedance and it was considered not to be due to the Project works. A summary of the investigation is presented in **Section 9.14 of Appendix D**. Exceedance of the Action/Limit Levels of the Continuous noise monitoring was recorded at MTW-16-1 on 10 April 2013. Investigation of the exceedance had been conducted and any necessary remedial action has also been taken according to the Event and Action Plan in the CNMP. A Summary of the investigation is presented in **Section 7.1 of Appendix B**.
- 2.1.6 Water quality monitoring was not carried out during this reporting period since no dredging activity was conducted in the reporting month.
- 2.1.7 No environmental notification of summon, prosecution and valid complaint were received in the reporting period.
- 2.1.8 Regular site inspections were conducted by the respective Contractor's ET 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)
<b>Works Contract 1101<sup>(6)</sup></b>					
<b>Works Contract 1102<sup>(7)</sup></b>					
<b>Works Contract 1103</b>					
DMS-1	C.U.H.K.A.A. Thomas Cheung School	35.6 – 83.9	148.7	260	No
DMS-2	Price Memorial Catholic Primary School	27.2 – 96.3	167.4	260	No
<b>Works Contracts 1103 and 1106</b>					
DMS-3	Hong Kong S.K.H Nursing Home <sup>(2)</sup>	8.7 – 120.1	159.1	260	No
<b>Works Contract 1106</b>					
DMS-4	Block 1, Rhythm Garden	44.7 – 99.1	160.4	260	No
<b>Works Contract 1107<sup>(7)</sup></b>					
<b>Works Contract 1108<sup>(7)</sup></b>					
<b>Works Contract 1108A<sup>(6)</sup></b>					
<b>Works Contract 1109</b>					
DMS-6	Katherine Building <sup>(3)</sup>	81 – 90	156.8	260	No
DMS-7	Parc 22 <sup>(4)</sup>	87 – 94	166.7	260	No
DMS-8	SKH Good Shepherd Primary School	88 – 97	152.2	260	No
DMS-9	No. 26 Kowloon City Road <sup>(5)</sup>	83 – 96	160.9	260	No

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)
DMS-10	Chat Ma Mansion	82 – 92	170.4	260	No
<b>Works Contract 1111</b>					
AM1 <sup>(7)</sup>	No. 234 – 238 Chatham Road North <sup>(8)</sup>	44.5 – 114.2	183.9	260	No
<b>Works Contract 1112<sup>(7)</sup></b>					

Note:

- (1) Construction works under the contract have not yet commenced
  - (2) Alternative monitoring location to Shek On House
  - (3) Alternative monitoring location to Prosperity House
  - (4) Alternative monitoring location to Skytower Tower 2
  - (5) Alternative monitoring location to Lucky Building
  - (6) No TSP monitoring is required under this contract
  - (7) AM1 named as HUH-1-3 in SCL(TAW-HUH) and SCL(HHS) EIA Reports.
  - (8) Alternative monitoring location to Wing Fung Building
- N/A Not applicable

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

Monitoring Station ID	Location	Noise Level (L <sub>Aeq,30mins</sub> , dB(A))			Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
		Measured	Baseline	Corrected <sup>(7)</sup>		
<b>Works Contract 1101<sup>(6)</sup></b>						
<b>Works Contract 1102<sup>(7)</sup></b>						
<b>Works Contract 1103</b>						
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School	52.3 – 59.4	57	50.1 – 55.7	70 65 during examination period	No
NMS-CA-2	Price Memorial Catholic Primary School	67.1 – 69.6	66	60.6 – 67.1	70 65 during examination period	No
<b>Works Contracts 1103 and 1106</b>						
NMS-CA-3	Hong Kong S.K.H Nursing Home <sup>(2)</sup>	64.0 – 68.2	73	-(8)	75	No
<b>Works Contract 1106</b>						
NMS-CA-4	Block 1, Rhythm Garden (north-eastern façade)	70.3 – 73.6	71	68.4 – 70.1	75	No
NMS-CA-5	Block 1, Rhythm Garden (northern façade) <sup>(3)</sup>	68.2 – 72.4	74	-(8)	70 65 during examination period	No
<b>Works Contract 1107<sup>(7)</sup></b>						
<b>Works Contract 1108<sup>(7)</sup></b>						
<b>Works Contract 1108A<sup>(6)</sup></b>						
<b>Works Contract 1109</b>						
NMS-CA-6	No. 16-23 Nam Kok Road <sup>(4)</sup>	63.9 – 65.0	76.0	-(8)	75	No
NMS-CA-7	Skytower Tower 2	66.8 – 68.1	70.0	-(8)	75	No
NMS-CA-8	SKH Good Shepherd Primary School	73.9 – 77.9	75.0	63.5 – 74.8	70 65 during examination period	No
NMS-CA-9	Kong Yiu Mansion <sup>(5)</sup>	71.6 – 75.3	69.0	68.1 – 74.1	75	No
NMS-CA-10	Chat Ma Mansion	76.5 – 77.0	77.0	-(8)	75	No
<b>Works Contract 1111</b>						
NM1	Carmel Secondary School (South Block)	69.2 – 72.9	68	63.0 – 71.2	70 65 during examination period	No <sup>(11)</sup>
NM2	No. 234 – 238 Chatham Road North <sup>(9)</sup>	68.6 – 79.0 <sup>(10)</sup>	79	-(8)	75	No
<b>Works Contract 1112<sup>(7)</sup></b>						



Note:

- (1) Construction works under the contract have not yet commenced.
  - (2) Alternative monitoring location to Shek On House.
  - (3) Alternative monitoring location to Canossa Primary School (San Po Kong).
  - (4) Alternative monitoring location to Prosperity House.
  - (5) Alternative monitoring location to Lucky Building.
  - (6) No construction noise monitoring is required under this contract.
  - (7) Measured noise level is corrected against the corresponding baseline Level.
  - (8) No correction was made as the measured noise levels were below the baseline noise levels.
  - (9) Alternative monitoring location to Wing Fung Building.
  - (10) 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.
  - (11) Investigation has been conducted and the exceedance was considered not to be due to the project works.
- N/A Not applicable

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

NSR ID	NSR Description	Continuous Noise Monitoring Location	Noise Level (L <sub>Aeq</sub> , dB(A))			Action/Limit Level <sup>(4)</sup> dB(A)	Exceedance due to the Project Construction (Yes/No)
			Measured	Baseline	Corrected <sup>(3)</sup>		
<b>Works Contract 1101<sup>(2)</sup></b>							
<b>Works Contract 1103</b>							
TAW-6-7	C.U.H.K.A.A. Thomas Cheung School	TAW-6-7 (C.U.H.K.A.A. Thomas Cheung School)	51.9 – 67.8	57	40.7 – 67.4	66 <sup>(9)</sup>	No <sup>(12)</sup>
<b>Works Contract 1103 &amp; 1106</b>							
DIH-9-1 <sup>(2)</sup>	Shek On Building	N/A	N/A	N/A	N/A	N/A	N/A
DIH-13-1 <sup>(2)</sup>	Canossa Primary School	N/A	N/A	N/A	N/A	N/A	N/A
<b>Works Contract 1106 &amp; 1107<sup>(1)</sup></b>							
DIH-14-1 <sup>(2)</sup>	Rhythm Garden Block 2	N/A	N/A	N/A	N/A	N/A	N/A
DIH-14-5 <sup>(2)</sup>	Rhythm Garden Block 1	N/A	N/A	N/A	N/A	N/A	N/A
<b>Works Contract 1103, 1106 &amp; 1107<sup>(1)</sup></b>							
DIH-14-4 <sup>(2)</sup>	Canossa Primary School (San Po Kong)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Works Contract 1108A<sup>(2)</sup></b>							
<b>Works Contract 1109</b>							
TKW-1-1 <sup>(2)</sup>	Parc 22	N/A	N/A	N/A	N/A	N/A	N/A
TKW-2-2 <sup>(2)</sup>	Skytower Tower 2	N/A	N/A	N/A	N/A	N/A	N/A
TKW-3-2	Prosperity House	TKW-3-2(A) (No. 420 Prince Edward Road West)	(5)	(5)	(5)	80	(5)
MTW-12-3	Lucky Mansion	MTW-12-3 (Lucky Mansion)	(5)	(5)	(5)	80	(5)
MTW-12-4	352-354 Ma Tau Wai Rd (East Façade)	MTW-12-4 (352-354 Ma Tau Wai Rd (East Façade))	(5)	(5)	(5)	80	(5)
MTW-12-4-1	352-354 Ma Tau Wai Rd (North Facade)	MTW-12-4-1(A) (Merricourt(59 Maidstone Road))	(5)	(5)	(5)	82	(5)
MTW-12-10	Lucky Building (South Façade)	MTW-12-10 Lucky Building (South Façade)	(5)	(5)	(5)	84	(5)

NSR ID	NSR Description	Continuous Noise Monitoring Location	Noise Level (L <sub>Aeq</sub> , dB(A))			Action/Limit Level <sup>(4)</sup> dB(A)	Exceedance due to the Project Construction (Yes/No)
			Measured	Baseline	Corrected <sup>(3)</sup>		
MTW-12-10-1	Lucky Building (East Façade)	MTW-12-10-1 Lucky Building (East Façade)	(5)	(5)	(5)	80	(5)
MTW-12-11	Jing Ming Building	MTW-12-11 Jing Ming Building	(5)	(5)	(5)	81	(5)
MTW-16-1	SKH Good Shepherd Primary School	MTW-16-1 SKH Good Shepherd Primary School	74.1 – 83.7	75	58.7 – 83.1	78	(11)
MTW-18-2 <sup>(10)</sup>	No. 2 Kowloon City Road	MTW-18-2(A) No. 20 Kowloon City Road	(5)	(5)	(5)	81	(5)
HOM-2-1--A <sup>(2)</sup>	Faerie Court (East Façade)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Works Contract 1111</b>							
OM4a	Carmel Secondary School (South Block)	NM1 Carmel Secondary School (South Block)	(8)	(8)	(8)	69 <sup>(9)</sup>	(8)
<b>Works Contract 1111 &amp; 1112<sup>(7)</sup></b>							
HH2 <sup>(7)</sup>	Wing Fung Building	NM2 No. 234-238 Chatham Road North <sup>(6)</sup>	(8)	(8)	(8)	77	(8)

Note:

- (1) Construction works under the contract have yet to commence.
- (2) No continuous noise monitoring is required under this contract.
- (3) Measured noise level (above the baseline noise level) was corrected against the corresponding baseline level.
- (4) Reference to the predicted maximum noise level as contained in the corresponding CNMMP.
- (5) According to the prediction in the CNMMP, continuous noise monitoring for Works Contract 1109 was only conducted at MTW-16-1 during the reporting month.
- (6) Alternative monitoring location to Wing Fung Building.
- (7) HH2 named as HUH-1-3 in SCL (TAW-HUH) and SCL(HHS) EIA Reports.
- (8) 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) Action/Limit level will only be applicable during the examination period.
- (10) 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.
- (11) Investigation has been conducted and no conclusion can be drawn on the noise sources which have contributed to the noise exceedance.
- (12) According to CNMP, the Event and Action Plan exceedance is only confirmed if there are two consecutive exceedances of the Action/Limit Level. As only one measurement exceeds Action/Limit level, no exceedance was recorded during the reporting month.

N/A Not applicable

### 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/C and EP-437/2012). The status of required submissions under the EPs as of the reporting period are summarised in **Table 3.1** and **3.2**.

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

EP Condition (EP-438/2012/C)	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 <sup>st</sup> submission) 31 Aug 2012 (2 <sup>nd</sup> submission) 30 Nov 2012 (3 <sup>rd</sup> submission)
Condition 2.7	Management Organisation of Main Construction Companies	27 Jul 2012 (1 <sup>st</sup> submission) 21 Aug 2012 (2 <sup>nd</sup> submission) 19 Dec 2012 (3 <sup>rd</sup> submission) 22 Jan 2013 (4 <sup>th</sup> submission) 30 Apr 2013 (5 <sup>th</sup> 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 <sup>st</sup> submission) 28 Sep 2012 (2 <sup>nd</sup> submission) 30 Nov 2012 (3 <sup>rd</sup> submission) 11 Jan 2013 (4 <sup>th</sup> submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5 <sup>th</sup> submission) 26 Apr 2013 (6 <sup>th</sup> submission)
Condition 2.10	Continuous Noise Monitoring Plan (CNMP)	1 Aug 2012 (1 <sup>st</sup> submission) 28 Sep 2012 (2 <sup>nd</sup> submission) 30 Nov 2012 (3 <sup>rd</sup> submission) 11 Jan 2013 (4 <sup>th</sup> submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5 <sup>th</sup> submission) 26 Apr 2013 (6 <sup>th</sup> submission)
Condition 2.11	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1 <sup>st</sup> submission) 12 Sep 2012 (2 <sup>nd</sup> submission) 10 Oct 2012 (Approved)
Condition 2.12	Sediment Management Plan	6 Jul 2012 (1 <sup>st</sup> submission) 12 Sep 2012 (2 <sup>nd</sup> submission) 5 Oct 2012 (3 <sup>rd</sup> submission) 10 Oct 2012 (Approved) 4 Mar 2013 (4 <sup>th</sup> submission)
Condition 2.13	Visual, Landscape, Tree Planting & Tree Protection Plan	6 Jul 2012 (1 <sup>st</sup> submission) 30 Aug 2012 (2 <sup>nd</sup> submission) 3 Oct 2012 (3 <sup>rd</sup> submission) 13 Nov 2012 (Approved for Contracts 1101, 1106 and 1109) 14 Nov 2012 (4 <sup>th</sup> submission) 8 Feb 2013 (5 <sup>th</sup> submission) 18 Mar 2013 (6 <sup>th</sup> submission)
Condition 2.14	Transplantation Proposal for Plant Species of Conservation Importance	22 Aug 2012 (1 <sup>st</sup> submission) 5 Oct 2012 (2 <sup>nd</sup> submission) 26 Nov 2012 (3 <sup>rd</sup> submission) 4 Dec 2012 (Approved)
Condition 2.15	Conservation Plan	31 Jan 2013 (1 <sup>st</sup> submission) 18 Mar 2013 (2 <sup>nd</sup> submission) 24 Apr 2013 (Approved)
Condition 2.16	Archaeological Action Plan(s) (AAP(s)) for Works Contract 1109	10 Aug 2012 (1 <sup>st</sup> submission) 3 Sep 2012 (2 <sup>nd</sup> submission)

EP Condition (EP-438/2012/C)	Submission	Submission date
		21 Sep 2012 (Approved)
Condition 2.16	Archaeological Action Plan(s) (AAP(s)) for Works Contract 1106	29 Jan 2013 (1 <sup>st</sup> submission) 19 Mar 2013 (2 <sup>nd</sup> 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 Report No. 1 Monthly EM&A Report No. 2 Monthly EM&A Report No. 3 Monthly EM&A Report No. 4 Monthly EM&A Report No. 5 Monthly EM&A Report No. 6 Monthly EM&A Report No. 7	12 Oct 2012 14 Nov 2012 13 Dec 2012 14 Jan 2013 14 Feb 2013 14 Mar 2013 12 Apr 2013

**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 <sup>st</sup> submission) 30 Apr 2013 (2 <sup>nd</sup> 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 <sup>st</sup> submission) 8 Feb 2013 (Approved for Contract 1111) 26 Apr 2013 (2 <sup>nd</sup> submission)
Condition 2.8	Continuous Noise Monitoring Plan (CNMP)	30 Nov 2012 (1 <sup>st</sup> submission) 11 Jan 2013 (2 <sup>nd</sup> submission) 8 Feb 2013 (Approved for Contract 1111)
Condition 2.9	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1 <sup>st</sup> submission) 12 Sep 2012 (2 <sup>nd</sup> submission) 15 Oct 2012 (Approved)
Condition 2.10	Sediment Management Plan	6 Jul 2012 (1 <sup>st</sup> submission) 12 Sep 2012 (2 <sup>nd</sup> submission) 5 Oct 2012 (3 <sup>rd</sup> submission) 15 Oct 2012 (Approved)
Condition 2.11	Visual, Landscape, Tree Planting & Tree Protection Plan	14 Nov 2012 (1 <sup>st</sup> submission) 8 Feb 2013 (2 <sup>nd</sup> 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 Report No. 5 Monthly EM&A Report No. 6 Monthly EM&A Report No. 7	14 Feb 2013 14 Mar 2013 12 Apr 2013

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**Appendix A**

**8<sup>th</sup> EM&A Report for Works Contract 1108A –  
Kai Tak Barging Point Facilities**

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MTR Corporation Limited

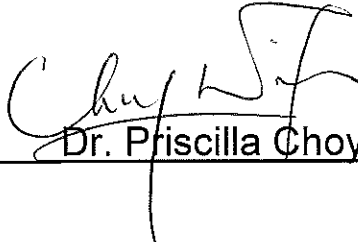
**Shatin to Central Link –  
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 8

[Period from 1 to 30 April 2013]

Works Contract 1108A – Kai Tak Barging Point  
Facilities

(May 2013)

Certified by:   
\_\_\_\_\_ Dr. Priscilla Choy

Position: Environmental Team Leader

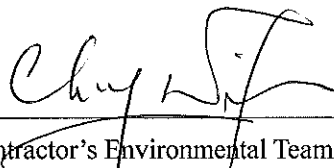
Date: 10<sup>th</sup> May 2013

**Concentric – Hong Kong River Joint Venture**

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

**Monthly Environmental  
Monitoring and Audit Report  
for April 2013**

(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 8<sup>th</sup> 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 April 2013.

### Summary of Site Activities undertaken during Reporting Month

2. The major site activities undertaken in the reporting month included:
  - Full operation of the Barging Point Facilities with two (2) conveyor belt systems and one (1) floating jetty barge ready for use;
  - Completion of site hoardings, project signboard and surface drainage works in Works Area 1108A.W1; and
  - Completion of chain link fences for temporary haul roads leading to Concorde Road.

### Environmental Monitoring and Audit Progress

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

### Water Quality

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

### Waste Management

5. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. No inert C&D materials and non-inert C&D materials were generated during the reporting period. No chemical wastes 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:
- Full operation of the Barging Point Facilities with two (2) conveyor belt systems and one (1) floating jetty barge ready for use; and
  - Completion of site hoardings and project signboard in Works Area 1108A.W1.

## 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 8<sup>th</sup> EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 April to 30 April 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) 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**.

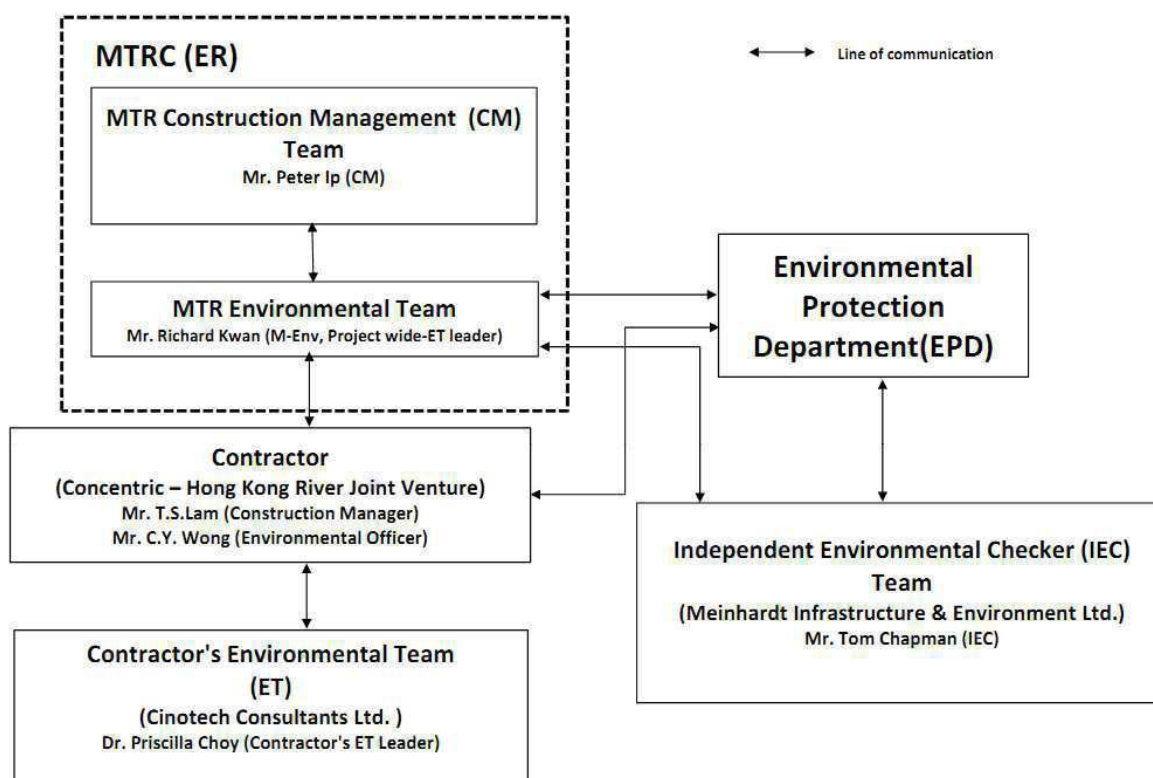
### Construction Programme and Activities

- 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**.
- Full operation of the Barging Point Facilities with two (2) conveyor belt systems and one (1) floating jetty barge ready for use;
  - Completion of site hoardings, project signboard and surface drainage works in Works Area 1108A.W1; and
  - Completion of chain link fences for temporary haul roads leading to Concorde Road.

### Project Organisation

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

2.7 The project organisation chart is shown as follows:



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

**Table 2.1 Key Contacts of the Project**

Party	Role	Name	Position	Phone No.	Fax No.
MTRC	ER	Mr. Peter IP	Construction Manager	3507 6889	2334 0323
	Environmental Team	Mr. Richard KWAN	SCL Project Environmental Team Leader	2688 1283	2993 7577
Cinotech	Contractor's Environmental Team	Dr. Priscilla CHOY	Contractor's ET Leader	2151 2089	3107 1388
		Ms. Ivy TAM	Project Coordinator and Audit Team Leader	2151 2090	
Meinhardt	Independent Environmental Checker	Mr. Tom CHAPMAN	Independent Environmental Checker	2858 0738	2540 1580
		Mr. Fredrick LEONG	Deputy Independent Environmental Checker	2859 1739	
CCL-HKR JV	Contractor	Mr. T.S. LAM	Construction Manager	9655 5486	2398 8301
		Mr. C.Y. WONG	Environmental Officer	9199 3188	
		Ms. Jane ZHU	Quality Engineer	6207 3974	

**Status of Environmental Licences, Notification and Permits**

- 2.9 Application for Variation of Environmental Permit (Application No. VEP-382/2012) was submitted by the Permit Holder on 17 October 2012 for amending Conditions 2.21 and 2.22 in Part C of Environmental Permit No. EP-438/2012/A. Environmental Permit No. EP-438/2012/B was issued by EPD on 26 October 2012 based on this application.
- 2.10 An updated Environmental Permit (EP) (EP No. EP-438/2012/C) was granted on 30 April 2013. 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 Licences, Notification and Permits**

Permit / License No.	Valid Period		Status
	From	To	
<b>Environmental Permit (EP)</b>			
EP-438/2012/B	26/10/2012	29/04/2013	Superseded by EP-438/2012/C
EP-438/2012/C	30/04/2013	N/A	Valid
<b>Construction Noise Permit (CNP)</b>			
GW-RE0754-012	24/09/2012	23/03/2013	Expired
GW-RE0272-13	26/03/2013	23/09/2013	Valid
<b>Marine Dumping Permits</b>			
EP/MD/13-075	10/10/2012	09/11/2012	Expired
EP/MD/13-074	26/10/2012	25/11/2012	Expired
<b>Notification pursuant to Air Pollution Control (Construction Dust) Regulation</b>			
N/A	22/08/2012	N/A	Receipt acknowledged by EPD
<b>Billing Account for Construction Waste Disposal</b>			
A/C# 7015860	29/08/2012	N/A	Valid
<b>Registration of Chemical Waste Producer</b>			
WPN5213-286-C3752-01	17/09/2012	N/A	Valid
<b>Effluent Discharge License under Water Pollution Control Ordinance</b>			
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 <sup>(1)</sup>	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:
- a DO level in the range of 0 - 20 mg/ L and 0 - 200% saturation; and
  - a 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**

<b>Parameters</b>	<b>Analytical Method</b>	<b>Reporting Limit</b>
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 (March 2013)	Submitted to EPD on 12 <sup>th</sup> April 2013 (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 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. 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) <sup>(a)</sup>	C&D Materials (non-inert) <sup>(b)</sup>	Dredging Quantity (in bulk volume)	Chemical Waste	Recycled materials		
					Paper/cardboard	Plastics	Metals
April 2013	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	0 L	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

- 5.4 The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

### Ecology

- 5.5 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 C**.
- 6.2 Site audits were conducted on 2, 11, 15, 22 and 29 April 2013 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 11 April 2013. No site inspection was conducted by EPD during 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 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
Water Quality	25 Mar 2013	Remove the spoil and sand at seashore next to Conveyor belt No.2.	The observation was observed to be improved/rectified by the Contractor during the audit session on 2 Apr 2013.
	2 Apr 2013	It is advised to cover the soil stockpile by impervious materials near Conveyor Belt No.2 near seashore during rainy season.	The observation was observed to be improved/rectified by the Contractor during the audit session on 11 Apr 2013.
	11 Apr 2013	Slight amount of silty water was leaked near Conveyor belt No. 1 due to rainy reason. Soil and sand arised from construction of U-channel at site boundary is advised to remove or backfill as far as practicable.	The observation was observed to be improved/rectified by the Contractor during the audit session on 15 Apr 2013.
	15 Apr 2013	It is advised to temporarily and properly cut off the drainage at site boundary (i.e. the side near EMSD Contract 1017EM10) during the construction of drainage, to avoid muddy runoff discharge due to rainy reason.	The observation was observed to be improved/rectified by the Contractor during the audit session on 22 Apr 2013.
	22 Apr 2013	It is advised to remove or compact the spoil accumulated at the tip of Conveyor belt No.2 to avoid splashing of the spoil into the sea.	The observation was observed to be improved/rectified by the Contractor during the audit session on 29 Apr 2013.
Noise	N/A	N/A	N/A
Ecology/ Landscape and Visual	N/A	N/A	N/A



Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	29 Apr 2013	Flexible dust curtain should be properly installed on the tipping hall on floating jetty as per EP condition	Follow up action will be reported in next reporting period.
	29 Apr 2013	<u>Reminder:</u> It is reminded to seal up the enclosure on Conveyor Belt No.2 when in operation.	Follow up action will be reported in next reporting period.
Waste / Chemical Management	14 Mar 2013	<u>Reminder:</u> It is reminded to plug the hole on the drip tray for generator near weighing bridge.	The observation was observed to be improved/rectified by the Contractor during the audit session on 11 Apr 2013.
	18 Mar 2013	<u>Reminder:</u> It is reminded chemical stocks should not be placed at chemical wastes storage cabin.	The observation was observed to be improved/rectified by the Contractor during the audit session on 2 Apr 2013.
	25 Mar 2013	<u>Reminder:</u> It is reminded to properly maintain the drip tray for generator next to the weighing bridge.	The observation was observed to be improved/rectified by the Contractor during the audit session on 11 Apr 2013.
	2 Apr 2013	<u>Reminder:</u> It is reminded to properly label the chemical wastes at chemical waste storage area and chemical wastes should be stored at designated area.	The observation was observed to be improved/rectified by the Contractor during the audit session on 11 Apr 2013.
	2 Apr 2013	<u>Reminder:</u> It is reminded to properly maintain the drip tray for generator next to the weighing bridge.	The observation was observed to be improved/rectified by the Contractor during the audit session on 11 Apr 2013.
	11 Apr 2013	The hole on the drip tray of a generator near Conveyor Belt No.1 was unplugged. The Contractor was reminded to plug the drip tray properly.	The observation was observed to be improved/rectified by the Contractor during the audit session on 15 Apr 2013.
	11 Apr 2013	<u>Reminder:</u> Fuel oil on top of the generator at Conveyor belt no.1 is reminded to place in designated area after use.	The observation was observed to be improved/rectified by the Contractor during the audit session on 15 Apr 2013.
Permits / Licenses	N/A	N/A	N/A

## **7 ENVIRONMENTAL NON-CONFORMANCE**

### **Summary of Exceedances**

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

### **Summary of Environmental Non-Compliance**

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

### **Summary of Environmental Complaint**

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

### **Summary of Environmental Summon and Successful Prosecution**

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

## 8 FUTURE KEY ISSUES

### Key Issues in the Coming Month

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

- Potential dust and noise impacts arising from unloading and handling of C&D material during operation of barging point facilities;
- Potential splashing of spoils into the surrounding seawater when handling/unloading the spoil at the discharge points; and
- Potential water pollution problem due to the discharge of site runoff with the wet season approaching.

### 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:

- Full operation of the Barging Point Facilities with two (2) conveyor belt systems and one (1) floating jetty barge ready for use;
- Completion of site hoardings and project signboard in Works Area 1108A.W1.

## **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 April 2013 to 30 April 2013 in accordance with EM&A Manual and the requirement under EP-438/2012/C.
- 9.2 No impact monitoring was conducted in the reporting month.
- 9.3 There was no environmental complaint, prosecution or notification of summons received.
- 9.4 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

### **Recommendations**

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

#### **Water Quality**

- Provide adequate measures to avoid any splashing of spoils into the surrounding seawater when handling/unloading the spoil at the discharge points.

#### **Air Quality**

- Flexible dust curtains should be properly installed at the discharge point for dust suppression when in operation.
- Dust enclosures for the loading ramp should be properly installed and maintained in good condition to prevent fugitive dust emissions at barging point.

#### **Waste / Chemical Management**

- Provide and properly maintain drip trays with adequate capacity for equipment or temporary use of chemicals.
- Chemical wastes should be placed and labeled properly at designated area.

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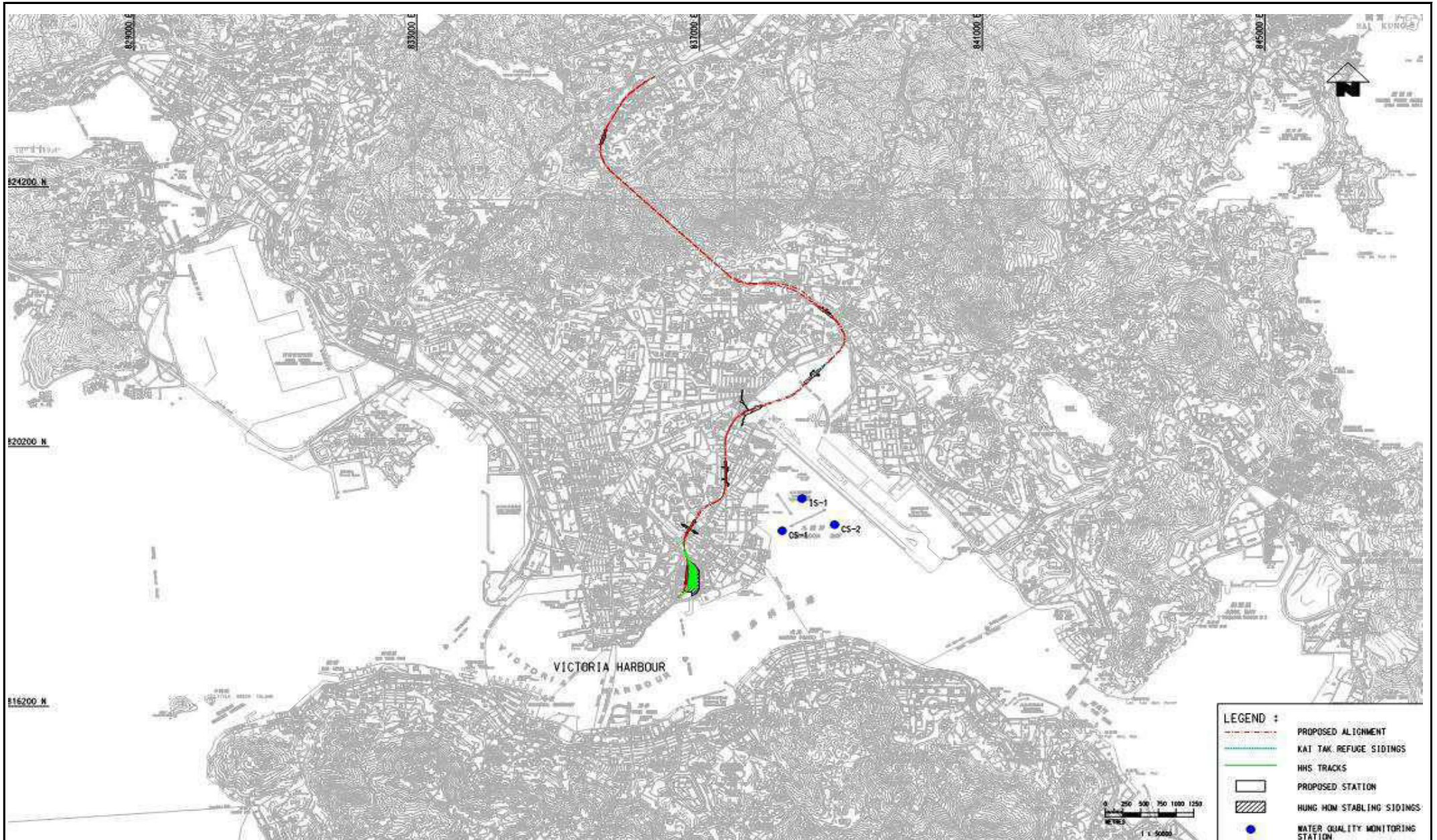
## FIGURES

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Title	SCL Contract 1108A The Shatin to Central Link - Kai Tak Barging Point Facilities  Site Layout Plan	Scale	N.T.S	Propose No.	MA12028	<b>CINOTECH</b>
		Date	Oct-12	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	Propose No.	MA12028
Date	Oct-12	Figure	2

**CINOTECH**

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**APPENDIX A  
ACTION AND LIMIT LEVELS**

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**APPENDIX A – Action and Limit Levels****Action and Limit Levels for Water Quality**

<b>Parameter</b>	<b>Action</b>	<b>Limit</b>
<b>DO in mg/L</b>	<u>Surface &amp; Middle:</u> 4.6 (5 percentile of baseline data) <u>Bottom:</u> 3.9 (5 percentile of baseline data)	<u>Surface &amp; Middle:</u> 4 <u>Bottom:</u> 2
<b>SS in mg/L</b>	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
<b>Turbidity in NTU</b>	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

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**APPENDIX B**  
**SUMMARY OF EXCEEDANCE**

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## **APPENDIX B – SUMMARY OF EXCEEDANCE**

**Reporting Month:** April 2013

**a) Exceedance Report for Water Quality Monitoring (NIL)**

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**APPENDIX C  
SITE AUDIT SUMMARY**

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



**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	130402
Date	2 April 2013 (Monday)
Time	14:00-15:00

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

Ref. No.	Remarks/Observations	Related Item No.
130402-O01	<p><b>Part B - Water Quality</b></p> <ul style="list-style-type: none"> <li>It is advised to cover the soil stockpile by impervious materials near Conveyor Belt No.2 near seashore during rainy season.</li> </ul>	B15ii.
130402-R02	<p><b>Part C - Ecology/Others</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	
130402-R03	<p><b>Part D - Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part E - Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F - Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>It is reminded to properly label the chemical wastes at chemical waste storage area and chemical wastes should be stored at designated area.</li> <li>It is reminded to properly maintain the drip tray for generator next to the weighing bridge.</li> </ul> <p><b>Part G - Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130325), outstanding item 130325-R02 is remarked as item 130402-R03 and has to be followed up during next site inspection.</li> </ul>	F2i.&F2ii. F9

	Name	Signature	Date
Recorded by	Ken Cheng		3 April 2013
Checked by	Dr. Priscilla Choy		3 April 2013

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



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	130411
Date	11 April 2013 (Thursday)
Time	14:30-15:15

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

Ref. No.	Remarks/Observations	Related Item No.
130411-001	<p><b>Part B - Water Quality</b></p> <ul style="list-style-type: none"> <li>Slight amount of silty water was leaked near Conveyor belt No. 1 due to rainy reason. Soil and sand arised from construction of U-channel at site boundary is advised to remove or backfill as far as practicable.</li> </ul> <p><b>Part C - Ecology/Others</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D - Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part E - Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	B15i.&ii.
130411-002	<p><b>Part F - Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>The hole on the drip tray of a generator near Conveyor Belt No.1 was unplugged. The Contractor was reminded to plug the drip tray properly.</li> </ul>	F9
130411-R03	<ul style="list-style-type: none"> <li>Fuel oil on top of the generator at Conveyor belt no.1 is reminded to place in designated area after use.</li> </ul> <p><b>Part G - Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130402), all environmental deficiency was observed improved/rectified by the Contractor.</li> </ul>	F2i.

	Name	Signature	Date
Recorded by	Ken Cheng		11 April 2013
Checked by	Dr. Priscilla Choy		15 April 2013



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	130415
Date	15 April 2013 (Monday)
Time	14:00-15:00

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

Ref. No.	Remarks/Observations	Related Item No.
130415-001	<p><b>Part B - Water Quality</b></p> <ul style="list-style-type: none"> <li>It is advised to temporarily and properly cut off the drainage at site boundary (i.e. the side near EMSD Contract 1017EM10) during the construction of drainage, to avoid muddy runoff discharge due to rainy reason.</li> </ul> <p><b>Part C - Ecology/Others</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D - Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part E - Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F - Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G - Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130411), all environmental deficiency was observed improved/rectified by the Contractor.</li> </ul>	B7

	Name	Signature	Date
Recorded by	Ken Cheng		15 April 2013
Checked by	Dr. Priscilla Choy		15 April 2013

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



**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	130422
Date	22 April 2013 (Monday)
Time	14:00-14:45

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

Ref. No.	Remarks/Observations	Related Item No.
130422-001	<p><b>Part B - Water Quality</b></p> <ul style="list-style-type: none"> <li>It is advised to remove or compact the spoil accumulated at the tip of Conveyor belt No.2 to avoid splashing of the spoil into the sea.</li> </ul>	B19
130422-001	<p><b>Part C - Ecology/Others</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D - Air Quality</b></p> <ul style="list-style-type: none"> <li>It is advised to remove or compact the spoil accumulated at the tip of Conveyor belt No.2 to avoid splashing of the spoil into the sea.</li> </ul> <p><b>Part E - Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F - Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G - Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130415), all environmental deficiency was observed improved/rectified by the Contractor.</li> </ul>	D12

	Name	Signature	Date
Recorded by	Ken Cheng		22 April 2013
Checked by	Dr. Priscilla Choy		22 April 2013



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



**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	130429
Date	29 April 2013 (Monday)
Time	14:00-15:00

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

Ref. No.	Remarks/Observations	Related Item No.
130429-O01	<p><b>Part B - Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	D18
130429-R02	<p><b>Part C - Ecology/Others</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D - Air Quality</b></p> <ul style="list-style-type: none"> <li>Flexible dust curtain should be properly installed on the tipping hall on floating jetty as per EP condition.</li> <li>It is reminded to seal up the enclosure on Conveyor Belt No.2 when in operation.</li> </ul> <p><b>Part E - Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F - Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G - Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130422), all environmental deficiency was observed improved/rectified by the Contractor.</li> </ul>	D12

	Name	Signature	Date
Recorded by	Ken Cheng		29 April 2013
Checked by	Dr. Priscilla Choy		30 April 2013

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**APPENDIX D**  
**EVENT AND ACTION PLANS**

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

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

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer/Engineer’s Representative

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**APPENDIX E  
UPDATED ENVIRONMENTAL  
MITIGATION IMPLEMENTATION  
SCHEDULE**

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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
<b>Ecology (Pre-Construction Phase)</b>								
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	^
<b>Ecology (Construction Phase)</b>								
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"> <li>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</li> </ul>	Minimise ecological impacts	Contractor	All construction sites	During Construction	• ProPECC PN 1/94	^

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		stream; <ul style="list-style-type: none"> <li>Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream;</li> <li>Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value.</li> <li>No on-site burning of waste;</li> <li>Waste and refuse in appropriate receptacles.</li> </ul>						^  ^  ^  ^
S5.7	E6	<u>Sediment Removal</u> <ul style="list-style-type: none"> <li>Use closed grab in dredging works.</li> <li>Install silt curtain during the dredging.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce indirect impacts of suspended solids on sessile benthic and intertidal fauna</li> <li>Minimize marine water quality impacts</li> </ul>	Contractor	Dredging Area	During Dredging	•TM-Water	N/A <sup>(2)</sup> N/A <sup>(2)</sup>
<b>Landscape &amp; Visual (Construction Phase)</b>								
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>	Minimize visual & landscape impact	Contractor	Within Project Site	Constructi on stage	•TM-EIAO	



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		<ul style="list-style-type: none"> <li>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.</li> </ul> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul>						<p>N/A<sup>(2)</sup></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"> <li>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.</li> </ul>						^
S6.12	LV2	<p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> <li>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> </ul> <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> <li>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> </ul>	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and construction stage	<ul style="list-style-type: none"> <li>EIAO – TM</li> <li>ETWB TCW 2/2004</li> <li>ETWB TCW 3/2006</li> </ul>	<p>^</p> <p>N/A<sup>(1)</sup></p>
<b>Construction Dust Impact</b>								
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"> <li>APCO</li> <li>To control the dust impact to meet HKAQO and</li> </ul>	^

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
							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 <sup>2</sup> to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction on stage	<ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	^
S7.6.5	D3	<ul style="list-style-type: none"> <li>• Proper watering of exposed spoil should be undertaken throughout the construction phase;</li> <li>• 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;</li> <li>• Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material should not be extend beyond the</li> </ul>	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction on stage	<ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	^  ^  ^

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>pedestrian barriers, fencing or traffic cones;</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> </ul>						<p>^</p> <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"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• 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;</li> <li>• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">N/A<sup>(2)</sup></p> <p style="text-align: center;">N/A<sup>(2)</sup></p> <p style="text-align: center;">N/A<sup>(2)</sup></p> <p style="text-align: center;">N/A<sup>(2)</sup></p> <p style="text-align: center;">N/A<sup>(2)</sup></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
		with the material filling line and no overfilling is allowed; <ul style="list-style-type: none"> <li>• 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</li> <li>• 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.</li> </ul>						N/A <sup>(2)</sup>  N/A <sup>(2)</sup>
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"> <li>• All road surface within the barging facilities will be paved;</li> <li>• Dust enclosures will be provided for the loading ramp;</li> <li>• Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>• Continuous water spray at the loading points</li> </ul>	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"> <li>• 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</li> </ul>	Minimize dust impact at the nearby sensitive	Contractor	Barging Points	Construction stage	• APCO • To control the dust	*

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
		suppression	receivers				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 <sup>(1)</sup>
<b>Construction Noise (Airborne)</b>								
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>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;</li> </ul>	Control construction airborne noise	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^  ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> <li>plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>						<p>^</p> <p>N/A<sup>(2)</sup></p> <p>^</p> <p>N/A<sup>(2)</sup></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.	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	Construction stage	• Annex 5, TM-EIA	N/A <sup>(1)</sup>



EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S8.3.6	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 <sup>(1)</sup>
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 <sup>(1)</sup>
<b>Water Quality (Construction Phase)</b>								
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:	To minimize water quality impact from construction site runoff and general	Contractor	All construction sites where	Construction stage	• Water Pollution Control Ordinance	

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><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> <li>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.</li> <li>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</li> </ul>	<p>construction activities</p>		<p>practicable</p>		<ul style="list-style-type: none"> <li>ProPECC PN1/94</li> <li>TM-EIAO</li> <li>TM-Water</li> </ul>	<p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>flow rate, but for a flow rate of 0.1 m<sup>3</sup>/s a sedimentation basin of 30m<sup>3</sup> would be required and for a flow rate of 0.5 m<sup>3</sup>/s the basin would be 150 m<sup>3</sup>. 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"> <li>• 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.</li> <li>• 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.</li> <li>• 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</li> </ul>						<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 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 disposed of by spreading evenly over stable, vegetated areas.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms.</li> <li>• 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</li> <li>• 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</li> </ul>						<p>^</p> <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
		<p>attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Construction solid waste, debris and rubbish on site should be</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

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		<p>collected, handled and disposed of properly to avoid water quality impacts.</p> <ul style="list-style-type: none"> <li>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</li> <li>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.</li> <li>Adopt best management practices.</li> </ul>						<p>^</p> <p>N/A<sup>(2)</sup></p> <p>^</p>
S10.7.1	W3	<p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul>	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construct on stage	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>TM-water</li> </ul>	^
S10.7.1	W4	<p><u>Groundwater from Contaminated Area:</u></p> <ul style="list-style-type: none"> <li>No direct discharge of groundwater from contaminated areas should be adopted. Prior to the excavation works within these</li> </ul>	To minimize groundwater quality impact from	Contractor	Excavation areas where	Construct on stage	<ul style="list-style-type: none"> <li>Water Pollution Control</li> </ul>	^

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>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.</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• If groundwater recharging wells are deployed, recharging wells</li> </ul>	contaminated area		contamination is found.		Ordinance • TM-water • TM-EIAO	<p style="text-align: center;">^</p> <p style="text-align: right;">N/A<sup>(2)</sup></p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>should be 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.</p>						
S10.7.1	W5	<p><u>Dredging Works</u> The following good practice shall apply for the dredging works:</p> <ul style="list-style-type: none"> <li>• Install efficient silt curtains at the point of seawall dredging to</li> </ul>	To minimize sediment suspension during dredging	Contractor	Kai Tak Barging Point during	Dredging period	• Water Pollution Control	N/A <sup>(2)</sup>



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
		control the dispersion of SS; <ul style="list-style-type: none"> <li>• Implement water quality monitoring to ensure effective control of water pollution and recommend additional mitigation measures required;</li> <li>• The decent speed of grabs should be controlled to minimize the seabed impact and to reduce the volume of over-dredging; and</li> <li>• 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.</li> </ul>			dredging works		Ordinance • TM-EIAO	N/A <sup>(2)</sup>  N/A <sup>(2)</sup>  N/A <sup>(2)</sup>
S10.7.1	W6	<u>Operation of Barging Facilities</u> The following good practice shall apply for the barging facilities operations: <ul style="list-style-type: none"> <li>• All barges should be fitted with tight bottom seals to prevent leakage of materials during transport;</li> <li>• Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or transportation;</li> <li>• All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions,</li> </ul>	To minimize water quality impact from operation of barging facility	Contractor	All barging facilities	Construction stage	<ul style="list-style-type: none"> <li>• Water Pollution Control Ordinance</li> <li>• TM-EIA</li> </ul>	^  ^  ^

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>to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;</p> <ul style="list-style-type: none"> <li>• Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water; and</li> <li>• 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.</li> </ul>						<p>^</p> <p>^</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"> <li>• 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.</li> <li>• 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.</li> <li>• Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.</li> </ul>	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> <li>• Water Pollution Control Ordinance</li> <li>• ProPECC PN1/94</li> <li>• TM-EIAO</li> <li>• TM-Water</li> </ul>	<p>^</p> <p>*</p> <p>*</p>
S10.7.1	W8	Implement a marine water quality monitoring programme	Monitor marine water	Contractor	At identified	Prior to	• Water	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
			quality prior to and during dredging period		monitoring location	and during dredging period	Pollution Control Ordinance • TM-water • EIA-TM	
<b>Waste Management (Construction Waste)</b>								
S11.4.1.1	WM1	<p><u>On-site sorting of C&amp;D material</u></p> <ul style="list-style-type: none"> <li>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</li> </ul>	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Constructi on stage	• DEVB TC(W) No. 6/2010	N/A <sup>(2)</sup>

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
		excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.						
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> <li>Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>Carry out on-site sorting;</li> <li>Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</li> <li>Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified; and</li> <li>Implement an enhanced Waste Management Plan similar to</li> </ul>	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"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal Ordinance</li> <li>ETWB TCW No. 19/2005</li> </ul>	<p>N/A<sup>(2)</sup></p> <p>N/A<sup>(2)</sup></p> <p>N/A<sup>(2)</sup></p> <p>N/A<sup>(2)</sup></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
		<p>ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&amp;D materials and to minimize their generation during the course of construction.</p> <ul style="list-style-type: none"> <li>In addition, disposal of the C&amp;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</li> </ul>						^
S11.5.1	WM3	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;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.</li> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where</li> </ul>	<p>Good site practice to minimize the waste generation and recycle the C&amp;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"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal Ordinance</li> <li>ETWB TCW No.19/2005</li> </ul>	^  N/A <sup>(2)</sup>

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>practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills.</p> <p>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"> <li>General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>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.</li> <li>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.</li> <li>Office wastes can be reduced through the recycling of paper if</li> </ul>	<p>Minimize production of the general refuse and avoid odour, pest and litter impacts</p>	Contractor	All construction sites	Construction on stage	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul>	<p>^</p> <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
		volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.						
S11.5.1	WM6	<p><u>Land-based and Marine-based Sediment</u></p> <ul style="list-style-type: none"> <li>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;</li> <li>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;</li> <li>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;</li> <li>Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.</li> <li>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</li> </ul>	To control pollution due to marine sediment	Contractor	Within Project Site Area	Construction Stage	<ul style="list-style-type: none"> <li>ETWB TCW No. 34/2002</li> </ul>	<p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></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>demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers;</p> <ul style="list-style-type: none"> <li>• The Contractors shall comply with the conditions in the dumping licence.</li> <li>• All bottom dumping vessels (Hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material;</li> <li>• The material shall be placed into the disposal pit by bottom dumping;</li> <li>• Contaminated marine mud shall be transported by spit barge of not less than 750m<sup>3</sup> capacity and capable of rapid opening and discharge at the disposal site;</li> <li>• 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.</li> <li>• 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</li> </ul>						<p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></p> <p>N/A<sup>(1)</sup></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>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>						
S11.5.1	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at</li> </ul>	<p>Control the chemical waste and ensure proper storage, handling and disposal.</p>	Contractor	All Construction Sites	Construction on Stage	<ul style="list-style-type: none"> <li>Waste Disposal (Chemical Waste) (General) Regulation</li> <li>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul>	<p>^</p> <p>*</p> <p>*</p>



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

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**APPENDIX G  
COMPLAINT LOG**

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**Appendix G - Complaint Log**

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
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**APPENDIX H  
TENTATIVE CONSTRUCTION  
PROGRAMME**

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MTR SCL 1108A  
KAI TAK BARGING POINT FACILITIES



3 Month Rolling Programme (Rev.02)

Act ID	Description	Orig Duf	Early Start	Early Finish	%	2013												2014		
						MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR		
<b>COMMENCEMENT &amp; COMPLETION</b>																				
<b>Completion of the Works</b>																				
1108ACD01	Letter of Acceptance	0	10AUG12 A		100															
1108ACD02	Commencement of Contract	0	13AUG12 A		100															
1108ACD03A	Completion of Specified Parts of the Works	0		10FEB13 A	100	Completion of Specified Parts of the Works														
1108ACD03C	Completion of Contract	0		28AUG16	0															
1108ACD04B	Completion of 1st BPF for Operation	0		10DEC12 A	100															
<b>Time for Completion</b>																				
1108ACD04A	Completion of Specified Parts of the Works	187	13AUG12 A	15FEB13 A	100	Completion of Specified Parts of the Works														
1108ADC04B	Completion of 1st BPF for Operation	122	13AUG12 A	10DEC12 A	100															
1108ADC04C	Completion of The Whole of the Works	1477	13AUG12 A	28AUG16	18															
<b>+ Time for Possession of Works Area</b>																				
		52	13AUG12 A	03OCT12 A	100															
<b>Vacation of Works Area</b>																				
1108ACD11V	Vacation of Portion 1108A.W1	0		28AUG16 *	0															
1108ACD12V	Vacation of Portion 1108A.W2	0		28AUG16 *	0															
1108ACD13V	Vacation of Portion 1108A.W3	0		31DEC15 *	0															
1108ACD14V	Vacation of Portion 1108A.W4 (Access Only)	0		28AUG16 *	0															
1108ACD15V	Vacation of Portion 1108A.W5	0		31DEC13 *	0	Vacation of Portion 1108A.W5														
1108ACD16V	Taking over of Portion 1108A.W6 by 1108	0		01MAY13 *	0	Taking over of Portion 1108A.W6 by 1108														
1108ACD17V	Taking over of Portion 1108A.W7 by 1108	0		01MAY13 *	0	Taking over of Portion 1108A.W7 by 1108														
<b>MILESTONES SCHEDULE</b>																				
<b>Milestones for Cost Centre A</b>																				
1108AMSA11	Approval of EMP (G5.1.10)	0		09NOV12 A	100															
1108AMSA12	Approval of Quality Plan (G9.2.1)	0		23NOV12 A	100															
1108AMSA13	Approval of Method of Construction (G12.1.1)	0		26NOV12 A	100															
1108AMSA14	Approval of Submission Schedule	0		09NOV12 A	100															
1108AMSA15	Approval of RMP (P24.3.1)	0		28OCT12 A	100															
1108AMSA16	Approval of DSCP (PS Appendix Q)	0		09NOV12 A	100															
1108AMSA21	Approval of Health & Safety Plan (G3.6.1)	0		28NOV12 A	100															
1108AMSA22	Approval of Preliminary MP (G4.6.1)	0		28NOV12 A	100															
1108AMSA30	Satisfactory Impl'n of Safety & Env. req'ts.	0		31MAR13 A	100	Satisfactory Impl'n of Safety & Env. req'ts.														
1108AMSA41	Satisfactory Impl'n of Quality req'ts.	0		29SEP13	0	Satisfactory Impl'n of Quality req'ts.														
1108AMSA42	Satisfactory Impl'n of Prog. Mgt. System	0		29SEP13	0	Satisfactory Impl'n of Prog. Mgt. System														
1108AMSA50	Satisfactory Impl'n of Safety & Env. req'ts.	0		30MAR14	0															
1108AMSA61	Satisfactory Impl'n of Risk Mgt. req'ts.	0		29SEP14	0															
1108AMSA62	Satisfactory Impl'n of Prog. Mgt. System	0		29SEP14	0															
1108AMSA70	Satisfactory Impl'n of Safety & Env. req'ts.	0		29MAR15	0															
1108AMSA81	Satisfactory Impl'n of Quality req'ts.	0		27SEP15	0															
1108AMSA82	Satisfactory Impl'n of Prog. Mgt. System	0		27SEP15	0															
1108AMSA90	Satisfactory Impl'n of Safety & Env. req'ts.	0		03APR16	0															
<b>Milestones for Cost Centre B</b>																				





Act ID	Description	Orig Dur	Early Start	Early Finish	%	2013												2014		
						MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR		
1108AB2101	Manufacture of BPF #1 & #2	56	29OCT12 A	15JAN13 A	100															
1108AB2111	Erection of New & Modification of Extg. Hoarding	28	15OCT12 A	23MAR13 A	100															
1108AB2112	Site Clearance and Modification of Site Layout	21	03OCT12 A	23OCT12 A	100															
1108AB2121	Ground Investigation (if necessary)	7	10OCT12 A	29OCT12 A	100															
1108AB2122	Foundation for BPF#1	21	30OCT12 A	01DEC12 A	100															
1108AB2123	Pile Test for BPF#1	14	10DEC12 A	19DEC12 A	100															
1108AB2124	Substructures for BPF#1	14	20DEC12 A	31DEC12 A	100															
1108AB2125	Erection of BPF#1	28	08JAN13 A	06FEB13 A	100															
1108AB2126	Testing & Commissioning of BPF#1	7	04FEB13 A	09FEB13 A	100															
1108AB2132	Foundation for BPF#2	21	20NOV12 A	29NOV12 A	100															
1108AB2133	Pile Test for BPF#2 (if necessary)	14	10DEC12 A	19DEC12 A	100															
1108AB2134	Substructures for BPF#2	14	20DEC12 A	05JAN13 A	100															
1108AB2135	Erection of BPF#2	28	27JAN13 A	10FEB13 A	100															
1108AB2136	Testing & Commissioning of BPF#2	7	09FEB13 A	15FEB13 A	100															
1108AB2140	Beautification and Landscaping Works	18	30APR13	17MAY13	0															
1108AB2191	Operation of BPF#1	0	09FEB13 A		100															
1108AB2192	Operation of BPF#2	0	10FEB13 A		100															
1108AB2222	Outstanding Works after Operation of BPF 1&2	30	16FEB13 A	23MAR13 A	100															
<b>Kai Tak BPF - Works Areas 1108A.W2 &amp; W3</b>																				
1108AB2212	Erection of Hoarding & Project Signboards	42	27SEP12 A	18NOV12 A	100															
<b>Kai Tak BPF - Works Areas 1108A.W2 &amp; W3 (Option)</b>																				
1108AB2202	Manufacture Floating Landing Barge #3 (Option)	60	11SEP12 A	04NOV12 A	100															
1108AB2213	Site Clearance and Formation	28	03SEP12 A	11OCT12 A	100															
1108AB2231	Concrete Slab for Plank Gang to F.L.Barge	14	22OCT12 A	01NOV12 A	100															
1108AB2232	Erection of Temp. Plank Gang to F.L.Barge	14	20OCT12 A	08NOV12 A	100															
1108AB2233	Construction Roads & Pavements	21	29SEP12 A	08NOV12 A	100															
1108AB2234	Installation of Weighbridge System	14	20OCT12 A	04NOV12 A	100															
1108AB2235	Installation of CCTV	14	29OCT12 A	11NOV12 A	100															
1108AB2236	Beautification and Landscaping Works	14	02NOV12 A	15NOV12 A	100															
1108AB2239	Earlier Operation of BPF#3	0		15NOV12 A	100															
<b>+Kai Tak BPF - Works Areas 1108A.W4, W6 &amp; W7</b>																				
		60	24SEP12 A	22DEC12 A	100															
<b>+Kai Tak BPF - Dredging Area</b>																				
		72	13AUG12 A	20NOV12 A	100															
<b>Kai Tak BPF - Mgt., Maintenance &amp; Operation</b>																				
1108AB3010	Manage, Maintain & Operate the BPF	152	10DEC12 A	30JUN13	59															
1108AB4010	Manage, Maintain & Operate the BPF	182	01JUL13	29DEC13	0															
1108AB5010	Manage, Maintain & Operate the BPF	182	30DEC13	29JUN14	0															
1108AB6010	Manage, Maintain & Operate the BPF	182	30JUN14	28DEC14	0															
1108AB7010	Manage, Maintain & Operate the BPF	182	29DEC14	28JUN15	0															
1108AB8010	Manage, Maintain & Operate the BPF	182	29JUN15	27DEC15	0															
1108AB9010	Manage, Maintain & Operate the BPF	186	28DEC15	30JUN16	0															

Start date	10AUG12
Finish date	28AUG16
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Page number	3A
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**MTR SCL 1108A**  
**KAI TAK BARGING POINT FACILITIES**

Concentric - Hong Kong River Joint Venture

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Early bar</li> <li><span style="color: yellow;">■</span> Target bar</li> <li><span style="color: blue;">■</span> Progress bar</li> <li><span style="color: red;">■</span> Critical bar</li> <li><span style="color: purple;">■</span> Summary bar</li> <li><span style="color: orange;">◆</span> Start milestone point</li> <li><span style="color: black;">●</span> Finish milestone point</li> </ul>	<table border="1"> <thead> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> </thead> <tbody> <tr> <td>13AUG12</td> <td>1st Submission</td> <td></td> <td></td> </tr> <tr> <td>11SEP12</td> <td>comments(SCoTE)</td> <td></td> <td></td> </tr> <tr> <td>21SEP12</td> <td>comments(SCoTE)</td> <td></td> <td></td> </tr> </tbody> </table>	Date	Revision	Checked	Approved	13AUG12	1st Submission			11SEP12	comments(SCoTE)			21SEP12	comments(SCoTE)		
Date	Revision	Checked	Approved														
13AUG12	1st Submission																
11SEP12	comments(SCoTE)																
21SEP12	comments(SCoTE)																

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**Appendix B**

**8<sup>th</sup> EM&A Report for Works Contract 1109 –  
Stations and Tunnels of Kowloon City Section**

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MTR Corporation Limited

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

Monthly EM&A Report No. 8

[Period from 1 to 30 April 2013]

Works Contract 1109 - Stations and Tunnels of  
Kowloon City Section

(May 2013)

Certified by:   
\_\_\_\_\_ Winnie Ko \_\_\_\_\_

Position: Environmental Team Leader

Date: \_\_\_\_\_ 10 May 2013 \_\_\_\_\_

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.8*

April 2013

**Environmental Resources Management**

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Shatin to Central Link (SCL) - Tai  
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Works Contract 1109 – Stations and  
Tunnels of Kowloon City Section  
*Monthly EM&A Report No.8*

April 2013

Reference 0171181

For and on behalf of  
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed: 

Position: Partner

Date: 10 May 2013

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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 eighth monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 April to 30 April 2013 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;
- Along Ma Tau Wai Road - Construction of D-wall panel, predrilling for D-wall and trial pits for location of utilities.

---

##### Works in To Kwa Wan (TKW)

- Olympic Playground Area – Diversion of existing water pipe and cable ducts laying;
  - Olympic Garden – Trial pits for existing UU diversion and pre-drilling;
  - Olympic Avenue – Pre-drilling and erection of hoarding;
  - Tam Kung Road – Pre-drilling;
  - Nam Kok Road – Cable ducts laying;
  - TKW Station – Archaeological survey, construction of grout curtain, sheet pile and bored pile, and installation of socket steel H-piling.
- 

### 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

During the reporting period, continuous noise monitoring is only required at MTW-16-1 according to the schedule presented in CNMP.

### Cultural Heritage

A Licence 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 at the Sacred Hill (North) commenced in mid-November 2012 and is being conducted in accordance with the Licence and the approved Archaeological Action Plan (AAP).

As tunnelling works have not yet commenced, no vibration monitoring was carried out during the reporting month.

### Waste Management

Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 13,557 m<sup>3</sup> of inert C&D materials were generated from the Project, of which 25 m<sup>3</sup> were disposed of at the public fill and the remaining 13,533 m<sup>3</sup> were sent to 1108A Kai Tai Barging Facilities during the reporting month. 148 kg of plastics was generated and sent to recyclers for recycling during the reporting period. About 86 m<sup>3</sup> of non-recyclable non-inert C&D materials, such as general refuse, were disposed of at NENT Landfill. No steel material and chemical waste were generated during this reporting month. 36 kg of paper/cardboard packaging was generated and sent to recyclers for recycling during the reporting period.

### Landscape and Visual

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 2 and 15 April 2013. 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 2, 8, 15, 22 and 29 April 2013. The representative of the IEC joined the site inspection on 8 April 2013. 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-16-1 on 10 April 2013 during the reporting period, but no conclusion could be drawn on the noise sources which have contributed to the noise exceedance. Investigation of exceedance had been

conducted and any necessary remedial action has also been taken according to the Event and Action Plan in CNMP.

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

No environmental complaint and summons/prosecutions 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)**

- Along Ma Tau Wai Road - Construction of D-wall panel, pre-drilling for D Wall and trial pits for location of utilities.

---

##### **Work in To Kwa Wan (TKW)**

- Olympic Playground Area – Diversion of existing water pipe and cable ducts laying;
  - Olympic Avenue – Pre-drilling and erection of hoarding;
  - Olympic Garden - construction of trial pits for existing UU diversion, and pre-drilling;
  - Tam Kung Road – Pre-drilling;
  - Nam Kok Road – Construction of trial trench for location of Utilities and cable ducts laying; and
  - TKW Station –Archaeological survey, construction of ground curtain, bored pile and sheet pile, and installation of socket steel H-piling.
-

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 eighth EM&A report which summarises the monitoring results and audit findings during the reporting period from 1 April to 30 April 2013.

### **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 organization 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 Environmental Mitigation Measures**

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*

<b>Construction Activities undertaken</b>	
<b>Works in Ma Tau Wai (MTW)</b>	
•	TKW/MTW Road Garden – Operation of bentonite plant;
•	Along Ma Tau Wai Road - Construction of D-wall panel, predrilling for D-wall and trial pits for location of utilities.
<b>Works in To Kwa Wan (TKW)</b>	
•	Olympic Playground Area – Diversion of existing water pipe and cable ducts laying;
•	Olympic Garden – Trial pits for existing UU diversion and pre-drilling;
•	Olympic Avenue – Pre-drilling and erection of hoarding;
•	Tam Kung Road – Pre-drilling;
•	Nam Kok Road – Cable ducts laying;

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**Construction Activities undertaken**


---

- TKW Station –Archaeological survey, construction of grout curtain, sheet pile and bored pile, and installation of socket steel H-piling.
- 

## 2.4 PROJECT ORGANISATION

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

## 2.5 STATUS OF ENVIRONMENTAL LICENCES, NOTIFICATION AND PERMITS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since the commencement of the construction works in September 2012 is presented in *Table 2.2*.

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

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-438/2012	-	Superseded by EP-438/2012/A on 12 July 2012
	EP-438/2012/A	-	Superseded by EP-438/2012/B on 26 October 2012
	EP-438/2012/B	-	Superseded by EP-438/2012/C on 30 April 2013
	EP-438/2012/C	Throughout the Contract	Permit granted on 30 April 2013
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	348516	13 Aug 2012 – 30 Apr 2017	-
Notification of Construction Works under Air Pollution Control (Construction Dust) Regulation (Form NB)	351125	16 Oct 2012 – 30 Apr 2017	-
<b>Wastewater Discharge Licence</b>			
Site at MTW	WT00013954-2012	-	Superseded by WT00014390-2012
	WT00014390-2012	30-Sep-2017	
Site at TKW	WT00013952-2012	-	Superseded by WT00014391-2012
	WT00014391-2012	30-Sep-2017	-
<b>Chemical Waste Producer Registration</b>			
Site at MTW	5213-286-S3682-01	Throughout the Contract	-
Site at TKW	5213-242-S3682-02	Throughout the Contract	-
<b>Construction Noise Permit</b>			

<b>Permit/ Licences/ Notification</b>	<b>Reference</b>	<b>Validity Period</b>	<b>Remarks</b>
- <i>Water Pump, Wastewater Treatment Plant, Site Office and Water Main Diversion</i>	<i>GW-RE0116-13</i>	<i>3-Aug-2013</i>	
- <i>Generator at TKW Works Area</i>	<i>GW-RE1099-12</i>	<i>16-Jun-2013</i>	-
- <i>Generator at Shansi Street</i>	<i>GW-RE1143-12</i>	<i>3-Jul-2013</i>	-
- <i>Grout Pump and Generator at TKW/ MTW Garden</i>	<i>GW-RE0160-13</i>	<i>20-Aug-2013</i>	
Licence to Excavate and Search for Antiquities	342	29-Oct-2013	-
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 the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was rejected or not available; 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 <sup>(a)</sup>	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 <sup>(b)</sup>	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*, comply 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*

<b>Monitoring Stations</b>	<b>Monitoring Equipment (Sound Level Meter and Calibrator)</b>
NMS-CA-6, 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. 00603867)

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 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*

<b>Time Period</b>	<b>Regular Noise Monitoring Location</b>	<b>Action Level</b>	<b>Limit Level</b>
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
	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)

**Note:**

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

## 3.2 CONTINUOUS NOISE MONITORING

### 3.2.1 Monitoring Location

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 <sup>(a)</sup>	Description
TKW-3-2(A)	No. 420 Prince Edward Road West
MTW-12-3	Lucky Mansion
MTW-12-4	352-354 Ma Tau Wai Rd (East Façade)
MTW-12-4-1(A)	Merricourt (59 Maidstone Road)
MTW-12-10	Lucky Building (South Façade)
MTW-12-10-1	Lucky Building (East Façade)
MTW-12-11	Jing Ming Building
MTW-16-1	SKH Good Shepherd Primary School

**Note:**

(a) The final monitoring locations will be subject to the latest Continuous Noise Monitoring Plan (CNMP).

### 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 on 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.

**Table 3.5** *Noise Monitoring Equipment*

Monitoring Stations	Monitoring Equipment (Sound Level Meter and Calibrator)
MTW-16-1	Calibrator: NC-73 (Serial No. 10997142) Sound Level Meter: NL-31 (Serial No. 00603867)

Monitoring Stations	Monitoring Equipment (Sound Level Meter and Calibrator)
---------------------	---

Note:

- (a) During the reporting period, continuous noise monitoring is only required at MTW-16-1 according to the schedule presented in CNMP.

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 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 <sup>(a)</sup>

Proposed Continuous Noise Monitoring Stations	Description	Action / Limit Level <sup>(a)</sup>	Measurement Period <sup>(a)</sup>
TKW-3-2(A)	No. 420 Prince Edward Road West	80	Sept 2014 – Dec 2014
MTW-12-3	Lucky Mansion	80	Aug 2014 – Jan 2015, Mar 2015 – Jun 2015
MTW-12-4	352-354 Ma Tau Wai Rd (East Façade)	80	Aug 2014 – Jun 2015
MTW-12-4-1(A)	Merricourt (59 Maidstone Road)	82	Oct 2014, Dec 2014 – Jun 2015
MTW-12-10	Lucky Building (South Façade)	84	Mar 2015 – Apr 2015, Sept 2015 – Jan 2016
MTW-12-10-1	Lucky Building (East Façade)	80	Dec 2014 – May 2015, Sept 2015 – Jan 2016
MTW-12-11	Jing Ming Building	81	Sept 2014 – Jun 2015
MTW-16-1	SKH Good Shepherd Primary School	78	Apr 2013 – Dec 2013, May 2014, Aug 2014 – Mar 2016

**Note:**

- (a) The A/L Levels and Measurement Periods will be subject to the latest Construction Noise Mitigation Measures Plan (CNMMP) and CNMP.

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 <sup>(a)</sup>	Katherine Building
DMS-7	Parc 22
DMS-8	SKH Good Shepherd Primary School
DMS-9 <sup>(b)</sup>	No. 26 Kowloon City Road
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.

#### 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 the 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)
<i>24-hr TSP</i>	
DMS-6	TE-5170 (Serial No. 0107), CM-AIR-43 (Serial No. 0438320)
DMS-7	TE-5170 (Serial No. 3574), CM-AIR-43 (Serial No. 0438320)
DMS-8	TE-5170 (Serial No. 3572), CM-AIR-43 (Serial No. 0438320)
DMS-9	TE-5170 (Serial No. 0814), CM-AIR-43 (Serial No. 0438320)
DMS-10	TE-5170 (Serial No. 3573), CM-AIR-43 (Serial No. 0438320)

### 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 four 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 m<sup>3</sup>min<sup>-1</sup>, which was within the range specified in the EM&A Manual (i.e. 0.6 – 1.7 m<sup>3</sup>min<sup>-1</sup>);
- 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 ( $\mu\text{g m}^{-3}$ ) <sup>(a)</sup>	Limit Level ( $\mu\text{g m}^{-3}$ ) <sup>(a)</sup>
24-hour TSP	DMS-6	156.8	260
	DMS-7	166.7	260
	DMS-8	152.2	260
	DMS-9	160.9	260
	DMS-10	170.4	260
1-hour TSP <sup>(b)</sup>	DMS-6	288.8	500
	DMS-7	289.7	500
	DMS-8	300.0	500
	DMS-9	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.

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

## 3.4 CULTURAL HERITAGE

The Licence 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 in mid-November 2012 and was conducted in accordance with the Licence and the approved Archaeological Action Plan (AAP).

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 summarized 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*

<b>EP Condition</b>	<b>Submission</b>	<b>Submission Date</b>
Condition 3.4	Seventh Monthly EM&A Report	12 April 2013

## 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. No exceedance of the limit level was recorded at NMS-CA-6, NMS-CA-7 and NMS-CA-10.

The noise monitoring results recorded at NMS-CA-8 on 8, 19 and 30 April, and at NMS-CA-9 in the whole monitoring period are higher than the daytime construction noise criterion. However, the results are not considered as exceedance as they are either below the baseline level or below the limit level after deducting the baseline noise level.

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

No exceedance of the Action and Limit Levels of regular construction noise due to the Project was recorded during the reporting period.

### 5.2 CONTINUOUS NOISE MONITORING

According to the prediction in the CNMP, continuous noise monitoring was only conducted at MTW-16-1 during the reporting month. Exceedances of the Action/Limit Level were recorded on 10 April 2013. Based on the investigation and the best available information, no conclusion could be drawn on the noise sources which have contributed to the noise exceedance. The monitoring results are presented in *Annex I-2*.

The investigation had been conducted to review the potential causes of these exceedances and any necessary remedial action has also been taken according to the Event and Action plan in CNMP. A summary of the investigation results is presented in *Section 7.1*.

### 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, $\mu\text{gm}^{-3}$ (a)		Action Level, $\mu\text{gm}^{-3}$	Limit Level, $\mu\text{gm}^{-3}$
	Average	Range		

Monitoring Station	24-hour TSP Monitoring Results measured, $\mu\text{gm}^{-3}$ (a)		Action Level, $\mu\text{gm}^{-3}$	Limit Level, $\mu\text{gm}^{-3}$
	Average	Range		
DMS-6	84	81-90	156.8	260
DMS-7	91	87-94	166.7	260
DMS-8	91	88-97	152.2	260
DMS-9	90	83-96	160.9	260
DMS-10	87	82-92	170.4	260

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

#### 5.4 CULTURAL HERITAGE

A Licence 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 at the Sacred Hill (North) commenced in mid-November 2012 and is being conducted in accordance with the Licence and the approved Archaeological Action Plan (AAP).

As tunnelling works have not commenced, no vibration monitoring was conducted during the reporting month.

#### 5.5 WASTE MANAGEMENT

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

*Table 5.2 Quantities of Waste Generated from the Project*

Reporting Month	Quantity					
	Inert C&D Materials (a) (b)	Chemical Waste	Non-inert C&D Materials			
			General Refuse/Vegetative Waste	Recycled materials		
				Paper/cardboard	Plastics	Metals
April 2013	13,557 m <sup>3</sup>	0 kg	86 m <sup>3</sup>	36 kg	148 kg	0 kg

**Notes:**

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

(b) About 13,557 m<sup>3</sup> of inert C&D materials were generated from the Project, of which 25 m<sup>3</sup> were disposed of at the public fill and the remaining 13,533 m<sup>3</sup> were sent to 1108A Kai Tai Barging Facilities during the reporting month.

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 2 and 15 April 2013. Most of the mitigation measures given in *Annex H* have been implemented. Required Actions that were found are listed below:

2 April 2013

- No observation was reported during the site inspection.

15 April 2013

- 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 2, 8, 15, 22 and 29 April 2013. The representative of the IEC joined the site inspection on 8 April 2013. No non-compliance was recorded during the site inspections.

Major findings and recommendations are summarized as follows:

#### 2 April 2013

- The AquaSed near the exit of TKW works area was observed not in operation. The Contractor was reminded to operate the AquaSed. Since no wastewater was observed in the U-channel, the AquaSed near the exit of TKW works area was not operating as observed during the site inspection on 8 April 2013.
- Silt was observed under the AquaSed at TKW works area. The Contractor was reminded to remove the silt. Silt under the AquaSed at TKW works area had been removed as observed during the site inspection on 8 April 2013.
- Clean rain water was seeping out under the hoarding at TKW/MTW Garden. The Contractor was reminded to seal up the cracks. The cracks under the hoarding at TKW/MTW Garden had been fixed as observed during the site inspection on 8 April 2013.

#### 8 April 2013

- The Contractor was reminded to cover the piles of sand when it was not in used at TKW works area. The pile of sand had been removed from TKW works area as observed during the site inspection on 15 April 2013.
- The hole on the drip tray of generator was not plugged. The Contractor was reminded to plug the hole to prevent any leakage. The hole on the drip tray of generator had been plugged as observed during the site inspection on 15 April 2013.
- Several chemical drums without drip tray were stored in front of AquaSed at TKW works area. The Contractor was reminded to store the chemical drums on the drip tray. No chemical storage was observed in front of the AquaSed at TKW works area during the site inspection on 15 April 2013.
- Some boards and tube were put inside the tree protection zone near one site exit at TKW works area. The Contractor was reminded to remove them from the tree protection zone. A proper tree protection zone had been installed near one site exit at TKW works area and boards/tube had been removed as observed during the site inspection on 15 April 2013.

### 15 April 2013

- The Contractor was reminded to conduct sufficient water spraying to the haul roads at TKW/MTW Garden and nearby works area. The Contractor had conducted water spraying to the haul roads at TKW/MTW Garden and nearby works area as observed during the site inspection on 22 April 2013.
- The two impervious sheets covering the grout mixing area were not fixed well. The Contractor was reminded to ensure that the grout mixing areas should be enclosed properly. The Contractor was also reminded to cover the cement stockpiles properly. Cement stockpile was not observed during the site inspection. The Contractor was noted to fix the impervious sheets at grouting mixing area properly during the site inspection on 22 April 2013.
- The Contractor was reminded to cover the piles of soil when unused at TKW works area. The soil stockpiles at TKW works area was either kept wet or covered by impervious sheets as observed during the site inspection on 22 April 2013.
- The Contractor was reminded to well maintain the AquaSed on site. The Contractor had noted to well maintain the AquaSed on site during the site inspection on 29 April 2013.
- Although noise barriers were installed at the site boundary of the work site at Ma Tau Wai works area, the Contractor was reminded to provide noise barriers to two generators at Ma Tau Wai works area. The two generators at Ma Tau Wai Road works area were not in operation and to be removed from that work site as observed during the site inspection on 22 April 2013.

### 22 April 2013

- Although noise barriers were provided at Ma Tau Wai Road works area, the Contractor was reminded to install noise barriers properly to a breaker at Ma Tau Wai works area. No construction work was carried out at works area on the opposite side of TKW market work site during the site inspection on 29 April 2013. According to the monitoring results of continuous noise monitoring, no exceedance was recorded on 22 April 2013.
- A wooden board was observed inside the tree protection zone of the retained tree MT0084. The Contractor was reminded to remove the wooden board from the tree protection zone. A wooden board inside the tree protection zone of the retained tree MT0084 had been removed as observed during the site inspection on 29 April 2013.

### 29 April 2013

- Some chemical and oil drums were not stored on the drip tray and labeled at Ma Tau Wai works area. The Contractor was reminded to store them on drip tray and to provide proper label to chemicals on site. It will be followed in the next site audit.
- The tree protection zone of the retained trees behind the silos at TKW/MTW garden was relatively small. The Contractor was reminded to provide sufficient tree protection zones to the retained trees. It will be followed in the next site audit.

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 in the following weekly site inspection conducted during the reporting period. For those findings and recommendations identified on 29 April 2013, these will be rectified and follow-up in the next weekly site inspection in May.



### 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 Action/Limit Level were recorded on 10 April 2013 at MTW-16-1. Based on the investigation and the best available information, no conclusion could be drawn on the noise sources which have contributed to the noise exceedance. The investigation had been conducted to review the potential causes of the exceedances and any necessary remedial action has also been taken according to the Event and Action Plan in CNMP.

On 10 April 2013, the construction works carried out near MTW-16-1 included the pre-drilling works at both TKW Market and Gas Station, installation of re-bar cage, concreting and trial trench exposure at TKW market as well as CLP cabling works near SKH Good Shepherd Primary School. Since worksites of TKW Market and Gas Station do not have direct line of sight towards the monitoring station, the contribution of noise level from these two work sites should therefore be minimal. Besides, the CLP cabling works at SKH Good Shepherd Primary School did not involve any PME and the works were done by man power. Also, the works were continuously operating on 10 April which means that the construction works carried out during exceedance period were same as that before and after the exceedance period. However the LAeq(30mins) were all below the Action/Limit Levels before and after the exceedance period. Apart from construction works, vehicle movement on Ma Tau Wai Road, heavy rain (14.1 mm rainfall was recorded by Hong Kong Observatory on 10 April) and other potential noises sources were also contributing to the abnormal noise exceedance. Based on the above and the best available information, no conclusion could be drawn on the noise sources which have contributed to the noise exceedance. However, the Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan (CNMMP) and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to avoid exceedance of the Action/Limit Level or causing noise nuisance.

The Investigation report is attached in *Annex L*.

### 7.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

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

7.3 *SUMMARY OF ENVIRONMENTAL COMPLAINT*

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

7.4 *SUMMARY OF ENVIRONMENTAL SUMMON AND SUCCESSFUL PROSECUTION*

No summon was received during the reporting month. The cumulative summons/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 summarized in *Table 8.1*.

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

<b>Construction Activities to be undertaken</b>	
<b>Work in Ma Tau Wai (MTW)</b>	
•	Along Ma Tau Wai Road - Construction of D-wall panel, pre-drilling for D Wall and trial pits for location of utilities.
<b>Work in To Kwa Wan (TKW)</b>	
•	Olympic Playground Area – Diversion of existing water pipe and cable ducts laying;
•	Olympic Avenue – Pre-drilling and erection of hoarding;
•	Olympic Garden - construction of trial pits for existing UU diversion, and pre-drilling;
•	Tam Kung Road – Pre-drilling;
•	Nam Kok Road – Construction of trial trench for location of Utilities and cable ducts laying; and
•	TKW Station –Archaeological survey, construction of ground curtain, bored pile and sheet pile, and installation of socket steel H-piling.

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. According to the schedule presented in the CNMP, continuous noise monitoring will be conducted 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 8<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 April 2013 to 30 April 2013 in accordance with the EM&A Manual and the requirement under EP-438/2012/C.

No exceedance of the Action and Limit Levels of regular construction noise 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-16-1 on 10 April 2013 during the reporting period, but no conclusion could be drawn on the noise sources which have contributed to the noise exceedance. Investigation of exceedance had been conducted and any necessary remedial action has also been taken according to the Event and Action Plan in CNMP.

