

MTR Corporation Limited

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

Monthly EM&A Report No. 4  
[Period from 1 to 31 December 2012]

(January 2013)

Verified by:  Tom Chapman

Position: Independent Environmental Checker


Date: 14 / 1 / 2013

MTR Corporation Limited

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

Monthly EM&A Report No. 4  
[Period from 1 to 31 December 2012]

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Certified by: Richard Kwan 

Position: Environmental Team Leader

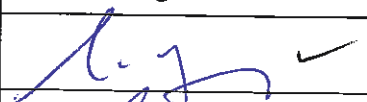
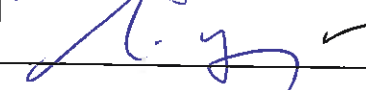
Date: 14 January 2013

**MTR Corporation Limited**

Consultancy Agreement No. C11033

**Shatin to Central Link - Tai Wai to Hung  
Hom Section  
[SCL (TAW – HUH)]****Monthly EM&A Report No. 4**

[Period from 1 to 31 December 2012]

	Name	Signature
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Version:	A	Date: 14 January 2013
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## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 Shatin to Central Link – Tai Wai to Hung Hom Section [SCL (TAW-HUH)], is an approximately 11 km long extension of the Ma On Shan Line (MOL) and connects the existing West Rail Line (WRL) at Hung Hom, forming a strategic east-west rail corridor and Shatin to Central Link – Stabling Sidings at Hung Hom Freight Yard [SCL (HHS)] is a proposed stabling sidings for SCL (TAW – HUH) at the former freight yard in Hung Hom (hereafter referred to as “the Project”).
- 1.1.2 The EIA Reports for SCL (TAW-HUH) (Register No.: AEIAR-167/2012) 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, an Environmental Permit (EP) was granted on 22 March 2012 (EP No: EP-438/2012) for the construction and operation of the SCL (TAW-HUH) and SCL (HHS). Variations of environmental permit (VEP) was subsequently applied and the latest Environmental Permit (EP No: EP-438/2012/B) was issued by Director of Environmental Protection (DEP) on 26 October 2012.

### 1.2 Project Programme

- 1.2.1 Four 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 Contract**

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	To be constructed	Vinci Construction Grands Projets	Arup
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)

Note:

- (1) Only noise cover 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 fourth 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 31 December 2012.

## 2 ENVIRONMENTAL MONITORING AND AUDIT

2.1.1 This monthly EM&A Report covers Works Contracts 1108A, 1109 and 1101 prepared by the respective Contractor's ETs which are provided in **Appendices A to C** respectively. The EM&A Reports provide details of the project information, EM&A requirements, impact monitoring and audit results for the corresponding Contracts.

2.1.2 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	<ul style="list-style-type: none"> <li>• Site setting out and drilling work; and</li> <li>• Erection of steel structure of noise cover</li> </ul>
	To Shek Storage Yard	<ul style="list-style-type: none"> <li>• Construction of concrete paving;</li> <li>• Site clearance; and</li> <li>• Storage of construction material</li> </ul>
1102 <sup>(1)</sup>	N/A	N/A
1103 <sup>(1)</sup>	N/A	N/A
1106 <sup>(1)</sup>	N/A	N/A
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>• Load testing of mini-piles and construction of pile caps;</li> <li>• Installation of weighbridges and recorder house;</li> <li>• Steelworks fabrication for tipping halls;</li> <li>• Drilling and installation of holding down bolts at existing concrete footings;</li> <li>• Erection of site hoarding;</li> <li>• Construction of concrete pavement for temporary haul roads; and</li> <li>• Operation of the first barging point facility using floating jetty barge.</li> </ul>
1109	Ma Tau Wai (MTW) Works Area	<ul style="list-style-type: none"> <li>• TKW/MTW Road Garden – Installation of concrete slabs and silos for the bentonite plant; erection of hoardings; and road marking;</li> <li>• To Kwa Wan Market - Demolition of the planter walls and paving the walkway; and</li> <li>• General Works - Preparation works for the underground utilities, removal of central dividers, and road marking work.</li> </ul>
	To Kwa Wan (TKW) Works Area	<ul style="list-style-type: none"> <li>• Archaeological Survey;</li> <li>• Pre-bored H-pile Location - Trial pits and pre-drilling; and</li> <li>• General Works - Site clearance, erection of site hoardings, construction of a site office, ground preparation, and utility scanning.</li> </ul>
1111 <sup>(1)</sup>	N/A	N/A
1112 <sup>(1)</sup>	N/A	N/A

Note:

(1) Construction works under the contract have yet to commence

N/A Not applicable

2.1.3 Impact monitoring for air quality and construction noise were conducted in accordance with the EM&A Manual in the reporting period. Under Works Contract 1109, continuous noise monitoring was also conducted according to the Continuous Noise Monitoring Plan (CNMP) in

the reporting period. The monitoring results indicated that no exceedance of the Action/Limit Levels of 24-hr TSP and construction noise due to the Project construction was recorded during the reporting period. With regard to the continuous noise monitoring, no exceedance of Action/Limit level was recorded, except on 17, 18 and 27 December 2012. An investigation had been conducted to review the potential causes of the exceedance 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**.

- 2.1.4 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 C**.
- 2.1.5 Water quality monitoring was not carried out during this reporting period since all dredging activities were completed on 11 November 2012.
- 2.1.6 No environmental notification of summon, prosecution and valid complaint were received in the reporting period.
- 2.1.7 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 1103<sup>(1)</sup></b>					
DMS-1	C.U.H.K.A.A. Thomas Cheung School	N/A	N/A	260	N/A
DMS-2	Price Memorial Catholic Primary School	N/A	N/A	260	N/A
<b>Works Contract 1106<sup>(1)</sup></b>					
DMS-3	Hong Kong S.K.H Nursing Home <sup>(2)</sup>	N/A	N/A	260	N/A
DMS-4	Block 1, Rhythm Garden	N/A	N/A	260	N/A
<b>Works Contract 1108A<sup>(6)</sup></b>					
<b>Works Contract 1109</b>					
DMS-6	Katherine Building <sup>(3)</sup>	70 – 93	156.8	260	No
DMS-7	Parc 22 <sup>(4)</sup>	73 – 85	166.7	260	No
DMS-8	SKH Good Shepherd Primary School	74 – 93	152.2	260	No
DMS-9	No. 26 Kowloon City Road <sup>(5)</sup>	73 – 91	160.9	260	No
DMS-10	Chat Ma Mansion	81 – 93	170.4	260	No
<b>Works Contract 1111<sup>(1)</sup></b>					
DMS-11	No. 234 – 238 Chatham Road North <sup>(7)</sup>	N/A	N/A	260	N/A

Note:

- (1) Construction works under the contract have yet to commence
  - (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) 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 1103<sup>(7)</sup></b>						
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School	N/A	N/A	N/A	70 65 during examination period	N/A
NMS-CA-2	Price Memorial Catholic Primary School	N/A	N/A	N/A	70 65 during examination period	N/A
<b>Works Contract 1106<sup>(7)</sup></b>						
NMS-CA-3	Hong Kong S.K.H Nursing Home <sup>(2)</sup>	N/A	N/A	N/A	75	N/A
NMS-CA-4	Block 1, Rhythm Garden (north-eastern façade)	N/A	N/A	N/A	75	N/A
NMS-CA-5	Block 1, Rhythm Garden (northern façade) <sup>(3)</sup>	N/A	N/A	N/A	70 65 during examination period	N/A
<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>	63.8 – 65.8	76.0	– <sup>(8)</sup>	75	No
NMS-CA-7	Skytower Tower 2	67.8 – 68.3	70.0	– <sup>(8)</sup>	75	No
NMS-CA-8	SKH Good Shepherd Primary School	72.5 – 76.0	75.0	69.1	78 <sup>(9)</sup>	No
NMS-CA-9	Kong Yiu Mansion <sup>(5)</sup>	70.1 – 71.9	69.0	63.6 – 68.8	75	No
NMS-CA-10	Chat Ma Mansion	76.3 – 78.2	77.0	72.0	75	No
<b>Works Contract 1111<sup>(7)</sup></b>						
MMS-CA-11	No. 234 – 238 Chatham Road <sup>(10)</sup>	N/A	N/A	N/A	75	N/A

Note:

- (1) Construction works under the contract have yet to commence
- (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 (above the baseline noise level) was corrected against the corresponding baseline Level
- (8) No correction was made as the measured noise levels were below the baseline noise levels
- (9) Continuous noise monitoring was conducted at this NSR during the reporting and the Action/Limit Level as stated in the CNMP was adopted

(10) Alternative monitoring location to Wing Fung Building

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 ( $L_{Aeq}$ ,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>(6)</sup></b>							
<b>Works Contract 1103<sup>(1)</sup></b>							
TAW-6-7	C.U.H.K.A.A. Thomas Cheung School	N/A	N/A	N/A	N/A	N/A	N/A
DIH-9-1	Shek On Building	N/A	N/A	N/A	N/A	N/A	N/A
DIH-13-1	Canossa Primary School	N/A	N/A	N/A	N/A	N/A	N/A
<b>Works Contract 1106<sup>(1)</sup></b>							
DIH-9-1	Shek On Building	N/A	N/A	N/A	N/A	N/A	N/A
DIH-13-1	Canossa Primary School	N/A	N/A	N/A	N/A	N/A	N/A
DIH-14-1	Rhythm Garden Block 2	N/A	N/A	N/A	N/A	N/A	N/A
DIH-14-4	Canossa Primary School (San Po Kong)	N/A	N/A	N/A	N/A	N/A	N/A
DIH-14-5	Rhythm Garden Block 1	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-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)

NSR ID	NSR Description	Continuous Noise Monitoring Location	Noise Level ( $L_{Aeq}$ ,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	Lucky Building (South Façade)	MTW-12-10 Lucky Building (South Façade)	(5)	(5)	(5)	84	(5)
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	73.1 – 85.4	75.0	58.7 - 85.0	78	Yes
MTW-18-2	No. 2 Kowloon City Road	MTW-18-2(A) No. 20 Kowloon City Road	(5)	(5)	(5)	81	(5)
HOM-2-1-A	Faerie Court (East Façade)	HOM-2-1-A Faerie Court (East Façade)	(5)	(5)	(5)	78	(5)
<b>Works Contract 1111<sup>(1)</sup></b>							
HUH-1-3	No. 234 – 238 Chatham Road <sup>(6)</sup>	N/A	N/A	N/A	N/A	N/A	N/A

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
- 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/B). The status of required submissions under the EP as of the reporting period is summarized in **Table 3.1**.

**Table 3.1 Summary of Status of Required Submissions**

EP Condition (EP-438/2012/B)	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)
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)
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)
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)
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) 14 Nov 2012 (4 <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 (Approved)
Condition 2.16	Archaeological Action Plan(s) (AAP(s))	10 Aug 2012 (1 <sup>st</sup> submission) 3 Sep 2012 (2 <sup>nd</sup> submission) 21 Sep 2012 (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	12 Oct 2012 14 Nov 2012 14 Dec 2012

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**Appendix A**

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

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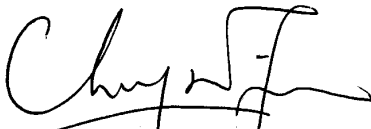
**Shatin to Central Link –  
Tai Wai to Hung Hom Section**

Monthly EM&A Report No. 4

[Period from 1 to 31 December 2012]

Works Contract 1108A – Kai Tak Barging Point  
Facilities

(January 2013)

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

Position: Environmental Team Leader

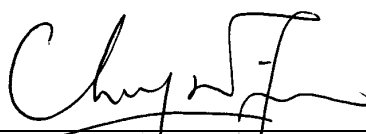
Date: 14<sup>th</sup> January 2013

# Concentric – Hong Kong River Joint Venture

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

### Monthly Environmental Monitoring and Audit Report for December 2012

(Version 2.0)

Certified By	 _____ (Contractor's Environmental Team Leader)
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**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 4<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 December 2012.

### Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month included:
  - Load testing of mini-piles and construction of pile caps;
  - Installation of weighbridges and recorder house;
  - Steelworks fabrication for tipping halls;
  - Drilling and installation of holding down bolts at existing concrete footings;
  - Erection of site hoarding;
  - Construction of concrete pavement for temporary haul roads; and
  - Operation of the first barging point facility using floating jetty barge.

### 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. 100 m<sup>3</sup> of inert C&D materials and 5 m<sup>3</sup> of 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:

- Assembly and erection of steel structures, including berthing frames, conveyor tower/frames and tipping halls;
- Installation, testing and commissioning of conveyor belt system;
- Installation of weighbridges, wheel washing facilities and recorder houses;
- Erection of site hoarding;
- Completion of miscellaneous provisions, e.g. road marking, signage, lighting, electrical system, for the barging point facilities; and
- Erection of chain link fences for temporary haul roads.

## 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 4<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 December to 31 December 2012.

### **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. 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**.

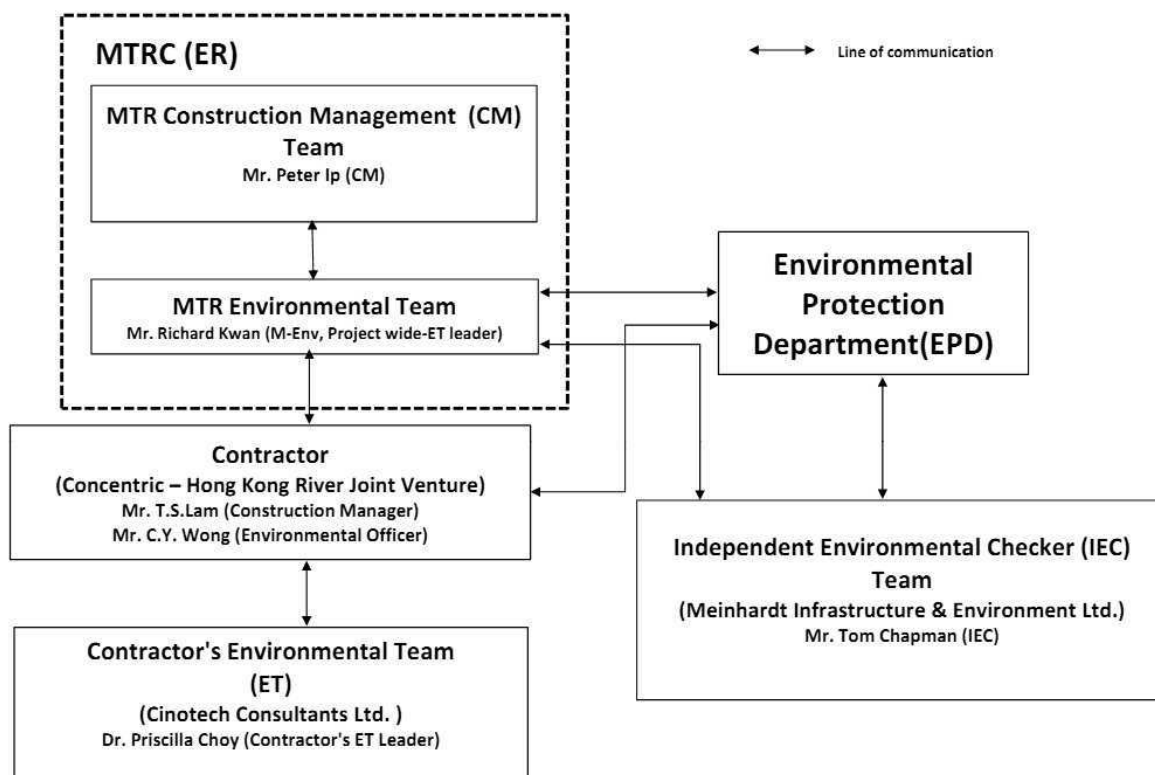
### Construction Programme and Activities

- 2.4 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix H**.
- Load testing of mini-piles and construction of pile caps;
  - Installation of weighbridges and recorder house;
  - Steelworks fabrication for tipping halls;
  - Drilling and installation of holding down bolts at existing concrete footings;
  - Erection of site hoarding;
  - Construction of concrete pavement for temporary haul roads; and
  - Operation of the first barging point facility using floating jetty barge.

### 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 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.2**.
- 2.10 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.

**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	N/A	Valid
<b>Construction Noise Permit (CNP)</b>			
GW-RE0754-012	24/09/2012	23/03/2013	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**

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

### **Action and Limit Levels**

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

### **Event and Action Plan**

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

### **Cultural Heritage**

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

### **Landscape and Visual**

- 3.21 In accordance with the EM&A Manual, the landscape and visual mitigation measures

shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is summarised in **Table 6.1** of Section 6.

### **Ecology**

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

#### 4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

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

**Table 4.1 Status of Required Submissions under EP**

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Status of submissions under EP	1	Monthly EM&A Report (November 2012)	Submitted to EPD on 14 <sup>th</sup> December 2012 (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
December 2012	100 m <sup>3</sup>	5 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 3<sup>rd</sup>, 13<sup>th</sup>, 17<sup>th</sup>, 24<sup>th</sup> and 31<sup>st</sup> December 2012 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 13<sup>th</sup> December 2012. 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
<i>Water Quality</i>	19 Nov 2012	<u>Reminder:</u> Provide appropriate barriers on the floating jet to avoid surface runoff runs into the sea.	The observation was observed to be improved/rectified by the Contractor during the audit session on 13 Dec 2012
	26 Nov 2012	<u>Reminder:</u> Generally remove rainwater accumulated on site after rainstorm.	The observation was observed to be improved/rectified by the Contractor during the audit session on 13 Dec 2012
	3 Dec 2012	<u>Reminder:</u> Properly remove the mud near the drainage channel and provide sandbag to the channel.	The observation was observed to be improved/rectified by the Contractor during the audit session on 13 Dec 2012
	13 Dec 2012	<u>Reminder:</u> Stockpile near site boundary should be covered.	The observation was observed to be improved/rectified by the Contractor during the audit session on 17 Dec 2012
	13 Dec 2012	<u>Reminder:</u> Properly maintain the drainage channel to prevent muddy runoff directly flows into it.	The observation was observed to be improved/rectified by the Contractor during the audit session on 17 Dec 2012
	24 Dec 2012	<u>Reminder:</u> Pump out the stagnant water near site hoarding next to wheel washing bay.	Follow up action is needed in next reporting month.
	31 Dec 2012	<u>Reminder:</u> Properly manage the wastewater to avoid it directly runs into the sea.	Follow up action is needed in next reporting month.
<i>Noise</i>	N/A	N/A	N/A
<i>Ecology/Landscape and Visual</i>	3 Dec 2012	<u>Reminder:</u> Remove the construction material and mechanical equipments from the tree protection area near site entrance.	The observation was observed to be improved/rectified by the Contractor during the audit session on 13 Dec 2012
<i>Air Quality</i>	17 Dec 2012	<u>Reminder:</u> Provide dust mitigation measures to the unpaved ground inside the site.	The observation was observed to be improved/rectified by the Contractor during the audit session on 24 Dec 2012
	24 Dec 2012	<u>Reminder:</u> Cover the dusty stockpile near site boundary at seaside properly to mitigate dust generation.	The observation was observed to be improved/rectified by the Contractor during the audit session on 31 Dec 2012
<i>Waste / Chemical Management</i>	N/A	N/A	N/A
<i>Permits/Licenses</i>	N/A	N/A	N/A
<b>IEC's observation/recommendation:</b>			
IEC's representative had the following observations/recommendations during the joint site audit on 13 Dec 2012:			
<ul style="list-style-type: none"> <li>Properly maintain the drainage channel to prevent muddy runoff directly flows into it, and</li> <li>Stockpile near site boundary should be covered.</li> </ul>			



## **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 the first barging point facility (floating jetty).
- Potential dust impact

### Construction Programme for the Next Month

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

- Assembly and erection of steel structures, including berthing frames, conveyor tower/frames and tipping halls;
- Installation, testing and commissioning of conveyor belt system;
- Installation of weighbridges, wheel washing facilities and recorder houses;
- Erection of site hoarding;
- Completion of miscellaneous provisions, e.g. road marking, signage, lighting, electrical system, for the barging point facilities; and
- Erection of chain link fences for temporary haul roads.

## 9 CONCLUSIONS AND RECOMMENDATIONS

### **Conclusions**

- 9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 December 2012 to 31 December 2012 in accordance with EM&A Manual and the requirement under EP-438/2012/B.
- 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 Impact***

- Manage the site boundary properly to avoid surface runoff into the sea.
- Provide adequate number of sand bags around piling works to prevent surface runoff into the sea.

#### ***Dust Impact***

- Regularly spray water on the dusty materials so as to maintain entire surface wet.
- Regularly spray with water on the surface of unpaved area to suppress dust generation.

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

- Avoid and check for any accumulation of waste materials or rubbish on site.
- Avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment.
- Provide drip tray with adequate capacity and maintain well for equipment and chemical waste.

#### ***Ecology***

- Prevent encroachment onto adjacent habitats by delineation of work sites.

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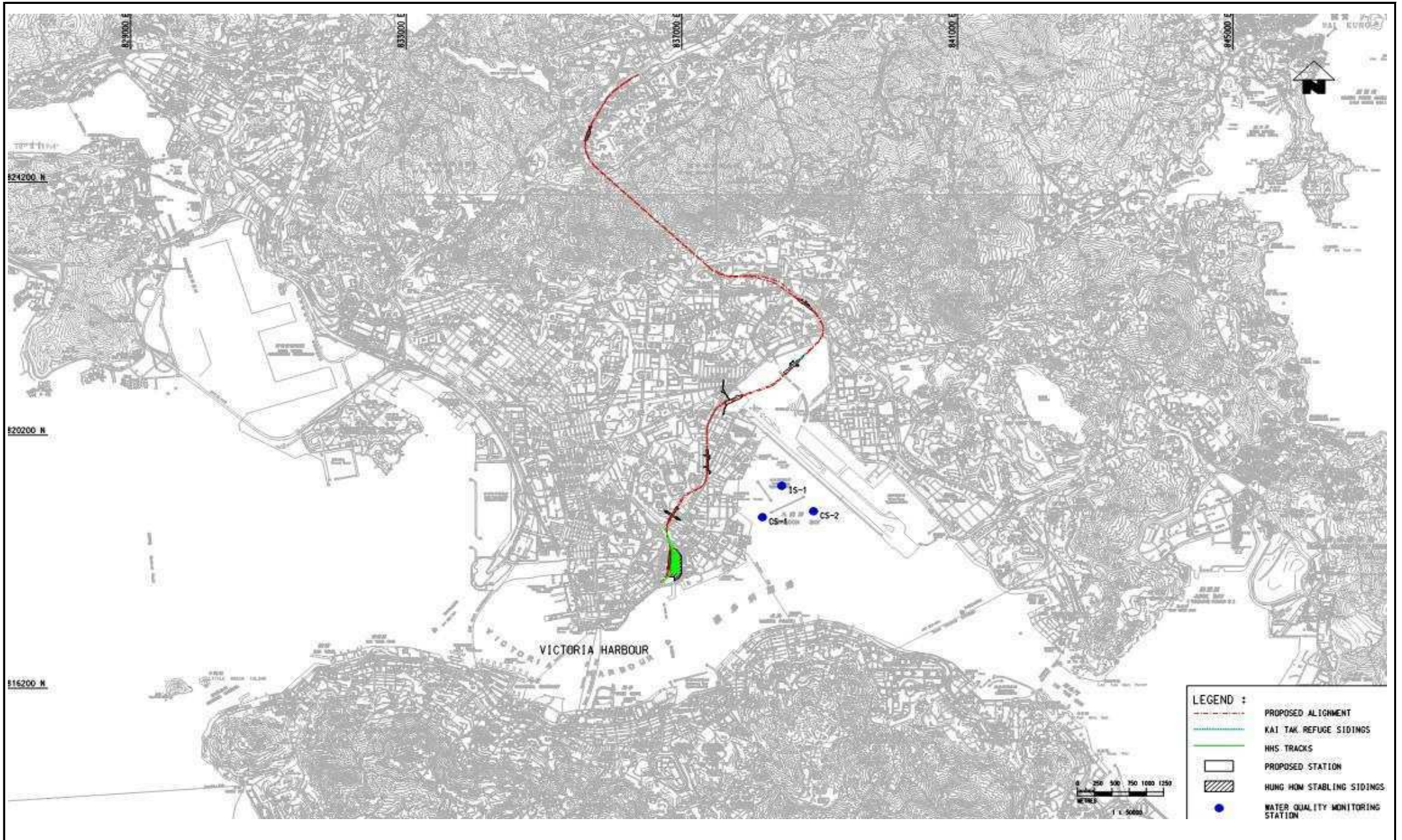
## FIGURES

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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	CINOTECH
		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



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



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

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**APPENDIX B – SUMMARY OF EXCEEDANCE**

**Reporting Month:** December 2012

*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*

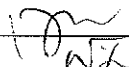
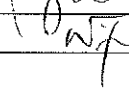
**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	121203
Date	3 December 2012 (Monday)
Time	13:45-14:45

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

Ref. No.	Remarks/Observations	Related Item No.
121203-R02	<p><b>Part B - Water Quality</b></p> <ul style="list-style-type: none"> <li>Properly remove the mud near the drainage channel and provide sandbag to the channel.</li> </ul>	B7&B20
121203-R01	<p><b>Part C - Ecology/Others</b></p> <ul style="list-style-type: none"> <li>Remove the construction material and mechanical equipments from the tree protection area near site entrance.</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.:121126), outstanding item 121126-R01 shall be reviewed during the next site inspection.</li> </ul>	C3

	Name	Signature	Date
Recorded by	Johnny Fung		3 December 2012
Checked by	Dr. Priscilla Choy		3 December 2012

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



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	121213
Date	13 December 2012 (Thursday)
Time	15:30-16:30

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

Ref. No.	Remarks/Observations	Related Item No.
121213-R01 121213-R02	<p><b>Part B - Water Quality</b></p> <ul style="list-style-type: none"> <li>• Stockpile near site boundary should be covered.</li> <li>• Properly maintain the drainage channel to prevent muddy runoff directly flows into it.</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.:121203), all identified environmental deficiencies were observed rectified by the Contractor.</li> </ul>	B9 B7

	Name	Signature	Date
Recorded by	Ken Cheng		13 December 2012
Checked by	Dr. Priscilla Choy		13 December 2012

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

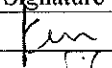
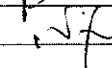
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	121217
Date	17 December 2012 (Thursday)
Time	14:00-15:00

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

Ref. No.	Remarks/Observations	Related Item No.
121217-R01	<p><i>Part B - Water Quality</i></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part C - Ecology/Others</i></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part D - Air Quality</i></p> <ul style="list-style-type: none"> <li>Provide dust mitigation measures to the unpaved ground inside the site.</li> </ul> <p><i>Part E - Construction Noise Impact</i></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part F - Waste/Chemical Management</i></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part G - Permit / Licenses</i></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Others</i></p> <ul style="list-style-type: none"> <li>Follow-up on previous audit section (Ref. No.:121213), all identified environmental deficiencies were improved/rectified by the Contractor.</li> </ul>	D13

	Name	Signature	Date
Recorded by	Ken Cheng		17 December 2012
Checked by	Dr. Priscilla Choy		17 December 2012

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



**Record Summary of Environmental Site Inspection**

**Inspection Information**

Checklist Reference Number	121224
Date	24 December 2012 (Monday)
Time	09:30-10:30

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

Ref. No.	Remarks/Observations	Related Item No.
121224-R01	<p><i>Part B - Water Quality</i></p> <ul style="list-style-type: none"> <li>• Pump out the stagnant water near site hoarding next to wheel washing bay.</li> </ul>	B12
121224-R02	<p><i>Part C - Ecology/Others</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part D - Air Quality</i></p> <ul style="list-style-type: none"> <li>• Cover the dusty stockpile near site boundary at seaside properly to mitigate dust generation.</li> </ul> <p><i>Part E - Construction Noise Impact</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part F - Waste/Chemical Management</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part G - Permit / Licenses</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Others</i></p> <ul style="list-style-type: none"> <li>• Follow-up on previous audit section (Ref. No.:121217), all identified environmental deficiency was improved/rectified by the Contractor.</li> </ul>	D7

	Name	Signature	Date
Recorded by	Ken Cheng		24 December 2012
Checked by	Dr. Priscilla Choy		24 December 2012

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



Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	121231
Date	31 December 2012 (Monday)
Time	09:30-10:30

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

Ref. No.	Remarks/Observations	Related Item No.
121231-R01	<p><i>Part B - Water Quality</i></p> <ul style="list-style-type: none"> <li>• Properly manage the wastewater to avoid it directly runs into the sea.</li> </ul> <p><i>Part C - Ecology/Others</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part D - Air Quality</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part E - Construction Noise Impact</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part F - Waste/Chemical Management</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Part G - Permit / Licenses</i></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><i>Others</i></p> <ul style="list-style-type: none"> <li>• Follow-up on previous audit section (Ref. No.:121224), outstanding item 121224-R01 has to be reviewed during next site inspection.</li> </ul>	B20

	Name	Signature	Date
Recorded by	Ken Cheng		2 January 2013
Checked by	Dr. Priscilla Choy		2 January 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	^

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
		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	

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>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>	^  *  ^  ^

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		<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>N/A<sup>(2)</sup></p> <p>^</p> <p>^</p>

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		<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>

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		<p>with the material filling line and no overfilling is allowed;</p> <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>						<p>N/A<sup>(2)</sup></p> <p>N/A<sup>(2)</sup></p>
S7.6.5	D4	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <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	<p>N/A<sup>(2)</sup></p> <p>N/A<sup>(2)</sup></p> <p>^</p> <p>^</p>
S7.6.5	D5	For the unloading of spoil from trucks at barging point, installation of 3-sided screen with top cover and the provision of water sprays at the discharge point would be provided for an assumed 50% dust	Minimize dust impact at the nearby sensitive	Contractor	Barging Points	Construction stage	• APCO • To control the dust	^

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		suppression.	receivers				impact to meet HKAQO and TM-EIA criteria	
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> <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> </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>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>N/A<sup>(2)</sup></p> <p>N/A<sup>(1)</sup></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	N/A <sup>(1)</sup>
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>
S8.3.6	N4	Use "Quiet plants"	Reduce the noise levels of plant items	Contractor	All Construction Sites where	Construction stage	• Annex 5, TM-EIA	^

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					practicable			
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected 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: <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</li> </ul>	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO	^



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		<p>should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> <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 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</li> </ul>					<ul style="list-style-type: none"> <li>TM-Water</li> </ul>	^

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		<p>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 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</li> </ul>						<p>^</p> <p>^</p> <p>N/A<sup>(2)</sup></p> <p>N/A<sup>(2)</sup></p>

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		<p>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.</p> <ul style="list-style-type: none"> <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 attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes</li> <li>• All vehicles and plant should be cleaned before leaving a</li> </ul>						<p>N/A<sup>(2)</sup></p> <p>*</p> <p>^</p> <p>^</p>

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		<p>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.</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</li> </ul>						<p>N/A<sup>(2)</sup></p> <p>*</p> <p>^</p>

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		<p>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>						N/A <sup>(2)</sup>  ^
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	Construction 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 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</li> </ul>	To minimize groundwater quality impact from contaminated area	Contractor	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>	^

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		<p>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 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</li> </ul>						<p style="text-align: center;">^</p> <p style="text-align: center;">N/A<sup>(2)</sup></p>

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		<p>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></p> <p>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 control the dispersion of SS;</li> <li>• Implement water quality monitoring to ensure effective control of water pollution and recommend additional mitigation measures</li> </ul>	To minimize sediment suspension during dredging	Contractor	Kai Tak Barging Point during dredging works	Dredging period	<ul style="list-style-type: none"> <li>• Water Pollution Control Ordinance</li> <li>• TM-EIAO</li> </ul>	<p>N/A<sup>(2)</sup></p> <p>N/A<sup>(2)</sup></p>

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		required; <ul style="list-style-type: none"> <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>						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, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;</li> <li>• Loading of barges and hoppers should be controlled to prevent</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>	^  ^  ^  ^



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		<p>splashing of material into the surrounding water; and</p> <ul style="list-style-type: none"> <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>						^
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>	^  ^  N/A <sup>(2)</sup>
S10.7.1	W8	Implement a marine water quality monitoring programme	Monitor marine water quality prior to and during dredging	Contractor	At identified monitoring location	Prior to and during dredging	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> </ul>	^

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			period			period	<ul style="list-style-type: none"> <li>• TM-water</li> <li>• EIA-TM</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 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</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 on stage	<ul style="list-style-type: none"> <li>• DEVB TC(W) No. 6/2010</li> </ul>	^

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

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
		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	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	^  ^  ^
S11.5.1	WM6	<u>Land-based and Marine-based Sediment</u>	To control pollution due	Contractor	Within Project	Construction	• ETWB	

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 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 demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers;</li> </ul>	<p style="text-align: center;">to marine sediment</p>		<p style="text-align: center;">Site Area</p>	<p style="text-align: center;">on Stage</p>	<p>TCW No. 34/2002</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
		<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 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</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>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 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,</li> </ul>	<p>Control the chemical waste and ensure proper storage, handling and disposal.</p>	Contractor	All Construction Sites	Construction Stage	<ul style="list-style-type: none"> <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>



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>whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.</p> <ul style="list-style-type: none"> <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>						^

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

- Non-compliance but rectified by the contractor
- \* Recommendation was made during site audit but improved/rectified by the contractor.