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

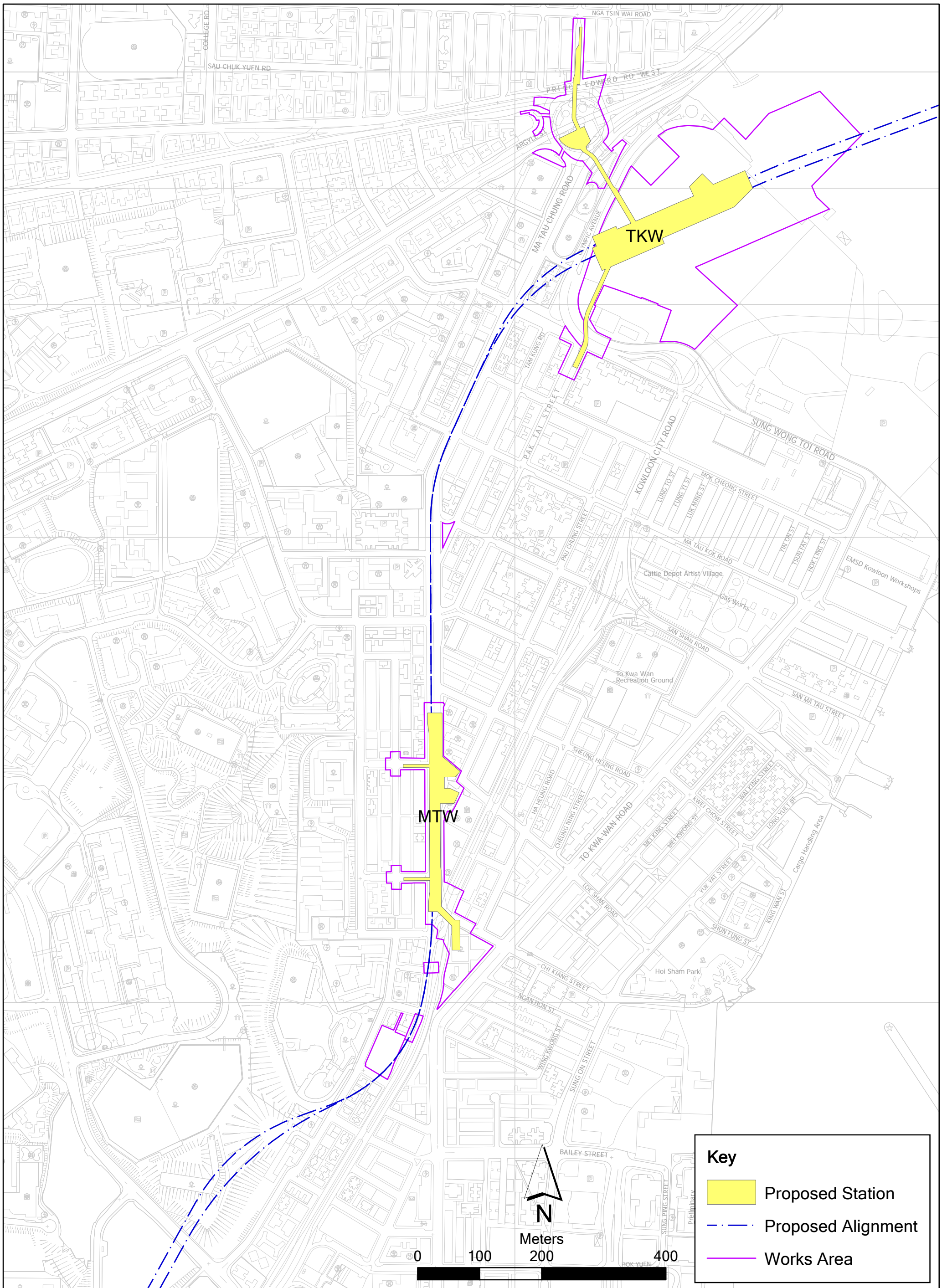
No non-compliance event was recorded during the reporting period.

No complaint and summons/prosecution was received during the reporting period.

The Contractor's ET will keep track of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all the necessary mitigation measures.

Annex A

## The Alignment and Works Area for Works Contract



**Key**

- Proposed Station
- Proposed Alignment
- Works Area

Annex A

Alignment, Stations and Works Area of SCL Works Contract 1109

Name: 0171181\_Works\_Area\_Annex.mxd  
Date: 10-Oct-12

**Environmental  
Resources  
Management**



Annex B

## Construction Programme for the Reporting Month and the Coming Month <sup>(1)</sup>

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

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
<b>1109 - SUW &amp; TKW Stations and Tunnels APR13 (UWP R3)</b>								
<b>PROJECT DATES</b>								
<b>Works Areas</b>								
<b>Return Dates</b>								
01109.RDA2e	Vacation date for Works Area 1109.A2e ( Wk 14/13;7Apr13)	0%		27-Apr-13*	◆	◆		
01109.RDW3d	Vacation date for Works Area 1109.W3d ( Wk 14/13; 7Apr13)	0%		27-Apr-13*	◆	◆		
<b>Specified Milestone Dates</b>								
<b>CC-A Milestones</b>								
01109.MSA3	A3 -Engineer's office including provision of office furniture and equipment complete (30Mar13).	100%		12-Apr-13 A	◆	◆		
01109.MSAii	A4(ii)-Engr's confirmation of satisfac. implementation of safety&environ. Reqmts (Wk24/13;16Jun13)	0%		16-Jun-13*			◆	
<b>CC-B Milestones</b>								
01109.MSB02ii	B2(ii) - 10% by plan length of temporary bored pile wall at TBM launch shaft complete(Wk07/13;17Feb13)	100%		15-Apr-13 A		◆		
01109.MSB03i	B3(i) - Archaeological survey-cum-excavation complete.(Wk24/13;16Jun13)	0%		31-May-13		◆	◆	
01109.MSB03ii	B3(ii)Contru dwg schs for blkwork, glazed walls, metal wall panels,louvers,ceilings /stoneworkapproved(Wk24/13;16Jun13)	0%		16-Jun-13*			◆	
<b>CC-C Milestones</b>								
01109.MSC02	C2-30% by plan length of permanent diaphragm wall complete.(Wk07/13;17Feb13)	0%		05-Jul-13				◆
<b>CC-D Milestones</b>								
01109.MSD02	D2(i)-Submission of des.&manufact.data comp; obtain Engr notice of no objection" for mould (Wk15/13;14Apr13)	0%		30-May-13*		◆	◆	
<b>CC-A - PRELIMINARIES AND GENERAL REQUIREMENTS</b>								
<b>Design and Approvals</b>								
<b>Temporary Traffic Arrangements</b>								
<b>SUW Station, Entrances and Adits</b>								
<b>TTMS Design &amp; Approval</b>								
01109.PDA1340	SUW - Sung Wong Toi & Pak Tai St - TTM Stage 1 - Design & Approval by SLG	0%	18-May-13	16-Jul-13				
01109.PDA1350	SUW - Nam Kok Rd - TTM Stage 1 Phase 2 - Design & Approval by SLG	0%	24-May-13	21-Jun-13				
01109.PDA1370	SUW - Olympic Avenue - TTM Stage 2 - Design & Approval by SLG	0%	01-Jun-13	30-Jul-13				
01109.PDA1360	SUW - Nam Kok Rd - TTM Stage 2 Phase 1 - Design & Approval by SLG	0%	21-Jun-13	21-Jul-13				
01109.PDA1390	SUW - Nam Kok Rd - TTM Stage 2 Phase 2 - Design & Approval by SLG	0%	21-Jul-13	20-Aug-13				
<b>TTMS Gazette Notice</b>								
01109.PDA1440	SUW - Nam Kok Rd - TTM Stage 1 Phase 2 - Gazette Notice	0%	21-Jun-13	21-Jul-13				
01109.PDA1470	SUW - Nam Kok Rd - TTM Stage 2 Phase 1 - Gazette Notice	0%	21-Jul-13	20-Aug-13				
<b>TTMS Signal Modification by EMSD</b>								





THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDA1530	SUW - Olympic Avenue - TTM Stage 2 - EMSD Signal Preparation	0%	15-Jun-13	09-Aug-13				
<b>General &amp; Site Wide</b>								
<b>Site Establishment Activities</b>								
01109.PDA2890	Engineer's office complete & ready to move in	100%	15-Feb-13 A	31-Mar-13 A				
<b>Management Systems</b>								
<b>Construction (incl Geotech) - Approval</b>								
01109.PDA3050	Review & Approve existing geotechnical features	100%	31-Dec-12 A	30-Mar-13 A				
<b>Existing Buildings and Structures (EBS) - Submission</b>								
01109.PDA3120	EBS Condition Survey - Investigation to confirm no exist piles/obstructions to proposed TBM tunnels	0%	01-May-13*	25-Jul-13				
<b>Existing Buildings and Structures (EBS) - Approval</b>								
01109.PDA4270	EBS Contingency Plan - Approve the Contingency plan for works in vicinity of EBS (P11.5.4)	70%	31-Dec-12 A	13-May-13				
<b>Procurement</b>								
<b>Initial Subcontracts</b>								
01109.PDA3790	SUW - Procure and mobilize Grout Curtain plant & equipment	100%	17-Oct-12 A	22-Apr-13 A				
01109.PDA35100	Procure and mobilize observation wells plant & equipment	90%	17-Oct-12 A	25-Jul-13				
<b>Concrete Construction Materials</b>								
<b>Precast supplies</b>								
01109.PDA3970	Precast concrete segment shop drawing preparation & approval	0%	25-May-13*	08-Jul-13				
01109.PDA3980	Precast concrete segment mould manufacture and delivery	0%	09-Jul-13	26-Nov-13				
<b>Method Statements</b>								
<b>SUW - Method statements Submission</b>								
01109.PDA34900	SUW - Prepare and submit Observation Wells & Pumping Test method statement	0%	05-Jun-13	21-Jun-13				
<b>SUW - Method Statements Approval</b>								
01109.PDA4060	SUW - Review & Approval of Grout Curtain method statement	100%	16-Jan-13 A	21-Apr-13 A				
01109.PDA35000	Review & Approval of Observation Wells & Pumping Test method statement	0%	22-Jun-13	25-Jul-13				
<b>CC-B - SUW STATION, ENTRANCES AND ADITS</b>								
<b>Implementation of TTA at SUW</b>								
01109.PDB1551	SUW - Nam Kok Rd - Implement TTM Stage 1 (Phase 1)	100%	15-Mar-13 A	29-Mar-13 A				
<b>SUW Station Construction Works</b>								
<b>General Activities</b>								
<b>Initial Survey Works</b>								
01109.PDB1060	Excavation of Trial Pits for utility Services in SUW areas (excl Archaeological Svy area)	100%	14-Jan-13 A	29-Mar-13 A				



SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDB1050	CCTV Record Survey of Public drains (excl Arch Svy area)	100%	01-Mar-13 A	29-Mar-13 A	[Gantt bar: 01-Mar-13 to 29-Mar-13]			
01109.PDB1070	Excavation of Trial Pits for underground structures in SUW areas (excl Arch Svy area)	100%	01-Mar-13 A	29-Mar-13 A	[Gantt bar: 01-Mar-13 to 29-Mar-13]			
<b>Site Preparation</b>								
<b>Site Hoarding &amp; Facilities Establishment Works</b>								
01109.PDB1110	Erection of site fencing	100%	18-Jan-13 A	12-Apr-13 A	[Gantt bar: 18-Jan-13 to 12-Apr-13]			
<b>Demolition and Site Clearance</b>								
<b>Tree Felling</b>								
01109.PDB1250	SUW - Tree transplanting works (all areas)	60%	19-Jan-13 A	25-May-13	[Gantt bar: 19-Jan-13 to 25-May-13]			
01109.PDB1320	SUW - Tree felling works other areas	0%	27-May-13	20-Jun-13	[Gantt bar: 27-May-13 to 20-Jun-13]			
01109.PDB1290	SUW - Tree felling works (Part 3- GL 12 to 19)	0%	01-Jun-13	17-Jun-13	[Gantt bar: 01-Jun-13 to 17-Jun-13]			
01109.PDB1310	SUW - Tree felling works (Part 4- GL 19 to 24)	0%	18-Jun-13	04-Jul-13	[Gantt bar: 18-Jun-13 to 04-Jul-13]			
<b>Install Monitoring Instruments/Take Initial Readings</b>								
01109.PDB14710	SUW - Install monitoring instruments/take initial readings; Part 3- GL 12 to 19	0%	01-Jun-13	05-Jul-13	[Gantt bar: 01-Jun-13 to 05-Jul-13]			
01109.PDB14720	SUW - Install monitoring instruments/take initial readings; Part 4- GL 19 to 24	0%	01-Jun-13	05-Jul-13	[Gantt bar: 01-Jun-13 to 05-Jul-13]			
<b>Archaeological Survey</b>								
01109.PDB14220	Archaeological Survey-cum-Excavation (Stages 2 and 3 Excavation)	76%	13-Nov-12 A	31-May-13	[Gantt bar: 13-Nov-12 to 31-May-13]			
01109.PDB1590	Prepare ASE Report	0%	01-Mar-13 A	07-Jun-13	[Gantt bar: 01-Mar-13 to 07-Jun-13]			
01109.PDB14230	Archaeological Physical Survey Complete - Site Handover	0%		31-May-13	[Gantt bar: 31-May-13]			
01109.PDB14210	Additional Investigation (in "Green Areas")	0%	01-Jun-13*	15-Jun-13	[Gantt bar: 01-Jun-13 to 15-Jun-13]			
01109.PDB1600	Submit Draft ASE report to MTRC	0%		07-Jun-13	[Gantt bar: 07-Jun-13]			
01109.PDB14240	MTRC Comment on Draft ASE report	0%	08-Jun-13	22-Jun-13	[Gantt bar: 08-Jun-13 to 22-Jun-13]			
01109.PDB14250	Revise the Draft ASE Report (following MTR comments)	0%	24-Jun-13	29-Jun-13	[Gantt bar: 24-Jun-13 to 29-Jun-13]			
01109.PDB14260	Submit Draft ASE Report to AMO	0%		29-Jun-13	[Gantt bar: 29-Jun-13]			
01109.PDB14270	Review Draft ASE Report by AMO	0%	02-Jul-13	29-Jul-13	[Gantt bar: 02-Jul-13 to 29-Jul-13]			
<b>Utilities and Services Diversion</b>								
<b>Utility Diversion Works</b>								
<b>DSD Box Culvert Stormwater drain diversion</b>								
01109.PDB1640	Stormwater drain diversions (Part 1- GL 01 to 04/ cofferdam areas)	0%	01-Jun-13	26-Jun-13	[Gantt bar: 01-Jun-13 to 26-Jun-13]			
01109.PDB1650	Stormwater drain diversions (Part 2- GL 04 to 12)	0%	27-Jun-13	22-Jul-13	[Gantt bar: 27-Jun-13 to 22-Jul-13]			
01109.PDB1670	Stormwater drain diversions (Part 3- GL 12 to 19)	0%	23-Jul-13	15-Aug-13	[Gantt bar: 23-Jul-13 to 15-Aug-13]			
<b>Fresh water main diversion</b>								
01109.PDB1700	Fresh water mains diversions (Part 1- GL 01 to 04/ cofferdam areas)	0%	01-Jun-13	26-Jun-13	[Gantt bar: 01-Jun-13 to 26-Jun-13]			



THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDB1710	Fresh water mains diversions (Part 2- GL 04 to 12)	0%	27-Jun-13	22-Jul-13				
01109.PDB1730	Fresh water mains diversions (Part 3- GL 12 to 19)	0%	23-Jul-13	15-Aug-13				
<b>Salt water main diversion</b>								
01109.PDB1760	Salt water mains diversions (Part 1- GL 01 to 04/ cofferdam areas)	0%	01-Jun-13	26-Jun-13				
01109.PDB1770	Salt water mains diversions (Part 2- GL 04 to 12)	0%	27-Jun-13	22-Jul-13				
01109.PDB1790	Salt water mains diversions (Part 3- GL 12 to 19)	0%	23-Jul-13	15-Aug-13				
<b>Electric Cable diversion</b>								
01109.PDB1820	Electric cable diversions (Part 1- GL 01 to 04/ cofferdam areas)	0%	27-Jun-13	22-Jul-13				
01109.PDB1830	Electric cable diversions (Part 2- GL 04 to 12)	0%	23-Jul-13	15-Aug-13				
<b>Telecom cable diversions</b>								
01109.PDB1880	Telecom cable diversions (Part 1- GL 01 to 04/ cofferdam areas)	0%	27-Jun-13	22-Jul-13				
01109.PDB1890	Telecom cable diversions (Part 2- GL 04 to 12)	0%	23-Jul-13	15-Aug-13				
<b>Station - Excavation and Foundation</b>								
<b>Pre-drilling Works</b>								
<b>Part 1</b>								
01109.PDB1960	Pre-drilling for station foundation piles (Part 1- GL 1 to 4)	90%	23-Nov-12 A	27-Apr-13				
01109.PDB1970	SI Report & Confirmation of Founding Levels (Part 1 - GL 1 to 4)	50%	02-Jan-13 A	29-Apr-13				
<b>Other Areas</b>								
01109.PDB14370	SI Report & Confirmation of Founding Levels (Beyond GL24)	100%	23-Mar-13 A	12-Apr-13 A				
<b>Part 2B</b>								
01109.PDB21560A	SI Report & Confirmation of Founding Levels (Part 2B - GL 7.5 to 12)	100%	23-Mar-13 A	24-Apr-13 A				
<b>Part 3</b>								
01109.PDB2030	Pre-drilling for station foundation piles (Part 3- GL 12 to 19)	0%	08-Jun-13	22-Jun-13				
01109.PDB14350	SI Report & Confirmation of Founding Levels (Part 3 - GL 12 to 19)	0%	24-Jun-13	29-Jun-13				
<b>Part 4</b>								
01109.PDB2060	Pre-drilling for station foundation piles (Part 4- GL 19 to 24)	0%	24-Jun-13	08-Jul-13				
01109.PDB14360	SI Report & Confirmation of Founding Levels (Part 4 - GL 19 to 24)	0%	09-Jul-13	15-Jul-13				
<b>Pre-bored H- Piling for Permanent Works</b>								
<b>Part 1 (GL 1 to 4)</b>								
01109.PDB2190A	Rig 1 - H- Piling - 53 Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	40%	21-Jan-13 A	02-Aug-13				
01109.PDB2230A	Rig 2 - H- Piling - 39 Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	40%	22-Jan-13 A	27-Jun-13				
01109.PDB2370A20	Rig 5 - H- Piling - 26Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	100%	11-Mar-13 A	24-Jun-13				



SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
<b>Part 2A (GL 4 - 7.5)</b>								
01109.PDB2260A	Rig 3 - H-Piling - 60 Nr - 2.5d/pile (BR approved drawings 06 Feb 13)	46%	10-Jan-13 A	02-Aug-13				
01109.PDB2100A	Rig 4 - H-Piling - 60 Nr - 2.5d/pile (BR approved drawings 06 Feb 13)	46%	30-Jan-13 A	02-Aug-13				
01109.PDB2370A30	Rig 6 - H- Piling - 10Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	100%	16-Mar-13 A	08-Apr-13 A				
<b>Part 2B (GL 7.5 - 12)</b>								
01109.PDB2370A10	Rig 6 - H- Piling - 58Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	5%	09-Apr-13 A	23-Sep-13				
01109.PDB2370A	Rig 5 - H- Piling - 48Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	0%	25-Jun-13	04-Nov-13				
<b>Part 3 (GL 12 - 18)</b>								
01109.PDB2250	Rig 8 - H- Piling - 45Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	0%	02-Jul-13	09-Nov-13				
01109.PDB2360	Rig 2 - H- Piling - 45Nr - 2.5d/pile (BD approved drawings 06 Feb 13)	0%	02-Jul-13	13-Nov-13				
<b>Part 4 (GL 18 - 23)</b>								
01109.PDB2350	Rig 7 - H- Piling - 50Nr - 2.5d/pile	0%	19-Apr-13 A	24-Sep-13				
<b>TBM Launch Shaft Works</b>								
<b>Bored Piling for TBM Shaft</b>								
01109.PDB19000	10% of temporary bored pile wall complete (13nr)	100%		15-Apr-13 A				
<b>Bored Pile P1 - P23</b>								
01109.PDB18970B	TBM Launch shaft - Bored Piling P1-P23 (13nr) - Rig 6A	20%	22-Feb-13 A	10-Jul-13				
01109.PDB18870B	TBM Launch shaft - Bored Piling P1-P23 (10nr) - Rig 7A	20%	08-Mar-13 A	28-Jun-13				
<b>Bored Pile P24 - P49</b>								
01109.PDB18980B	TBM Launch shaft - Bored Piling P24-49 (26nr) - Rig 8A	20%	29-Mar-13 A	27-Aug-13				
<b>Bored Pile P50 - P100</b>								
01109.PDB18930B	TBM Launch shaft - Bored Piling P50-P100 (11nr) - Rig 4A	15%	01-Mar-13 A	07-Oct-13				
01109.PDB18940B	TBM Launch shaft - Bored Piling P50-P100 (10nr) - Rig 5A	15%	01-Mar-13 A	07-Oct-13				
01109.PDB18890B	TBM Launch shaft - Bored Piling P50-P100 (10nr) - Rig 1A	15%	08-Mar-13 A	07-Oct-13				
01109.PDB18910B	TBM Launch shaft - Bored Piling P50-P100 (10nr) - Rig 2A	15%	08-Mar-13 A	07-Oct-13				
01109.PDB18920B	TBM Launch shaft - Bored Piling P50-P100 (10nr) - Rig 3A	10%	01-Apr-13 A	13-Sep-13				
<b>Bored Pile P101 - 125</b>								
01109.PDB19090B	TBM Launch shaft - Bored Piling P101-P125 (7nr) - Rig 9A	10%	12-Apr-13 A	13-Sep-13				
01109.PDB19100B	TBM Launch shaft - Bored Piling P101-P125 (6nr) - Rig 10A	10%	19-Apr-13 A	13-Sep-13				
01109.PDB18950B	TBM Launch shaft - Bored Piling P101-P125 (6nr) - Rig 7A	0%	28-Jun-13	17-Sep-13				
01109.PDB18880B	TBM Launch shaft - Bored Piling P101-P125 (6nr) - Rig 6A	0%	11-Jul-13	27-Sep-13				
<b>Pipe piling for TBM Shaft Area</b>								



**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - APRIL 2013**

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDB19020	TBM Launch shaft - Gang A - Pipe Piles Zone B1 - P1 to 24 (24nr) 2d/pile	0%	07-May-13*	04-Jul-13		[Green bar spanning May, Jun, Jul]		
01109.PDB19050	TBM Launch shaft - Gang B - Pipe Piles Zone C - P71 to 93 (23nr) 2d/pile	0%	07-May-13*	04-Jul-13		[Green bar spanning May, Jun, Jul]		
01109.PDB19030	TBM Launch shaft - Gang A - Pipe Piles Zone C - P25 to 47 (23nr) 2d/pile	0%	05-Jul-13	04-Sep-13				[Green bar in Jul]
01109.PDB19060	TBM Launch shaft - Gang B - Pipe Piles Zone C - P94 to 117 (24nr) 2d/pile	0%	05-Jul-13	06-Sep-13				[Green bar in Jul]
<b>Excavation TBM Shaft Area</b>								
<b>Utility Support /Diversions</b>								
01109.PDB3000	TBM Launch shaft - Excavate & support rising mains in NW corner	25%	12-Apr-13 A	20-May-13	[Blue bar in Apr]	[Green bar in May]		
<b>Earthworks</b>								
<b>Curtain Grout Works</b>								
01109.PDB3360A	Grout Curtain; Part 4- GL 21 to 22	25%	22-Apr-13 A	14-May-13	[Blue bar in Apr]	[Green bar in May]		
01109.PDB3210	Grout Curtain; Part 2- GL 4 to 5	0%	26-Apr-13	02-May-13		[Green bar in May]		
01109.PDB3250	Grout Curtain; Part 1- GL 1 to GL 2	0%	03-May-13	08-May-13		[Green bar in May]		
01109.PDB3290	Grout Curtain; Part 2- GL 5 to 6	0%	09-May-13	14-May-13		[Green bar in May]		
01109.PDB3310	Grout Curtain; Part 1- GL 2 to GL 3	0%	15-May-13	21-May-13		[Green bar in May]		
01109.PDB3330	Grout Curtain; Part 2- GL 6 to 7	0%	22-May-13	27-May-13		[Green bar in May]		
01109.PDB3350	Grout Curtain; Part 1- GL 3 to GL 4	0%	28-May-13	01-Jun-13		[Green bar in May]		
01109.PDB3390	Grout Curtain; Part 4- GL 22 to 23	0%	01-Jun-13	06-Jun-13			[Green bar in Jun]	
01109.PDB3370	Grout Curtain; Part 2- GL 7 to 8	0%	03-Jun-13	07-Jun-13			[Green bar in Jun]	
01109.PDB3420	Grout Curtain; Part 4- GL 23 to 24	0%	07-Jun-13	13-Jun-13			[Green bar in Jun]	
01109.PDB3400	Grout Curtain; Part 2- GL 8 to 9	0%	08-Jun-13	14-Jun-13			[Green bar in Jun]	
01109.PDB3240	Grout Curtain; Part 3- GL 10 to 11	0%	13-Jun-13	18-Jun-13			[Green bar in Jun]	
01109.PDB3430	Grout Curtain; Part 2- GL 9 to 10	0%	15-Jun-13	20-Jun-13			[Green bar in Jun]	
01109.PDB3450	Grout Curtain; Part 4- areas beyond GL 24	0%	19-Jun-13	03-Jul-13			[Green bar in Jun]	
01109.PDB3300	Grout Curtain; Part 3- GL 11 to 12	0%	04-Jul-13	10-Jul-13				[Green bar in Jul]
01109.PDB3280	Grout Curtain; Part 4- GL 19 to 20	0%	06-Jul-13	12-Jul-13				[Green bar in Jul]
01109.PDB3340	Grout Curtain; Part 3- GL 12 to 13	0%	11-Jul-13	17-Jul-13				[Green bar in Jul]
01109.PDB3320	Grout Curtain; Part 4- GL 20 to 21	0%	13-Jul-13	19-Jul-13				[Green bar in Jul]
01109.PDB3380	Grout Curtain; Part 3- GL 13 to 14	0%	18-Jul-13	24-Jul-13				[Green bar in Jul]
<b>Install Observation Wells</b>								
01109.PDB3750	Observation Wells; Part 4- areas beyond GL 24	0%	04-Jul-13	09-Jul-13				[Green bar in Jul]
<b>Entrance C and Associated Adits</b>								
<b>Entrance C - Site Preparation</b>								



**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - APRIL 2013**

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
<b>Entrance C - Record Survey and Site set-up Works</b>								
01109.PDB10270	CCTV Record Survey of Public drains	0%	31-May-13*	26-Jun-13				
<b>Entrance C - Utilities and Services Diversion</b>								
01109.PDB10290	Excavation of Trial Pits for utility Services and underground structures in Ent C & Adits areas	100%	11-Feb-13 A	19-Apr-13 A				
01109.PDB10330	Initial survey of dump concentrations in Ent C & Adits related areas	0%	27-May-13	28-Jun-13				
01109.PDB10310	Visual joint survey of Highways structures in Ent C & Adits areas	0%	27-Jun-13	30-Jul-13				
<b>Entrance C - Part 1- GL 7 to GL 14</b>								
<b>Entrance C- Part 1- ELS Works</b>								
<b>Entrance C - Part 1- Piling &amp; Toe Grouting Works</b>								
01109.PDB10380	Sheet Piling Works; GL C7 to C14	20%	05-Apr-13 A	28-Jun-13				
01109.PDB14400	Pre Bored H Pile works (24nr) 1PR	0%	29-Jun-13	24-Aug-13				
01109.PDB10390	Toe grouting Works; GL C7 to C14; East Side	0%	03-Jul-13	30-Jul-13				
01109.PDB10400	Toe grouting Works; GL C14 to C7; West Side	0%	11-Jul-13	07-Aug-13				
<b>Entrance B and Associated Adits</b>								
<b>Entrance B - Site Preparation</b>								
<b>Entrance B - Record Survey and Site set-up Works</b>								
01109.PDB2040	Pre-drilling for Adit B works (GL 11 to 20)	0%	15-Mar-13 A	18-May-13				
01109.PDB11650	CCTV Record Survey of Public drains	100%	05-Apr-13 A	19-Apr-13 A				
01109.PDB11660	Excavation of Trial Pits for utility Services in Adit B areas	100%	12-Apr-13 A	19-Apr-13 A				
01109.PDB11670	Excavation of Trial Pits for underground structures in Adit B areas	100%	12-Apr-13 A	19-Apr-13 A				
01109.PDB2070	SI Report & Confirmation of Founding Levels	0%	19-May-13	24-May-13				
01109.PDB11690	Initial survey of Structures to be retained in Adit B areas	0%	21-May-13	05-Jun-13				
01109.PDB11700	Initial survey of dump concentrations in Adit B related areas	0%	25-Jun-13	12-Jul-13				
<b>Entrance B - Utilities and Services Diversion</b>								
01109.PDB11710	Traffic Diversion for site clearance, utility relocation/diversion in Adit B Area	75%	21-Jan-13 A	27-May-13				
01109.PDB11720	Utility relocation / diversion in Adit B Area	0%	13-Jul-13	10-Sep-13				
01109.PDB11730	Site clearance and Tree Felling in Adit B Area	0%	13-Jul-13	24-Aug-13				
<b>Entrance B - Olympic Avenue and SUW playground Works</b>								
<b>Stage 1</b>								
01109.PDB11760	Implement the TTMS to occupy two Southbound lanes of Olympic Avenue	100%	18-Feb-13 A	25-Mar-13 A				
01109.PDB11770	Divert / protect Temporary utilities	50%	26-Mar-13 A	18-May-13				
01109.PDB11780	Pre-Bored H-Piles foundation works (22nr 1PR) (4d/pile)	0%	25-May-13	14-Sep-13				



**MTR Corporation Limited**  
**Shatin to Central Link Contract 1109**

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THREE MONTH ROLLING PROGRAMME - APR 13 TASK filters:  
 3MRP Dates, MTRC 1109 - 3MRP.

- MP Baseline
- Actual Work
- Remaining Work
- MP Milestone
- Milestone



**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - APRIL 2013**

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
<b>Entrance B - Nam Kok Road Works - (Detailed Programme)</b>								
<b>Entrance B - Nam Kok Road Works (Portion 3)</b>								
<b>Nam Kok Road - Site Preparation</b>								
<b>Instrumentation &amp; Monitoring</b>								
01109.PDB19130A	Installation and Monitoring of Instrumentation	5%	05-Apr-13 A	30-Dec-14				
<b>Existing Building Survey (EBS)</b>								
01109.PDC28690A	EBS Condition Survey - Install protection measures	0%	03-Jan-13 A	29-Apr-13				
01109.PDC28700A	EBS Condition Survey - Establish baseline readings	0%	28-May-13*	26-Jun-13				
<b>Nam Kok Road - TTMS - Stage 1 and 2</b>								
<b>TTMS - Stage 1 (Phase 1)</b>								
01109.PDB14670A	Site Investigation (Predrill) and Trial Pits (to confirm utility location)	50%	15-Mar-13 A	14-May-13				
01109.PDB18960A	Utility diversion & protection measures (Telecom)	0%	15-May-13	31-May-13				
01109.PDB18970A	Utility diversion & protection measures (Drainage)	0%	15-May-13	31-May-13				
01109.PDB18980A	Utility diversion & protection measures (Watermain)	0%	15-May-13	17-Jul-13				
01109.PDB14680A	Utility diversion & protection measures (Towngas)	0%	15-May-13	20-Jun-13				
01109.PDB18840A	Utility diversion & protection measures (CLP 132kV cables)	0%	15-May-13	07-Sep-13				
01109.PDB14650A	Install 410mm dia pipe pile wall. 90nr (assume 3 piles/2 days). 1PR	0%	29-Jun-13	07-Sep-13				
01109.PDB19200A	Install grout curtain	0%	24-Jul-13	09-Oct-13				
<b>Entrance B - Kowloon City Interchange</b>								
<b>Entrance B - Underpinning of KNEC Piers</b>								
<b>Pier P75</b>								
01109.PDB12950	Specific geotechnical monitoring equipment to be installed & baseline readings	50%	22-Mar-13 A	14-May-13				
01109.PDB12960	General Clearance	100%	25-Mar-13 A	28-Mar-13 A				
01109.PDB12970	Site investigation Trial Trench & predrilling	100%	29-Mar-13 A	12-Apr-13 A				
01109.PDB12980	P75 - Pre-bored socket H- Piles 609 Dia;4Nos 40m depth;1 PR of low headroom	0%	24-Jun-13*	01-Aug-13				
<b>Pier P76</b>								
01109.PDB13120	General Clearance	100%	17-Apr-13 A	20-Apr-13 A				
01109.PDB13130	Site investigation Trial Trench & predrilling	0%	22-Apr-13 A	14-May-13				
01109.PDB13110	Specific geotechnical monitoring equipment to be installed & baseline readings	0%	15-May-13	20-Jun-13				
<b>Pier P46</b>								
01109.PDB12630	Specific geotechnical monitoring equipment to be installed & baseline readings	65%	22-Feb-13 A	27-May-13				
01109.PDB12640	General Clearance	0%	27-May-13	30-May-13				



**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - APRIL 2013**

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDB12650	Site investigation Trial Trench & predrilling	0%	30-May-13	07-Jun-13				
<b>Pier P74</b>								
01109.PDB12810	Site investigation Trial Trench & predrilling	100%	08-Apr-13 A	22-Apr-13 A				
01109.PDB12790	Specific geotechnical monitoring equipment to be installed & baseline readings	0%	27-May-13	03-Jul-13				
01109.PDB12800	General Clearance	0%	03-Jul-13	06-Jul-13				
<b>CC-C - TKW STATION, ENTRANCES AND ADITS</b>								
<b>Engineers Instructions (EI)</b>								
<b>EI 29 - Provision of Watermain along Kowloon City Road and Sheung Heung Road</b>								
01109.PDC21600A	Install Watermain at Zone 1	46%	29-Jan-13 A	19-Jun-13				
01109.PDC21630A	Install Watermain at Zone 4	34%	29-Jan-13 A	24-Jul-13				
01109.PDC21610A	Install Watermain at Zone 2	0%	22-May-13	27-Jul-13				
01109.PDC21660A10	Obtain Gazettal Approval	0%	22-May-13*					
01109.PDC21620A	Install Watermain at Zone 3	0%	31-May-13	27-Jul-13				
01109.PDC21640A	Carry out Swabbing	0%	20-Jul-13	21-Aug-13				
<b>EI 14 - Sheung Heung Road Amenity Facility</b>								
01109.PDC21520A	Construct planter, shell chairs, signs and drainage network	100%	26-Jan-13 A	26-Mar-13 A				
01109.PDC21530A	Install lighting and irrigation system	100%	22-Feb-13 A	12-Apr-13 A				
01109.PDC21540A	Handover to LCSD	0%		26-Apr-13				
<b>Implementation of TTA at TKW</b>								
01109.PDC1690	TKW - Implement TTM Stage 1 - E2/E4 1st Shuffle	0%	26-Apr-13	27-Apr-13				
<b>TKW Station</b>								
<b>Existing Utility Diversion Works</b>								
<b>Drainage and Sewerage</b>								
01109.PDC1530	TKW-SD510 - 975dia SD - P91 - Support & Monitor during Construction	0%	26-Apr-13					
01109.PDC1490	TKW-FD401/401P - P6 to P7 - Divert 600dia sewer	0%	26-Apr-13	18-May-13				
01109.PDC1560	TKW-FD501/501P - P9 - Divert 150 & 225dia sewer	0%	26-Apr-13	26-Apr-13				
01109.PDC1510	TKW-FD402/402P - P140 - Divert 600dia sewer	0%	04-May-13	25-May-13				
01109.PDC1540	TKW-FD403/403P - P140 - Divert 150dia sewer	0%	11-May-13	01-Jun-13				
01109.PDC1550	TKW-SD504 - P123 - Storm Drain 225dia Support in situ	0%	18-May-13	31-May-13				
01109.PDC1520	TKW-SD506 - P117 - Support In-situ/abandon	0%	21-Jun-13	27-Jun-13				
01109.PDC1650	TKW-FD101/101P - Ent A - New 225dia sewer in vicinity of TKW Ent A	0%	02-Jul-13	22-Jul-13				
01109.PDC1500	TKW-SD502 - P132 - Storm Drain Support Insitu	0%	19-Jul-13	25-Jul-13				



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THREE MONTH ROLLING PROGRAMME - APR 13 TASK filters:  
 3MRP Dates, MTRC 1109 - 3MRP.

- MP Baseline
- Actual Work
- Remaining Work
- MP Milestone
- Milestone



**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - APRIL 2013**

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
<b>Power Supply</b>								
01109.PDC1870	TKW-CLP401 - P7 & P142 - (11kV) Locally Slew	100%	18-Sep-12 A	13-Apr-13 A				
01109.PDC1880	TKW-CLP404 - P7 & P142 - (415 V) - Support in-situ & close monitoring	12%	18-Sep-12 A	13-Apr-19				
01109.PDC1830	TKW-CLP114 - P104 - (Existing Abandoned 33 kV) - Remove	100%	17-Dec-12 A	22-Apr-13 A				
01109.PDC1790	TKW-CLP405 - P13 & P132 - (Existing Abandoned 66 kV) - Remove	0%	26-Apr-13	03-May-13				
01109.PDC1820	TKW-CLP602 - P123 - New 132 kV supply - Install	0%	18-May-13	31-May-13				
<b>Gas Supply</b>								
01109.PDC1900	TKW-GAS503 - P42 & P108 - Temporarily Abandon	100%	21-Feb-13 A	25-Mar-13 A				
<b>Telecommunication System</b>								
01109.PDC1960	TKW-HKT503/503P - P76 to 87incl. - Telecom Cable - Slew	100%	07-Feb-13 A	19-Apr-13 A				
01109.PDC1950	TKW-HGC401 - P142 & P4,5,6 - Telecom Cable - Slew & Support	100%	16-Feb-13 A	11-Apr-13 A				
<b>Diaphragm Wall during TTMS Stage 1</b>								
<b>Area E1 (MTW Road)</b>								
<b>Area E1 (MTW Rd) - Advance Works</b>								
01109.PDC2010	E1 (MTW Rd) - Batch 2 - Trial Pits	100%	14-Dec-12 A	28-Mar-13 A				
01109.PDC2020	E1 (MTW Rd) - Batch 1 - Excavation & Construction of Guide walls	78%	21-Jan-13 A	30-Apr-13				
01109.PDC2030	E1 (MTW Rd) - Batch 2 - Excavation & Construction of Guide walls	0%	26-Apr-13	10-May-13				
01109.1000A	E1 (MTW Rd) - Trial Pits & Predrill to P13	0%	04-May-13	10-May-13				
<b>Area E1 (MTW Rd) - Founding Level Predrill</b>								
01109.PDC2120	E1 (MTW Rd) - Batch 2 - Founding Level Predrill P: 11,12,134,159 (7nr) (1.5PR)	100%	17-Dec-12 A	19-Apr-13 A				
01109.PDC2110	E1 (MTW Rd) - Batch 1 - P:125,129,130,131,132,133 - SI Report & Confirmation of Founding Levels	100%	24-Jan-13 A	12-Apr-13 A				
01109.PDC2180	E1 (MTW Rd) - Batch 2 - P:11,12,13,128,134,159 - SI Report & Confirmation of Founding Levels	50%	19-Feb-13 A	28-Apr-13				
01109.PDC2240	E1 (MTW Rd) - Batch 2 - Dwall work commences	0%	11-May-13					
<b>Area E1 (MTW Rd) - BC Cutter Nr 1</b>								
01109.PDC23320	E1 (MTW Rd) - Dwall works P125	0%	18-Apr-13 A	03-May-13				
<b>Area E1 (MTW Rd) - BC Cutter Nr 2 (Low Headroom cutter)</b>								
01109.PDC23400	E1 (MTW Rd) - Dwall works P130	100%	16-Mar-13 A	27-Mar-13 A				
01109.PDC23670	E1 (MTW Rd) - Dwall works P126	100%	25-Mar-13 A	11-Apr-13 A				
01109.PDC23360	E1 (MTW Rd) - Dwall works P129	80%	17-Apr-13 A	27-Apr-13				
01109.PDC23360A	Modify BC Cutter Nr.2	0%	29-Apr-13	07-May-13				
01109.PDC23500	E1 (MTW Rd) - Crosswall D1-4	0%	08-May-13	10-May-13				
01109.PDC23510	E1 (MTW Rd) - Crosswall D3-4	0%	10-May-13	14-May-13				



SAMSUNG - H SIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDC23450	E1 (MTW Rd) - Crosswall C3-5	0%	15-May-13	18-May-13				
01109.PDC23480	E1 (MTW Rd) - Crosswall D2-4	0%	18-May-13	21-May-13				
01109.PDC23560	E1 (MTW Rd) - Crosswall C1-4	0%	21-May-13	23-May-13				
01109.PDC23590	E1 (MTW Rd) - Crosswall D1-3	0%	23-May-13	25-May-13				
01109.PDC23540	E1 (MTW Rd) - Crosswall C2-4	0%	25-May-13	28-May-13				
01109.PDC23520	E1 (MTW Rd) - Crosswall D4-3	0%	28-May-13	30-May-13				
01109.PDC23490	E1 (MTW Rd) - Crosswall C1-5	0%	30-May-13	01-Jun-13				
01109.PDC23530	E1 (MTW Rd) - Crosswall D3-3	0%	03-Jun-13	05-Jun-13				
01109.PDC23580	E1 (MTW Rd) - Crosswall C4-4	0%	05-Jun-13	07-Jun-13				
01109.PDC23470	E1 (MTW Rd) - Crosswall C2-5	0%	07-Jun-13	11-Jun-13				
01109.PDC23440	E1 (MTW Rd) - Crosswall D4-4	0%	11-Jun-13	14-Jun-13				
01109.PDC23550	E1 (MTW Rd) - Crosswall C4-5	0%	14-Jun-13	18-Jun-13				
01109.PDC23570	E1 (MTW Rd) - Crosswall D2-3	0%	18-Jun-13	20-Jun-13				
01109.PDC23460	E1 (MTW Rd) - Crosswall C3-4	0%	20-Jun-13	22-Jun-13				
01109.PDC23420	E1 (MTW Rd) - Dwall works P131	0%	22-Jun-13	04-Jul-13				
01109.PDC23390	E1 (MTW Rd) - Dwall works P13	0%	28-Jun-13	11-Jul-13				
01109.PDC23380	E1 (MTW Rd) - Dwall works P132 (under TKW Flyover)	0%	06-Jul-13	25-Jul-13				
01109.PDC23350	E1 (MTW Rd) - Dwall works P159 (under TKW Flyover)	0%	16-Jul-13	03-Aug-13				
<b>Area E1 (Ent D)</b>								
<b>Area E1 (Ent D) - Advance Works</b>								
01109.PDC3230	E1 (Ent D) - Batch 1 - Excavation & Construction of Guide Walls	36%	17-Dec-12 A	17-Jun-13				
01109.PDC3250	E1 (Ent D) - Batch 2 - Excavation & Construction of Guide Walls	20%	15-Mar-13 A	17-Jun-13				
<b>Area E1 (Ent D) - Founding Level Pedrill</b>								
01109.PDC3270	E1 (Ent D) - Batch 2 - Founding Level Predrill P6,10,7,8 (6nr) 2PR	100%	24-Dec-12 A	03-Apr-13 A				
01109.PDC3260	E1 (Ent D) - Batch 1 - Founding Level Predrill P142,141,135,140,136,137,138 (11nr) 2PR	100%	29-Dec-12 A	08-Apr-13 A				
01109.PDC3400	E1 (Ent D) - Batch 1 - P:142,141,135,140,136,137,138 - GI Report & Confirmation of Founding Levels	75%	15-Jan-13 A	10-May-13				
01109.PDC3380	E1 (Ent D) - Batch 2 - P:5,6,10,9,7,8 - GI Report & Confirmation of Founding Levels	0%	26-Apr-13	24-Jun-13				
01109.PDC3270A	E1 (Ent D) - Batch 2 - P9 Trial pit and Founding Level Predrill	0%	26-Apr-13	18-May-13				
<b>Area E1 (Ent D) - BC Cutter Nr 2 (Low Headroom cutter)</b>								
01109.PDC26720	E1 (Ent D) - Dwall works P5	100%	08-Apr-13 A	19-Apr-13 A				
<b>Area E2/E4/E5</b>								
<b>Area E2/E4/E5 - Advance Works</b>								



**SAMSUNG - Hsin Chong Joint Venture**

**THREE MONTH ROLLING PROGRAMME - APRIL 2013**

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDC8380	E5 - Excavation and construction of Guide Walls	100%	14-Jan-13 A	15-Apr-13 A				
01109.PDC4050	E2 - Batch 1 - Excavation & Construction of Guide Walls	40%	14-Feb-13 A	31-May-13				
<b>Area E2/E4/E5 - Founding Level Predrill</b>								
01109.PDC4190	E2 - Batch 1 - P: 115,116,117,118,119 - SI Report & Confirmation of Founding Levels 1.5PR	60%	08-Feb-13 A	28-Apr-13				
01109.PDC29005A	E5 - P: 111,114 - SI Report & Confirmation of Founding Levels	100%	09-Apr-13 A	25-Apr-13 A				
01109.PDC4090A	E2 - Batch 1 - P116 Trial Pit and Founding Level	0%	26-Apr-13	30-Apr-13				
<b>Area E2/E4/E5 - BC Cutter Nr 1</b>								
01109.PDC23610	E2 - Dwall works P121	100%	22-Mar-13 A	22-Apr-13 A				
01109.PDC23700	E2 - Dwall works P120	5%	25-Apr-13 A	21-May-13				
01109.PDC24710	E4 - Dwall works P124	0%	16-May-13	25-May-13				
01109.PDC23680	E2 - Dwall works P119	0%	22-May-13	05-Jun-13				
01109.PDC24700	E4 - Dwall works P123	0%	01-Jun-13	14-Jun-13				
01109.PDC23650	E2 - Dwall works P117	0%	10-Jun-13	27-Jun-13				
01109.PDC23630A	E2 - Dwall works P122	0%	24-Jun-13	05-Jul-13				
01109.PDC23640	E2 - Dwall works P116	0%	02-Jul-13	12-Jul-13				
01109.PDC23660	E2 - Dwall works P118	0%	09-Jul-13	24-Jul-13				
01109.PDC23850	E2 - Crosswall F4-3	0%	20-Jul-13	24-Jul-13				
<b>Area E2/E4/E5 - BC Cutter Nr 3</b>								
01109.PDC24720	E5 - Dwall works P114	100%	10-Apr-13 A	19-Apr-13 A				
01109.PDC24730	E5 - Dwall works P111	50%	23-Apr-13 A	30-Apr-13				
01109.PDC23620	E2 - Dwall works P115	0%	11-May-13	27-May-13				
<b>Area E2/E4/E5 - BC Cutter Nr 5</b>								
01109.PDC23760	E2 - Crosswall F3-4	0%	11-Jun-13	15-Jun-13				
01109.PDC23710	E2 - Crosswall F8-4	0%	15-Jun-13	19-Jun-13				
01109.PDC23800	E2 - Crosswall F1-3	0%	19-Jun-13	22-Jun-13				
01109.PDC24770	E5 - Crosswall F12-4	0%	22-Jun-13	26-Jun-13				
01109.PDC23720	E2 - Crosswall F1-4	0%	26-Jun-13	29-Jun-13				
01109.PDC23770	E2 - Crosswall F5-4	0%	29-Jun-13	04-Jul-13				
01109.PDC23600	E2 - Crosswall F6-3	0%	04-Jul-13	08-Jul-13				
01109.PDC23820	E2 - Crosswall F2-3	0%	08-Jul-13	11-Jul-13				
01109.PDC23790	E2 - Crosswall F4-4	0%	11-Jul-13	15-Jul-13				
01109.PDC24810	E5 - Crosswall F12-3	0%	15-Jul-13	17-Jul-13				



SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDC28900A	E4 - Crosswall E1-4	0%	17-Jul-13	20-Jul-13				
01109.PDC24780	E5 - Crosswall F10-4	0%	20-Jul-13	24-Jul-13				
01109.PDC23840	E2 - Crosswall F5-3	0%	24-Jul-13	29-Jul-13				
<b>Area E2/E4/E5 - Post Concrete Works</b>								
01109.PDC8860	E5 - Dwall testing	0%	01-May-13	25-May-13				
01109.PDC23110	E5 - Dwall Shear pin installation	0%	27-May-13	08-Jun-13				
01109.PDC23120	E5 - Dwall Toe grouting	0%	10-Jun-13	24-Jun-13				
01109.PDC23080	E4 - Dwall Shear pin installation	0%	15-Jun-13	21-Jun-13				
01109.PDC23090	E4 - Dwall testing	0%	22-Jun-13	15-Jul-13				
01109.PDC5080	E2 - Dwall Toe grouting	0%	13-Jul-13	02-Aug-13				
01109.PDC5110	E2 - Dwall testing	0%	13-Jul-13	05-Aug-13				
01109.PDC5220	E2 - Dwall Shear pin installation	0%	13-Jul-13	26-Jul-13				
01109.PDC23100	E4 - Dwall Toe grouting	0%	16-Jul-13	22-Jul-13				
<b>Area E3</b>								
<b>Area E3 - Advance Works</b>								
01109.PDC5190	E3-1 - Excavation & Construction of Guide Walls	29%	18-Jan-13 A	09-May-13				
01109.PDC6010	E3-2 - Excavation and Construction of Guide Walls	100%	28-Jan-13 A	28-Mar-13 A				
01109.PDC6810A	E3-3 - Additional Utility diversions	100%	11-Mar-13 A	25-Apr-13 A				
01109.PDC2903A	E3-1 3-2 - Additional Utility diversions	100%	11-Mar-13 A	25-Mar-13 A				
01109.PDC6760A	E3-3 - Trial Pits (Batch 2)	75%	23-Mar-13 A	27-Apr-13				
01109.PDC6750A	E3-3 - Excavation and Construction of Guide Walls (P88a,88b,89,90,91,92,93)	14%	27-Mar-13 A	13-May-13				
01109.PDC28985	E3-2 - Excavation and Construction of Guide Walls (Cross Walls)	0%	26-Apr-13	14-May-13				
<b>Area E3 - Founding Level Pre-drill</b>								
01109.PDC5210	E3-1 - Founding Level Pre-drill P104,105,106,107,108,109,110 (10nr) 3PR	100%	02-Jan-13 A	15-Apr-13 A				
01109.PDC5280	E3-1 - P: 104,105,106,107,108,109,110 - SI Report & Confirmation of Founding Levels	40%	24-Jan-13 A	01-May-13				
01109.PDC6770	E3-3 - Batch 2 - Founding Level Pre-drill P88a,88b(89),92,90,93,91(8nr) 2.5PR	75%	05-Apr-13 A	27-Apr-13				
01109.PDC6830	E3-3 - Batch 2 - P: 88a,88b(89),92,90,93,91 - GI Report & Confirmation of Founding Levels	0%	27-Apr-13	03-May-13				
<b>Area E3 - BC Cutter Nr 3</b>								
01109.PDC24530	E3 - Dwall works P98	100%	19-Mar-13 A	28-Mar-13 A				
01109.PDC24200	E3 - Dwall works P101	100%	03-Apr-13 A	12-Apr-13 A				
01109.PDC24030	E3 - Dwall works P107	100%	16-Apr-13 A	25-Apr-13 A				
01109.PDC24040	E3 - Dwall works P106	0%	29-Apr-13	09-May-13				



SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDC23990	E3 - Dwall works P110	0%	06-May-13	15-May-13				
01109.PDC24000	E3 - Dwall works P109	0%	23-May-13	31-May-13				
01109.PDC24020	E3 - Dwall works P104	0%	29-May-13	06-Jun-13				
01109.PDC29025	E3 - Modify cutter 1.2m to 0.8m	0%	04-Jun-13	06-Jun-13				
01109.PDC24070	E3 - Crosswall F13-4	0%	07-Jun-13	11-Jun-13				
01109.PDC24110	E3 - Crosswall F15-4	0%	11-Jun-13	15-Jun-13				
01109.PDC24150	E3 - Crosswall F17-4	0%	15-Jun-13	19-Jun-13				
01109.PDC24060	E3 - Crosswall F13-3	0%	19-Jun-13	21-Jun-13				
01109.PDC24100	E3 - Crosswall F15-3	0%	21-Jun-13	24-Jun-13				
01109.PDC24140	E3 - Crosswall F17-3	0%	24-Jun-13	26-Jun-13				
01109.PDC24090	E3 - Crosswall F14-4	0%	26-Jun-13	29-Jun-13				
01109.PDC24130	E3 - Crosswall F16-4	0%	29-Jun-13	04-Jul-13				
01109.PDC24170	E3 - Crosswall F18-4	0%	04-Jul-13	08-Jul-13				
01109.PDC24080	E3 - Crosswall F14-3	0%	08-Jul-13	10-Jul-13				
01109.PDC24120	E3 - Crosswall F16-3	0%	10-Jul-13	12-Jul-13				
01109.PDC24250	E3 - Crosswall F19-5	0%	12-Jul-13	16-Jul-13				
01109.PDC24230	E3 - Crosswall F19-3	0%	16-Jul-13	18-Jul-13				
01109.PDC24310	E3 - Crosswall G2-5	0%	18-Jul-13	22-Jul-13				
01109.PDC24290	E3 - Crosswall G2-3	0%	22-Jul-13	24-Jul-13				
01109.PDC24240	E3 - Crosswall F19-4	0%	24-Jul-13	27-Jul-13				
<b>Area E3 - BC Cutter Nr 4</b>								
01109.PDC24010	E3 - Dwall works P108	100%	19-Mar-13 A	26-Mar-13 A				
01109.PDC24360	E3 - Dwall works P97	100%	03-Apr-13 A	13-Apr-13 A				
01109.PDC24540	E3 - Dwall works P94	88%	13-Apr-13 A	26-Apr-13				
01109.PDC24190	E3 - Dwall works P102	55%	17-Apr-13 A	30-Apr-13				
01109.PDC24560	E3 - Dwall works P93	0%	29-Apr-13	08-May-13				
01109.PDC24180	E3 - Dwall works P103	0%	04-May-13	14-May-13				
01109.PDC24550	E3 - Dwall works P90	0%	10-May-13	21-May-13				
01109.PDC24050	E3 - Dwall works P105	0%	22-May-13	30-May-13				
01109.PDC24350	E3 - Dwall works P88A	0%	28-May-13	06-Jun-13				
01109.PDC24570	E3 - Dwall works P91	0%	03-Jun-13	13-Jun-13				
01109.PDC28930	E3 - Dwall works P88B	0%	08-Jun-13	19-Jun-13				



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THREE MONTH ROLLING PROGRAMME - APR 13 TASK filters:  
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- MP Baseline
- Actual Work
- Remaining Work
- MP Milestone
- Milestone

SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDC24390	E3 - Dwall works P92	0%	15-Jun-13	25-Jun-13				
01109.PDC24370	E3 - Dwall works P89	0%	21-Jun-13	02-Jul-13				
01109.PDC24850	E3 - Dwall works P87 (Was E6, now E3)	0%	27-Jun-13	11-Jul-13				
01109.PDC24980	E3 - Modify cutter 1.2m to 0.8m	0%	08-Jul-13	10-Jul-13				
01109.PDC24420	E3 - Crosswall G5-4	0%	11-Jul-13	15-Jul-13				
01109.PDC24430	E3 - Crosswall G7-4	0%	15-Jul-13	18-Jul-13				
01109.PDC24460	E3 - Crosswall G9-5	0%	18-Jul-13	22-Jul-13				
01109.PDC24620	E3 - Crosswall G9-3	0%	22-Jul-13	24-Jul-13				
01109.PDC24500	E3 - Crosswall G11-5	0%	24-Jul-13	27-Jul-13				
<b>Area E3 - BC Cutter Nr 5</b>								
01109.PDC24990A	Mobilise BC Cutter Nr 5 + desander to Site & Set Up	100%	02-Apr-13 A	04-May-13				
01109.PDC24660	E3 - Crosswall G4-5	0%	06-May-13	09-May-13				
01109.PDC24470	E3 - Crosswall G4-3	0%	09-May-13	11-May-13				
01109.PDC24610	E3 - Crosswall G6-5	0%	11-May-13	15-May-13				
01109.PDC24510	E3 - Crosswall G6-3	0%	15-May-13	18-May-13				
01109.PDC24650	E3 - Crosswall G8-5	0%	18-May-13	22-May-13				
01109.PDC24410	E3 - Crosswall G8-3	0%	22-May-13	24-May-13				
01109.PDC24340	E3 - Crosswall G3-5	0%	24-May-13	28-May-13				
01109.PDC24320	E3 - Crosswall G3-3	0%	28-May-13	30-May-13				
01109.PDC24630	E3 - Crosswall G5-5	0%	30-May-13	03-Jun-13				
01109.PDC24490	E3 - Crosswall G5-3	0%	03-Jun-13	05-Jun-13				
01109.PDC24590	E3 - Crosswall G7-5	0%	05-Jun-13	08-Jun-13				
01109.PDC24680	E3 - Crosswall G7-3	0%	08-Jun-13	11-Jun-13				
<b>Area E3 - Post Concrete Works</b>								
01109.PDC6650	E3-2 - Dwall Toe grouting	0%	15-May-13	05-Jun-13				
01109.PDC6670	E3-2 - Dwall testing	0%	06-Jun-13	29-Jun-13				
01109.PDC5940	E3-1 - Dwall testing	0%	07-Jun-13	30-Jun-13				
01109.PDC8090	E3-3 - Dwall Shear pin installation	0%	14-Jun-13	27-Jun-13				
01109.PDC8130	E3-3 - Dwall testing	0%	28-Jun-13	21-Jul-13				
01109.PDC6850	E3-2 - Dwall Shear pin installation	0%	02-Jul-13	15-Jul-13				
01109.PDC6820	E3-1 - Dwall Toe grouting	0%	02-Jul-13	22-Jul-13				
01109.PDC8990	E3-3 - Dwall Toe grouting	0%	22-Jul-13	10-Aug-13				



MTR Corporation Limited  
Shatin to Central Link Contract 1109

1109-UWP-3A, Page 15 of 16

THREE MONTH ROLLING PROGRAMME - APR 13 TASK filters:  
3MRP Dates, MTRC 1109 - 3MRP.

- MP Baseline
- Actual Work
- Remaining Work
- MP Milestone
- Milestone

THREE MONTH ROLLING PROGRAMME - APRIL 2013

Activity ID	Activity Name	Physical % Complete	Start	Finish	2013			
					Apr	May	Jun	Jul
01109.PDC6840	E3-1 - Dwall Shear pin installation	0%	23-Jul-13	05-Aug-13				
<b>Area E6</b>								
<b>Area E6 - Advance Works</b>								
01109.PDC9020A	E6 - Additional Utility Diversions (New activity)	100%	11-Mar-13 A	25-Apr-13 A				
01109.PDC8980	E6 - Batch 1 - Excavation and construction of Guide walls	0%	26-Apr-13	10-May-13				
01109.PDC8960	E6 - Batch 2 - Excavation and construction of Guide walls	0%	11-May-13	25-May-13				
<b>Area E6 - Founding Level Predrill</b>								
01109.PDC9130	E6 - Batch 1 - Founding Level Predrill - P74a,75,76,77,78,79 (8nr) 2PR	0%	27-May-13	04-Jun-13				
01109.PDC9060	E6 - Batch 2 - Founding Level Predrill - P80,81,82,83,84,85,86,87 (12r) 4PR	0%	05-Jun-13	11-Jun-13				
01109.PDC9140	E6 - Batch 1 - P: 75,79,76,78,77,74a - GI Report & Confirmation of Founding Levels	0%	12-Jun-13	18-Jun-13				
01109.PDC9070	E6 - Batch 2 - E6 - P: 83,87,84,82,86,81,85,80 - GI Report & Confirmation of Founding Levels	0%	19-Jun-13	25-Jun-13				
<b>Transition Works from D Wall Stg 1 Hybrid to Stg 2</b>								
01109.PDC11050	E5 - Remove concrete canopy at BMW Garage	0%	25-Jun-13	13-Jul-13				
<b>Entrance A &amp; Vent Shaft A</b>								
<b>Vent Shaft A</b>								
<b>Foundation</b>								
01109.PDC27310	Vent Shaft A - Trial Pits	100%	08-Apr-13 A	19-Apr-13 A				
01109.PDC27290	Vent Shaft A - Founding Level predrill & verify founding levels	50%	20-Apr-13 A	03-May-13				
01109.PDC27320	Vent Shaft A - Install Pipe Piles clockwise from next to P97 to P102 (79nr 2d/pile 1PR)	0%	23-Jul-13	06-Feb-14				
<b>CC-D - BORED TUNNELS FROM SUW STATION TO HOM STATION</b>								
<b>Procurement of Specialised Construction Machinery</b>								
<b>Procurement of Specialised Construction Machinery</b>								
<b>Off-site</b>								
01109.PDD1040	TBM Down track SUW to HOM - TBM Manufacture	35%	09-Jan-13 A	05-Nov-13				
01109.PDD1030	STP (Manufacture)	33%	17-Jan-13 A	13-Nov-13				



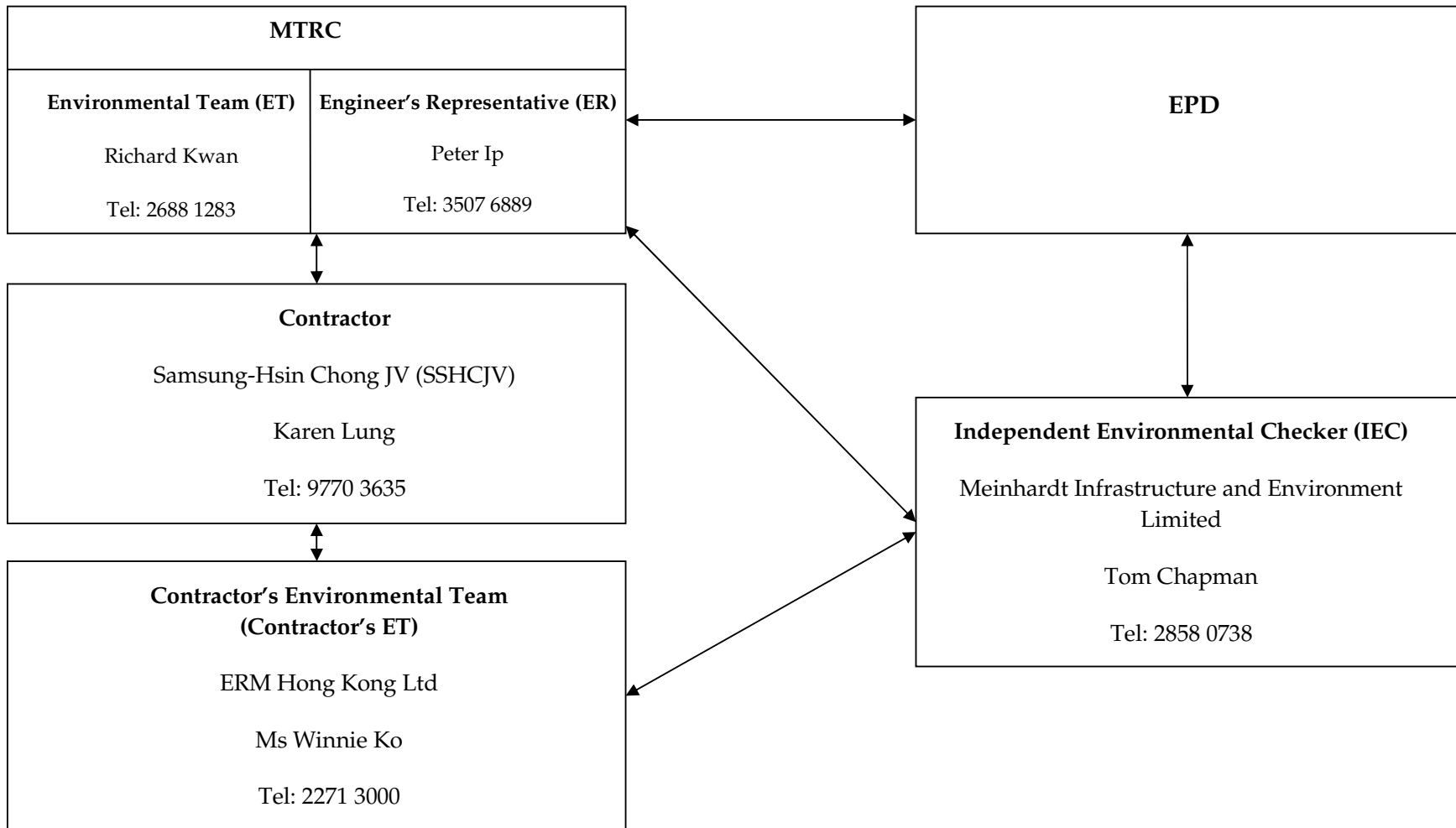


Annex C

## Project Organization Chart and Contact Detail

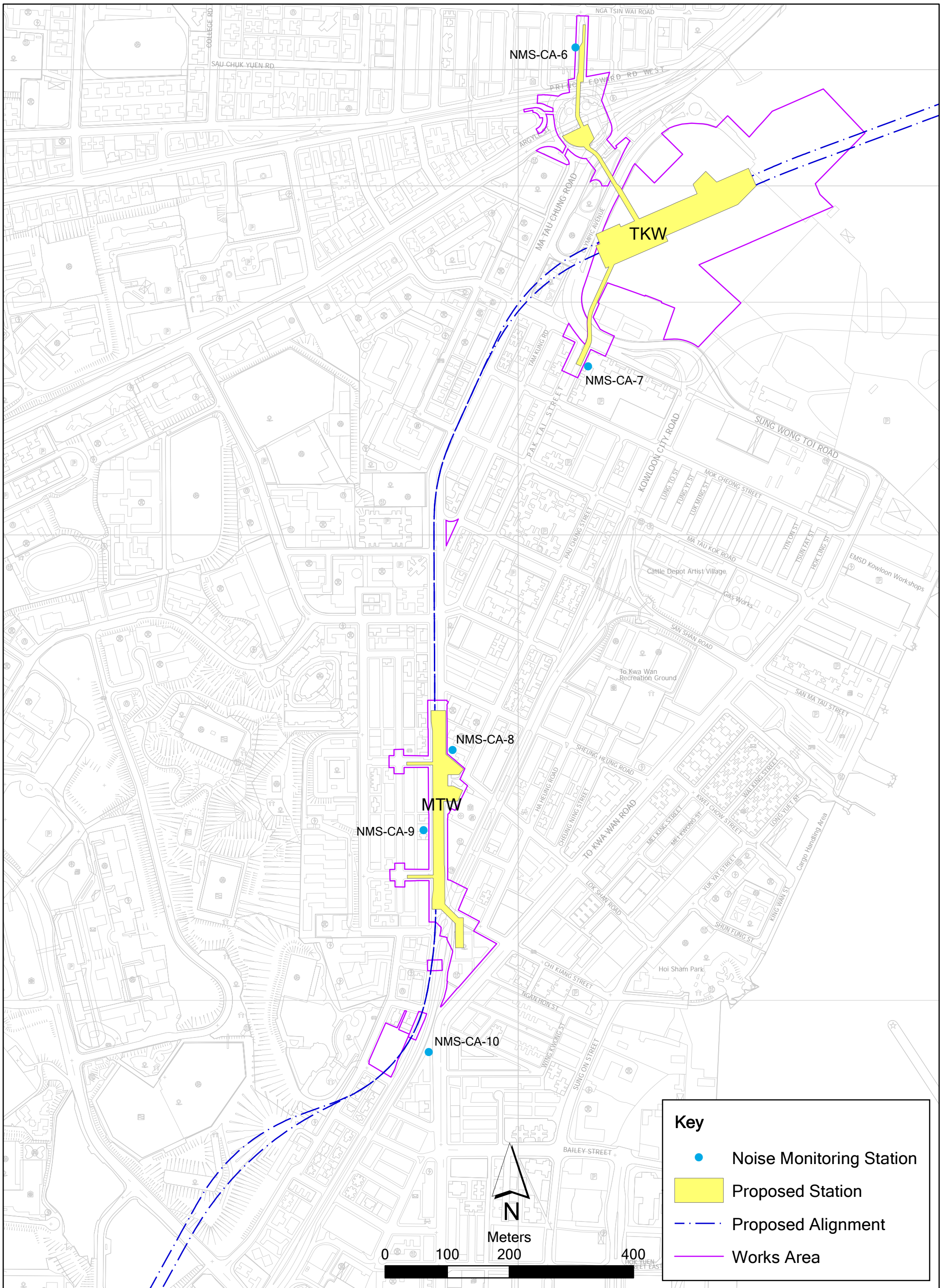


Annex C Project Organization of SCL Works Contract 1109



Annex D

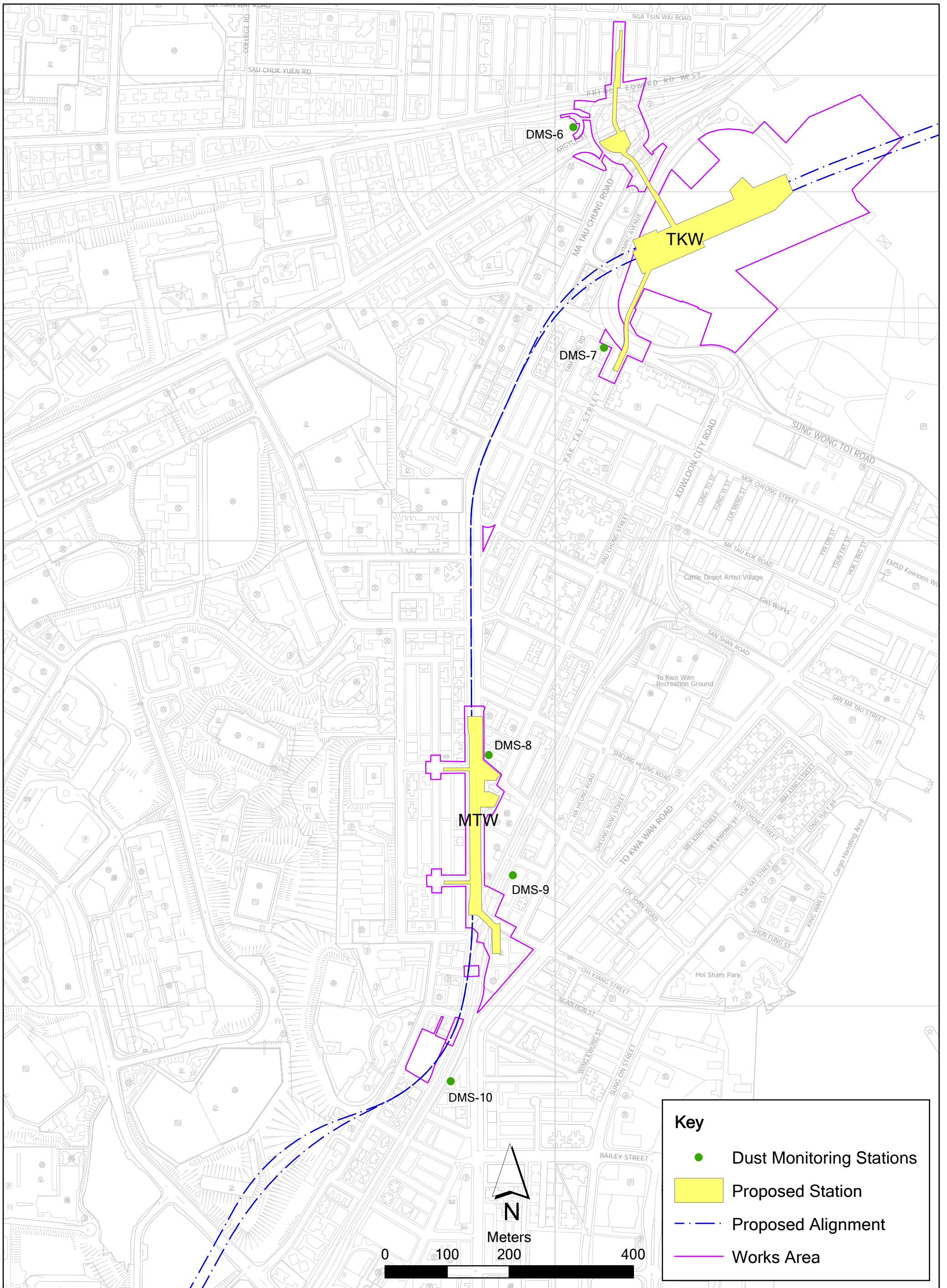
## Locations of Noise and Dust Monitoring Stations



Annex D1

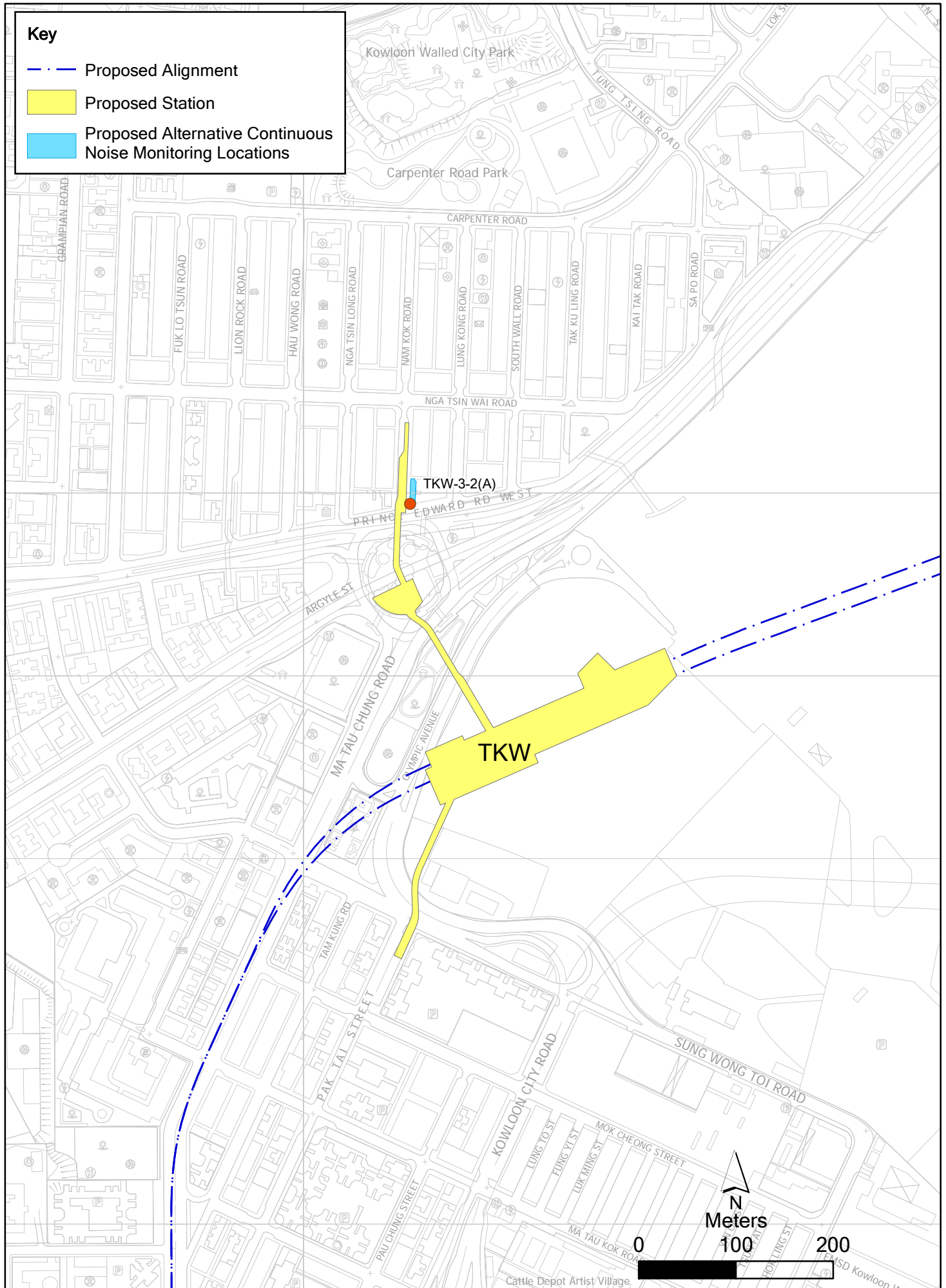
### Location of Regular Construction Noise Monitoring Stations





**Key**

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



Annex D3

**Proposed Continuous Noise Monitoring Locations**

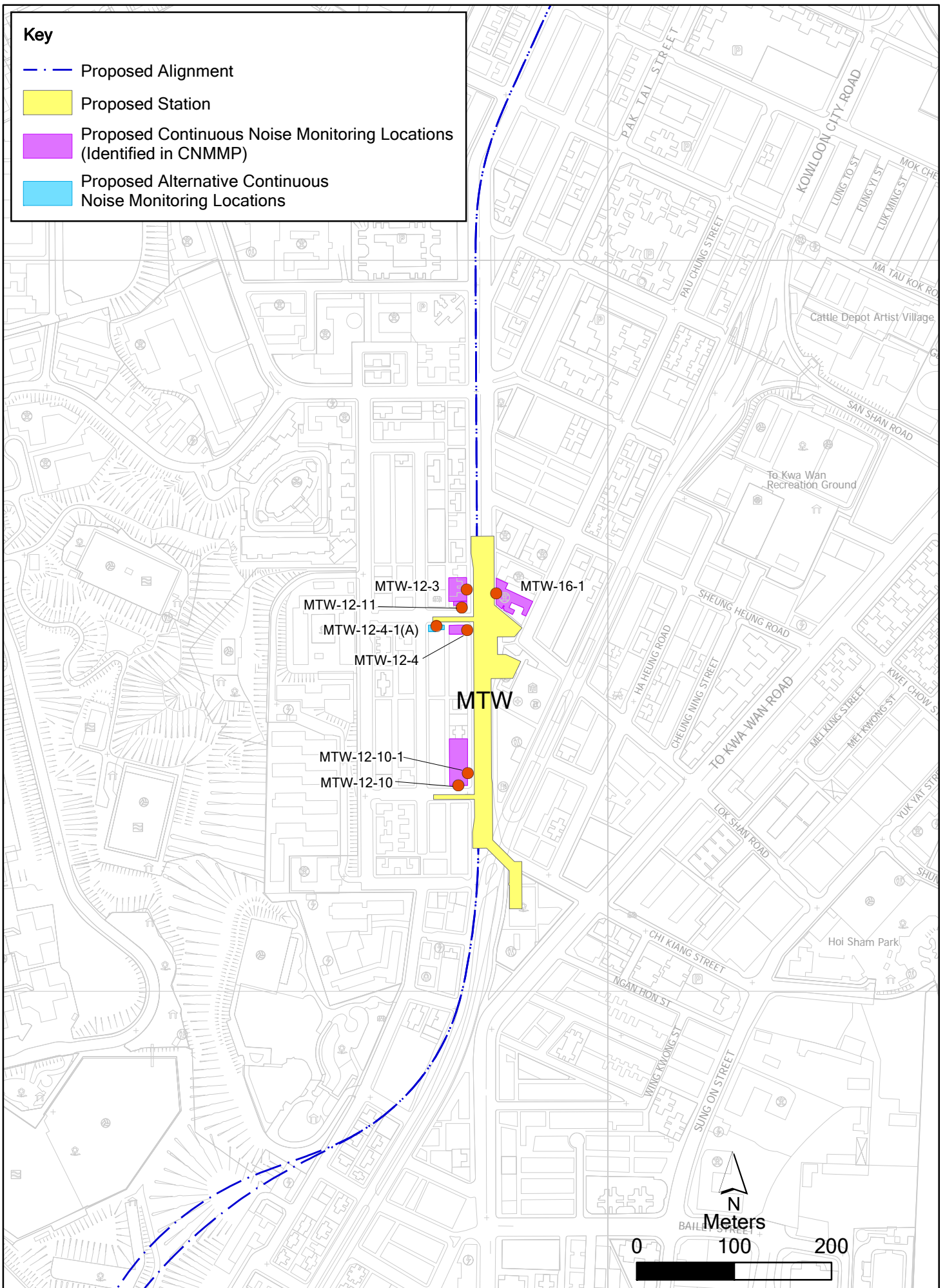
Name: 171181\_Annex\_Continuous  
Noise\_Monitoring\_Locations\_TKW.mxd  
Date: 10-Oct-12

**Environmental Resources Management**



**Key**

- Proposed Alignment
- Proposed Station
- Proposed Continuous Noise Monitoring Locations (Identified in CNMMP)
- Proposed Alternative Continuous Noise Monitoring Locations



Annex E

## Monitoring Schedule of the Reporting Period and the Next Month

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

**DMS-6 & NMS-CA-6  
Monitoring Month : Apr 2013**

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



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

**DMS-7 & NMS-CA-7  
Monitoring Month : Apr 2013**

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

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

**DMS-8 & NMS-CA-8  
Monitoring Month : Apr 2013**

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

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

**DMS-9 & NMS-CA-9  
Monitoring Month : Apr 2013**

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

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

**DMS-10 & NMS-CA-10  
Monitoring Month : Apr 2013**

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

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

**DMS-6 & NMS-CA-6  
Monitoring Month : May 2013**

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

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

**DMS-7 & NMS-CA-7  
Monitoring Month : May 2013**

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

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

**DMS-8 & NMS-CA-8  
Monitoring Month : May 2013**

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

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

**DMS-9 & NMS-CA-9  
Monitoring Month : May 2013**

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



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

**DMS-10 & NMS-CA-10  
Monitoring Month : May 2013**

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

Annex F

## Calibration Reports

*Annex F Calibration Reports*

*Dust Monitoring Equipment*

<b>Monitoring Station ID</b>	<b>Location</b>	<b>Monitoring Equipment</b>	<b>Last Calibration Date</b>	<b>Next Calibration Date</b>
<i>24-hr TSP</i>		<b>HVS</b>	<b>Calibrator</b>	
DMS-6	Katherine Building	TE-5170 (S/N 0107)	CM-AIR-43 (Orifice I.D. - 1378)	8 March 2013
DMS-7	Parc 22	TE-5170 (S/N 3574)	CM-AIR-43 (Orifice I.D. - 1378)	8 March 2013
DMS-8	SHK Good Shepherd Primary School	TE-5170 (S/N 3572)	CM-AIR-43 (Orifice I.D. - 1378)	8 March 2013
DMS-9	No. 26 Kowloon City Road	TE-5170 (S/N 0814)	CM-AIR-43 (Orifice I.D. - 1378)	8 March 2013
DMS-10	Chat Ma Mansion	TE-5170 (S/N 3573)	CM-AIR-43 (Orifice I.D. - 1378)	8 March 2013

*Noise Monitoring Equipment*

<b>Monitoring Station ID</b>	<b>Monitoring Equipment</b>	<b>Model &amp; Serial No.</b>	<b>Last Calibration Date</b>	<b>Next Calibration Date</b>
NMS-CA-6, NMS-CA-7, NMS-CA-9 and NMS-CA-10	Calibrator	Rion NC-73 (S/N 10997142)	9 July 2012	9 July 2013
	Sound Level Meter	Rion NL-18 (S/N 00360030)	13 June 2012	13 June 2013
NMS-CA-8, MTW-16-1	Calibrator	Rion NC-73 (S/N 10997142)	9 July 2012	9 July 2013
	Sound Level Meter	Rion NL-31 (S/N 00603867)	18 July 2012	18 July 2013

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-6(Katherine Building)  
Calibrated by : K.T.Ho  
Date : 08/03/2013

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2323  
Service Date : 26 Dec 2012  
Slope (m) : 2.09107  
Intercept (b) : -0.02838  
Correlation Coefficient(r) : 0.99996

Standard Condition

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

Calibration Condition

Pa (hpa) : 1012  
Ta(K) : 298

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	12.7	3.599	1.735	54	54.5
2   13 holes	9.7	3.146	1.518	47	47.5
3   10 holes	7.5	2.766	1.336	40	40.4
4   7 holes	4.6	2.166	1.050	30	30.3
5   5 holes	2.9	1.720	0.836	22	22.2

Sampler Calibration Relationship

Slope(m): 36.090 Intercept(b): -7.760 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan

Date: 11/03/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-7(Parc 22)  
 Calibrated by : P.F.Yeung  
 Date : 08/03/2013

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

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

Calibration Condition

Pa (hpa) : 1023  
 Ta(K) : 295

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	12.5	3.571	1.721	62	62.6
2   13 holes	9.7	3.146	1.518	55	55.6
3   10 holes	7.7	2.803	1.354	48	48.5
4   7 holes	4.8	2.213	1.072	38	38.4
5   5 holes	3.0	1.749	0.850	28	28.3

Sampler Calibration Relationship

Slope(m): 39.220 Intercept(b): -4.449 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan

Date: 11/03/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-8(SHK Good Shepherd Primary School)  
 Calibrated by : P.F.Yeung  
 Date : 08/03/2013

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

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

Calibration Condition

Pa (hpa) : 1023  
 Ta(K) : 295

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	12.4	3.557	1.714	62	62.6
2   13 holes	9.7	3.146	1.518	55	55.6
3   10 holes	7.6	2.784	1.345	48	48.5
4   7 holes	5.0	2.258	1.094	38	38.4
5   5 holes	3.0	1.749	0.850	28	28.3

Sampler Calibration Relationship

Slope(m): 39.920 Intercept(b): -5.411 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 11/03/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-9(No. 26 Kowloon City Road)  
 Calibrated by : P.F.Yeung  
 Date : 08/03/2013

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

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

Calibration Condition

Pa (hpa) : 1023  
 Ta(K) : 295

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	12.7	3.599	1.735	66	66.7
2   13 holes	9.9	3.178	1.533	59	59.6
3   10 holes	7.7	2.803	1.354	52	52.5
4   7 holes	4.8	2.213	1.072	40	40.4
5   5 holes	2.7	1.660	0.807	30	30.3

Sampler Calibration Relationship

Slope(m): 39.740 Intercept(b): -1.784 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan

Date: 11/03/2013



High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-10(Chat Ma Mansion)  
 Calibrated by : P.F.Yeung  
 Date : 08/03/2013

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

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

Calibration Condition

Pa (hpa) : 1023  
 Ta(K) : 295

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	11.8	3.470	1.673	61	61.6
2   13 holes	9.6	3.129	1.510	54	54.5
3   10 holes	7.5	2.766	1.336	48	48.5
4   7 holes	4.9	2.236	1.083	37	37.4
5   5 holes	2.1	1.464	0.714	21	21.2

Sampler Calibration Relationship

Slope(m):41.960 Intercept(b):8.359 Correlation Coefficient(r):0.9995

Checked by: Magnum Fan

Date: 10/03/2013



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

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Dec 26, 2012 Rootsmeter S/N 0438320 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 2323 Pa (mm) - 753.11

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	1.4440	3.2	2.00
2	NA	NA	1.00	1.0240	6.4	4.00
3	NA	NA	1.00	0.9120	8.0	5.00
4	NA	NA	1.00	0.8720	8.8	5.50
5	NA	NA	1.00	0.7200	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9967	0.6902	1.4149	0.9957	0.6896	0.8851
0.9925	0.9693	2.0010	0.9915	0.9683	1.2517
0.9903	1.0858	2.2372	0.9893	1.0847	1.3995
0.9893	1.1345	2.3464	0.9883	1.1334	1.4678
0.9840	1.3666	2.8299	0.9830	1.3652	1.7702
Qstd slope (m) = 2.09107			Qa slope (m) = 1.30939		
intercept (b) = -0.02838			intercept (b) = -0.01775		
coefficient (r) = 0.99996			coefficient (r) = 0.99996		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			x axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

$$Qstd = Vstd/Time$$

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

$$Qa = Va/Time$$

For subsequent flow rate calculations:

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

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

# Certificate of Calibration

## 校正證書

Certificate No. : C123522  
證書編號

### ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC12-1472)

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 : 13 June 2012

### 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 Precision Measurement Ltd., UK
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By :   
測試 : \_\_\_\_\_  
L K Yeung

Certified By :   
核證 : \_\_\_\_\_  
K C Lee

Date of Issue : 15 June 2012  
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. : C123522  
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 was performed before the test.
- 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	C120016
CL281	Multifunction Acoustic Calibrator	DC110233

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	93.8	± 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	93.9 (Ref.)
				104.00		103.9
				114.00		113.8

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	93.8	Ref.
			Slow			93.8	± 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. : C123522

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	54.1	-39.4 ± 1.5
					63 Hz	67.4	-26.2 ± 1.5
					125 Hz	77.5	-16.1 ± 1.0
					250 Hz	85.1	-8.6 ± 1.0
					500 Hz	90.5	-3.2 ± 1.0
					1 kHz	93.8	Ref.
					2 kHz	95.1	+1.2 ± 1.0
					4 kHz	94.8	+1.0 ± 1.0
					8 kHz	92.7	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.4	-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	90.7	-3.0 ± 1.5
					63 Hz	93.0	-0.8 ± 1.5
					125 Hz	93.6	-0.2 ± 1.0
					250 Hz	93.8	0.0 ± 1.0
					500 Hz	93.9	0.0 ± 1.0
					1 kHz	93.9	Ref.
					2 kHz	93.7	-0.2 ± 1.0
					4 kHz	93.1	-0.8 ± 1.0
					8 kHz	90.8	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.6	-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. : C123522  
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	100.1	± 0.5
			60 sec.					90	89.9	± 0.5
			5 min.					80	79.6	± 1.0
								70	69.8	± 1.0

Remarks : - 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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# Certificate of Calibration

## 校正證書

Certificate No. : C124011  
證書編號

### ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC12-1674 )

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 : 9 July 2012

### 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 : L K Yeung

Certified By :   
核證 : K C Lee

Date of Issue : 10 July 2012  
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所書面批准。



# Certificate of Calibration

## 校正證書

Certificate No. : C124011  
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	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

- 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	± 0.5	± 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.