N/A<sup>(1)</sup> Not Applicable      N/A<sup>(2)</sup> Not Applicable at this stage

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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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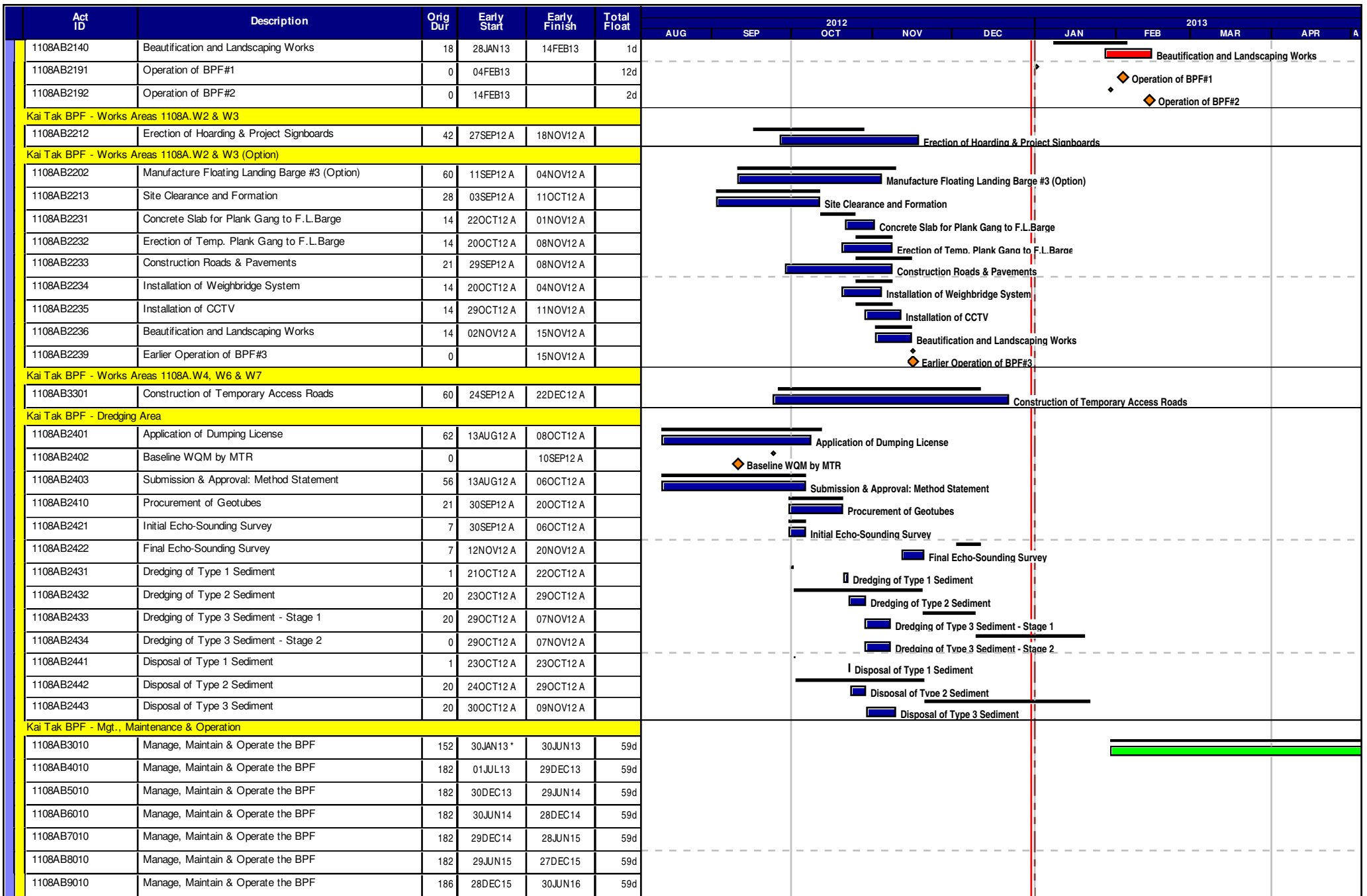
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Act ID	Description	Orig Dur	Early Start	Early Finish	Total Float	2012					2013				
						AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	
1108AMSA50	Satisfactory Impl'n of Safety & Env. req'ts.	0		01APR14	880d										
1108AMSA61	Satisfactory Impl'n of Risk Mgt. req'ts.	0		30SEP14	698d										
1108AMSA62	Satisfactory Impl'n of Prog. Mgt. System	0		30SEP14	698d										
1108AMSA70	Satisfactory Impl'n of Safety & Env. req'ts.	0		01APR15	515d										
1108AMSA81	Satisfactory Impl'n of Quality req'ts.	0		30SEP15	333d										
1108AMSA82	Satisfactory Impl'n of Prog. Mgt. System	0		30SEP15	333d										
1108AMSA90	Satisfactory Impl'n of Safety & Env. req'ts.	0		31MAR16	150d										
<b>Milestones for Cost Centre B</b>															
1108AMSB11	Approval: Design of BPF	0		31OCT12 A				◆							
1108AMSB12	Approval: Operation Plan for BPF	0		28OCT12 A				◆							
1108AMSB20	Complete ALL BPF & Ready for Operation	0		14FEB13	1291d						◆				
1108AMSB30	Mgt., Maint., & Operation of BPF	0		30JUN13	1155d									◆	
1108AMSB40	Mgt., Maint., & Operation of BPF	0		29DEC13	973d										
1108AMSB50	Mgt., Maint., & Operation of BPF	0		29JUN14	791d										
1108AMSB60	Mgt., Maint., & Operation of BPF	0		28DEC14	609d										
1108AMSB70	Mgt., Maint., & Operation of BPF	0		28JUN15	427d										
1108AMSB80	Mgt., Maint., & Operation of BPF	0		27DEC15	245d										
1108AMSB90	Mgt., Maint., & Operation of BPF	0		30JUN16	59d										
<b>+ EXECUTION OF OPTIONS</b>															
		43	13AUG12 A	10OCT12 A											
<b>Value Engineering Proposals</b>															
<b>Reuse of Existing Footings</b>															
1108AVE210	Preliminary Agreement w/Contractor of CV/2007/03	5	11SEP12 A	15SEP12 A											
1108AVE220	Coordination amongst DLO/HyD/CEDD/MTR	7	13SEP12 A	19SEP12 A											
1108AVE231	Proposal of Verification on Existing Footings	7	16SEP12 A	22SEP12 A											
1108AVE232	RSE's Structural Appraisal	16	16SEP12 A	01OCT12 A											
1108AVE240	Submission of Preliminary VE Proposal to MTR	3	10SEP12 A	12SEP12 A											
1108AVE251	Endorsement by CP of MTR	7	23SEP12 A	29SEP12 A											
1108AVE252	Approval by HyD (RDO)	14	23SEP12 A	06OCT12 A											
1108AVE260	Acceptance of Preliminary VE Proposal by MTR	0		01OCT12 A											
1108AVE271	Agreement on Terms & Conditions of VE w/MTR	21	13SEP12 A	03OCT12 A											
1108AVE273	Formal Approval of VE by MTR	0		06OCT12 A											
<b>Cost Centre A</b>															
<b>Preliminaries</b>															
1108AA1010	Submission of EMP	28	13AUG12 A	10SEP12 A											
1108AA1011	Approval of EMP	49	11SEP12 A	09NOV12 A											
1108AA1020	Submission of Quality Plan	28	13AUG12 A	10SEP12 A											
1108AA1021	Approval of Quality Plan	49	11SEP12 A	23NOV12 A											
1108AA1030	Submission of Method of Construction	28	13AUG12 A	26OCT12 A											
1108AA1031	Approval of Method Construction	42	27OCT12 A	26NOV12 A											
1108AA1040	Submission of Submission Schedule	28	13AUG12 A	04SEP12 A											
1108AA1041	Approval of Submission Schedule	49	05SEP12 A	09NOV12 A											
1108AA1050	Submission of Risk Mgt. Plan	28	13AUG12 A	10SEP12 A											







Start date 10AUG12  
 Finish date 28AUG16  
 Data date 31DEC12  
 Run date 02JAN13  
 Page number 4A  
 Primavera Systems, Inc.



MTR SCL 1108A

KAI TAK BARGING POINT FACILITIES

Concentric - Hong Kong River Joint Venture

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

Date	Revision	Checked	Approved
13AUG12	1st Submission		
11SEP12	comments(SContE)		
21SEP12	comments(SContE)		

---

**Appendix B**

**4<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. 4

[Period from 1 to 31 December 2012]

Works Contract 1109 - Stations and Tunnels of  
Kowloon City Section

(January 2013)

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

Position: Environmental Team Leader

Date: \_\_\_\_\_ 14 January 2012 \_\_\_\_\_

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.4*

December 2012

**Environmental Resources Management**

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Works Contract 1109 – Stations and  
Tunnels of Kowloon City Section  
*Monthly EM&A Report No.4*

December 2012

Reference 0171181

For and on behalf of  
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed: 

Position: Partner

Date: 14 January 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 fourth monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 December to 31 December 2012 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:

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#### Construction Activities

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##### Work in Ma Tau Wai (MTW)

- TKW/MTW Road Garden – Installation of concrete slabs and silos for the bentonite plant; erection of hoardings; and road marking;
- To Kwa Wan Market - Demolition of the planter walls and paving the walkway; and
- General Works - Preparation works for the underground utilities, removal of central dividers, and road marking work.

---

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

- Archaeological Survey;
  - Pre-bored H-pile Location - Trial pits and pre-drilling; and
  - General Works - Site clearance, erection of site hoardings, construction of a site office, ground preparation, and utility scanning.
- 

### 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 *4 times*
  - NMS-CA-7 *4 times*
  - NMS-CA-8 *4 times*
  - NMS-CA-9 *4 times*
  - NMS-CA-10 *4 times*
- Construction Dust (24-hour TSP) Monitoring
  - DMS-6 *6 times*
  - DMS-7 *6 times*
  - DMS-8 *6 times*
  - DMS-9 *6 times*
  - DMS-10 *6 times*

### Continuous Noise Monitoring

Continuous noise monitoring was carried out at MTW-16-1 during the reporting month according to the program in Construction Noise Monitoring Plan (CNMP). Exceedances of the Action/Limit Level were recorded on 17, 18 and 27 December 2012 at MTW-16-1.

### 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 16,844 m<sup>3</sup> of inert C&D materials were generated from the Project, in which 5 m<sup>3</sup> of inert C&D materials were disposed of at public fill and 16,839 m<sup>3</sup> of inert C&D material were sent to 1108A Kai Tai Barging Facilities during the reporting month. 57 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. No paper/cardboard packaging and plastics were generated and sent to recyclers for recycling during the reporting period.

### Landscape and Visual

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 5*.

### Environmental Site Inspection

Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 3, 10, 17, 24 and 31 December. The representative of the IEC joined the site inspection on 10 December 2012. Details of the audit findings and implementation status are presented in *Section 6*.

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

No non-compliance 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/Limit Level of continuous noise monitoring were recorded on 17, 18 and 27 December 2012 at MTW-16-1. An investigation (as presented in *Section 7.1*) had been conducted to review the potential causes of the exceedance and any necessary action has also been taken according to the Event and Action Plan in CNMP. Based on the findings of the investigation,

it is considered not due to the construction works and hence, no further action is required. However, the Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level.

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:

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#### **Construction Activities to be undertaken**

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##### **Ma Tau Wai (MTW) Works Area**

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- Tree transplantation;
- Site clearance, site setup and erection of site hoardings;
- Mobilization of cutter and crawler crane;
- Construction of D-wall; and
- Pre-drilling work.

---

##### **To Kwa Wan (TKW) Works Area**

---

- Removal of trees;
  - Site clearance, site setup and erection of site hoardings;
  - Pre-bored H-piling;
  - Construction of Engineer's office; and
  - Archaeological survey.
-

## 1 INTRODUCTION

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 fourth EM&A report which summarises the monitoring results and audit findings during the reporting period from 1 December to 31 December 2012.

### 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</b>	
<b>Work in Ma Tau Wai (MTW)</b>	
•	TKW/MTW Road Garden – Installation of concrete slabs and silos for the bentonite plant; erection of hoardings; and road marking;
•	To Kwa Wan Market - Demolition of the planter walls and paving the walkway; and
•	General Works - Preparation works for the underground utilities, removal of central dividers, and road marking work.
<b>Work in To Kwa Wan (TKW)</b>	
•	Archaeological survey;
•	Pre-bored H-pile Location - Trial pits and pre-drilling; and
•	General Works - Site clearance, erection of site hoardings, construction of a site office, ground preparation, and utility scanning.

## 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	Throughout the Contract	Permit granted on 26 October 2012
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>			
- Tree Transplantation	GW-RE0864-12	Till 22 Dec 2012	-
- Water Pump and Wastewater Treatment Plant	GW-RE0951-12	30-Apr-2013	-
- Trial run of Temporary Traffic Movement System (TTMS) in Chi Kiang St & MTW Rd	GW-RE1043-12	23-Dec-2012	-
- Generator at TKW	GW-RE1099-12	16 Jun 2013	-

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
<i>Works Area</i>			
- <i>Generator at Shansi Street</i>	<i>GW-RE1143-12</i>	<i>3 Jul 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 ( $L_{eq}$ ) in decibels dB(A).  $L_{eq(30min)}$  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*

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

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*

Time Period	Regular Noise Monitoring Location	Action Level	Limit Level
0700 - 1900 hours on normal weekdays	NMS- CA-6	When one documented valid complaint is received	75 dB(A)
	NMS- CA-7	When one documented valid complaint is received	75 dB(A)
	NMS- CA-8	When one documented valid complaint is received	70 dB(A) 65 dB(A) during examination periods
	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 nine 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
HOM-2-1-A	Faerie Court (East Facade)

**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  $L_{eq(30min)}$  noise levels will be carried out at the eight NSRs identified in *Table 3.4* during the normal construction working hours (0700 – 1900 Monday to Saturday). 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. 10786708) Sound Level Meter: NL-31 (Serial No. 00603867)
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 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	Dec 2012, Apr 2013 – Dec 2013, May 2014, Aug 2014 – Mar 2016
HOM-2-1-A	Faerie Court	78	Mar 2013 – Feb 2014

**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) 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, Environmental Protection Department (EPD) and Independent Environmental Checker (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 flowrate 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 HVSSs using CM-AIR-43 Calibration Kit. HVSSs are calibrated every six-month. The calibration records for the HVSSs 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	Third Monthly EM&A Report	14 December 2012

## 5 MONITORING RESULTS

### 5.1 REGULAR CONSTRUCTION NOISE MONITORING

A total of 20 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-9.

The noise monitoring results of the measurements carried out at NMS-CA-8 on 24 December and at NMS-CA-10 on 7 and 24 December 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 construction noise due to the Project was recorded during the reporting period.

### 5.2 CONTINUOUS NOISE MONITORING

According to the prediction in the CNMMP, continuous noise monitoring was only conducted at MTW-16-1 during the reporting month. No exceedance of the Action/Limit Level presented in Table 3.6 during the reporting month except on 17, 18 and 27 December 2012. The monitoring results are presented in *Annex I-2*.

An 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		
DMS-6	79	70-93	156.8	260
DMS-7	80	73-85	166.7	260
DMS-8	84	74-93	152.2	260
DMS-9	79	73-91	160.9	260
DMS-10	85	81-93	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*. About 16,844 m<sup>3</sup> of inert C&D materials were generated from the Project, in which 5 m<sup>3</sup> of inert C&D materials were disposed of at public fill and 16,839 m<sup>3</sup> of inert C&D material were sent to 1108A Kai Tai Barging Facilities during the reporting month. 57 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 was generated during this reporting month. No paper/cardboard packaging and plastics was generated and sent to recyclers for recycling during the reporting period. 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 <sup>(a) (b)</sup>	Chemical Waste	General Refuse	Non-inert C&D Materials <sup>(c)</sup>		
				Paper/cardboard	Plastics	Metals
December 2012	16,844 m <sup>3</sup>	0 L	57 m <sup>3</sup>	0 kg	0 kg	0 kg

**Notes:**

- (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.
- (b) About 16,844 m<sup>3</sup> of inert C&D materials were generated from the Project, in which 5 m<sup>3</sup> of inert C&D materials were disposed of at public fill and 16,839 m<sup>3</sup> of inert C&D material were sent to 1108A Kai Tai Barging Facilities during the reporting month.
- (c) Non-inert C&D materials include steel, paper / cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes.

5.6 LANDSCAPE AND VISUAL MITIGATION MEASURES

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 10 and 24 December 2012. Most of the mitigation measures given in *Annex H* have been implemented. Required Actions that were found are listed below:

10 December 2012

- No observation was reported during the site inspection.

24 December 2012

- Several steel blocks and a drip tray were stored within the tree protection zone of the retained tree MT0133 at TKW/MTW Garden. The Contractor was reminded that no storage inside the tree protection zone is allowed. The Contractor had removed the steel blocks and drip tray them within a week of the site inspection as informed by the Contractor during the site inspection on 31 December 2012.

Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 3, 10, 17, 24 and 31 December 2012. The representative of the IEC joined the site inspection on 10 December 2012. No non-compliance was recorded during the site inspections.

Major findings and recommendations are summarized as follows:

3 December 2012

- No observation was reported during the site inspection.

10 December 2012

- A stockpile of C&D waste stored on the site in front of TKW market was not entirely covered by the impervious sheeting. The Contractor was reminded to cover the stockpile entirely to avoid the generation of fugitive dust. The stockpile of C&D waste had been covered by an impervious sheets during the site inspection on 17 December 2012.
- The Contractor was reminded to conduct regular watering of the stockpile and haul road at the TKW works area to avoid dust generation. The Contractor had conducted regular watering of them as informed by the Contractor during the site inspection on 17 December 2012.

17 December 2012

- The Contractor had provided a noise absorption sheet for the breaker. To avoid any potential noise nuisance, the contractor was advised by MTR to provide mobile noise barriers at three sides of breakers at work sites at Ma Tau Wai Road.
- A tree protection zone of the retained tree 0134 was not installed at TKW/MTW garden. The Contractor was reminded to provide the tree protection zone. The tree protection zone has been installed by the Contractor as observed during the site inspection on 24 December 2012

24 December 2012

- The Contractor was reminded to conduct sufficient water spraying to avoid generation of fugitive dust at TKW Works Area. The Contractor had conducted regular water spraying as informed by the Contractor during the site inspection on 31 December 2012.
- Several bags of general waste and cardboard packaging were stored at Ma Tau Wai Road worksite. The Contractor was reminded to provide skips on site for waste storage. The general waste had been removed as observed during the site inspection on 31 December 2012.

31 December 2012

- Stockpile of loose materials without impervious sheet covered were stored near the gate of TKW Works Area. The Contractor was reminded to cover the stockpile with impervious sheets.
- Wooden boards were stored inside the storage area for construction material. The Contractor was reminded to provide a designated area for waste storage.
- Two chemical drums without drip tray were stored next to the wastewater treatment facility. The Contractor was reminded to store the drums in the drip tray with proper cover.
- Several steel blocks and a drip tray were stored within the tree protection zone of retained tree no. MT0133 at TKW/MTW Garden. The Contractor was reminded that no storage is allowed inside the tree protection zone and the storage will be removed within a week as informed by the Contractor.
- Debris of bricks was observed being stored on the root flare of the retained tree no. 0134. The Contractor was reminded to remove the bricks immediately and no storage is allowed inside the tree protection zone

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.

### 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 each 17, 18 and 27 December 2012 at MTW-16-1.

On 17 December 2012, the construction works carried near MTW-16-1 included the demolition of bus stop and shelter at TKW market and near SKH Good Shepherd Primary School and trial trenching for exposing underground utilities at Gainful Centre. Mini-breaker and grab lorry were employed. Noise mitigation measures had been implemented, including covering the breaker tips with acoustic fabric and erecting movable noise barrier. According to the site record, the aforementioned construction works and construction equipment were carried out and employed throughout the day. Apart from 1109 construction works, vehicle movement on Ma Tau Wai Road was also the other potential noise source contributing to the exceedance. By reviewing the recorded noise levels throughout the day on 17 Dec 2012, no exceedance were recorded except the two 30-min periods with exceedance. In particular, the noise levels were below the Action/Limit Levels immediately before and after each of exceedance periods. In view of same construction works carried out and same equipment employed throughout the day; no exceedance recorded immediate before and after each of the exceedance periods and contribution from other potential noise source in vicinity (ie, traffic), it is considered that the exceedance is not due to 1109 construction works. However, the Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level.

On 18 December 2012, the construction works being carried near MTW-16-1 included demolition of bus stop and shelter at TKW market and trial trenching for exposing underground utilities near SKH Good Shepherd Primary School. Mini backhoe was employed and movable noise fabrics as barrier had been erected on the site hoarding to mitigate the noise. Apart from Project construction works, vehicle movement on Ma Tau Wai Road was also the other potential noise sources contributing to the exceedance. By reviewing the recorded noise levels throughout the day on 18 Dec 2012, no exceedance were recorded except the two 30-min periods with exceedance. In particular, the noise levels were below the Action/Limit Levels immediately before and after each of the exceedance periods. In view of same construction works carried out and same equipment employed throughout the day; no exceedance recorded immediate before and after each of the exceedance periods and contribution from other potential noise source in vicinity (ie, traffic), it is considered that the exceedance is not due to 1109 construction works. However, the Contractor will continue to provide



sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level.

On 27 December 2012, the construction works being carried near MTW-16-1 included demolishing planter by mini breaker at TKW Market and trial trenching for exposing underground utilities by mini backhoe outside SKH Good Shepherd Primary School. The mini breaker tip had been covered with acoustic fabric to mitigate the noise. Movable noise fabrics as barrier had also been erected on the site hoarding. Vehicle movement on Ma Tau Wai Road and other unknown sources were also the other potential noise source contributing to the abnormal noise exceedance. Before and after the exceedance period, the  $L_{Aeq(30mins)}$  were all well below the Action/Limit Levels. Besides, the construction works carried out during exceedance period was same as that before and after the exceedance period. Based on the above, it is considered that the exceedance is considered not due to the construction works and hence, no further action is required. However, the Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level.

The investigation reports are 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><u>Ma Tau Wai (MTW) Works Area</u></b>
<ul style="list-style-type: none"> <li>• Tree transplantation;</li> <li>• Site clearance, site setup and erection of site hoardings;</li> <li>• Mobilization of cutter and crawler crane;</li> <li>• Construction of D-wall; and</li> <li>• Pre-drilling work.</li> </ul>
<b><u>To Kwa Wan (TKW) Works Area</u></b>
<ul style="list-style-type: none"> <li>• Removal of trees;</li> <li>• Site clearance, site setup and erection of site hoardings;</li> <li>• Pre-bored H-piling;</li> <li>• Construction of Engineer’s office; and</li> <li>• Archaeological survey.</li> </ul>

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.

Continuous noise monitoring will be carried out in January 2013 due to examination periods at MTW-16-1 (SKH Good Shepherd Primary School).

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 4<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 December 2012 to 31 December 2012 in accordance with the EM&A Manual and the requirement under EP-438/2012/B.

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

Continuous noise monitoring was conducted only at MTW-16-1 during the reporting month. Exceedances of the Action/Limit Level were recorded on 17, 18 and 27 December 2012 at MTW-16-1. Investigation (as presented in *Section 7.1*) 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. Based on the findings of the investigation, it is considered not due to the construction works and hence, no further action is required. However, the Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level.

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.

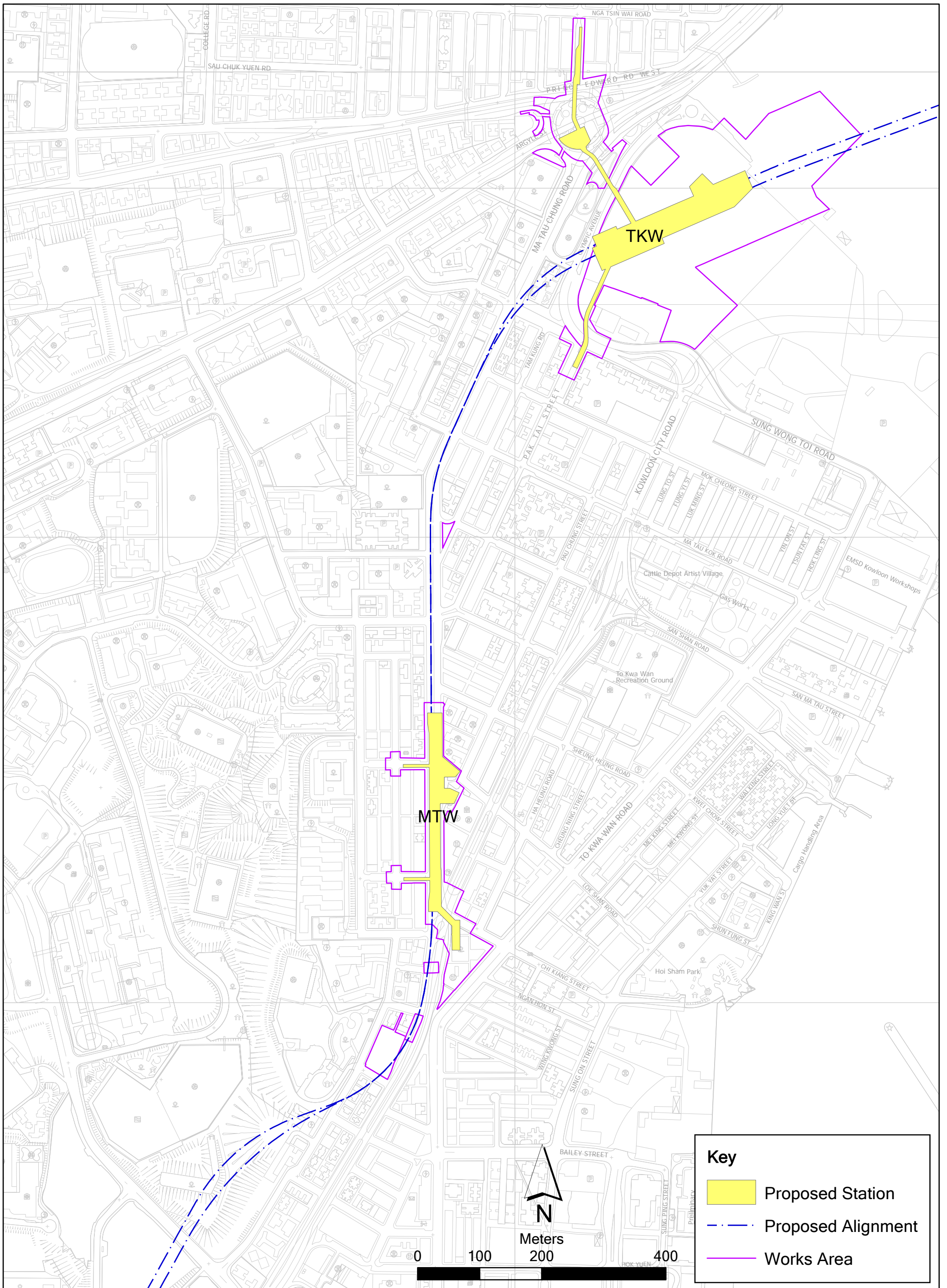
No non-compliance event was recorded during the reporting period.

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 - DECEMBER 2012

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012				2013								
						Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar					
<b>1109 - SUW &amp; TKW Stations and Tunnels DEC 12</b>																		
<b>PROJECT DATES</b>																		
<b>Works Areas</b>																		
<b>Access Dates</b>																		
01109.ACW1	Access date to Works Area 1109.W1 (Wk50/12;17Dec12)	100%	0	26-Nov-12 A														
01109.ACW1a	Access date to Works Area 1109.W1a (Wk50/12;17Dec12)	100%	0	26-Nov-12 A														
01109.ACW1b	Access date to Works Area 1109.W1b (Wk50/12;17Dec12)	100%	0	26-Nov-12 A														
01109.ACW1c	Access date to Works Area 1109.W1c (Wk50/12;17Dec12)	100%	0	26-Nov-12 A														
01109.ACW1d	Access date to Works Area 1109.W1d (Wk50/12;17Dec12)	100%	0	26-Nov-12 A														
<b>Specified Milestone Dates</b>																		
<b>CC-A Milestones</b>																		
01109.MSA2a	A2(a)-Approval of Preliminary Master Programme A2(G4.6.1)(Wk50/12;16Dec12)	100%	0		16-Dec-12 A													
01109.MSA2b	A2(b)-Approval of Time Chainage Programme A2(G4.11.1)(Wk50/12;16Dec12)	100%	0		16-Dec-12 A													
01109.MSA3	A3 -Complete Structural works of Engr office (Wk11/13;17Mar13)	0%	0		19-Feb-13													
<b>CC-B Milestones</b>																		
01109.MSB02i	B2(i) -50% by plan area of archaeological survey-cum-excavation complete(Wk07/13;17Feb13)	0%	0		17-Feb-13*													
<b>CC-C Milestones</b>																		
01109.MSC01	C1-TTMS implemented to close 3 traffic lanes at Ma Tau Wai Road.(Wk46/12;18Nov12)	100%	0		11-Dec-12 A													
<b>CC-D Milestones</b>																		
01109.MSD01	D1-Order for tunnel boring machines (TBM ) placed.(Wk50/12;16Dec12)	0%	0		15-Jan-13*													
01109.MSD02ii	D2(ii)- Investig.to confirm no exist. piles/obstructions to proposed TBM tunnels comp.&accepted by Eng.(Wk15/13;14Apr13)	0%	0		20-Mar-13													
<b>CC-A - PRELIMINARIES AND GENERAL REQUIREMENTS</b>																		
<b>General &amp; Site Wide</b>																		
<b>Survey &amp; Instrumentation</b>																		
01109.PDA2790	Conduct initial site surveys, inc utility detection	100%	0	15-Aug-12 A	04-Dec-12 A													
<b>Site Establishment Activities</b>																		
01109.PDA2850	Erect hoarding	100%	0	13-Aug-12 A	26-Nov-12 A													
01109.PDA2870	Establish Engineer's office (Structural components)	15%	56	17-Dec-12 A	19-Feb-13													
01109.PDA2890	Engineer's office complete & ready to move in	0%	50	10-Feb-13	31-Mar-13*													
<b>Management Systems</b>																		
<b>Construction (incl Geotech) - Submission</b>																		
01109.PDA3010	Survey of existing geotechnical features (P4.3.1)	90%	5	14-Aug-12 A	30-Dec-12													
<b>Construction (incl Geotech) - Approval</b>																		
01109.PDA3050	Review & Approve existing geotechnical features	0%	15	31-Dec-12*	14-Jan-13													
<b>Existing Buildings and Structures (EBS) - Submission</b>																		
01109.PDA3110	EBS Contingency Plan - Prepare & Submit for works in vicinity of EBS (P11.5.4)	90%	5	31-Aug-12 A	30-Dec-12													
01109.PDA4280	EBS Condition Survey - SSHCJV receive complete Report from MTR	100%	0	17-Sep-12 A														
01109.PDA4290	EBS Condition Survey - SSHCJV Review Condition Survey and discuss with MTR	0%	24	27-Dec-12	24-Jan-13													



MTR Corporation Limited  
Shatin to Central Link Contract 1109

— PMP-4 Baseline     ◆ PMP-4 Milestone  
█ Actual Work     ◆ Milestone  
█ Remaining Work

**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012				2013					
						Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
01109.PDA4300	EBS Condition Survey - SSHCJV agree protection measures with MTR	0%	12	11-Jan-13	24-Jan-13										
01109.PDA4310	EBS Condition Survey - SSHCJV prepare details of Prot Measures (in acc w ETWB)	0%	6	25-Jan-13	31-Jan-13										
01109.PDA4320	EBS Condition Survey - Government review, comment & app of Protection measures	0%	30	01-Feb-13	02-Mar-13										
01109.PDA3120	EBS Condition Survey - Investigation to confirm no exist piles/obstructions to proposed TBM tunnels	0%	28	21-Feb-13	20-Mar-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)	0%	55	31-Dec-12*	23-Feb-13										
<b>Environmental - Approval</b>															
01109.PDA3250	Review & Approve spoil disposal plan (P17.5.1)	100%	0	06-Oct-12 A	01-Dec-12 A										
<b>Sub-Contractors - Submission</b>															
01109.PDA3710	Submit Subcontractor Management Plan (PS App S)	100%	0	01-Aug-12 A	19-Nov-12 A										
<b>Sub-Contractors - Approval</b>															
01109.PDA3720	Review & Approve Subcontractor Management Plan (PS App S)	100%	0	20-Nov-12 A	03-Dec-12 A										
<b>Procurement</b>															
<b>Initial Subcontracts</b>															
01109.PDA3800	Confirm consultants' appointments	100%	0	09-Aug-12 A											
01109.PDA3860	Bid and award - Ground treatment Drainage and dewatering	70%	8	08-Nov-12 A	07-Jan-13										
01109.PDA3870	Bid and award - waterproofing works	60%	30	20-Nov-12 A	31-Jan-13										
01109.PDA3880	Bid and award - utility diversions	100%	0	03-Dec-12 A	17-Dec-12 A										
01109.PDA3900	Mobilise H- Piling plant & equipment	100%	0	11-Dec-12 A	17-Dec-12 A										
<b>Concrete Construction Materials</b>															
01109.PDA3910	Bid and award - Temporary works structural steel and sheet piles	100%	0	06-Aug-12 A	24-Dec-12 A										
01109.PDA3920	Bid and award - Major construction plant and equipment	100%	32	13-Aug-12 A	02-Feb-13										
<b>Method Statements</b>															
<b>SUW - Method statements Submission</b>															
01109.PDA4030	SUW - Prepare and submit Grout Curtain method statement	60%	48	13-Aug-12 A	11-Feb-13										
01109.PDA4050a	SUW - Prepare and Re-submit H-Piling method statement	90%	2	05-Dec-12 A	27-Dec-12										
01109.PDA34900	SUW - Prepare and submit Observation Wells & Pumping Test method statement	0%	14	11-Mar-13	26-Mar-13										
<b>SUW - Method Statements Approval</b>															
01109.PDA4120	SUW - Review & Approval of H- Piling method statement	100%	0	13-Nov-12 A	04-Dec-12 A										
01109.PDA4120a	SUW - Review & Approval of H- Piling method statement	0%	14	28-Dec-12	10-Jan-13										
01109.PDA4060	SUW - Review & Approval of Grout Curtain method statement	0%	28	12-Feb-13	11-Mar-13										
01109.PDA4090	SUW - Review & approval of Traffic Diversion Scheme;SUW Stn-Olym. Rd Area	0%	28	21-Feb-13	20-Mar-13										
01109.PDA4110	SUW - Review & approval of TDS by Police & TD bodies;SUW Stn- Olym. Rd Area	0%	14	21-Mar-13	03-Apr-13										
<b>TKW - Method Statement Submission</b>															
01109.PDA4240	TKW - Prepare & Submit Method Statement for TKW Station Works	100%	0	01-Aug-12 A	26-Nov-12 A										
<b>CC-B - SUW STATION, ENTRANCES AND ADITS</b>															
<b>SUW Station Construction Works</b>															
<b>General Activities</b>															