# Certificate of Calibration

## 校正證書

Certificate No. : C124191  
證書編號

### ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC12-1770 )

Description / 儀器名稱 : Sound Level Meter  
Manufacturer / 製造商 : Rion  
Model No. / 型號 : NL-31  
Serial No. / 編號 : 00603867  
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 : 18 July 2012

### 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, USA
- Fluke Everett Service Center, USA
- Fluke Precision Measurement Ltd., UK
- Rohde & Schwarz Laboratory, Germany

Tested By :   
測試 : \_\_\_\_\_  
L K Yeung

Certified By :   
核證 : \_\_\_\_\_  
K C Lee

Date of Issue : 18 July 2012  
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. : C124191  
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 was performed before the test.
- 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	C120016
CL281	Multifunction Acoustic Calibrator	DC110233

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)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	93.8	± 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 <sub>A</sub>	A	Fast	94.00	1	93.8 (Ref.)
				104.00		103.8
				114.00		113.8

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)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L <sub>A</sub>	A	Fast	94.00	1	93.8	Ref.
			Slow			93.7	± 0.3

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# Certificate of Calibration

## 校正證書

Certificate No. : C124191  
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)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L <sub>A</sub>	A	Fast	94.00	63 Hz	67.6	-26.2 ± 1.5
					125 Hz	77.6	-16.1 ± 1.5
					250 Hz	85.1	-8.6 ± 1.4
					500 Hz	90.6	-3.2 ± 1.4
					1 kHz	93.8	Ref.
					2 kHz	95.1	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	92.8	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.9	-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)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L <sub>C</sub>	C	Fast	94.00	63 Hz	93.0	-0.8 ± 1.5
					125 Hz	93.6	-0.2 ± 1.5
					250 Hz	93.8	0.0 ± 1.4
					500 Hz	93.9	0.0 ± 1.4
					1 kHz	93.9	Ref.
					2 kHz	93.7	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.1	-6.2 (+3.0 ; -6.0)

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

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

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

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



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

Annex H

## Summary of Implementation Status

**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
<b>Cultural Heritage Impact</b>							
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	✓
<b>Ecology (Construction Phase)</b>							
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"> <li>• Erection of temporary geotextile silt or sediment fences/oil traps around earth-moving works to trap sediments and prevent them from entering watercourses;</li> <li>• Avoidance of soil storage against trees or close to water bodies;</li> <li>• 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;</li> <li>• No on-site burning of waste;</li> <li>• Store waste and refuse in appropriate receptacles.</li> </ul>					
<b>Landscape &amp; Visual (Construction Phase)</b>							
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"> <li>• 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</li> </ul>	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"> <li>To maximize protection to existing trees, ground vegetation and associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing . The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment.</li> </ul>					
		<u>Protection of Retained Trees</u>					
		<ul style="list-style-type: none"> <li>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.</li> <li>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</li> </ul>					

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"> <li>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.</li> </ul> <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> <li>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).</li> </ul> <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul>	Minimize visual & landscape impact	Contractor	Within Project Site	Construction Stage	√
<b>Construction Dust</b>							
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 <sup>2</sup> 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"> <li>• Proper watering of exposed spoil should be undertaken throughout the construction phase;</li> <li>• 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;</li> <li>• Any dusty materials remaining after a stockpile has been removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty materials should not be extended beyond the pedestrian barriers, fencing or traffic cones.</li> <li>• The load of dusty materials on a vehicle leaving a construction site should be covered entirely by an impervious</li> </ul>	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"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• Any area that involves demolition activities should be sprayed with water or</li> </ul>					



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"> <li>• 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;</li> <li>• Any skip hoist for material transport should be totally enclosed by an impervious sheeting;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> </ul>					

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"> <li>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.</li> </ul>					
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	✓
<b>Construction Noise (Airborne)</b>							
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work</li> </ul>	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"> <li>• plant known to emit noise strongly in one direction, where possible, should be orientated so that the noise is directed away from nearby NSRs;</li> <li>• silencers or mufflers on construction equipment should be properly fitted and maintained during the period of construction works;</li> <li>• mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>• material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>					
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	√
<b>Water Quality</b>							
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"> <li>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.</li> <li>The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to</li> </ul>	To minimize 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"> <li>• 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 m<sup>3</sup>/s, a sedimentation basin of 30m<sup>3</sup> would be required and for a flow rate of 0.5 m<sup>3</sup>/s the basin would be 150 m<sup>3</sup>. The detailed design of the sand/silt traps shall be undertaken by the Contractor prior to the commencement of construction.</li> <li>• 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.</li> <li>• 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</li> </ul>					

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"> <li>• 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.</li> <li>• 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.</li> <li>• Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m<sup>3</sup> 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.</li> <li>• Manholes (including newly constructed</li> </ul>					

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"> <li>• 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.</li> <li>• 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</li> </ul>					

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"> <li>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.</li> <li>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.</li> <li>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.</li> <li>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.</li> <li>Adopt best management practices</li> </ul>					
S10.7.1	W2	<p><u>Tunnelling Works</u></p> <ul style="list-style-type: none"> <li>Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge.</li> <li>The wastewater with a high concentration</li> </ul>	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"> <li>• 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.</li> </ul>					
S10.7.1	W3	<p><u>Sewage Effluent</u> Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for their appropriate disposal and maintenance.</p>	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	✓
S10.7.1	W4	<p><u>Groundwater from Contaminated Area in case contamination is found:</u></p> <ul style="list-style-type: none"> <li>• No direct discharge of groundwater from</li> </ul>	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"> <li>• 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.</li> </ul>					

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"> <li>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.</li> </ul>					
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
		<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.</li> </ul>	spillage				
<b>Waste Management (Construction Waste)</b>							
S11.4.1.1	WM1	<u>On-site sorting of C&amp;D (Construction and Demolition) material</u> <ul style="list-style-type: none"> <li>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</li> </ul>	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&amp;D) Material</u></p> <ul style="list-style-type: none"> <li>• Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>• Carry out on-site sorting;</li> <li>• Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>• Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</li> </ul>	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"> <li>Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified;</li> <li>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&amp;D materials and minimize waste generation during the course of construction.</li> <li>Disposal of the C&amp;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</li> </ul>					
S11.5.1	WM3	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;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.</li> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site.</li> </ul>	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&amp;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"> <li>• General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>• 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.</li> <li>• 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.</li> <li>• Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme</li> </ul>	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"> <li>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.</li> <li>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.</li> <li>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.</li> </ul>	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"> <li>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.</li> </ul>					

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 <sub>Aeq</sub> (30 min)	Baseline (dB(A)), L <sub>Aeq</sub> (30 min)	Corrected LAeq(dBA) <sup>(a)</sup>	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-Apr-13	11:28	11:58	Cloudy	64.1	76.0	-(b)	-	Traffic noise	21.0	0.5	NL-18 00360030	NC-73 10997142
08-Apr-13	11:23	11:53	Cloudy	63.9	76.0	-(b)	-	Traffic noise	19.0	0.5	NL-18 00360030	NC-73 10997142
19-Apr-13	11:25	11:55	Cloudy	65.0	76.0	-(b)	-	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142
25-Apr-13	11:20	11:50	Cloudy	64.2	76.0	-(b)	-	Traffic noise	26.0	0.5	NL-18 00360030	NC-73 10997142
30-Apr-13	11:15	11:45	Fine	63.9	76.0	-(b)	-	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142

Station NMS-CA-7 Skytower Tower 2

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L <sub>Aeq</sub> (30 min)	Baseline (dB(A)), L <sub>Aeq</sub> (30 min)	Corrected LAeq(dBA) <sup>(a)</sup>	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-Apr-13	10:30	11:00	Cloudy	67.4	70.0	-(b)	-	Traffic noise	21.0	1.2	NL-18 00360030	NC-73 10997142
08-Apr-13	10:27	10:57	Cloudy	68.0	70.0	-(b)	-	Traffic noise	19.0	1.2	NL-18 00360030	NC-73 10997142
19-Apr-13	10:28	10:58	Cloudy	66.8	70.0	-(b)	-	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142
25-Apr-13	10:23	10:53	Cloudy	67.4	70.0	-(b)	-	Traffic noise	26.0	0.5	NL-18 00360030	NC-73 10997142
30-Apr-13	10:18	10:48	Fine	68.1	70.0	-(b)	-	Traffic noise	25.0	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 <sub>Aeq</sub> (30 min) <sup>(c)</sup>	Baseline (dB(A)), L <sub>Aeq</sub> (30 min)	Corrected LAeq(dBA) <sup>(a)</sup>	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-Apr-13	8:42	9:12	Cloudy	73.9	75.0	-(b)	Crane Operation	Traffic noise	21.0	0.5	NL-18 00360030	NC-73 10997142
08-Apr-13	8:40	9:10	Cloudy	75.3	75.0	63.5	Crane Operation	Traffic noise	19.0	0.5	NL-18 00360030	NC-73 10997142
19-Apr-13	8:40	9:10	Rainy	77.9	75.0	74.8	Crane Operation and breaker	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142
25-Apr-13	8:40	9:10	Cloudy	74.7	75.0	-(b)	Crane Operation and breaker	Traffic noise	26.0	0.5	NL-18 00360030	NC-73 10997142
30-Apr-13	8:38	9:08	Fine	75.4	75.0	64.8	Crane Operation	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142

Station NMS-CA-9 Kong Yiu Mansion

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L <sub>Aeq</sub> (30 min)	Baseline (dB(A)), L <sub>Aeq</sub> (30 min)	Corrected LAeq(dBA) <sup>(a)</sup>	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-Apr-13	8:00	8:30	Cloudy	71.6	69.0	68.1	Crane Operation	Traffic noise	21.0	0.5	NL-18 00360030	NC-73 10997142
08-Apr-13	8:00	8:30	Cloudy	71.9	69.0	68.8	Crane Operation	Traffic noise	19.0	0.5	NL-18 00360030	NC-73 10997142
19-Apr-13	8:00	8:30	Cloudy	75.3	69.0	74.1	Crane Operation and breaker	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142
25-Apr-13	8:00	8:30	Cloudy	74.3	69.0	72.8	Crane Operation and breaker	Traffic noise	26.0	0.5	NL-18 00360030	NC-73 10997142
30-Apr-13	8:00	8:30	Fine	73.4	69.0	71.4	Crane Operation	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142

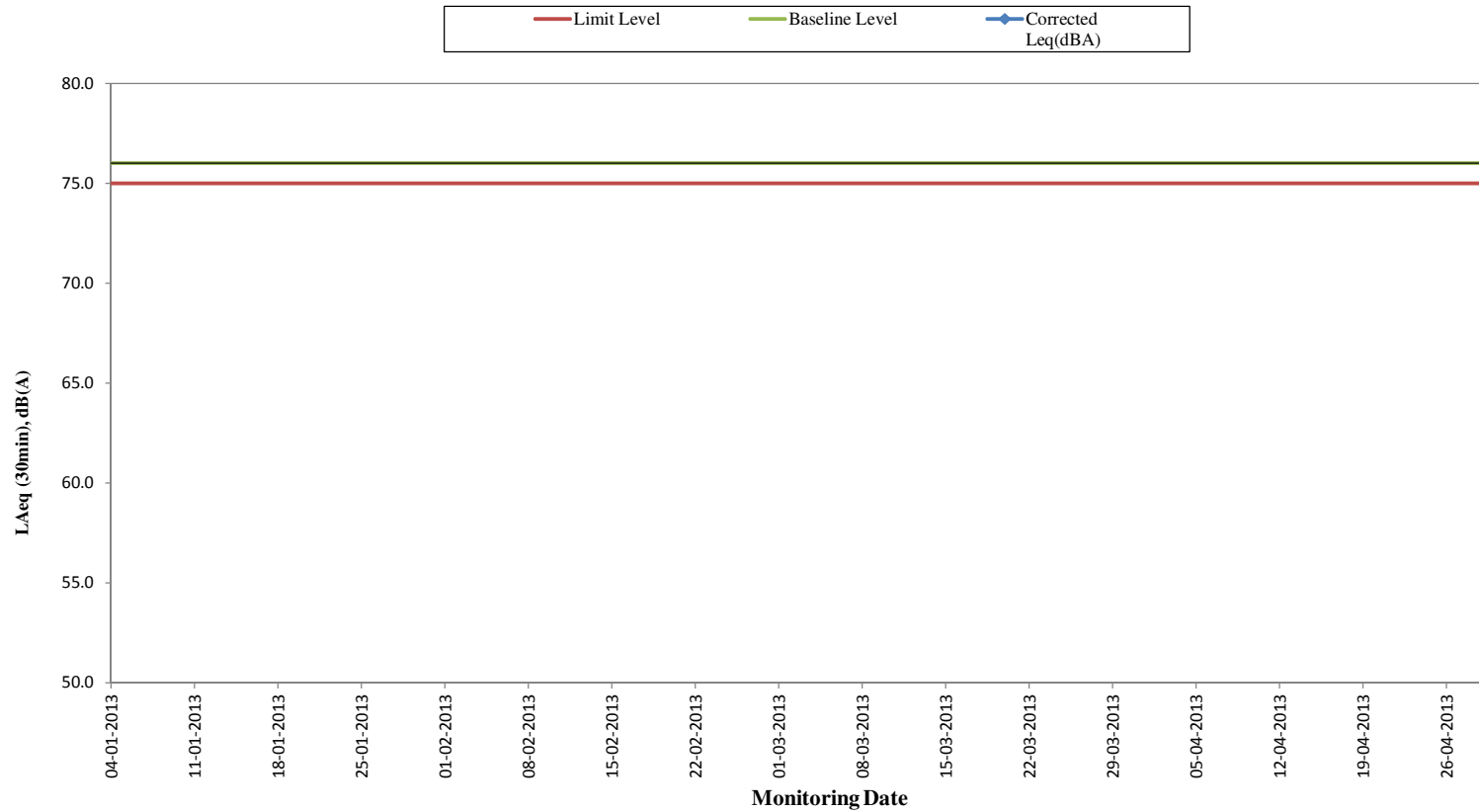
Station NMS-CA-10 Chat Ma Mansion

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L <sub>Aeq</sub> (30 min) <sup>(c)</sup>	Baseline (dB(A)), L <sub>Aeq</sub> (30 min)	Corrected LAeq(dBA) <sup>(a)</sup>	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-Apr-13	9:36	10:06	Cloudy	77.0	77.0	-(b)	Crane operation	Traffic noise	21.0	0.5	NL-18 00360030	NC-73 10997142
08-Apr-13	9:32	10:02	Cloudy	77.0	77.0	-(b)	Crane operation	Traffic noise	19.0	0.5	NL-18 00360030	NC-73 10997142
19-Apr-13	9:32	10:02	Cloudy	76.7	77.0	-(b)	Crane operation and breaker	Traffic noise	25.0	0.5	NL-18 00360030	NC-73 10997142
25-Apr-13	9:25	9:55	Cloudy	76.9	77.0	-(b)	Crane operation and backhole	Traffic noise	26.0	0.5	NL-18 00360030	NC-73 10997142
30-Apr-13	9:24	9:54	Fine	76.5	77.0	-(b)	Crane operation	Traffic noise	25.0	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 of the measurements carried out at NMS-CA-8 on 8, 19 and 30 April, at NMS-CA-9 in the whole monitoring period are higher than the daytime construction noise criterion. However, the results are not considered as exceedance as they are either below the baseline level or below the limit level after deducting the baseline noise level.

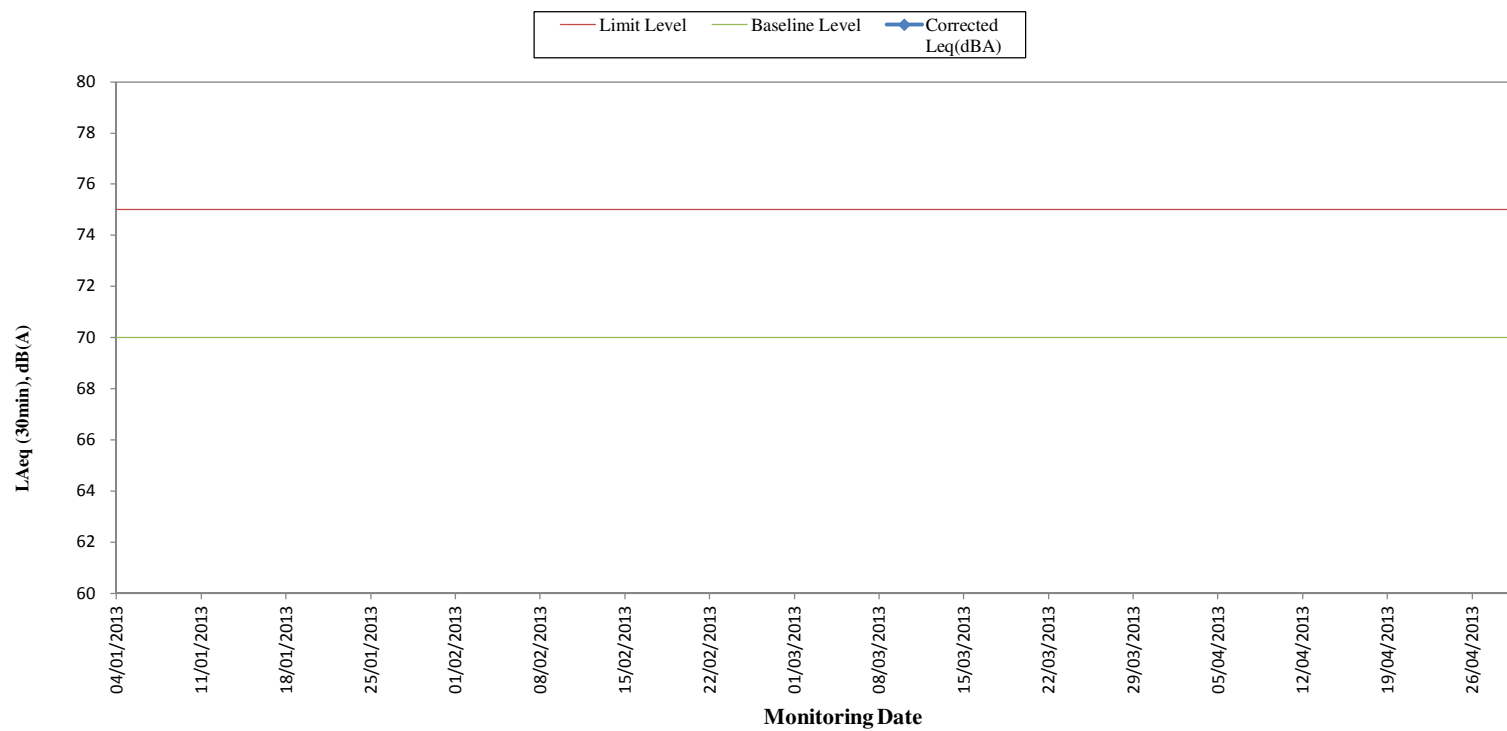
### Regular Noise Monitoring Results at NMS-CA-6 (No. 16-23 Nam Kok Road) (LAeq, 30min) for the Past 4 Months



Remarks:

- For the corrected noise level without showing the in this graph, the measured noise level is below baseline level.

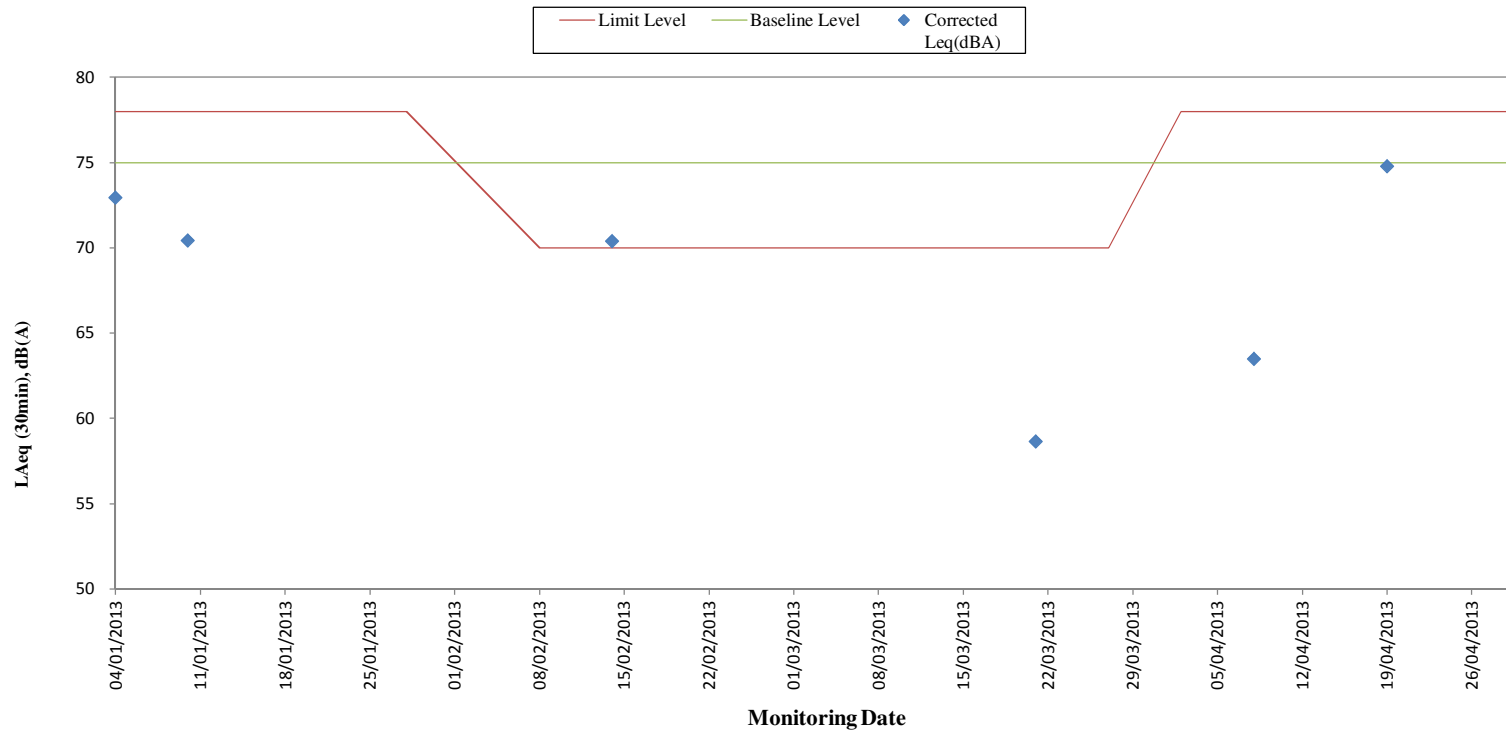
### Regular Noise Monitoring Results at NMS-CA-7 (Skytower Tower 2) (LAeq, 30min) for the Past 4 Months



**Remarks:**

- for the corrected noise level without showing the in this graph, the measured noise level is below baseline level.

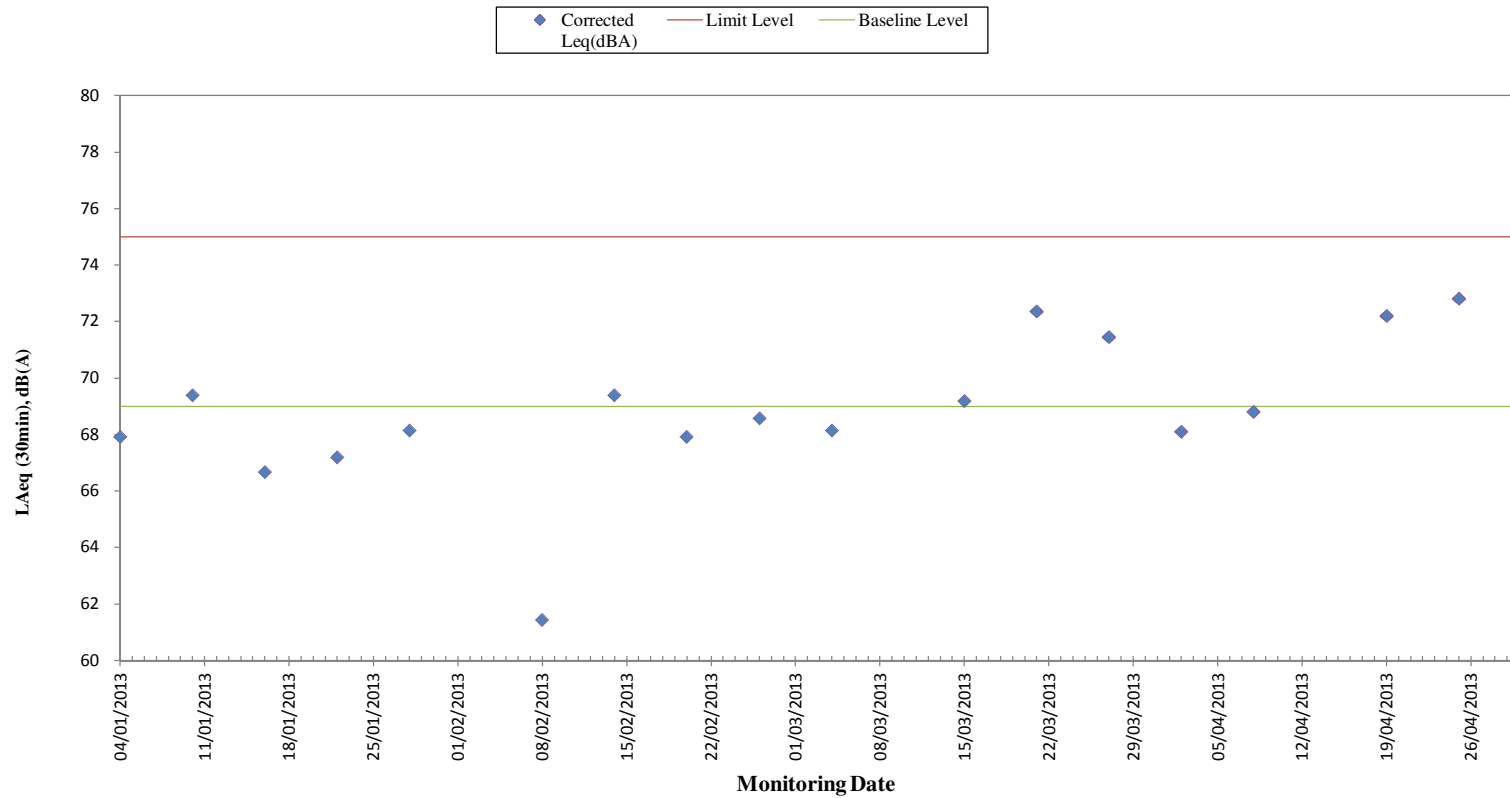
**Regular Noise Monitoring Results at NMS-CA- 8 (SKH Good Shepherd Primary School)  
(LAeq, 30min) for the Past 4 Months**



**Remarks:**

- for the corrected noise level without showing the in this graph, the measured noise level is below baseline level.
- The limit level was 78dB(A) in January and April 2013 as continuous noise monitoring was conducted in these 2 months.

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

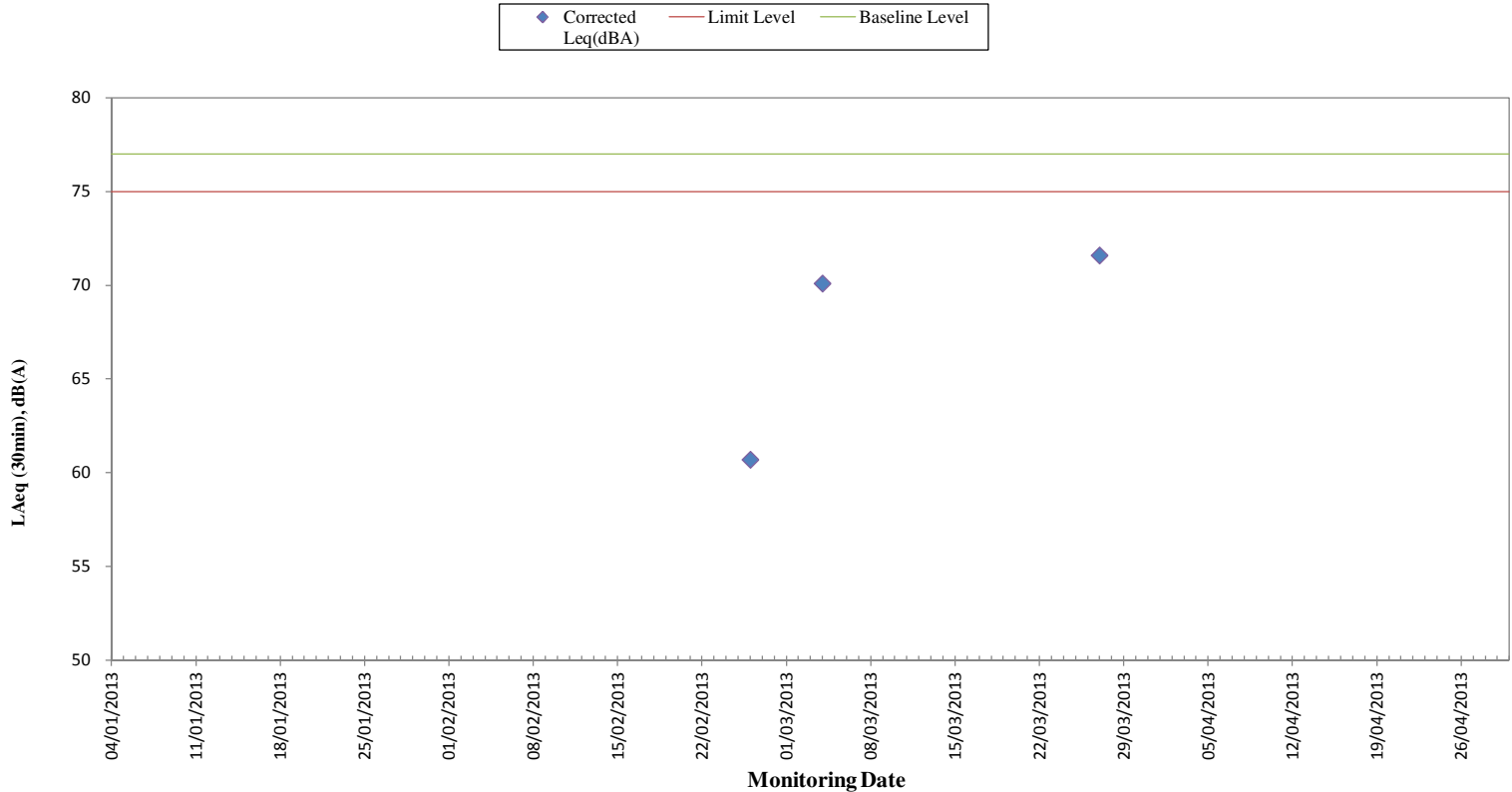


Remarks:

- for the corrected noise level without showing the in this graph, the measured noise level is below baseline level.



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



Remarks:  
- for the corrected noise level without showing the in this graph, the measured noise level is below baseline level.

Annex I - 2

## Continuous Noise Monitoring Results

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	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	2013	4	8	8	26	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	8	56	78.5	75.0	75.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	9	26	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	9	56	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	10	26	80	75.0	78.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	10	56	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	11	26	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	11	56	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	12	26	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	12	56	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	13	26	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	13	56	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	14	26	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	14	56	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	15	26	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	15	56	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	16	26	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	16	56	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	17	26	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	17	56	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	18	26	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	8	18	56	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	7	1	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	7	31	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	8	1	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	8	31	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	9	1	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	9	31	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	10	1	81.3	75.0	80.1	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	10	31	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	11	1	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	11	31	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	12	1	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	12	31	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	13	1	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	13	31	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	14	1	83.7	75.0	83.1	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	14	31	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	15	1	79.6	75.0	77.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	15	31	79.5	75.0	77.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	16	1	82.6	75.0	81.8	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	16	31	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	17	1	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	17	31	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	18	1	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	9	18	31	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	7	1	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	7	31	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	8	1	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	8	31	78.5	75.0	75.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	9	1	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	9	31	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	10	1	81.9	75.0	80.9	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	10	31	83.2	75.0	82.5	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	11	1	80.8	75.0	79.5	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	11	31	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	12	1	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	12	31	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	13	1	79.1	75.0	77.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	13	31	78.8	75.0	76.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	14	1	78.8	75.0	76.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	14	31	79.1	75.0	77.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	15	1	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	15	31	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	16	1	78.8	75.0	76.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	16	31	78.7	75.0	76.3	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	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	2013	4	10	17	1	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	17	31	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	18	1	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	10	18	31	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	7	1	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	7	31	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	8	1	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	8	31	79.3	75.0	77.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	9	1	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	9	31	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	10	1	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	10	31	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	11	1	79.5	75.0	77.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	11	31	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	12	1	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	12	31	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	13	1	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	13	31	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	13	59	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	14	29	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	14	59	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	15	29	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	15	59	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	16	29	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	16	59	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	17	29	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	17	59	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	18	29	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	11	18	59	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	7	4	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	7	34	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	8	4	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	8	34	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	9	4	79.6	75.0	77.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	9	34	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	10	4	79.9	75.0	78.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	10	34	79.5	75.0	77.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	11	4	79.5	75.0	77.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	11	34	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	12	4	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	12	34	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	13	4	79.5	75.0	77.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	13	34	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	14	4	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	14	34	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	15	4	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	15	34	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	16	4	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	16	34	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	17	4	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	17	34	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	18	4	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	12	18	34	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	7	4	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	7	34	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	8	4	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	8	34	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	9	4	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	9	34	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	10	4	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	10	34	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	11	4	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	11	34	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	12	4	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	12	34	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	13	4	78.3	75.0	75.6	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	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	2013	4	13	13	34	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	14	4	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	14	34	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	15	4	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	15	34	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	16	4	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	16	34	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	17	4	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	17	34	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	18	4	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	13	18	34	75	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	7	4	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	7	34	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	8	4	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	8	34	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	9	4	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	9	34	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	10	4	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	10	34	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	11	4	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	11	34	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	12	4	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	12	51	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	13	21	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	13	51	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	14	21	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	14	51	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	15	21	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	15	51	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	16	21	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	16	51	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	17	21	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	17	51	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	18	21	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	15	18	51	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	7	1	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	7	31	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	8	1	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	8	31	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	9	1	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	9	31	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	10	1	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	10	31	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	11	1	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	11	31	78.5	75.0	75.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	12	1	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	12	31	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	13	1	79.3	75.0	77.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	13	31	80.7	75.0	79.3	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	14	1	79.6	75.0	77.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	14	31	79.3	75.0	77.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	15	1	79.7	75.0	77.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	15	31	79	75.0	76.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	16	1	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	16	31	79	75.0	76.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	17	1	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	17	31	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	18	1	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	16	18	31	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	7	1	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	7	31	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	8	1	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	8	31	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	9	1	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	9	31	79.3	75.0	77.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	10	1	79	75.0	76.8	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	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	2013	4	17	10	31	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	11	1	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	11	31	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	12	1	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	12	31	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	13	1	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	13	31	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	14	1	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	14	31	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	15	1	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	15	31	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	16	1	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	16	31	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	17	1	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	17	31	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	18	1	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	17	18	31	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	7	1	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	7	31	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	8	1	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	8	31	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	9	1	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	9	31	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	10	1	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	10	31	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	11	21	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	11	51	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	12	21	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	12	51	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	13	21	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	13	51	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	14	21	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	14	51	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	15	21	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	15	51	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	16	21	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	16	51	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	17	21	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	17	51	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	18	21	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	18	18	51	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	7	6	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	7	36	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	8	6	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	8	36	78.8	75.0	76.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	9	6	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	9	36	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	10	6	78.5	75.0	75.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	10	36	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	11	6	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	11	36	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	12	6	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	12	36	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	13	6	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	13	36	79.5	75.0	77.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	14	6	80	75.0	78.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	14	36	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	15	6	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	15	36	78.5	75.0	75.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	16	6	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	16	36	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	17	6	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	17	36	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	18	6	75	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	19	18	36	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	7	6	75.2	75.0	61.7	78	N

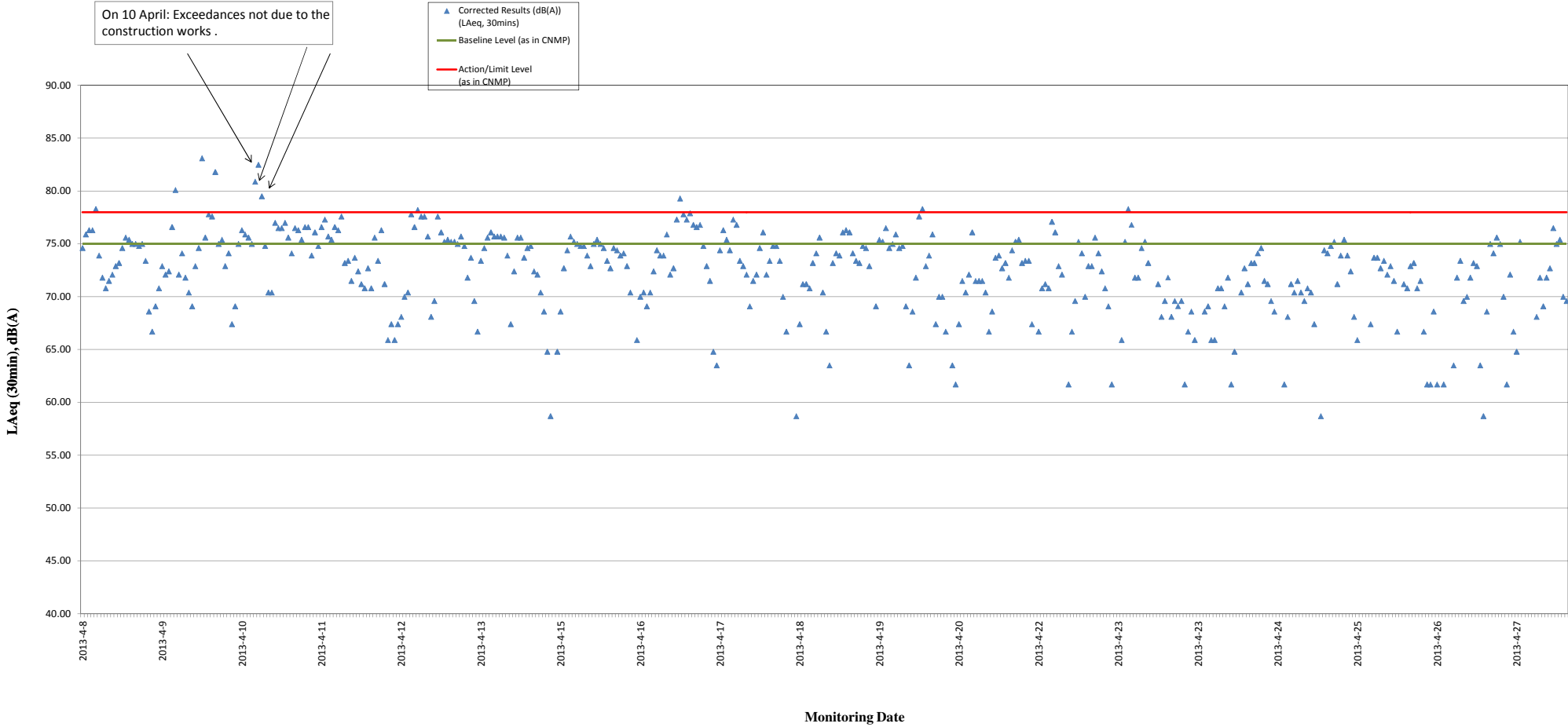
Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	7	36	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	8	6	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	8	36	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	9	6	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	9	36	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	10	6	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	10	36	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	11	6	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	11	36	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	12	6	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	12	36	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	13	6	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	13	36	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	14	6	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	14	36	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	15	6	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	15	36	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	16	6	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	16	36	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	17	6	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	17	36	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	18	6	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	20	18	36	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	7	6	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	7	36	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	8	6	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	8	36	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	9	6	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	9	36	79.2	75.0	77.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	10	6	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	10	43	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	11	13	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	11	43	75	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	12	13	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	12	43	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	13	13	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	13	43	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	14	13	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	14	43	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	15	13	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	15	43	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	16	13	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	16	43	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	17	13	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	17	43	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	18	13	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	18	43	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	22	19	13	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	6	58	75	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	7	28	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	7	58	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	8	28	80	75.0	78.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	8	58	79	75.0	76.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	9	28	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	9	58	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	10	28	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	10	58	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	11	28	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	11	58	75	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	12	28	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	12	58	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	13	28	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	13	58	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	14	28	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	14	58	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	15	28	76.1	75.0	69.6	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	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	2013	4	23	15	58	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	16	28	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	16	58	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	17	28	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	17	58	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	18	28	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	23	18	58	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	6	58	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	7	28	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	7	58	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	8	28	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	8	58	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	9	28	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	9	58	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	10	28	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	10	58	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	11	28	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	11	58	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	12	28	75	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	12	58	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	13	28	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	13	58	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	14	28	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	14	58	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	15	28	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	16	5	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	16	35	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	17	5	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	17	35	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	18	5	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	18	35	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	24	19	5	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	7	0	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	7	30	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	8	0	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	8	30	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	9	0	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	9	30	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	10	0	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	10	30	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	11	0	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	11	30	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	12	0	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	12	30	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	13	0	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	13	30	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	14	0	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	14	30	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	15	0	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	15	30	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	16	0	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	16	30	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	17	0	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	17	30	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	18	0	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	18	30	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	25	19	0	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	7	0	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	7	30	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	8	0	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	8	30	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	9	0	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	9	30	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	10	0	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	10	30	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	11	0	76.6	75.0	71.5	78	N



Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	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	2013	4	26	11	30	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	12	0	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	12	30	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	13	0	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	13	30	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	14	0	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	14	30	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	15	0	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	15	32	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	16	2	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	16	32	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	17	2	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	17	32	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	18	2	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	18	32	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	26	19	2	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	7	2	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	7	32	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	8	2	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	8	32	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	9	2	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	9	32	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	10	2	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	10	32	77.2	75.0	73.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	11	2	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	11	32	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	12	2	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	12	32	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	13	2	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	13	32	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	14	2	78.3	75.0	75.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	14	32	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	15	2	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	15	32	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	16	2	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	16	32	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	17	2	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	17	32	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	18	2	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	18	32	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	27	19	2	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	7	2	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	7	32	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	8	2	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	8	32	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	9	2	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	9	32	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	10	2	78.8	75.0	76.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	10	32	78	75.0	75.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	11	2	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	11	32	76.2	75.0	70.0	78	N
MTW-16-1	SKH Good Shepherd Primary School	2013	4	29	12	2	76.1	75.0	69.6	78	N

Continuous Noise Monitoring at MTW-16-1 (SKH Good Shepherd Primary School) in April 2013- (LAeq, 30min)



Remarks:  
 - for the corrected noise level without showing the in this graph, the measured noise level is below baseline level.

Annex J

Construction Dust  
Monitoring Results and  
Wind Data Monitoring  
Results

**Annex J Construction Dust Monitoring Results**

Station DMS-6 Katherine Building

Start Date	Time	Finish Date	Time	Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)		Average	TSP Conc. (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Observations / Remarks	Sampler ID	Filter ID
					Initial	Final	Initial	Final		Initial	Final							
2-Apr-13	11:15	3-Apr-13	11:15	Cloudy	2.6811	2.8423	10976.30	11000.30	24.00	1.38	1.38	1.38	81	156.8	260	Construction work in progress	0107	6873
8-Apr-13	11:08	9-Apr-13	11:08	Cloudy	2.6970	2.8600	11000.30	11024.30	24.00	1.38	1.38	1.38	82	156.8	260	Construction work in progress	0107	6896
13-Apr-13	9:10	14-Apr-13	9:10	Cloudy	2.7817	2.9601	11024.30	11048.30	24.00	1.38	1.38	1.38	90	156.8	260	Construction work in progress	0107	6923
19-Apr-13	11:12	20-Apr-13	11:12	Cloudy	2.7860	2.9503	11048.30	11072.30	24.00	1.38	1.38	1.38	83	156.8	260	Construction work in progress	0107	6994
25-Apr-13	11:08	26-Apr-13	11:08	Cloudy	2.7035	2.8711	11072.30	11096.30	24.00	1.38	1.38	1.38	84	156.8	260	Construction work in progress	0107	7150
30-Apr-13	10:55	1-May-13	10:55	Fine	2.6947	2.8611	11096.30	11120.30	24.00	1.38	1.38	1.38	84	156.8	260	Construction work in progress	0107	7069
													Minimum	81				
													Average	84				
													Maximum	90				

Station DMS-7 Parc 22

Start Date	Time	Finish Date	Time	Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)		Average	TSP Conc. (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Observations / Remarks	Sampler ID	Filter ID
					Initial	Final	Initial	Final		Initial	Final							
2-Apr-13	10:20	3-Apr-13	10:20	Cloudy	2.6686	2.8357	01129.17	01153.17	24.00	1.24	1.24	1.24	94	166.7	260	Construction work in progress	3574	6848
8-Apr-13	10:17	9-Apr-13	10:17	Cloudy	2.6914	2.8556	01153.17	01177.17	24.00	1.24	1.24	1.24	92	166.7	260	Construction work in progress	3574	6895
13-Apr-13	8:50	14-Apr-13	8:50	Cloudy	2.7922	2.9559	01177.17	01201.17	24.00	1.24	1.24	1.24	92	166.7	260	Construction work in progress	3574	6922
19-Apr-13	10:17	20-Apr-13	10:17	Cloudy	2.7819	2.9391	01201.17	01225.17	24.00	1.25	1.25	1.25	87	166.7	260	Construction work in progress	3574	6993
25-Apr-13	10:15	26-Apr-13	10:15	Cloudy	2.6935	2.8603	01225.17	01249.17	24.00	1.24	1.24	1.24	93	166.7	260	Construction work in progress	3574	7149
30-Apr-13	10:10	1-May-13	10:10	Fine	2.6911	2.8521	01249.17	01273.17	24.00	1.24	1.24	1.24	90	166.7	260	Construction work in progress	3574	7068
													Minimum	87				
													Average	91				
													Maximum	94				

Station DMS-8 SKH Good Shepherd Primary School

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)		Average	TSP Conc. (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final							
2-Apr-13	8:45	3-Apr-13	8:45	Cloudy	2.6749	2.8399	01123.11	01147.11	24.00	1.25	1.25	1.25	92	152.2	260	Construction work in progress	3572	6847
8-Apr-13	8:45	9-Apr-13	8:45	Cloudy	2.6806	2.8393	01147.11	01171.11	24.00	1.25	1.25	1.25	88	152.2	260	Construction work in progress	3572	6894
13-Apr-13	8:34	14-Apr-13	8:34	Cloudy	2.7825	2.9441	01171.11	01195.11	24.00	1.25	1.25	1.25	90	152.2	260	Construction work in progress	3572	6921
19-Apr-13	8:45	20-Apr-13	8:45	Cloudy	2.7841	2.9497	1195.11	1219.11	24.00	1.25	1.25	1.25	92	152.2	260	Construction work in progress	3572	6992
25-Apr-13	8:45	26-Apr-13	8:45	Cloudy	2.6969	2.8591	01219.11	01243.11	24.00	1.25	1.25	1.25	90	152.2	260	Construction work in progress	3572	7148
30-Apr-13	8:42	1-May-13	8:42	Fine	2.6859	2.8600	01243.11	01267.11	24.00	1.25	1.25	1.25	97	152.2	260	Construction work in progress	3572	7067
													Minimum	88				
													Average	91				
													Maximum	97				

Station DMS-9 No. 26 Kowloon City Road

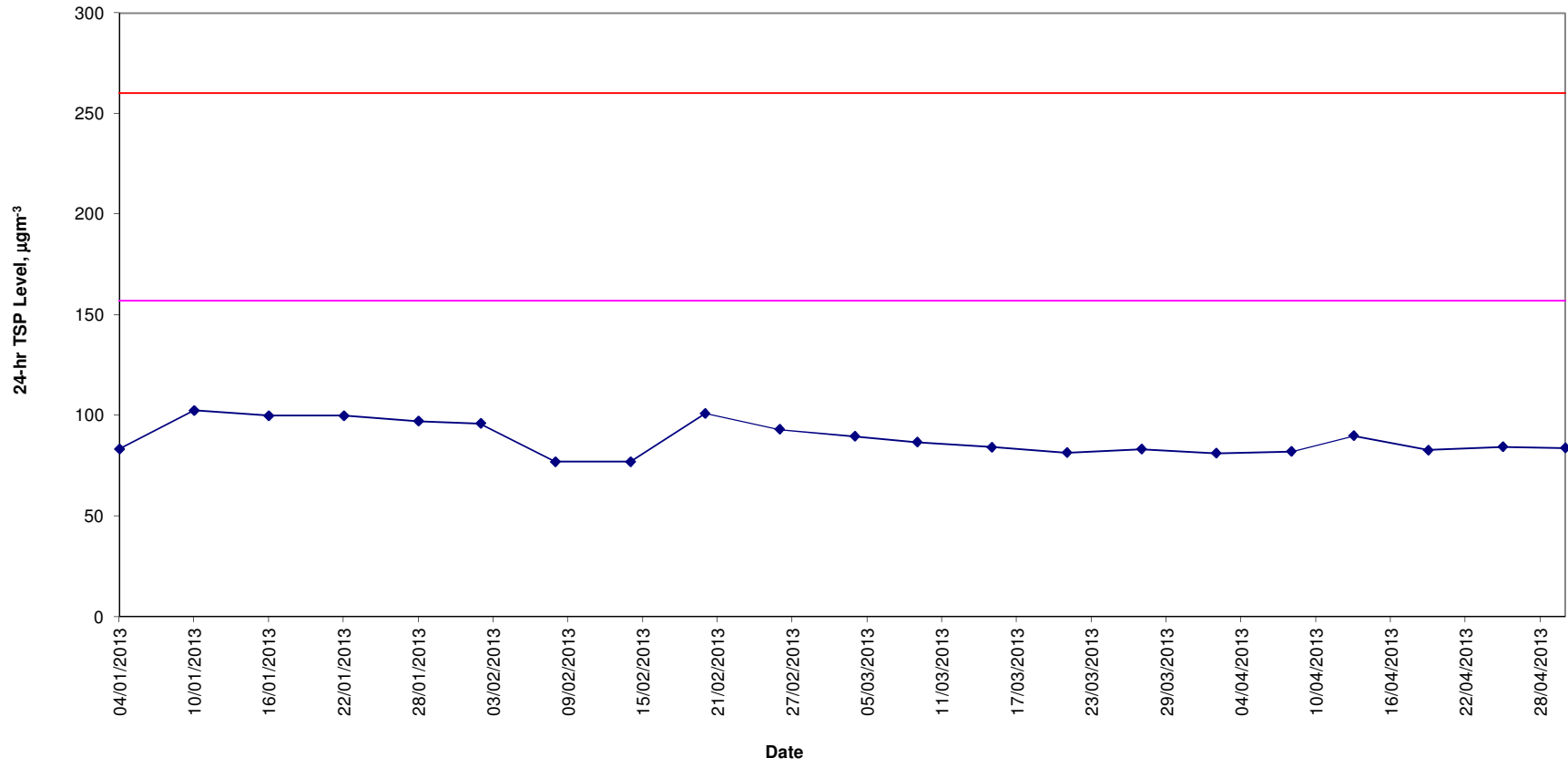
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)		Average	TSP Conc. (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final							
2-Apr-13	9:24	3-Apr-13	9:24	Cloudy	2.6779	2.8277	11841.40	11865.40	24.00	1.20	1.20	1.20	87	160.9	260	Construction work in progress	0814	6846
8-Apr-13	9:20	9-Apr-13	9:20	Cloudy	2.6756	2.8198	11865.40	11889.40	24.00	1.20	1.20	1.20	83	160.9	260	Construction work in progress	0814	6893
13-Apr-13	8:22	14-Apr-13	8:22	Cloudy	2.7878	2.9393	11769.40	11793.40	24.00	1.20	1.20	1.20	88	160.9	260	Construction work in progress	0814	6920
19-Apr-13	9:20	20-Apr-13	9:20	Cloudy	2.7862	2.9500	11913.40	11937.40	24.00	1.20	1.20	1.20	95	160.9	260	Construction work in progress	0814	6991
25-Apr-13	8:55	26-Apr-13	8:55	Cloudy	2.7007	2.8575	11937.40	11961.40	24.00	1.20	1.20	1.20	91	160.9	260	Construction work in progress	0814	7147
30-Apr-13	8:55	1-May-13	8:55	Fine	2.6859	2.8511	11961.40	11985.40	24.00	1.20	1.20	1.20	96	160.9	260	Construction work in progress	0814	7066
													Minimum	83				
													Average	90				
													Maximum	96				

Station DMS-10 Chat Ma Mansion

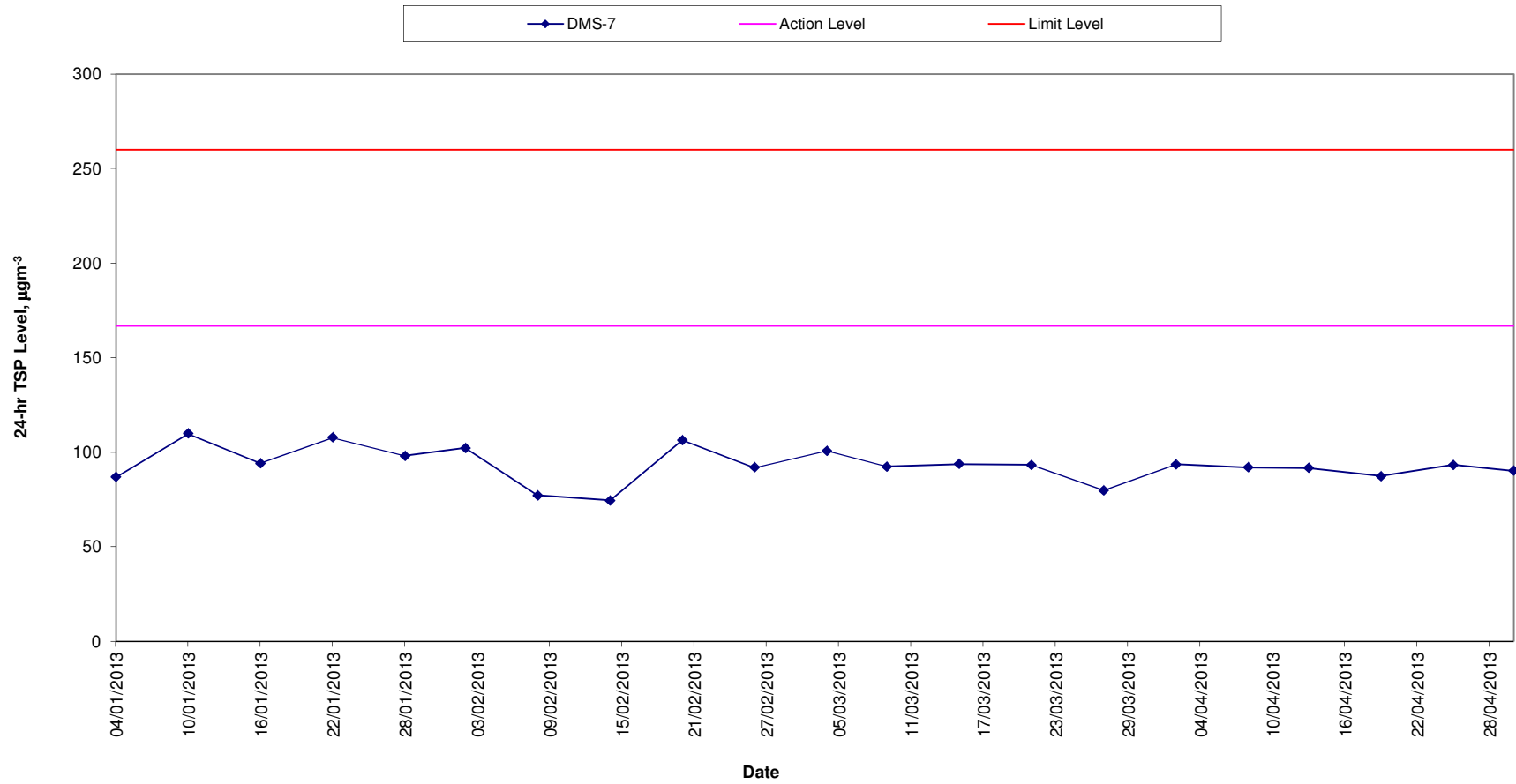
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)		Average	TSP Conc. (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final							
2-Apr-13	9:40	3-Apr-13	9:40	Cloudy	2.6752	2.8280	01117.20	01141.20	24.00	1.20	1.20	1.20	88	170.4	260	Construction work in progress	3573	6845
8-Apr-13	10:05	9-Apr-13	10:05	Cloudy	2.6677	2.8127	01141.20	01165.20	24.00	1.20	1.20	1.20	84	170.4	260	Construction work in progress	3573	6892
13-Apr-13	8:10	14-Apr-13	8:10	Cloudy	2.7961	2.9449	01165.20	01189.20	24.00	1.20	1.20	1.20	86	170.4	260	Construction work in progress	3573	6719
19-Apr-13	9:35	20-Apr-13	9:35	Cloudy	2.7878	2.9298	01189.20	01213.20	24.00	1.20	1.20	1.20	82	170.4	260	Construction work in progress	3573	6990
25-Apr-13	9:28	26-Apr-13	8:03	Cloudy	2.7034	2.8559	01213.20	01237.20	24.00	1.20	1.20	1.20	88	170.4	260	Construction work in progress	3573	7146
30-Apr-13	9:35	1-May-13	9:28	Fine	2.6827	2.8411	01237.20	01261.20	24.00	1.20	1.20	1.20	92	170.4	260	Construction work in progress	3573	7065
													Minimum	82				
													Average	87				
													Maximum	92				

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

◆ DMS-6    ◆ Action Level    ◆ Limit Level

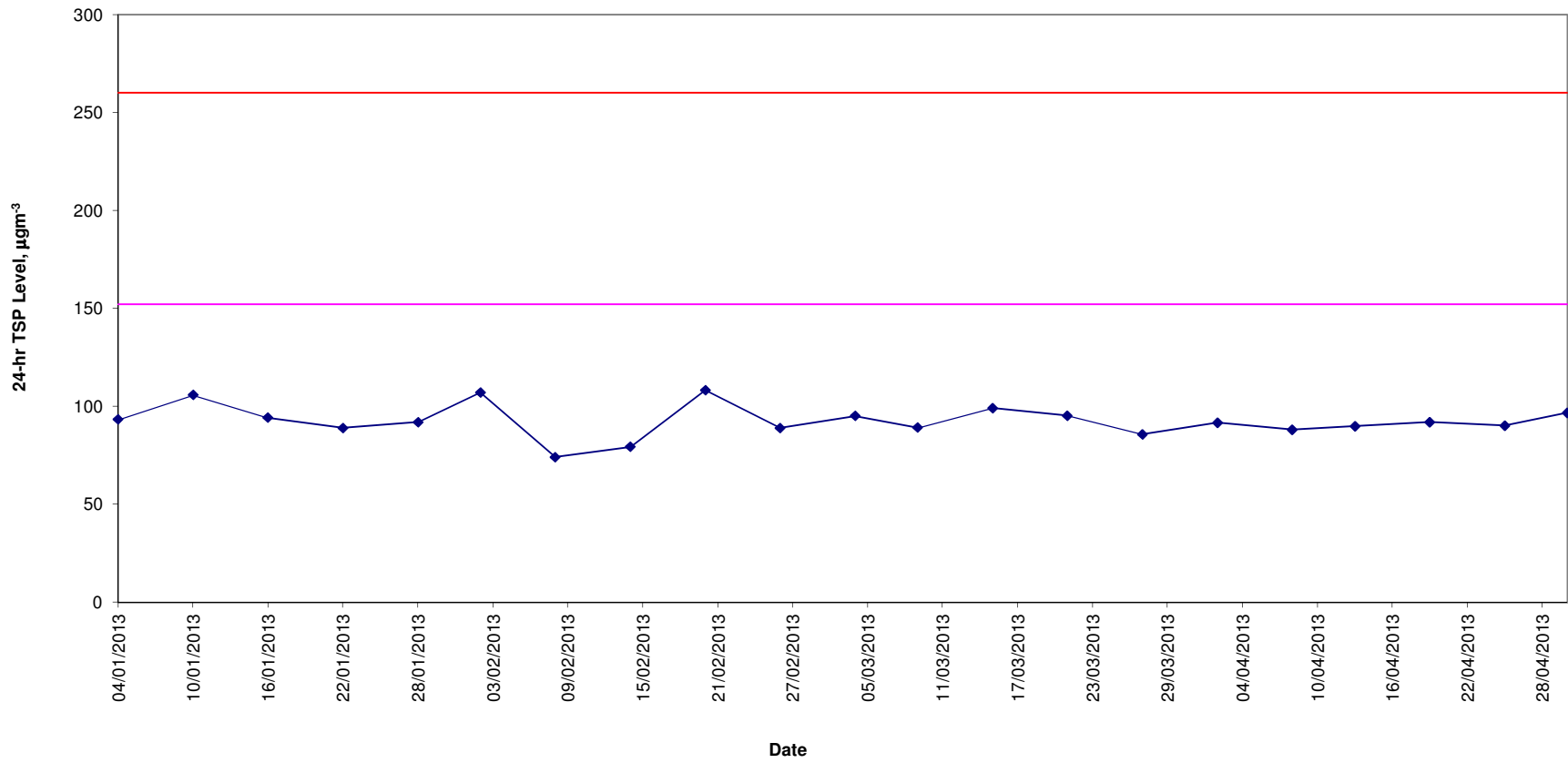
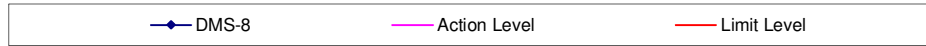


**Construction Dust Monitoring Results for the Past 4 Months  
DMS- 7 (Parc 22)**

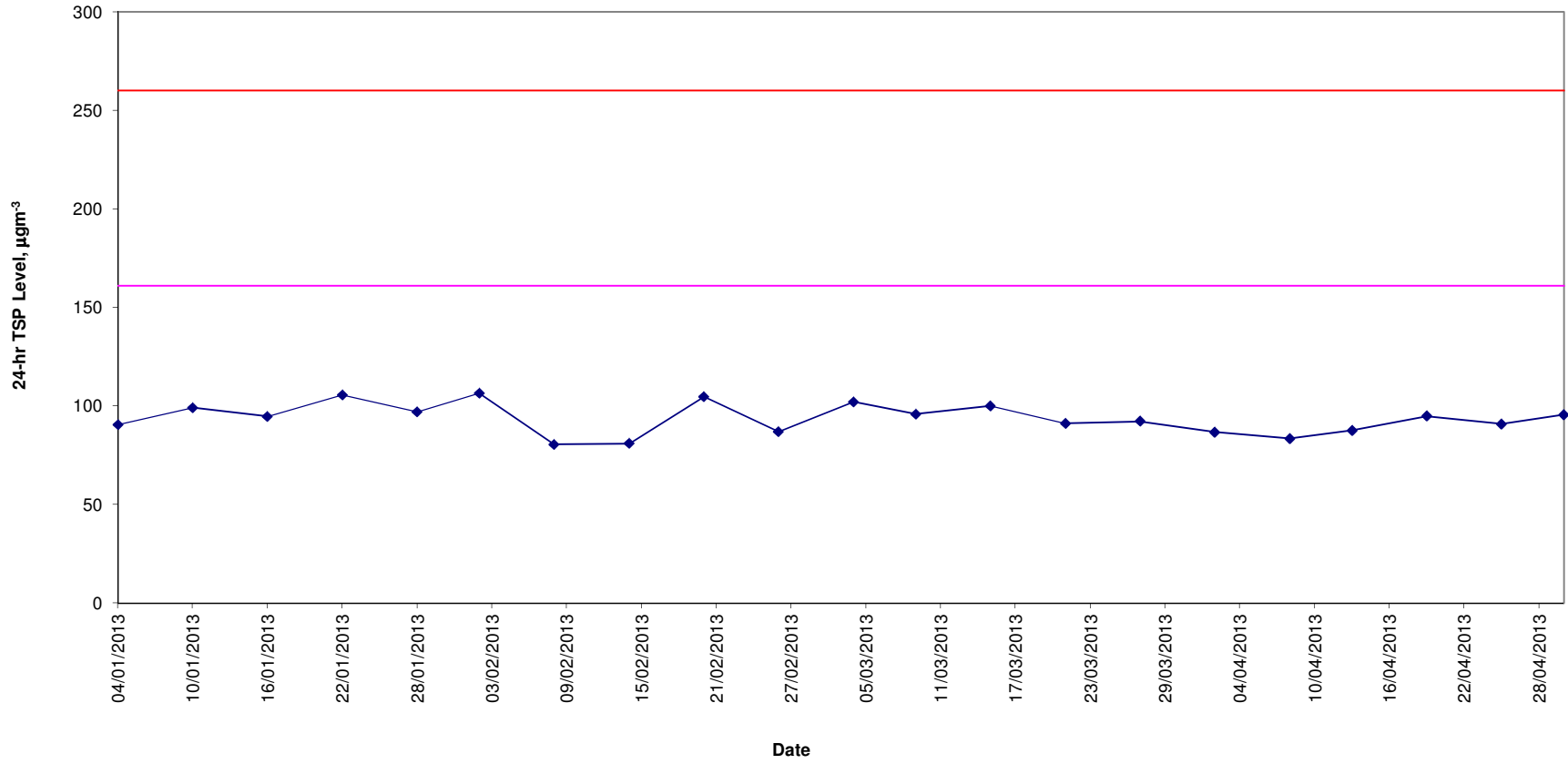
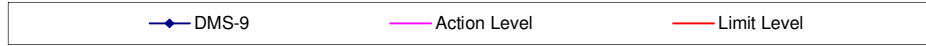




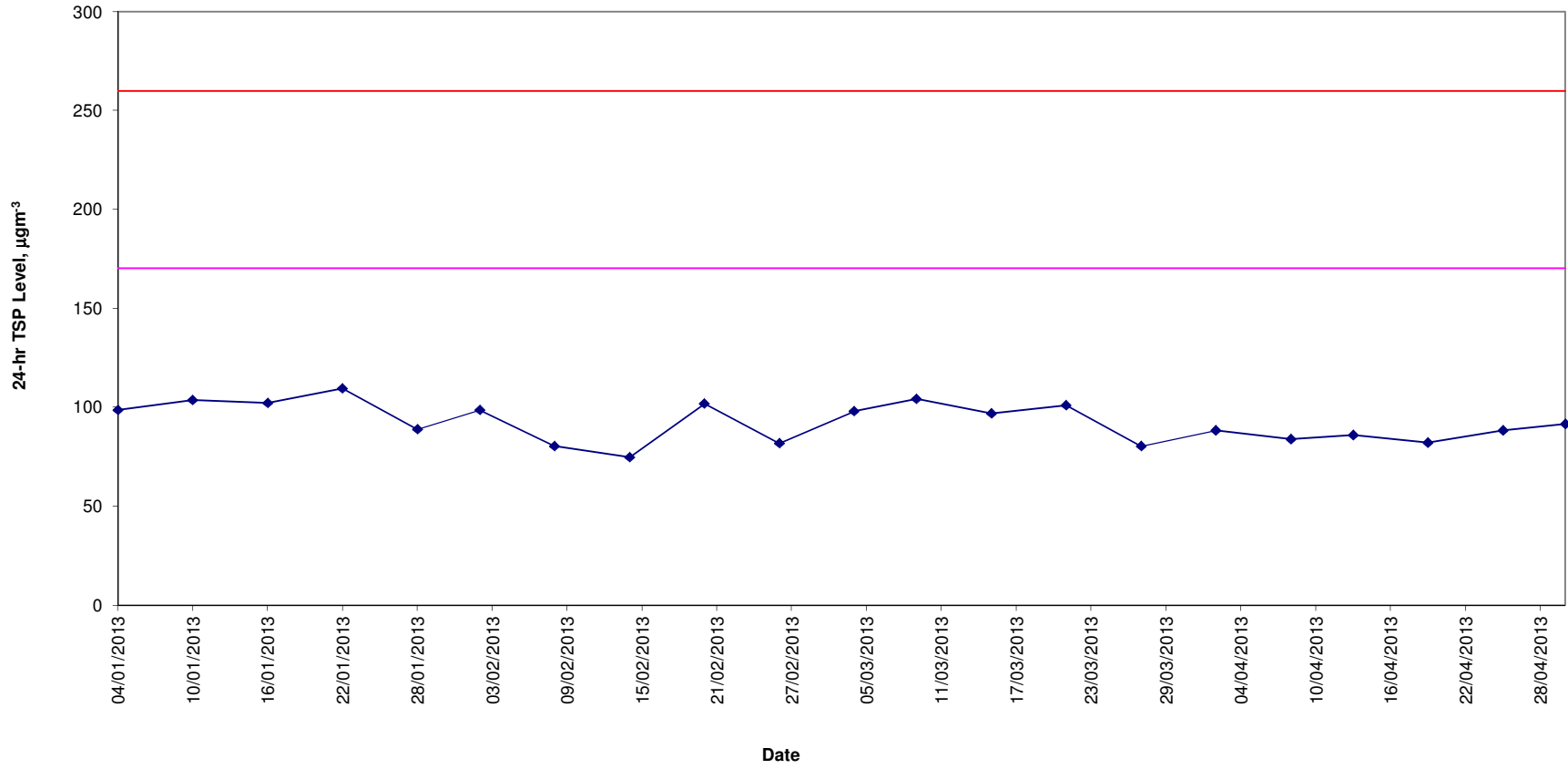
**Construction Dust Monitoring Results for the Past 4 Months  
DMS-8 (SKH Good Shepherd Primary School)**



**Construction Dust Monitoring Results for the Past 4 Months  
DMS-9 (No. 26 Kowloon City Road)**



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

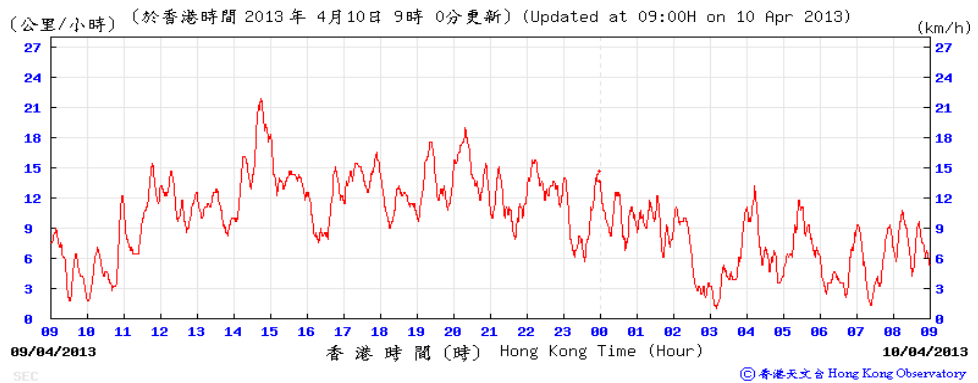
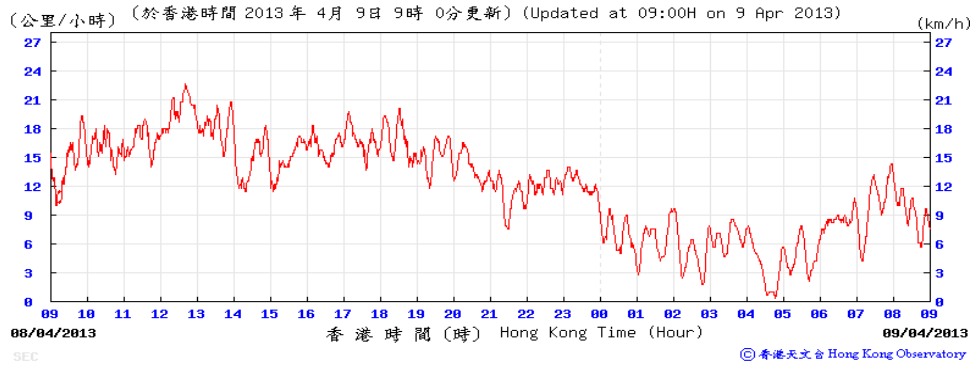
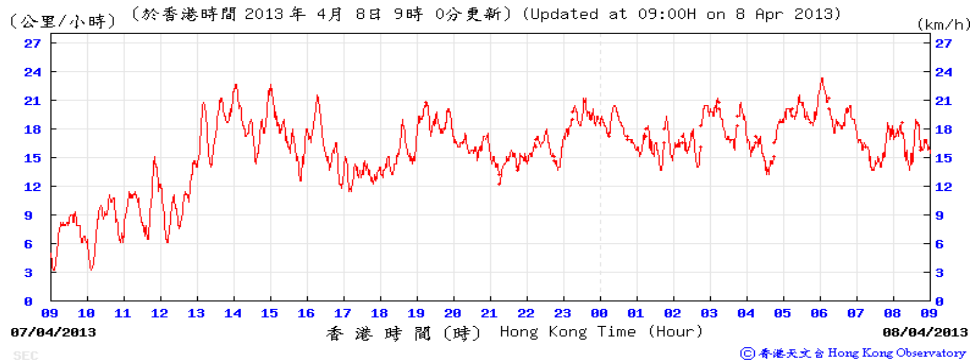


# Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

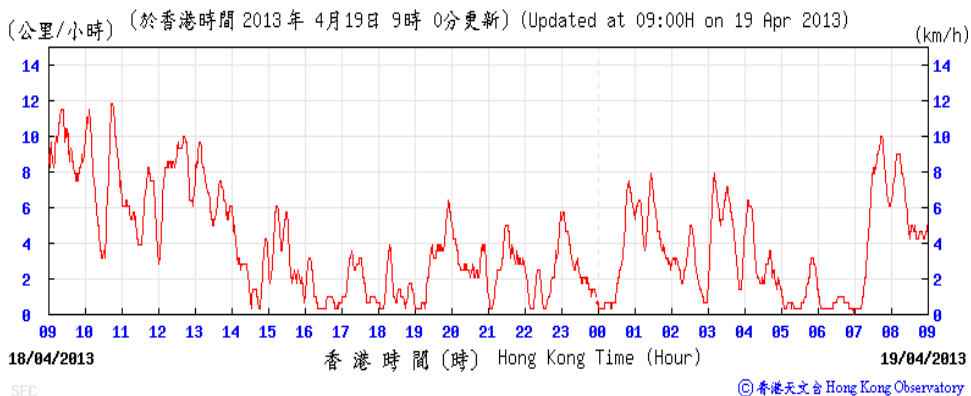
2 – 3 April 2013

Information is not available.

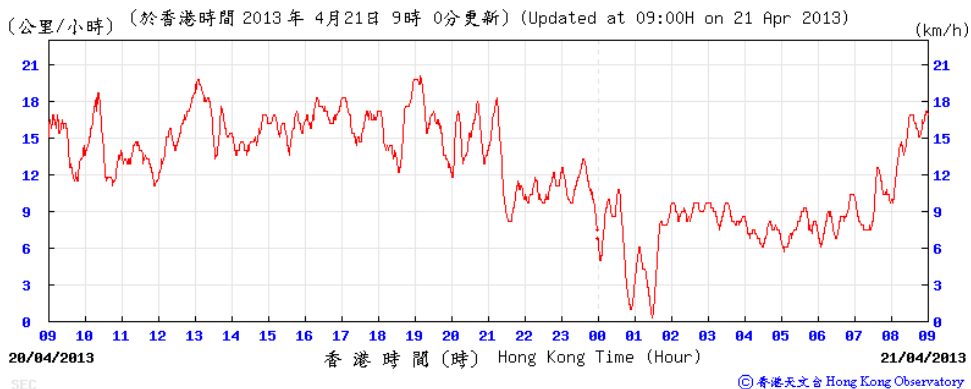
8 – 9 April 2013



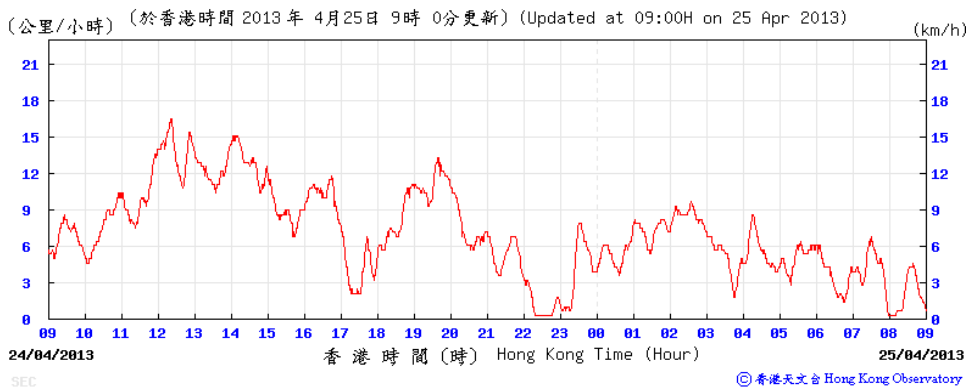
### 19 – 20 April 2013

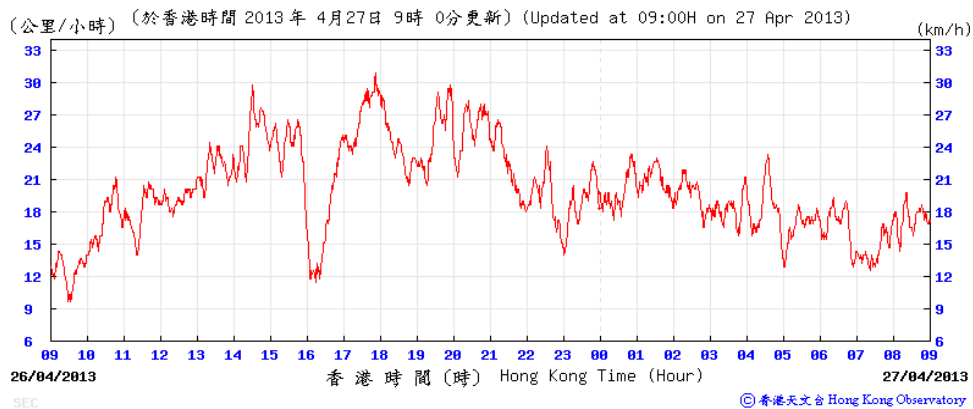
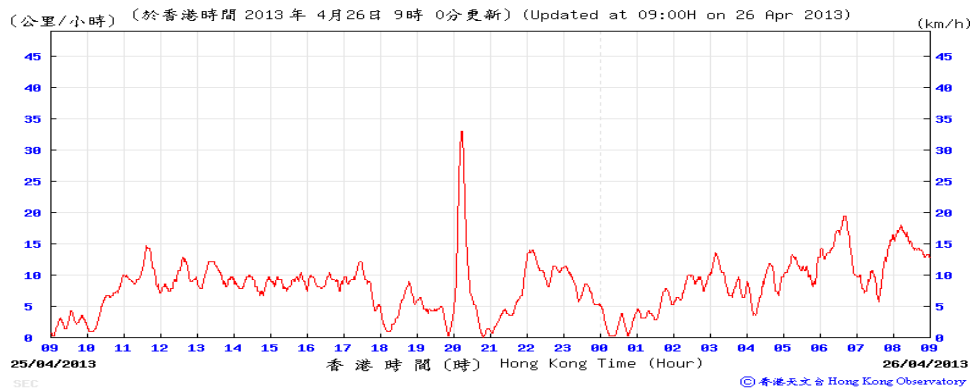


Information from 10 am April 19 to 8 am April 20 is not available.