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

— PMP-4 Baseline     ◆ PMP-4 Milestone  
█ Actual Work     ◆ Milestone  
█ Remaining Work



THREE MONTH ROLLING PROGRAMME - DECEMBER 2012

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012				2013					
						Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
<b>Initial Survey Works</b>															
01109.PDB1050	CCTV Record Survey of Public drains (excl Arch Svy area)	0%	29	15-Jan-13*	20-Feb-13										
01109.PDB1060	Excavation of Trial Pits for utility Services in SUW areas (excl Archaeological Svy area)	0%	25	15-Jan-13	15-Feb-13										
01109.PDB1070	Excavation of Trial Pits for underground structures in SUW areas (excl Arch Svy area)	0%	25	15-Jan-13	15-Feb-13										
<b>Site Preparation</b>															
<b>Site Hoarding &amp; Facilities Establishment Works</b>															
01109.PDB1080	Fabrication & erection of site hoarding (Works area excluding 1109 W5)	97%	2	08-Sep-12 A	28-Dec-12										
01109.PDB15070	Site survey, establishment & maintenance	30%	25	08-Dec-12 A	25-Jan-13										
01109.PDB1120	Establish D/Wall rebar cage steel fixing area	100%	0	12-Dec-12 A	27-Dec-12 A										
01109.PDB1100	Fabrication & erection of Site Gates	20%	22	19-Dec-12 A	23-Jan-13										
01109.PDB1090	Construction of Site wheel wash facilities	20%	17	19-Dec-12 A	16-Jan-13										
01109.PDB1140	Fabrication & reaction of site hoarding (Works Area 1109.W5)	35%	17	21-Dec-12 A	11-Jan-13										
01109.PDB1110	Erection of site fencing	0%	35	25-Jan-13	11-Mar-13										
<b>Demolition and Site Clearance</b>															
<b>Tree Felling</b>															
01109.PDB1220	SUW - Prepare trees for transplanting Stage 1	100%	0	09-Nov-12 A	11-Dec-12 A										
01109.PDB1230	SUW - Prepare trees for transplanting Stage 2	30%	21	08-Dec-12 A	21-Jan-13										
01109.PDB1260	SUW - Tree felling works: 0.5m-1m; Provisional; Summary Bar)	0%	45	27-Dec-12	21-Feb-13										
01109.PDB1270	SUW - Tree felling works (Part 1- GL.01 to 04)	0%	7	27-Dec-12*	04-Jan-13										
01109.PDB1280	SUW - Tree felling works (Part 2- GL.04 to 12)	0%	14	05-Jan-13	21-Jan-13										
01109.PDB1240	SUW - Prepare trees for transplanting Stage 3	0%	30	05-Jan-13	08-Feb-13										
01109.PDB1320	SUW - Tree felling works other areas	0%	21	25-Jan-13	21-Feb-13										
01109.PDB1250	SUW - Tree transplanting works (all areas)	0%	30	30-Jan-13	08-Mar-13										
<b>Install Monitoring Instruments/Take Initial Readings</b>															
01109.PDB14730	SUW - Install monitoring instruments/take initial readings; Part 1- GL.01 to 04 / cofferdam areas)	100%	0	04-Oct-12 A	15-Dec-12 A										
01109.PDB14700	SUW - Install monitoring instruments/take initial readings; Part 2- GL.04 to 12	0%	28	27-Dec-12	29-Jan-13										
<b>Archaeological Survey</b>															
01109.PDB2990	Obtain License from AMO for Archaeological Works	100%	0	31-Oct-12 A											
01109.PDB14190	Removal of Concrete Slab and Fill by Mechanical excavator	100%	0	01-Nov-12 A	28-Nov-12 A										
01109.PDB14200	Archaeological Survey (Stage 1 Excavation)	50%	30	12-Nov-12 A	31-Jan-13										
01109.PDB14220	Archaeological Survey-cum-Excavation (Stages 2 and 3 Excavation)	20%	146	13-Nov-12 A	20-May-13										
01109.PDB14210	Additional Investigation (in "Green Areas")	0%	18	07-Feb-13*	02-Mar-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)	70%	4	23-Nov-12 A	31-Dec-12										



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— PMP-4 Baseline    ◆ PMP-4 Milestone  
— Actual Work        ◆ Milestone  
— Remaining Work

**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012				2013					
						Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
01109.PDB1970	SI Report & Confirmation of Founding Levels (Part 1 - Gl 1 to 4)	0%	6	31-Dec-12	08-Jan-13										
<b>Other Areas</b>															
01109.PDB2080	Pre-drilling for station foundation piles beyond GL 24	0%	12	17-Jan-13*	30-Jan-13										
01109.PDB14370	SI Report & Confirmation of Founding Levels (Beyond GL24)	0%	6	31-Jan-13	06-Feb-13										
<b>Part 2</b>															
01109.PDB1990	Pre-drilling for station foundation piles(Part 2- GL 4 to 12)	40%	7	27-Nov-12 A	05-Jan-13										
01109.PDB14340	SI Report & Confirmation of Founding Levels (Part 2 - GL 4 to 12)	0%	6	05-Jan-13	12-Jan-13										
<b>Pre-bored H- Piling for Permanent Works</b>															
<b>Part 1</b>															
01109.PDB2260	H- Piling; Part 1- GL 4 - 37 Nr 2PR	0%	93	08-Jan-13	06-May-13										
01109.PDB2140	H- Piling; Part 1- GL 1a - 5 Nr 1PR	0%	25	11-Jan-13	08-Feb-13										
01109.PDB14380	H- Piling; Part 1- GL 1b - 6 Nr 1PR	0%	30	11-Jan-13	18-Feb-13										
01109.PDB2190	H- Piling; Part 1- GL 2 - 24 Nr 2PR	0%	60	13-Feb-13	27-Apr-13										
01109.PDB2230	H- Piling; Part 1- GL 3 - 32 Nr 2PR	0%	80	16-Feb-13	27-May-13										
01109.PDB2100	H- Piling; Part 2- GL 5 - 33Nos 2PR	0%	83	19-Feb-13	01-Jun-13										
<b>Other Areas</b>															
01109.PDB2350	H- Piling; Part 4- areas beyond GL 24+ - 20Nos 2PR	0%	50	07-Feb-13	13-Apr-13										
<b>TBM Launch Shaft Works</b>															
01109.PDB2600	TBM Launch shaft - Site survey, hoarding, clearance and monitoring stations	0%	6	27-Dec-12	03-Jan-13										
<b>Excavation TBM Shaft Area</b>															
<b>Utility Support /Diversions</b>															
01109.PDB3000	TBM Launch shaft - Excavate & support rising mains in NW corner	0%	36	12-Mar-13	26-Apr-13										
<b>Earthworks</b>															
<b>Curtain Grout Works</b>															
01109.PDB3210	Grout Curtain; Part 2- GL 4 to 5	0%	5	12-Mar-13	16-Mar-13										
01109.PDB3240	Grout Curtain; Part 3- GL 10 to 11	0%	5	12-Mar-13	16-Mar-13										
01109.PDB3250	Grout Curtain; Part 1- GL 1 to GL 2	0%	5	18-Mar-13	22-Mar-13										
01109.PDB3450	Grout Curtain; Part 4- areas beyond GL 24	0%	12	18-Mar-13	03-Apr-13										
01109.PDB3290	Grout Curtain; Part 2- GL 5 to 6	0%	5	23-Mar-13	28-Mar-13										
<b>Entrance C and Associated Adits</b>															
<b>Entrance C - Site Preparation</b>															
<b>Entrance C - Record Survey and Site set-up Works</b>															
01109.PDB1980	Pre-drilling for Adit C works (Part 1 GL 7 to 14)	100%	0	17-Nov-12 A	03-Dec-12 A										
01109.PDB2010	Pre-drilling for Adit C works (Part 2 & 3; GL 1 to 7)	0%	7	27-Dec-12	04-Jan-13										
01109.PDB2000	Confirm Founding levels	0%	3	05-Jan-13	08-Jan-13										
01109.PDB10270	CCTV Record Survey of Public drains	0%	22	15-Jan-13*	08-Feb-13										
<b>Entrance C - Utilities and Services Diversion</b>															
01109.PDB10320	Initial survey of Structures to be retained in Ent C & Adits areas	0%	28	27-Dec-12	29-Jan-13										



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

— PMP-4 Baseline    ◆ PMP-4 Milestone  
— Actual Work        ◆ Milestone  
— Remaining Work

**SAMSUNG - H SIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012				2013					
						Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
01109.PDB10290	Excavation of Trial Pits for utility Services and underground structures in Ent C & Adits areas	0%	28	04-Jan-13	05-Feb-13										
01109.PDB10330	Initial survey of dump concentrations in Ent C & Adits related areas	0%	28	06-Feb-13	13-Mar-13										
01109.PDB10310	Visual joint survey of Highways structures in Ent C & Adits areas	0%	28	13-Feb-13	16-Mar-13										
<b>Entrance C - Part 1- GL 7 to GL 14</b>															
<b>Entrance C- Part 1- ELS Works</b>															
01109.PDB10340	Site Clearance Ent C; GL 7 to 14	0%	7	14-Mar-13	21-Mar-13										
01109.PDB10350	Utility relocation / diversion in Ent C; GL 7 to 14	0%	14	18-Mar-13	06-Apr-13										
<b>Entrance C - Part 1- Piling &amp; Toe Grouting Works</b>															
01109.PDB14400	Bre Bored H Pile works (24nr) 2PR	0%	60	09-Jan-13	22-Mar-13										
01109.PDB14410	Bre Bored H pile testing	0%	24	23-Mar-13	24-Apr-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.PDB2020	Pre-drilling for Adit B works (GL 1 to 11)	0%	18	05-Jan-13	25-Jan-13										
01109.PDB11650	CCTV Record Survey of Public drains	0%	14	15-Jan-13*	30-Jan-13										
01109.PDB11680	Visual joint survey of Highway structures in Adit B areas	0%	55	15-Jan-13	22-Mar-13										
01109.PDB2040	Pre-drilling for Adit B works (GL 11 to 20)	0%	18	26-Jan-13	19-Feb-13										
01109.PDB11660	Excavation of Trial Pits for utility Services in Adit B areas	0%	21	31-Jan-13	27-Feb-13										
01109.PDB2050	Pre-drilling for Adit B works (GL 20 to 31)	0%	18	20-Feb-13	12-Mar-13										
01109.PDB11670	Excavation of Trial Pits for underground structures in Adit B areas	0%	21	28-Feb-13	23-Mar-13										
01109.PDB2070	SI Report & Confirmation of Founding Levels	0%	6	13-Mar-13	18-Mar-13										
<b>Entrance B - Utilities and Services Diversion</b>															
01109.PDB11710	Traffic Diversion for site clearance, utility relocation/diversion in Adit B Area	0%	28	01-Feb-13*	08-Mar-13										
<b>Entrance B - Kowloon City Interchange</b>															
<b>Entrance B - Underpinning of KNEC Piers</b>															
01109.PDB12620	Under pinning of Piers	0%	94	23-Mar-13	23-Jul-13										
<b>Pier P46</b>															
01109.PDB12630	Specific geotechnical monitoring equipment to be installed & baseline readings	0%	30	23-Mar-13	02-May-13										
<b>Pier P75</b>															
01109.PDB12950	Specific geotechnical monitoring equipment to be installed & baseline readings	0%	30	23-Mar-13	02-May-13										
<b>CC-C - TKW STATION, ENTRANCES AND ADITS</b>															
<b>Implementation of TTA at TKW</b>															
01109.PDC1670	TKW - Implement TTM Stage 1 - Phase 1B - Ma Tau Wai Rd	100%	0	12-Dec-12A											
01109.PDC28870	TKW - Move E3 Bus Stop to Final Location	100%	0	24-Dec-12A											
<b>TKW Station</b>															
<b>Pre TTMS Stage 1 Works</b>															
<b>New Road Construction within portion W15 &amp; W16</b>															



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

— PMP-4 Baseline    ◆ PMP-4 Milestone  
  Actual Work    ◆ Milestone  
  Remaining Work

**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012				2013					
						Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
01109.PDC1050	TKW - Temp road for TTA stage 1 - Wearing course and road marking	100%	0	05-Nov-12 A	02-Dec-12 A	█									
<b>Tin Kwong Rd &amp; Farm Rd</b>															
01109.PDC1100	Place barriers along the kerb of the junction	100%	0	06-Nov-12 A	12-Nov-12 A										
01109.PDC1120	Road Marking modification & commission temp signals (night work)	100%	0	07-Nov-12 A	23-Nov-12 A										
<b>Ma Tau Wai Rd</b>															
01109.PDC1240	Road marking modification work	100%	0	28-Nov-12 A	02-Dec-12 A	█									
<b>Ma Tau Wai Rd / To Kwa Wan Rd new Temp Jct</b>															
01109.PDC1290	Erect traffic light at the junction	100%	0	12-Nov-12 A	02-Dec-12 A	█									
01109.PDC1300	Road marking modification	100%	0	28-Nov-12 A	02-Dec-12 A	█									
<b>MTW/TKW Road Garden (site portion W13 + W14)</b>															
01109.PDC1390	TKW - Mobilization of initial bentonite tanks & D-Wall Equipment	90%	41	08-Oct-12 A	16-Feb-13	█	█	█	█	█	█	█	█	█	█
01109.PDC1410	TKW - Stg 2 (TTM Stg 1) - Construct bentonite pipe trench under Chi Kiang St (stg 2)	100%	0	26-Oct-12 A	07-Dec-12 A	█									
<b>Site Preparation</b>															
<b>Install Monitoring Instruments/Take Initial Readings</b>															
01109.PDC14630	TKW - Install additional monitoring instruments	100%	0	18-Sep-12 A	24-Dec-12 A	█									
01109.PDC14640	TKW - Take over existing monitoring instrumentation from MTR	100%	0	18-Sep-12 A											
01109.PDC14650	TKW - Establish baseline readings	50%	14	08-Oct-12 A	08-Jan-13	█	█								
<b>Existing Buildings and Structures (EBS) Implementation</b>															
01109.PDC4330	EBS Condition Survey - Install protection measures	0%	12	04-Mar-13	16-Mar-13									█	
01109.PDC4340	EBS Condition Survey - Establish baseline readings	0%	30	17-Mar-13	15-Apr-13	█									█
<b>Existing Utility Diversion Works</b>															
<b>Drainage and Sewerage</b>															
01109.PDC1490	TKW-FD401/401P - P6 to P7 - Divert 600dia sewer	0%	18	21-Feb-13	13-Mar-13	█								█	
01109.PDC1650	TKW-FD101/101P - Ent A - New 225dia sewer in vicinity of TKW Ent A	0%	18	21-Feb-13	13-Mar-13	█								█	
01109.PDC1580	TKW-SD301/301P - Ent C, P26 - Divert 525dia to 675dia storm drain	0%	12	21-Feb-13	06-Mar-13									█	
01109.PDC1500	TKW-SD502 - P132 - Storm Drain Support Insitu	0%	6	21-Feb-13	27-Feb-13					█					
01109.PDC1530	TKW-SD510 - 975dia SD - P91 - Support & Monitor during Construction	0%	0	21-Feb-13						◆					
01109.PDC1510	TKW-FD402/402P - P140 - Divert 600dia sewer	0%	18	28-Feb-13	20-Mar-13	█								█	
01109.PDC1540	TKW-FD403/403P - P140 - Divert 150dia sewer	0%	18	07-Mar-13	27-Mar-13	█								█	
<b>Water Supply</b>															
01109.PDC1720	TKW-SW101/101P - P89 - Relocate exist 200dia Salt Watermain	0%	18	28-Feb-13	20-Mar-13									█	
<b>Power Supply</b>															
01109.PDC1870	TKW-CLP401 - P7 & P142 - (11kV) Locally Slew	12%	84	18-Sep-12 A	12-Apr-13	█	█	█	█	█	█	█	█	█	█
01109.PDC1880	TKW-CLP404 - P7 & P142 - (415 V) - Support in-situ & close monitoring	12%	84	18-Sep-12 A	12-Apr-13	█	█	█	█	█	█	█	█	█	█
01109.PDC1810	TKW-CLP407 - P9 & P135 - (Existing Abandoned 33 kV) - Remove	50%	11	17-Dec-12 A	09-Jan-13		█	█							



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

█ PMP-4 Baseline    ◆ PMP-4 Milestone  
█ Actual Work        ◆ Milestone  
█ Remaining Work

**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012		2013		
						Dec	Jan	Feb	Mar	
01109.PDC1830	TKW-CLP114 - P104 - (Existing Abandoned 33 kV) - Remove	50%	21	17-Dec-12 A	21-Jan-13					
01109.PDC1840	TKW-CLP503 - P87 - 11kV Supply - Support insitu	6%	6	17-Dec-12 A	02-Mar-13					
01109.PDC1850	TKW-CLP505 - P76 to P93 - 11kV Supply - Slew & support	3%	12	17-Dec-12 A	23-Mar-13					
01109.PDC1860	TKW-CLP506 - P76 to P93 - 415V - Slew & support	0%	6	17-Dec-12 A	16-Mar-13					
01109.PDC26950	TKW-CLP503 - P61 - 11kV Supply - Support insitu	6%	6	17-Dec-12 A	25-Jun-14					
01109.PDC1790	TKW-CLP405 - P13 & P132 - (Existing Abandoned 66 kV) - Remove	0%	6	21-Feb-13	27-Feb-13					
01109.PDC1800	TKW-CLP406 - P9 & P135 - (Existing Abandoned 33 kV) - Remove	0%	6	21-Feb-13	27-Feb-13					
<b>Gas Supply</b>										
01109.PDC1890	TKW-GAS401 - P155, P156, P138 - Exist MP400 Gas Main - Abandon	17%	30	17-Dec-12 A	31-Jan-13					
01109.PDC1910	TKW-GAS504 - P79 & P69 - Exist LPA300 Gas Main - Divert	21%	70	17-Dec-12 A	01-Jun-13					
01109.PDC1900	TKW-GAS503 - P42 & P108 - Temporarily Abandon	0%	6	21-Feb-13	27-Feb-13					
01109.PDC1930	TKW-GAS506 - P78, P77, P76 - Exist LPA300 Gas Main - Abandon	0%	69	06-Mar-13	31-May-13					
01109.PDC1940	TKW-GAS602 - Proposed MP315PE Gas Main - Subject to discussion (MTR & Town Gas)	0%	0	18-Mar-13						
<b>Telecommunication System</b>										
01109.PDC1950	TKW-HGC401 - P142 & P4,5,6 - Telecom Cable - Slew & Support	0%	12	21-Feb-13	06-Mar-13					
01109.PDC1960	TKW-HKT503/503P - P76 to 87incl. - Telecom Cable - Slew	0%	12	21-Feb-13	06-Mar-13					
<b>Diaphragm Wall during TTMS Stage 1</b>										
01109.PDC28750	Area E1 - Trial Pits	40%	22	14-Dec-12 A	16-Jan-13					
01109.PDC26960	Stage 1 Diaphragm Wall - Ready to start Trial Pits, Predrill & Guide walls	100%	0	14-Dec-12 A						
01109.PDC28780	Area E2 - Trial Pits	50%	14	15-Dec-12 A	08-Jan-13					
01109.PDC28760	Area E1 - Predrilling Works	3%	31	17-Dec-12 A	25-Jan-13					
01109.PDC28810	Area E5 - Trial Pits	100%	0	18-Dec-12 A	19-Dec-12 A					
01109.PDC28790	Area E2 - Predrilling Works	20%	18	22-Dec-12 A	12-Jan-13					
01109.PDC28820	Area E5 - Predrilling Works	10%	9	24-Dec-12 A	03-Jan-13					
01109.PDC26740	Area E3 - Trial Pits	0%	18	28-Dec-12*	14-Jan-13					
01109.PDC26720	Area E3 - Predrilling Works	0%	28	05-Jan-13*	01-Feb-13					
01109.PDC28900	Shell Access - Trial Pits	0%	2	07-Jan-13*	08-Jan-13					
01109.PDC28890	Shell Access - Predrilling Works	0%	14	09-Jan-13*	22-Jan-13					
01109.PDC26990	Area E3 - Bentonite Pipe Laying and Guide Wall Construction	0%	28	12-Jan-13*	08-Feb-13					
01109.PDC28850	Area E4 - Trial Pits	0%	5	12-Jan-13*	16-Jan-13					
01109.PDC28800	Area E2 - Bentonite Pipe Laying and Guide Wall Construction	0%	6	14-Jan-13*	19-Jan-13					
01109.PDC28860	Area E4 - Predrilling Works	0%	5	15-Jan-13	19-Jan-13					
01109.PDC28840	Area E4 - Bentonite Pipe Laying and Guide Wall Construction	0%	5	18-Jan-13	22-Jan-13					



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

PMP-4 Baseline     PMP-4 Milestone  
 Actual Work     Milestone  
 Remaining Work

**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012		2013		
						Dec	Jan	Feb	Mar	
01109.PDC28830	Area E5 - Bentonite Pipe Laying and Guide Wall Construction	0%	13	21-Jan-13*	02-Feb-13					
01109.PDC28880	Shell Access - Bentonite Pipe Laying and Guide Wall Construction	0%	6	21-Jan-13*	26-Jan-13					
01109.PDC28770	Area E1 - Bentonite Pipe Laying and Guide Wall Construction	0%	21	26-Jan-13*	15-Feb-13					
01109.PDC28930	Area E6 - Trial Pits	0%	18	29-Jan-13*	15-Feb-13					
01109.PDC28920	Area E6 - Predrilling Works	0%	28	06-Feb-13*	05-Mar-13					
01109.PDC28910	Area E6 - Bentonite Pipe Laying and Guide Wall Construction	0%	28	06-Mar-13*	02-Apr-13					
<b>Area E1 (MTW Road)</b>										
<b>Area E1 - DWall Construction - DW 1</b>										
01109.PDC23430	Dwall works P11	0%	10	21-Jan-13*	31-Jan-13					
01109.PDC23420	Dwall works P131	0%	10	30-Jan-13*	13-Feb-13					
01109.PDC23370	Dwall works P12	0%	14	16-Feb-13*	04-Mar-13					
01109.PDC23380	Dwall works P132	0%	10	05-Mar-13*	15-Mar-13					
01109.PDC23350	Dwall works P159	0%	10	16-Mar-13*	27-Mar-13					
<b>Area E1 (Ent D)</b>										
<b>Area E1 - DWall Construction - DW 1</b>										
01109.PDC26630	Dwall works - P152	0%	6	28-Dec-12*	04-Jan-13					
01109.PDC28730	Dwall works P153	0%	8	07-Jan-13*	15-Jan-13					
01109.PDC26640	Dwall works - P143	0%	7	17-Jan-13*	24-Jan-13					
01109.PDC23870	Dwall works P6	0%	7	25-Jan-13*	01-Feb-13					
01109.PDC26660	Dwall works - P144	0%	7	04-Feb-13*	14-Feb-13					
01109.PDC28740	Dwall works P5	0%	7	08-Feb-13*	19-Feb-13					
01109.PDC23860	Dwall works P142	0%	7	23-Feb-13*	02-Mar-13					
01109.PDC23960	Dwall works P7	0%	7	28-Feb-13*	07-Mar-13					
01109.PDC23880	Dwall works P141	0%	7	09-Mar-13*	16-Mar-13					
01109.PDC23910	Dwall works P140	0%	8	20-Mar-13*	28-Mar-13					
<b>Area E2</b>										
<b>Area E2 - DWall Construction - DW 2</b>										
01109.PDC23660	Dwall works P118	0%	7	08-Feb-13*	19-Feb-13					
01109.PDC23680	Dwall works P119	0%	7	25-Feb-13*	04-Mar-13					
01109.PDC23700	Dwall works P120	0%	7	11-Mar-13*	18-Mar-13					
01109.PDC23630	Dwall works P122a	0%	7	20-Mar-13*	27-Mar-13					
<b>Area E3-1</b>										



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

- PMP-4 Baseline
- Actual Work
- Remaining Work
- PMP-4 Milestone
- Milestone

**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012				2013					
						Dec	Jan	Feb	Mar	Dec	Jan	Feb	Mar		
<b>Area E3-1 - DWall Construction - DW 3</b>															
01109.PDC24020	Dwall works P104	0%	7	05-Feb-13*	15-Feb-13										
01109.PDC24050	Dwall works P105	0%	7	18-Feb-13*	25-Feb-13										
01109.PDC24040	Dwall works P106	0%	7	04-Mar-13*	11-Mar-13										
01109.PDC24030	Dwall works P107	0%	7	13-Mar-13*	20-Mar-13										
01109.PDC24010	Dwall works P108	0%	7	22-Mar-13*	02-Apr-13										
<b>Area E3-2</b>															
<b>Area E3-2 - DWall Construction - DW 3</b>															
01109.PDC24180	Dwall works P103	0%	7	28-Jan-13*	04-Feb-13										
01109.PDC24220	Dwall works P99	0%	7	01-Feb-13*	08-Feb-13										
01109.PDC24210	Dwall works P100	0%	7	13-Feb-13*	20-Feb-13										
01109.PDC24190	Dwall works P102	0%	7	27-Feb-13*	06-Mar-13										
01109.PDC24200	Dwall works P101	0%	7	18-Mar-13*	25-Mar-13										
<b>Area E3-3</b>															
<b>Area E3-3 - DWall Construction - DW 3</b>															
01109.PDC24540	Dwall works P94	0%	7	04-Feb-13*	14-Feb-13										
01109.PDC24550	Dwall works P90	0%	7	08-Feb-13*	19-Feb-13										
01109.PDC24560	Dwall works P93	0%	7	15-Feb-13*	22-Feb-13										
01109.PDC24530	Dwall works P98	0%	7	22-Feb-13*	01-Mar-13										
01109.PDC24520	Dwall works P95	0%	7	25-Feb-13*	04-Mar-13										
01109.PDC24570	Dwall works P91	0%	7	15-Mar-13*	22-Mar-13										
<b>Area E3-3 - DWall Construction - DW 4</b>															
01109.PDC24370	Dwall works 89	0%	7	20-Feb-13*	27-Feb-13										
01109.PDC28700	Dwall works P88b	0%	7	01-Mar-13*	08-Mar-13										
01109.PDC24390	Dwall works P92	0%	7	06-Mar-13*	13-Mar-13										
01109.PDC24360	Dwall works P97	0%	7	08-Mar-13*	15-Mar-13										
01109.PDC24350	Dwall works P88a	0%	7	11-Mar-13*	18-Mar-13										
01109.PDC24460	Crosswall G9-5	0%	5	13-Mar-13	18-Mar-13										
01109.PDC24480	Crosswall G10-5	0%	5	15-Mar-13	20-Mar-13										
01109.PDC24500	Crosswall G11-5	0%	5	18-Mar-13	22-Mar-13										
01109.PDC24380	Dwall works P96	0%	7	20-Mar-13*	27-Mar-13										
<b>Area E4</b>															



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

— PMP-4 Baseline    ◆ PMP-4 Milestone  
— Actual Work        ◆ Milestone  
— Remaining Work

**SAMSUNG - HSIN CHONG JOINT VENTURE**

**THREE MONTH ROLLING PROGRAMME - DECEMBER 2012**

Activity ID	Activity Name	Physical % Complete	Remaining Duration	Start	Finish	2012		2013		
						Dec	Jan	Feb	Mar	
<b>Area E4 - DWall Construction - DW 2</b>										
01109.PDC24700	E4 - Dwall works P123	0%	7	15-Feb-13*	22-Feb-13					
01109.PDC24710	E4 - Dwall works P124	0%	7	01-Mar-13*	08-Mar-13					
<b>Area E4 - Post Concrete Works</b>										
01109.PDC23080	E4 - Dwall Shear pin installation	0%	6	09-Mar-13	15-Mar-13					
01109.PDC23090	E4 - Dwall testing	0%	24	16-Mar-13	08-Apr-13					
<b>Area E5</b>										
<b>Area E5 - DWall Construction - DW 2</b>										
01109.PDC24740	E5 - Dwall works P113	0%	7	04-Feb-13*	14-Feb-13					
01109.PDC24750	E5 - Dwall works P112	0%	7	20-Feb-13*	27-Feb-13					
01109.PDC24720	E5 - Dwall works P114	0%	7	06-Mar-13*	13-Mar-13					
01109.PDC24730	E5 - Dwall works P111	0%	7	15-Mar-13*	22-Mar-13					
<b>Area E5 - Post Concrete Works</b>										
01109.PDC8860	E5 - Dwall testing	0%	25	23-Mar-13	16-Apr-13					
<b>Top Slab, Utility, &amp; Backfill during TTMS Stage 1</b>										
<b>Area E4 - Span 3 - GL 5 to GL 7</b>										
01109.PDC8300	E4 - Steelwork; Installation of sheet piles 12lmx2 1PR	0%	5	09-Mar-13	14-Mar-13					
01109.PDC9000	E4 - Pumping Test	0%	12	15-Mar-13	28-Mar-13					
<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	0%	300	15-Jan-13*	10-Nov-13					
01109.PDD1000	TBM Down + Up track SUW to HOM - Place order for TBM	0%	0		15-Jan-13*					
01109.PDD1020	STP (Slurry Treatment Plant) - Place Order	0%	0		15-Jan-13*					
01109.PDD1030	STP (Manufacture)	0%	300	15-Jan-13*	10-Nov-13					
<b>CC-F - ABWF WORKS INSIDE HOM SCL STATION</b>										
<b>CC-F Submissions, Approvals &amp; Procurement</b>										
01109.PDF1000	Prepare & submit Perm Wks Mtrl control schedule (G4.16.1)	0%	60	28-Jan-13	28-Mar-13					
01109.PDF1010	Prepare and submit all shop dwgs, and material submissions	0%	60	28-Jan-13	28-Mar-13					



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

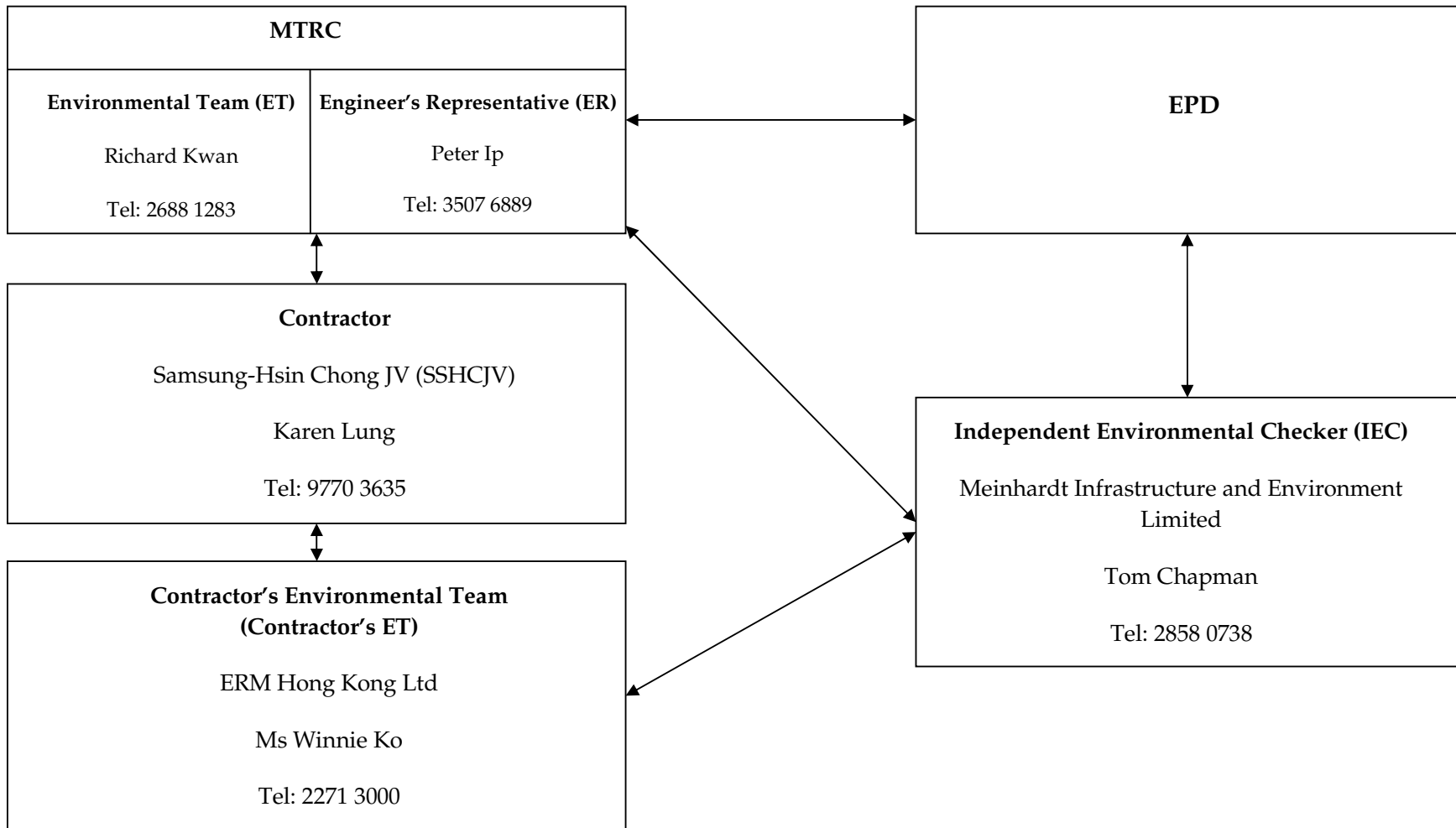
- PMP-4 Baseline
- Actual Work
- Remaining Work
- PMP-4 Milestone
- Milestone