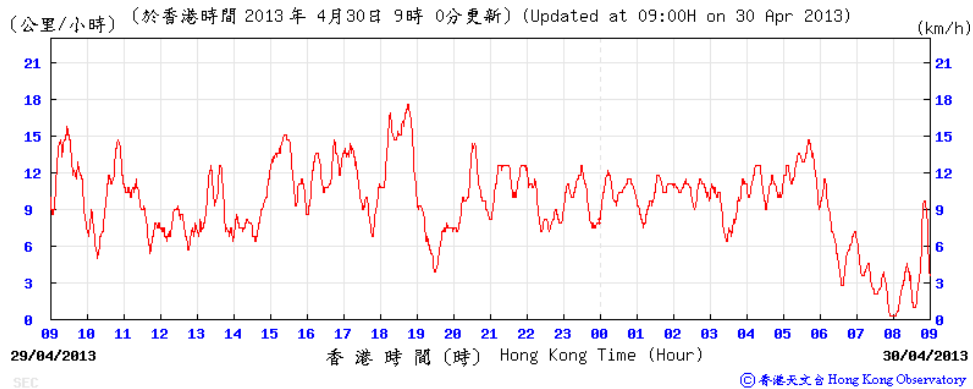


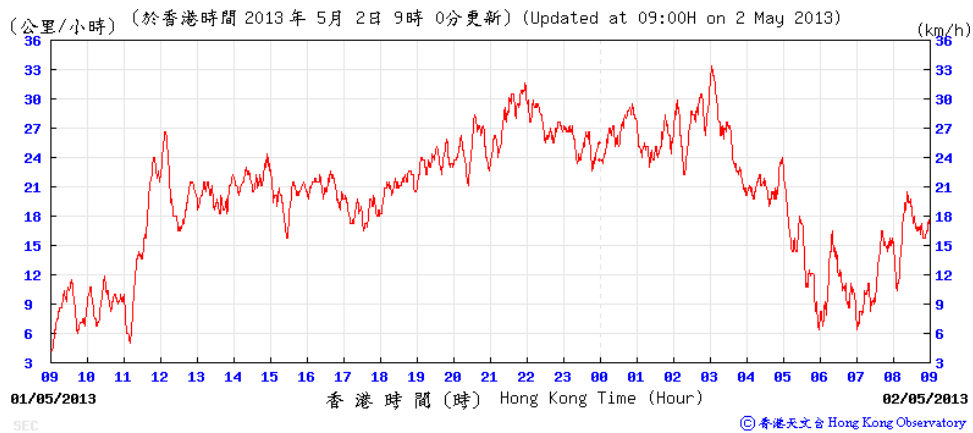
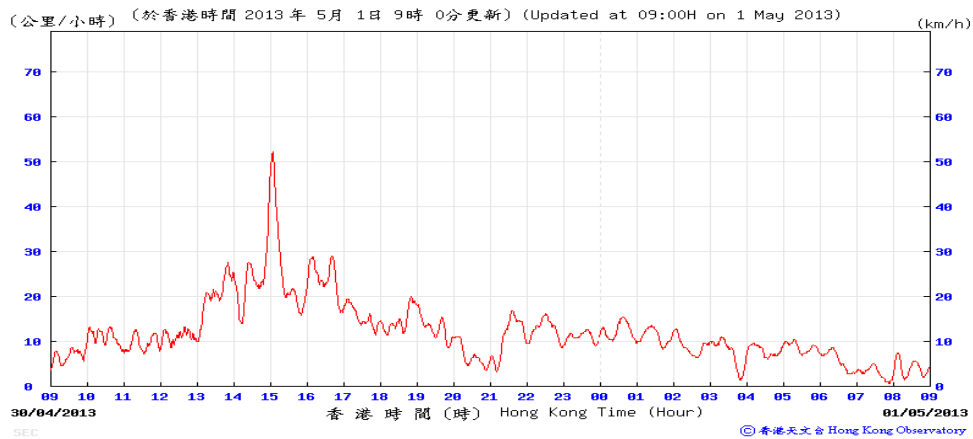
### 25 - 26 April 2013





30 April – 01 May 2013



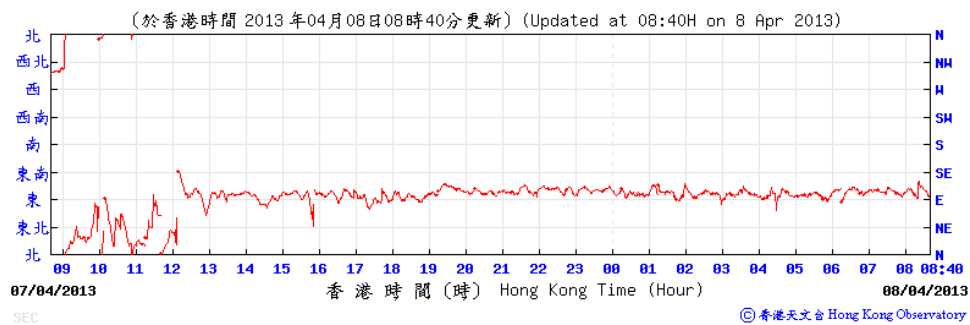


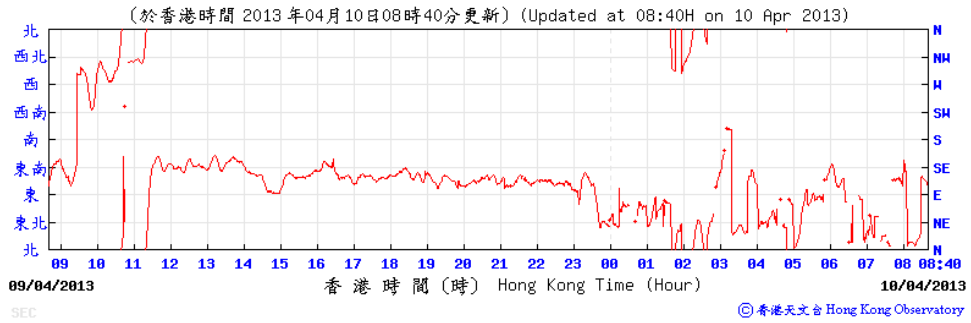
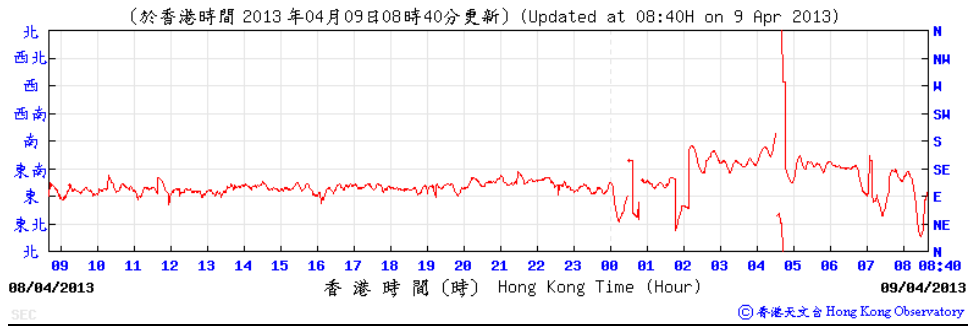
**Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)**

2 – 3 April 2013

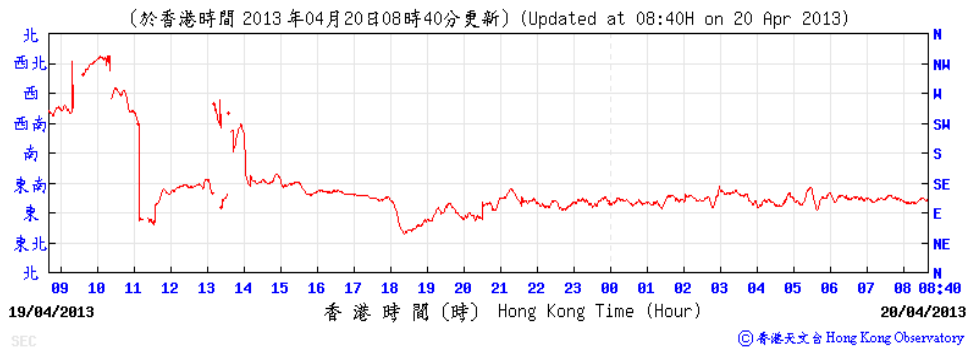
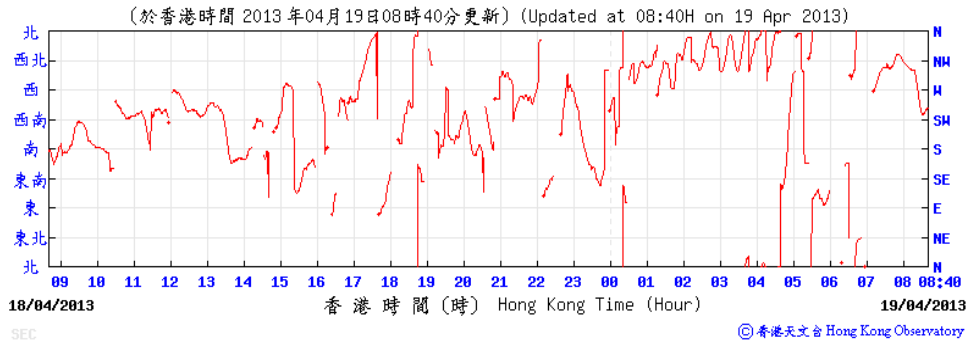
Information is not available.

8 – 9 April 2013

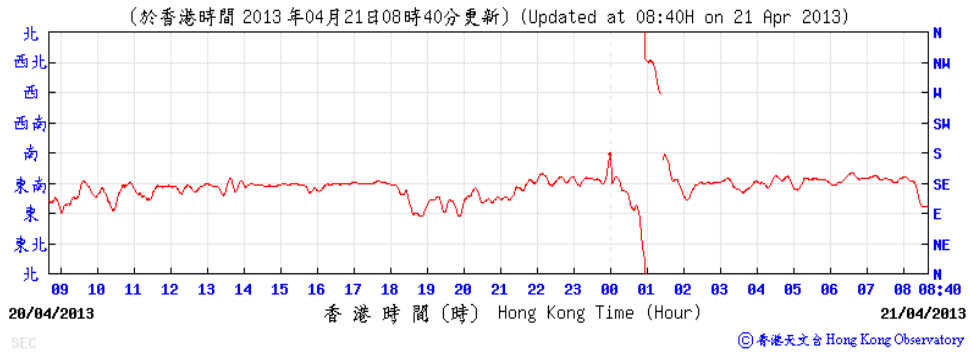




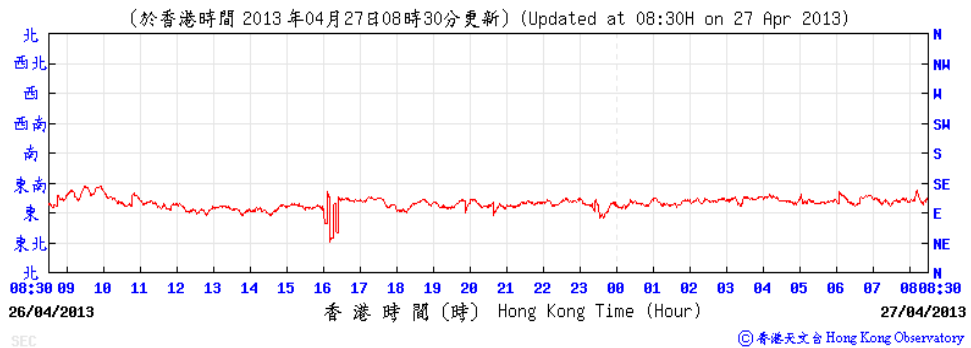
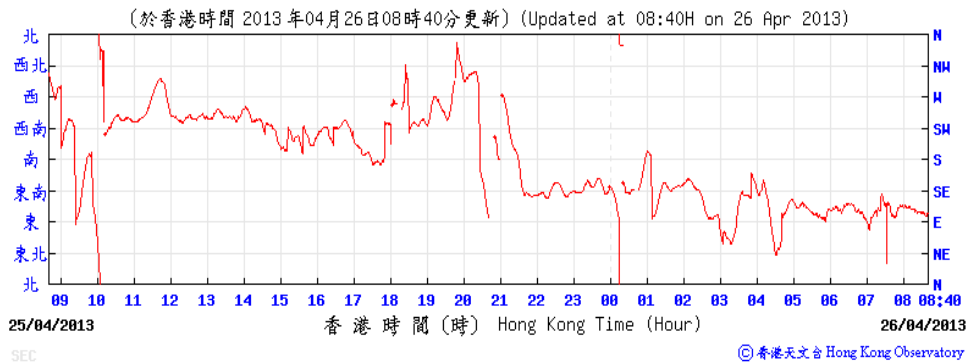
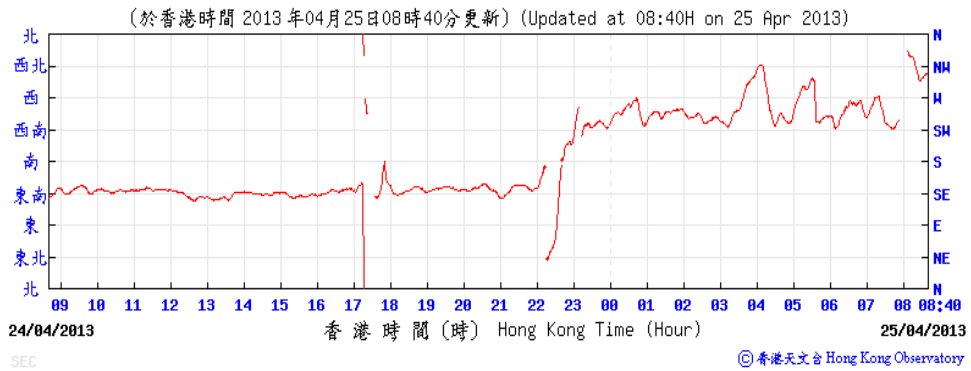
19 – 20 April 2013



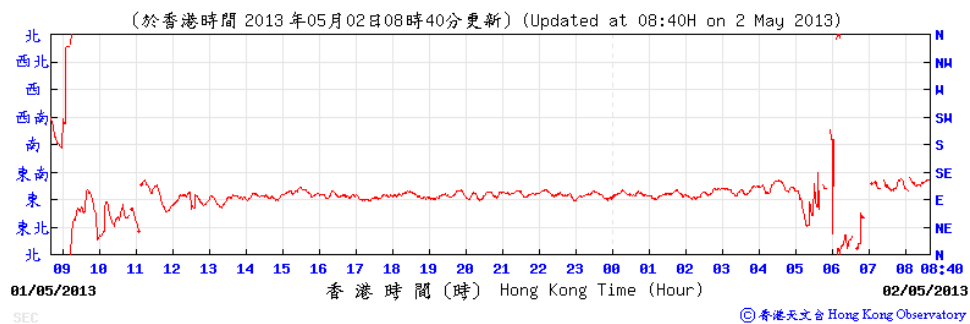
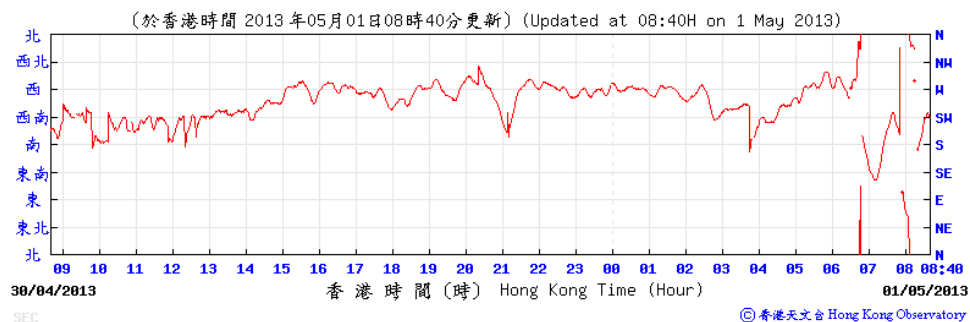
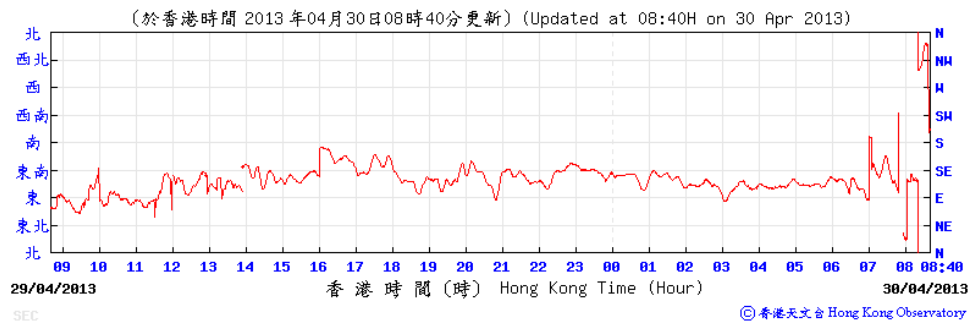




25 - 26 April 2013



### 30 April – 01 May 2013



Annex K

## Waste Flow Table

# Annex K – Waste Flow Table

## Monthly Summary Waste Flow Table for the year 2012-2013

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	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)	
Jan	--	--	--	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--	--	--	--
Apr	--	--	--	--	--	--	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--	--	--	--
June	--	--	--	--	--	--	--	--	--	--	--	--
July	--	--	--	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--	--	--	--
Sub-total												
Sept	0.004	0.000	0.000	0.000	0.004	-	0.000	0.000	5.300	0.000	0.144	0.000
Oct	0.000	0.000	0.000	0.000	0.000	-	12.800	0.242	0.013	0.000	0.514	0.000
Nov	0.624	0.000	0.605	0.000	0.019	-	0.000	0.154	0.002	0.000	0.172	6.804
Dec	16.844	0.000	0.000	0.000	0.005	16.839	0.000	0.000	0.000	0.000	0.057	0.000
Jan	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	8.372	0.000	0.000	0.000	0.005	8.366	0.000	0.036	0.443	0.000	0.021	0.000
March	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
April	13.557	0.000	0.000	0.000	0.025	13.533	0.000	0.036	0.148	0.000	0.086	0.000
Total	73.903	0.000	0.605	0.000	0.064	73.233	12.800	0.504	6.785	0.000	0.994	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.

Annex L

## Investigation reports

**Investigation Report of Environmental Quality Limit Exceedance**

Date	10 April 2013
Time	10:01 – 10:31; 10:31 – 11:01; 11:01 – 11:31
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq(30mins)}$
Action / Limit Levels	78 dB(A) (according to the latest Continuous Noise Monitoring Plan, CNMP)
Measured Level (With baseline level adjustment)	80.9dB(A) (10:01 – 10:31) 82.5dB(A) (10:31 – 11:01) 79.5dB(A) (11:01 – 11:31)
Possible reason	<p>Based on site record on 10 April 2013, the following potential noise sources from works were being carried out:</p> <ol style="list-style-type: none"> <li>1. TKW Market: pre-drill works, re-bar cage installation, concreting and trial trench exposure.</li> <li>2. Gas Station: pre-drill</li> <li>3. SKH Good Shepherd Primary School: CLP cabling works</li> </ol> <p>Vehicle movement on Ma Tau Wai Road, heavy rain (14.1mm rainfall was recorded by Hong Kong observatory on 10 April) and other unknown sources were also the other potential noise source contributing to the abnormal noise exceedance.</p> <p>As TKW Market work site and Gas Station do not have direct line of sight towards the monitoring station, the contribution of noise level from these two work sites should be minimal.</p> <p>Moreover, the CLP cabling works at SKH Good Shepherd Primary School did not involve any PME and the works were done by man power. Also the works were continuously operating on 10 April which means that the construction works carried out during exceedance period were same as that before and after the exceedance period. However the <math>L_{Aeq(30mins)}</math> were all below the Action/Limit Levels before and after the exceedance period.</p> <p>Based on the above and the best available information, no conclusion could be drawn on the noise sources which have contributed to the noise exceedance.</p>
Action Taken / Action to be Taken	Movable noise fabrics as barrier had also been erected for PME noise sources.

	As the exceedance is identified not due to the construction works, no additional action is considered necessary. However, the Contractor will adhere strictly to the Construction Noise Mitigation Measure Plan and to implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to avoid exceedance of the Action/Limit Level or causing noise nuisance where practicable.
Remarks	N/A

Prepared by: Winnie Ko, 1109 ET Leader

Date: 15-Apr-13

Annex M

Environmental Complaint,  
Environmental Summon  
and Prosecution



*Annex M Environmental Complaint, Environmental Summon and Prosecution Log*

<b>Reporting Month</b>	<b>Number of Complaints in Reporting Month</b>	<b>Number of Summons/Prosecutions in Reporting Month</b>
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
Overall Total	0	0

---

**Appendix C**

**5<sup>th</sup> EM&A Report for Works Contract 1101 –  
Ma On Shan Line Modification Works**

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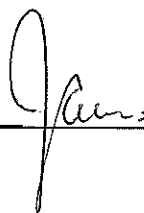
MTR Corporation Limited

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

Monthly EM&A Report  
[Period from 1 to 30 April 2013]

Works Contract 1101  
Ma On Shan Modification Works

(May 2013)

Certified by: James Choi 

Position: Environmental Team Leader

Date: 14 May 2013


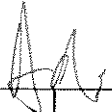

**SCL Contract No. 1101**

**Ma On Shan Line Modification Works**

**Monthly EM&A Report (SCL) (April 2013)**

for

**Sun Fook Kong Joint Venture**

Prepared By	Checked By	Approved for Issue
E Yue 	A Lee 	J Choi 
Version	0	Date
		3 May 2013

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 EDMS Consulting Limited accepts no responsibility for its use by others.

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Appendix F	Environmental Complaint Log
Appendix G	Updated Construction Programme
Appendix H	Works Sites as Part of SCL (TAW-HUH)

## **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). EDMS Consulting Limited (EDMS) 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/B) for the SCL Tai Wai to Hung Hom Section (TAW-HUH) included works sites at Tai Wai Mei Tin Road, To Shek Storage Yard, Shek Mun Storage Yard and Tai Shui Hang Storage Yard of which EM&A programme according to the EM&A Manual of SCL (TAW-HUH) should be implemented.

### **Construction Activities**

During the reporting month, major construction activities undertaken by the Contractor includes erection of steel structure of noise cover at Tai Wai Mei Tin Road.

### **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, Shek Mun Storage Yard and Tai Shui Hang 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 April 2013. All observations, which were recorded in inspection checklist and together with the ET's recommendations, were passed to the Contractor and ER for necessary corrective action.

### **Waste Disposal**

No C&D materials and chemical wastes were disposed off in the reporting month and 16.25 m<sup>3</sup> of general refuse were disposed of to NENT Landfill 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**

The major construction activities in the upcoming months will include construction of steel noise cover at Tai Wai Mei Tin Road during restricted hours. It is anticipated that construction noise will be the key issue. The Contractor has been reminded to properly implement construction noise control measures in order to minimize the potential environmental impacts due to the construction works of the Project.

### **Reporting Changes**

The storage activity at Tai Shui Hang Storage Yard has been terminated since 19 April 2013.

## 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, Shek Mun Storage Yard and Tai Shui Hang Storage Yard of which EM&A programme according to the EM&A Manual of SCL (TAW-HUH) should be implemented.

EDMS Consulting Limited (EDMS) 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 activities of the Construction Works include:

- Construction of noise cover over the viaduct at Tai Wai Mei Tin Road

The works areas including works sites at Tai Wai Mei Tin Road, To Shek Storage Yard, Shek Mun Storage Yard and Tai Shui Hang Storage Yard are shown in **Appendix H**.

### 1.3 Purpose of this Report

This is the 5<sup>th</sup> 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 April 2013.

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, Shek Mun Storage Yard and Tai Shui Hang 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 A*.

### **2.2 Construction Activities**

In the reporting month, major site construction activities undertaken by the Contractor include:

Tai Wai Mei Tin Road:

- Erection of steel structure of noise cover

Offsite works areas at To Shek Storage Yard, Shek Mun Storage Yard and Tai Shui Hang Storage Yard were only used for storage of construction materials and no construction activities were carried out. The storage activity at Tai Shui Hang Storage Yard has been terminated since 19 April 2013.

### **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/B and EP-438/2012/C for contract no. 1101 is given in *Table 1* and *Table 2* in *Appendix B*.



### 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 C*.

**Table 3.1 Waste Generated in the Reporting Month**

<b>Waste Type</b>	<b>Quantity this month m<sup>3</sup></b>	<b>Cumulative-to-Date m<sup>3</sup></b>
Inert C&D materials disposed	0	13.00
Inert C&D materials recycled	0	0
Non-inert C&D materials disposed	0	0
Non-inert C&D materials recycled	0	0
General waste disposed of to NENT Landfill	16.25	49.00
Chemical waste disposed off to Chemical Waste Treatment Centre at Tsing Yi	0	0

#### 4. SITE INSPECTION

Weekly site inspections were carried out at the sites on 3, 10, 16, and 23 April 2013. The joint site inspection with IEC was carried out on 23 April 2013. 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 *Appendix D*.

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 E*.

## 5. ENVIRONMENTAL COMPLAINT

No complaint was received during the reporting month.

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

**Table 5.1 Cumulative Statistic of Environmental Complaint**

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

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

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

## 7. FUTURE KEY ISSUES

*Appendix G* shows the updated construction programme of the construction works.

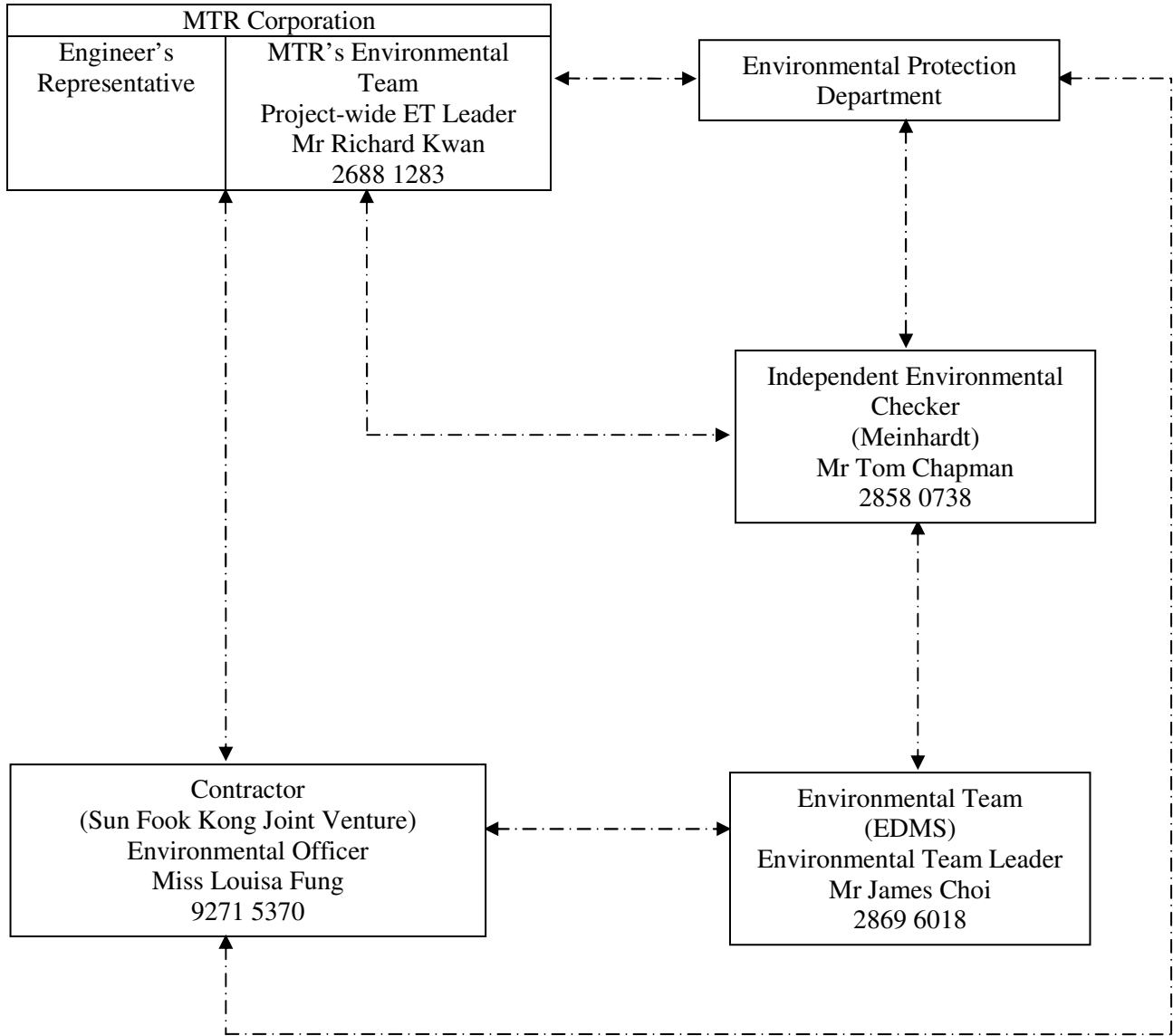
The major construction activities in the upcoming months will include construction of steel noise cover at Tai Wai Mei Tin Road during restricted hours. It is anticipated that construction noise will be the key issue. The Contractor has been reminded to properly implement construction noise control measures in order to minimize the potential environmental impacts due to the construction works of the Project.

## **APPENDIX A**

# **ORGANISATION CHART OF ENVIRONMENTAL MANAGEMENT**

**Appendix A Organisation Chart of Environmental Management**

Project Organization Chart



----- Line of communication

## **APPENDIX B**

### **STATUS OF LICENSE, PERMIT AND SUBMISSIONS UNDER ENVIRONMENTAL PROTECTION REQUIREMENTS**



**Appendix B 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/B	17 October 2012	26 October 2012	26 October 2012	N/A
Shatin to Central Link (SCL) - Tai Wai to Hung Hom Section	EP-438/2012/C	15 April 2013	30 April 2013	30 April 2013	N/A
Construction Noise Permit					
Tai Wai Station (At Tai Wai Mei Tin Road)	GW-RN0086-13	28 January 2013	15 February 2013	18 February 2013	17 August 2013
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	N/A	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/B**

<b>EP Condition</b>	<b>Submission</b>	<b>Date of Submission</b>
Condition 3.4	Monthly EM&A Report (March 2013)	12 April 2013

**APPENDIX C**

**WASTE FLOW TABLE**

**Waste Flow Table for 2012 (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		
	<b>Total Quantity Generated</b>	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste
January							
February							
March							
April							
May							
June							
<b>Sub-total</b>							
July							
August							
September	<b>0.00</b>	0.00	0.00	0.00	0.00	0.00	0.00
October	<b>0.00</b>	0.00	0.00	0.00	0.00	0.00	0.00
November	<b>13.00</b>	0.00	0.00	13.00	0.00	26.00	0.00
December	<b>0.00</b>	0.00	0.00	0.00	0.00	0.00	0.00
<b>Cumulative Total</b>	<b>13.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.00</b>	<b>0.00</b>	<b>26.00</b>	<b>0.00</b>

Remark: Waste Generated from site at Tai Wai Mei Tin Road, To Shek Storage Area and Tai Shui Hang Storage area.

1 full loaded dumping truck is assumed equivalent to 6.5 m<sup>3</sup> by volume from Archsd D/OL03/09.002

**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	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	0.00	0.00	0.00	0.00	0.00	3.50	0.00
March	0.00	0.00	0.00	0.00	0.00	3.25	0.00
April	0.00	0.00	0.00	0.00	3.00	16.25	0.00
May							
June							
<b>Sub-total</b>	<b>13.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.00</b>	<b>3.00</b>	<b>49.00</b>	<b>0.00</b>
July							
August							
September							
October							
November							
December							
<b>Cumulative Total</b>	<b>13.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.00</b>	<b>3.00</b>	<b>49.00</b>	<b>0.00</b>

Remark: Waste Generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Area and Tai Shui Hang Storage area  
1 full loaded dumping truck is assumed equivalent to 6.5 m<sup>3</sup> by volume from Archsd D/OL03/09.002

## **APPENDIX D**

### **SUMMARY OF SITE INSPECTIONS AND RECOMMENDATIONS**

**Environmental Site Walk on 3.4.2013**

<i>ET's Observations and Recommendations</i>	<i>Follow-up Action</i>
No site observation	NA

**Environmental Site Walk on 10.4.2013**

<i>ET's Observations and Recommendations</i>	<i>Follow-up Action</i>
No site observation	NA

**Environmental Site Walk on 16.4.2013**

<i>ET's Observations and Recommendations</i>	<i>Follow-up Action</i>
No site observation	NA

**Environmental Site Walk on 23.4.2013 (Joint Site Inspection with IEC)**

<i>ET's Observations and Recommendations</i>	<i>Follow-up Action</i>
No site observation	NA

Remark:

No construction activity had been carried out at To Shek Storage Yard, Shek Mun Storage Yard and Tai Shui Hang Storage Yard.

## **APPENDIX E**

# **MITIGATION MEASURES IMPLEMENTATION SCHEDULE FOR CONSTRUCTION STAGE**



EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
Ecology (Construction Phase)								
S5.7	E5	<p><u>Good Site Practices</u></p> <p>Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> <li>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;</li> <li>Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream;</li> <li>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;</li> </ul>	Minimise ecological impacts	Contractor	All construction sites	During construction	• ProPECC PN 1/94	^

Remarks:

^ Implement mitigation measure in the reporting month

N/A Not Applicable in the reporting month

x Non-compliance of mitigation measure

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> <li>No on-site burning of waste;</li> <li>Waste and refuse in appropriate receptacles.</li> </ul>						
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"> <li>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.</li> </ul> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><u>Protection of Retained Trees</u></p>	Minimize visual & landscape impact	Contractor	Within Project Site	Contraction stage	TM-EIAO	^

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"> <li>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.</li> <li>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.</li> </ul>						
S6.12	LV2	<ul style="list-style-type: none"> <li><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> <li><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> <li><u>Tree Transplanting</u></li> </ul>	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and construction stage	EIAO-TM ETWB TCW 2/2004 ETWB TCW 3/2006	^

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
		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.						
<b>Construction Dust Impact</b>								
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"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	^
S7.6.5	D2	<ul style="list-style-type: none"> <li>• 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/m<sup>2</sup> to achieve the dust removal efficiency</li> </ul>	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	^

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
S7.6.5	D3	<ul style="list-style-type: none"> <li>Proper watering of exposed spoil should be undertaken throughout the construction phase;</li> <li>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;</li> <li>Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>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;</li> <li>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;</li> </ul>	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>APCO</li> <li>To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	^

Remarks:

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		<ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> </ul>						

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		<ul style="list-style-type: none"> <li>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;</li> <li>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;</li> <li>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</li> <li>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.</li> </ul>						
Construction Noise (Airborne)								
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> <li>Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> </ul>	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^

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		<ul style="list-style-type: none"> <li>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;</li> <li>Plant down to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>Mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.</li> </ul>						
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoarding shall be properly maintained throughout the construction period.	Reduce the construction noise level at low-level zone of NSRs through partial screening	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^

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S8.3.6	N4	Use “Quiet plants”	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N5	Sequencing operation of construction plants where practicable	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> <ul style="list-style-type: none"> <li>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</li> </ul>	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"> <li>Water Pollution Control Ordinance</li> <li>ProPECC PN1/94</li> <li>TM-EIAO</li> <li>TM-Water</li> </ul>	^

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		<p>the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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 0.1m<sup>3</sup>/s a sedimentation basin of 30m<sup>3</sup> would be required and for a flow rate of 0.5m<sup>3</sup>/s the basin would be 150m<sup>3</sup>. The detailed design of the sand/silt traps shall be undertaken by the constructor prior to the commencement of construction.</li> <li>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.</li> </ul>						

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		<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m<sup>3</sup> 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</li> </ul>						

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		<p>debris into any drainage system.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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</li> </ul>						

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		<p>and drains.</p> <ul style="list-style-type: none"> <li>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.</li> <li>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.</li> <li>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.</li> <li>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.</li> <li>Adopt best management practices.</li> </ul>						
S10.7.1	W3	<p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> <li>Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor</li> </ul>	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>TM-water</li> </ul>	^

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		should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.						
S10.7.1	W7	<p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Disposal of chemical waste should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.</li> </ul>	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>ProPECC PN1/94</li> <li>TM-EIAO</li> <li>TM-Water</li> </ul>	^
Waste Management (Construction Waste)								
S11.4.1.1	WM1	<p><u>On-site sorting of C&amp;D material</u></p> <ul style="list-style-type: none"> <li>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</li> </ul>	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"> <li>DEVB TC(W) No.6/2010</li> </ul>	^

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		from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Apilte Dyke rock, etc should also be explored.						
S11.5.1	WM2	<u>Construction and Demolition Material</u> <ul style="list-style-type: none"> <li>Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>Carry out on-site sorting;</li> <li>Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>Adopt “Selective Demolition” technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling</li> </ul>	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"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal Ordinance</li> <li>ETWB TCW No.19/2005</li> </ul>	^

Remarks:

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		<p>purpose, where possible;</p> <ul style="list-style-type: none"> <li>Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documents and verified; and</li> <li>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&amp;D materials and to minimize their generation during the course of construction;</li> <li>In addition, disposal of the C&amp;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.</li> </ul>						
S11.5.1	WM3	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;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.</li> </ul>	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"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal Ordinance</li> <li>ETWB TCW No.19/2005</li> </ul>	^

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		<ul style="list-style-type: none"> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;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.</li> </ul>						
S11.5.1	WM4	<u>General Refuse</u> <ul style="list-style-type: none"> <li>General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>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.</li> <li>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.</li> </ul>	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"> <li>Waste Disposal Ordinance</li> </ul>	^

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		<ul style="list-style-type: none"> <li>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.</li> </ul>						
S11.5.1	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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</li> </ul>	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal (Chemical Waste General) Regulation</li> <li>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul>	^

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		<p>incompatible materials are adequately separated;</p> <ul style="list-style-type: none"> <li>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.</li> </ul>						
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"> <li>EIAO Guidance Note No.4/2010</li> <li>TM-EIAO</li> </ul>	^
S14.2-14.4	EM2	<ol style="list-style-type: none"> <li>An Environmental Team needs to be employed as per the EM&amp;A Manual.</li> <li>Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</li> <li>An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&amp;A Manual are fully complied with.</li> </ol>	Perform environmental monitoring & auditing	MTR Corporation/ Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>EIAO Guidance Note No. 4/2010</li> <li>TM-EIAO</li> </ul>	^

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 F**

**ENVIRONMENTAL COMPLAINT LOG**

**Appendix F Environmental Complaint Log**

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

**APPENDIX G**

**UPDATED CONSTRUCTION PROGRAMME**

**Construction Programme (SCL)**

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

Note:

1. Abbreviation:

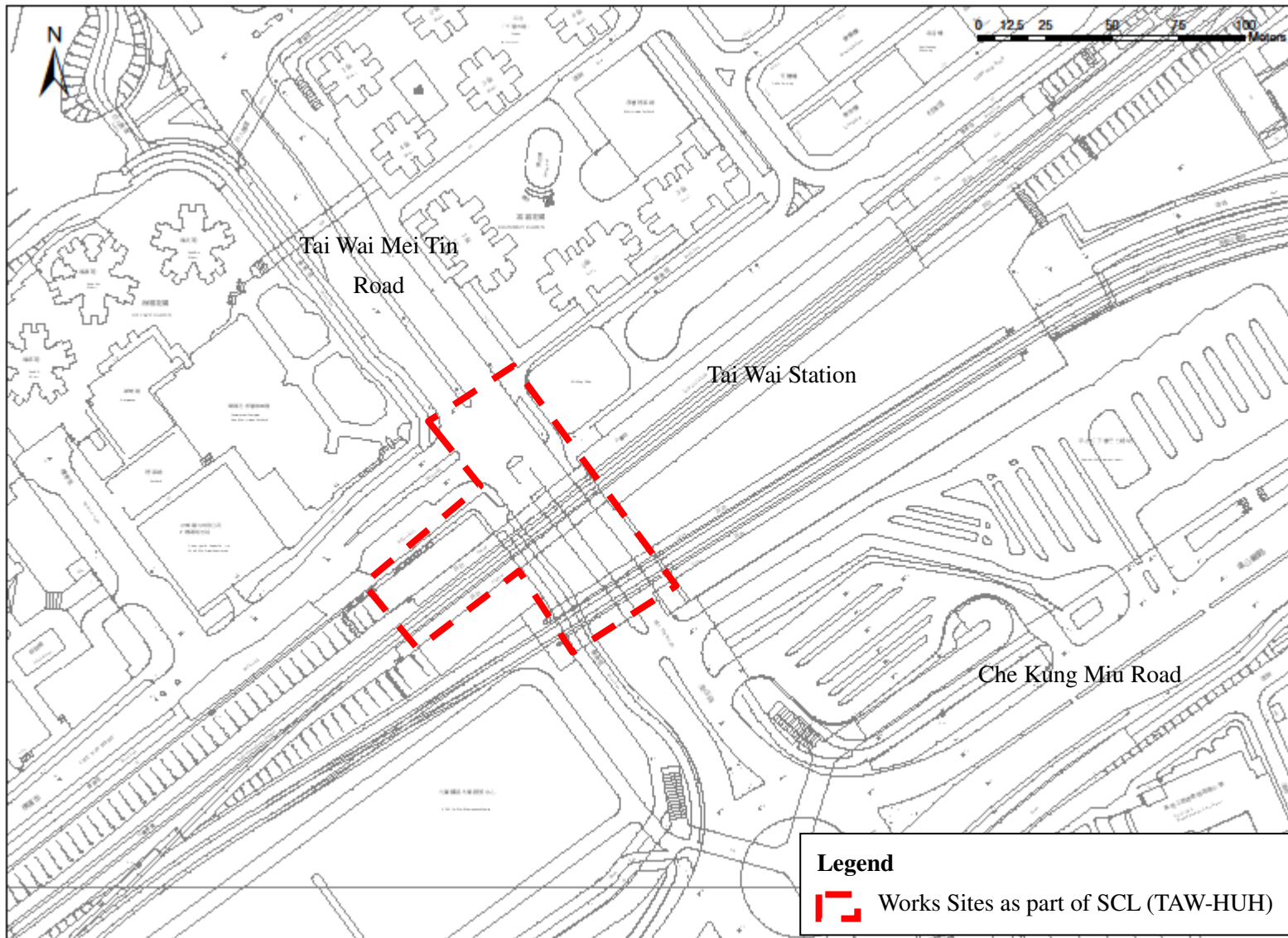
I Engineering Possession (2:00 to 4:00)

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

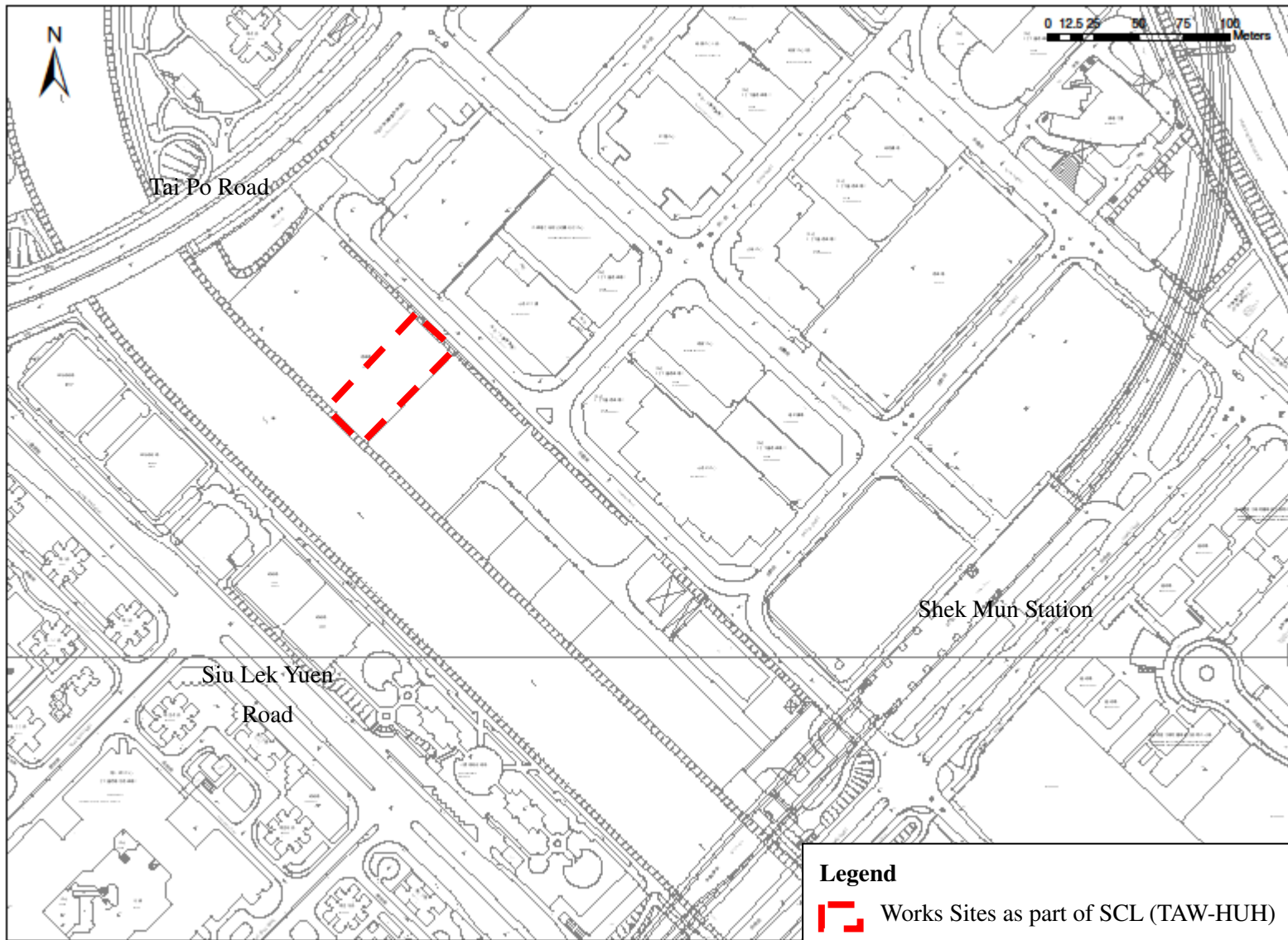
**APPENDIX H**

**WORKS SITES AS PART OF SCL (TAW-HUH)**






SCALE	N.T.S.	DATE	5 February 2013
CHECK	LYMA	DRAWN	YSWE
Ref.	FIGURE NO.		REV
SCL Contract No.1101	App H (Sheet 1 of 4)		1



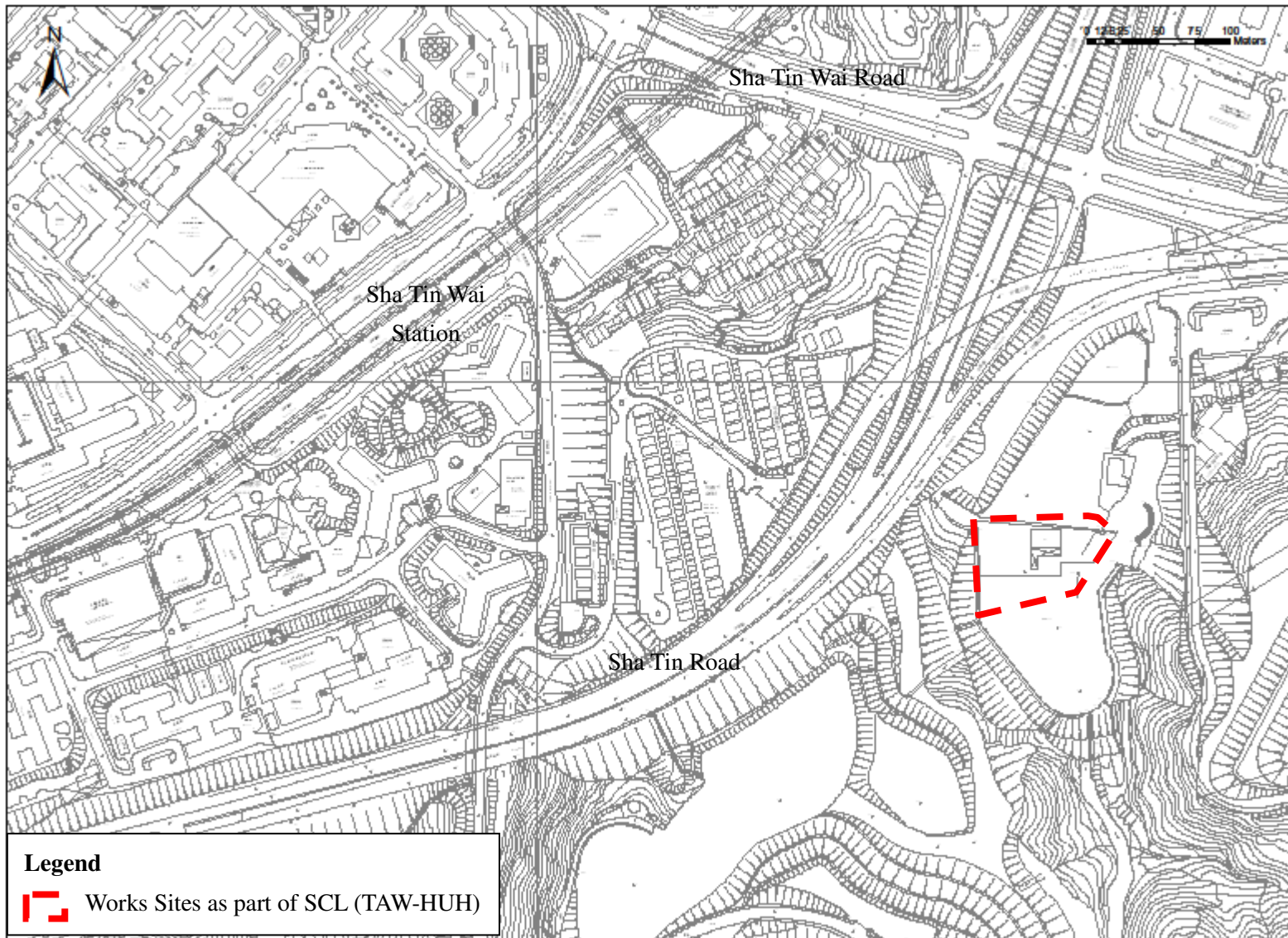
**Legend**

 Works Sites as part of SCL (TAW-HUH)

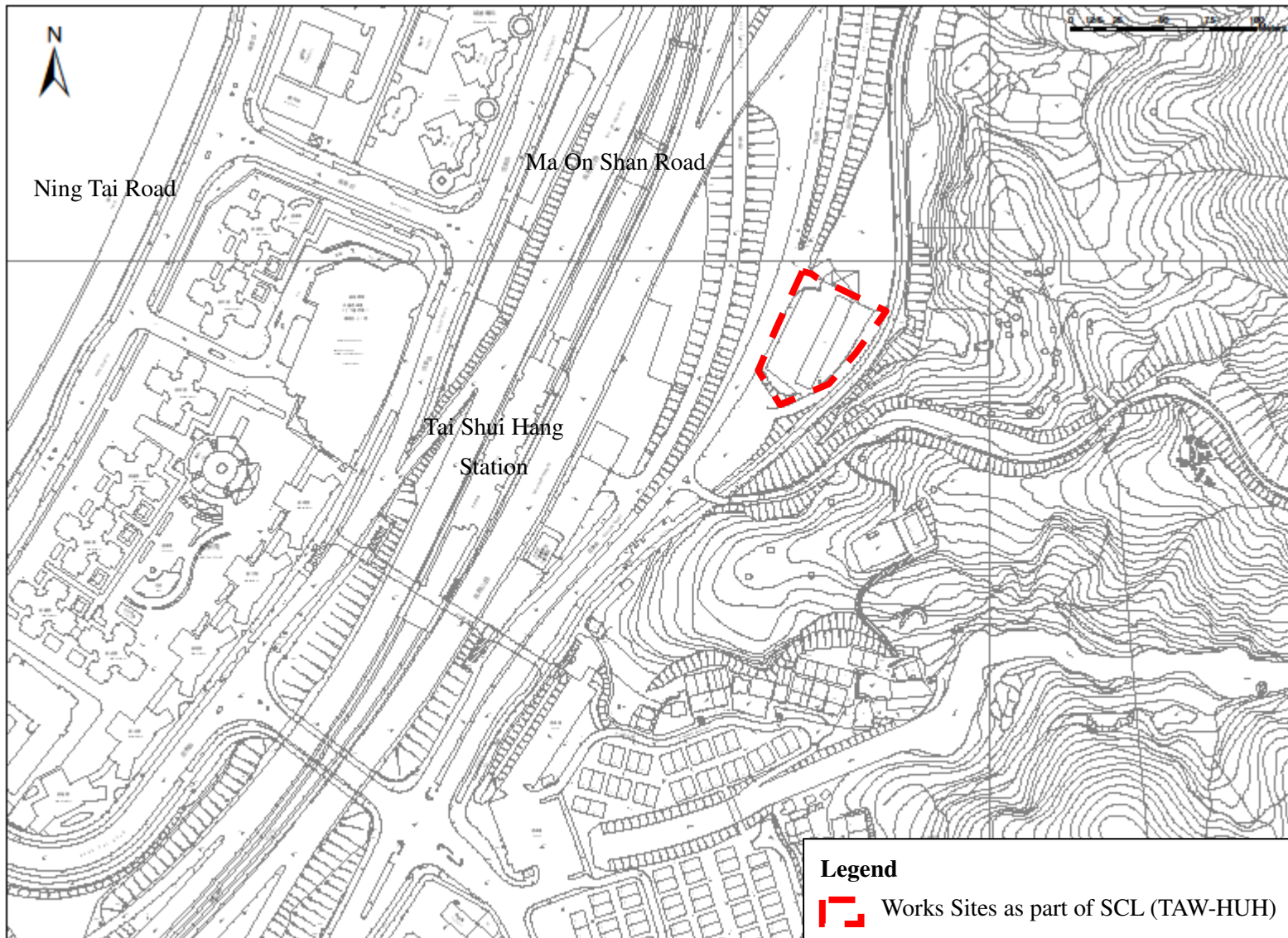


Works Areas under the Remaining Works from parts of the SCL(TAW-HUH)  
**Shek Mun Storage Yard**


SCALE	N.T.S.	DATE	5 February 2013
CHECK	LYMA	DRAWN	YSWE
Ref.	FIGURE NO.		REV
SCL Contract No.1101	App H (Sheet 2 of 4)		1



SCALE	N.T.S.	DATE	8 May 2013
CHECK	LYMA	DRAWN	YSWE
Ref.	FIGURE NO.		REV
SCL Contract No.1101	App H (Sheet 3 of 4)		1



**Legend**

 Works Sites as part of SCL (TAW-HUH)

SCALE	N.T.S.	DATE	8 May 2013
CHECK	LYMA	DRAWN	YSWE
Ref.	FIGURE NO.		REV
SCL Contract No.1101	App H (Sheet 4 of 4)		1

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**Appendix D**

**4<sup>th</sup> EM&A Report for Works Contract 1111 –  
Hung Hom North Approach Tunnel**

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**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  
April 2013**

**May 2013**

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

Version: 0

Date: 14 May 2013

**Disclaimer**

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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 April 2013. As informed by the Contractor, major activities in the reporting period were:-

### Hung Hom Area

- Excavation work, demolition, man hole and drainage construction.
- Drain / sewage pipe construction, building footing / RC structure construction.
- Hoarding erection, cross track duct construction, cable trough installation, existing track removal.
- Pre-grouting, trial pit, TAM grout.
- Installation of waterdown pipe.

### Mong Kok Freight Terminal

- Base slab demolition, base slab and building construction.

## **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 was received in the reporting month.

One (1) exceedance of Limit Level of regular construction noise was recorded on 3 April 2013 during the reporting month. Investigation of exceedance had been conducted and concluded that the noise exceedance was not due to Project works.

### 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 not commenced during this reporting month, no continuous noise monitoring was carried out.

## **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*

- Site preparation, site clearance, hoarding/ fencing erection, demolition of retaining wall.
- Excavation work, demolition, man hole and drainage construction, RC structure construction.
- Drain/sewage pipe construction, building footing/RC structure construction.
- Hoarding erection, cross track duct construction, ADMS installation, tree felling, existing track removal.
- Trial pit, pipe pile installation, TAM grout.
- Concreting, rebar fixing, formwork erection, lighting installation, bridge steel frame erection and cover walkway.

*Mong Kok Freight Terminal*

- Base slab demolition, base slab and building construction.

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 fourth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 to 30 April 2013.

### **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/B) was issued by Director of Environmental Protection (DEP) on 26 October 2012.
- 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, demolition, man hole and drainage construction.
- Drain / sewage pipe construction, building footing / RC structure construction.
- Hoarding erection, cross track duct construction, cable trough installation, existing track removal.
- Pre-grouting, trial pit, TAM grout.
- Installation of waterdown pipe.

### Mong Kok Freight Terminal

- Base slab demolition, base slab and building construction.

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	3507 6889	2334 0323
		SCL Project Environmental Team Leader	Mr. Richard Kwan	2688 1283	2993 7577
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Mr. Tom Chapman	2858 0738	2540 1580
		Deputy Independent Environmental Checker	Mr. Fredrick Leong	2859 1739	
GKSCKJV	Contractor	Project Manager	Mr. Alan Yan	9855 0361	3904 9630
		Environmental Manager	Mr. Brian Kam	9456 9541	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y T Tang	3922 9393	2317 7609

## 2.5 Status of Environmental Licences, Notification and Permits

2.5.1 Relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 2.1**.

**Table 2.1 Status of Environmental Licenses, Notifications and Permits**

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
<b>Environmental Permit</b>				
EP-437/2012	22 Mar 2012	-	Valid	-
EP-438/2012/B	26 Oct 2012	30 Apr 2013	Valid until 30 Apr 2013	Superseded by EP-438/2012/C
EP-438/2012/C	30 Apr 2013	-	Valid	-
<b>Construction Noise Permit</b>				
GW-RE0125-13	08 Feb 2013	07 Apr 2013	Valid until cancellation on 07 Apr 2013	For Cross-track Duct (Workfronts No. 1 & 2)
GW-RE0155-13	19 Feb 2013	17 Apr 2013	Valid until cancellation on 17 Apr 2013	For Cross-track Duct (Workfronts No. 3, 5 & 6)
GW-RE0243-13	19 Mar 2013	30 Apr 2013	Valid until cancellation on 30 Apr 2013	For Cross-track Duct (Workfronts No. 7)
GW-RE0328-13	03 Apr 2013	04 May 2013	Valid	For Mong Kok Station Re provisioning Works
GW-RE0139-13	15 Feb 2013	07 May 2013	Valid	For Link Bridge truss lifting
GW-RE0329-13	04 Apr 2013	14 May 2013	Valid	For Cross-track Duct (Workfronts No. 3, 5 & 6)
GW-RE0198-13	06 Mar 2013	24 May 2013	Valid until cancellation on 17 Apr 2013	For Hung Hom Station Re provisioning Works
GW-RE0344-13	09 Apr 2013	31 May 2013	Valid	For Mong Kok Station Concourse Works
GW-RE0359-13	11 Apr 2013	07 Jun 2013	Valid	For Cross-track Duct (Workfronts No.1 & 2)
GW-RE0372-13	20 Apr 2013	08 Jul 2013	Valid	For Hung Hom Station Re provisioning Works
<b>Wastewater Discharge License</b>				
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
EP682/222/0637/I	-	-	Application was made on 16 Apr 2013 and is pending for EPD's approval	For Mong Kok Freight Terminal Works
358158	-	-	Application was made on 08 Apr 2013 and is pending for EPD's approval	For Hung Hom Station Works
358026	-	-	Application was made on 08 Apr 2013 and is pending for EPD's approval	For Chatham Road North Works
<b>Chemical Waste Producer Registration</b>				
5213-213-G2618-03	-	-	Valid	For Hung Hom Station Re provisioning Works

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
5213-213-G2618-01	-	-	Valid	For Winslow Street Works
WCRE-0680	-	-	Application was made on 16 Apr 2013 and is pending for EPD's approval	For Mong Kok Freight Terminal Works
5213-213-G2618-06	-	-	Valid	For Homantin Sidings Works
<b>Billing Account for Construction Waste Disposal</b>				
7016658	24 Jan 2013	-	Account Active	-
<b>Notification Under Air Pollution Control (Construction Dust) Regulation</b>				
353991	02 Jan 2013	18 Apr 2018	Notified	-

### 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:894-0835) )

##### *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  $\pm 3$  °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 m<sup>3</sup>/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m<sup>3</sup>/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.
- (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 April 2013 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	Rion (Model No. NL-31) & B&K (Model No. 2238)
Acoustic Calibrator	Rion (Model No. NC-73)

#### 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 <sup>(1)</sup>	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 April 2013 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/B (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 Continuous Noise Monitoring Plan (CNMP) was prepared and submitted to EPD before the commencement of the construction of the Project.

#### **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 <sup>(1)</sup>

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	Rion (Model No. NL-31)
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 Plan**

Monitoring Location	NSR Description	Action/Limit Level, dB(A)	Measurement Period
NM1	Carmel Secondary School (South Block)	69 <sup>(1)</sup>	Dec of 2014 Mar of 2015 Mar of 2017
NM2	No. 234-238 Chatham Road North <sup>(2)</sup>	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.

**3.4 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**

<b>EP Condition</b>	<b>Submission</b>	<b>Submission Date</b>
Condition 3.4 (EP-437/2012) & Condition 3.4 (EP-438/2012/B)	Monthly EM&A Report for March 2013	12 April 2013

## 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 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	69.4	44.5 – 114.2	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 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), $L_{\text{eq}}$ (30 mins)	Limit Level, dB(A), $L_{\text{eq}}$ (30 mins)
NM 1 <sup>(2)</sup>	63.0 – 71.2	65 / 70 <sup>(1)</sup>
NM 2 <sup>(2)</sup>	68.6 – 79.0	75

Note:

(1) Daytime noise Limit Level of 70dB(A) applies to education institutions while 65dB(A) applies during school examination period. The reporting month is the school examination period and the criteria of 65dB(A) was applied from 8 to 30 April 2013.

(2) Baseline correction will be made to the measured  $L_{\text{eq}}$  when the measured noise level exceeded the corresponding baseline noise level and presented in the table.

5.2.2 No noise complaint was received in the reporting month; hence, no Action Level exceedance was recorded.

5.2.3 One (1) Limit Level exceedance of regular construction noise was recorded at NM1 (Carmel Carmel Secondary School (South Block)) on 3 April 2013 during the reporting month. Investigation of exceedance had been conducted and any necessary remedial action has also been taken according to the Event and Action Plan for regular construction noise.

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, 651m<sup>3</sup> of inert C&D material was generated and disposed as public fills at TKO 137 while 103,680kg of general refuse was disposed at NENT landfill in the reporting month. No paper/cardboard packaging, plastics and metals were collected by recycling contractor in the reporting month. No inert C&D materials were reused on site. 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 Inspection of the implementation of landscape and visual mitigation measures were conducted bi-weekly. 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**.

## 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 5, 10, 18 and 25 April 2013. The one held on 18 April 2013 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
<b>Water Quality</b>	5 Apr 2013	<ul style="list-style-type: none"> <li>Water trapping near the entrance was observed at Portion W1A. The Contractor should clear the water/remove the bund to avoid water accumulation on site.</li> <li>Addition sand bag should be provided for boil piling boundary to avoid muddy water discharge from site at Portion W1A and track side as well.</li> </ul>	The items were observed to be rectified by the Contractor on 10 Apr 2013.
	10 Apr 2013	<ul style="list-style-type: none"> <li>Sand bundings should be provided to retain leaking effluent from the spoil storage tank in the works area in Portion W1A.</li> </ul>	The item was observed to be rectified by the Contractor on 18 Apr 2013.
	18 Apr 2013	<ul style="list-style-type: none"> <li>Public drainages were exposed to turbid water generated from construction in Portion W1A. The Contractor was reminded to implement measures to avoid untreated turbid water from flowing into the public drainage.</li> </ul>	The item was following-up on 25 Apr 2013.
		<ul style="list-style-type: none"> <li>Drainage in Oi Sen Path was blocked by sand and mud. The Contractor was reminded to clear the sand and mud to prevent drainage from being blocked.</li> </ul>	The item was observed to be rectified by the Contractor on 25 Apr 2013.
25 Apr 2013	<ul style="list-style-type: none"> <li>Public drainage near the entrance gate at Portion W1A was exposed to effluent. Moreover, silty water and debris were observed in the gullies in the works area. The Contractor should clear the gullies regularly and implement measures to prevent effluent from entering the public drainage.</li> <li>Leakage was observed in one of the sedimentation tanks at works area in Portion W1A. The Contractor was reminded to seal the sedimentation tank and clear the leaked effluent.</li> </ul>	The items were observed to be rectified by the Contractor on 2 May 2013.	
<b>Air Quality</b>	10 Apr 2013	<ul style="list-style-type: none"> <li>The Contractor should cover the excavation area entirely by impervious sheeting at works area in Homantin siding.</li> </ul>	The item was observed to be rectified by the Contractor on 18 Apr 2013.

Parameters	Date	Observations and Recommendations	Follow-up
	18 & 25 Apr 2013	<ul style="list-style-type: none"> <li>The Contractor was reminded to provide water spraying facilities in Oi Sen Path to prevent vehicles and site workers from bringing mud trials to public road.</li> </ul>	The item was follow-up on 2 May 2013.
<b>Noise</b>	N/A	N/A	N/A
<b>Waste/ Chemical Management</b>	5 Apr 2013	<ul style="list-style-type: none"> <li>Accumulated general refuses and C&amp;D wastes were observed at Link Bridge. The Contractor should implement on site properly and clear the refuse regularly.</li> </ul>	The item was observed to be rectified by the Contractor on 10 Apr 2013.
		<ul style="list-style-type: none"> <li>Oil stain was observed at Mong Kok Freight Terminal. The Contractor should clear the stain with absorbent and disposed of as chemical waste.</li> </ul>	The item was observed to be rectified by the Contractor on 18 Apr 2013.
	10 Apr 2013	<ul style="list-style-type: none"> <li>Oil spillage was observed from an excavator at works area in Homantin siding. The Contractor should clear the leaked oil and disposed of as chemical waste.</li> </ul>	The item was observed to be rectified by the Contractor on 18 Apr 2013.
	18 Apr 2013	<ul style="list-style-type: none"> <li>The contractor was reminded to block the holes of drip tray to prevent oil from leaking out at Mong Kok Freight Terminal.</li> <li>General waste was dumped into one of the recycling bins at Hung Hom Station. The Contractor was reminded to clear the general waste and dump the recycling materials only into the recycling bins.</li> </ul>	The item was observed to be rectified by the Contractor on 25 Apr 2013.
	25 Apr 2013	<ul style="list-style-type: none"> <li>The Contractor should clear the waste skip in Hung Hom Station and Mong Kok Freight Terminal regularly.</li> </ul>	The item was observed to be rectified by the Contractor on 2 May 2013.
<ul style="list-style-type: none"> <li>Oil stain was observed on ground near the drip tray in Hung Hom Station and Mong Kok Freight Terminal. The Contractor should clear the oil stain and dispose of as chemical waste.</li> </ul>		The item was follow-up on 2 May 2013.	
<b>Landscape &amp; Visual</b>	N/A	N/A	N/A
<b>Permits/ Licenses</b>	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 was received in the reporting month; hence, no Action Level exceedance was recorded.
- 7.1.2 One (1) Limit Level exceedance of regular construction noise was recorded at NM1 (Carmel Carmel Secondary School (South Block)) on 3 April 2013 during the reporting month. Investigation of exceedance had been conducted and any necessary remedial action has also been taken according to the Event and Action Plan for regular construction noise

According to information provided by the Contractor and on-site observations, housekeeping and site clearance were the major construction activity being undertaken at the nearest site works areas (Homantin Siding & Chatham Road) during the monitoring period. Similar construction activities and excavation works were conducted at the nearest site works areas (Homantin Siding & Chatham Road) on 27 March and 9 April 2013.

On 27 March and 9 April 2013 at the same monitoring station, the noise monitoring data recorded the noise level in Leq (30-min) were 68.0dB(A) and 69.7dB(A) respectively, which were below the Limit Level. Traffic noise was dominant during the noise monitoring.

The noise exceedance was therefore considered not to be due to the Project works. However, the Contractor will implement all relevant noise mitigation measures recommended or specified in the EIA, EM&A Manual, EMP, Method Statements, General and Particular Specifications of this Project to avoid exceedance of the Action/Limit Level or causing noise nuisance.

- 7.1.3 The exceedance investigation report is provided in **Appendix L**.
- 7.1.4 Cumulative statistics on exceedances is provided in **Appendix J**.

### **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 Next Month

8.1.1 The major construction works in May and June 2013 will be:-

#### Hung Hom Area

- Site preparation, site clearance, hoarding/ fencing erection, demolition of retaining wall.
- Excavation work, demolition, man hole and drainage construction, RC structure construction.
- Drain/sewage pipe construction, building footing/RC structure construction.
- Hoarding erection, cross track duct construction, ADMS installation, tree felling, existing track removal.
- Trial pit, pipe pile installation, TAM grout.
- Concreting, rebar fixing, formwork erection, lighting installation, bridge steel frame erection and cover walkway.

#### Mong Kok Freight Terminal

- Base slab demolition, base slab and building construction.

### 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 and waste management.

### 8.3 Monitoring Schedule for the Next Month

8.3.1 The tentative schedule for environmental monitoring in May 2013 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 was received in the reporting month. Hence, no Action Level exceedance was recorded.
- 9.1.4 One (1) Limit Level exceedance of regular construction noise was recorded at NM1 (Carmel Carmel Secondary School (South Block)) on 3 April 2013 during the reporting month. Investigation of exceedance had been conducted and concluded that the noise exceedance was not due to Project works.
- 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 April 2013. 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

- Properly avoid surface runoff into the drainage system.

### Chemical and Waste Management

- Avoid accumulation of waste materials on site.
- Provide proper chemical waste management.

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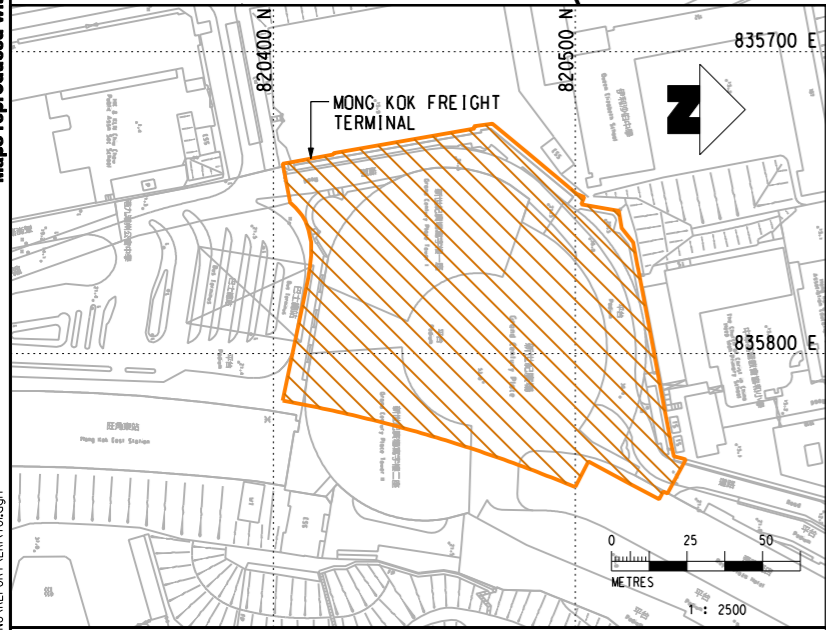
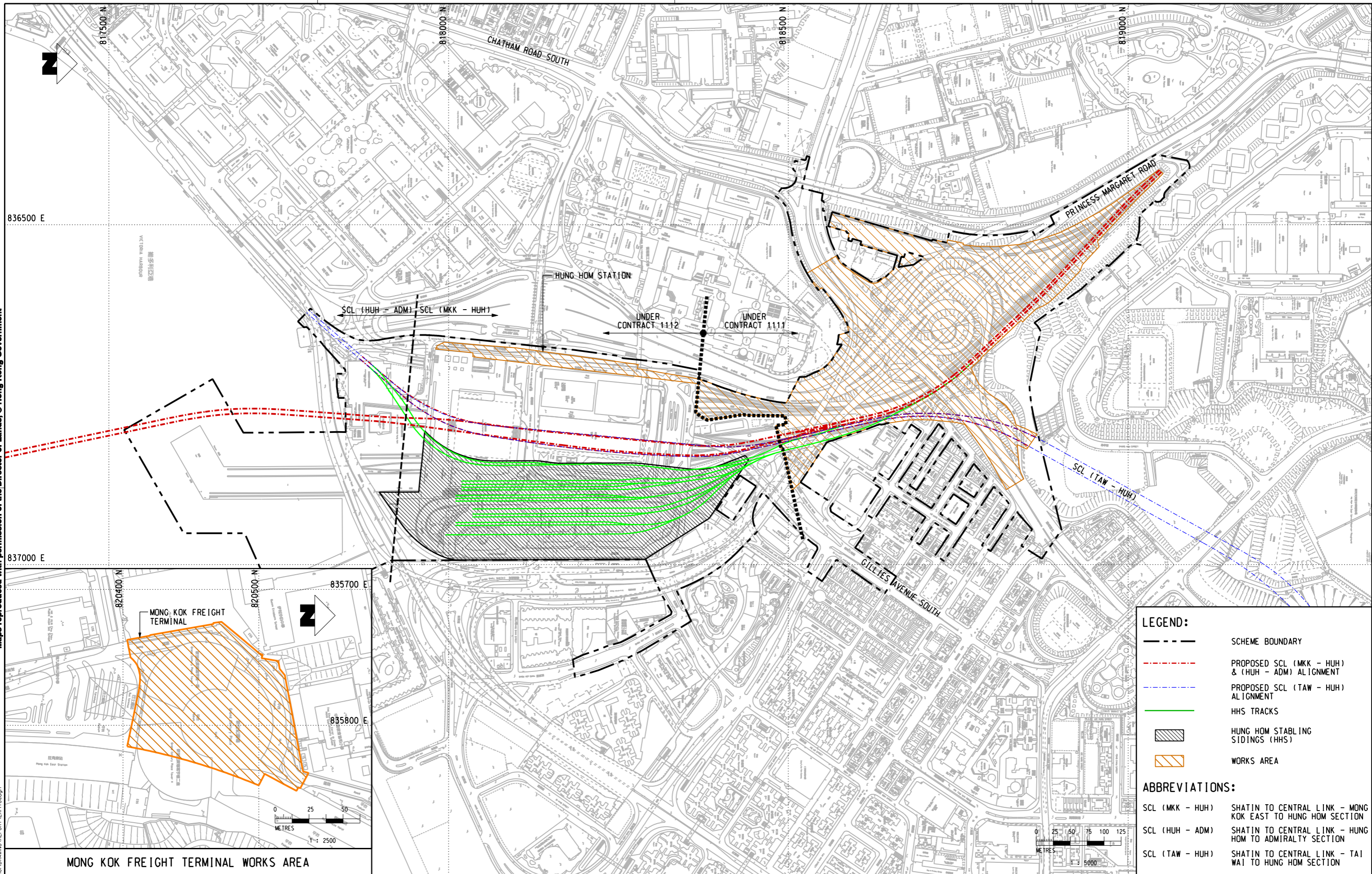
## FIGURES

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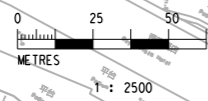


**LEGEND:**

- SCHEME BOUNDARY
- PROPOSED SCL (MKK - HUH) & (HUH - ADM) ALIGNMENT
- PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- HUNG HOM STABLING SIDINGS (HHS)
- WORKS AREA

**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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APPROVED	IMW
DATE	08/FEB/2013

**MTR**

SHATIN TO CENTRAL LINK

CONTRACTOR: **Gammon Kaden** (Joint Venture)

ORIGINATOR: **AECOM**

CADD REF: 701.dgn

TITLE: **CONTRACT 1111 HUNG HOM NORTH APPROACH TUNNELS WORKS AREAS OF THE PROJECT**

SCALE: A3 AS SHOWN

FIGURE NO.: **FIGURE 1.1**

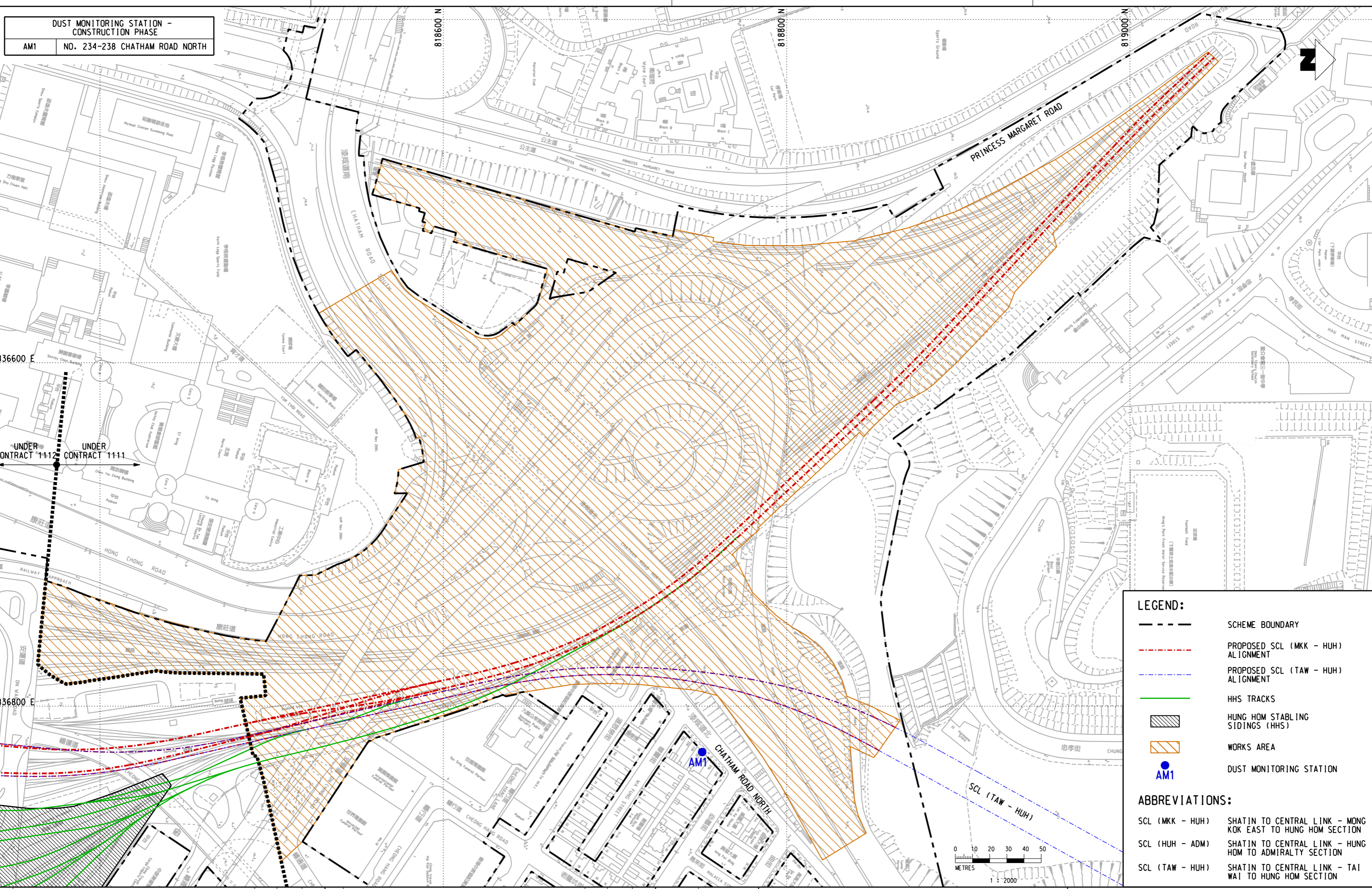
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DUST MONITORING STATION - CONSTRUCTION PHASE  
 AM1 NO. 234-238 CHATHAM ROAD NORTH

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**LEGEND:**

- SCHEME BOUNDARY
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- - - PROPOSED SCL (Taw - Huh) ALIGNMENT
- HHS TRACKS
- [Hatched Box] HUNG HOM STABILING SIDINGS (HHS)
- [Orange Hatched Box] 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

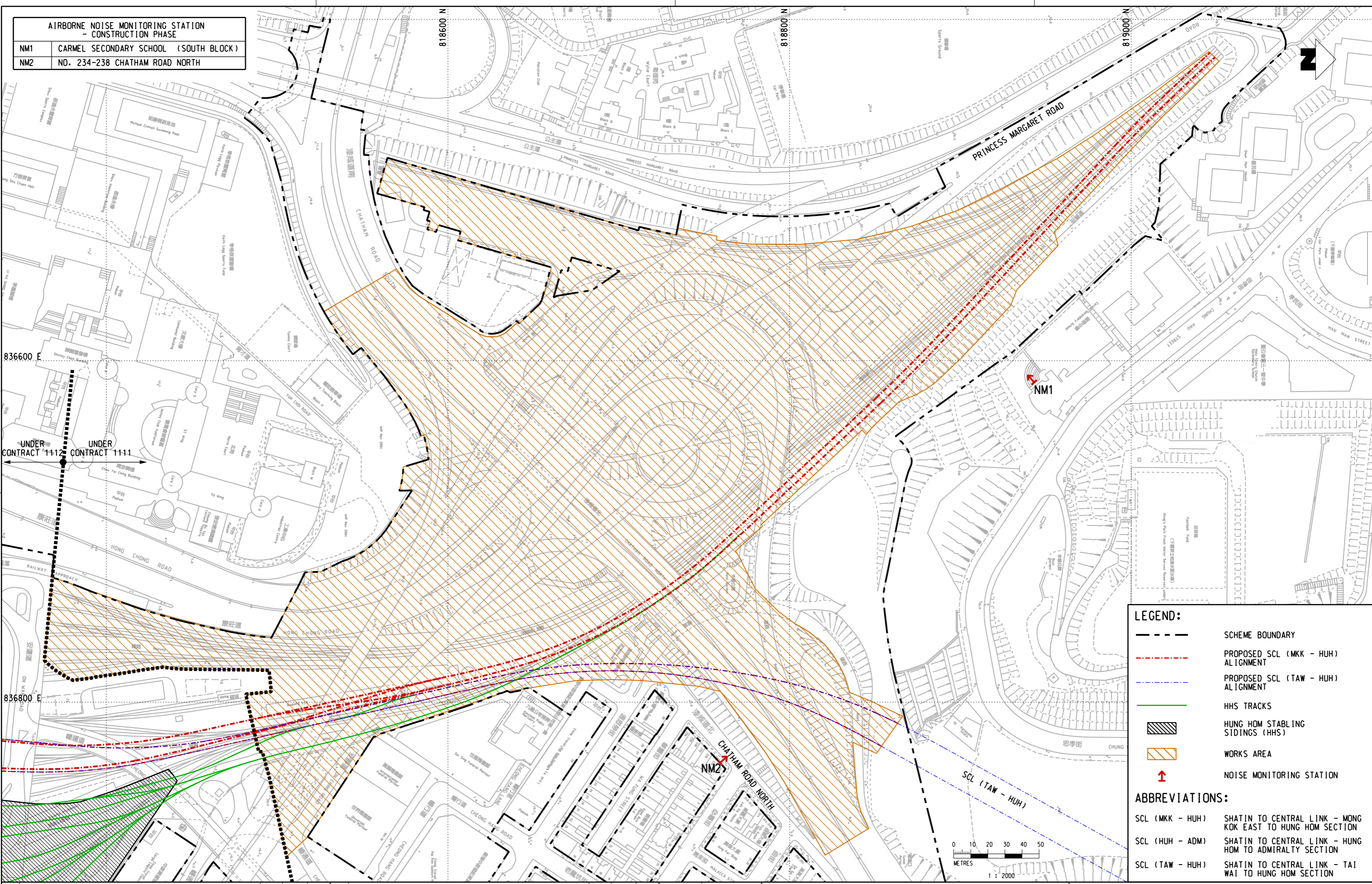
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AIRBORNE NOISE MONITORING STATION - CONSTRUCTION PHASE	
NM1	CARMEL SECONDARY SCHOOL (SOUTH BLOCK)
NM2	NO. 234-238 CHATHAM ROAD NORTH

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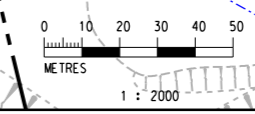


**LEGEND:**

- SCHEME BOUNDARY
- PROPOSED SCL (MKK - HUH) ALIGNMENT
- PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- HUNG HOM STABILING 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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DATE	08/JAN/2013

**MTR**

**SHATIN TO CENTRAL LINK**

CONTRACTOR: **Gammon Kaden**  
 Gammon - Kaden SCL 1111 Joint Venture

ORIGINATOR: **AECOM**

CADD REF. **Figure 3.1.dgn**

**CONTRACT 1111**  
**HUNG HOM NORTH APPROACH TUNNELS**  
**LOCATION OF NOISE MONITORING STATION (CONSTRUCTION PHASE)**

SCALE: 1 : 2000 (A3)    FIGURE NO. **FIGURE 3.1**




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**APPENDIX A**

**Construction Programme**

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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
<b>REPROVISIONING WORKS</b>																																																																			
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																																																																	
<b>NSL/EWL TUNNEL</b>																																																																			
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																																																																	
<b>NSL TUNNEL</b>																																																																			
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																																																																	
<b>EWL TUNNEL</b>																																																																			
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			

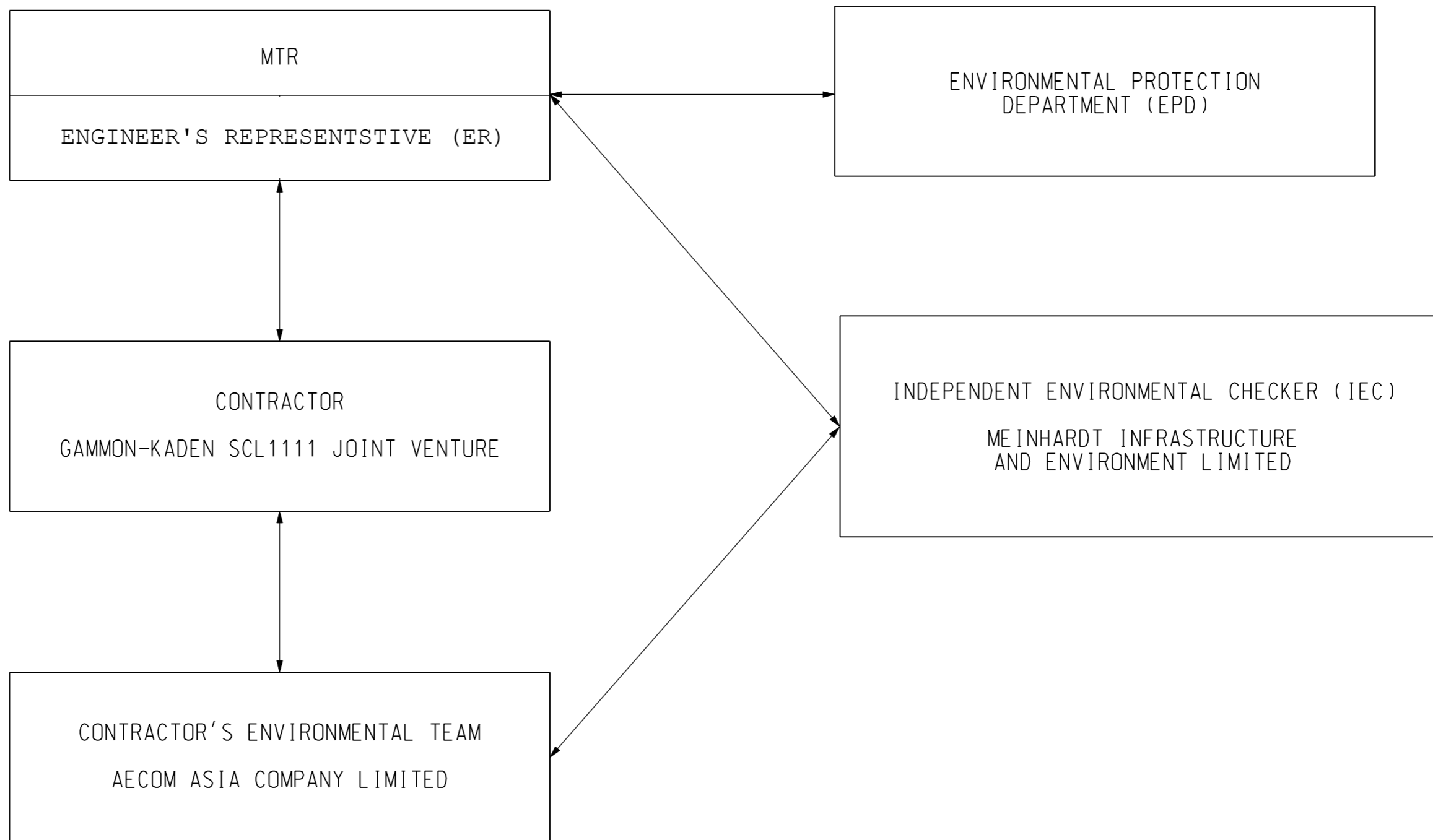
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**APPENDIX B**

**Project Organization Structure**

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APPROVED		IMW								
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						<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>		SCALE N.T.S.		
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**APPENDIX C**

**Implementation Schedule of Environmental Mitigation  
Measures**

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### Appendix C - Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	Environmental Mitigation Measures		Location	Implementation Status
<b>Landscape and Visual Impact</b>				
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

<b>Construction Noise Impact</b>				
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"> <li>• Asphalt Paver (SWL=101dB(A))</li> <li>• Backhoe (SWL=106dB(A))</li> <li>• Backhoe with Hydraulic Breaker (SWL=110dB(A))</li> <li>• Concrete lorry mixer (SWL=96dB(A))</li> <li>• Concrete mixer truck (SWL=96dB(A))</li> <li>• Concrete Pump (SWL=106dB(A))</li> </ul>	Works areas where required	N/A

		<ul style="list-style-type: none"> <li>• Concrete Pump Truck (SWL=106dB(A))</li> <li>• Crane, mobile (SWL=94dB(A))</li> <li>• Crawler Crane (SWL=102dB(A))</li> <li>• Drill, hand-held (SWL=98dB(A))</li> <li>• Dump truck (SWL=104dB(A))</li> <li>• Excavator (SWL=106dB(A))</li> <li>• Flat Bed Lorry (SWL=102dB(A))</li> <li>• Generator (SWL=95dB(A))</li> <li>• Giken Piler and Power-pack (SWL=94dB(A))</li> <li>• Hydraulic breaker (SWL=110dB(A))</li> <li>• Hydraulic excavator (SWL=106dB(A))</li> <li>• Lorry (SWL=102dB(A))</li> <li>• Lorry with crane/ grab (SWL=94dB(A))</li> <li>• Mini Piling Rig (SWL=112dB(A))</li> <li>• Piling Rig (SWL=112dB(A))</li> <li>• Poker, vibrator, hand-held (SWL=98dB(A))</li> <li>• Road Roller (SWL=101dB(A))</li> <li>• Rock Drill (SWL = 108dB(A))</li> <li>• Roller (SWL = 101dB(A))</li> <li>• Truck (SWL=103dB(A))</li> <li>• Vibratory Hammer (SWL=118dB(A))</li> </ul>		
		<p>Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs.</p>	<p>All construction sites</p>	<p>V</p>

		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
<b>Construction Air Quality Impact</b>				
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	N/A
		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	@
		Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads	All construction sites	N/A
		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	@

	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	N/A
	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
	Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet.	All construction sites	N/A
	Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building.	All construction sites	V
	Any skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	N/A
	Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.	All construction sites	N/A

	Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	All construction sites	N/A
	Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.	All construction sites	N/A
	Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	All construction sites	N/A
	Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site.	All construction sites	N/A
	Imposition of speed controls for vehicles on site haul roads.	All construction sites	N/A

<b>Construction Water Quality Impact</b>				
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	@
		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	@
		Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried	All construction sites	N/A



		out immediately after the final surfaces are formed to prevent erosion caused by rainstorms.		
		Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	All construction sites	V
		Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities	All construction sites	V
		Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All construction sites	V
		Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area.	All construction sites	V
		All vehicles and plant should be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads.	All construction sites	@
		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	All construction sites	V

		either be dewatered or mixed with inert fill material for disposal to a public filling area.		
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	A cofferdam wall should be built as necessary to limit groundwater inflow to the excavation works areas.	Excavation works areas	N/A
	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

<b>Waste Management</b>				
S11.5.1(TAW-H UH), 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	@
		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	@
		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
	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.	All construction sites	N/A

<b>Contaminated Land</b>				
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

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**APPENDIX D**

**Summary of Action and Limit Levels**

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**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) <sup>(1)</sup>
NM2	No. 234 – 238 Chatham Road North		75 dB(A)

Note:

(1) Daytime noise Limit Level of 70 dB(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)	69 dB(A) <sup>(1)</sup>
NM2	No. 234-238 Chatham Road North	77 dB(A)

Note:

(1) Action/Limit level will only be applicable during the examination period.



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**APPENDIX E**

**Calibration Certificates of Equipments**

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# 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: 15-Mar-13 Next Due Date: 15-May-13  
 Equipment No.: --- Serial No. 894-0835

Ambient Condition			
Temperature, Ta (K)	295	Pressure, Pa (mmHg)	764.7

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	1.99238	Intercept, bc	-0.00351
Last Calibration Date:	6-Dec-12	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	6-Dec-13	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (m <sup>3</sup> /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	8.8	2.99	1.50	48.0	48.39
13	7.2	2.71	1.36	44.0	44.36
10	6.0	2.47	1.24	38.0	38.31
7	4.3	2.09	1.05	30.0	30.25
5	3.2	1.80	0.91	24.0	24.20

By Linear Regression of Y on X

Slope, mw = 41.6955 Intercept, bw = -13.4477

Correlation Coefficient\* = 0.9950

\*If Correlation Coefficient < 0.990, check and recalibrate.

#### Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m<sup>3</sup>/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)]<sup>1/2</sup> = 40.43

Remarks: \_\_\_\_\_

QC Reviewer: Yu Fay

Signature: [Signature]

Date: 15-Mar-13



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
 VILLAGE OF CLEVELS, OH 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX  
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 15, 2012 Rootsometer S/N 0438320 Ta (K) - 295  
 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	1.3860	3.2	2.00
2	NA	NA	1.00	0.9700	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8290	8.8	5.50
5	NA	NA	1.00	0.6840	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9951	0.7179	1.4137	0.9957	0.7184	0.8859
0.9908	1.0215	1.9993	0.9915	1.0222	1.2528
0.9887	1.1378	2.2353	0.9894	1.1385	1.4007
0.9876	1.1913	2.3444	0.9883	1.1921	1.4690
0.9824	1.4363	2.8275	0.9831	1.4372	1.7717
Qstd slope (m) = 1.97048			Qa slope (m) = 1.23388		
intercept (b) = -0.00546			intercept (b) = -0.00342		
coefficient (r) = 0.99991			coefficient (r) = 0.99991		
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}



## CERTIFICATE OF CALIBRATION

Certificate No.: 12CA1115 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.:	2255688 / N.009.05	,	2141430
Adaptors used:	-	,	-

### Item submitted by

Customer Name: AECOM ASIA CO., LTD.  
Address of Customer: -  
Request No.: -  
Date of receipt: 15-Nov-2012

Date of test: 16-Nov-2012

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2013	CIGISMEC
Signal generator	DS 360	33873	29-May-2013	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI

### Ambient conditions

Temperature: 22 ± 1 °C  
Relative humidity: 60 ± 10 %  
Air pressure: 1000 ± 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 responsiveness of the Sound Level Meter.

### Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 17-Nov-2012

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

Certificate No.: 12CA1008 02 Page 1 of 2

### Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone	Preamp
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A	NH-19
Serial/Equipment No.:	00320528 / N 007.03A	,	90565	75883
Adaptors used:	-	,	-	-

### Item submitted by

Customer Name: AECOM ASIA CO., LTD.  
Address of Customer: -  
Request No.: -  
Date of receipt: 08-Oct-2012

Date of test: 08-Oct-2012

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2013	CIGISMEC
Signal generator	DS 360	33873	29-May-2013	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI

### Ambient conditions

Temperature: (22 ± 1) °C  
Relative humidity: (60 ± 10) %  
Air pressure: (1000 ± 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: 08-Oct-2012

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

Certificate No.: 12CA0817 01

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: 17-Aug-2012

Date of test: 17-Aug-2012

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	29-May-2013	SCL
Preamplifier	B&K 2673	2239857	05-Jan-2013	CEPREI
Measuring amplifier	B&K 2610	2346941	29-Dec-2012	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI
Digital multi-meter	34401A	US36087050	16-Dec-2012	CEPREI
Audio analyzer	8903B	GB41300350	29-May-2013	CEPREI
Universal counter	53132A	MY40003662	29-May-2013	CEPREI

### Ambient conditions

Temperature:  $22 \pm 1$  °C  
Relative humidity:  $60 \pm 10$  %  
Air pressure:  $995 \pm 5$  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

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 17-Aug-2012

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.

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**APPENDIX F**

**EM&A Monitoring Schedules**

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**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels  
Impact Monitoring Schedule for April 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Apr	02-Apr	03-Apr	04-Apr	05-Apr	06-Apr
		24-hour TSP (AM1)	Noise (NM1, NM2)			
07-Apr	08-Apr	09-Apr	10-Apr	11-Apr	12-Apr	13-Apr
	24-hour TSP (AM1)	Noise (NM1, NM2)				24-hour TSP (AM1)
14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr
	Noise (NM1, NM2)				24-hour TSP (AM1)	
21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr
				24-hour TSP (AM1)	Noise (NM1, NM2)	
28-Apr	29-Apr	30-Apr				
		24-hour TSP (AM1)				



**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels  
Tentative Impact Monitoring Schedule for May 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-May	02-May	03-May	04-May
				Noise (NM1, NM2)		
05-May	06-May	07-May	08-May	09-May	10-May	11-May
	24-hour TSP (AM1)	Noise (NM1, NM2)				24-hour TSP (AM1)
12-May	13-May	14-May	15-May	16-May	17-May	18-May
	Noise (NM1, NM2)			24-hour TSP (AM1)		
19-May	20-May	21-May	22-May	23-May	24-May	25-May
			24-hour TSP (AM1)	Noise (NM1, NM2)		
26-May	27-May	28-May	29-May	30-May	31-May	
		24-hour TSP (AM1)	Noise (NM1, NM2)			

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

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**APPENDIX G**

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

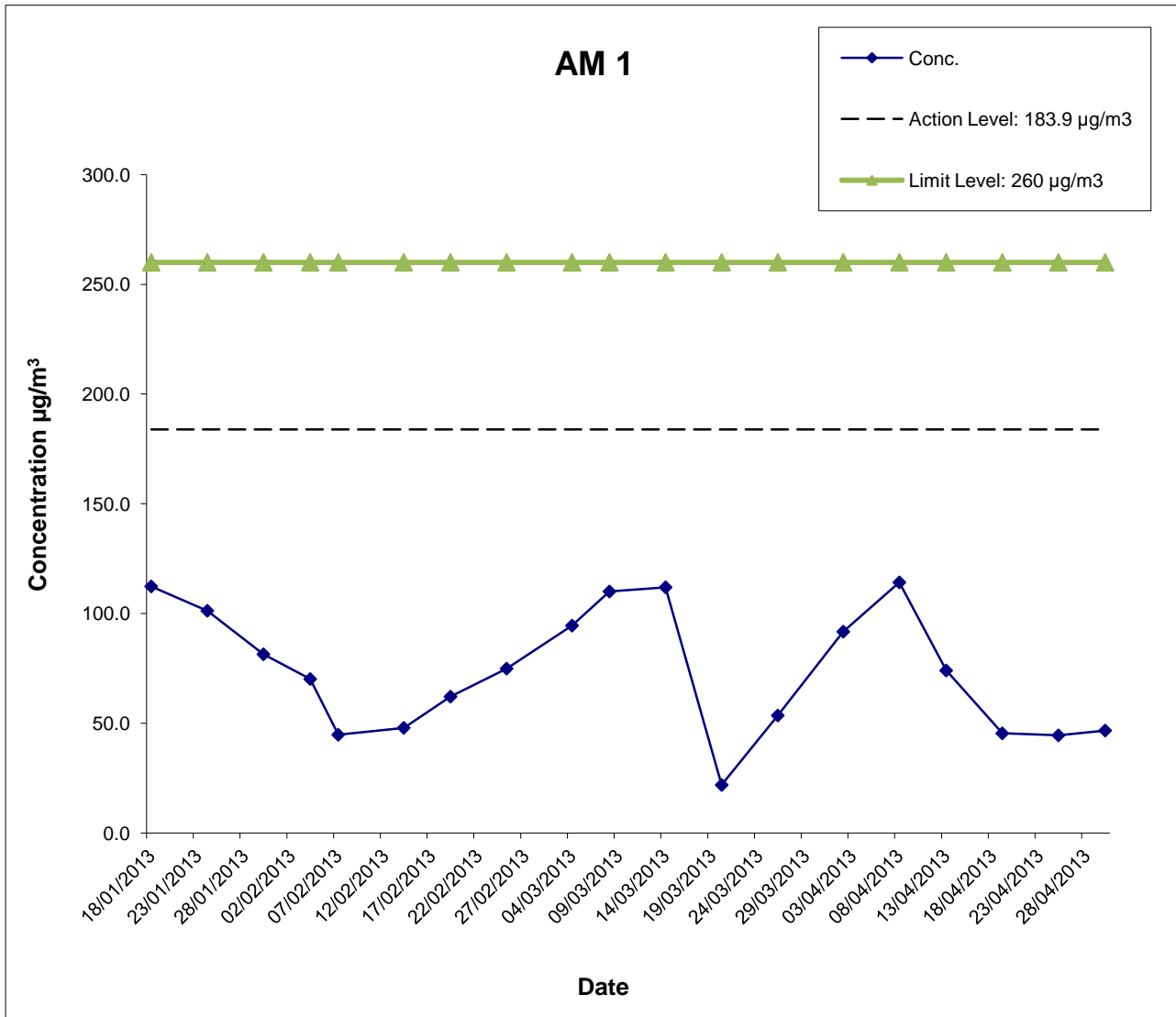
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**Appendix G**  
**Air Quality Monitoring Results**

**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 <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
Date	Time	Date	Time				Initial	Final			Initial	Final		Initial	Final		
02-Apr-13	9:00	03-Apr-13	9:00	Rainy	21.1	1014.0	1.30	1.30	1.30	1877.8	2.7813	2.9535	0.1722	12409.87	12433.87	24.00	91.7
08-Apr-13	0:00	09-Apr-13	0:00	Cloudy	18.8	1013.0	1.30	1.30	1.30	1877.8	2.7645	2.9789	0.2144	12433.87	12457.87	24.00	114.2
13-Apr-13	0:00	14-Apr-13	0:00	Sunny	19.9	1017.0	1.30	1.30	1.30	1877.8	2.7468	2.8858	0.1390	12457.87	12481.87	24.00	74.0
19-Apr-13	0:00	20-Apr-13	0:00	Rainy	25.2	1009.0	1.30	1.30	1.30	1877.8	2.7463	2.8315	0.0852	12481.87	12505.87	24.00	45.4
25-Apr-13	0:00	26-Apr-13	0:00	Rainy	26.0	1011.1	1.30	1.30	1.30	1877.8	2.7518	2.8353	0.0835	12481.87	12505.87	24.00	44.5
30-Apr-13	0:00	01-May-13	0:00	Cloudy	24.4	1009.0	1.30	1.30	1.30	1877.8	2.7628	2.8504	0.0876	12505.87	12529.87	24.00	46.7
<b>Average</b>																<b>69.4</b>	
<b>Minimum</b>																<b>44.5</b>	
<b>Maximum</b>																<b>114.2</b>	

# Appendix G Air Quality Monitoring Results



	<b>Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels</b>	SCALE	N.T.S.	DATE	May-13
		CHECK	TYUT	DRAWN	IYYS
	<b>Graphical Presentations of Impact 24-hour TSP Monitoring Results</b>	JOB NO.	60284101	APPENDIX No. G	Rev. -

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**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) <sup>+</sup>				Baseline Corrected Level, dB(A)	Baseline Noise Level, dB(A)	Limit Level <sup>***</sup> , dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
03-Apr-13	Cloudy	10:03	69.5	74.5	72.9	<b>71.2<sup>^</sup></b>	68.0	70	<b>Y</b>
09-Apr-13	Cloudy	10:15	68.0	71.3	69.7	64.8 <sup>#</sup>	68.0	65	N
15-Apr-13	Sunny	10:30	67.2	70.7	69.2	63.0 <sup>#</sup>	68.0	65	N
26-Apr-13	Rainy	9:45	67.2	69.8	69.3	63.4 <sup>#</sup>	68.0	65	N
		<b>Min</b>	<b>67.2</b>	<b>69.8</b>		<b>63.0</b>			
		<b>Max</b>	<b>69.5</b>	<b>74.5</b>		<b>71.2</b>			

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

Date	Weather Condition	Noise Level for 30-min, dB(A) <sup>++</sup>				Baseline Corrected Level, dB(A)	Baseline Noise Level, dB(A)	Limit Level <sup>***</sup> , dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
03-Apr-13	Cloudy	16:15	76.2	81.2	79.0	79.0 <sup>#</sup>	79.0	75	N
09-Apr-13	Cloudy	10:52	74.3	77.8	76.1	76.1 <sup>#</sup>	79.0	75	N
15-Apr-13	Sunny	10:47	71.8	78.5	75.9	75.9 <sup>#</sup>	79.0	75	N
26-Apr-13	Rainy	10:40	66.2	70.8	68.6	68.6	79.0	75	N
		<b>Min</b>	<b>66.2</b>	<b>70.8</b>		<b>68.6</b>			
		<b>Max</b>	<b>76.2</b>	<b>81.2</b>		<b>79.0</b>			

<sup>+</sup> - Façade measurement

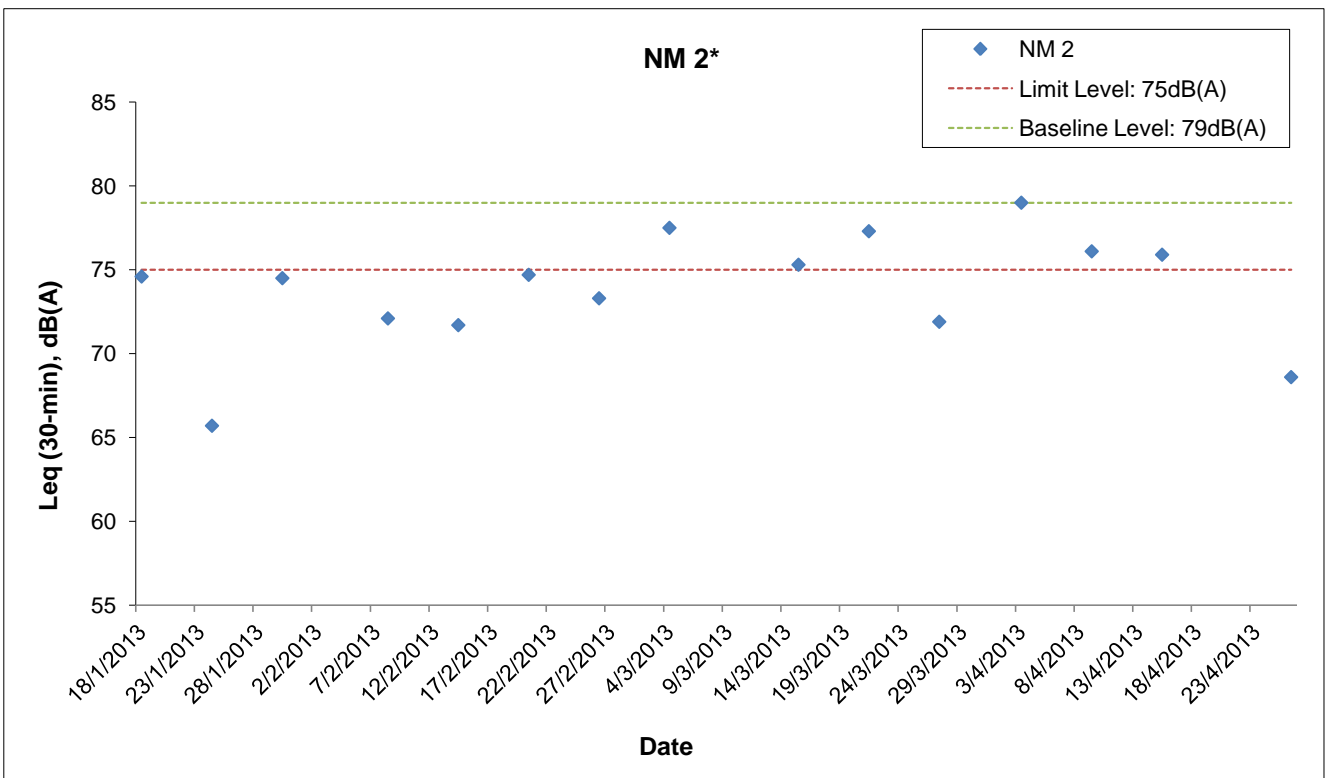
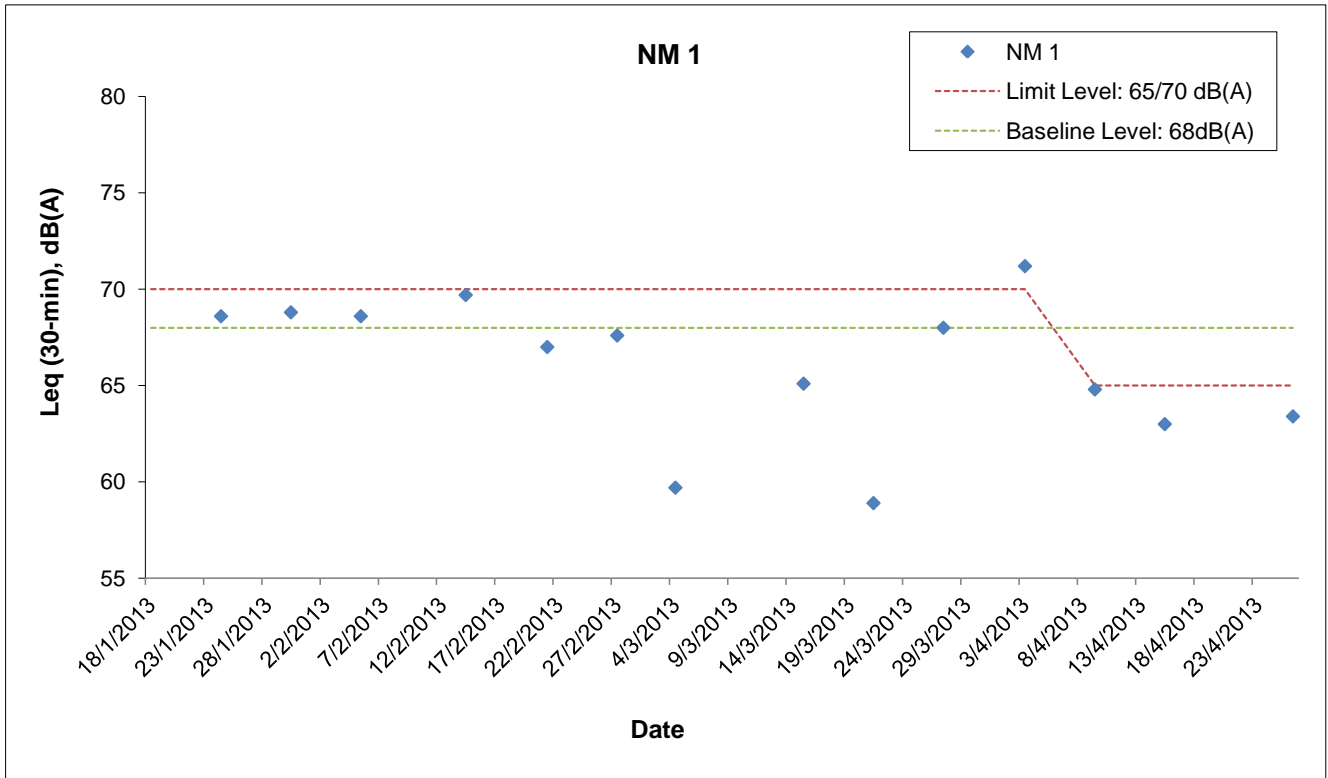
<sup>++</sup> - Free field measurement

<sup>\*\*\*</sup> - Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period. The construction noise monitoring were conducted during school examination period from 8 to 30 April 2013.


<sup>#</sup> - 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.

<sup>^</sup> - Exceedance of limit level was recorded on 3 April 2013.

# 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.

	<b>Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels</b>	SCALE	N.T.S.	DATE	May-13
	<b>Graphical Presentations of Noise Monitoring Results</b>	CHECK	TYUT	DRAWN	IYYS
		JOB NO.	60284101	APPENDIX	H

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**APPENDIX I**

**Event Action Plan**

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**Appendix I – Event and Action Plan**

Event / Action Plan for Construction Dust

EVENT	ACTION			
	ET	IEC	ER	Contractor
<b>ACTION LEVEL</b>				
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
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	1. Inform the Contractor, IEC, EPD and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	1. Notify Contractor, IEC, EPD and ER ; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Regular Construction Noise

EVENT	ACTION			
	ET	IEC	ER	Contractor
Exceedance of Action Level	1. Notify the Contractor, IEC and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; and 3. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the contractor; and 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of complaint in writing; 2. Review and agree on the remedial measures proposed by the Contractor; and 3. Supervise implementation of remedial measures.	1. Investigate the complaint and propose remedial measures; 2. Report the results of investigation to the IEC, ET and ER; 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification; and 4. Implement noise mitigation proposals.

EVENT	ACTION			
	ET	IEC	ER	Contractor
Exceedance of Limit Level	1. Notify the Contractor, IEC, EPD and ER ; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Review the effectiveness of Contractor's remedial measures and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures; and 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of failure in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; and 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Continuous Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<p><b>Action/Limit Level</b></p>	<p>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.</p>	<p>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.</p>	<p>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.</p>	<p>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.</p>

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**APPENDIX J**

**Cumulative Statistics of Exceedances, Complaints,  
Notification of Summons and Successful Prosecutions**

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**Appendix J**

**Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions**

**Cumulative statistics on Exceedances**

		Total no. recorded in this month	Total no. recorded since project commencement
<b>24-Hour TSP</b>	Action	-	-
	Limit	-	-
<b>Noise</b>	Action	-	-
	Limit	1	1

**Cumulative statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions**

	Date Received	Subject	Status	Total no. received in this month	Total no. received since project commencement
<b>Environmental complaints</b>	-	-	-	0	0
<b>Notification of summons</b>	-	-	-	0	0
<b>Successful Prosecutions</b>	-	-	-	0	0

---

**APPENDIX K**

**Waste Flow Table**

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**Appendix K Monthly Summary Waste Flow Table**

Month	Actual Quantities of Inert C&D Materials Generated Monthly										Actual Quantities of non-inert C&D Materials (i.e. C&D Wastes) Generated Monthly				
	Generated				Disposed						Recycled			Disposed	
	Fill Material	Artificial Material		Total Quantity Generated	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	Total Quantity Disposal	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	General Refuse (Note 2)
	Soil and Rock	Broken Concrete	Asphalt												
Unit	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000m <sup>3</sup> )	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)
Jan	0.043	0.000	0.021	0.065	0.000	0.000	0.000	0.065	0.000	0.065	0.000	0.000	0.000	0.000	17.110
Feb	0.172	0.004	0.019	0.195	0.026	0.000	0.000	0.165	0.004	0.195	0.000	0.000	0.000	0.000	29.440
Mar	0.280	0.010	0.094	0.384	0.000	0.000	0.001	0.347	0.036	0.384	0.000	0.000	0.000	0.000	112.240
Apr	0.632	0.032	0.045	0.708	0.000	0.000	0.000	0.651	0.057	0.708	0.000	0.000	0.000	0.000	103.680
May															
Jun															
<b>SUB-TOTAL</b>	<b>1.127</b>	<b>0.045</b>	<b>0.179</b>	<b>1.352</b>	<b>0.026</b>	<b>0.000</b>	<b>0.001</b>	<b>1.228</b>	<b>0.097</b>	<b>1.352</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>262.470</b>
Jul															
Aug															
Sep															
Oct															
Nov															
Dec															
<b>TOTAL</b>	<b>1.127</b>	<b>0.045</b>	<b>0.179</b>	<b>1.352</b>	<b>0.026</b>	<b>0.000</b>	<b>0.001</b>	<b>1.228</b>	<b>0.097</b>	<b>1.352</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>262.470</b>

Note:

1. Assume the density of fill is 2 ton/m<sup>3</sup>.
2. Refuses disposed of at NENT landfill.

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**APPENDIX L**

**Noise Exceedance Investigation Report**

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**INVESTIGATION REPORT ON LIMIT LEVEL NON-COMPLIANCE**

**REF. NO.: N001**

<b>Monitoring Date</b>	3 April 2013
<b>Monitoring Time</b>	3 April 2013 10:30 –3 April 2013 11:00
<b>Monitoring Location</b>	NM1: Carmel Secondary School (South Block)
<b>Parameter</b>	Leq <sub>(30-min)</sub>
<b>Action &amp; Limit Levels (Leq<sub>(30-min)</sub>, dB(A))</b>	Action level: When one documented complaint is received Limit level: 70
<b>Measured Level (Leq<sub>(30-min)</sub>, dB(A))</b>	72.9
<b>Baseline-corrected Level (Leq<sub>(30-min)</sub>, dB(A))</b>	71.2
<b>Possible reason for Action Level Non-compliance</b>	<ul style="list-style-type: none"> <li>• According to information provided by the Contractor and on-site observations, housekeeping and site clearance were the major construction activity being undertaken at the nearest site works areas (Homantin Sidling &amp; Chatham Road) during the monitoring period.</li> <li>• Similar construction activities and excavation works were conducted at the nearest site works areas (Homantin Sidling &amp; Chatham Road) on 27 March and 9 April 2013.</li> <li>• According to the noise monitoring data recorded on 27 March and 9 April 2013 at the same monitoring station, the measured noise level in Leq (30-min) were 68.0dB(A) and 69.7dB(A) respectively, which were below the Limit Level.</li> <li>• Traffic noise was dominant during the noise monitoring.</li> <li>• The noise exceedance was therefore considered not to be due to the Project works.</li> </ul>
<b>Actions taken / to be taken</b>	The Contractor was recommended to continue implementing existing noise mitigation measures.
<b>Remarks</b>	Nil

**Environmental Team Leader**

**Signature:**



**Date:**

10/4/2013

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**Appendix E**

**3<sup>rd</sup> EM&A Report for Works Contract 1103 –  
Hin Keng to Diamond Hill**

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MTR Corporation Limited


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

Monthly EM&A Report No. 3

[Period from 1 to 30 April 2013]

Works Contract 1103 – Hin Keng to Diamond Hill Tunnels

(May 2013)

Certified by: \_\_\_\_\_ Coleman Ng 

Position: Environmental Team Leader

Date: 13 May 2013

MTR Corporation Limited

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

Monthly Environmental Monitoring  
and Audit Report – April 2013

228105-27

May 2013

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 228105-27

**Ove Arup & Partners Hong Kong Ltd**  
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**ARUP**



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Appendix J: Monthly Waste Flow Table

Appendix K: Environmental Monitoring Programme for Coming Month

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## Executive Summary

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This is the third monthly Environmental Monitoring and Audit (EM&A) report prepared by Ove Arup & Partners Hong Kong Limited (Arup), the designated Environmental Team (ET), for the Project “SCL1103 Hin Keng to Diamond Hill Tunnels”. Construction works of this works contract commenced on 14 February 2013 and this report presents the results of EM&A works conducted in the month of April 2013 (1 to 30 April 2013).

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

- Diaphragm Wall Construction and Site Office Erection Diamond Hill;
- Pipe Piling, Site Office Erection and Ground Investigation at Hin Keng;
- Ground Investigation and Utilities Detection and Diversion at Fung Tak; and
- Platform Construction, Tree Transplant and Removal, Ground Investigation and Site Formation 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***

All measured noise levels in the reporting month were below the Action and Limit Levels. No non-compliance was recorded.

Continuous noise monitoring was carried out at NMS-CA-1 during the reporting month in accordance with the program in Construction Noise Monitoring Plan (CNMP). No Exceedances of the Action/Limit Level 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 3792m<sup>3</sup> were generated and disposed of at public fill in TKO137FB and Kai Tak Barging Point Facility

(Contract 1108A). 43m<sup>3</sup> of general refuse were generated and disposed of at NENT landfill in the reporting month.

### **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 April 2013 and the final, an IEC joint site audit, was undertaken on 25 April 2013. No non-conformance to the environmental requirements was identified during the reporting period.

### **Complaint Log**

No complaint in relation to the environmental issues was made against the Project in the reporting period.

### **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 in the reporting month.

### **Future Key Issues**

Construction noise is one of the key environmental issues. 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 another key environmental issue. The implemented construction dust mitigation measures should also be improved and maintained as necessary. Furthermore, water quality impact is also a key environmental issue. As the rainy season approaches, special attention should be paid to avoid any muddy surface runoff from exposed soil surfaces during rainy days.

# 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	Diaphragm Wall Construction and Site Office Erection.
Hin Keng	Pipe Piling, Site Office Erection and Ground Investigation.
Fung Tak	Ground Investigation and Utilities Detection and Diversion.
Ma Chai Hang	Platform Construction, Tree Transplant and Removal, Ground Investigation and Site Formation.

## 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
<b>Project Proponent: MTRC</b>		
Engineer's Representative	Thomas Barrett	2163 6181
SCL Project-wide Environmental Team Leader	Richard Kwan	2688 1283
<b>Independent Environmental Checker: Meinhardt Infrastructure &amp; Environment Ltd.</b>		
Independent Environmental Checker	Tom Chapman	2858 0738
Deputy Independent Environmental Checker	Fredrick Leong	2859 1739
<b>Contractor: VINCI Constructions Grand Projects</b>		
Project Director	Francois Dudouit	3765 5610

Organisation	Name	Telephone
IMS Manager	L K Mak	3765 5635
<b>Contractor's Environmental Team: Ove Arup &amp; Partners Hong Kong Ltd.</b> 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
<b>Air Quality</b>	
DMS-1	C.U.H.K.A.A. Thomas Cheung School
DMS-2	Price Memorial Catholic Primary School
DMS-3	Hong Kong Sheng Kung Hui Nursing Home <sup>(Note 1)</sup>
<b>Noise</b>	
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School
NMS-CA-2	Price Memorial Catholic Primary School
NMS-CA-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.

## 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 contractor 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-438/2013/C	All	30 April 2013	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 April 2018
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation	351345	All	24 Oct 2012	15 April 2018
Construction Noise Permit	GW-RE0118-13	Diamond Hill	14 Feb 2013	13 Aug 2013
	GW-RE0130-13	Diamond Hill	14 Feb 2013	28 Mar 2013
	GW-RE0145-13	Diamond Hill	20 Feb 2013	10 Aug 2013
	GW-RE0411-13	Diamond Hill	3 May 2013	16 May 2013
	GW-RE0295-13	Ma Chai Hang	28 Mar 2013	30 April 2013
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 March 2013	Throughout the Contract
Billing Account for Disposal of Construction Waste	7016250	All	6 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 third monthly EM&A report summarising the monitoring methodology, locations, periods, frequencies, results and any observation from the air quality, noise, ecology, waste management, landscape and visual monitoring and environmental site audit from 1 to 30 April 2013.

## 2 Implementation Status

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### 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**.

## 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	Hong Kong Sheng Kung Hui Nursing Home <sup>(Note 1)</sup>

Note:

Note 1: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On House.

#### Wind Monitoring

Wind monitoring data including wind speed and wind directions shall be collected from Hong Kong Observatory – Kai Tak Meteorological Station 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
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
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	GMW-2535		2421

### 3.2.2 Maintenance and Calibration

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

Specifications of the HVS are as follows:

- 0.6 – 1.7  $\text{m}^3/\text{min}$  (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 cm<sup>2</sup> (63in<sup>2</sup>);
- 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

No adverse weather conditions were recorded during the monitoring dates.

#### 3.3.2 Air Quality Monitoring Results

Monitoring of 24-hour TSP was conducted on 3, 9, 13, 19, 25 and 30 April 2013. 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	64.3	48.3	148.7	260
DMS-2	65.4	69.1	167.4	260
DMS-3	49.0	111.4	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.

#### 3.3.3 General Observations

Major construction works including site formation, ground investigation, site office erection, diaphragm wall construction, pipe piling, tree transplant and removal and utilities detection, and diversion. No abnormal condition was recorded during the monitoring period.

## 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 <sup>(Note 1)</sup>
NMS-CA-2	Price Memorial Catholic Primary School
NMS-CA-3	Hong Kong Sheng Kung Hui Nursing Home <sup>(Note 2)</sup>

Notes:

Note 1: Continuous Noise Monitoring Location.

Note 2: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On house.

##### 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 <sup>(Note 1)</sup>	Time Period <sup>(note 3)</sup>	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 <sup>(Note 2)</sup>
NMS-CA-3			75

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

### 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 continuous basis for the entire month of April. The monitoring time periods, monitoring parameters and frequency are summarised in **Table 4.4**.

**Table 4.4** Construction Noise Monitoring Parameters and Frequency

Time Period (when construction activity is found)	Parameters	Monitoring Frequency
Between 0700-1900 hours Monday to Saturday (excluding public holidays)	$L_{eq(30 \text{ min})}$	Continuous

### Monitoring Location

In accordance with the CNMP, continuous noise monitoring will be undertaken at one location, namely:

**Table 4.5** Continuous Noise Monitoring Locations

ID	Premise
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School

### 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 4.6**.



**Table 4.6** Action and Limit Levels of Construction Noise

Location <sup>(Note 1)</sup>	Time Period	Action Level	Limit Level dB(A)
NMS-CA-1	0700 - 1900 hours on normal weekdays	When one documented complaint is received	65

Note:

- The detail of monitoring location was presented in Table 1.3.

## 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 4.7** shows the equipment list of the noise monitoring.

**Table 4.7** Noise Equipment List for Impact Noise Monitoring

Equipment	Manufacturer & Model No.	Serial No.	Precision Grade
Integrated SLM	Brüel & Kjær 2238	2562763	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

The weather condition was mainly overcast with periods of rain during the noise monitoring period in the reporting month.

#### 4.3.2 Noise Monitoring Results

##### Impact Monitoring

Monitoring of the construction noise level was conducted on 2, 10, 15 and 26 April 2013. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix H** and are summarised in **Tables 4.8 - 4.10**. The graphical presentations of the monitoring results are provided in **Appendix H**.

**Table 4.8** 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)
2 Apr 13	08:35–09:05	52.3	57.0	< Baseline Level	70/65
10 Apr 13	13:00-13:30	57.8		50.1	
15 Apr 13	11:30-12:00	59.4		55.7	
26 Apr 13	13:45-14:15	58.0		51.1	

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. April is an examination period at NMS-CA-1.

**Table 4.9** 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)
2 Apr 13	11:25-11:55	67.1	66.0	60.6	70/65
10 Apr 13	09:25-09:55	69.2		66.4	
15 Apr 13	09:15-09:45	68.4		64.7	
26 Apr 13	09:55-10:25	69.6		67.1	

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 4.10** 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
		Leq (30min)	Leq (30min)	Leq (30min)	dB(A)
2 Apr 13	15:05-15:35	64.0	73.0	< Baseline Level	75
10 Apr 13	11:10-11:40	67.9		< Baseline Level	
15 Apr 13	10:25-10:55	68.2		< Baseline Level	
26 Apr 13	11:25-11:55	67.6		< Baseline Level	

Note:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.

### Continuous Noise Monitoring

According to the prediction in the CNMMP, continuous noise monitoring was only conducted at NMS-CA-1 during the reporting month. No exceedance of the Action/Limit Level presented in **Table 4.5** during the reporting month was recorded. The monitoring results are presented in **Appendix H**.

### 4.3.3 Exceedance of Limit and Action Levels for Construction Noise

No Action Level and Limit Level exceedance of construction noise was recorded during the reporting month.

### 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

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### 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.

### 5.2 Mitigation Measures

Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting month on 10 and 25 March 2013. During the site inspections the following actions were found to be required:

#### **25 April 2013**

- The contractor is reminded to set up a tree protection zone for the trees located next to the site entrance.

## 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	3792m <sup>3</sup>	TKO137FB and Kai Tak Barging Point Facility (1108A)
Chemical Waste	0	-
Paper / cardboard packaging	0	-
Plastic	0	
Metal	0	
General Refuse	43m <sup>3</sup>	NENT Landfill

## 7 Environmental Performance

### 7.1 Environmental Site Inspection

Environmental site inspections were carried out on a weekly basis, with the IEC joint site inspection being carried out on 28 March 2013, 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 7.1**.

**Table 7.1** 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
<b>Air Quality</b>				
28 Mar 13	Diamond Hill	Cement bags (quantity <20) shall be covered with tarpaulin properly.	Agreed with ET's Advice	The contractor rectified the issue and covered the cement bags with tarpaulin. Closed on 3 April 2013.
10 Apr 13	Ma Chai Hang	Dark smokey emissions were observed from the generator on site. The contractor shall ensure proper maintenance of generator is carried out in order to avoid adverse emissions.	Agreed with ET's Advice	The issue has been rectified. Closed on 18 April 2013.
10 Apr 13	Ma Chai Hang	The contractor is reminded to provide wheel washing facilities at the vehicle access area.	Agreed with ET's Advice	The issue has been rectified. Closed on 18 April 2013.
25 Apr 13	Diamond Hill	The contractor is reminded to increase frequency of water spraying during hot and dry conditions in order to avoid dusty emissions.	Agreed with ET's Advice	The reminder has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
25 Apr 13	Ma Chai Hang	The contractor is reminded to increase frequency of water spraying during hot and dry conditions in order to avoid dusty emissions.	Agreed with ET's Advice	The reminder has been noted and the contractor will follow up. The status will be

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
				reported by the ET in the next reporting month.
25 Apr 13	Ma Chai Hang	The contractor shall provide tarpaulin sheet for stockpiles of earth.	Agreed with ET's Advice	The reminder has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
<b>Water Quality</b>				
21 Mar 13	Ma Chai Hang	The contractor is reminded to ensure that exposed slopes are properly covered with tarpaulin.	Agreed with ET's Advice	The contractor rectified the issue. Closed on 3 April 2013.
28 Mar 13	Fung Tak	The contractor is reminded to place sand bags in the vicinity of drill rigs to prevent waste water discharge to storm drains.	Agreed with ET's Advice	The contractor rectified the issue and placed sand bags in the vicinity of the drill rig. Closed 3 April 2013.
3 Apr 13	Fung Tak	The contractor is reminded to place sand bags in the vicinity of drill rigs to prevent waste water discharge to storm drains.	Agreed with ET's Advice	The contractor rectified the issue and placed sand bags in the vicinity of the drill rig. Closed 10 April 2013.
10 Apr 13	Hin Keng	The contractor is reminded to ensure that water from piling works does not enter nearby streams.	Agreed with ET's Advice	The issue was noted by the contractor and appropriate measures were put in place. Closed 18 April 2013.

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
10 Apr 13	Fung Tak	The contractor is reminded to place sand bags in the vicinity of drill rigs to prevent waste water discharge to storm drains.	Agreed with ET's Advice	The contractor rectified the issue and placed sand bags in the vicinity of the drill rig. Closed 18 April 2013.
10 Apr 13	Fung Tak	The contractor is reminded to regularly remove standing water.	Agreed with ET's Advice	The issue was rectified by the contractor and standing water has been removed. Closed 18 April 2013.
18 Apr 13	Hin Keng	The contractor is reminded to ensure that waste water in the site channel shall be pumped to WWTP asap to prevent runoff from site.	Agreed with ET's Advice	This contractor has rectified the issue. Closed 25 April 2013.
18 Apr 13	Ma Chai Hang	Water discharge was observed flowing towards public storm drain without proper treatment. The contractor shall place sand bags around drill rigs to ensure that surface run off does not enter storm drains untreated.	Agreed with ET's Advice	This contractor has rectified the issue and provided sand bags around drill rigs. Closed 25 April 2013.
18 Apr 13	Fung Tak	Water discharge was observed flowing from drill rig area into public storm drain untreated. The contractor shall place sand bags in the vicinity of drill rigs to rectify the issue.	Agreed with ET's Advice	This contractor has rectified the issue and provided sand bags around drill rigs as well as around nearby storm drains. Closed 25 April 2013.
<b>Noise</b>				
28 Mar 13	Hin Keng	The contractor is reminded to ensure that suitable noise mitigation measures are put in place for the construction of new site office.	Agreed with ET's Advice	The reminded was noted and suitable measures were put in



Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
				place.
28 Mar 13	Fung Tak	The contractor is reminded to provide suitable noise mitigation measures for drill rigs.	Agreed with ET's Advice	The contractor has rectified the issue and implemented noise mitigation measures. Closed 3 April 2013.
28 Mar 13 and 3 Apr 13	Ma Chai Hang	The contractor is reminded to provide suitable noise mitigation measures for breakers.	Agreed with ET's Advice	The contractor has rectified the issue and provided noise barriers. Closed 10 April 2013.
10 April 13	Hin Keng	The contractor is reminded to set up adequate noise mitigation measures for piling works.	Agreed with ET's Advice	The contractor has rectified the issue. Noise barriers were set up and located next to the drilling rig to reduce noise impact. Closed 18 April 2013.
10 Apr 13	Hin Keng	The contractor is reminded to conduct additional noise monitoring at different locations around the work site during the examination period of the nearby school.	Agreed with ET's Advice	Noted by the contractor. Additional noise monitoring was conducted to ensure compliance. Closed 30 April 2013.
10 Apr 13	Ma Chai Hang	The contractor is reminded to effectively place acoustic barriers.	Agreed with ET's Advice	The issue has been rectified and the contractor has ensured that noise barriers are effectively placed. Closed 18 April 2013.

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
25Apr 13	Fung Tak	Drilling rigs was observed without the provision of a noise barrier. The contractor shall rectify and ensure that adequate mitigation measures are put in place.	Agreed with ET's Advice	The observation has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
<b>Landscape and Visual</b>				
3 Apr 13	Ma Chai Hang	The contractor is reminded to ensure that all tree protection zones are adequate.	Agreed with ET's Advice	The contractor has rectified the issue. Closed 10 April 2013.
10 Apr 13	Ma Chai Hang	A generator and construction debris was observed within the tree protection zone. The contractor shall remove these items and ensure that the tree protection zone is properly implemented.	Agreed with ET's Advice	The contractor has removed the generator and debris from the tree protection zone. Closed 18 April 2013.
25 Apr 13	Diamond Hill	The contractor is reminded to set up a tree protection zone for the trees located next to the site entrance.	Agreed with ET's Advice	The reminder has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
<b>Waste</b>				
28 Mar 13	Diamond Hill	The contractor is reminded to ensure that all oil cans have the provision of a drip tray.	Agreed with ET's Advice	The contractor rectified the issue and provided drip trays. Closed on 3 April 2013.
28 Mar 13	Diamond Hill	Oil stains in from of chemical waste storage was observed. The contractor shall remove the contaminated soil as chemical	Agreed with ET's Advice	The contractor rectified the issue and dealt with the

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
		waste in accordance with WDO.		oil stains. Closed 3 April 2013.
28 Mar 13	Ma Chai Hang	The contractor is reminded to ensure that all construction waste such as broken concrete is regularly removed from site.	Agreed with ET's Advice	The contractor rectified the issue. Closed 3 April 2013.
28 Mar 13	Hin Keng	Different waste types shall be properly disposed of separately in designated bins.	Agreed with ET's Advice	The contractor has rectified the issue and ensured all wastes are disposed of correctly into designated bins. Closed 3 April 2013.
3 Apr 2013	Diamond Hill	The contractor is reminded to ensure that the drip tray for generator next to the chemical waste storage area is properly sealed.	Agreed with ET's Advice	The contractor has rectified the issue and plugged the drip tray. Closed on 10 April 2013
3 Apr 2013	Fung Tak	The contractor is reminded to ensure that refuse skips are properly covered.	Agreed with ET's Advice	The contractor has rectified the issue and covered the refuse skip. Closed on 10 April 2013
3 Apr 2013	Fung Tak	The contractor is reminded to provide facilities to deal with chemical waste.	Agreed with ET's Advice	The contractor has rectified the issue provide adequate facilities. Closed on 10 April 2013
10 Apr 2013	Diamond Hill	Accumulation of liquid in drip trays was observed. The contractor shall remove it as chemical waste in accordance with WDO.	Agreed with ET's Advice	The contractor has rectified the issue. Closed on 18 April 2013
10 Apr 2013	Diamond Hill	The contractor is reminded to cover accumulated waste with tarpaulin sheet prior to disposal.	Agreed with ET's Advice	The contractor has rectified the issue. Closed

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
				on 18 April 2013
10 Apr 2013	Diamond Hill	Oil stains were observed next to Crane HS885. The contractor shall remove it and treat as chemical waste in accordance with WDO.	Agreed with ET's Advice	The contractor has rectified the issue. Closed on 18 April 2013
18 Apr 2013	Hin Keng	The contractor is reminded to regularly remove accumulated liquid from drip trays and treat it as chemical waste in accordance with WDO.	Agreed with ET's Advice	The contractor has rectified the issue. Closed on 25 April 2013
18 Apr 2013	Hin Keng	An accumulation of general refuse was observed outside of site office. The contractor is reminded to employ good housekeeping and regularly remove rubbish from site.	Agreed with ET's Advice	The contractor has rectified the issue. Closed on 25 April 2013
18 Apr 2013	Hin Keng	The contractor is reminded to properly label chemical waste storage areas and ensure that only chemical waste is stored.	Agreed with ET's Advice	The contractor has rectified the issue. Closed on 25 April 2013
18 Apr 2013	Diamond Hill	The contractor is reminded to ensure that all oil drums have the provision of a drip tray.	Agreed with ET's Advice	The contractor has rectified the issue. Closed on 25 April 2013
25 Apr 2013	Diamond Hill	Oil stains were observed next to two generators (No. 38521 and No. 1310). The contractor shall remove the contaminated soil and treat as chemical waste in accordance with WDO.	Agreed with ET's Advice	The observation has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
25 Apr 2013	Diamond Hill	An open plug hole was observed in the drip tray of generator G2262. The contractor shall rectify and ensure that all drip trays are sealed.	Agreed with ET's Advice	The observation has been noted and the contractor will follow up. The status will be reported by

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
				the ET in the next reporting month.
25 Apr 2013	Fung Tak	Oil stains were observed next to generator No. 1125. The contractor shall remove the contaminated soil and treat as chemical waste in accordance with WDO.	Agreed with ET's Advice	The observation has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
25 Apr 2013	Ma Chai Hang	An open plug hole was observed in the drip tray of a water pump. The contractor shall rectify and ensure that all drip trays are sealed.	Agreed with ET's Advice	The observation has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
25 Apr 2013	Hin Keng	An accumulation of refuse was observed at Hin Keng spoil handling area. The contractor shall provide a skip and ensure that refuse is collected and removed from site regularly.	Agreed with ET's Advice	The observation has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.
25 Apr 2013	Hin Keng	An open plug hole was observed in the drip tray of a generator. The contractor shall rectify and ensure that all drip trays are sealed.	Agreed with ET's Advice	The observation has been noted and the contractor will follow up. The status will be reported by the ET in the next reporting month.

## 7.2 Summary of Environmental Complaint

No environmental complaints regarding environmental issue were recorded in the reporting month. The updated statistical summary of complaint is presented in **Table 7.2**. The updated complaint logs, if any, of the Project in the reporting month is shown in **Appendix L**.

**Table 7.2** Summary of Complaints

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
01/03/13– 28/03/13	0	0	N/A	N/A	N/A

## 7.3 Summary of Environmental Non-Compliance

There was no non-compliance identified during the reporting month so review of the non-compliance was not required.

## 7.4 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.

## 8 Future Key Issues

### 8.1 Key Issues for the Coming Month

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

**Table 8.1** Tentative Programme of Construction Works for the Coming Month

Locations	Major Works Undertaken
Diamond Hill	Diaphragm Wall Construction and Site Office Erection.
Hin Keng	Pipe Piling Work, Ground Investigation and Erection of Site Office.
Fung Tak	Utilities Diversion and Ground Investigation.
Ma Chai Hang	Site Formation, Jogging Path Diversion Ground Investigation, Tree Transplant and Removal and Platform Construction.
Shui Chuen O	Site Storage.

### 8.2 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**.

### 8.3 Construction Programme for the Coming Month

The construction programme for the coming month is shown in **Appendix A**.

## 9 Conclusions and Recommendations

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### 9.1 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 of 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 complaint and 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.

### 9.2 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.

Construction dust is a 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.

Construction noise is also one of the key environmental issues. The implemented construction noise mitigation measures should also be maintained and improved as necessary.

Waste management is also 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. The solid and liquid waste management should be strictly followed in accordance with the requirements stipulated in the EIA report.



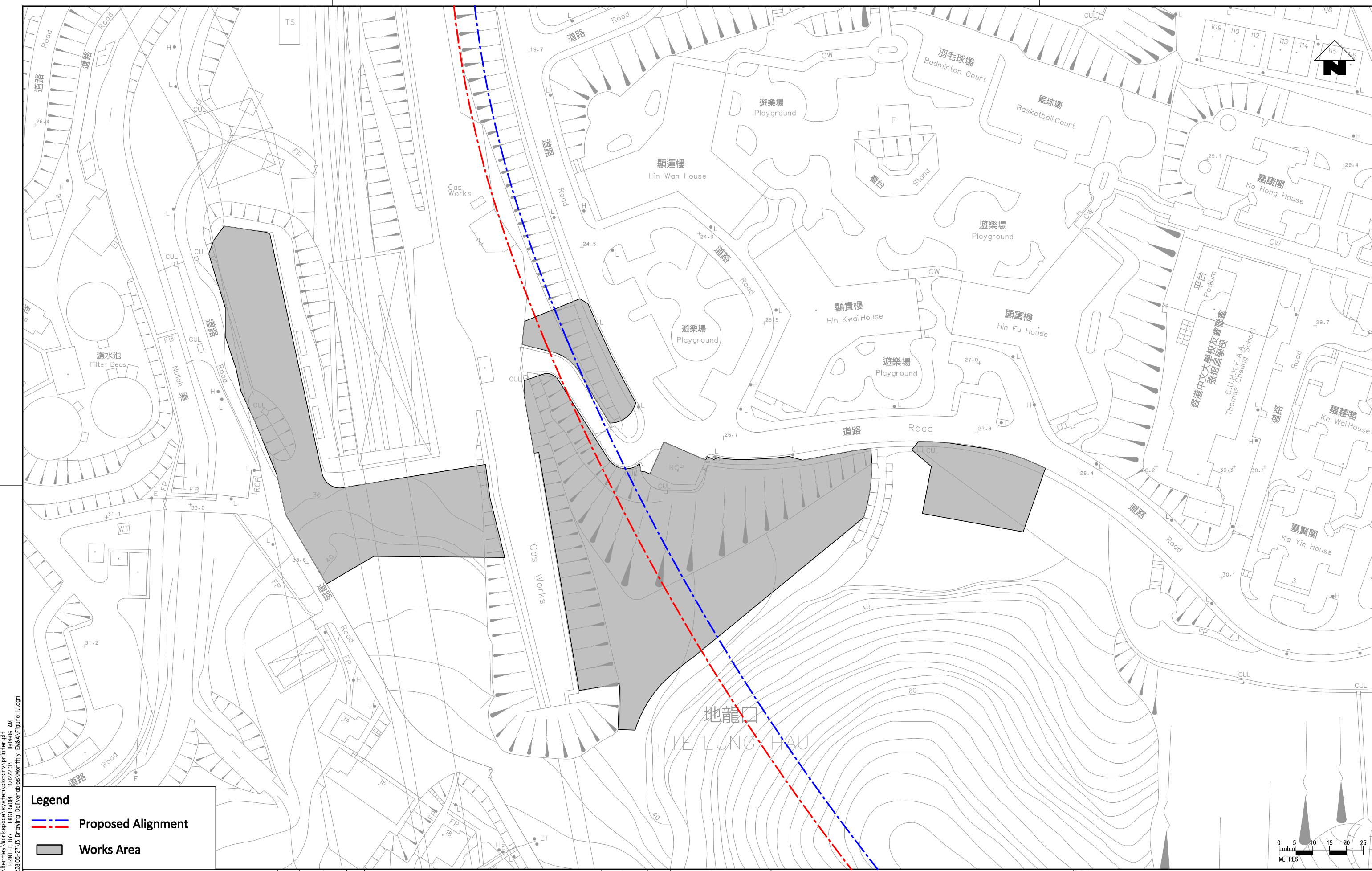
## 10 Reference

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- (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.

## Figures

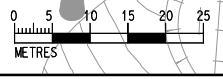
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- - - Proposed Alignment
- Works Area



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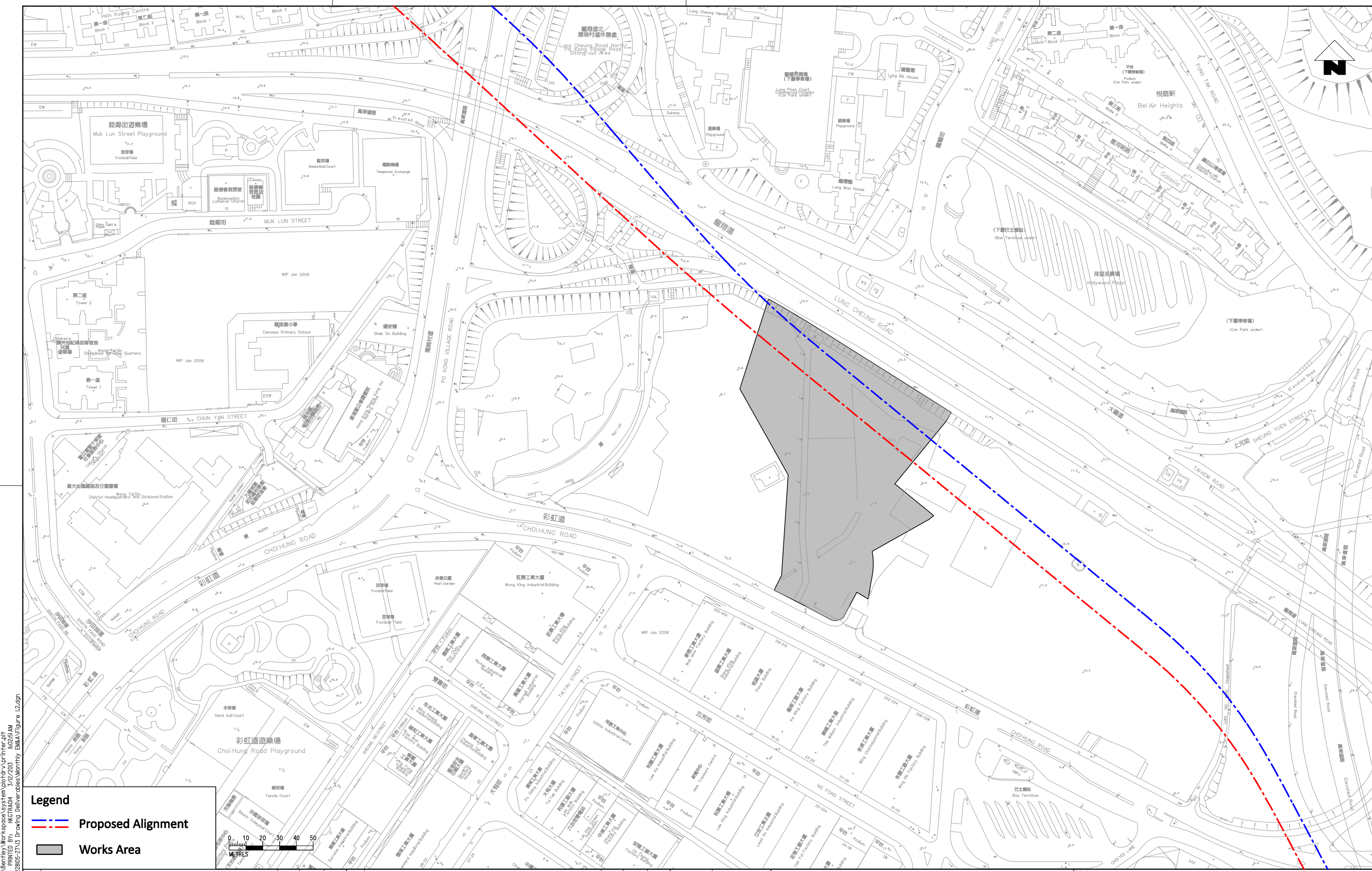
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**TITLE**

**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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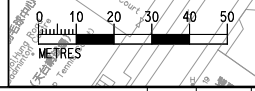




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- - - Proposed Alignment
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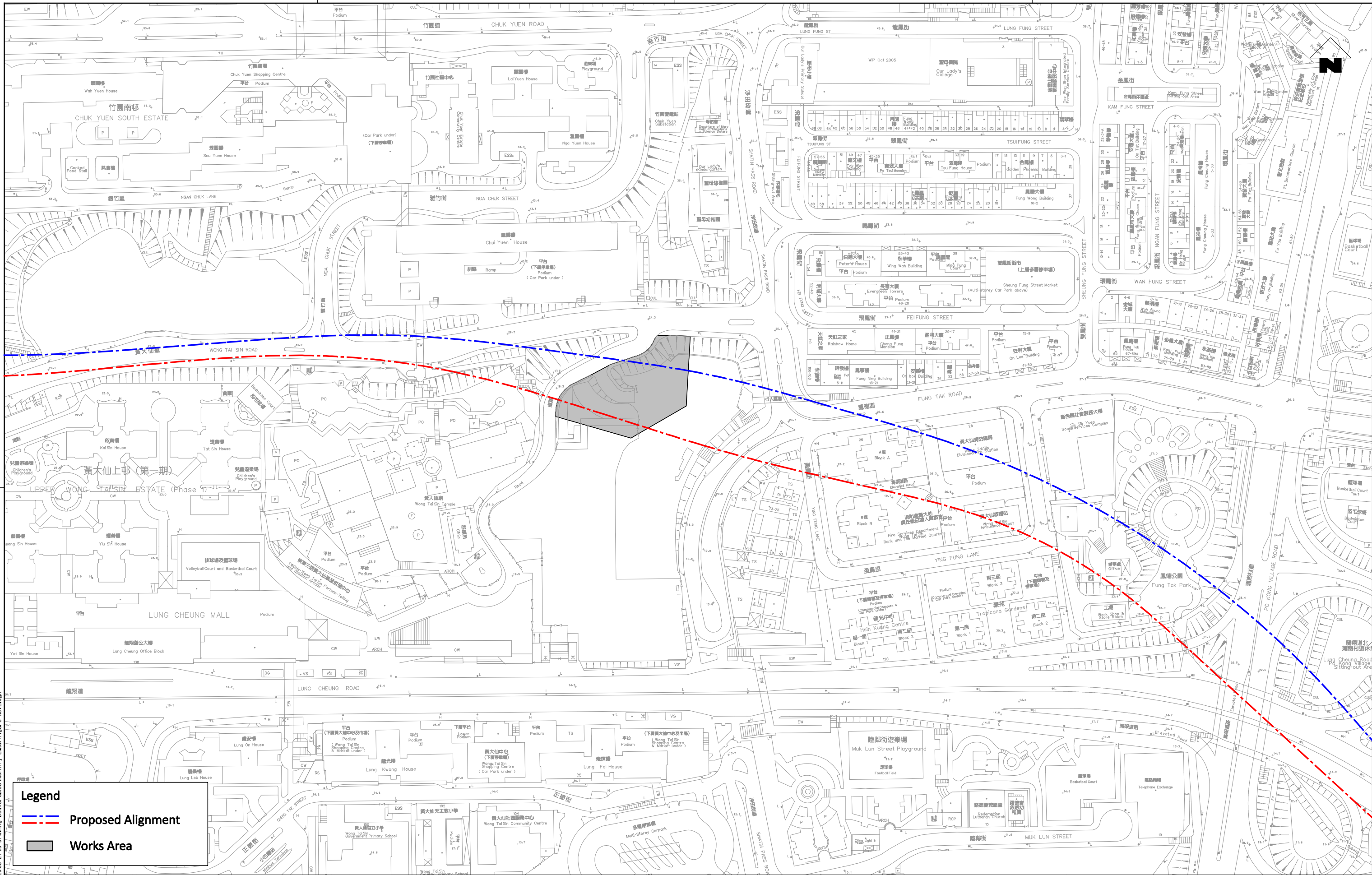
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**Legend**

- - - Proposed Alignment
- Works Area

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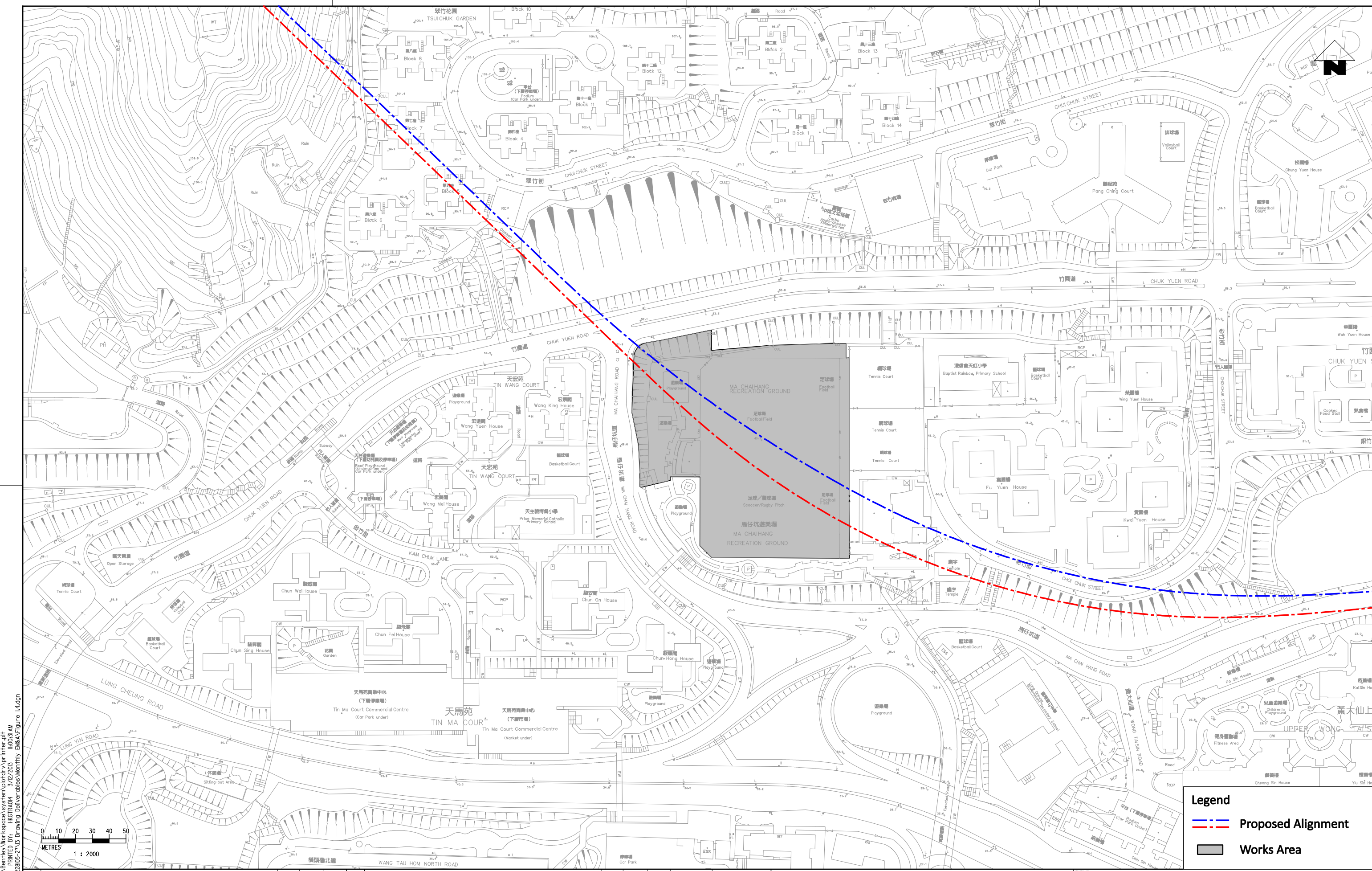
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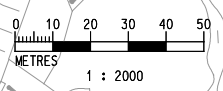
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		HIN KENG TO DIAMOND HILL TUNNELS	
		Locations of Project Works Areas - Site Layout Plan of Fung Tak EAP/EEP Building (Sheet 3 of 6)	
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- --- Proposed Alignment
- Works Area

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		HIN KENG TO DIAMOND HILL TUNNELS	
		Locations of Project Works Areas	
		- Site Layout Plan of Ma Chai Hang Shaft	
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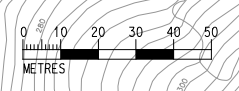




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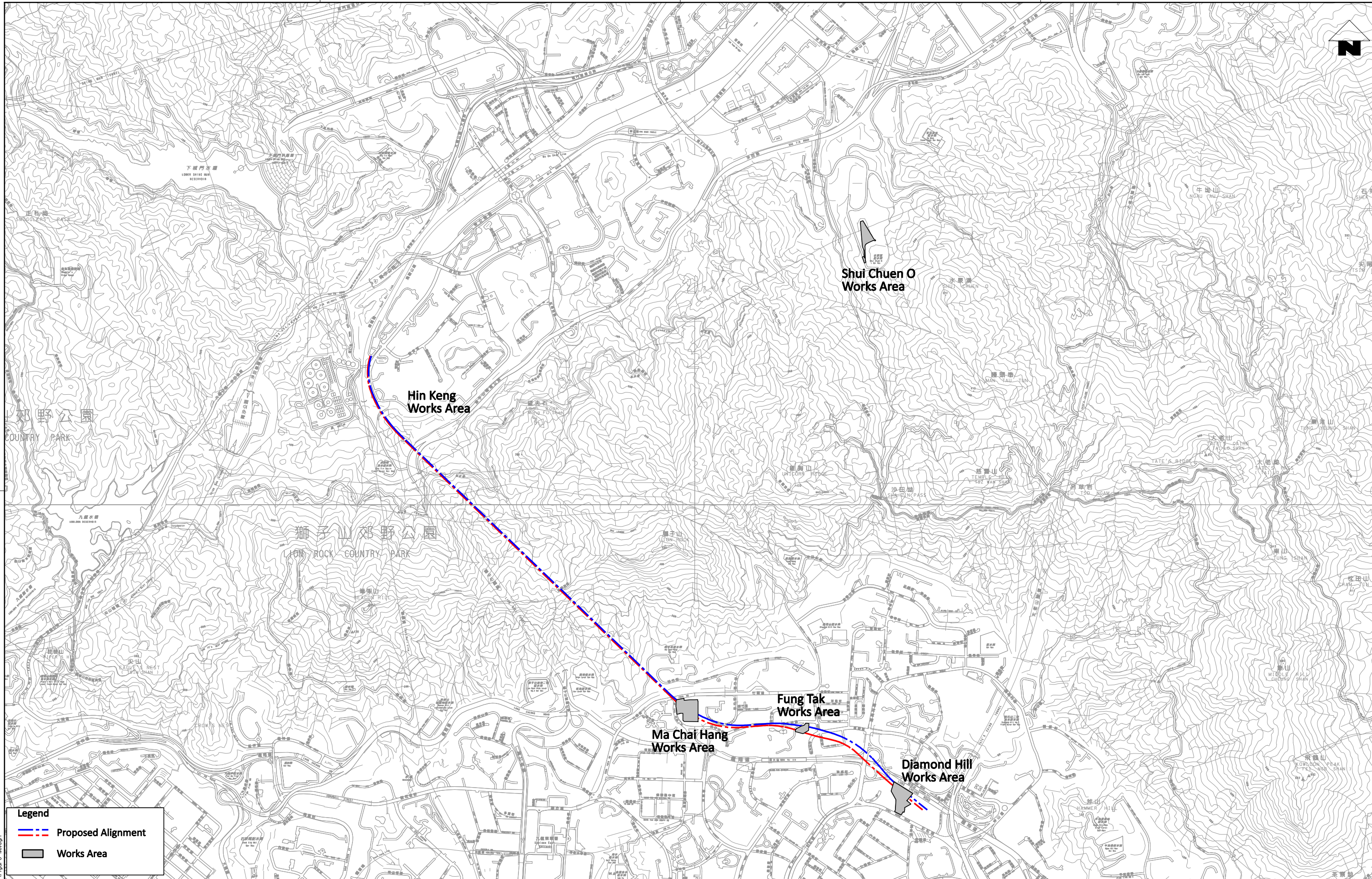
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Works Area



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**Legend**

- Proposed Alignment
- Works Area

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**TITLE**
  
 CONTRACT 1103
   
 HIN KENG TO DIAMOND HILL TUNNELS
   
 Locations of Project Works Areas
   
 - General Alignment of Contract 1103
   
 (Sheet 6 of 6)