Annex C

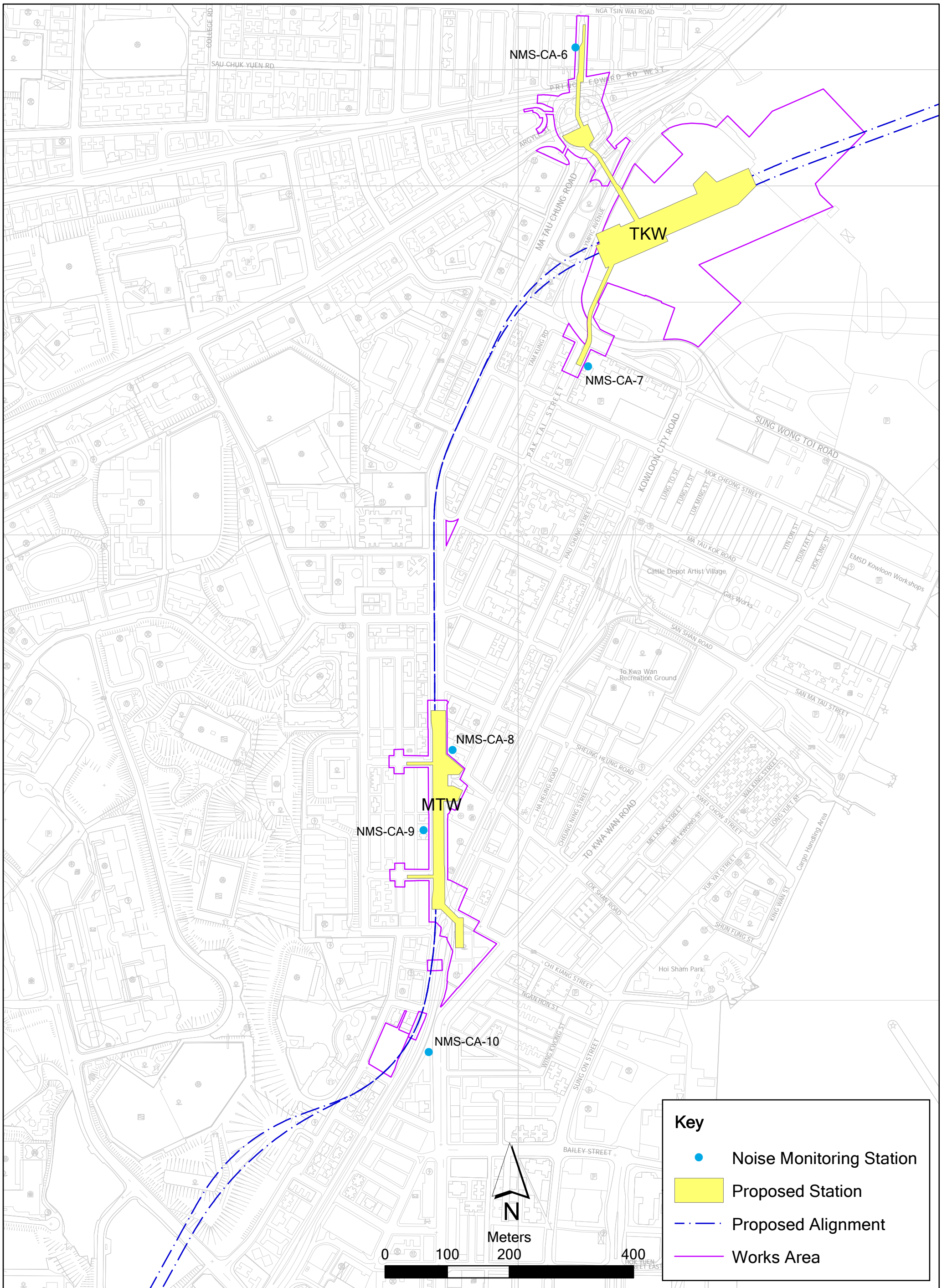
## Project Organization Chart and Contact Detail

*Annex C Project Organization of SCL Works Contract 1109*



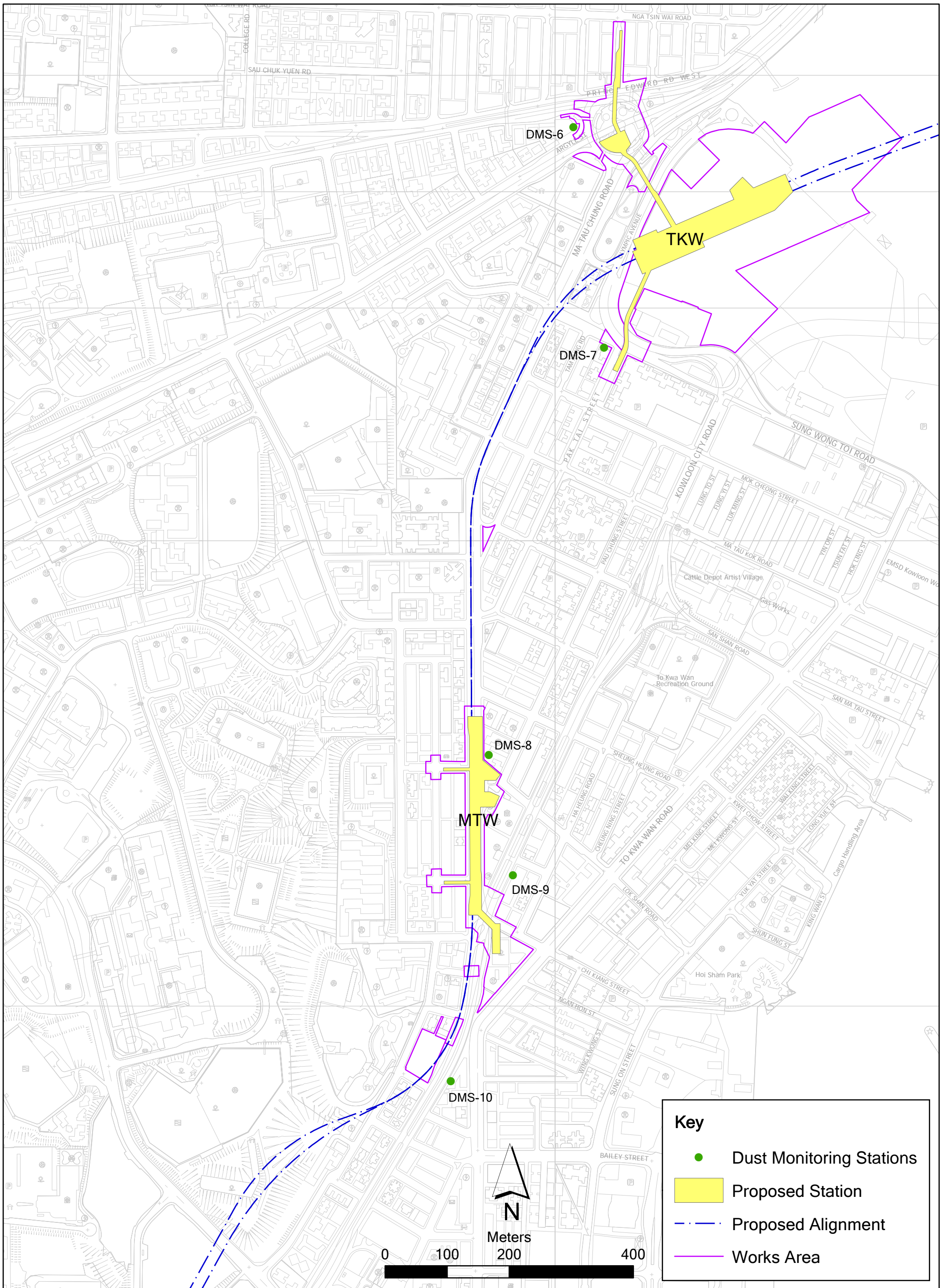
Annex D

## Locations of Noise and Dust Monitoring Stations



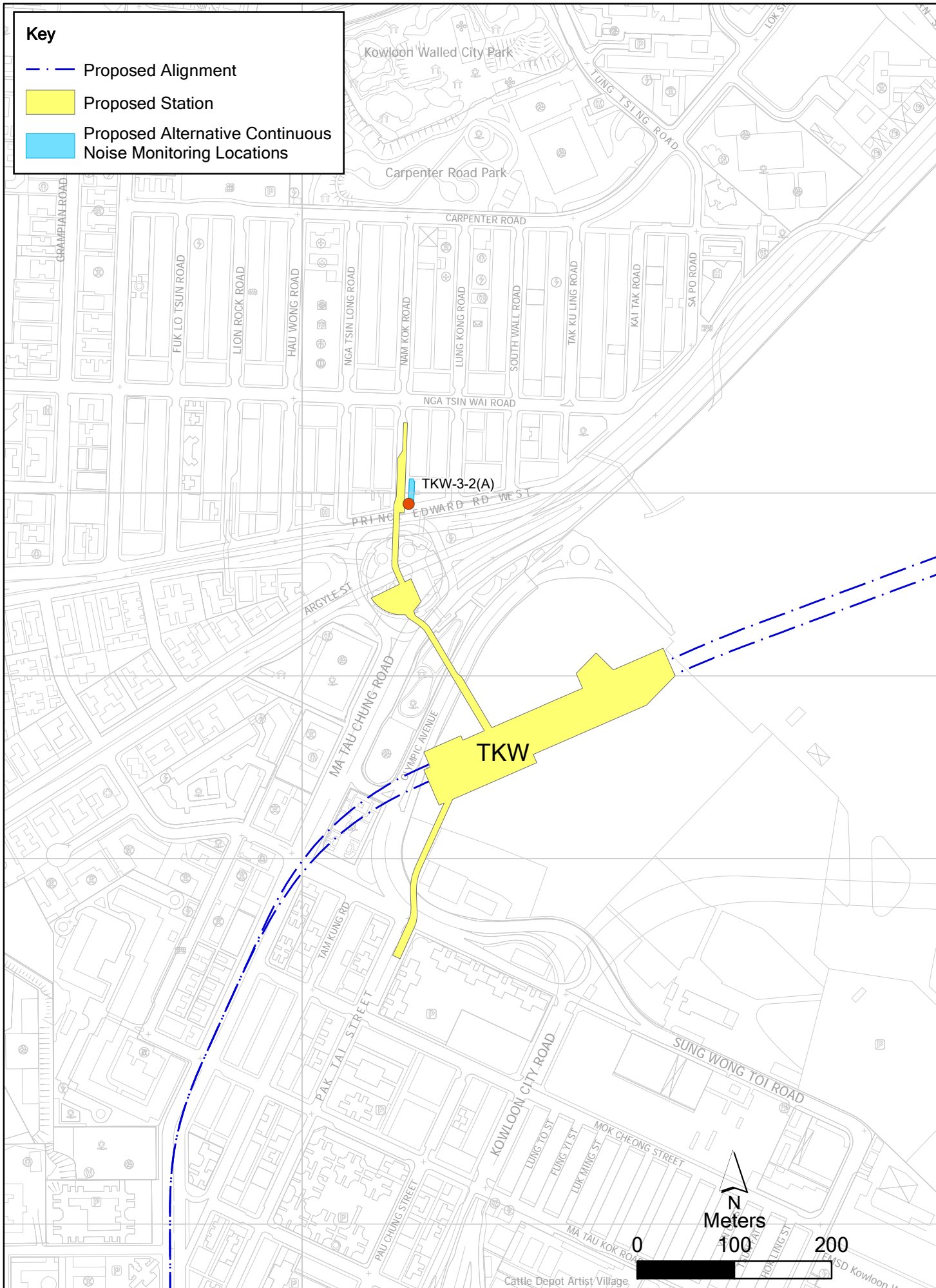
Annex D1

### Location of Regular Construction Noise Monitoring Stations



**Key**

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

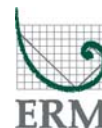


Annex D3

**Proposed Continuous Noise Monitoring Locations**

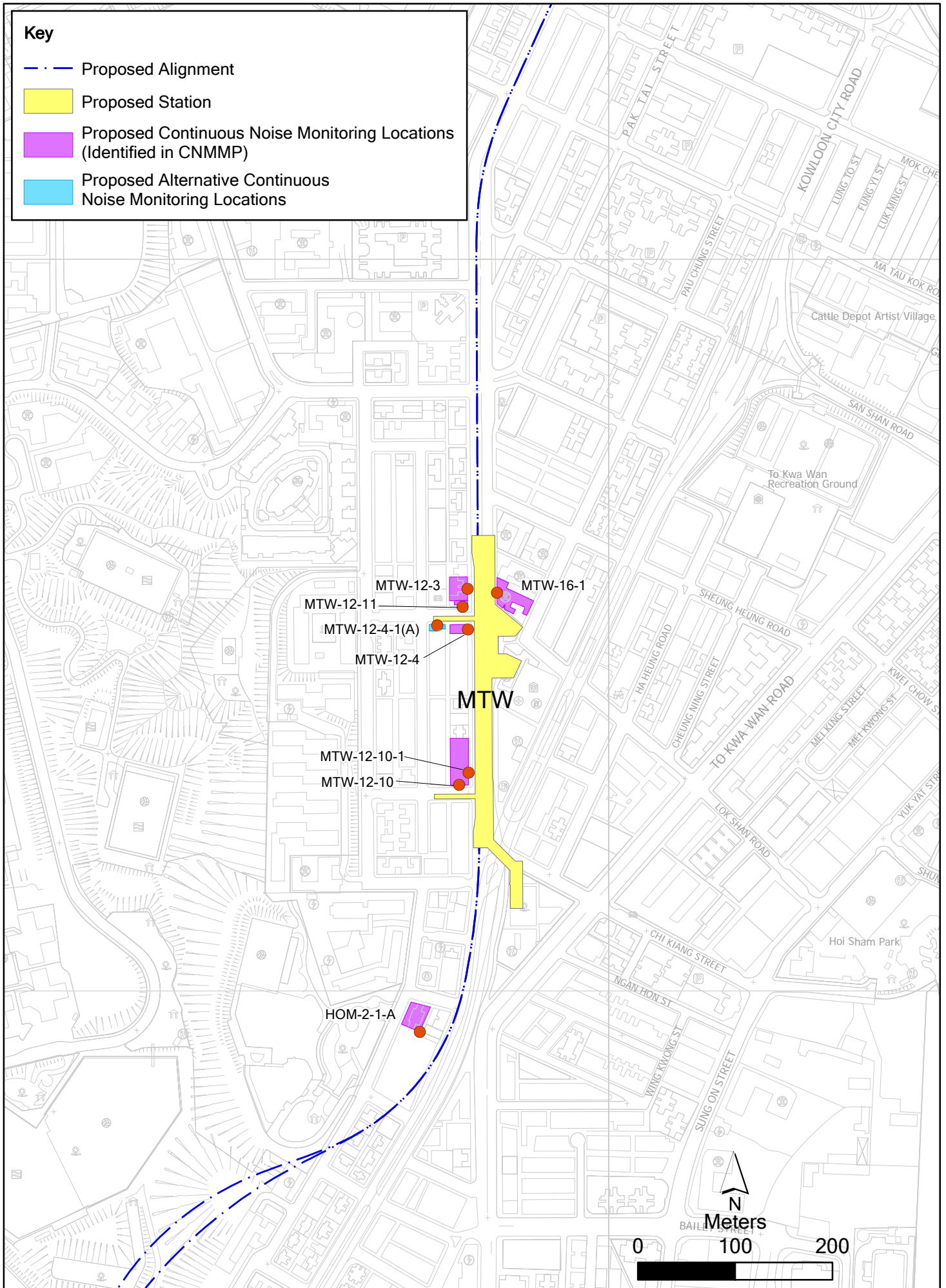
Name: 171181\_Annex\_Continuous  
Noise\_Monitoring\_Locations\_TKW.mxd  
Date: 10-Oct-12