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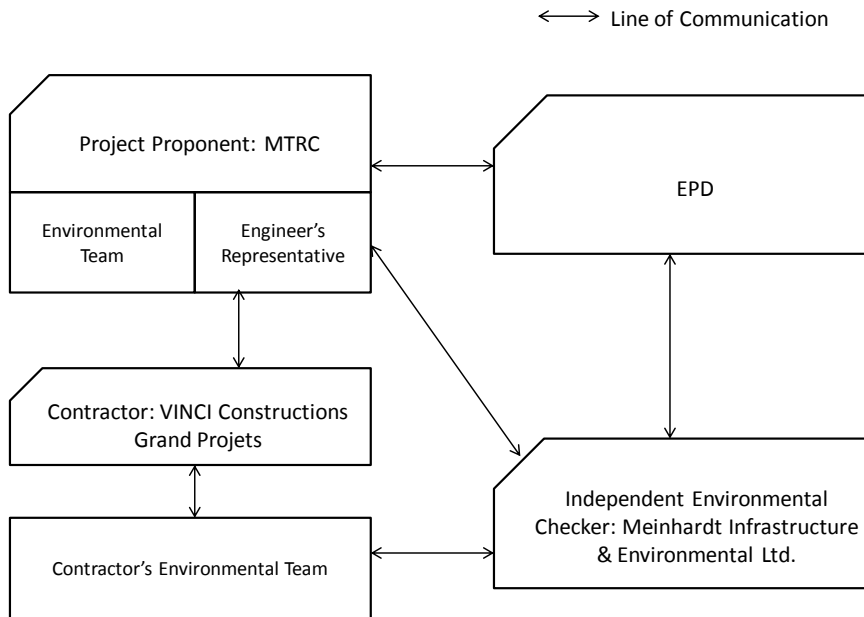
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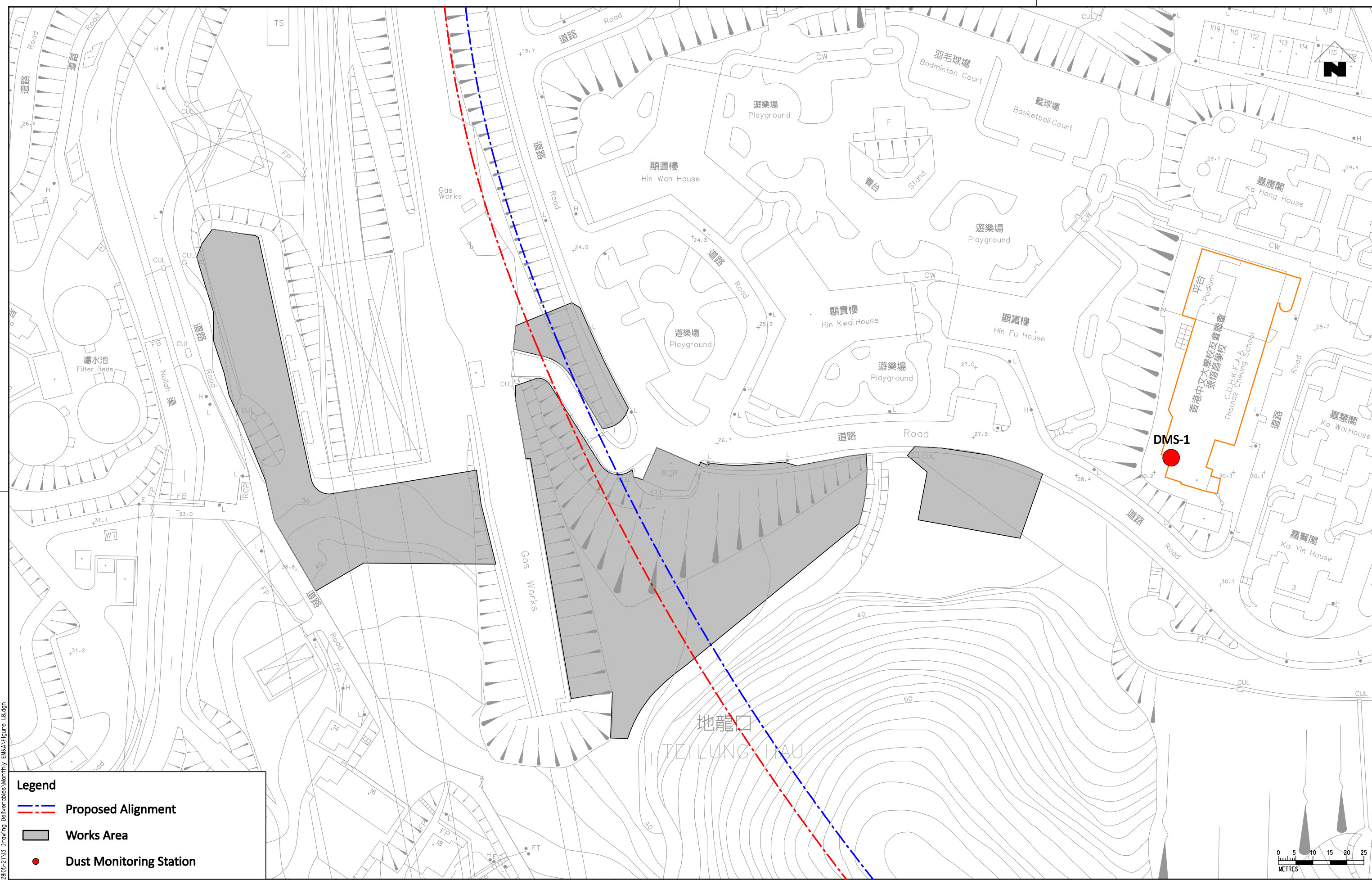
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**Figure 1.7 - Project Organisation for Environmental Works**



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

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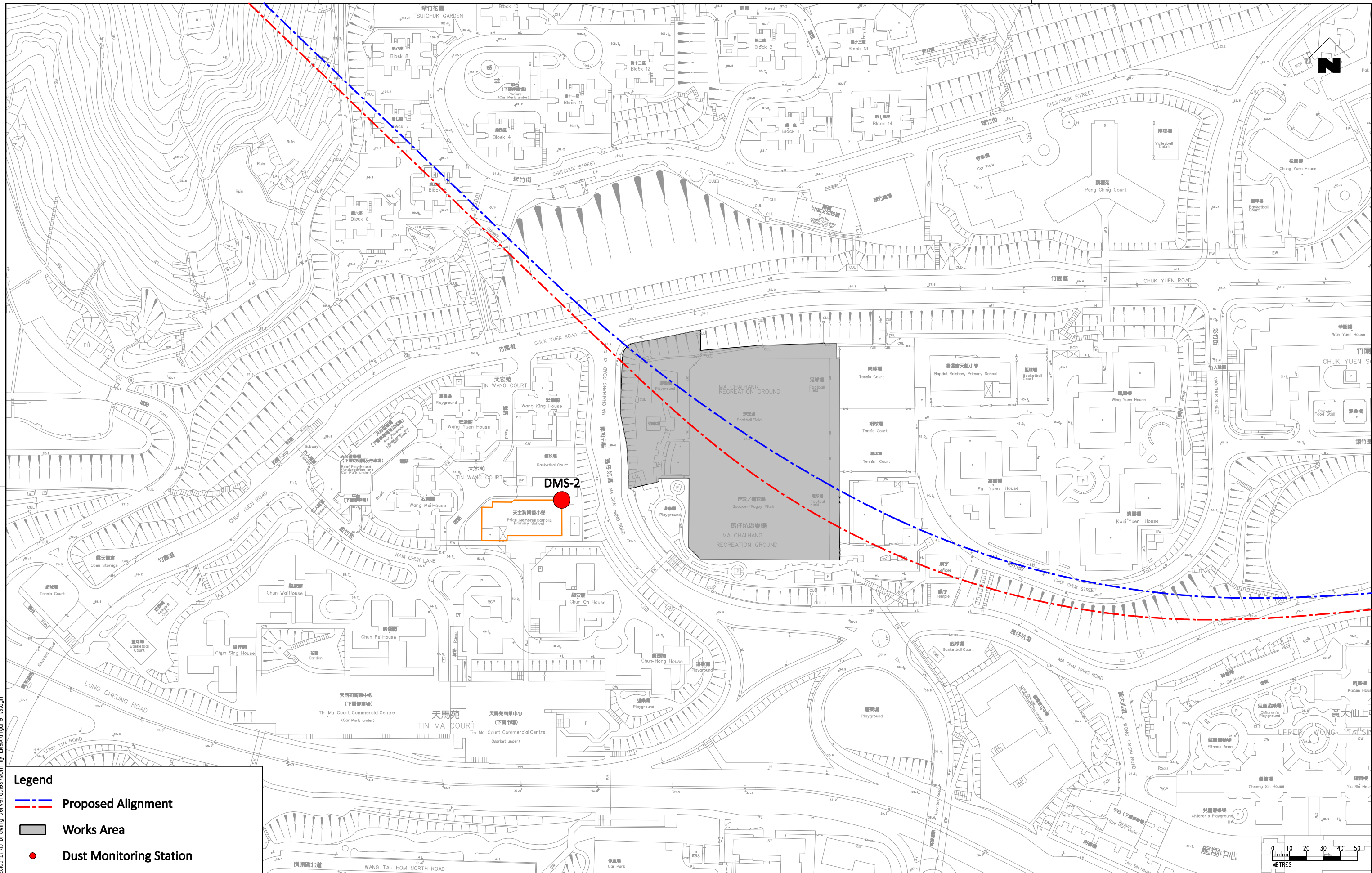
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		HIN KENG TO DIAMOND HILL TUNNELS	
		Locations of Proposed Dust Monitoring Stations	
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- Legend**
- --- Proposed Alignment
  - Works Area
  - Dust Monitoring Station

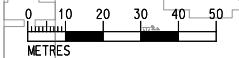
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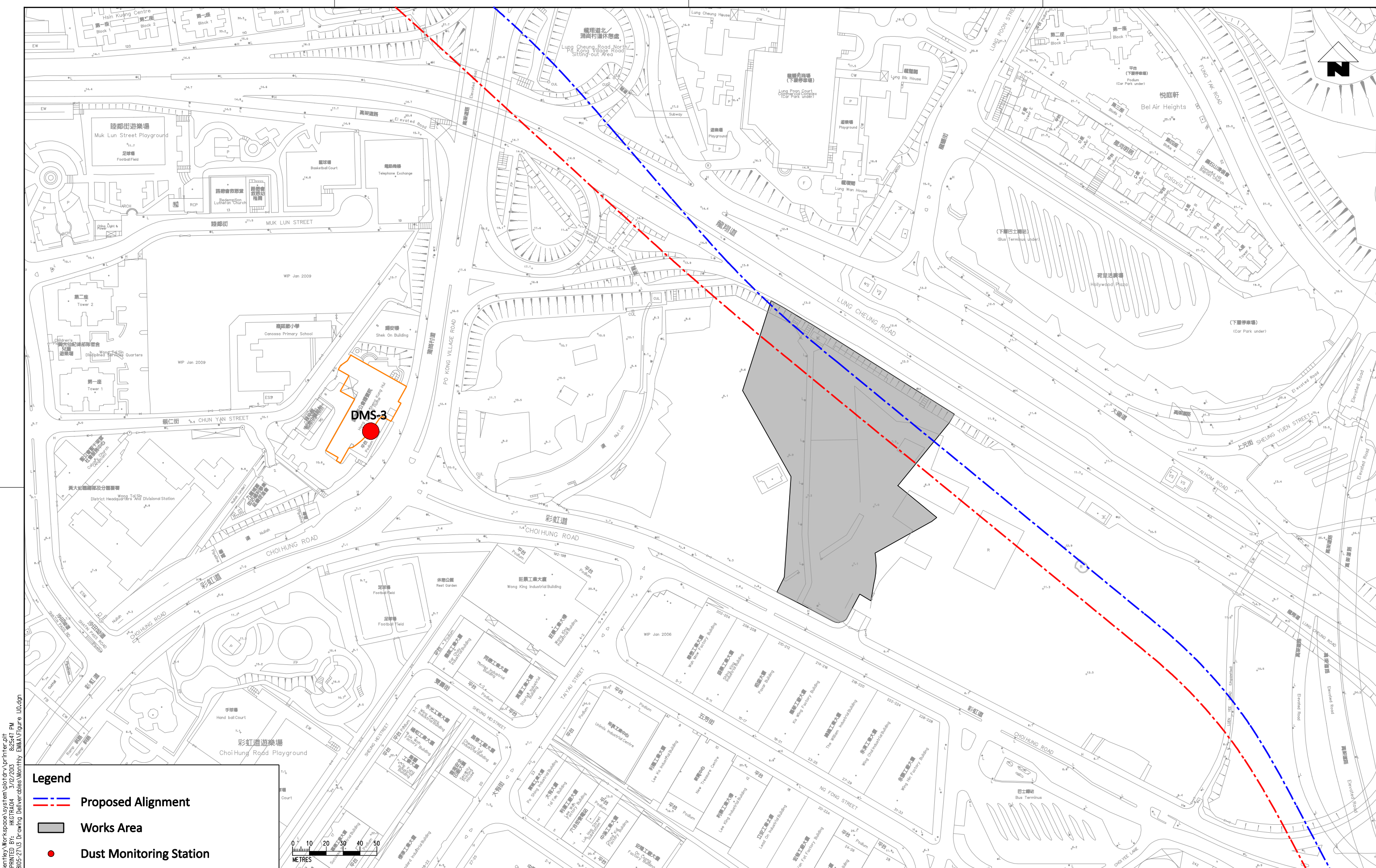
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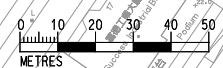
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- Legend**
- - - Proposed Alignment
  - Works Area
  - Dust Monitoring Station



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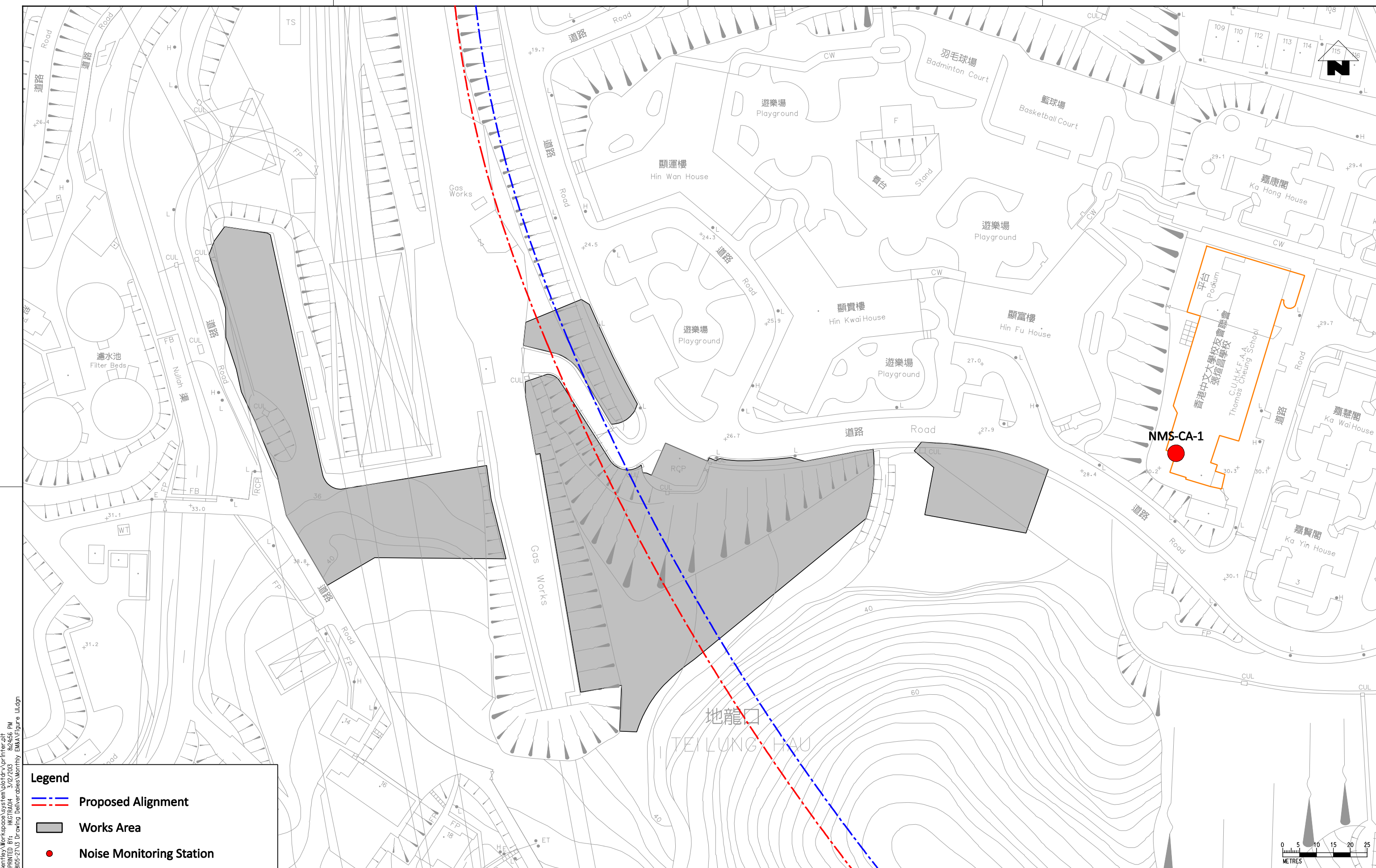
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**ARUP** Ove Arup & Partners  
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TITLE		CONTRACT 1103	
		HIN KENG TO DIAMOND HILL TUNNELS	
		Locations of Proposed Dust Monitoring Stations	
		(Sheet 3 of 3)	
SCALE	DRAWING NO.	REV.	
1:2000 (A3)	Figure 1.10	A	

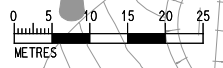




**Legend**

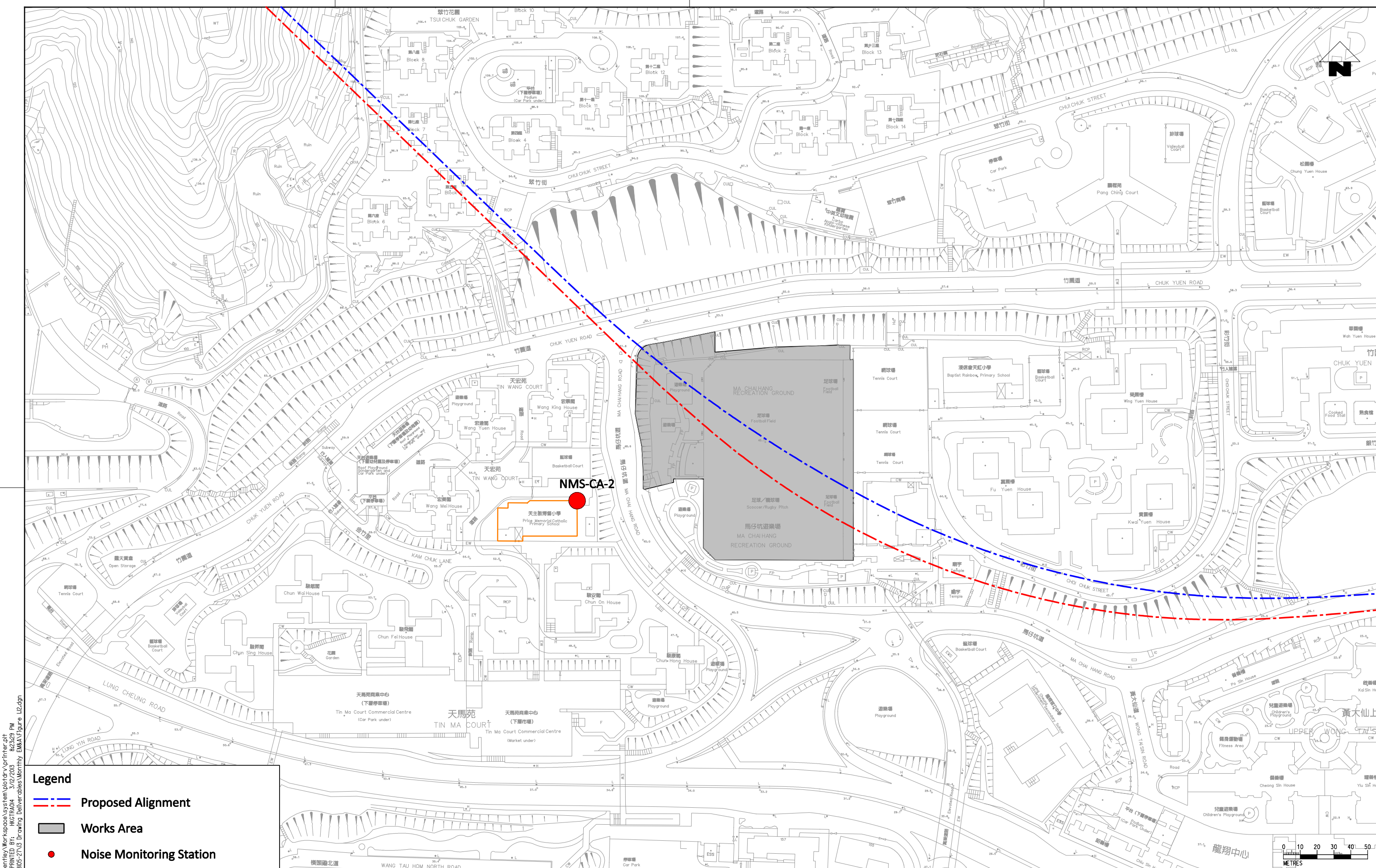
- **Proposed Alignment**
- Works Area**
- **Noise Monitoring Station**

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				DESIGNED							GL	
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		DATE		12/12		Ove Arup & Partners Hong Kong Limited		DRAWING NO. Figure 1.11		REV. A		
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- Legend**
- --- Proposed Alignment
  - Works Area
  - Noise Monitoring Station

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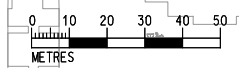
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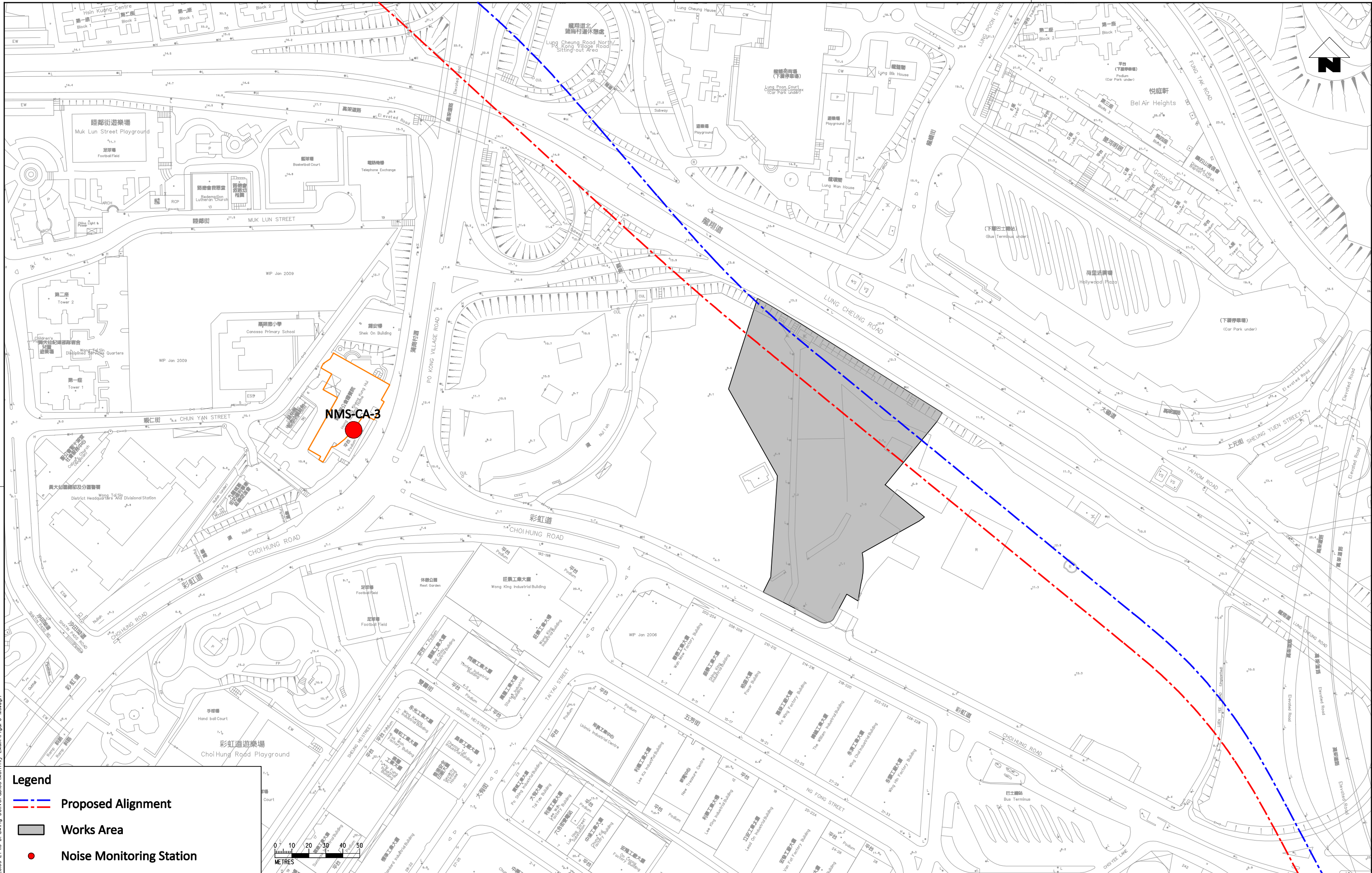
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**TITLE**  
 CONTRACT 1103  
 HIN KENG TO DIAMOND HILL TUNNELS  
 Locations of Noise Monitoring Stations  
 (Construction Airborne Noise)  
 (Sheet 2 of 3)

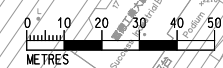
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- Legend**
- --- Proposed Alignment
  - Works Area
  - Noise Monitoring Station



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

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## Appendix A

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### Construction Programme



Activity ID	Activity Name	Original Duration	Start	Finish	Physical % Complete	2013																											
						April				May				June				July				August											
						31	07	14	21	28	05	12	19	26	02	09	16	23	30	07	14	21	28	04	11	18	25						
<b>CONTRACT 1103:- HIN KENG TO DIAMOND HILL TUNNELL</b>																																	
<b>COST CENTER F - MA CHAI HANG VENTILATION B</b>																																	
	MCV - TTM Works	88	11-03-13 A	28-06-13																													
	MCV - Shaft D-Wall Predrilling	73	02-03-13 A	27-05-13																													
	MCV - Instrumentation and Monitoring Pre-drilling	26	15-04-13 A	21-05-13																													
	MCV - Trees Transplant and Felling	60	23-03-13 A	29-05-13																													
	MCV - Football Pitch Chain Fence and Upstand Wall	10	20-03-13 A	18-04-13 A																													
	MCV - Site Clearance	42	20-03-13 A	04-05-13																													
	MCV - Hoarding Erection	49	23-03-13 A	27-05-13																													
	MCV - New Jogging Path Diversion	49	23-03-13 A	14-05-13																													
	MCV - Pedestrian Steel Bridge Diversion	77	05-04-13 A	15-07-13																													
<b>COST CENTER G - FUNG TAK EAP/EEP BUILDING (</b>																																	
	FTA - Site Setup	24	30-04-13 A	27-05-13																													
	FTA - Hoarding Erection	209	11-03-13 A	03-07-13																													
	FTA - Shaft D-Wall Predrilling	148	12-03-13 A	18-04-13 A																													
	FTA - Trees Transplant and Felling	160	09-03-13 A	09-05-13																													
	FTA - TTMs Works	37	30-04-13	14-06-13																													
	FTA - Dn 600mm DSD Drainage Diversion Works	57	30-04-13	09-07-13																													
<b>COST CENTER H - HIN KENG WORKING SHAFT</b>																																	
	HIK - Site Office	42	28-03-13 A	25-05-13																													
	HIK - Site Clearance, Tree Felling/Transplant	172	03-12-12 A	04-05-13																													
	HIK - Site Setup	110	10-12-12 A	01-08-13																													
	HIK - Chain Link Fence	12	01-02-13 A	30-04-13																													
	HIK - Site Formation	170	24-01-13 A	15-05-13																													
	HIK - Water Treatment System	10	04-03-13 A	19-04-13 A																													
	HIK - Wheel Wash	40	30-04-13	18-06-13																													
	HIK - Stage 1a Pipe Pile Wall (For Shaft)	196	10-12-12 A	18-06-13																													
	HIK - Pipe Pile (At W6b)	105	25-04-13 A	30-08-13																													
	HIK - Stage 1a TAM Grout (For Shaft)	209	04-03-13 A	03-07-13																													
	HIK Stage 1 Pumping Test	109	05-04-13 A	22-07-13																													
	HIK - ELS in Stages	219	10-12-12 A	15-07-13																													
	HIK - Muckling Out Arrangement	158	22-03-13 A	03-10-13																													
	HIK - Conveyor System	197	25-03-13 A	04-10-13																													



**Three Month Rolling Programme  
As of 30-4-2013**

Date	Revision	Checked	Approved
05-05-13	Submission for MTR Information	QT	DSC

## Appendix B

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Environmental  
Monitoring  
Programme in  
Reporting Month

**SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels  
Impact Monitoring Schedule - April 2013**

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L <sub>Aeq</sub> 30 min	
1-Apr-13 Mon			
2-Apr-13 Tue			
3-Apr-13 Wed			
4-Apr-13 Thu			
5-Apr-13 Fri			
6-Apr-13 Sat			
7-Apr-13 Sun			
8-Apr-13 Mon			
9-Apr-13 Tue			
10-Apr-13 Wed			
11-Apr-13 Thu			
12-Apr-13 Fri			
13-Apr-13 Sat			
14-Apr-13 Sun			
15-Apr-13 Mon			
16-Apr-13 Tue			
17-Apr-13 Wed			
18-Apr-13 Thu			
19-Apr-13 Fri			
20-Apr-13 Sat			
21-Apr-13 Sun			
22-Apr-13 Mon			
23-Apr-13 Tue			
24-Apr-13 Wed			
25-Apr-13 Thu			
26-Apr-13 Fri			
27-Apr-13 Sat			
28-Apr-13 Sun			
29-Apr-13 Mon			
30-Apr-13 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 - 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 - Hong Kong Sheng Kung Hui	L <sub>Aeq</sub> (30 min), L <sub>10</sub> , L <sub>90</sub>

Note - Continuous Noise Monitoring will be undertaken regularly during April at NMS-CA-3

## Appendix C

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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. 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
<b>Ecology (Pre-Construction Phase)</b>							
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"> <li>•AFCD's requirements</li> <li>•EIAO</li> <li>•Country Parks Ordinance</li> </ul>	✓
	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"> <li>•AFCD's requirements</li> </ul>	✓
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"> <li>•AFCD's requirements</li> </ul>	✓

**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
<b>Ecology (Construction Phase)</b>							
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"> <li>• 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;</li> <li>• Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream;</li> <li>• 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;</li> <li>• No on-site burning of waste;</li> <li>• Waste and refuse in appropriate receptacles.</li> </ul>	Minimise 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"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid indirect water impact to any wetland habitats or wetland fauna</li> <li>Minimize the drawdown of water table</li> </ul>	Works area in Hin Keng	Construction stage	<ul style="list-style-type: none"> <li>TCW No. 5/2005</li> </ul>	<p align="center">Rdr</p> <p align="center">✓</p>

**Environmental Mitigation Implementation Schedule – Works Contract 1103**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
<b><i>Landscape and Visual (Construction Phase)</i></b>							
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"> <li>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.</li> </ul> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> <li>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.</li> <li>The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees</li> </ul>	Minimize visual & landscape impact	Within Project Site	Construction stage	TM-EIAO	<p align="center">✓</p> <p align="center">Obs</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>• <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> <li>• <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> <li>• <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.</li> </ul>	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
<b>Construction Dust Impact</b>							
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	<ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	✓
S7.6.5	D2	<ul style="list-style-type: none"> <li>• 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/m<sup>2</sup> to achieve the dust removal efficiency</li> </ul>	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	Rdr
S7.6.5	D3	<ul style="list-style-type: none"> <li>• Proper watering of exposed spoil should be undertaken throughout the construction phase:</li> <li>• 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;</li> <li>• Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material should not be extend beyond the</li> </ul>	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>• APCO</li> <li>• To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	Rdr  Rdr  ✓  ✓

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
		<p>pedestrian barriers, fencing or traffic cones.</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting</li> </ul>					<p align="center">✓</p> <p align="center">Rdr</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">N/A</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
		<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"> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• 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;</li> </ul>					<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>
		<ul style="list-style-type: none"> <li>• 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;</li> <li>• 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</li> <li>• 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.</li> </ul>					<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>

**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
<b>Construction Noise (Airborne)</b>							
S8.3.6	N1	Implement the following good site practices: <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>• 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;</li> <li>• plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>• silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>• mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>• material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>	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	<p align="center">Obs</p>

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
		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	✓

**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
<b>Water Quality (Construction Phase)</b>							
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"> <li>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.</li> <li>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.</li> <li>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 m<sup>3</sup>/s a sedimentation basin of 30m<sup>3</sup> would be required and for a flow rate of 0.5 m<sup>3</sup>/s the basin would be 150 m<sup>3</sup>. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the</li> </ul>	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"> <li>Water Pollution Control Ordinance</li> <li>ProPECC PN1/94</li> <li>TM-EIAO</li> <li>TM-Water</li> </ul>	<p align="center">Rdr</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
		<p>commencement of construction.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m<sup>3</sup> 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.</li> <li>• Manholes (including newly constructed ones) should always be</li> </ul>					<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>

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
		<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"> <li>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.</li> <li>Adopt best management practices</li> </ul>					<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"> <li>Cut-&amp;-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.</li> <li>Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge</li> <li>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.</li> <li>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.</li> </ul>	To minimize construction water quality impact from tunneling works	All tunneling portion	Construction stage	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>ProPECC PN 1/94</li> <li>TM-water</li> <li>TM-EIAO</li> </ul>	<p align="center">N/A</p> <p align="center">N/A</p> <p align="center">N/A</p> <p align="center">N/A</p>
S10.7.1	W3	<u>Sewage Effluent</u>	To minimize water quality	All construction sites	Construction	• Water Pollution	

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
		<ul style="list-style-type: none"> <li>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.</li> </ul>	from sewage effluent	where practicable	stage	Control Ordinance <ul style="list-style-type: none"> <li>TM-water</li> </ul>	✓
S10.7.1	W4	<u>Groundwater from Contaminated Area:</u> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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</li> </ul>	To minimize groundwater quality impact from contaminated area	Excavation areas where contamination is found.	Construction stage	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>TM-water</li> <li>TM-EIAO</li> </ul>	✓

**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
		<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"> <li>• 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.</li> <li>• 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.</li> <li>• Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.</li> </ul>	To minimize water quality impact from accidental spillage	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> <li>• Water Pollution Control Ordinance</li> <li>• ProPECC PN1/94</li> <li>• TM-EIAO</li> <li>• TM-Water</li> </ul>	<p align="center">Obs</p> <p align="center">Rdr</p> <p align="center">Obs</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
<b>Waste Management (Construction Phase)</b>							
S11.4.1.1	WM1	<p><u>On-site sorting of C&amp;D material</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul>	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"> <li>DEVB TC(W) No. 6/2010</li> </ul>	✓
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> <li>Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>Carry out on-site sorting;</li> <li>Make provisions in the Contract documents to allow and</li> </ul>	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"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal Ordinance</li> </ul>	✓  ✓  ✓

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
		<p>promote the use of recycled aggregates where appropriate;</p> <ul style="list-style-type: none"> <li>• Adopt „Selective Demolition’ technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</li> <li>• Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified; and</li> <li>• 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&amp;D materials and to minimize their generation during the course of construction.</li> <li>• In addition, disposal of the C&amp;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</li> </ul>				<ul style="list-style-type: none"> <li>• ETWB TCW No. 19/2005</li> </ul>	<p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p>
S11.5.1	WM3	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>• Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;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.</li> <li>• The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;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</li> </ul>	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"> <li>• Land (Miscellaneous Provisions) Ordinance</li> <li>• Waste Disposal Ordinance</li> <li>• ETWB TCW No. 19/2005</li> </ul>	<p align="center">✓</p> <p align="center">✓</p>

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
		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"> <li>• General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>	Minimize production of the general refuse and avoid odour, pest and litter impacts	All construction sites	Construction stage	• Waste Disposal Ordinance	<p align="center">Obs</p> <p align="center">Uà•</p> <p align="center">✓</p> <p align="center">✓</p>
S11.5.1	WM5	<p><u>Excavated Contaminated Soils</u></p> <p>Details of the mitigation measures on handling of the contaminated soil shall be referred to Section on Land Contamination below.</p>	To remediate contaminated soil	Site L4 (Former Tai Hom Village)	Site remediation	• Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boat yards and Car Repair/Dismantling Workshop.	

**Environmental Mitigation Implementation Schedule – Works Contract 1103**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S11.5.1	WM7	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>	Control the chemical waste and ensure proper storage, handling and disposal.	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal (Chemical Waste) (General) Regulation</li> <li>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul>	<p align="center">Obs</p> <p align="center">Rdr</p> <p align="center">Rdr</p> <p align="center">✓</p>



**Environmental Mitigation Implementation Schedule – Works Contract 1103**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>• EIAO Guidance Note No.4/2010</li> <li>• TM-EIAO</li> </ul>	✓
S14.2 – 14.4	EM2	<p>1) An Environmental Team needs to be employed as per the EM&amp;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&amp;A Manual are fully complied with.</p>	Perform environmental monitoring & auditing	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>• EIAO Guidance Note No.4/2010</li> <li>• TM-EIAO</li> </ul>	<p>✓</p> <p>✓</p> <p>✓</p>

## Appendix D

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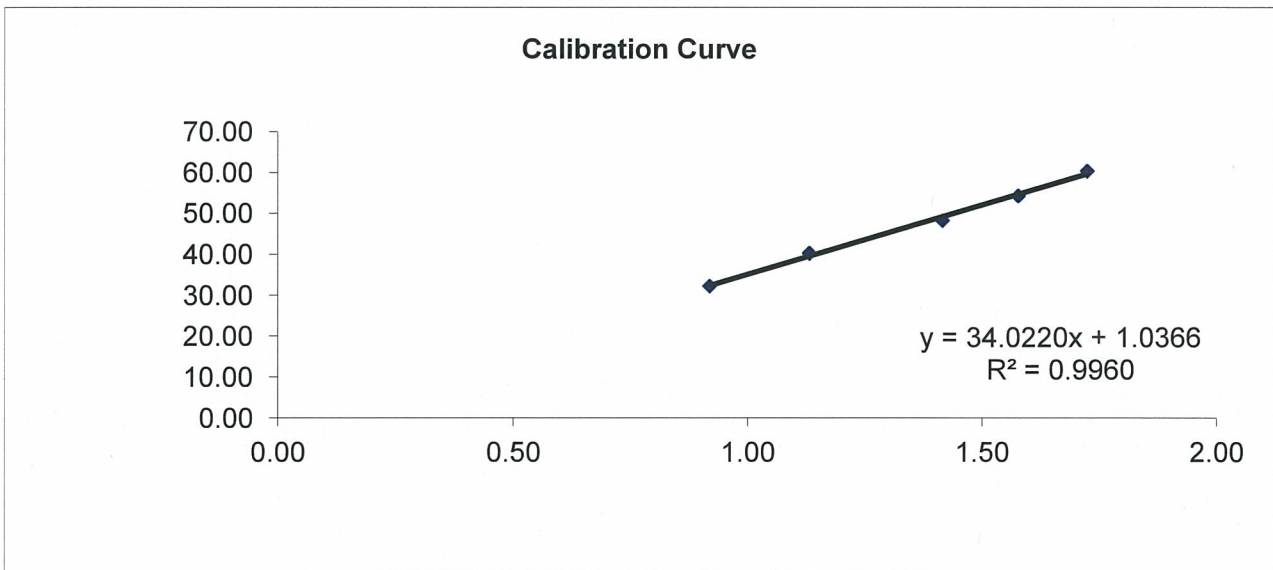
Calibration  
Certificates for Air  
Monitoring  
Equipment

# Ove Arup Partners (Hong Kong) Limited

## High Volume Air Sampler Calibration Worksheet

Calibration date	5-Apr-13	Barometric pressure	759 mm Hg
Next Calibration date	4-Jun-13	Temperature (°C)	21 °C
Sampler location	DMS1 - Thomas Cheung School	Temperature (K)	294 K
Sampler model	TE-5170	P <sub>std</sub>	760 mm Hg
Sampler serial number	3763	T <sub>std</sub>	298 K
Calibrator model	GMW-2535		
Calibrator serial number	2421		
Slope of the standard curve, m <sub>s</sub>	2.0458		
Intercept of the standard curve, b <sub>s</sub>	0.0019		

Resistance Plate No.	Manometer Reading (inch H <sub>2</sub> O)	Flow Recorder Reading (CFM)	Calculated Q <sub>std</sub> (m <sup>3</sup> /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.50	32.00	0.92	32.20
7	5.30	40.00	1.13	40.24
10	8.30	48.00	1.42	48.29
13	10.30	54.00	1.58	54.33
18	12.30	60.00	1.72	60.37



**Linear Regression**

Sampler slope (m) : **34.0220**  
 Sampler intercept (b) : **1.0366**  
 Correlation coefficient (R<sup>2</sup>) : **0.9960**

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

Performed by: \_\_\_\_\_  
 Checked by: \_\_\_\_\_

Date: 5-4-13  
 Date: 6-4-13

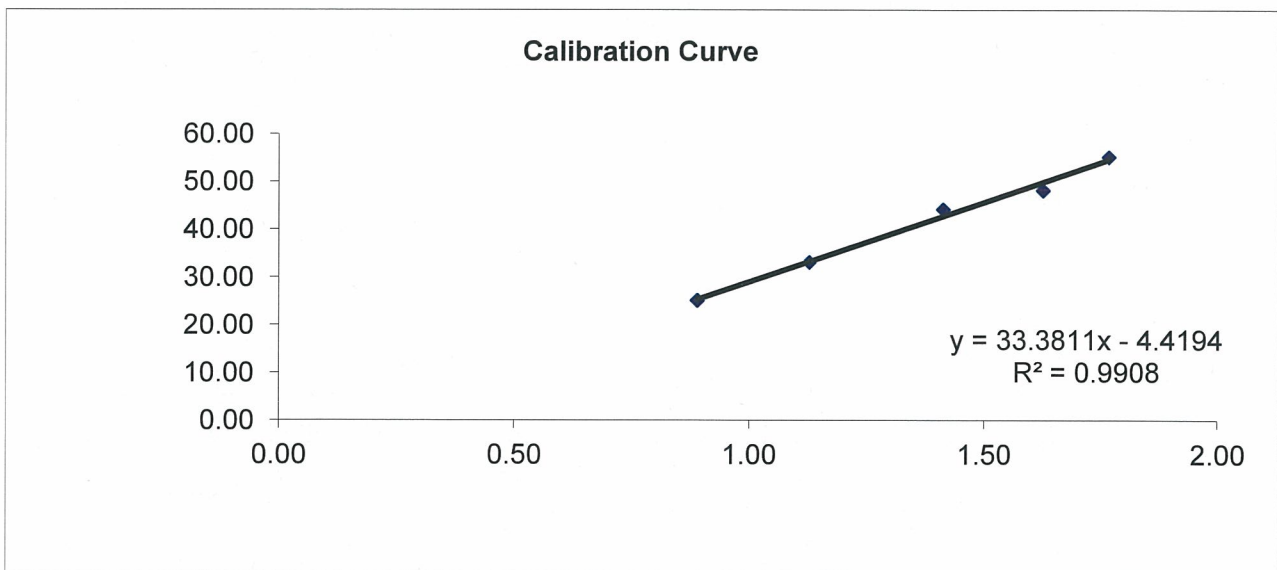
# Ove Arup Partners (Hong Kong) Limited

## High Volume Air Sampler Calibration Worksheet

Calibration date	6-Mar-13	Barometric pressure	761 mm Hg
Next Calibration date	5-May-13	Temperature (°C)	23 °C
Sampler location	DMS2 - Price Memorial Catholic Pri	Temperature (K)	296 K
Sampler model	TE-5170	P <sub>std</sub>	760 mm Hg
Sampler serial number	3761	T <sub>std</sub>	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m <sub>s</sub>	2.0458
Intercept of the standard curve, b <sub>s</sub>	0.0019

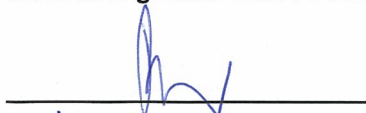

Resistance Plate No.	Manometer Reading (inch H <sub>2</sub> O)	Flow Recorder Reading (CFM)	Calculated Q <sub>std</sub> (m <sup>3</sup> /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.30	25.00	0.89	25.10
7	5.30	33.00	1.13	33.13
10	8.30	44.00	1.41	44.18
13	11.00	48.00	1.63	48.19
18	13.00	55.00	1.77	55.22



**Linear Regression**

Sampler slope (m) : **33.3811**  
 Sampler intercept (b) : **-4.4194**  
 Correlation coefficient (R<sup>2</sup>) : **0.9908**

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

Performed by:   
 Checked by: 

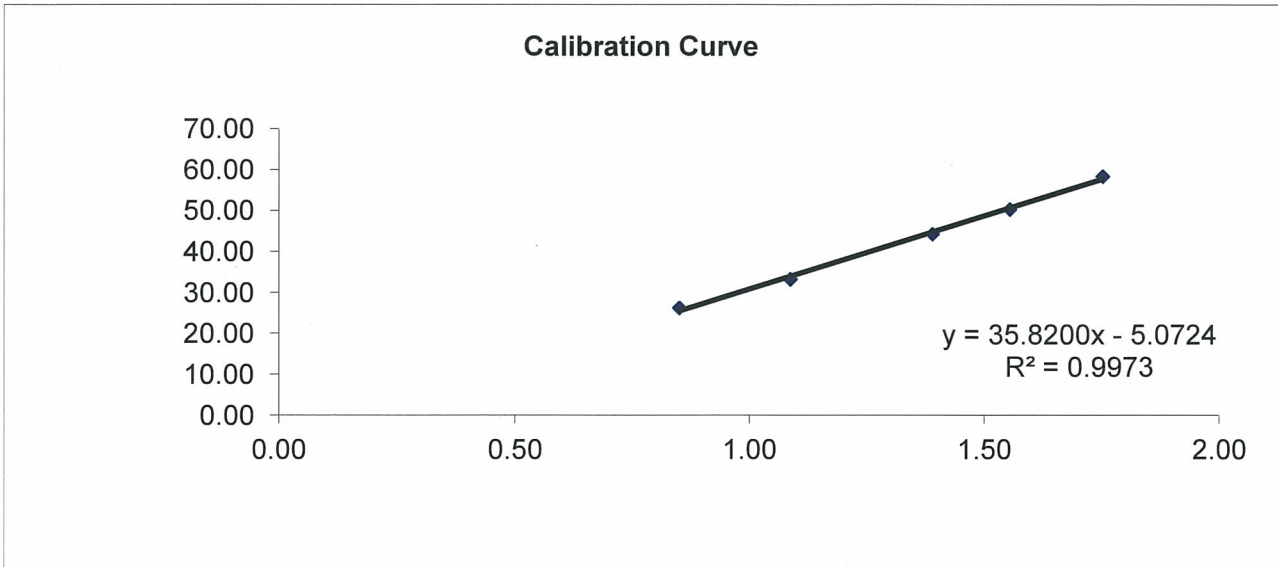
Date: 6-3-13  
 Date: 15-3-13

# Ove Arup Partners (Hong Kong) Limited

## High Volume Air Sampler Calibration Worksheet

Calibration date	5-Apr-13	Barometric pressure	759 mm Hg
Next Calibration date	4-Jun-13	Temperature (°C)	21 °C
Sampler location	DMS3 - Sheng Kung Hui Nursing Home	Temperature (K)	294 K
Sampler model	TE-5170	P <sub>std</sub>	760 mm Hg
Sampler serial number	3762	T <sub>std</sub>	298 K
Calibrator model	GMW-2535		
Calibrator serial number	2421		
Slope of the standard curve, m <sub>s</sub>	2.0458		
Intercept of the standard curve, b <sub>s</sub>	0.0019		

Resistance Plate No.	Manometer Reading (inch H <sub>2</sub> O)	Flow Recorder Reading (CFM)	Calculated Q <sub>std</sub> (m <sup>3</sup> /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.00	26.00	0.85	26.16
7	4.90	33.00	1.09	33.20
10	8.00	44.00	1.39	44.27
13	10.00	50.00	1.55	50.31
18	12.70	58.00	1.75	58.35



**Linear Regression**

Sampler slope (m) : **35.8200**  
 Sampler intercept (b) : **-5.0724**  
 Correlation coefficient (R<sup>2</sup>) : **0.9973**

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

Performed by: \_\_\_\_\_

Date: 5-4-13

Checked by: \_\_\_\_\_

Date: 6-4-13

## **Appendix E**

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### **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 <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m <sup>3</sup> )	24-hour TSP Level (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish					
102663	Apr-13	3-Apr-13	0:00	0:00	DMS-1	Rainy	Normal Operation	760.0	761.0	21.0	21.0	42.0	42.0	2.7686	2.8928	0.1242	1.1769	1.1777	1.1773	264.29	288.29	1440.00	1695.31	73.3	148.7	260.0
102667	Apr-13	9-Apr-13	0:00	0:00	DMS-1	Rainy	Normal Operation	759.0	761.0	20.0	19.0	43.0	41.0	2.7834	2.8803	0.0969	1.2434	1.1877	1.2156	288.29	312.29	1440.00	1750.39	55.4	148.7	260.0
106271	Apr-13	13-Apr-13	0:00	0:00	DMS-1	Rainy	Normal Operation	759.0	759.0	22.0	22.0	42.0	42.0	2.7706	2.9168	0.1462	1.2095	1.2095	1.2095	312.29	336.29	1440.00	1741.68	83.9	148.7	260.0
102669	Apr-13	19-Apr-13	0:00	0:00	DMS-1	Fine	Normal Operation	757.0	758.0	23.0	25.0	42.0	41.0	2.7660	2.8270	0.0610	1.2058	1.1731	1.1895	336.29	360.29	1440.00	1712.81	35.6	148.7	260.0
102676	Apr-13	25-Apr-13	0:00	0:00	DMS-1	Rainy	Normal Operation	761.0	760.0	26.0	22.0	41.0	41.0	2.7651	2.8849	0.1198	1.1734	1.1808	1.1771	360.29	384.29	1440.00	1695.02	70.7	148.7	260.0
102683	Apr-13	30-Apr-13	0:00	0:00	DMS1	Rainy	Normal Operation	759.0	758.0	21.0	21.0	40.0	41.0	2.7342	2.8465	0.1123	1.1524	1.1812	1.1668	384.29	408.29	1440.00	1680.19	66.8	148.7	260.0

Average (µg/m3)	64.3
Max (µg/m3)	83.9
Min (µg/m3)	35.6

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 <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m <sup>3</sup> )	24-hour TSP Level (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish					
102668	Apr-13	3-Apr-13	0:00	0:00	DMS-2	Rainy	Normal Operation	760.0	761.0	21.0	21.0	41.0	42.0	2.7702	2.8244	0.0542	1.3690	1.3999	1.3845	120.39	144.39	1440.00	1993.61	27.2	167.4	260.0
102666	Apr-13	9-Apr-13	0:00	0:00	DMS-2	Rainy	Normal Operation	759.0	761.0	20.0	19.0	42.0	41.0	2.7728	2.9652	0.1924	1.4005	1.3740	1.3873	144.39	168.39	1440.00	1997.64	96.3	167.4	260.0
102672	Apr-13	13-Apr-13	0:00	0:00	DMS-2	Rainy	Normal Operation	759.0	759.0	22.0	22.0	41.0	42.0	2.7726	2.8965	0.1239	1.3661	1.3962	1.3812	168.39	192.39	1440.00	1988.86	62.3	167.4	260.0
102674	Apr-13	19-Apr-13	0:00	0:00	DMS-2	Fine	Normal Operation	757.0	758.0	23.0	25.0	42.0	42.0	2.7607	2.9355	0.1748	1.3924	1.3890	1.3907	192.39	216.39	1440.00	2002.61	87.3	167.4	260.0
102680	Apr-13	25-Apr-13	0:00	0:00	DMS-2	Rainy	Normal Operation	761.0	760.0	26.0	22.0	41.0	41.0	2.7533	2.8175	0.0642	1.3594	1.3669	1.3632	216.39	240.39	1440.00	1962.94	29.9	167.4	260.0
102681	Apr-13	30-Apr-13	0:00	0:00	DMS2	Rainy	Normal Operation	759.0	758.0	21.0	21.0	42.0	42.0	2.7442	2.9245	0.1803	1.3983	1.3975	1.3979	240.39	264.39	1440.00	2012.98	89.6	167.4	260.0

Average (µg/m3)	65.4
Max (µg/m3)	96.3
Min (µg/m3)	27.2

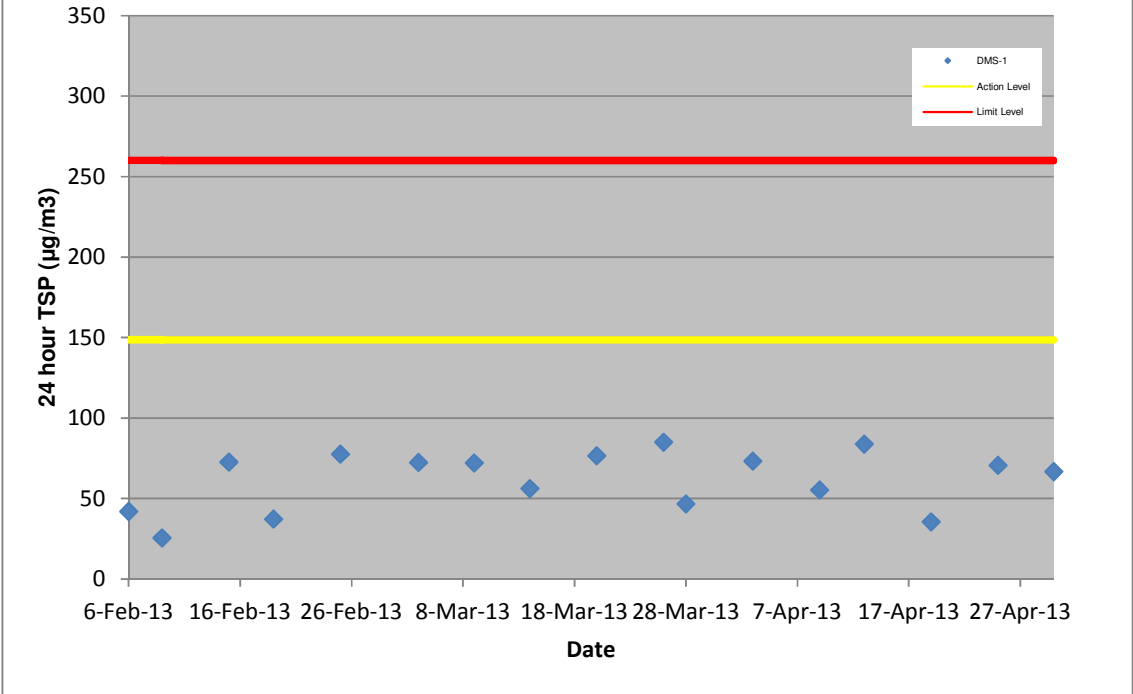
Location: DMS-3 - Hong Kong Sheng Kung Hui Nursing Home

Details of 24-Hour TSP Monitoring

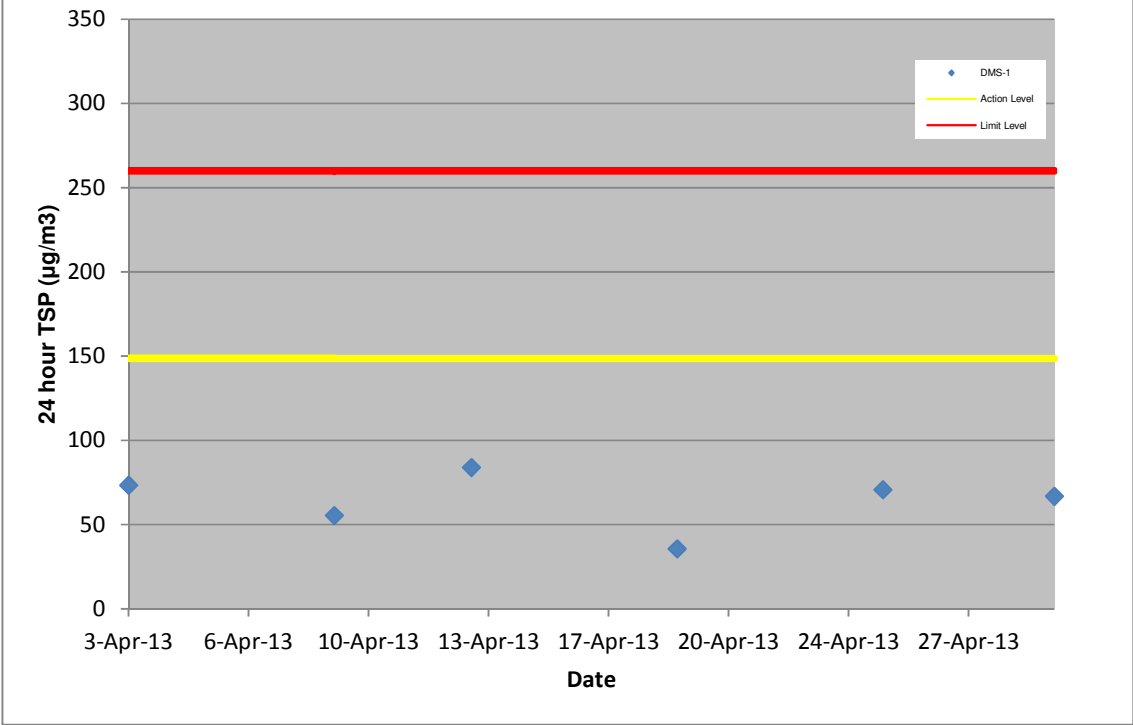
Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m <sup>3</sup> )	24-hour TSP Level (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish					
102660	Apr-13	3-Apr-13	0:00	0:00	DMS-3	Rainy	Normal Operation	760.0	761.0	21.0	21.0	41.0	42.0	2.8028	2.8915	0.0887	1.3767	1.4062	1.3915	264.40	288.40	1440.00	2003.69	44.3	159.1	260.0
102664	Apr-13	9-Apr-13	0:00	0:00	DMS-3	Rainy	Normal Operation	759.0	761.0	20.0	19.0	40.0	40.0	2.7707	2.7866	0.0159	1.2671	1.2704	1.2688	288.40	312.40	1440.00	1827.00	8.7	159.1	260.0
102670	Apr-13	13-Apr-13	0:00	0:00	DMS-3	Rainy	Normal Operation	759.0	759.0	22.0	22.0	40.0	41.0	2.7616	2.8796	0.1180	1.2633	1.2913	1.2773	312.40	336.40	1440.00	1839.31	64.2	159.1	260.0
102677	Apr-13	19-Apr-13	0:00	0:00	DMS-3	Fine	Normal Operation	757.0	758.0	23.0	25.0	41.0	41.0	2.7591	2.9816	0.2225	1.2879	1.2847	1.2863	336.40	360.40	1440.00	1852.27	120.1	159.1	260.0
102679	Apr-13	25-Apr-13	0:00	0:00	DMS-3	Rainy	Normal Operation	761.0	760.0	26.0	22.0	42.0	41.0	2.7523	2.8119	0.0000	1.3130	1.2920	1.3025	360.40	384.40	1440.00	1875.60	31.8	159.1	260.0
102685	Apr-13	30-Apr-13	0:00	0:00	DMS3	Rainy	Normal Operation	759.0	758.0	21.0	21.0	43.0	42.0	2.7425	2.7906	0.0481	1.3494	1.3205	1.3350	384.40	408.40	1440.00	1922.33	25.0	159.1	260.0

Average (µg/m3)	49.0
Max (µg/m3)	120.1
Min (µg/m3)	8.7

Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-1  
From February 2013 to April 2013

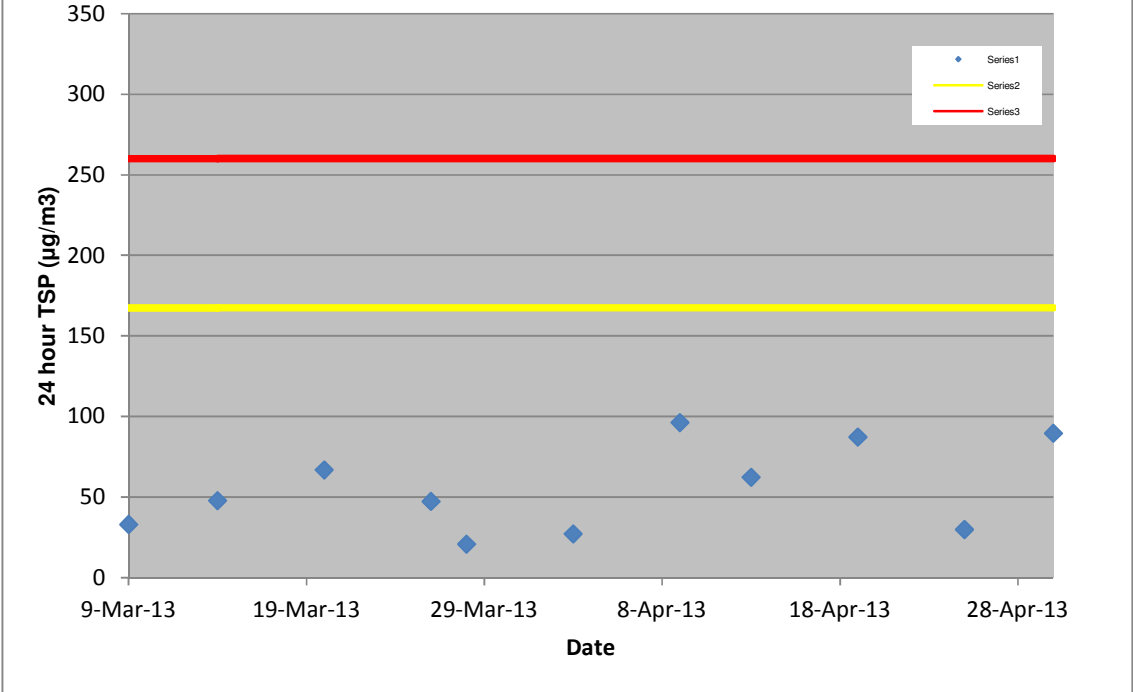


Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-1

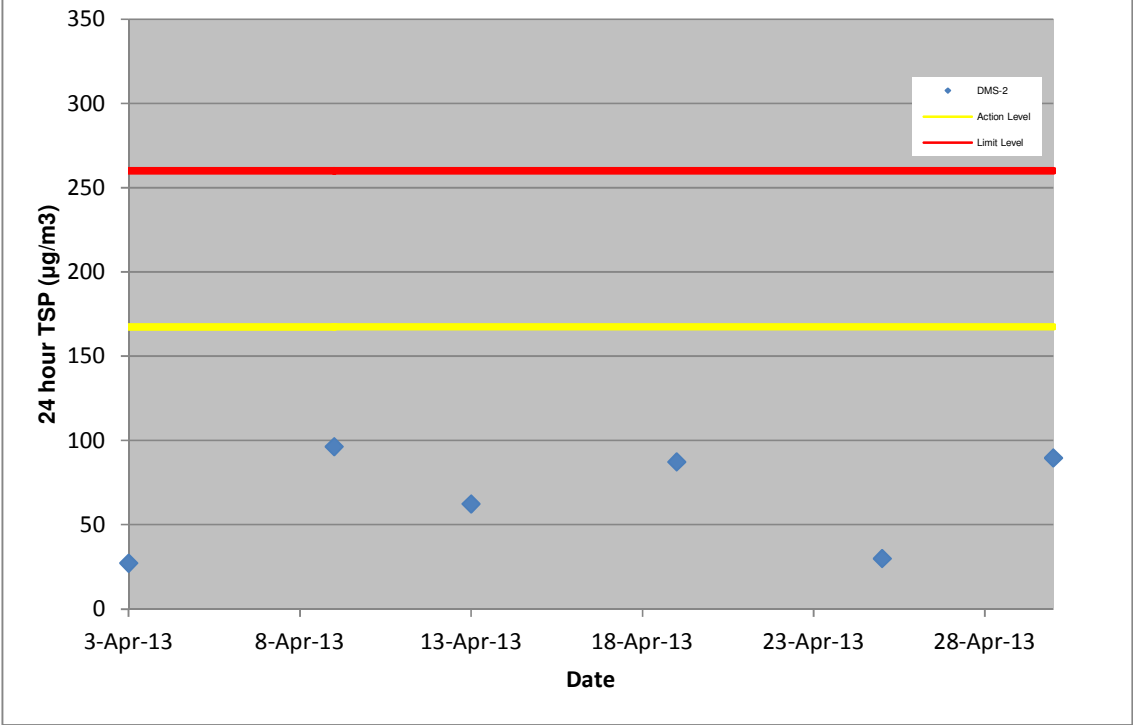




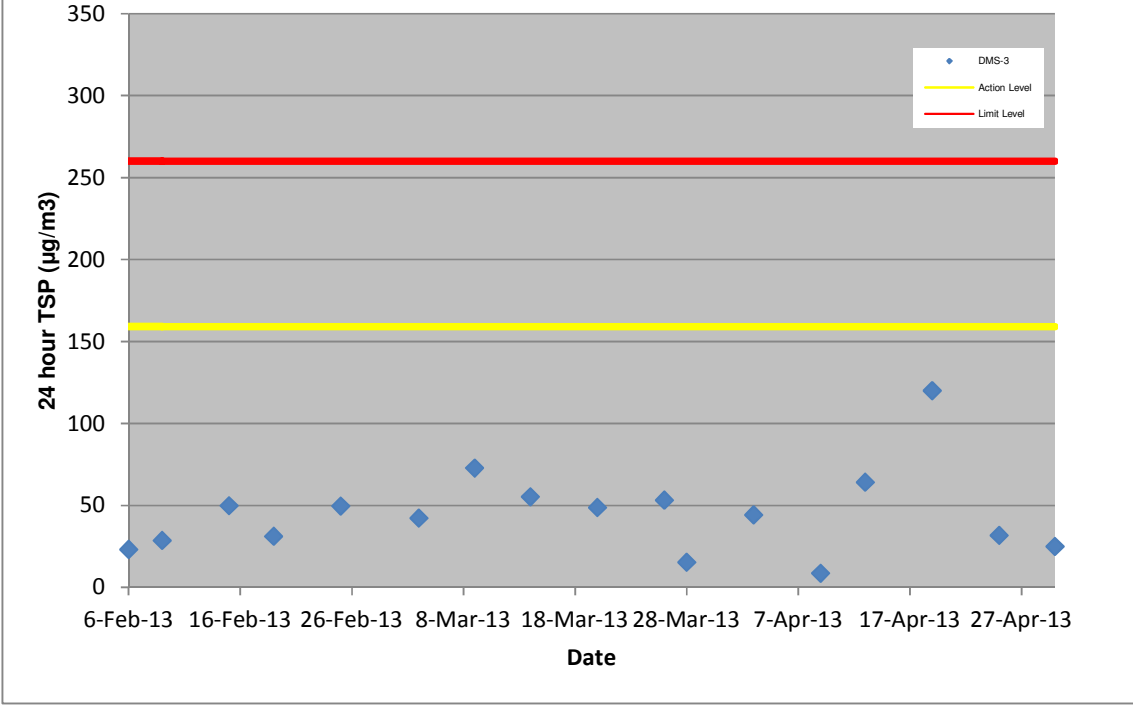
Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-2  
From March 2013 to April 2013



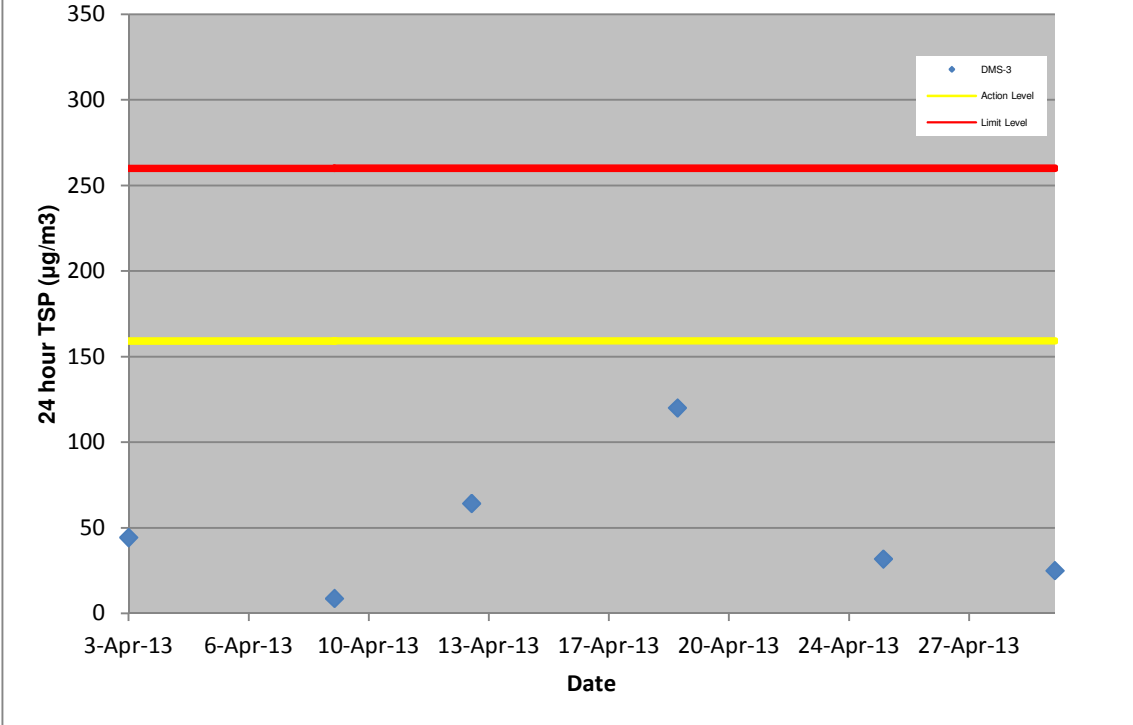
Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-2



**Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-3  
From February 2013 to April 2013**



**Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-3**



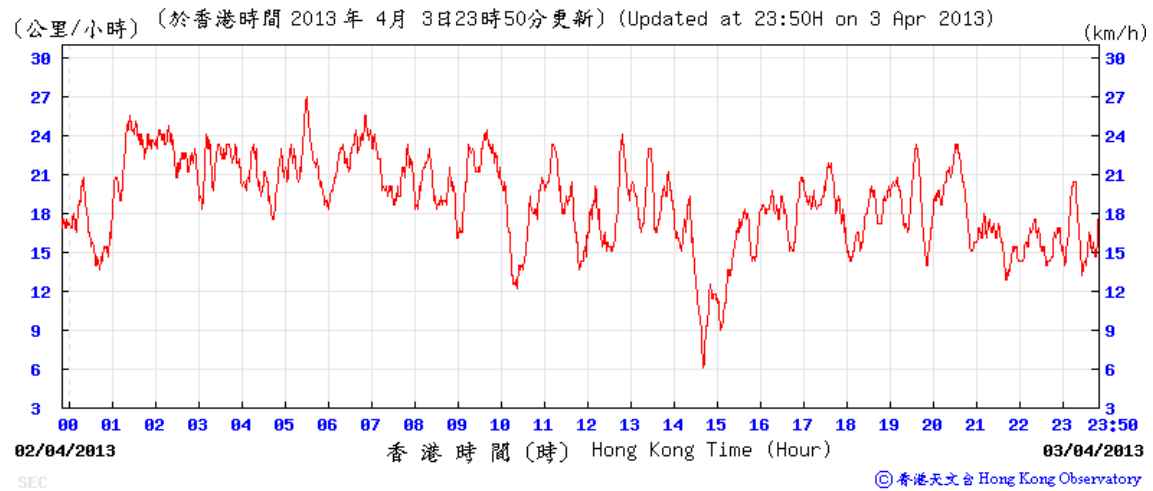
## Appendix F

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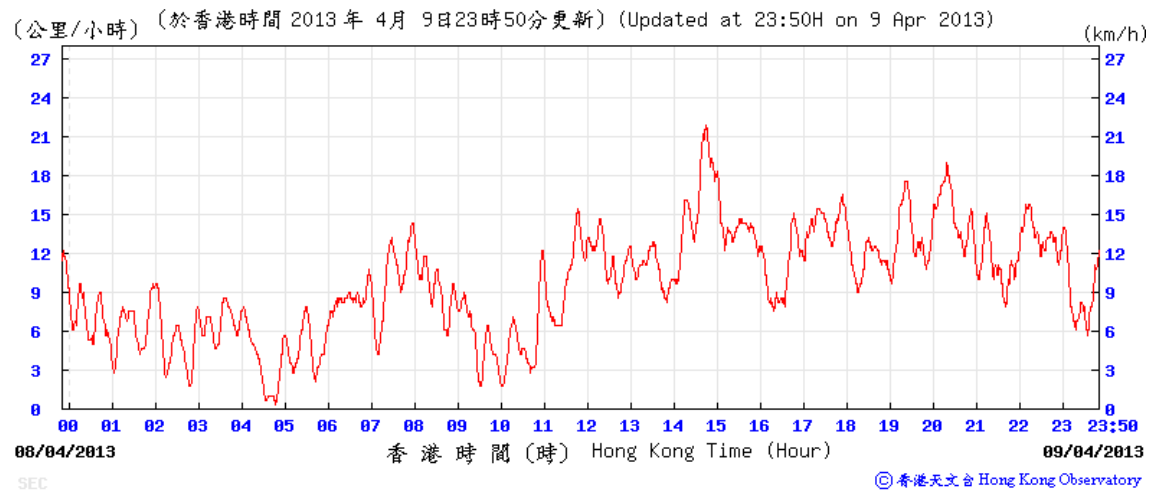
Wind data

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

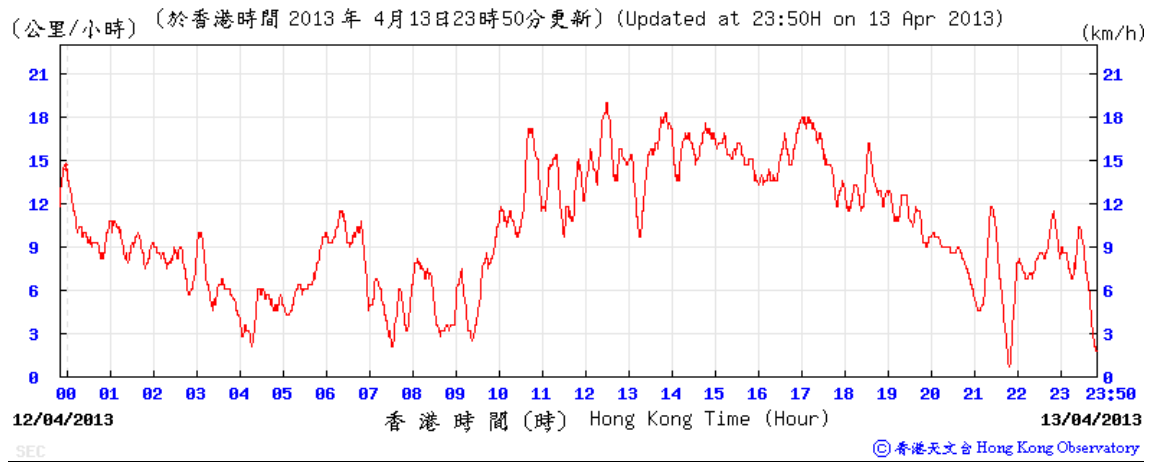
3 April 2013



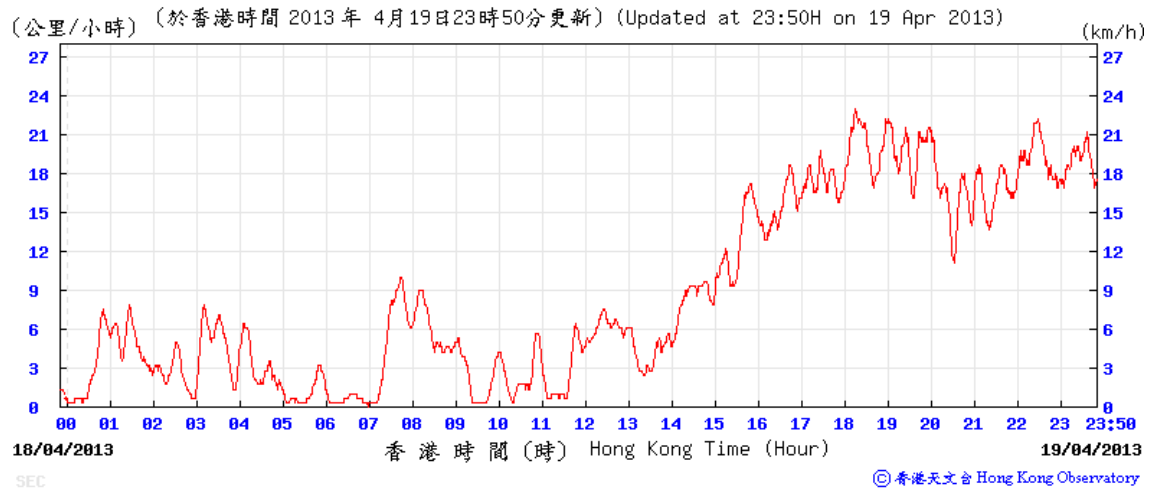
9 April 2013



## 13 April 2013

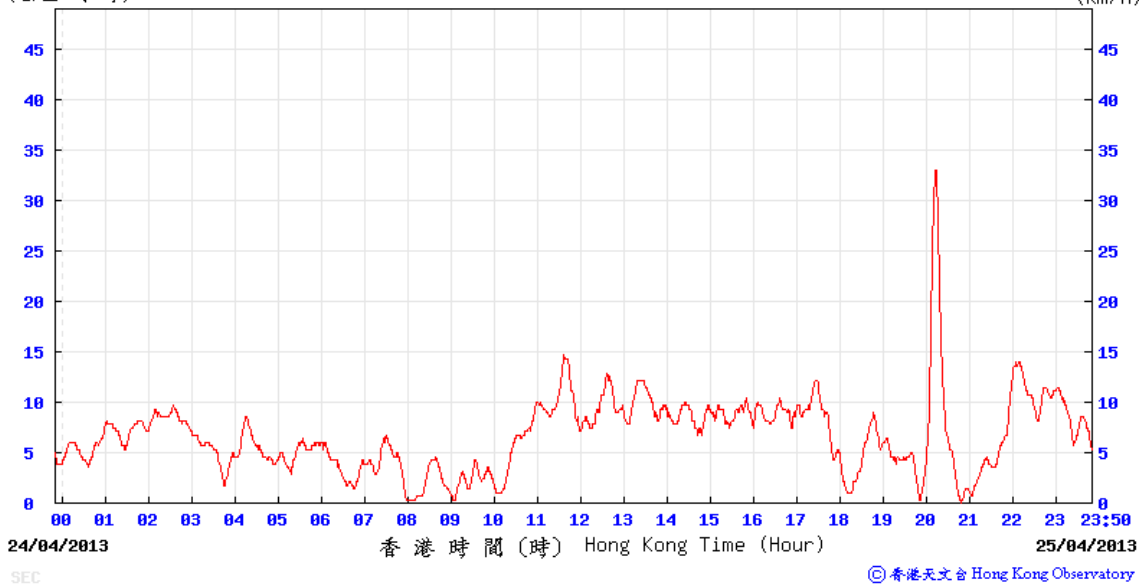


## 19 April 2013



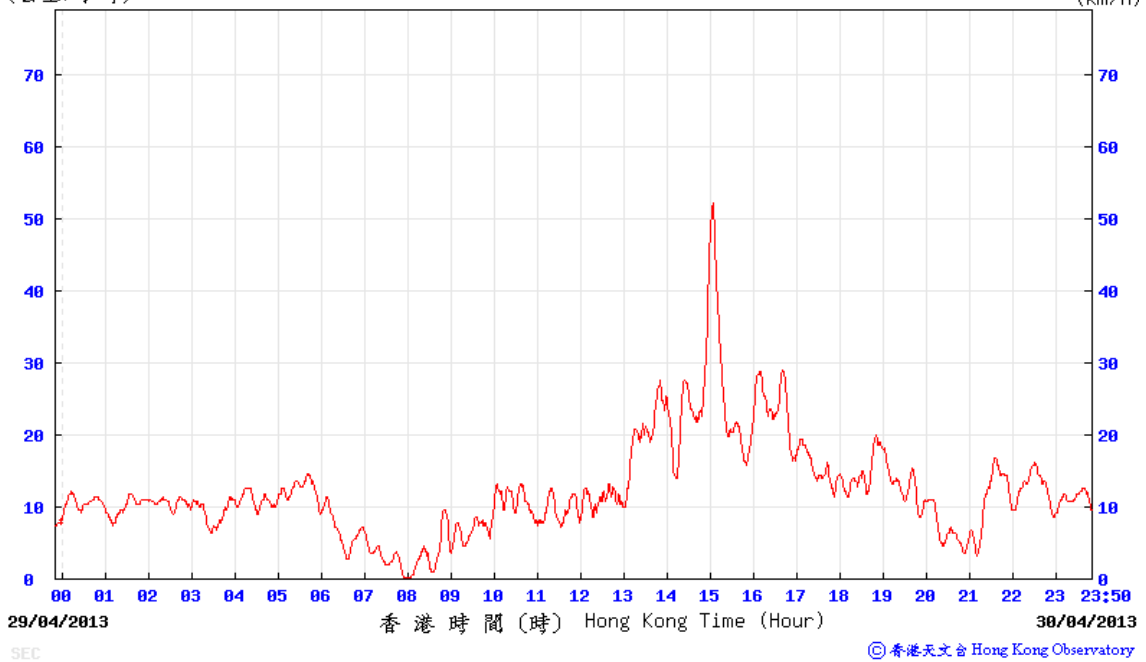
## 25 April 2013

(公里/小時) (於香港時間 2013 年 4月25日23時50分更新) (Updated at 23:50H on 25 Apr 2013) (km/h)



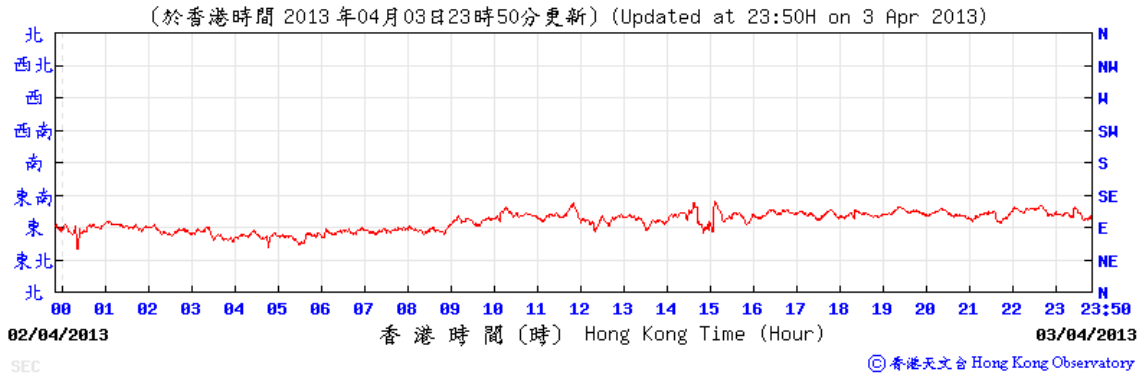
## 30 April 2013

(公里/小時) (於香港時間 2013 年 4月30日23時50分更新) (Updated at 23:50H on 30 Apr 2013) (km/h)

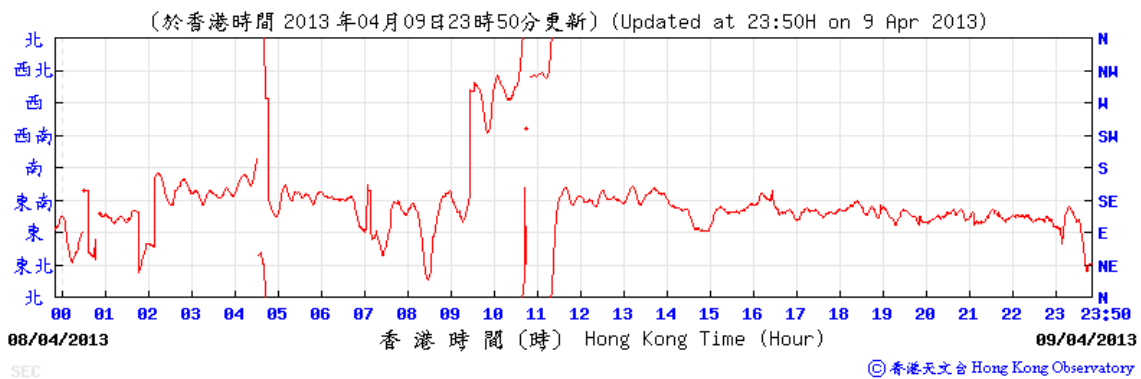


# Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

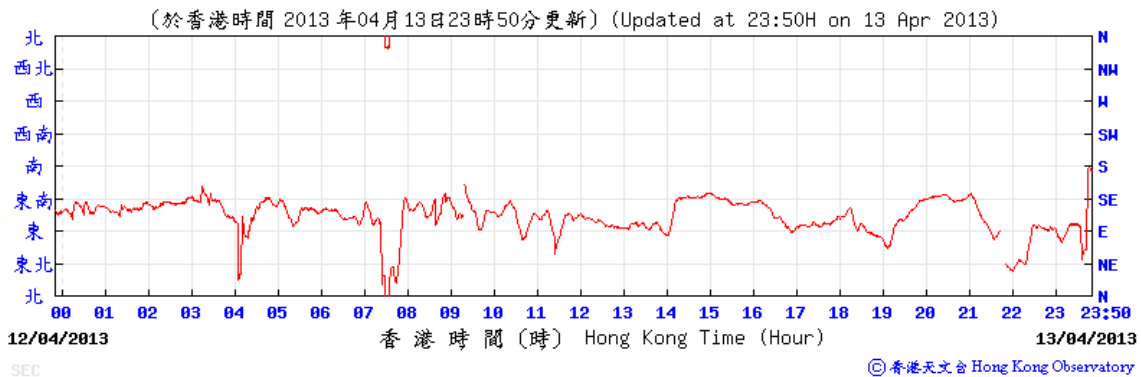
3 April 2013



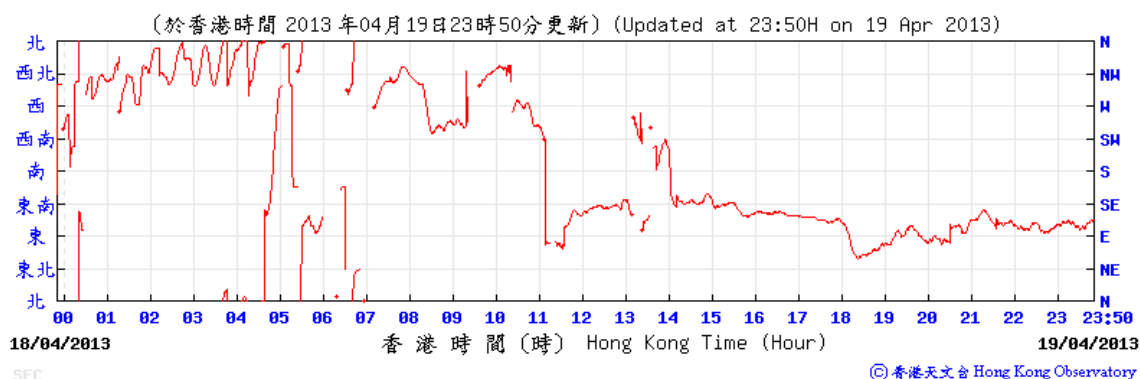
9 April 2013



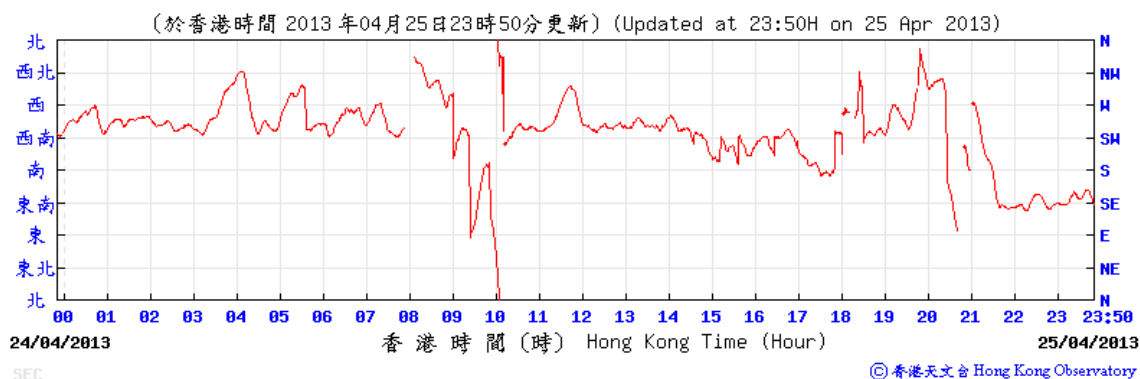
13 April 2013



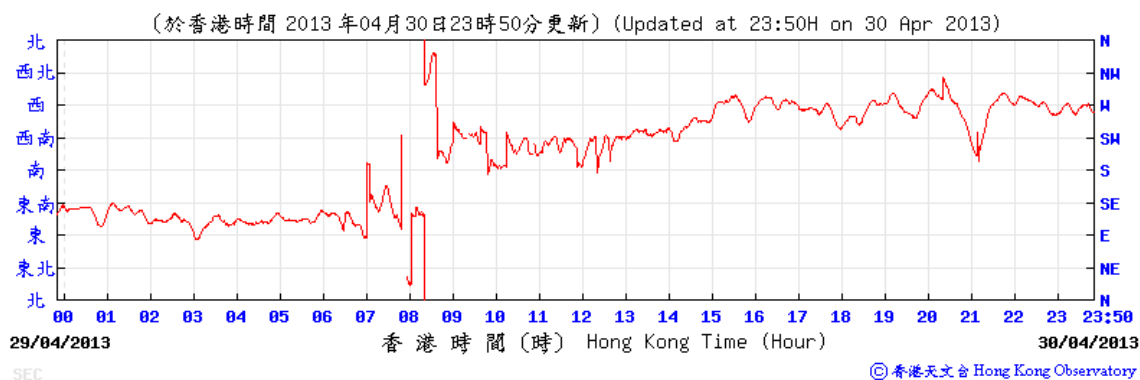
## 19 April 2013



## 25 April 2013



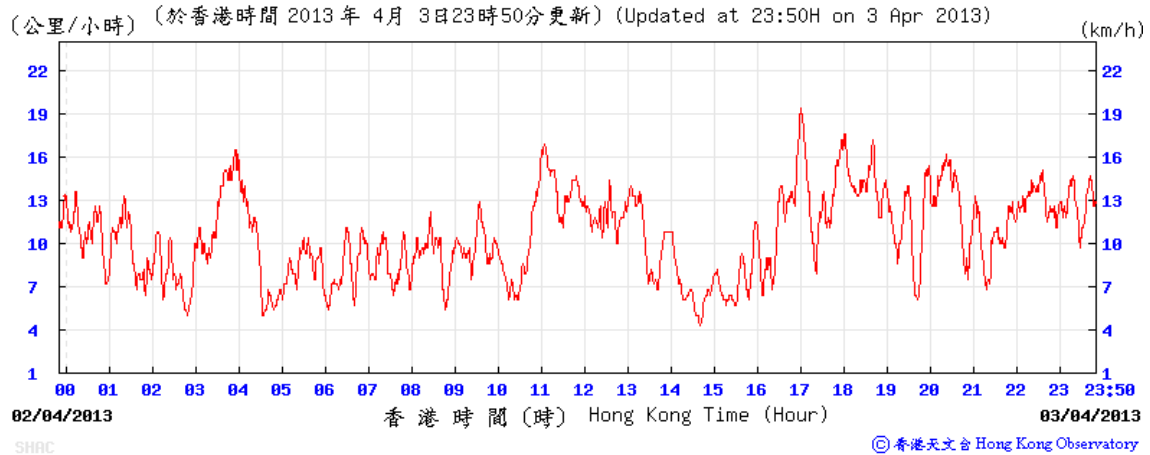
## 30 April 2013



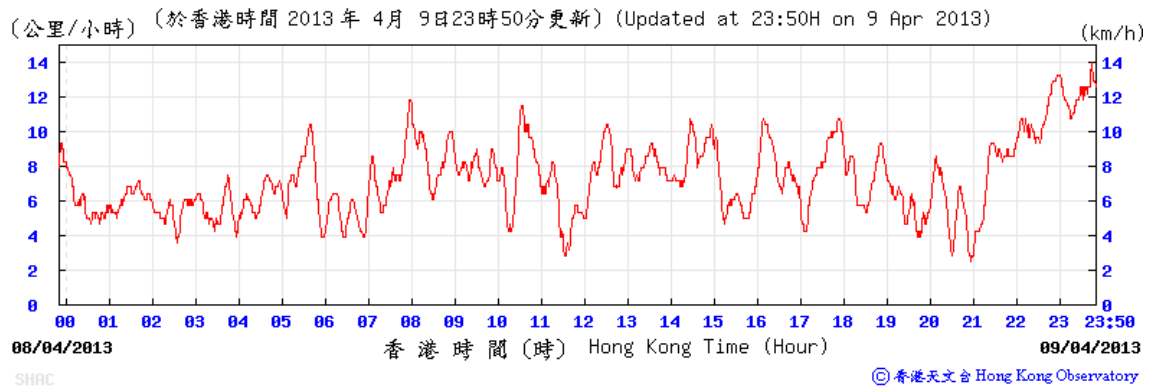


## Average wind speed obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

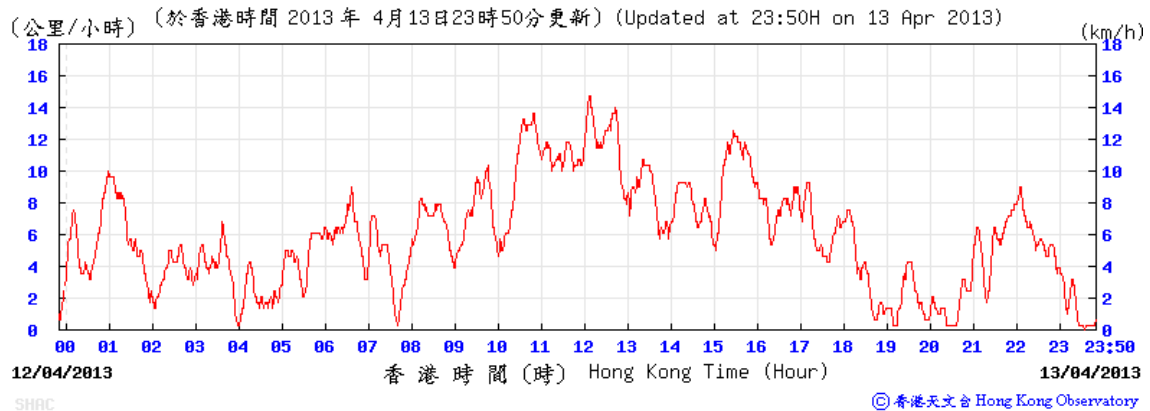
3 April 2013



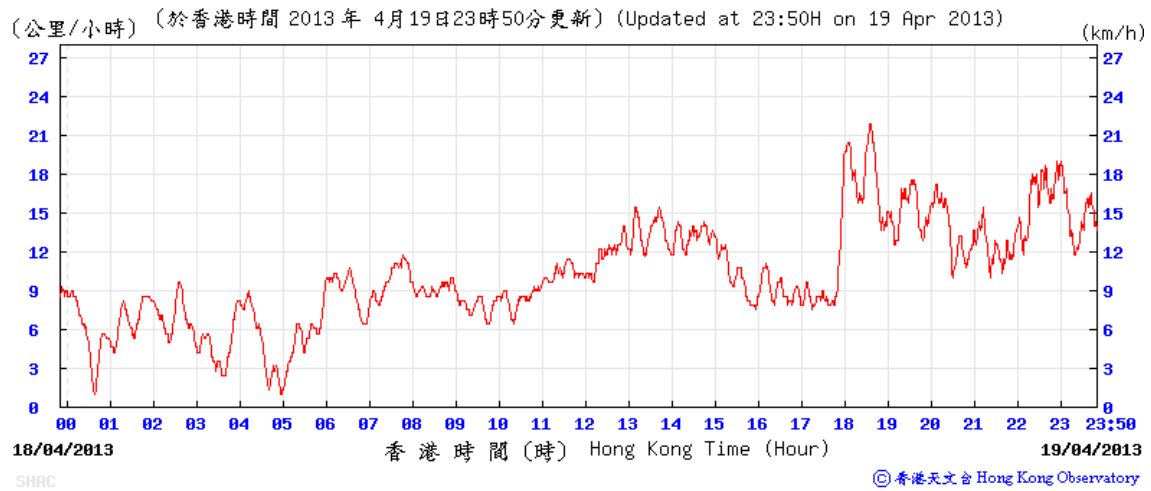
9 April 2013



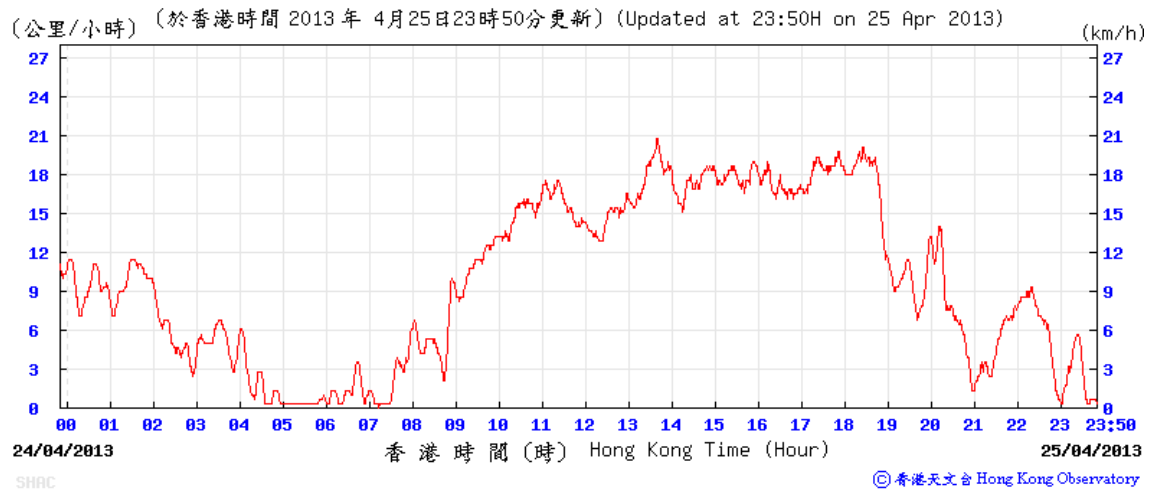
13 April 2013



## 19 April 2013

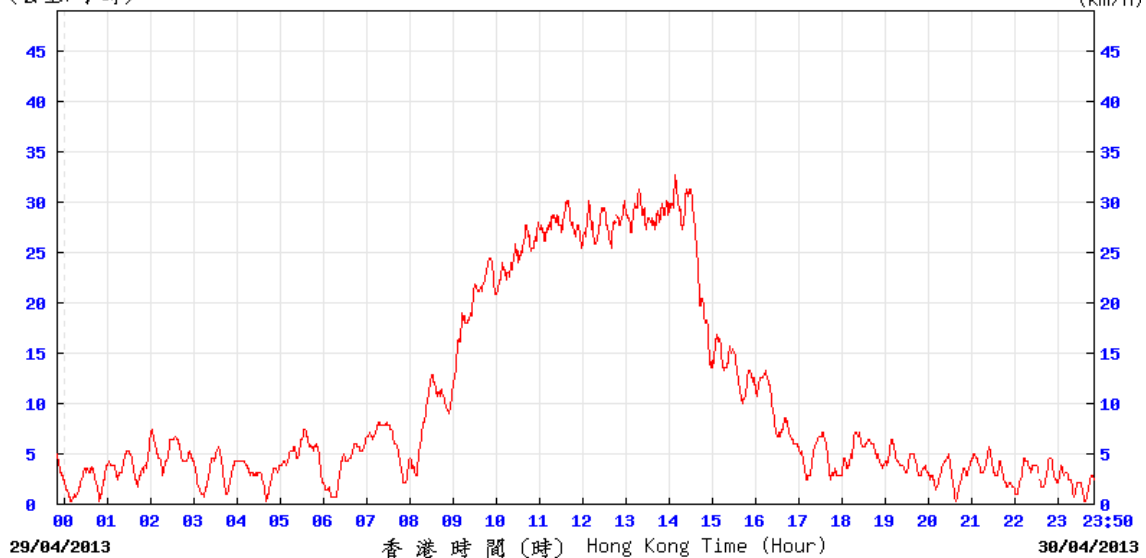


## 25 April 2013



30 April 2013

(公里/小時) (於香港時間 2013 年 4月30日23時50分更新) (Updated at 23:50H on 30 Apr 2013) (km/h)



29/04/2013

香港時間 (時) Hong Kong Time (Hour)

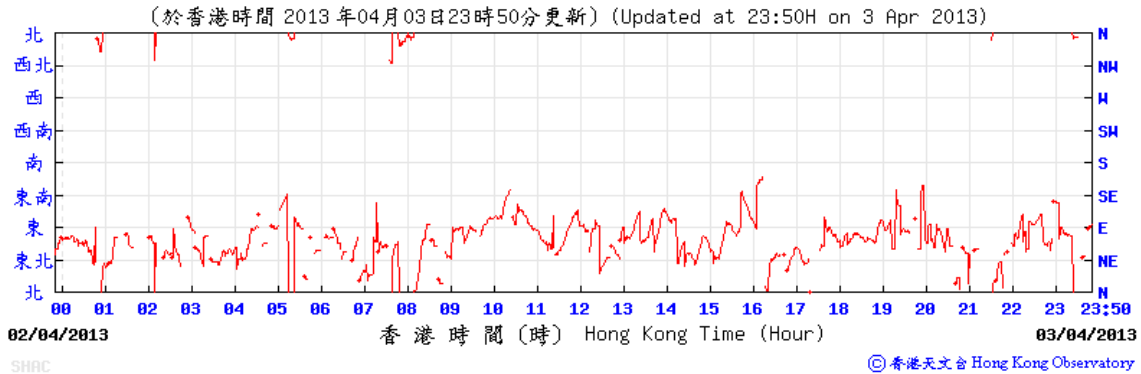
30/04/2013

SHAC

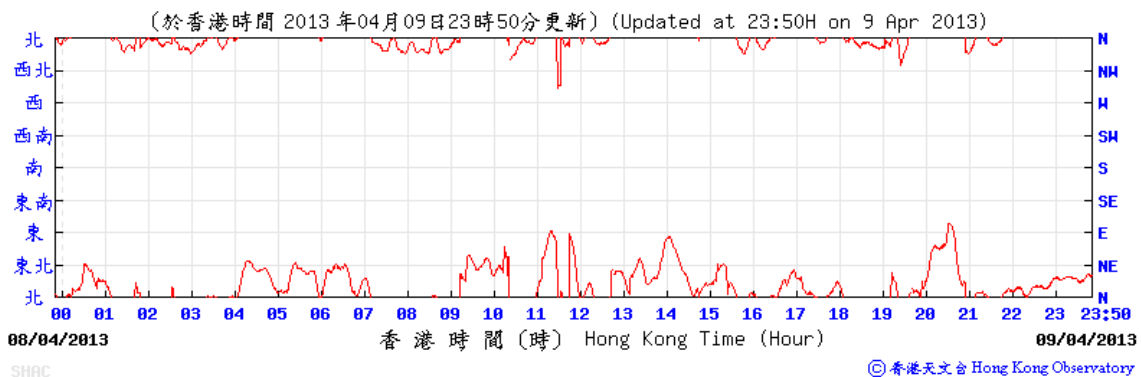
© 香港天文台 Hong Kong Observatory

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

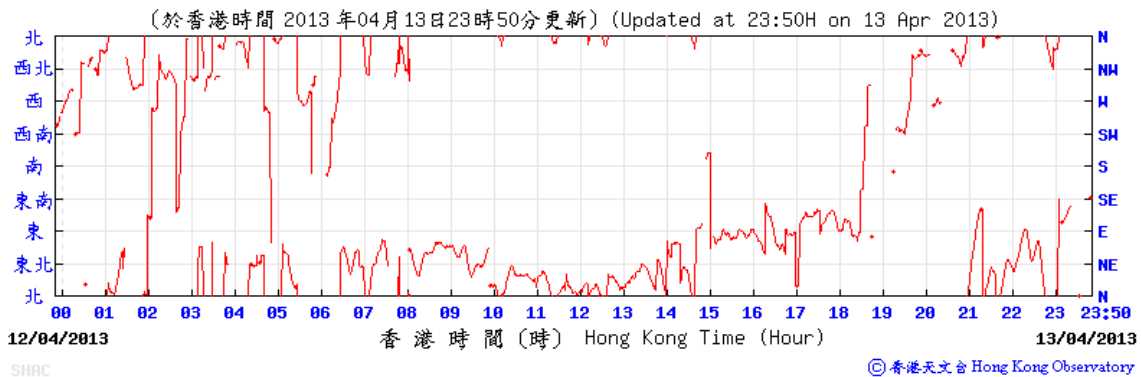
3 April 2013



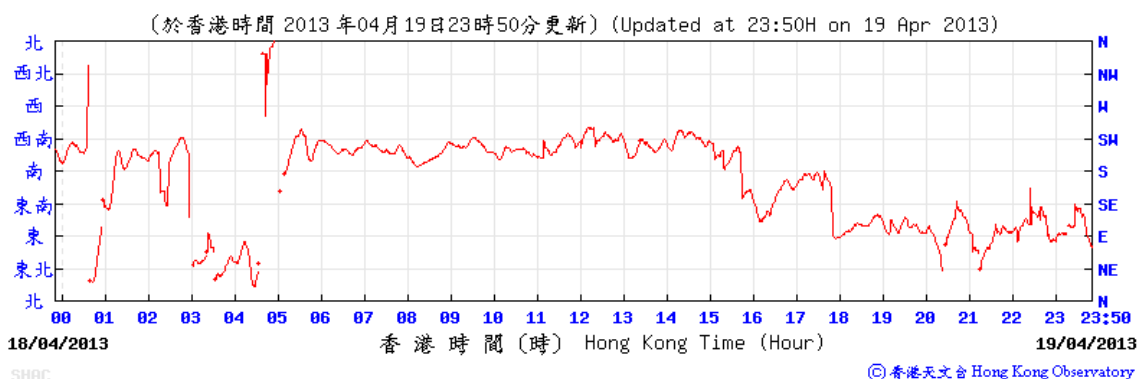
9 April 2013



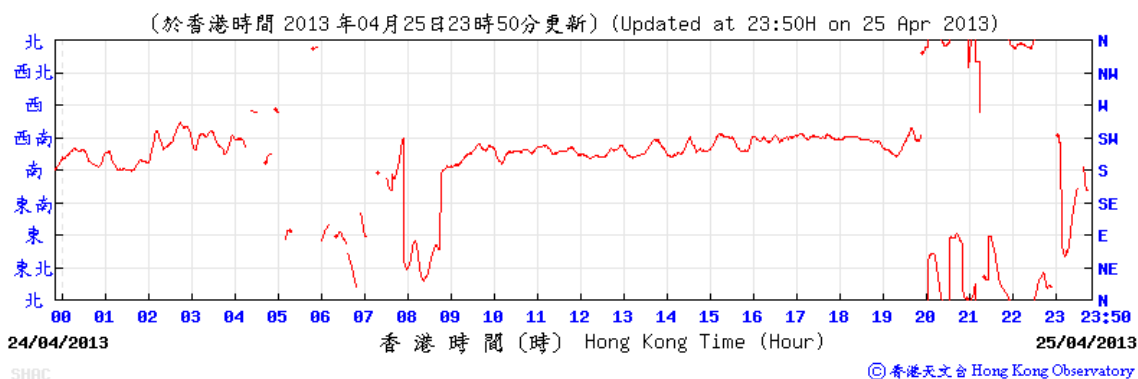
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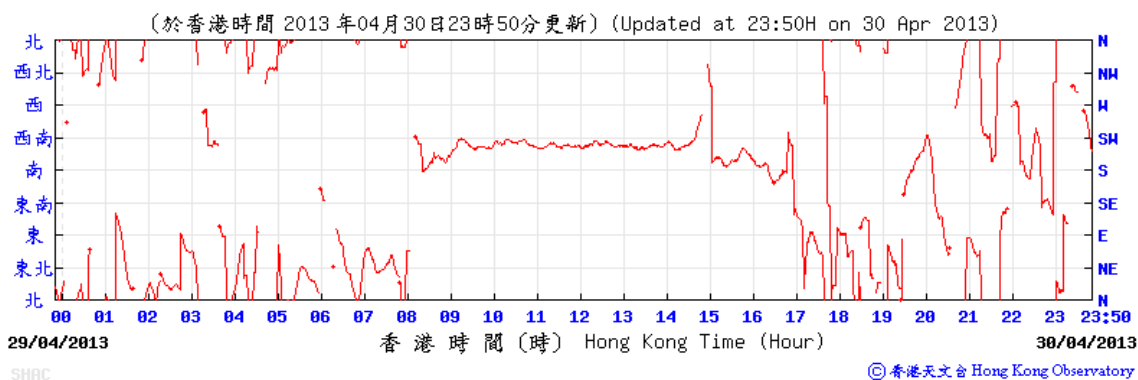
## 19 April 2013



## 25 April 2013



## 30 April 2013



## Appendix G

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Calibration  
Certificates of Noise  
Monitoring  
Equipment

輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C124325  
證書編號

### ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC12-1839)

Description / 儀器名稱 : Integrating Sound Level Meter  
Manufacturer / 製造商 : Bruel & Kjaer  
Model No. / 型號 : 2238  
Serial No. / 編號 : 2562763  
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 : 25 July 2012

### 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 Precision Measurement Ltd., UK
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By :   
測試 : K.C. Lee

Certified By :   
核證 : C.C. Cheung

Date of Issue : 26 July 2012  
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所書面批准。

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

Page 1 of 4

# Certificate of Calibration

## 校正證書

Certificate No. : C124325

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 6.3.2.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C120016
CL281	Multifunction Acoustic Calibrator	DC110233

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 <sub>AFF</sub>	A	F	94.00	1	94.2

##### 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 <sub>AFF</sub>	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 <sub>AFF</sub>	A	F	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.

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所書面批准。



# Certificate of Calibration

## 校正證書

Certificate No. : C124325

證書編號

### 6.2 Time Weighting

#### 6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L <sub>AFF</sub>	A	F	94.00	1	94.0	Ref.
	L <sub>ASP</sub>		S			94.1	± 0.1
	L <sub>AIP</sub>		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 <sub>AFF</sub>	A	F	106.0	Continuous	106.0	Ref.
	L <sub>AFMax</sub>				200 ms	105.1	-1.0 ± 1.0
	L <sub>ASP</sub>	S	Continuous		106.0	Ref.	
	L <sub>ASMax</sub>		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 <sub>AFF</sub>	A	F	94.00	31.5 Hz	54.8	-39.4 ± 1.5
					63 Hz	67.9	-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	94.9	+1.0 ± 1.0
					8 kHz	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-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. : C124325

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 <sub>CFP</sub>	C	F	94.00	31.5 Hz	91.1	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	93.9	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	93.1	-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 <sub>Aeq</sub>	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
								90	89.7	± 0.5
								80	79.7	± 1.0
								70	69.8	± 1.0
			60 sec.			1/10 <sup>2</sup>				
			5 min.			1/10 <sup>4</sup>				

Remarks : - 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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# Certificate of Calibration

## 校正證書

Certificate No. : C124803  
證書編號

**ITEM TESTED / 送檢項目** (Job No. / 序引編號 : IC12-1839)

Description / 儀器名稱 : Acoustical Calibrator  
Manufacturer / 製造商 : Bruel & Kjaer  
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 :  $(23 \pm 2)^{\circ}\text{C}$   
Line Voltage / 電壓 : ---

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

**TEST SPECIFICATIONS / 測試規範**

Calibration check

**DATE OF TEST / 測試日期** : 16 August 2012

**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

Certified By :   
核證 C C Cheung

Date of Issue : 17 August 2012  
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所書面批准。

# Certificate of Calibration

## 校正證書

Certificate No. : C124803

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	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

- 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	114.0		

### 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.

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## Appendix H

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### 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 <sub>Aeq,30min</sub>	Limit	L <sub>10,30min</sub>	L <sub>90,30min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
2-Apr-13	08:35 - 09:05	52.3	65.0	54.5	49.0	57.0	< Baseline Level
10-Apr-13	13:00 - 13:30	57.8	65.0	60.0	53.0	57.0	50.1
15-Apr-13	11:30 - 12:00	59.4	65.0	62.0	54.0	57.0	55.7
26-Apr-13	13:45 - 14:15	58.0	65.0	60.0	54.0	57.0	51.1

Notes: (\*) : Façade correction is included

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

<b>Average</b> L <sub>Aeq,30min</sub>	56.9
<b>Max</b> L <sub>Aeq,30min</sub>	59.4
<b>Min</b> L <sub>Aeq,30min</sub>	52.3

**Location: NMS-CA-2 - Price Memorial Catholic Primary School**

Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L <sub>Aeq,30min</sub>	Limit	L <sub>10,30min</sub>	L <sub>90,30min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
2-Apr-13	11:25 - 11:55	67.1	70.0	69.5	64.5	66.0	60.6
10-Apr-13	09:25 - 09:55	69.2	70.0	70.5	69.2	66.0	66.4
15-Apr-13	09:15 - 09:45	68.4	70.0	70.0	69.2	66.0	64.7
26-Apr-13	09:55 - 10:25	69.6	70.0	71.0	66.0	66.0	67.1

Notes: (\*) : Façade correction is included

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

<b>Average</b> L <sub>Aeq,30min</sub>	68.6
<b>Max</b> L <sub>Aeq,30min</sub>	69.6
<b>Min</b> L <sub>Aeq,30min</sub>	67.1

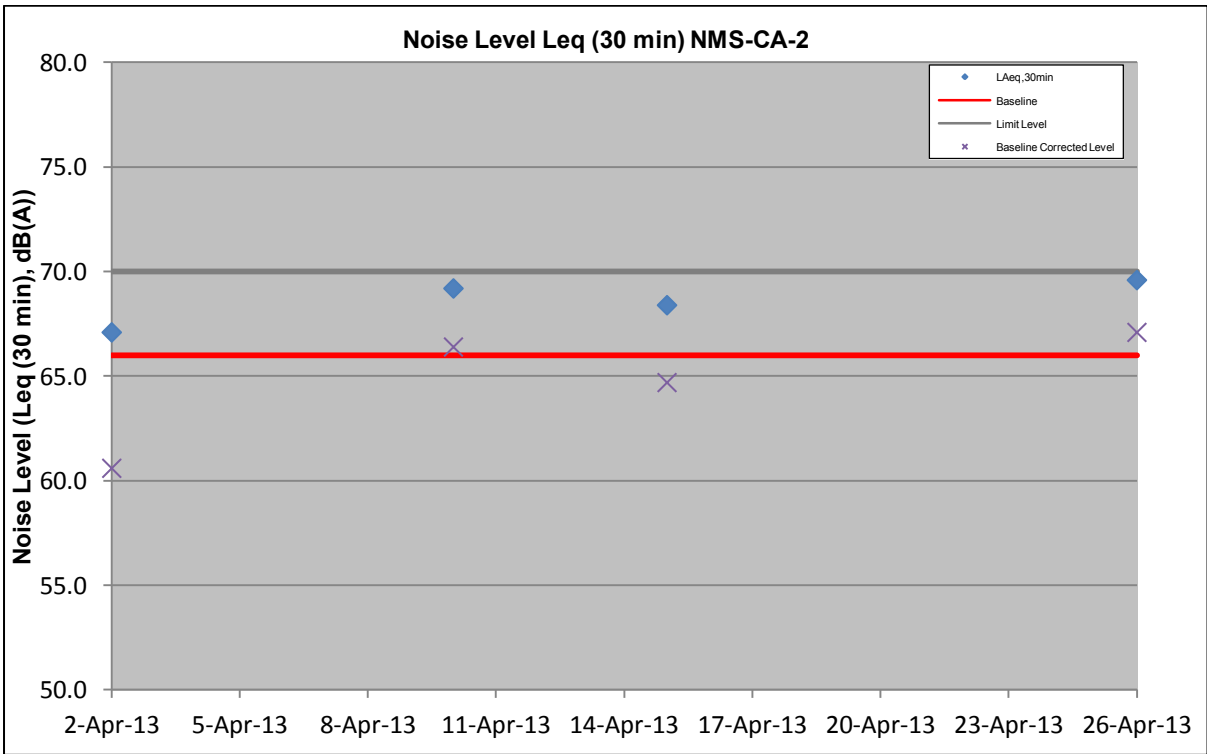
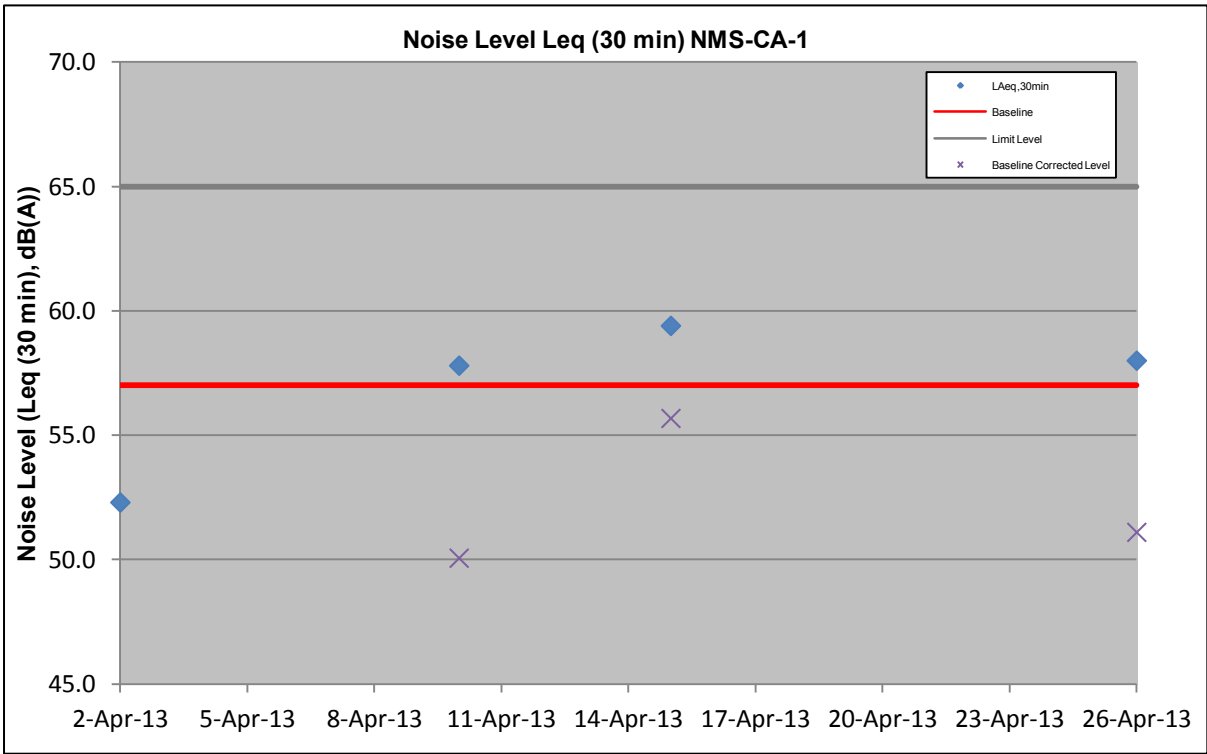
**Location: NMS-CA-3 - Hong Kong Sheng Kung Hui Nursing Home**

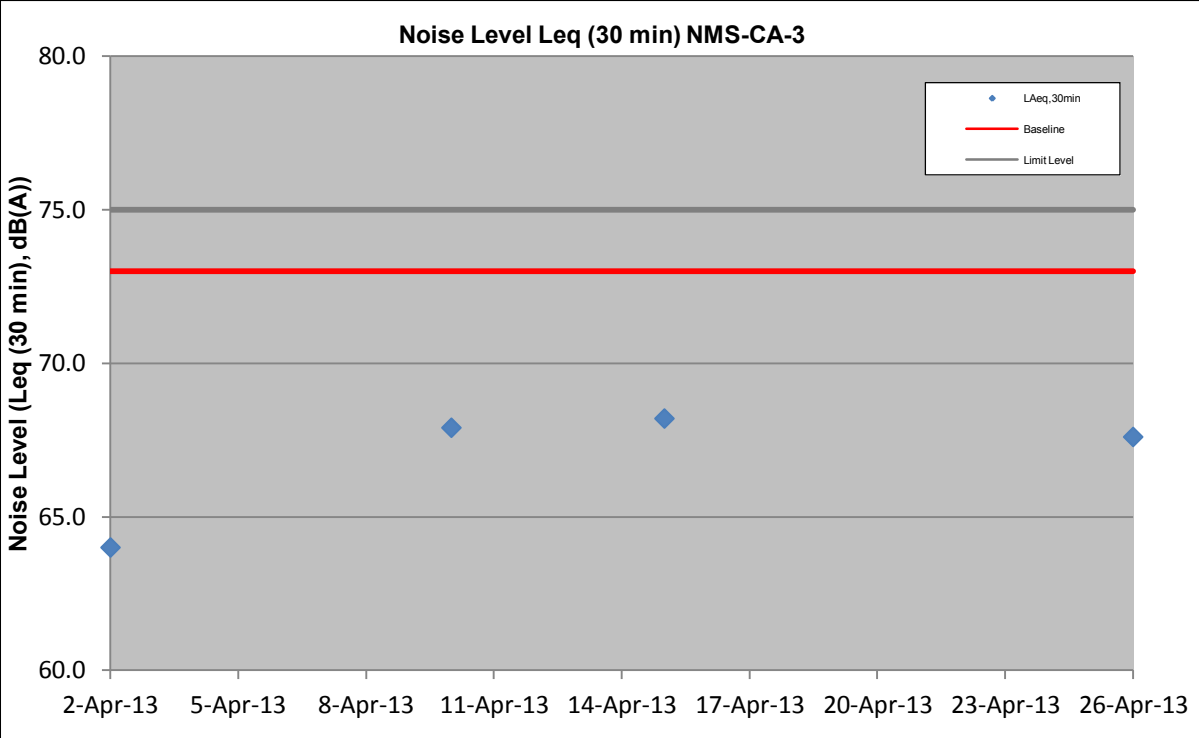
Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L <sub>Aeq,30min</sub>	Limit	L <sub>10,30min</sub>	L <sub>90,30min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
2-Apr-13	15:05 - 15:35	64.0	75.0	69.0	64.5	73.0	< Baseline Level
10-Apr-13	11:10 - 11:40	67.9	75.0	69.5	64.5	73.0	< Baseline Level
15-Apr-13	10:25 - 10:55	68.2	75.0	69.5	62.0	73.0	< Baseline Level
26-Apr-13	11:25 - 11:55	67.6	75.0	70.0	65.0	73.0	< Baseline Level

Notes: (\*) : Façade correction is included

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

<b>Average</b> L <sub>Aeq,30min</sub>	66.9
<b>Max</b> L <sub>Aeq,30min</sub>	68.2
<b>Min</b> L <sub>Aeq,30min</sub>	64.0









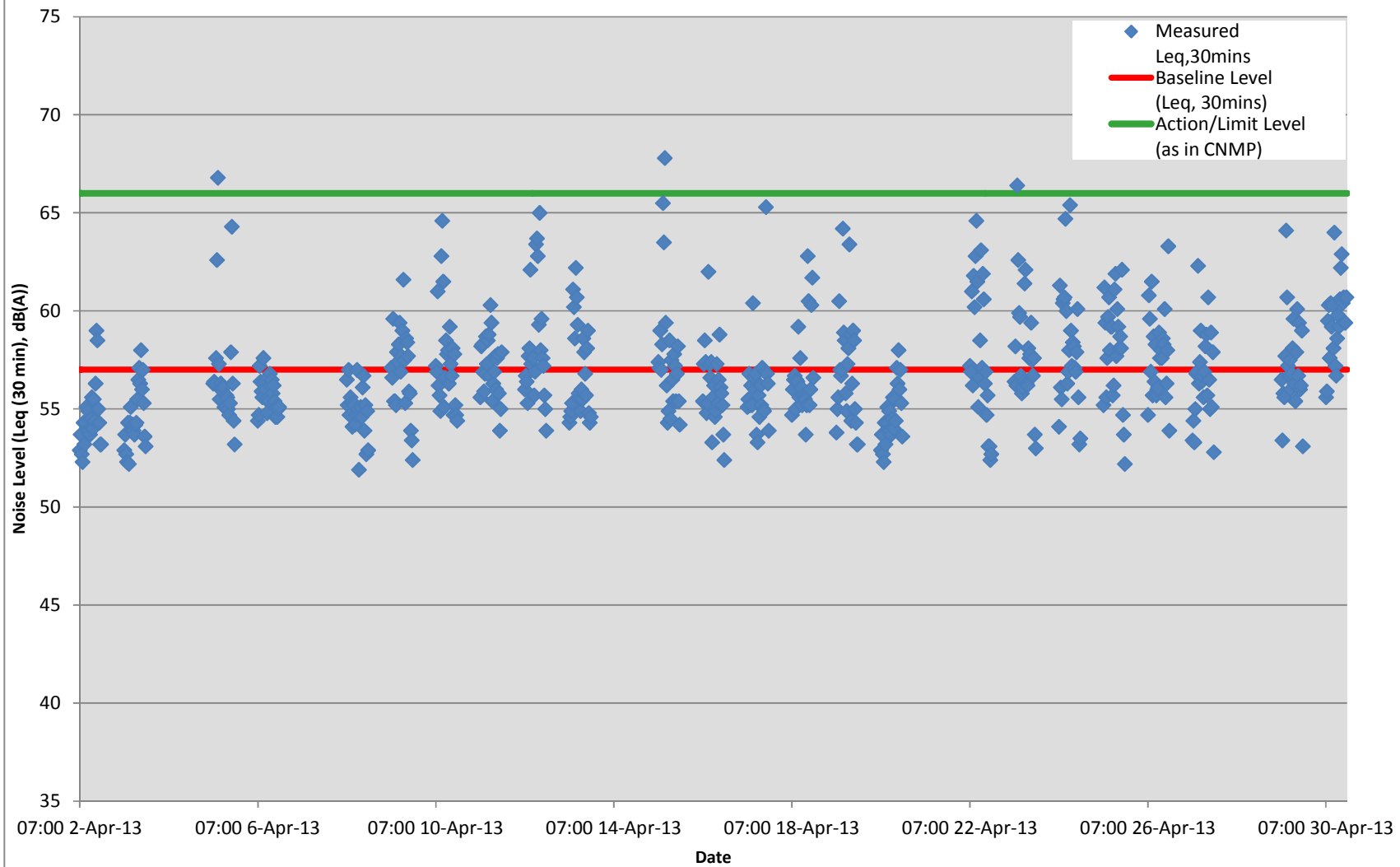




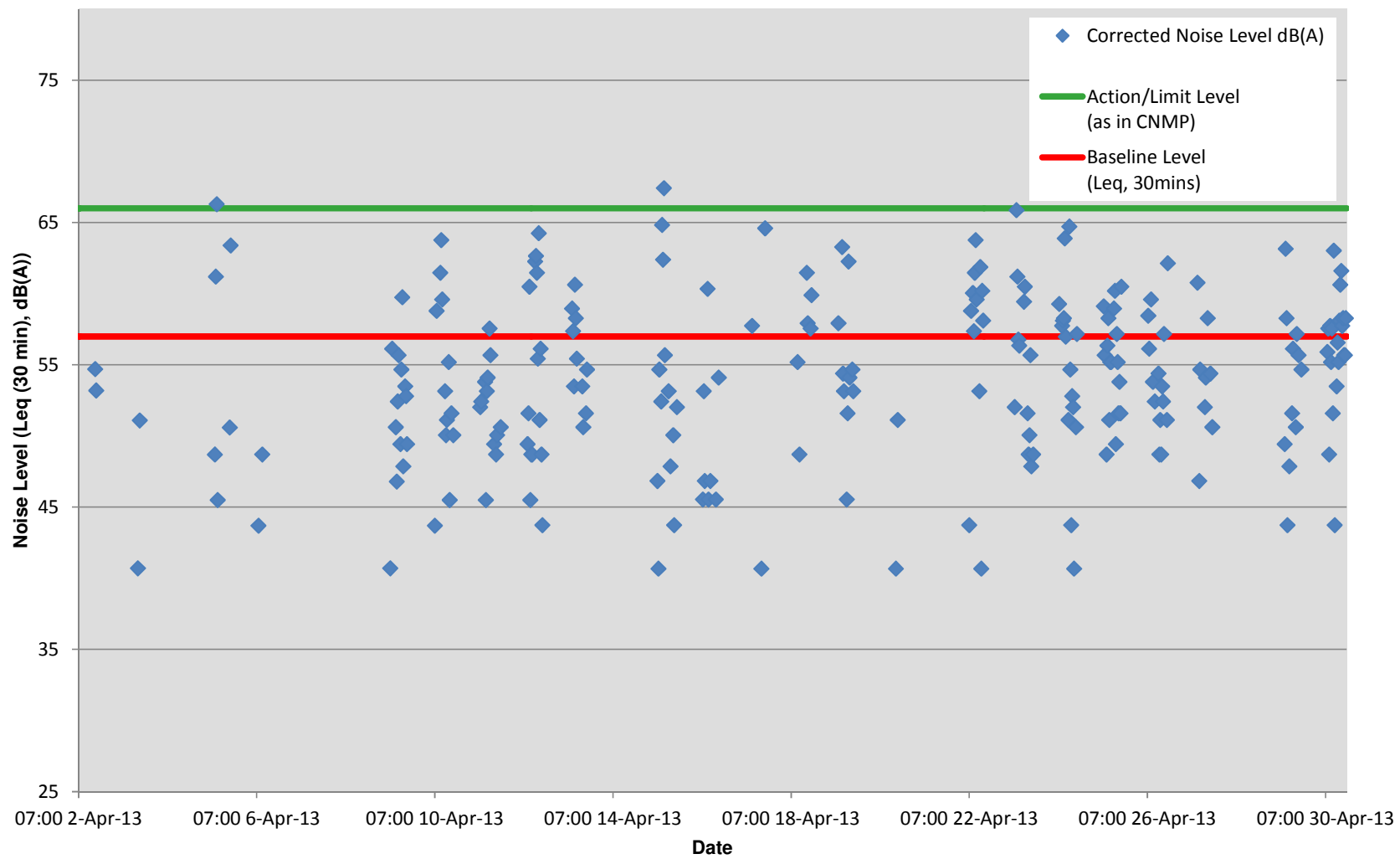




Continuous Noise Monitoring at NMS-CA-1



### Continuous Noise Monitoring at NMS-CA-1



## Appendix I

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Event/Action Plan for  
Ct'S wcrk\ "'cpf 'Ckdqtpg"  
P qkug''''

## Event and Action Plan for Air Quality

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



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

## Event and Action Plan for Airborne Noise

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

## **Appendix J**

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### **Waste Flow Table**

**Monthly Summary Waste Flow Table for 2013**

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 (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan	1.694	0.000	0.000	0.000	1.694	0.000	0.000	0.000	0.000	0.000	0.087
Feb	1.962	0.000	0.000	0.526	1.436	1.339	0.000	0.000	0.000	0.000	0.014
Mar	3.171	0.000	0.440	1.537	1.194	2.199	0.000	0.000	0.000	0.000	0.025
Apr	3.792	1.000	0.000	2.159	0.634	0.000	0.000	0.000	0.000	0.000	0.043
May											
Jun											
<b>Sub-total</b>	<b>10.619</b>	<b>1.000</b>	<b>0.440</b>	<b>4.222</b>	<b>4.957</b>	<b>3.538</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.169</b>
July											
August											
September											
October											
November											
December											
<b>Total</b>	<b>10.619</b>	<b>1.000</b>	<b>0.440</b>	<b>4.222</b>	<b>4.957</b>	<b>3.538</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.169</b>

Comment:

1) Assumption the densities of Rock, Soil, Mix Rock and Soil, and Regular Spoil to be 2.0 tonnes/m<sup>3</sup>. Assumption the densities of general refuse is 1.0 tonnes/m<sup>3</sup>.

2) The amounts of waste in Apr and cut-off date of data for TKO137FB, NENT Landfill, Kai Tak (Contact 1108A) are 1267.4ton as at 26/4/13, 43.04ton, as at 26/4/13, 4317.53ton as at 26/4/13.

3) Chemical Waste will be collected by registered chemical collector.

## Appendix K

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Environmental  
Monitoring  
Programme for  
Coming Month

**SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels  
Tentative Impact Monitoring Schedule - May 2013**

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L <sub>Aeq</sub> 30 min	
1-May-13 Wed			
2-May-13 Thu			
3-May-13 Fri			
4-May-13 Sat			
5-May-13 Sun			
6-May-13 Mon			
7-May-13 Tue			
8-May-13 Wed			
9-May-13 Thu			
10-May-13 Fri			
11-May-13 Sat			
12-May-13 Sun			
13-May-13 Mon			
14-May-13 Tue			
15-May-13 Wed			
16-May-13 Thu			
17-May-13 Fri			
18-May-13 Sat			
19-May-13 Sun			
20-May-13 Mon			
21-May-13 Tue			
22-May-13 Wed			
23-May-13 Thu			
24-May-13 Fri			
25-May-13 Sat			
26-May-13 Sun			
27-May-13 Mon			
28-May-13 Tue			
29-May-13 Wed			
30-May-13 Thu			
31-May-13 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 - 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 - Hong Kong Sheng Kung Hui	L <sub>Aeq(30 min)</sub> , L <sub>10</sub> , L <sub>90</sub>

## Appendix L

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### Complaint Log





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**Appendix F**

**2<sup>nd</sup> EM&A Report for Works Contract 1106 –  
Diamond Hill Station**

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MTR Corporation Limited

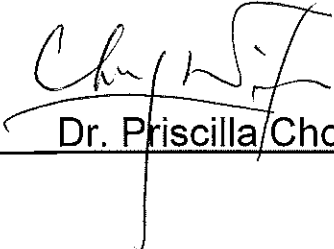
**Shatin to Central Link –  
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 2

[Period from 1 to 30 April 2013]

Works Contract 1106 – Diamond Hill Station

(May 2013)

Certified by:   
\_\_\_\_\_ Dr. Priscilla Choy

Position: Environmental Team Leader

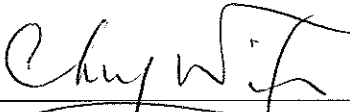
Date: 10 May 2013

**Sembawang – Leader Joint Venture**

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

**Monthly Environmental  
Monitoring and Audit Report  
for April 2013**

(Version 2.1)

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 2<sup>nd</sup> 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 April to 30 April 2013.

### Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month include:
  - D-wall construction;
  - Building of site office;
  - Building of Transformer Room near site office;
  - Hoarding work;
  - Tree pruning; and
  - Archaeological survey-cum-excavation.

### 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 <sup>(1)(3)</sup> /NMS-CA-4 <sup>(2)(3)</sup> (H.K. Sheng Kung Hui Nursing Home)        | 4 times |
| • NMS-CA-4 <sup>(1)</sup> /NMS-CA-3 <sup>(2)</sup> (Block 1, Rhythm Garden (north-eastern façade)) | 4 times |
| • NMS-CA-5 <sup>(1)</sup> /NMS-CA-2 <sup>(2)</sup> (Block 1, Rhythm Garden (northern façade))      | 4 times |

- Construction Dust (24-hour TSP) Monitoring

##### Dust Monitoring Station ID

- |   |         |
|---|---------|
| • DMS-3 <sup>(1)(4)</sup> /DMS-4 <sup>(2)(4)</sup> (H.K. Sheng Kung Hui Nursing Home) | 6 times |
| • DMS-4 <sup>(1)</sup> /DMS-3 <sup>(2)</sup> (Block 1, Rhythm Garden)                 | 6 times |

#### Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
- (3) Noise monitoring on NMS-CA-3<sup>(1)</sup>/NMS-CA-4<sup>(2)</sup> (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.
- (4) Dust monitoring on DMS-3<sup>(1)</sup>/DMS-4<sup>(2)</sup> (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 has been subsequently obtained on 19 April 2013. The survey-cum-excavation commenced on 25 April 2013.

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.

#### Waste Management

6. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 1,977 m<sup>3</sup> of inert C&D materials were generated from the Project and were sent to 1108A Kai Tai Barging Facilities, Fill Bank at Tseung Kwan O Area 137 and SCL Works Contract 1103 for backfilling during the reporting month. About 1,545 m<sup>3</sup> of non-recyclable non-inert C&D materials, such as general refuse, were disposed of at NENT Landfill. No steel material, paper/cardboard packaging, plastics and chemical wastes were generated during this reporting month.

#### Landscape and Visual

7. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 9 and 24 April 2013. 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 2, 9, 16, 24 and 30 April 2013. The representative of the IEC joined the site inspection on 30 April 2013. 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 was received in this reporting period.

#### **Future Key Issues**

12. Major site activities for the coming reporting month will include:
  - D-wall construction;
  - Archaeological survey-cum-excavation;
  - Tree Pruning and tree transplanting works; and
  - Demolition of Former Royal Air Force Hangar.

## 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 2<sup>nd</sup> EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 April to 30 April 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 Recommendation**



## 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**.
- D-wall construction;
  - Building of site office;
  - Building of Transformer Room near site office;
  - Hoarding work;
  - Tree pruning; and
  - Archaeological survey-cum-excavation.

### Project Organisation

- 2.5 The project organizational chart and contact details are shown in **Figure 4**.

### Status of Environmental Licences, Notification and Permits

- 2.6 During this reporting period, an updated Environmental Permit (EP) for SCL (TAW-HUH) (EP No. EP-438/2012/C) was granted on 30 April 2013. Also, a new Construction Noise Permit (CNP) (Permit No. GW-RE0340-13) for re-circulation of bentonite was granted on 5 April 2013. 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 2.2**.

**Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits**

Permit / License No.	Valid Period		Status
	From	To	
<b>Environmental Permit (EP)</b>			
EP-438/2012/B	26/10/2012	29/04/2013	Superseded by EP-438/2012/C
EP-438/2012/C	30/04/2013	N/A	Valid
<b>Notification pursuant to Air Pollution Control (Construction Dust) Regulation</b>			
No.: 353668	19/12/2012	N/A	Valid
<b>Billing Account for Construction Waste Disposal</b>			
Account No.: 7016601	27/12/2012	N/A	Valid
<b>Registration of Chemical Waste Producer</b>			
5213-281-S3711-01	11/01/2013	N/A	Valid
<b>Effluent Discharge License under Water Pollution Control Ordinance</b>			
WT00014959-2012	14/01/2013	31/01/2018	Valid
<b>Construction Noise Permit (CNP)</b>			
GW-RE0340-13	12/04/2013	11/10/2013	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**

<b>Regular Construction Noise Monitoring Location</b>	<b>Description</b>	<b>Type of Measurement</b>
NMS-CA-3 <sup>(1)(3)(4)</sup> / NMS-CA-4 <sup>(2)(3)(4)</sup>	Hong Kong Sheng Kung Hui Nursing Home	Façade
NMS-CA-4 <sup>(1)</sup> / NMS-CA-3 <sup>(2)</sup>	Block 1, Rhythm Garden (north-eastern façade)	Façade
NMS-CA-5 <sup>(1)(5)</sup> / NMS-CA-2 <sup>(2)(5)</sup>	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<sup>(1)</sup>/NMS-CA-4<sup>(2)</sup> (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**

- 3.4 Construction noise measurements were conducted in accordance with requirement in approved EM&A Manual. Noise measurements were made in accordance with standard acoustical principles and practices in relation to weather conditions.

- 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	SVANTEK – SVAN 955 (Serial no.: 14303) SVANTEK – SVAN 957 (Serial no.: 21455 & 21459)
Calibrator	SVANTEK – SV30A (Serial no.: 10929, 24803 & 24791)

- 3.6 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.
- 3.7 Measurements were accepted when the calibration level from before and after the noise measurement agreed to within 1.0 dB(A).

**Action & Limit Level for Construction Noise Monitoring**

- 3.8 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**

- 3.9 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared and submitted under EP Condition 2.10, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria will be anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (TAW-HUH) under Works Contract 1106.

**Regular Construction Dust Monitoring**

- 3.10 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 <sup>(1)(3)(4)</sup> / DMS-4 <sup>(2)(3)(4)</sup>	Hong Kong Sheng Kung Hui Nursing Home
DMS-4 <sup>(1)</sup> / DMS-3 <sup>(2)</sup>	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<sup>(1)</sup>/DMS-4<sup>(2)</sup> (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.

### Monitoring Parameter and Frequency

- 3.11 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 <sup>(1)</sup>	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

- 3.12 **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: 2323	1

### Instrumentation

- 3.13 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**

- 3.14 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**

- 3.15 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3  $\mu\text{m}$  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.
- 3.16 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  $\pm 3$  °C; the relative humidity (RH) was < 50% and not variable by more than  $\pm 5\%$ . A convenient working RH was 40%.
- 3.17 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

### **Operating/Analytical Procedures**

- 3.18 Operating/analytical procedures for the TSP monitoring were highlighted as follows:
- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 and 1.4  $\text{m}^3/\text{min}$ .) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard.
  - The power supply was checked to ensure the sampler worked properly.
  - The filter holding frame and the area surrounding the filter were cleaned.
  - On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the air quality monitoring station.
  - The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
  - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts to avoid air leakage at the edges.
  - The shelter lid was closed and secured with the aluminum strip.

- A new flow rate record chart was set into the flow recorder.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- The flow rate of the HVS sampler would be verified to be constant and recorded on the data sheet before and after sampling.
- The elapsed time and other relevant information was recorded. After sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed and sent to the Wellab Ltd. for weighing.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment should be between 25°C and 30°C and not vary by more than  $\pm 3^\circ\text{C}$ ; the relative humidity (RH) should be  $< 50\%$  and not vary by more than  $\pm 5\%$ . A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

### **Maintenance/Calibration**

3.19 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**

3.20 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**

3.21 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 has been subsequently obtained on 19 April 2013. The survey-cum-excavation commenced on 25 April 2013.

3.22 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.

### **Landscape and Visual**

3.23 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**.



#### 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 2.9	Construction Noise Mitigation Measures Plan (CNMMP) <sup>(1)</sup>	26 <sup>th</sup> April 2013
Condition 2.10	Continuous Noise Monitoring Plan (CNMP) <sup>(1)</sup>	26 <sup>th</sup> April 2013
Condition 3.4	Monthly EM&A Report (March 2013)	12 <sup>th</sup> April 2013

Note:

(1) It should be note that updates under this submission of CNMP and CNMMP were based on the latest information submitted under SCL(TAW-HUH) EP.



## 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<sup>(1)</sup>/NMS-CA-2<sup>(2)</sup> (Block 1, Rhythm Garden (northern façade)) on 9, 15 & 26 April 2013 exceeded the daytime construction noise criterion. However, the results are not considered as exceedance as they are below the baseline level.
- 5.3 The noise monitoring results together with their graphical presentations are presented in **Appendix F<sup>(3)</sup>**.
- 5.4 No exceedance of the Action and Limit Levels of construction noise due to the Project was recorded during the reporting period.

### Regular Dust Monitoring

- 5.5 A total of 6 sets of 24-hour TSP monitoring were carried out at the designated monitoring 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<sup>(3)</sup>** 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 <sup>3</sup>	Maximum µg/m <sup>3</sup>	Average µg/m <sup>3</sup>	Action Level, µg/m <sup>3</sup>	Limit Level, µg/m <sup>3</sup>
24-hr TSP (DMS-3 <sup>(1)(4)</sup> / DMS-4 <sup>(2)(4)</sup> )	8.7	120.1	49.0	159.1	260
24-hr TSP (DMS-4 <sup>(1)</sup> / DMS-3 <sup>(2)</sup> )	44.7	99.1	69.6	160.4	260

- 5.6 Wind monitoring data were obtained from Kai Tak Meteorological Station of Hong Kong Observatory and shown on **Appendix E**.
- 5.7 No exceedance of the Action and Limit Levels of the 24-hour TSP was recorded during the reporting period.

#### 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<sup>(1)</sup>/DMS-4<sup>(2)</sup> (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103

### Cultural Heritage

- 5.8 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 has been subsequently obtained on 19 April 2013. The survey-cum-excavation commenced on 25 April 2013.
- 5.9 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.

### 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**. No steel material, paper/cardboard packaging and plastics were generated during 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) <sup>(a)</sup>	C&D Materials (non-inert) <sup>(b)</sup>				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/cardboard	Plastics	Metals
April 2013	1,977 m <sup>3</sup>	1,545 m <sup>3</sup>	0 kg	0 kg	0 kg	0 kg
Notes:						
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil, which were delivered to 1108A Kai Tak Barging Point Facility, Fill Bank at Tseung Kwan O Area 137 and SCL Works Contract 1103 for backfilling 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

- 5.11 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 9 and 24 April 2013. 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 2, 9, 16, 24 and 30 April 2013 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 30 April 2013. No site inspection was conducted by EPD during 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
Water Quality	26 Mar 2013 & 2 Apr 2013	Wheel washing bay should be properly maintained (e.g. sand and silt should be settled out at least on a weekly basis) for ensuring it is properly functioning.	The observation was observed to be improved/rectified by the Contractor during the audit session on 9 Apr 2013.
	24 Apr 2013	<u>Reminder:</u> It is reminded to avoid any stagnant water on site during wet season.	N/A
	30 Apr 2013	Sand bags should be provided next to the drain near wheel washing bay to avoid muddy runoff discharge.	Follow up actions will be reported in next month.
Noise	24 Apr 2013	<u>Reminder:</u> It is reminded to implement noise mitigation measures (e.g. erection of noise barrier, etc.) where practicable.	Acoustics fabrics were installed on 25 Apr 2013 on the hoarding near Diamond Hill Station Exit B by the Contractor for mitigating noise nuisance to public.
Landscape and Visual	26 Mar 2013	It is advised to set up tree protection zone at bar bending area yard as far as practicable.	The observation was observed to be improved/rectified by the Contractor during the audit session on 2 Apr 2013.
	2 Apr 2013	Tree protection zone behind the bentonite mixing plant should properly set up.	The observation was observed to be improved/rectified by the Contractor during the audit session on 9 Apr 2013.
	16 Apr 2013	<u>Reminder:</u> Retained trees near the site office should be free of materials.	The observation was observed to be improved/rectified by the Contractor during the audit session on 24 Apr 2013.

Parameters	Date	Observations and Recommendations	Follow-up
	24 Apr 2013	Tree protection zone should be set up for retained trees at site office.	The observation was observed to be improved/rectified by the Contractor during the audit session on 30 Apr 2013.
	30 Apr 2013	Tree protection zone should be properly set up near site office.	Follow up actions will be reported in next month.
<b>Cultural Heritage</b>	N/A	N/A	N/A
<b>Air Quality</b>	26 Mar 2013	<u>Reminder:</u> It is reminded spoil trucks leaving the site should be properly covered. Special attention should be paid to wet spoil to prevent any leakage of muddy water during transportation to disposal sites.	The observation was observed to be improved/rectified by the Contractor during the audit session on 2 Apr 2013.
	16 Apr 2013	Cover the exposed slope properly by tarpaulin or impervious sheet to avoid dust generation near Hangar.	The observation was observed to be improved/rectified by the Contractor during the audit session on 24 Apr 2013.
	30 Apr 2013	Excavated materials near Hangar Frame and archaeological survey area should be properly covered or watered regularly to avoid dust generation.	Follow up actions will be reported in next month.
<b>Waste / Chemical Management</b>	2 Apr 2013	It is advised to remove oily mixture on drip tray for generator near trench cutter after rainstorm. The mixture should be disposed of as chemical waste.	The observation was observed to be improved/rectified by the Contractor during the audit session on 9 Apr 2013.
	9 Apr 2013	Oily mixture on drip tray near silos in area W1 should be properly removed and should be disposed of as chemical waste.	The observation was observed to be improved/rectified by the Contractor during the audit session on 16 Apr 2013.
	9 Apr 2013	Chemical wastes/containers on the trench cutter should be properly handled (i.e. to provide drip tray for temporary storage or placed and labeled properly. Chemical waste should be placed at designated storage area after use).	The observation was observed to be improved/rectified by the Contractor during the audit session on 16 Apr 2013.
	16 Apr 2013	Provide plug for the drain hole of drip tray of generator-set near the site entrance.	The observation was observed to be improved/rectified by the Contractor during the audit session on 24 Apr 2013.
	16 Apr 2013	<u>Reminder:</u> Waste sorting should be implemented on-site.	The observation was observed to be improved/rectified by the Contractor during the audit session on 24 Apr 2013.
	24 Apr 2013	Oil stain was observed near the generator near site office. It is reminded to properly seal up the drain hole of the drip tray to avoid any leakage.	The observation was observed to be improved/rectified by the Contractor during the audit session on 30 Apr 2013.
<b>Permits/Licenses</b>	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 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:
- D-wall construction;
  - Archaeological survey-cum-excavation;
  - Tree Pruning and tree transplanting works; and
  - Demolition of Former Royal Air Force Hangar.

### 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 bentonite;
  - Treatment of wastewater from D-wall construction;
  - Preservation of Former Royal Air Force Hangar after demolition;
  - Preservation and protection of retained 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 April to 30 April 2013 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 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 and particularly following wet seasons.
- Wheel washing facilities is reminded to be properly maintained for ensuring it can properly functioning.

#### Noise

- Noise mitigation measures (e.g. erection of noise barrier, re-scheduling of works etc.) should be implemented whenever practicable.

#### Landscape and Visual

- “No-intrusion zone” should be established and maintained for existing trees as far as practicable. The Contractor is reminded to closely monitor and restrict the site working staff from entering the erected “no-intrusion zone” for existing trees for maximizing the protection.

#### Air Quality

- Regular water spraying on site is reminded to be implemented as per EP requirement.
- 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.

Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals shall be sustained. Drip trays should be properly maintained.



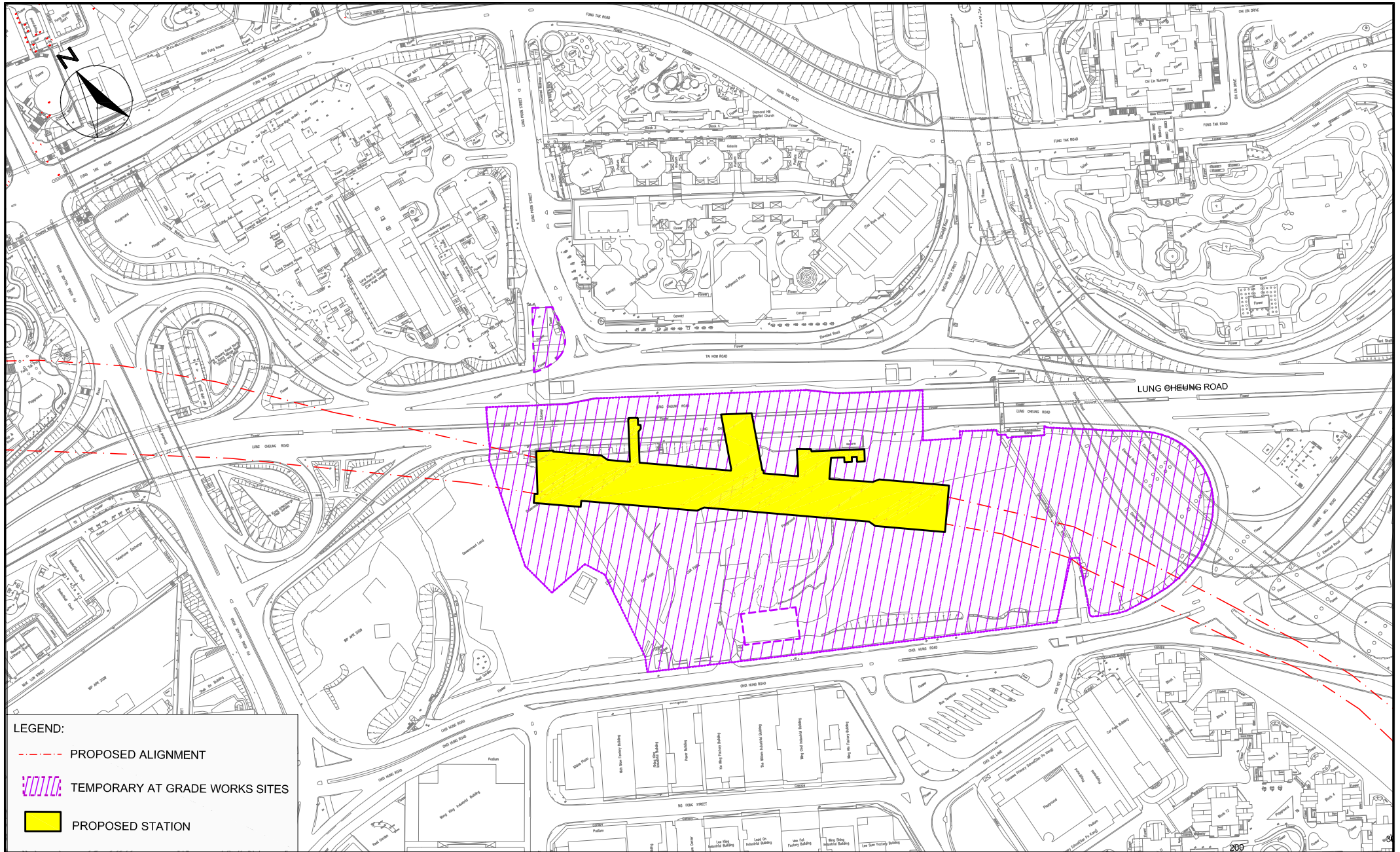
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## FIGURES

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

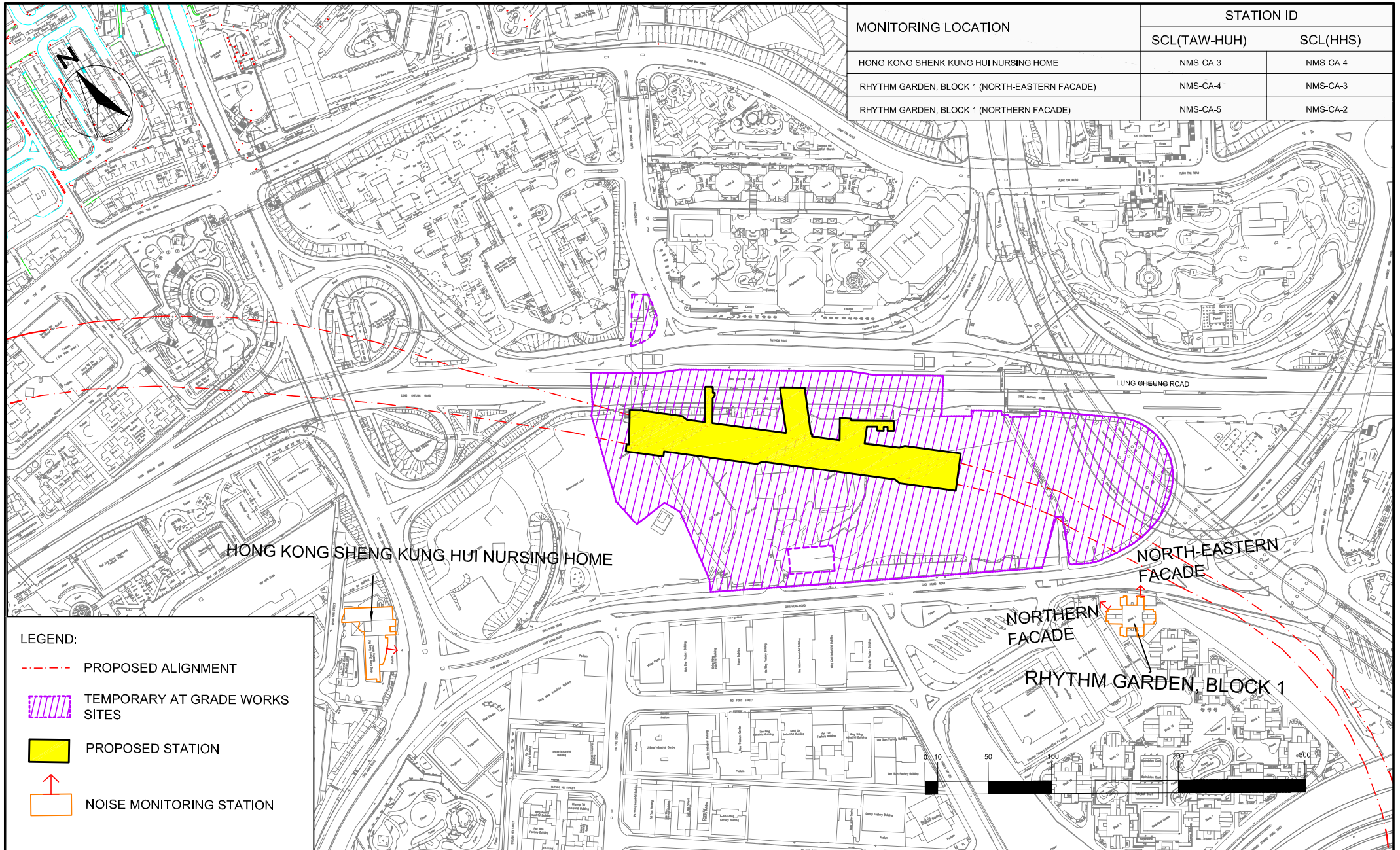
SHATIN TO CENTRAL LINK CONTRACT 1106  
DIAMOND HILL STATION

**SITE LAYOUT PLAN**

**CINOTECH**  
Cinotech Consultants Limited

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





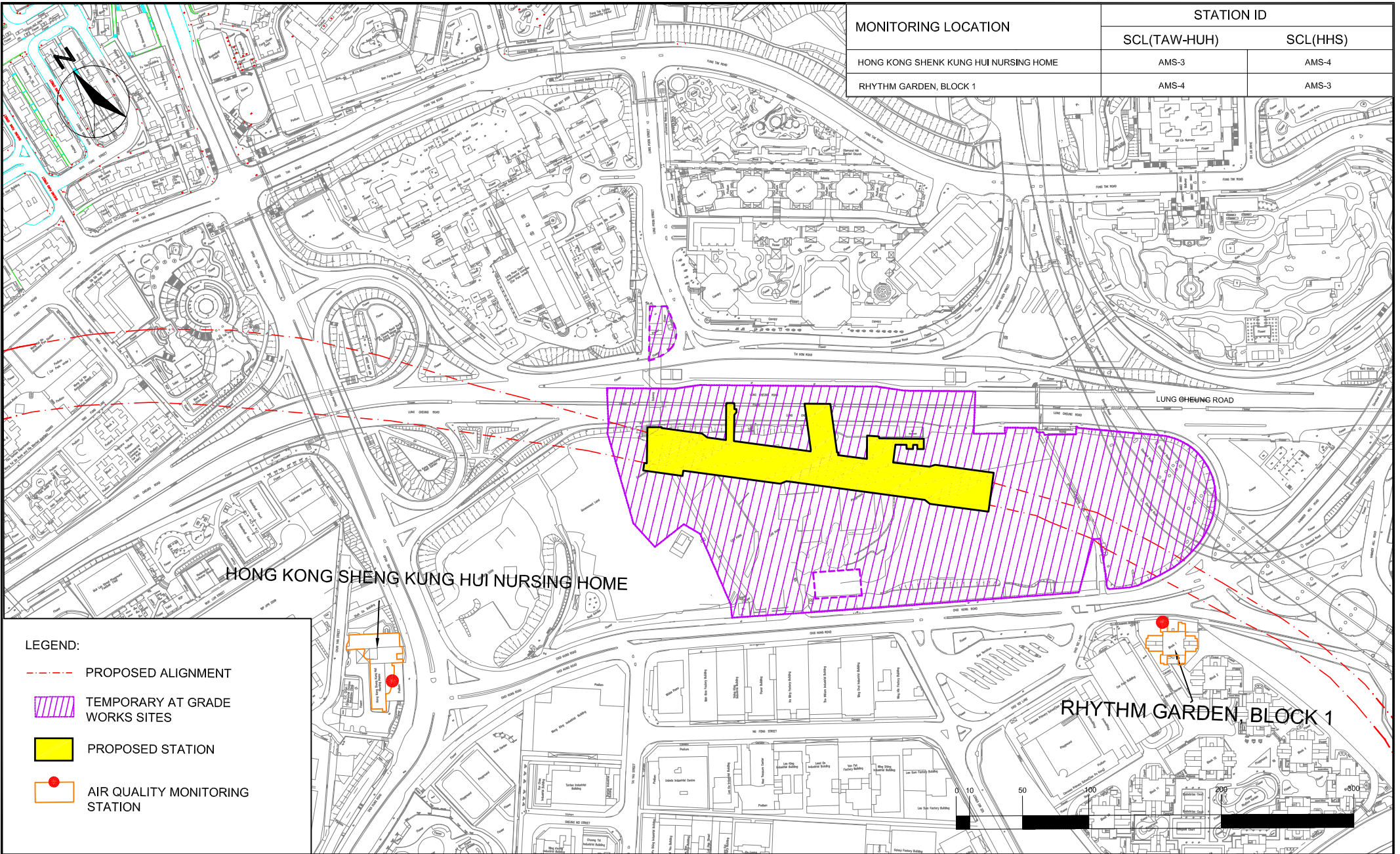
MONITORING LOCATION	STATION ID	
	SCL(TAW-HUH)	SCL(HHS)
HONG KONG SHENK KUNG HUI NURSING HOME	NMS-CA-3	NMS-CA-4
RHYTHM GARDEN, BLOCK 1 (NORTH-EASTERN FACADE)	NMS-CA-4	NMS-CA-3
RHYTHM GARDEN, BLOCK 1 (NORTHERN FACADE)	NMS-CA-5	NMS-CA-2

**LEGEND:**

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

SCALE	1:100	DATE	MAY 2013	
CHECK	KC	DRAWN	JW	
JOB No.	MA12051	FIGURE NO.	2	REV -





MONITORING LOCATION	STATION ID	
	SCL(TAW-HUH)	SCL(HHS)
HONG KONG SHENG KUNG HUI NURSING HOME	AMS-3	AMS-4
RHYTHM GARDEN, BLOCK 1	AMS-4	AMS-3

HONG KONG SHENG KUNG HUI NURSING HOME

RHYTHM GARDEN, BLOCK 1

**LEGEND:**

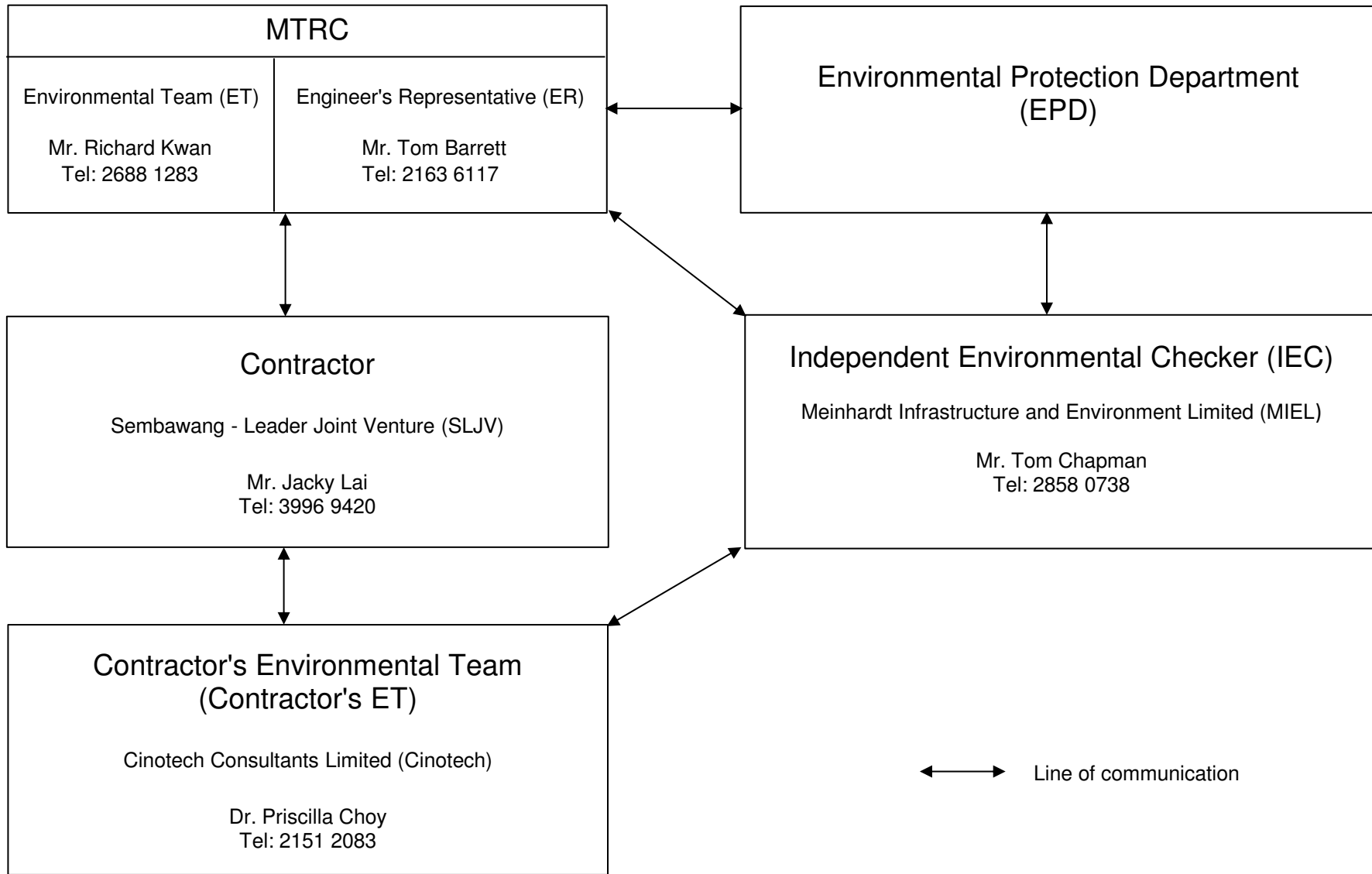
- - - PROPOSED ALIGNMENT
- TEMPORARY AT GRADE WORKS SITES
- PROPOSED STATION
- AIR QUALITY MONITORING STATION



SHATIN TO CENTRAL LINK CONTRACT 1106  
DIAMOND HILL STATION

## LOCATION OF AIR QUALITY MONITORING STATIONS

SCALE	1:100	DATE	MAY 2013	
CHECK	KC	DRAWN	JW	
JOB No.	MA12051	FIGURE NO.	3	REV -



Title

MTR SCL Works Contract 1106  
Diamond Hill Station

Scale

N.T.S

Proposal

No.

MA12051

Date

Apr-13

Figure

4

Organisation Chart and Key Contact of the Project

**CINOTECH**

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**APPENDIX A  
TENTATIVE CONSTRUCTION  
PROGRAMME**

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# Contract 1106 - Diamond Hill Station



Activity ID	Activity Name	Orig Dur	Planned Early Start	Planned Early Finish	% Complete	April					May					June					July						
						1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28				
<b>Contract Dates</b>																											
<b>Possession &amp; Vacation Dates</b>																											
<b>Possession of Works Areas</b>																											
<b>Possession Dates</b>																											
C1106.ADW002	Access to Works Area 1106.W2 (Existing Public Access)	0	30-Jun-13*		0%																						
C1106.ADW005	Access to Works Area 1106.W5 (Existing Entrance A1 KTL DIH)	0	06-May-13*		0%																						
C1106.ADW11C	Access to Works Area 1106.W1C (Interface with 1103)	0	30-Jun-13*		0%																						
<b>Completion Obligation Dates</b>																											
<b>Completion of Specified Parts of the Works</b>																											
<b>Completion Dates</b>																											
C1106.CDW03A	3A: Complete Cable Containment for Ops Contracts at DIH (KTL) Concourse & Platform Level	0	24-May-13*		0%																						
<b>Milestone Dates</b>																											
<b>Cost Centre A Milestones</b>																											
<b>Preliminaries</b>																											
C1106.MSA02	A2: Approve Preliminary Master Programme, Time Change Programme and Health and Safety Plan	0	05-May-13		0%																						
C1106.MSA03	A3: Engineer's Confirmation of Satisfactory Implementation of Safety and Environmental Requirements	0	24-Jul-13		0%																						
<b>Cost Centre D - Reprovisioning, Remedial and Improvement Works (RRIW)</b>																											
<b>Completion Dates</b>																											
C1106.DMS002	D2: Complete 50% by Plan Area of Archaeological Survey-Cum-Excavation	0	31-May-13		0%																						
<b>Cost Centre A - Preliminaries</b>																											
<b>General Requirements</b>																											
<b>Submissions</b>																											
<b>General</b>																											
C1106.GS0147	Received Comments and Resubmit	14	28-Mar-13 A	26-Apr-13 A	100%																						
C1106.GS0150	Review & Approve Preliminary Master Programme - A2	30	26-Feb-13 A	05-May-13	90%																						
C1106.GS0155	Review & Approve Time Change Programme	30	02-Mar-13 A	05-May-13	90%																						
C1106.GS0195	Submit Schedule of Utility Services Arrangement	60	10-Jan-13 A	02-Apr-13 A	100%																						
C1106.GS0200	Approve Schedule of Utility Services Arrangement	28	04-Apr-13 A	07-May-13	80%																						
C1106.GS0260	Prepare & Submit Plant/Material Control Schedule	28	19-Feb-13 A	11-May-13	60%																						
C1106.GS0265	Review & Approve Plant/Material Control Schedule	28	12-May-13	08-Jun-13	0%																						
C1106.GS0314	Review & Approve Health & Safety Plan - A2	70	19-Feb-13 A	16-Apr-13 A	100%																						
C1106.GS0316	1st Baseline Health & Safety Audit	120	17-Dec-12 A	24-Apr-13 A	100%																						
C1106.GS0318	1st Safety Management & Environmental Monitoring Audit -A3	90	26-Apr-13 A	24-Jul-13	2%																						
C1106.GS0320	1st Progress Monitoring & Programming Management System Audit	90	25-Jul-13	22-Oct-13	0%																						
C1106.GS0465	Prepare and Submit Design for Engineer's Site Accommodation	25	17-Jan-13 A	22-Apr-13 A	100%																						
C1106.GS0475	MTR Review and Approve Engineer's Site Accommodation	7	23-Apr-13 A	07-May-13	0%																						
C1106.GS0480	Submit Detail Design (Final) for BD/ RDO Approval	2	08-May-13	09-May-13	0%																						
C1106.GS0485	Review & Approve by BD/ RDO	28	10-May-13	06-Jun-13	0%																						
C1106.GS0495	Prepare & Submit BD BA10 Form	7	07-Jun-13	13-Jun-13	0%																						
C1106.GS0565	Erect Contractor's Site Offices etc.	75	11-Mar-13 A	13-Apr-13 A	100%																						
C1106.GS0575	Erect and Equip PM's 4 Container Offices	70	14-Jun-13	04-Sep-13	0%																						
<b>Cost Centre B: SCL- DIH Station, Entrances and Adits</b>																											
<b>Design &amp; Approval</b>																											
<b>General</b>																											
C1106.DS0570	Environmental Protection Department (EPD Review and Approval CI)	25	19-Mar-13 A	12-Apr-13 A	100%																						
<b>Mobilization / Enabling Works / Utilities Diversions</b>																											
<b>Preliminary Site Works</b>																											
<b>Site Preparation</b>																											
C1106.BSP1140	Tree Felling	30	19-Jan-13 A	08-Apr-13 A	100%																						
C1106.BSP1150	Ground Instrumentation Outside Site Areas	19	27-Mar-13 A	07-May-13	50%																						
<b>TTMS Implementation</b>																											
<b>Submissions</b>																											
<b>TTM Submission</b>																											
C1106.TMS0250	Prepare & Submit Lung Cheung Road TTMS Plan to Engineer / SLG	16	16-Mar-13 A	09-May-13	40%																						
C1106.TMS0265	Discuss & Agree in Principles at SLG Working Group	14	10-May-13	23-May-13	0%																						
C1106.TMS0270	Supporting Technical Documents Ready	0		23-May-13	0%																						
C1106.TMS0275	Discuss & Agree in Principles at SLG Meeting	12	24-May-13	06-Jun-13	0%																						
C1106.TMS0280	Submission of District Council Consultation Paper	0		06-Jun-13	0%																						
C1106.TMS0290	Transport & Housing Bureau (THB) Clearance prior to Submission of District Council Consultation Paper	14	07-Jun-13	20-Jun-13	0%																						
C1106.TMS0300	District Consultation (Meeting Schedule of YTMDC/ T&TC Meeting)	21	21-Jun-13	11-Jul-13	0%																						
C1106.TMS0305	Community Liaison Group (CLG) Consultation	28	21-Jun-13	18-Jul-13	0%																						
C1106.TMS0310	Railway Development Office (RDO) Endorsed TTMS Drawing	7	12-Jul-13	18-Jul-13	0%																						
C1106.TMS0315	Submission of Section 22 Paper	0		18-Jul-13	0%																						
C1106.TMS0320	Government Internal Review of Section 22 Paper	28	19-Jul-13	15-Aug-13	0%																						
<b>Tree Felling / Transplanting</b>																											
<b>General</b>																											
<b>Tree Transplanting</b>																											
C1106.BTP1410	Tree Transplant (1st Stage Works for Category A & B Trees - 5 nos.)	43	14-Feb-13 A	09-Apr-13 A	100%																						
C1106.BTP1420	Tree Transplant (2nd Stage Works for Category A & B Trees - 5 nos.)	44	10-Apr-13 A	01-Jun-13	30%																						
C1106.BTP1425	Tree Transplant to Permanent Location for Category A & B Trees - 5 nos.	30	03-Jun-13	09-Jul-13	0%																						
C1106.BTP1450	Tree Transplant (1st Stage Works for Category C Trees - 5 nos.)	53	14-Feb-13 A	22-Apr-13 A	100%																						
C1106.BTP1470	Tree Transplant (2nd Stage Works for Category C Trees - 5 nos.)	53	23-Apr-13 A	18-Jun-13	20%																						
C1106.BTP1480	Tree Transplant to Permanent Location for Category C Trees - 5 nos.	53	19-Jun-13	20-Aug-13	0%																						
C1106.BTP1515	Tree Transplant (1st Stage Works for Category D Trees - 2 nos.)	70	23-Feb-13 A	04-May-13	95%																						
C1106.BTP1520	Tree Transplant (2nd Stage Works for Category D Trees - 2 nos.)	70	06-May-13	29-Jul-13	0%																						
<b>Diaphragm Wall &amp; Foundation Works</b>																											
<b>DIH (SCL) Gridline 39 - 49</b>																											
<b>Station Cofferdam</b>																											
C1106.BDW3990	GL 40-41 Construct Dwall Panel A05 (Primary) (Gang 1)	12	14-Mar-13 A	03-Apr-13 A	100%																						
C1106.BDW3995	GL 40-41 Construct Dwall Panel A04 (Gang 1)	12	05-Apr-13 A	15-Apr-13 A	100%																						
C1106.BDW4000	GL 40-41 Construct Dwall Panel A06 (Gang 1)	12	17-Apr-13 A	30-Apr-13 A	100%																						
C1106.BDW4005	GL 40-41 Construct Dwall Panel A03 (Gang 1)	12	30-Apr-13	14-May-13	0%																						
C1106.BDW4010	GL 40-41 Construct Dwall Panel A02 (Gang 1)	12	15-May-13	29-May-13	0%																						
C1106.BDW4015	GL 40-41 Construct Dwall Panel A01 (Closing) (Gang 1)	12	30-May-13	13-Jun-13	0%																						
C1106.BDW4030	GL 41-42 Construct Dwall Panel A10 (Primary) (Gang 2)	10	20-Mar-13 A	08-Apr-13 A	100%																						
C1106.BDW4035	GL 41-42 Construct Dwall Panel A11 (Gang 2)	12	11-Apr-13 A	23-Apr-13 A	100%																						
C1106.BDW4040	GL 42-43 Construct Dwall Panel A12 (Gang 2)	12	26-Apr-13 A	11-May-13	0%																						
C1106.BDW4045	GL 43 Construct Dwall Panel A15 (Primary) (Gang 2)	12	13-May-13	27-May-13	0%																						
C1106.BDW4050	GL 42-43 Construct Dwall Panel A13 (Gang 2)	12	28-May-13	10-Jun-13	0%																						
C1106.BDW4055	GL 42-43 Construct Dwall Panel A14 (Gang 2)	10	11-Jun-13	22-Jun-13	0%																						
C1106.BDW4060	GL 43-44 Construct Dwall Panel A16 (Gang 2)	12	24-Jun-13	08-Jul-13	0%																						
C1106.BDW4065	GL 41-42 Construct Dwall Panel A09 (Gang 2)	12	09-Jul-13	22-Jul-13	0%																						
C1106.BDW4070	GL 41-42 Construct Dwall Panel A08 (Gang 2)	12	23-Jul-13	05-Aug-13	0%																						

<ul style="list-style-type: none"> <li>— Baseline</li> <li>█ Actual Work</li> <li>█ Remaining Work</li> <li>█ Critical Remaining Work</li> <li>◆ Baseline Milestone</li> </ul>	Project File: C1106P-3MRP Apr 2013 Project Start: 17-Dec-12 Project Finish: 14-Apr-13 Date Date: 30-Apr-13 Print: 30-Apr-13 @18:12	Page 1 of 4 <h3 style="text-align: center;">MTR Contract 1106 - Diamond Hill Station</h3> <h4 style="text-align: center;">3 Month Rolling Programme</h4> <p style="text-align: center;">as of 30 April 2013</p>	<table border="1"> <tr> <th colspan="4">3 Month Rolling Programme</th> </tr> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> <tr> <td>02-May-13</td> <td>C1106-3M...</td> <td>RR</td> <td>RB</td> </tr> </table>	3 Month Rolling Programme				Date	Revision	Checked	Approved	02-May-13	C1106-3M...	RR	RB
3 Month Rolling Programme															
Date	Revision	Checked	Approved												
02-May-13	C1106-3M...	RR	RB												









Activity ID	Activity Name	Orig Dur	Planned Early Start	Planned Early Finish	% Complete	April							May							June							July						
						1	8	15	22	29	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	4	11	18	25	1	8
C1106.DRIW395	Review & Approve Method Statement for Dismantling Plan for Heritage Work by AMO	25	23-Apr-13 A	24-May-13	0%	Review & Approve Method Statement for Dismantling Plan for Heritage Work by AMO																											
C1106.DRIW397	Endorsement of Conservation Management Plan (CMP) for Old Pill Box by the Government Department	3	22-Apr-13 A	24-Apr-13 A	100%	Endorsement of Conservation Management Plan (CMP) for Old Pill Box by the Government Department																											
<b>Preservation of Old Pillbox</b>																																	
<b>General</b>																																	
C1106.DRIW402	Install Permanent Strengthening System inside the Pill Box Structure	7	25-May-13	01-Jun-13	0%	Install Permanent Strengthening System inside the Pill Box Structure																											
C1106.DRIW406	Install socket H-Pile for relocation of Old Pillbox	30	03-Jun-13	09-Jul-13	0%	Install socket H-Pile for relocation of Old Pillbox																											
C1106.DRIW408	Excavate around the Pillbox down and Construct RC Ring	12	10-Jul-13	23-Jul-13	0%	Excavate around the Pillbox down and Construct RC Ring																											
C1106.DRIW411	Inject Pressurized Cement Sand grout and further excavation down to +8.40mPD to form Working Platform	12	24-Jul-13	06-Aug-13	0%	Inject Pressurized Cement Sand grout and further excavation down to +8.40mPD to form Working Platform																											
C1106.DRIW416	Install Horizontal Pipe Pipes	12	24-Jul-13	06-Aug-13	0%	Install Horizontal Pipe Pipes																											
<b>Preservation of Former Royal Airforce Hangar</b>																																	
<b>General</b>																																	
C1106.DRIW444	Dismantle Front Gate of RAF Hanger (Bay 1 to Bay 4)	30	25-May-13	29-Jun-13	0%	Dismantle Front Gate of RAF Hanger (Bay 1 to Bay 4)																											
C1106.DRIW446	Dismantle Steel Truss along Grid Line 1-2	25	02-Jul-13	30-Jul-13	0%	Dismantle Steel Truss along Grid Line 1-2																											
<b>Archaeological Survey</b>																																	
<b>General</b>																																	
C1106.DRIW460	Apply Licence to search and Excavate for Antiquities	60	21-Mar-13 A	22-Apr-13 A	100%	Apply Licence to search and Excavate for Antiquities																											
C1106.DRIW464	Fill Soil Removal and Setting Out Site Boundary	12	23-Apr-13 A	08-May-13	25%	Fill Soil Removal and Setting Out Site Boundary																											
C1106.DRIW465	Stage 1: Archaeological Survey and Tests Pit (6 nos.)	18	09-May-13	30-May-13	0%	Stage 1: Archaeological Survey and Tests Pit (6 nos.)																											
C1106.DRIW466	Archaeological Survey Report Submission to AMO	1	31-May-13	31-May-13	0%	Archaeological Survey Report Submission to AMO																											
C1106.DRIW468	Stage 2: Archaeological Survey-Cum-Excavation at Zone "A"	25	31-May-13	02-Jul-13	0%	Stage 2: Archaeological Survey-Cum-Excavation at Zone "A"																											
C1106.DRIW470	Zone "A" Site Handover Assessment Report	7	02-Jul-13	09-Jul-13	0%	Zone "A" Site Handover Assessment Report																											
C1106.DRIW475	Archaeological Survey-Cum-Excavation at Zone "B"	28	09-Jul-13	10-Aug-13	0%	Archaeological Survey-Cum-Excavation at Zone "B"																											
C1106.DRIW480	Archaeological Survey-Cum-Excavation at Zone "C"	28	09-Jul-13	10-Aug-13	0%	Archaeological Survey-Cum-Excavation at Zone "C"																											
<b>Cost Centre H - Option No. 4 Piling Works for CDA at SCL DIH East</b>																																	
<b>Design &amp; Approval</b>																																	
<b>Submissions</b>																																	
<b>Exercise Date of Option</b>																																	
C1106.CDA0110	Contractor's Review Drawings / Submit Method Station for Construction	60	19-Mar-13 A	18-May-13	70%	Contractor's Review Drawings / Submit Method Station for Construction																											
C1106.CDA0150	MTR Advice to Exercise Option No. 4 (CDA Piling)	0	01-Jul-13*		0%	MTR Advice to Exercise Option No. 4 (CDA Piling)																											
C1106.CDA0155	Submit / Approve Method Statement for Bored Pile	50	01-Jul-13	19-Aug-13	0%	Submit / Approve Method Statement for Bored Pile																											

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**APPENDIX B  
ACTION AND LIMIT LEVELS**

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## 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 <sup>(1)(3)(4)</sup> / DMS-4 <sup>(2)(3)(4)</sup>	Hong Kong Sheng Kung Hui Nursing Home	159.1	260
DMS-4 <sup>(1)</sup> / DMS-3 <sup>(2)</sup>	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<sup>(1)</sup>/DMS-4<sup>(2)</sup> is carried out by Environmental Team of SCL Works Contract 1103.

### Construction Noise

Regular Construction Noise Monitoring Location <sup>(1)</sup>	Description	Time Period	Action Level	Limit Level
NMS-CA-3 <sup>(1)(3)(4)</sup> / NMS-CA-4 <sup>(2)(3)(4)</sup>	Hong Kong Sheng Kung Hui Nursing Home	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)
NMS-CA-4 <sup>(1)</sup> / NMS-CA-3 <sup>(2)</sup>	Block 1, Rhythm Garden (north-eastern façade)			75 dB(A)
NMS-CA-5 <sup>(1)(5)</sup> / NMS-CA-2 <sup>(2)(5)</sup>	Block 1, Rhythm Garden (northern façade)			65 / 70 dB(A) <sup>(6)</sup>

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<sup>(1)</sup>/ NMS-CA-4<sup>(2)</sup> 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.

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**APPENDIX C  
CALIBRATION CERTIFICATES FOR  
MONITORING EQUIPEMENT**

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## High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0001

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK  
 Date: 14-Mar-13 Next Due Date: 13-May-13  
 Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	290.2	Pressure, Pa (mmHg)	766.8

Orifice Transfer Standard Information					
Equipment No.:	A-04-05	Slope, mc	0.0592	Intercept, bc	-0.0283
Last Calibration Date:	26-Dec-12	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	25-Dec-13	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.6	3.47	59.04	7.2	2.73
2	8.9	3.04	51.77	5.7	2.43
3	7.0	2.69	45.97	4.3	2.11
4	4.5	2.16	36.95	2.7	1.67
5	2.8	1.70	29.25	1.7	1.33

**By Linear Regression of Y on X**

Slope, mw = 0.0479 Intercept, bw = -0.0818

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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.78

Remarks: \_\_\_\_\_

Conducted by: M.K. Singh Signature: [Signature]  
 Checked by: [Signature] Signature: [Signature]

Date: 14/3/2013  
 Date: 14 March 2013





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

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Dec 26, 2012 Rootsmeter S/N 0438320 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 2323 Pa (mm) - 753.11

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	1.4440	3.2	2.00
2	NA	NA	1.00	1.0240	6.4	4.00
3	NA	NA	1.00	0.9120	8.0	5.00
4	NA	NA	1.00	0.8720	8.8	5.50
5	NA	NA	1.00	0.7200	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9967	0.6902	1.4149	0.9957	0.6896	0.8851
0.9925	0.9693	2.0010	0.9915	0.9683	1.2517
0.9903	1.0858	2.2372	0.9893	1.0847	1.3995
0.9893	1.1345	2.3464	0.9883	1.1334	1.4678
0.9840	1.3666	2.8299	0.9830	1.3652	1.7702
Qstd slope (m) = 2.09107			Qa slope (m) = 1.30939		
intercept (b) = -0.02838			intercept (b) = -0.01775		
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}

## TEST REPORT

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

Test Report No.:	C/N/130104
Date of Issue:	2013-01-05
Date Received:	2013-01-04
Date Tested:	2013-01-04
Date Completed:	2013-01-05
Next Due Date:	2014-01-04

**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	: 22 degree Celsius
Relative Humidity	: 59%

**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/120901/1
Date of Issue:	2012-09-02
Date Received:	2012-09-01
Date Tested:	2012-09-01
Date Completed:	2012-09-02
Next Due Date:	2013-09-01

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

**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/120901/2
Date of Issue:	2012-09-02
Date Received:	2012-09-01
Date Tested:	2012-09-01
Date Completed:	2012-09-02
Next Due Date:	2013-09-01

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

**Test conditions:**

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

**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/120921/1
Date of Issue:	2012-09-22
Date Received:	2012-09-21
Date Tested:	2012-09-21
Date Completed:	2012-09-22
Next Due Date:	2013-09-21

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10929
Equipment No.	: N-09-01

### Test conditions:

Room Temperature	: 24 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/121005/1
Date of Issue:	2012-10-07
Date Received:	2012-10-05
Date Tested:	2012-10-05
Date Completed:	2012-10-07
Next Due Date:	2013-10-06

**ATTN:** Mr. W.K. Tang

Page: 1 of 1

### Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

### Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64%

### Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
\_\_\_\_\_  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

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

Test Report No.:	C/N/121005/2
Date of Issue:	2012-10-07
Date Received:	2012-10-05
Date Tested:	2012-10-05
Date Completed:	2012-10-07
Next Due Date:	2013-10-06

**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	: 23 degree Celsius
Relative Humidity	: 64%

### Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

### Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**

Laboratory Manager

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**APPENDIX D**  
**IMPACT MONITORING SCHEDULE**

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**Shatin to Central Link – Contract 1106 Diamond Hill Station  
Impact Air Quality and Noise Monitoring Schedule for April 2013**

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

**Air Quality Monitoring Station**

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

**Noise Monitoring Station**

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)

**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).

**Shatin to Central Link – Contract 1106 Diamond Hill Station  
Tentative Impact Air Quality and Noise Monitoring Schedule for May 2013**

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

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

**Air Quality Monitoring Station**

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

**Noise Monitoring Station**

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)

**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).



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**APPENDIX E  
24-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATIONIS**

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## Appendix E - 24-hour TSP Monitoring Results

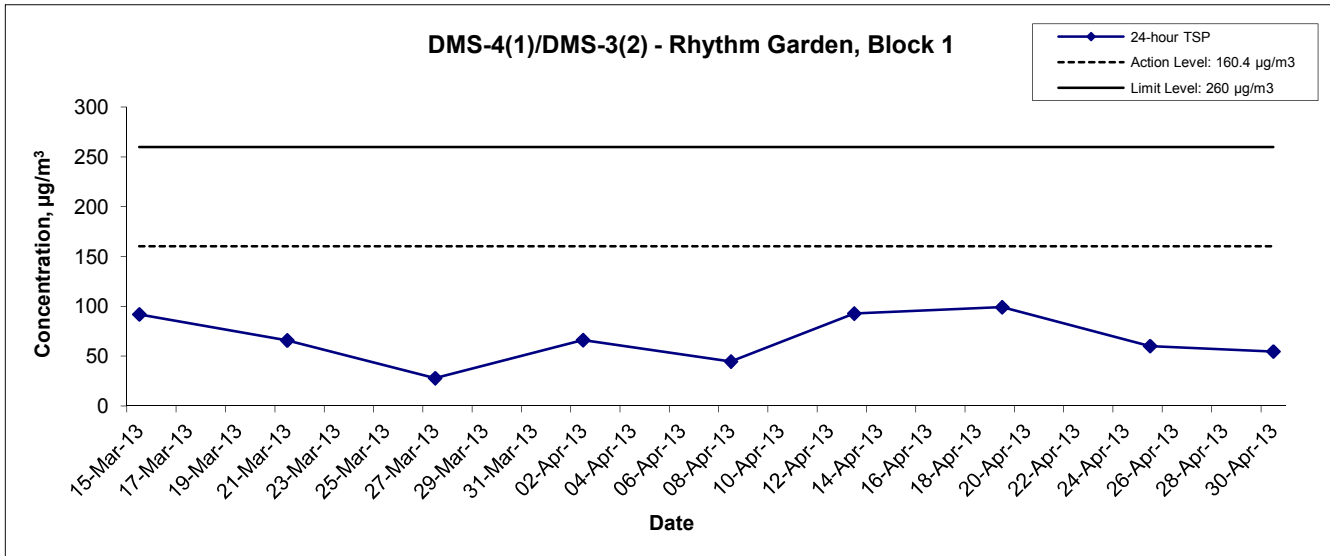
### Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

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 <sup>3</sup> /min.)		Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
					Initial	Final		Initial	Final		Initial	Final			
2-Apr-13	09:00	Cloudy	295.9	763.6	3.0282	3.1432	0.1150	905.9	929.9	24.0	1.21	1.21	1.21	1737.8	66.2
8-Apr-13	15:00	Cloudy	292.1	761.5	3.0809	3.1590	0.0781	929.9	953.9	24.0	1.21	1.21	1.21	1746.4	44.7
13-Apr-13	09:00	Cloudy	292.3	767.1	3.1806	3.3433	0.1627	953.9	977.9	24.0	1.22	1.22	1.22	1751.9	92.9
19-Apr-13	09:00	Cloudy	297.9	769.7	3.1127	3.2851	0.1724	977.9	1001.9	24.0	1.21	1.21	1.21	1738.9	99.1
25-Apr-13	09:00	Cloudy	297.3	762.2	3.0555	3.1598	0.1043	1001.9	1025.9	24.0	1.20	1.20	1.20	1732.4	60.2
30-Apr-13	09:00	Cloudy	299.7	769.8	3.1257	3.2206	0.0949	1025.9	1049.9	24.0	1.20	1.20	1.20	1733.9	54.7
														Min	44.7
														Max	99.1
														Average	69.6

**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



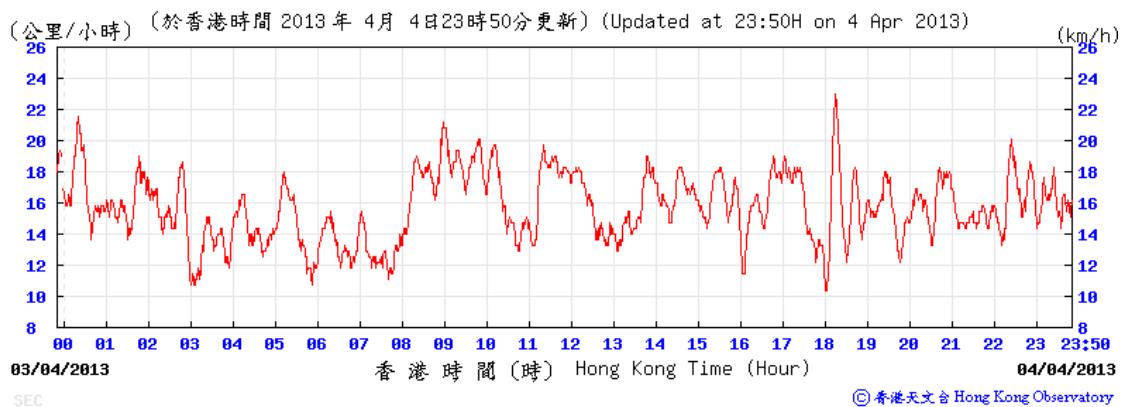
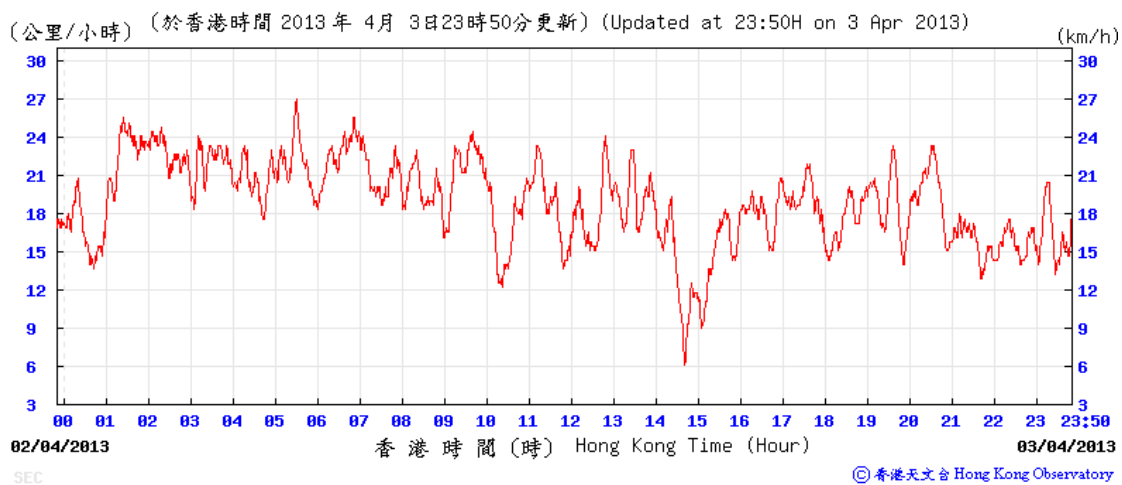
**Remarks:**

- (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 Apr 13	Appendix E	

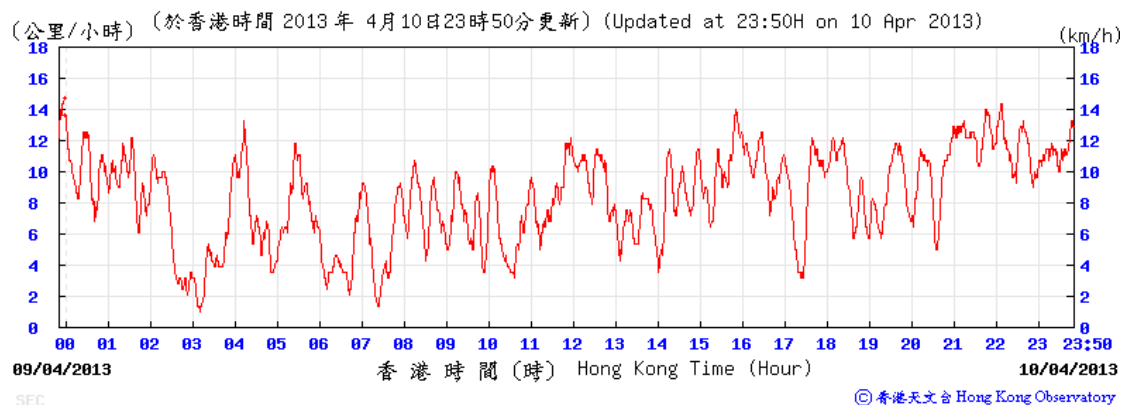
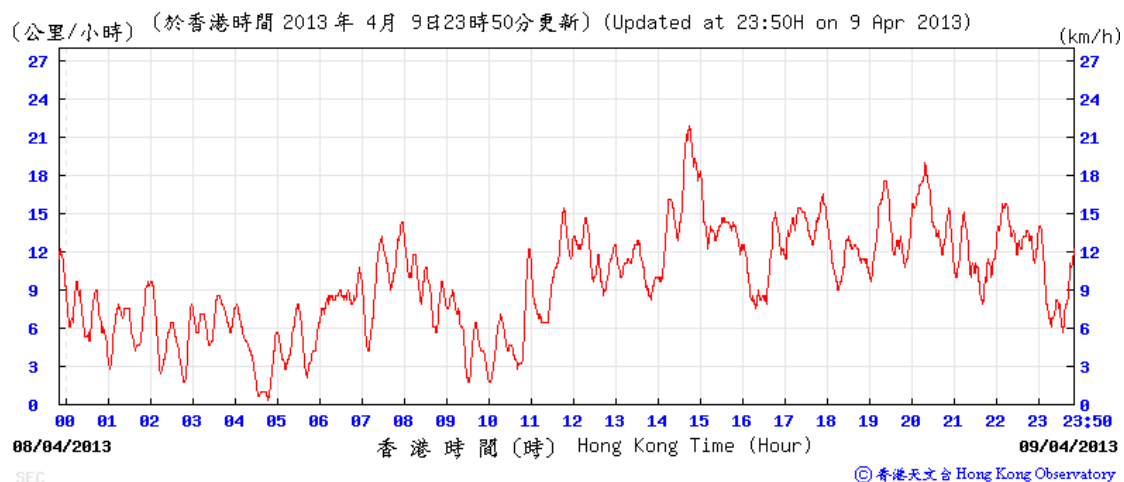
# Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 April 2013



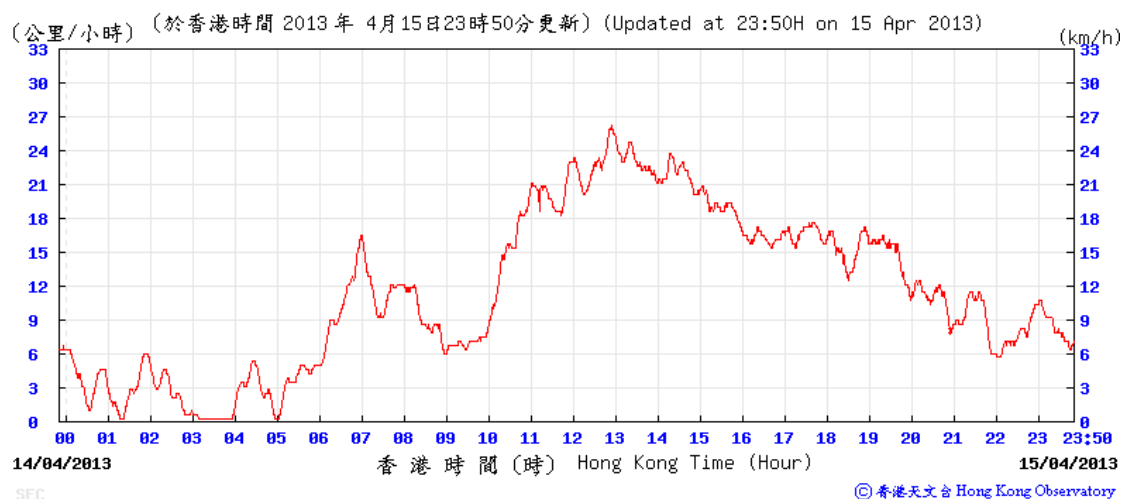
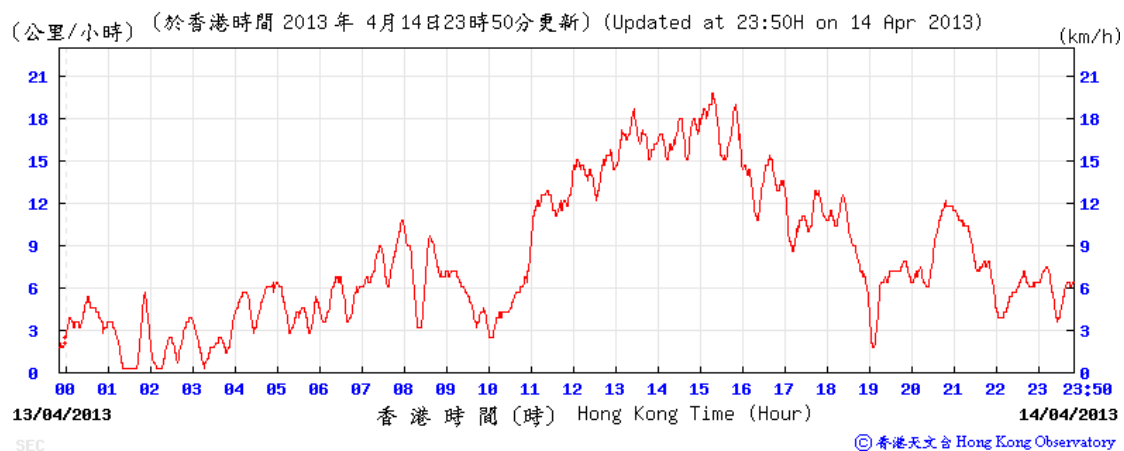
# Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

8-9 April 2013



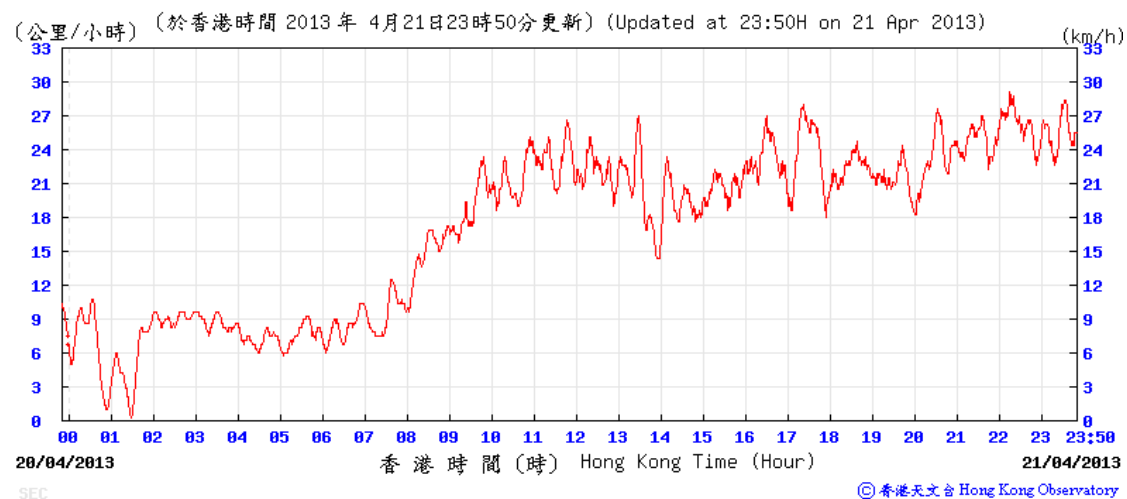
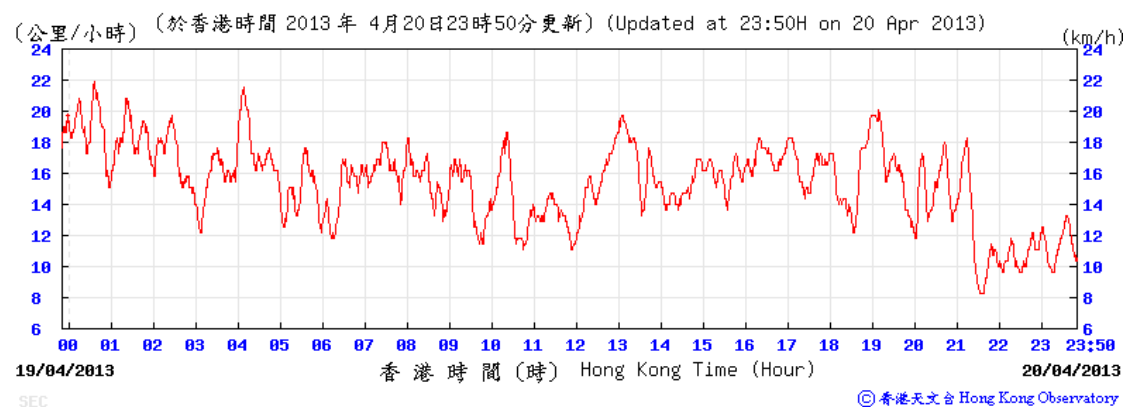
# Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

13-14 April 2013



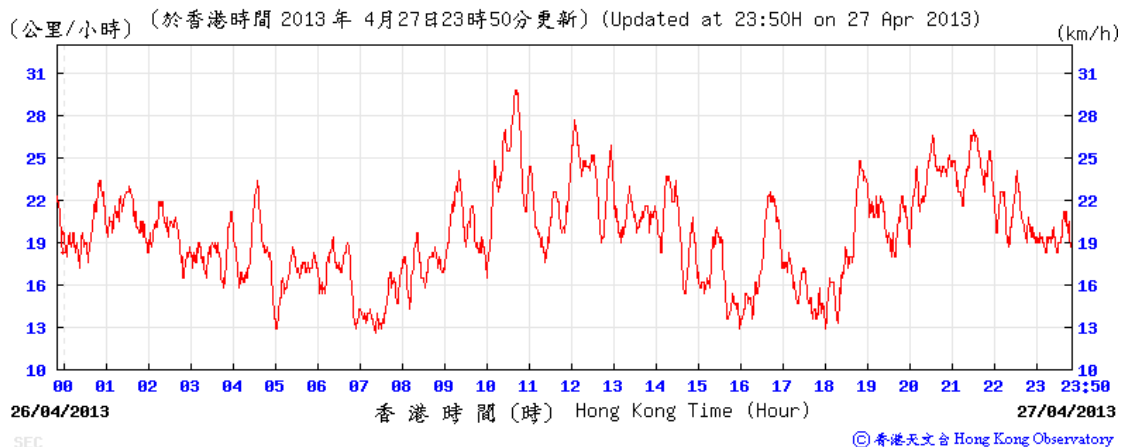
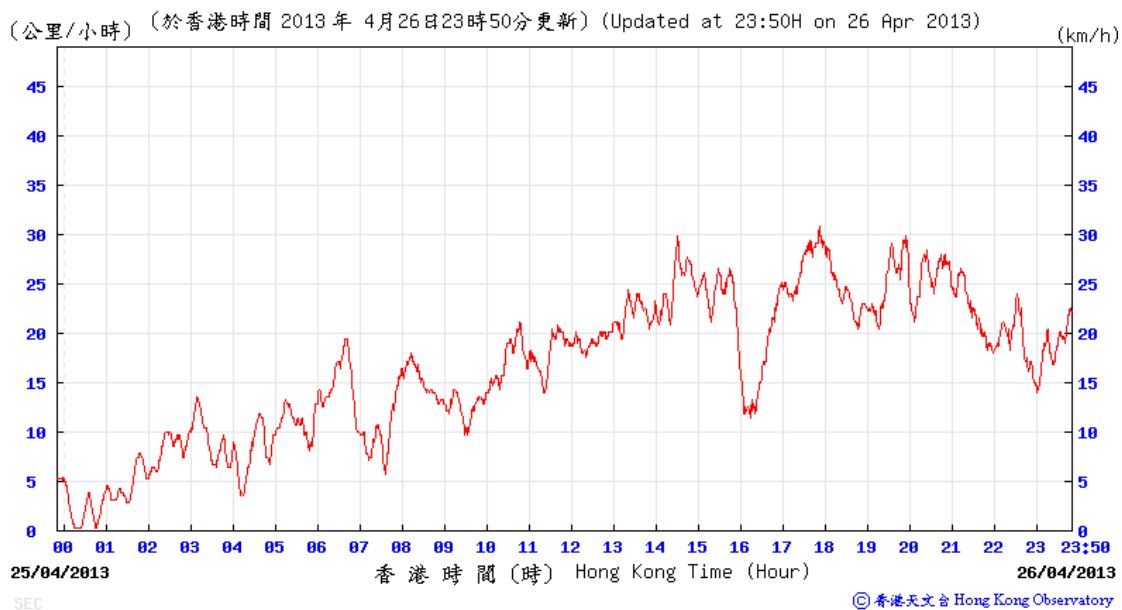
# Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

19-20 April 2013



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

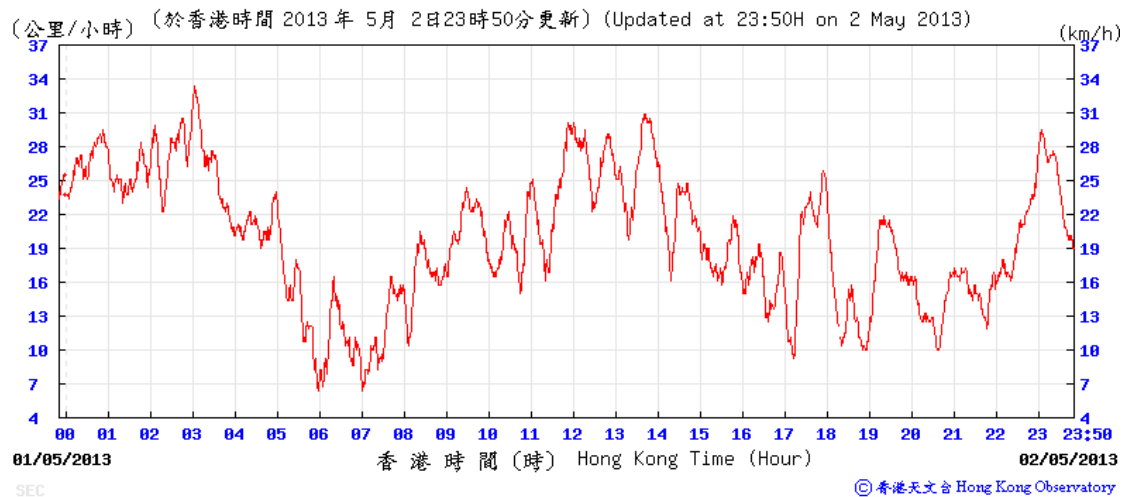
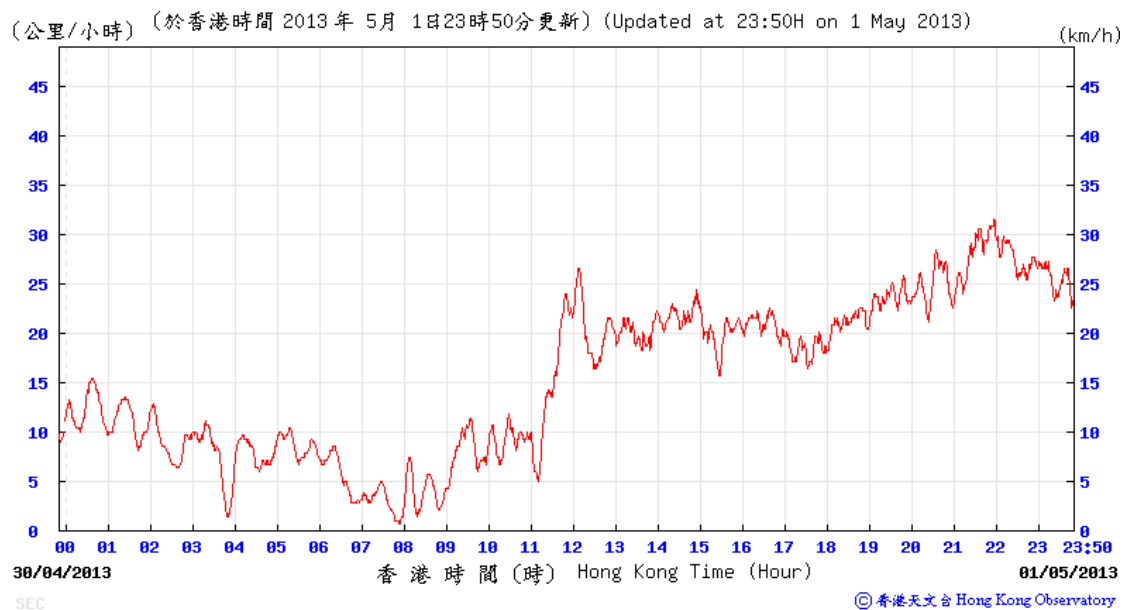
25-26 April 2013





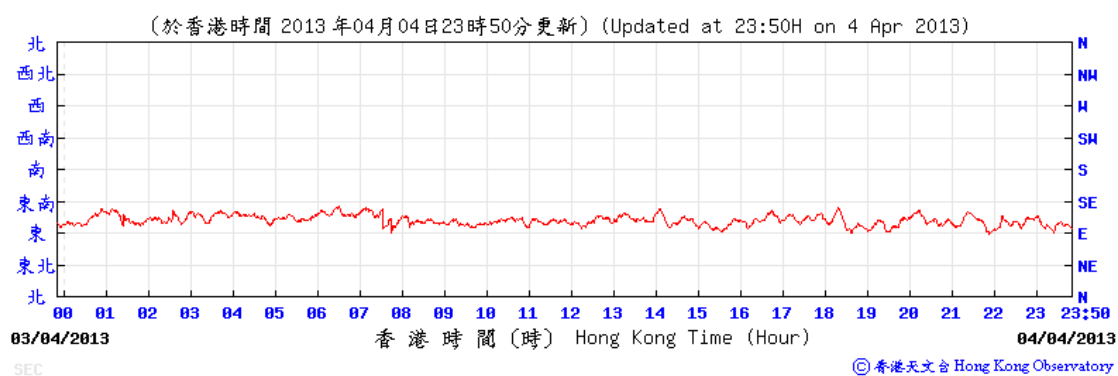
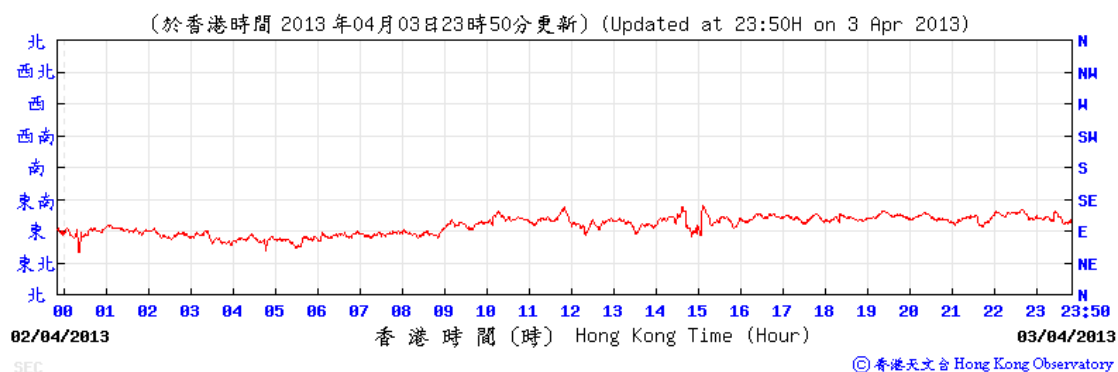
# Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

30 April -1 May 2013



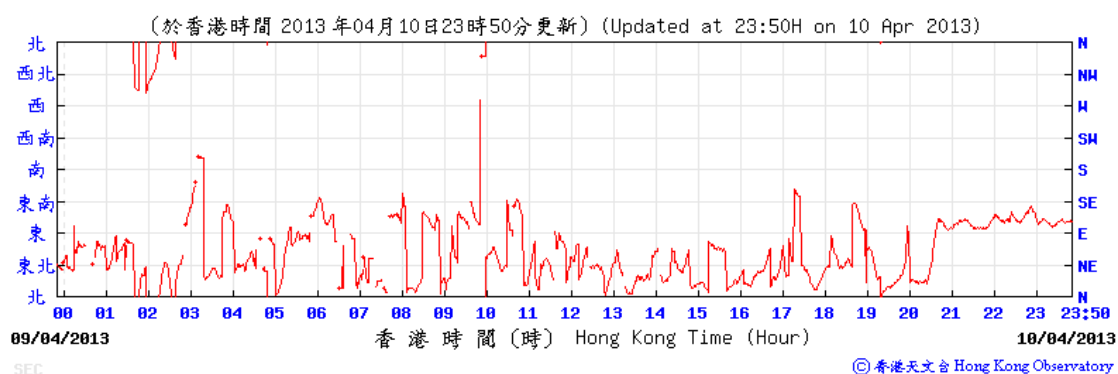
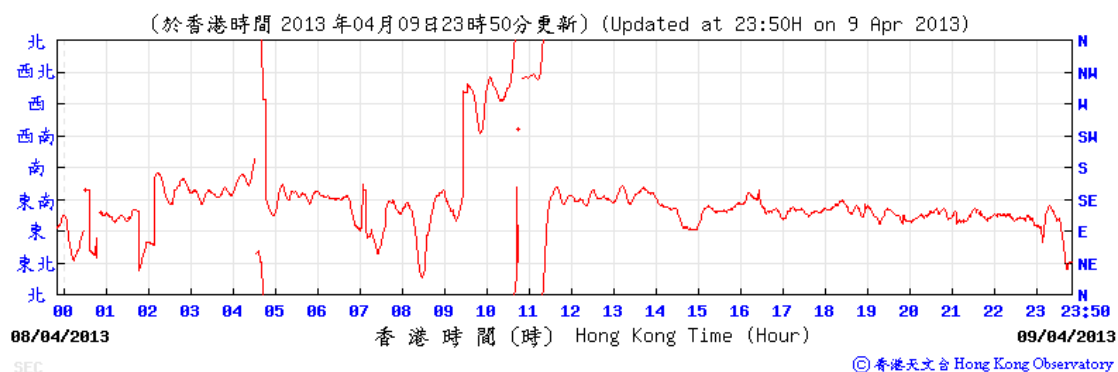
# Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

2-3 April 2013



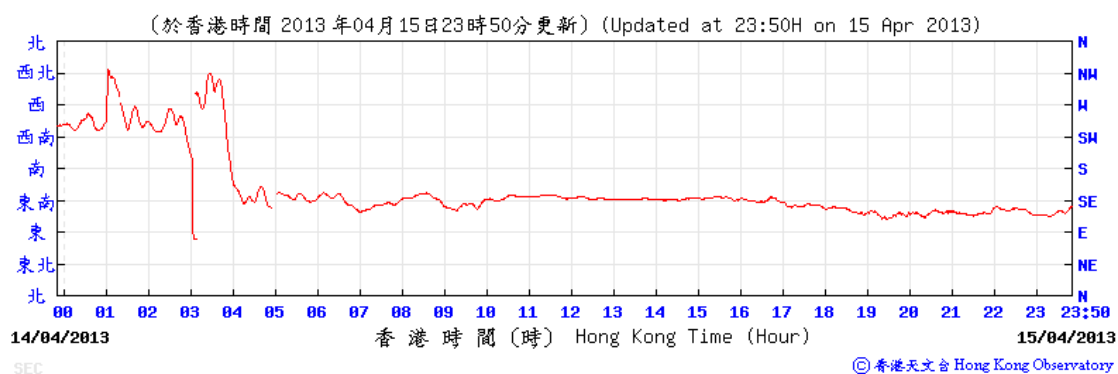
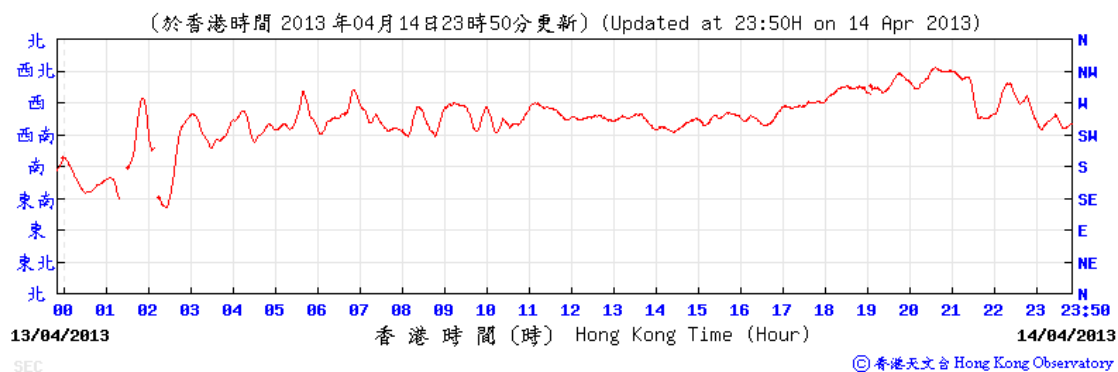
# Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

8-9 April 2013



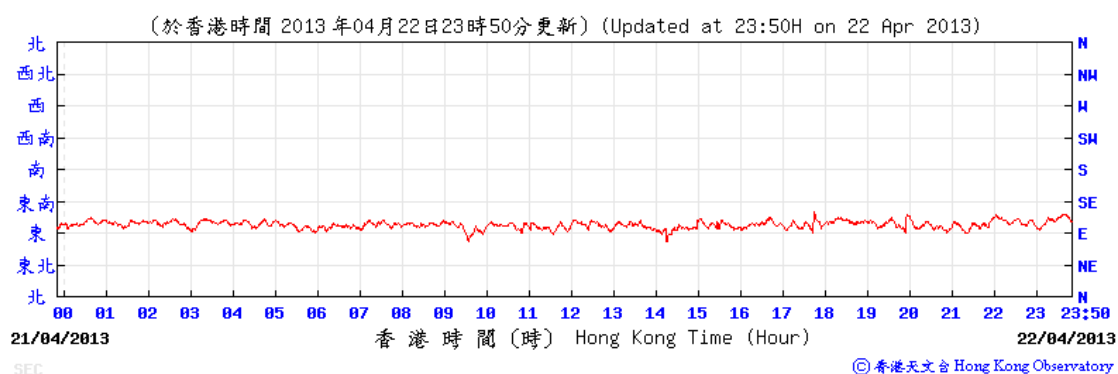
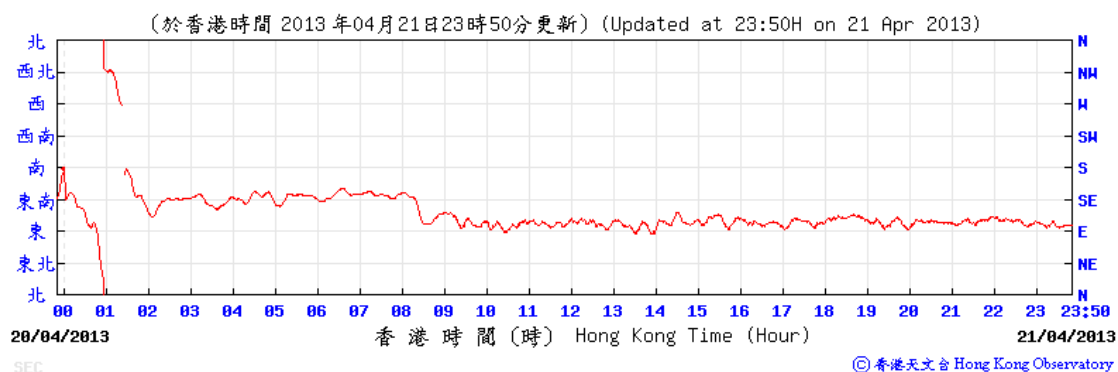
# Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

13-14 April 2013



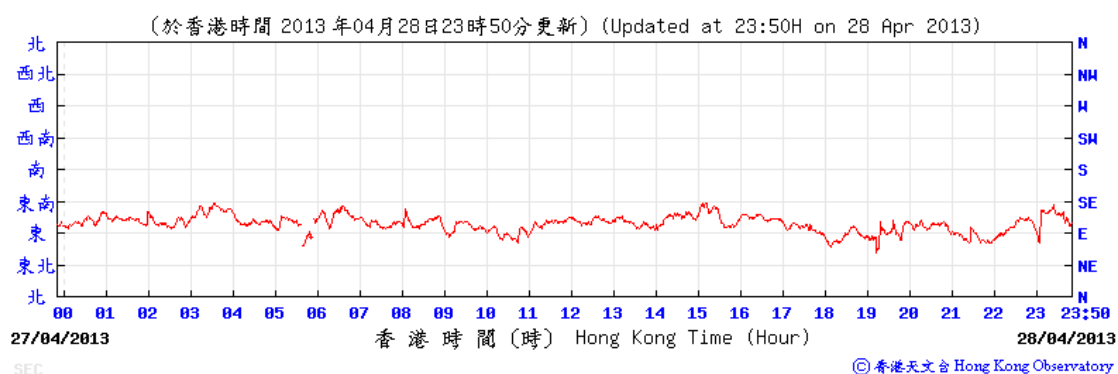
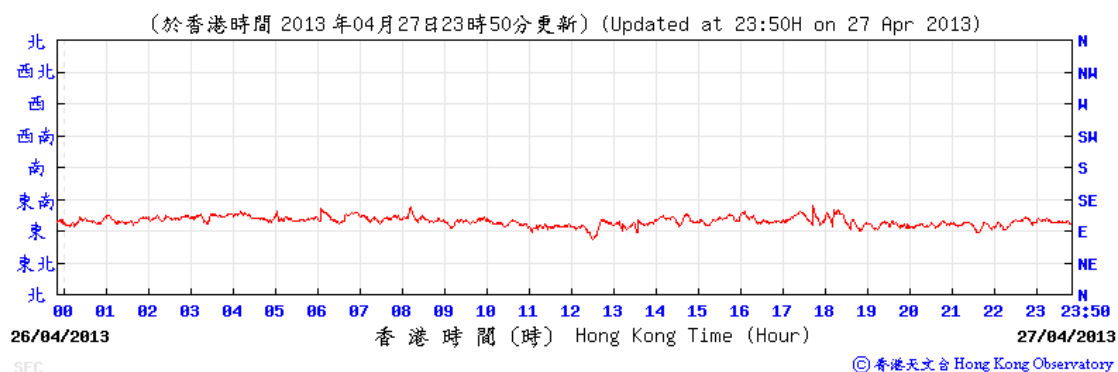
# Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

19-20 April 2013



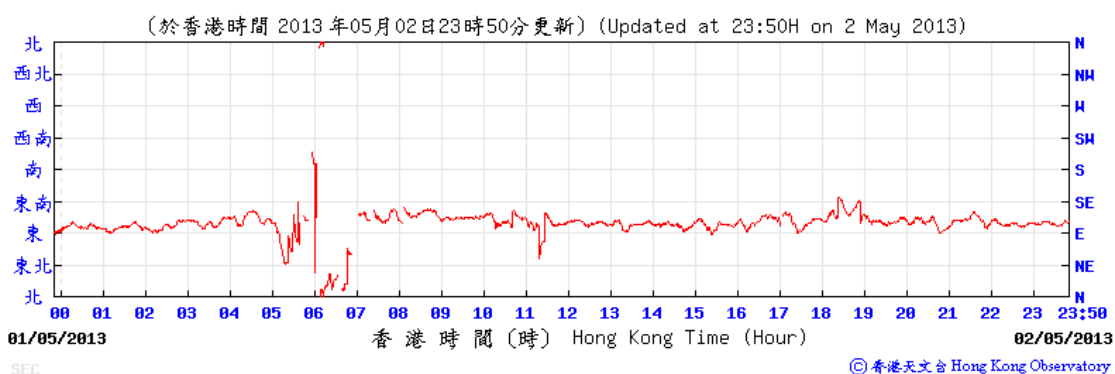
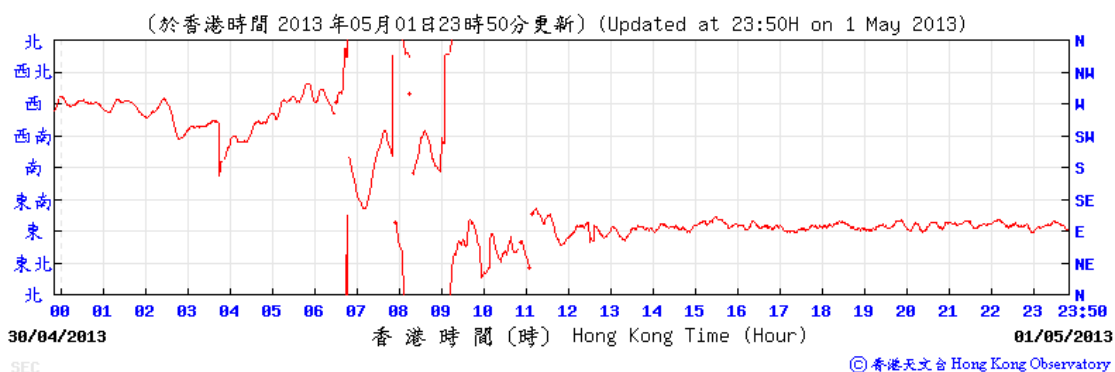
# Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

25-26 April 2013



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

30 April -1 May 2013



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**APPENDIX F  
NOISE MONITORING RESULTS AND  
GRAPHICAL PRESENTATIONS**

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## 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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
3-Apr-13	Cloudy	15:02	70.9	72.3	69.3	71.0	71	71.0 Measured ≤ Baseline Level
		15:07	71.1	73.5	69.5			
		15:12	71.0	73.2	69.4			
		15:17	71.2	73.0	69.6			
		15:22	71.2	73.5	69.3			
		15:27	70.8	72.8	69.4			
9-Apr-13	Cloudy	16:55	71.0	72.1	69.8	70.3	71	70.3 Measured ≤ Baseline Level
		17:00	70.3	71.4	68.9			
		17:05	69.8	72.3	67.5			
		17:10	71.6	73.7	69.5			
		17:15	69.2	71.9	63.2			
		17:20	69.0	73.4	67.8			
15-Apr-13	Cloudy	10:35	72.4	74.8	70.5	72.9	71	68.4
		10:40	73.1	75.2	70.6			
		10:45	72.0	74.3	70.1			
		10:50	73.6	75.8	70.5			
		10:55	72.7	74.6	70.3			
		11:00	73.4	75.1	70.6			
26-Apr-13	Cloudy	10:40	73.7	75.0	72.2	73.6	71	70.1
		10:45	73.5	74.9	71.9			
		10:50	73.0	74.3	71.3			
		10:55	74.0	75.0	72.4			
		11:00	73.0	74.5	71.3			
		11:05	74.0	75.3	72.3			

### Remarks:

- (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
- (2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

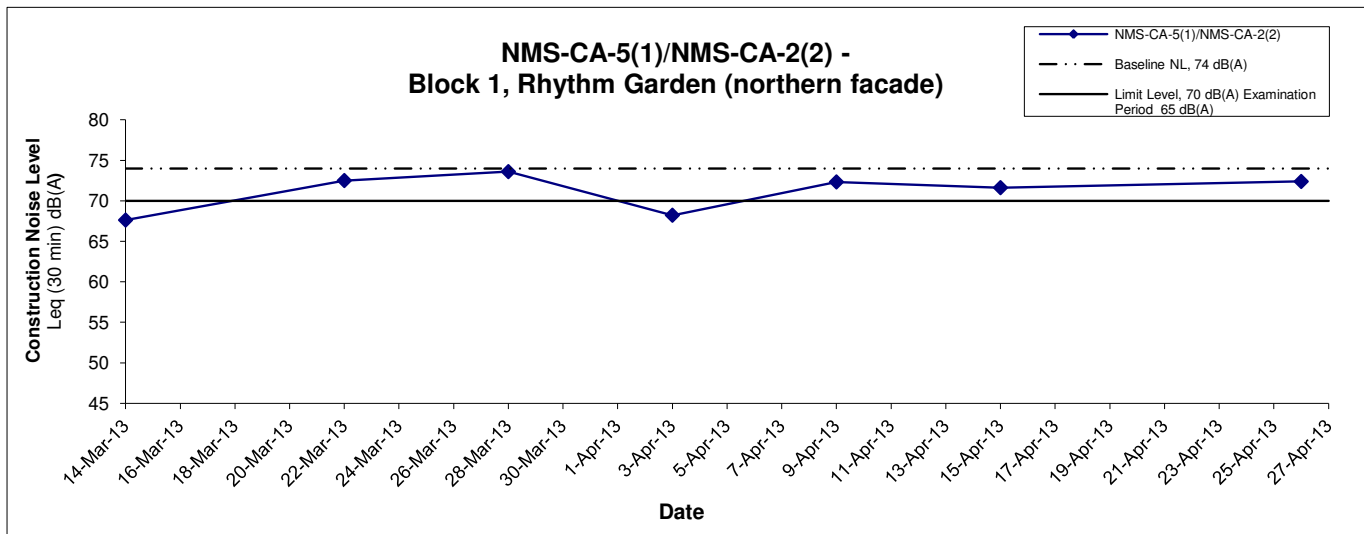
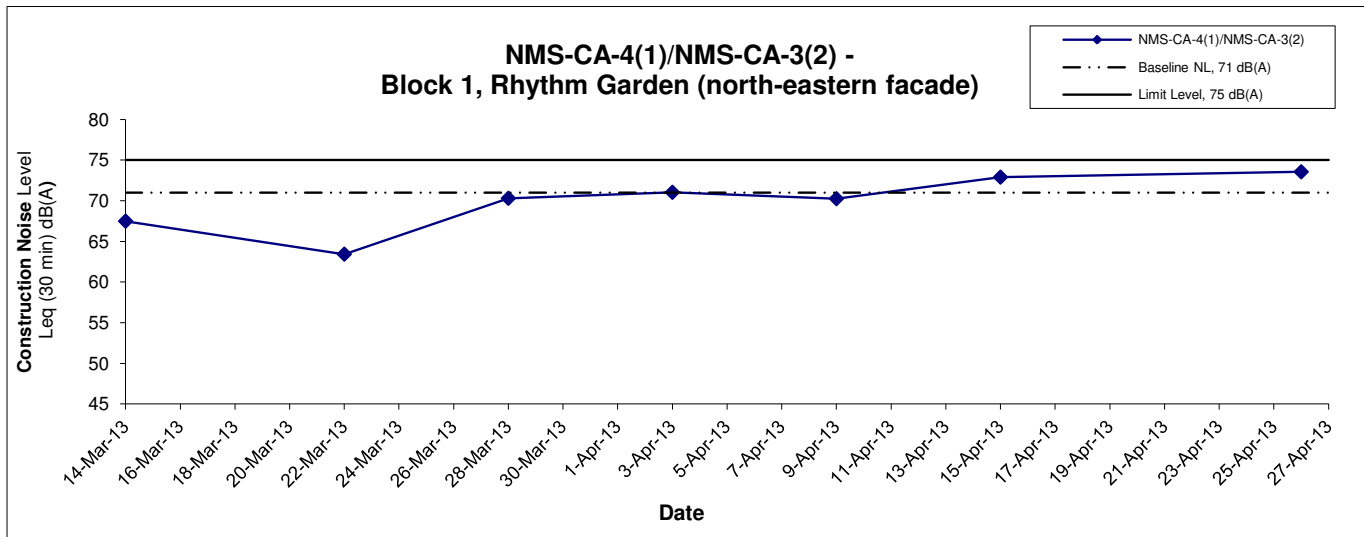
## Appendix F - Noise Monitoring Results

Location NMS-CA-5(1)/NMS-CA-2(2) - Block 1, Rhythm Garden (northern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
3-Apr-13	Cloudy	15:34	68.1	69.1	67.1	68.2	74	68.2 Measured ≤ Baseline Level
		15:39	68.3	69.4	67.2			
		15:44	68.0	69.0	66.9			
		15:49	68.5	69.7	67.5			
		15:54	68.4	69.8	67.8			
		15:59	68.0	69.3	67.1			
9-Apr-13	Cloudy	16:55	74.0	75.2	72.7	72.3	74	72.3 Measured ≤ Baseline Level
		17:00	73.1	74.2	70.5			
		17:05	71.8	73.6	69.7			
		17:10	72.3	74.5	70.8			
		17:15	70.6	73.4	69.2			
		17:20	71.3	73.7	68.7			
15-Apr-13	Cloudy	09:50	70.9	72.1	68.9	71.6	74	71.6 Measured ≤ Baseline Level
		09:55	72.8	73.4	69.3			
		10:00	71.9	73.1	68.5			
		10:05	71.5	72.9	68.6			
		10:10	70.7	72.4	68.5			
		10:15	71.6	73.2	69.3			
26-Apr-13	Cloudy	11:15	72.4	73.8	70.7	72.4	74	72.4 Measured ≤ Baseline Level
		11:20	72.2	73.4	70.7			
		11:25	72.5	73.7	71.3			
		11:30	72.2	73.5	70.8			
		11:35	72.6	73.9	71.2			
		11:40	72.4	73.7	71.1			

### 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 Apr 13	Appendix F	

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**APPENDIX G**  
**SUMMARY OF EXCEEDANCE**

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## **APPENDIX G – SUMMARY OF EXCEEDANCE**

**Reporting Month:** April 2013

**a) Exceedance Report for Dust Monitoring (NIL)**

**b) Exceedance Report for Noise Monitoring (NIL)**

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**APPENDIX H**  
**SITE AUDIT SUMMARY**

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

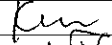

**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	130402
Date	2 April 2013 (Tuesday)
Time	09:00-10:30

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

Ref. No.	Remarks/Observations	Related Item No.
130402-O02	<p><b>Part B – Water Quality</b></p> <ul style="list-style-type: none"> <li>Wheel washing bay should be properly maintained (e.g. sand and silt should be settled out at least on a weekly basis) for ensuring it is properly functioning.</li> </ul>	B14ii.& B14iii.
130402-O01	<p><b>Part C – Ecology</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D – Landscape &amp; Visual</b></p> <ul style="list-style-type: none"> <li>Tree protection zone behind the bentonite mixing plant should properly set up.</li> </ul>	D2
130402-O03	<p><b>Part E – Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F – Cultural Heritage</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G – Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part H – Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>It is advised to remove oily mixture on drip tray for generator near trench cutter after rainstorm. The mixture should be disposed of as chemical waste.</li> </ul> <p><b>Part I – Permits/Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part J – Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130326), item 130326-O02 is remained outstanding and remarked as item 130402-O02 to be followed up during next site inspection.</li> </ul>	H10

	Name	Signature	Date
Recorded by	Ken Cheng		3 April 2013
Checked by	Dr. Priscilla Choy		3 April 2013

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



**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	130409
Date	9 April 2013 (Tuesday)
Time	09:00-10:00

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

Ref. No.	Remarks/Observations	Related Item No.
130409-001	<p><b>Part B – Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	H2ii.
130409-002	<p><b>Part C – Ecology</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D – Landscape &amp; Visual</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part E – Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F – Cultural Heritage</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G – Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part H – Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>Oily mixture on drip tray near silos in area W1 should be properly removed and should be disposed of as chemical waste.</li> <li>Chemical wastes/containers on the trench cutter should be properly handled (i.e. to provide drip tray for temporary storage or placed and labeled properly. Chemical waste should be placed at designated storage area after use).</li> </ul>	H10
	<p><b>Part I – Permits/Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part J – Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130402), all identified environmental deficiency was observed improved/rectified by the Contractor.</li> </ul>	

	Name	Signature	Date
Recorded by	Ken Cheng		9 April 2013
Checked by	Dr. Priscilla Choy		22 April 2013



Shatin to Central Link -  
Contract 1106 Diamond Hill Station

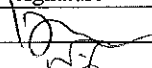

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	130416
Date	16 April 2013 (Tuesday)
Time	09:00-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
130416-R04	<p><b>Part B – Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part C – Ecology</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D – Landscape &amp; Visual</b></p> <ul style="list-style-type: none"> <li>Retained trees near the site office should be free of materials.</li> </ul>	D3
130416-O02	<p><b>Part E – Air Quality</b></p> <ul style="list-style-type: none"> <li>Cover the exposed slope properly by tarpaulin or impervious sheet to avoid dust generation near Hangar.</li> </ul> <p><b>Part F – Cultural Heritage</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G - Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	E6
130416-O01 130416-R03	<p><b>Part H – Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>Provide plug for the drip tray of generator-set near the site entrance.</li> <li>Waste sorting should be implemented on-site.</li> </ul> <p><b>Part I – Permits/Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part J - Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130409), all identified environmental deficiency was observed improved/rectified by the Contractor.</li> </ul>	H10 H4iii.

	Name	Signature	Date
Recorded by	Johnny Fung		16 April 2013
Checked by	Dr. Priscilla Choy		22 April 2013

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

**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	130424
Date	24 April 2013 (Tuesday)
Time	10:30-11:45

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

Ref. No.	Remarks/Observations	Related Item No.
130424-001	<p><b>Part B – Water Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part C – Ecology</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D – Landscape &amp; Visual</b></p> <ul style="list-style-type: none"> <li>Tree protection zone should be set up for retained trees at site office.</li> </ul> <p><b>Part E – Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part F – Cultural Heritage</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G - Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	D2&D3
130424-002	<p><b>Part H – Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>Oil stain was observed near the generator near site office. It is reminded to properly seal up the drain hole of the drip tray to avoid any leakage.</li> </ul> <p><b>Part I – Permits/Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part J - Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130416), all identified environmental deficiency was observed improved/rectified by the Contractor.</li> </ul> <p><u>Reminders:</u></p> <ul style="list-style-type: none"> <li>It is reminded to avoid any stagnant water on site during wet season.</li> <li>It is reminded to implement noise mitigation measures (e.g. erection of noise barrier, etc.) where practicable.</li> </ul>	H9&H10

	Name	Signature	Date
Recorded by	Ken Cheng		24 April 2013
Checked by	Dr. Priscilla Choy		29 April 2013

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

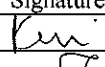

**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	130430
Date	30 April 2013 (Tuesday)
Time	09:00 – 10:30

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

Ref. No.	Remarks/Observations	Related Item No.
130430-003	<p><b>Part B – Water Quality</b></p> <ul style="list-style-type: none"> <li>Sand bags should be provided next to the drain near wheel washing bay to avoid muddy runoff discharge.</li> </ul>	B7
130430-002	<p><b>Part C – Ecology</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part D – Landscape &amp; Visual</b></p> <ul style="list-style-type: none"> <li>Tree protection zone should be properly set up near site office.</li> </ul>	D2 & D3
130430-001	<p><b>Part E – Air Quality</b></p> <ul style="list-style-type: none"> <li>Excavated materials near Hangar Frame and archaeological survey area should be properly covered or watered regularly to avoid dust generation.</li> </ul> <p><b>Part F – Cultural Heritage</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part G – Construction Noise Impact</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part H – Waste/Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part I – Permits/Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>Part J – Others</b></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:130424), all identified environmental deficiency was observed improved/rectified by the Contractor.</li> </ul>	E6

	Name	Signature	Date
Recorded by	Ken Cheng		30 April 2013
Checked by	Dr. Priscilla Choy		30 April 2013

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**APPENDIX I  
EVENT AND ACTION PLANS**

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

**Appendix I - Event and Action Plan for Air Quality Monitoring during Construction Phase**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Inform the IEC, Contractor and ER;</li> <li>2. Discuss with the Contractor, IEC and ER on the remedial measures required;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source(s), investigate the causes of exceedance and propose remedial measures;</li> <li>2. Implement remedial measures;</li> <li>3. Amend working methods agreed with the ER as appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Inform the IEC, Contractor and ER;</li> <li>2. Discuss with the ER, IEC and Contractor on the remedial measures required;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. If exceedance continues, arrange meeting with the IEC, ER and Contractor;</li> <li>6. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify the Contractor, IEC and ET;</li> <li>3. Review and agree on the remedial measures proposed by the Contractor;</li> <li>4. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal as appropriate.</li> </ol>

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

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**APPENDIX J  
UPDATED ENVIRONMENTAL  
MITIGATION IMPLEMENTATION  
SCHEDULE**

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## 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
<b><i>Cultural Heritage Impact (Construction Phase)</i></b>								
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"> <li>• AMO's requirements</li> </ul>	^ ^
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"> <li>• AMO's requirements</li> <li>• Principles for the Conservation of Heritage Sites in China</li> <li>• Burra Charter, the Australia's ICOMOS Charter for Places of Cultural Significance</li> </ul>	^
<b><i>Ecology (Construction Phase)</i></b>								
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"> <li>• ProPECC PN 1/94</li> </ul>	^

## 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>on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> <li>• No on-site burning of waste;</li> <li>• Waste and refuse in appropriate receptacles.</li> </ul>						^ ^
<b><i>Landscape &amp; Visual (Construction Phase)</i></b>								
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"> <li>• 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.</li> </ul> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> <li>• 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</li> </ul>	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	•TM-EIAO	^  *

## SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>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> <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
Table 6.9	LV2	<p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> <li>• 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> </ul> <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> <li>• To provide proper management of the facilities on the sites, give</li> </ul>	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"> <li>• EIAO – TM</li> <li>• ETWB TCW 2/2004</li> <li>• ETWB TCW 3/2006</li> </ul>	<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>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"> <li>Trees of medium to high survival rate that would be affected by the works shall be transplanted where possible and practicable.</li> </ul> <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>						N/A
<b>Construction Dust Impact</b>								
S7.6.6	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> <li>APCO</li> <li>To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	^
S7.6.6	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	<ul style="list-style-type: none"> <li>APCO</li> <li>To control the dust impact to meet HKAQO and TM-EIA criteria</li> </ul>	^



### 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>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;</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p>

## 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"> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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</li> <li>• 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.</li> </ul>					<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;">N/A</p>	
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	^

## 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
<b>Construction Airborne Noise</b>								
S8.5.6	AN1	Implement the following good site practices: <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>• 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;</li> <li>• plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>• silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>• mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>• material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>	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	Contractor	All Construction Sites	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
			screening.					
S8.5.6	AN3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	*
S8.5.6	AN4	Use "Quiet" plant	Reduce the noise levels of plant items	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	•TM-EIA	^
<b>Water Quality (Construction Phase)</b>								
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994	To minimize water quality impact from construction	Contractor	All construction sites	Construction stage	• Water Pollution Control Ordinance	

## SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>(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"> <li>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.</li> <li>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</li> </ul>	<p>site runoff and general construction activities</p>		<p>where practicable</p>		<ul style="list-style-type: none"> <li>ProPECC PN1/94</li> <li>TM-EIAO</li> <li>TM-Water</li> </ul>	<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>under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m<sup>3</sup>/s a sedimentation basin of 30m<sup>3</sup> would be required and for a flow rate of 0.5 m<sup>3</sup>/s the basin would be 150 m<sup>3</sup>. 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"> <li>• 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.</li> <li>• 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.</li> <li>• 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</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

## SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>and disposed of by spreading evenly over stable, vegetated areas.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms.</li> <li>• 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</li> <li>• 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</li> </ul>						<p>N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">^</p>

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		<p>attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality</li> </ul>						<p style="text-align: center;">*</p> <p style="text-align: center;">N/A</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>the locations should be located as far as possible from the sensitive watercourse and stormwater drains;</p> <ul style="list-style-type: none"> <li>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</li> <li>Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.</li> </ul>						^
<b>Waste Management (Construction Waste)</b>								
S11.4.1.1	WM1	<p><u>On-site sorting of C&amp;D material</u></p> <ul style="list-style-type: none"> <li>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</li> </ul>	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"> <li>DEVB TC(W) No. 6/2010</li> </ul>	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>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"> <li>• Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>• Carry out on-site sorting;</li> <li>• Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>• Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</li> <li>• Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and</li> </ul>	<p>Good site practice to minimize the waste generation and recycle the C&amp;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"> <li>• Land (Miscellaneous Provisions) Ordinance</li> <li>• Waste Disposal Ordinance</li> <li>• ETWB TCW No. 19/2005</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p>



## 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>verified; and</p> <ul style="list-style-type: none"> <li>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&amp;D materials and to minimize their generation during the course of construction.</li> <li>In addition, disposal of the C&amp;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</li> </ul>						^
S11.5.1	WM3	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;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.</li> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated</li> </ul>	<p>Good site practice to minimize the waste generation and recycle the C&amp;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"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal Ordinance</li> <li>ETWB TCW No.19/2005</li> </ul>	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
		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"> <li>• General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>• 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.</li> <li>• 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.</li> <li>• Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a</li> </ul>	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	<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;">N/A</p>





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

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**Contract No:** MTR SCL 1106 - Diamond Hill Station

**Date of Report:** April, 2013

### Monthly Summary Waste Flow Table for 2013

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 and 3)	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse	
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )	
Jan	0.610	0.000	0.000	0.000	0.610	0.000	0.00	0.00	0.00	0.000	0.267	
Feb	2.171	0.000	0.000	0.272	1.899	0.000	0.00	0.00	0.00	0.000	0.203	
Mar	1.416	0.000	0.000	0.392	1.024	0.000	0.00	0.00	0.00	1.500	0.172	
Apr	1.977	0.000	0.000	0.463	1.514	0.000	0.00	0.00	0.00	0.000	1.545	
May												
Jun												
Sub-total	6.174	0.000	0.000	1.127	5.047	0.000	0.000	0.000	0.000	1.500	2.187	
Jul												
Aug												
Sept												
Oct												
Nov												
Dec												
Total	6.174	0.000	0.000	1.127	5.047	0.000	0.000	0.000	0.000	1.500	2.187	

Notes:

- 1) Assume the densities of Rock, Soil, Mix Rock and Soil, are Regular Spoil to be 2.0 tonnes/m<sup>3</sup>. Assumption the densities of general refuse is 1.0 tonnes/m<sup>3</sup>
- 2) Inert C&D material delivered to Kai Tak Barging Point Facility (Contract 1108A) from 17/04/13 to 23/04/13 was 430 m<sup>3</sup> and Project 1103 on 17/04/13 was 33 m<sup>3</sup> for backfilling.
- 3) Inert C&D material delived to Project 1103 by using the conversion factor: 1 full load of dumping truck being equivalent to 6.5m<sup>3</sup> by volume from Archsd D/OL03/09.002

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

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

### Cumulative Complaint Log

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
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### Cumulative Log for Notifications of Summons

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
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### Cumulative Log for Successful Prosecutions

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