**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 : Dec 2012**

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

**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 : Dec 2012**

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

**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 : Dec 2012**

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

**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 : Dec 2012**

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

**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 : Dec 2012**

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

**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 : Jan 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
		Public Holiday			24-hr TSP Monitoring Noise Monitoring	
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
				24-hr TSP Monitoring Noise Monitoring		
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
			24-hr TSP Monitoring Noise Monitoring			
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
		24-hr TSP Monitoring Noise Monitoring				
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
	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 : Jan 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
		Public Holiday			24-hr TSP Monitoring Noise Monitoring	
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
				24-hr TSP Monitoring Noise Monitoring		
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
			24-hr TSP Monitoring Noise Monitoring			
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
		24-hr TSP Monitoring Noise Monitoring				
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
	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 : Jan 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
		Public Holiday			24-hr TSP Monitoring Noise Monitoring	
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
				24-hr TSP Monitoring Noise Monitoring		
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
			24-hr TSP Monitoring Noise Monitoring			
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
		24-hr TSP Monitoring Noise Monitoring				
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
	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 : Jan 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
		Public Holiday			24-hr TSP Monitoring Noise Monitoring	
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
				24-hr TSP Monitoring Noise Monitoring		
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
			24-hr TSP Monitoring Noise Monitoring			
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
		24-hr TSP Monitoring Noise Monitoring				
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
	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 : Jan 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
		Public Holiday			24-hr TSP Monitoring Noise Monitoring	
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
				24-hr TSP Monitoring Noise Monitoring		
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
			24-hr TSP Monitoring Noise Monitoring			
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
		24-hr TSP Monitoring Noise Monitoring				
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
	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)	12 October 2012	12 April 2013
DMS-7	Parc 22	TE-5170 (S/N 3574)	CM-AIR-43 (Orifice I.D. - 1378)	21 September 2012	21 March 2013
DMS-8	SHK Good Shepherd Primary School	TE-5170 (S/N 3572)	CM-AIR-43 (Orifice I.D. - 1378)	7 September 2012	7 March 2013
DMS-9	No. 26 Kowloon City Road	TE-5170 (S/N 0814)	CM-AIR-43 (Orifice I.D. - 1378)	21 September 2012	21 March 2013
DMS-10	Chat Ma Mansion	TE-5170 (S/N 3573)	CM-AIR-43 (Orifice I.D. - 1378)	7 September 2012	7 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-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
MTW-16-1	Calibrator	Rion NC-73 (S/N 10786708)	17 July 2012	17 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 : 12/10/2012

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 1378  
Service Date : 22 Feb 2012  
Slope (m) : 1.99405  
Intercept (b) : -0.00397  
Correlation Coefficient(r) : 0.99999

Standard Condition

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

Calibration Condition

Pa (hpa) : 1013  
Ta(K) : 299

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	11.4	3.371	1.703	58	57.9
2   13 holes	9.0	2.996	1.514	50	49.9
3   10 holes	6.9	2.622	1.327	42	41.9
4   7 holes	4.0	1.997	1.013	30	29.9
5   5 holes	2.7	1.640	0.835	23	22.9

Sampler Calibration Relationship

Slope(m):40.105 Intercept(b): -10.742 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 14/10/2012

High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-7(Parc 22)  
 Calibrated by : P.F.Yeung  
 Date : 21/09/2012

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 1378  
 Service Date : 22 Feb 2012  
 Slope (m) : 1.99405  
 Intercept (b) : -0.00397  
 Correlation Coefficient(r) : 0.99984

Standard Condition

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

Calibration Condition

Pa (hpa) : 1010  
 Ta(K) : 300

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	11.8	3.415	1.714	64	63.6
2   13 holes	9.2	3.015	1.514	57	56.7
3   10 holes	7.0	2.630	1.321	49	48.7
4   7 holes	4.4	2.085	1.048	40	39.8
5   5 holes	2.7	1.633	0.821	32	31.8

Sampler Calibration Relationship

Slope(m):35.677 Intercept(b):2.316 Correlation Coefficient(r):0.9995

Checked by: Magnum Fan

Date: 23/09/2012

High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-8(SHK Good Shepherd Primary School)  
 Calibrated by : P.F.Yeung  
 Date : 07/09/2012

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 1378  
 Service Date : 22 Feb 2012  
 Slope (m) : 1.99405  
 Intercept (b) : -0.00397  
 Correlation Coefficient(r) : 0.99984

Standard Condition

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

Calibration Condition

Pa (hpa) : 1013  
 Ta(K) : 299

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	11.8	3.429	1.722	60	59.9
2   13 holes	9.2	3.028	1.521	54	53.9
3   10 holes	6.8	2.603	1.308	48	47.9
4   7 holes	4.4	2.094	1.052	41	40.9
5   5 holes	2.2	1.481	0.745	32	31.9

Sampler Calibration Relationship

Slope(m):28.429 Intercept(b):10.836 Correlation Coefficient(r):0.9998

Checked by: Magnum Fan

Date: 10/09/2012



High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-9(No. 26 Kowloon City Road)  
 Calibrated by : P.F.Yeung  
 Date : 21/09/2012

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 1378  
 Service Date : 22 Feb 2012  
 Slope (m) : 1.99405  
 Intercept (b) : -0.00397  
 Correlation Coefficient(r) : 0.99984

Standard Condition

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

Calibration Condition

Pa (hpa) : 1010  
 Ta(K) : 300

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	12.4	3.500	1.757	65	64.6
2   13 holes	9.2	3.015	1.514	56	55.7
3   10 holes	7.2	2.667	1.340	50	49.7
4   7 holes	4.5	2.109	1.059	40	39.8
5   5 holes	2.7	1.633	0.821	30	29.8

Sampler Calibration Relationship

Slope(m):36.768 Intercept(b):0.175 Correlation Coefficient(r):0.9995

Checked by: Magnum Fan

Date: 23/09/2012

High-Volume TSP Sampler  
5-Point Calibration Record

Location : DMS-10(Chat Ma Mansion)  
 Calibrated by : P.F.Yeung  
 Date : 07/09/2012

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 1378  
 Service Date : 22 Feb 2012  
 Slope (m) : 1.99405  
 Intercept (b) : -0.00397  
 Correlation Coefficient(r) : 0.99984

Standard Condition

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

Calibration Condition

Pa (hpa) : 1013  
 Ta(K) : 299

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1   18 holes	11.4	3.371	1.692	59	58.9
2   13 holes	9.1	3.012	1.512	53	52.9
3   10 holes	6.9	2.622	1.317	47	46.9
4   7 holes	4.5	2.118	1.064	39	38.9
5   5 holes	2.7	1.640	0.825	32	31.9

Sampler Calibration Relationship

Slope(m):31.054 Intercept(b):6.109 Correlation Coefficient(r):0.9998

Checked by: Magnum Fan

Date: 10/09/2012



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
 VILLAGE OF CLEVELAND, OH 45002  
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 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 - Feb 22, 2012 Rootsmeter S/N 0438320 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 1378 Pa (mm) - 740.41

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3940	3.2	2.00
2	NA	NA	1.00	0.9740	6.4	4.00
3	NA	NA	1.00	0.8720	8.0	5.00
4	NA	NA	1.00	0.8340	8.8	5.50
5	NA	NA	1.00	0.6870	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9799	0.7029	1.4029	0.9957	0.7142	0.8927
0.9756	1.0017	1.9841	0.9914	1.0178	1.2624
0.9734	1.1163	2.2183	0.9891	1.1343	1.4114
0.9724	1.1660	2.3265	0.9881	1.1848	1.4803
0.9671	1.4077	2.8059	0.9827	1.4304	1.7853
Qstd slope (m) = 1.99405			Qa slope (m) = 1.24864		
intercept (b) = -0.00397			intercept (b) = -0.00252		
coefficient (r) = 0.99984			coefficient (r) = 0.99984		
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

## 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.

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. : 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.

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

# Certificate of Calibration

## 校正證書

Certificate No. : 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. : C124184  
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 Calibrator  
 Manufacturer / 製造商 : Rion  
 Model No. / 型號 : NC-73  
 Serial No. / 編號 : 10786708  
 Supplied By / 委託者 : Envirotech Services Co.  
 Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,  
 Hong Kong

**TEST CONDITIONS / 測試條件**

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

**TEST SPECIFICATIONS / 測試規範**

Calibration check

**DATE OF TEST / 測試日期** : 17 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
- 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. : C124184  
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	93.9	± 0.5	± 0.2

### 5.2 Frequency Accuracy

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

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

#### Note :

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

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

### 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 :

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 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

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

### 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.

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Sun Creation Engineering Limited – Calibration & Testing Laboratory

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Annex G

## Summary of Event/ Action Plans

**Annex G1 Even 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			
	Contractor's Environmental Team (Contractor's ET)	Independent Environmental Checker (IEC)	Engineer Representative (ER)	The Contractor
Exceeding Action/Limit Level	<ol style="list-style-type: none"> <li>1. Notify the IEC, Contractor and ER</li> <li>2. Identify source and investigate the causes of exceedance</li> <li>3. Inform the IEC, ER and Contractor the causes and actions taken for the exceedances</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 if necessary;</li> <li>6. Assess the effectiveness of the Contractor's remedial measures and keep the IEC and ER informed of the results</li> <li>7. Repeat measurement to confirm findings if exceedance is caused by the 1109 works and if necessary.</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 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, and IEC</li> <li>3. In consultation with the 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 reasons 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 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 is 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 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.					
		<p><u>No-intrusion Zone</u></p> <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>					
		<p><u>Protection of Retained Trees</u></p> <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)), Leq(30 min)	Baseline (dB(A)), Leq(30 min)	Corrected Leq(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
7-Dec-12	11:25	11:55	Fine	63.8	76.0	-(b)	-	Traffic noise	18.0	0.5	NL-18 00360030	NC-73 10997142
13-Dec-12	11:12	11:42	Cloudy	64.0	76.0	-(b)	-	Traffic noise	18.1	0.8	NL-18 00360030	NC-73 10997142
19-Dec-12	9:50	10:20	Cloudy	65.8	76.0	-(b)	Handheld breaker	Traffic noise	15.0	0.5	NL-18 00360030	NC-73 10997142
24-Dec-12	10:50	11:20	Sunny	64.2	76.0	-(b)	-	Traffic noise	12.5	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)), Leq(30 min)	Baseline (dB(A)), Leq(30 min)	Corrected Leq(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
7-Dec-12	10:30	11:00	Fine	67.8	70.0	-(b)	-	Traffic noise	18.0	1.2	NL-18 00360030	NC-73 10997142
13-Dec-12	10:15	10:45	Sunny	67.9	70.0	-(b)	-	Traffic noise	18.1	1.2	NL-18 00360030	NC-73 10997142
19-Dec-12	10:38	11:08	Cloudy	68.3	70.0	-(b)	-	Traffic noise	15.0	0.8	NL-18 00360030	NC-73 10997142
24-Dec-12	9:57	10:27	Sunny	68.3	70.0	-(b)	-	Traffic noise	12.5	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)), Leq(30 min) <sup>(c)</sup>	Baseline (dB(A)), Leq(30 min)	Corrected Leq(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
7-Dec-12	8:50	9:20	Fine	74.0	75.0	-(b)	-	-	18.0	0.5	NL-18 00360030	NC-73 10997142
13-Dec-12	8:50	9:20	Sunny	74.9	75.0	-(b)	-	Traffic noise	18.1	0.5	NL-18 00360030	NC-73 10997142
19-Dec-12	8:55	9:25	Cloudy	72.5	75.0	-(b)	-	Traffic noise	15.0	0.5	NL-18 00360030	NC-73 10997142
24-Dec-12	14:19	14:49	Fine	76.0	75.0	69.1	Backhole	Traffic noise	12.5	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)), Leq(30 min)	Baseline (dB(A)), Leq(30 min)	Corrected Leq(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
7-Dec-12	9:30	10:00	Fine	71.0	69.0	66.7	Backhole and breaker	Traffic noise	18.0	0.5	NL-18 00360030	NC-73 10997142
13-Dec-12	9:28	9:58	Sunny	70.1	69.0	63.6	Backhole and breaker	Traffic noise	18.1	0.5	NL-18 00360030	NC-73 10997142
19-Dec-12	8:00	8:30	Cloudy	70.4	69.0	64.8	Breaker	Traffic noise	15.0	0.5	NL-18 00360030	NC-73 10997142
24-Dec-12	8:35	9:05	Fine	71.9	69.0	68.8	Backhole & crane operation	Traffic noise	12.5	0.5	NL-18 00360030	NC-73 10997142

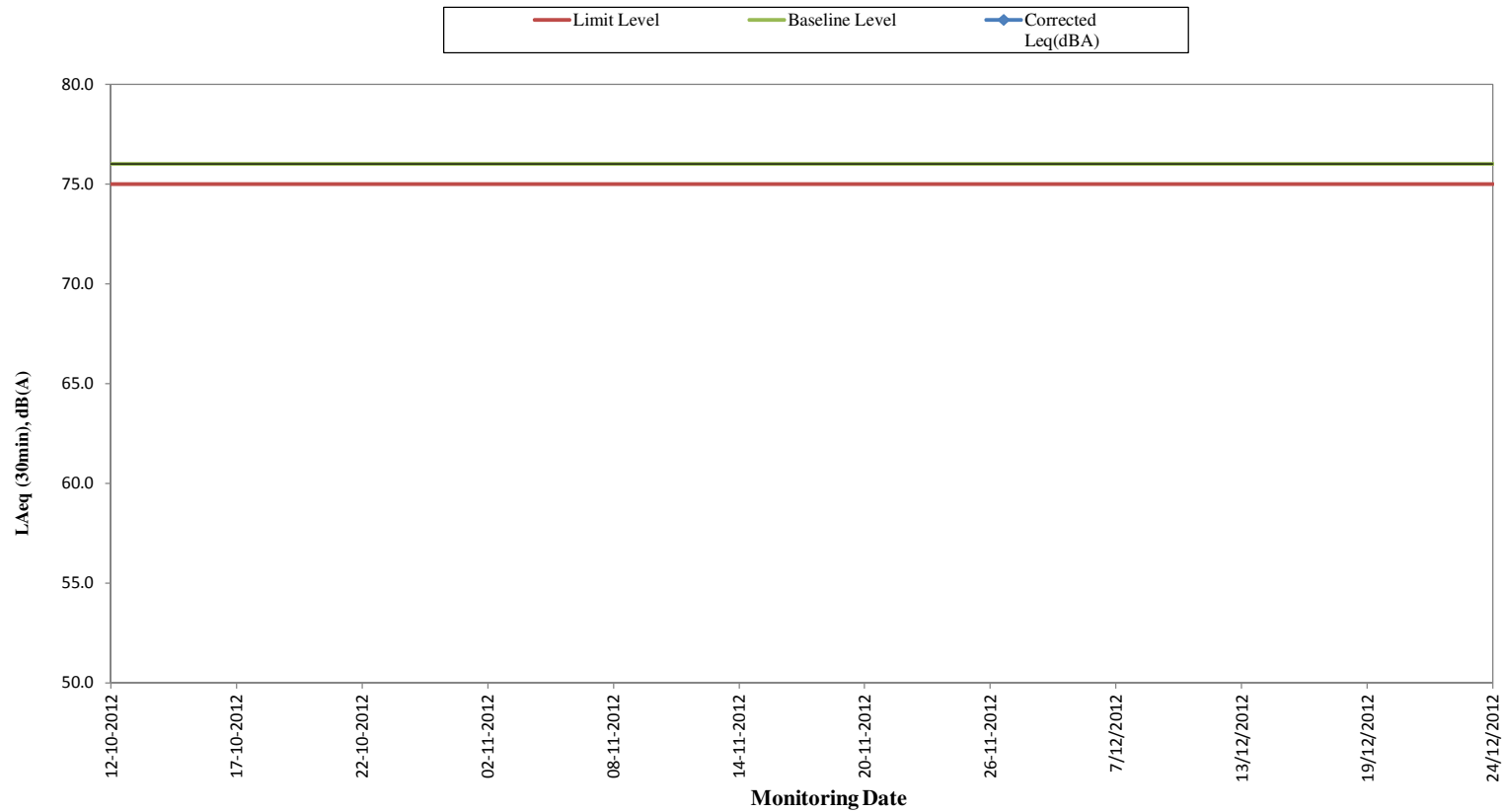
Station NMS-CA-10 Chat Ma Mansion

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), Leq(30 min) <sup>(c)</sup>	Baseline (dB(A)), Leq(30 min)	Corrected Leq(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
7-Dec-12	8:05	8:35	Fine	78.2	77.0	72.0	Breaker	Traffic noise	18.0	0.5	NL-18 00360030	NC-73 10997142
13-Dec-12	8:00	8:30	Sunny	76.3	77.0	-(b)	Breaker	Traffic noise	18.1	0.5	NL-18 00360030	NC-73 10997142
19-Dec-12	8:40	9:10	Cloudy	76.4	77.0	-(b)	-	Traffic noise	15.0	0.5	NL-18 00360030	NC-73 10997142
24-Dec-12	8:00	8:30	Fine	77.3	77.0	65.5	Crane operation and backhole	Traffic noise	12.5	0.5	NL-18 00360030	NC-73 10997142

Remarks:

- (a) The Measured Leq 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 on 24 December at NMS-CA-8 and on 7 and 24 December at NMS-CA-10 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.

**Regular Noise Monitoring Results at NMS-CA-6 (No. 16-23 Nam Kok Road) (Leq, 30min)  
for the Past 3 Months**

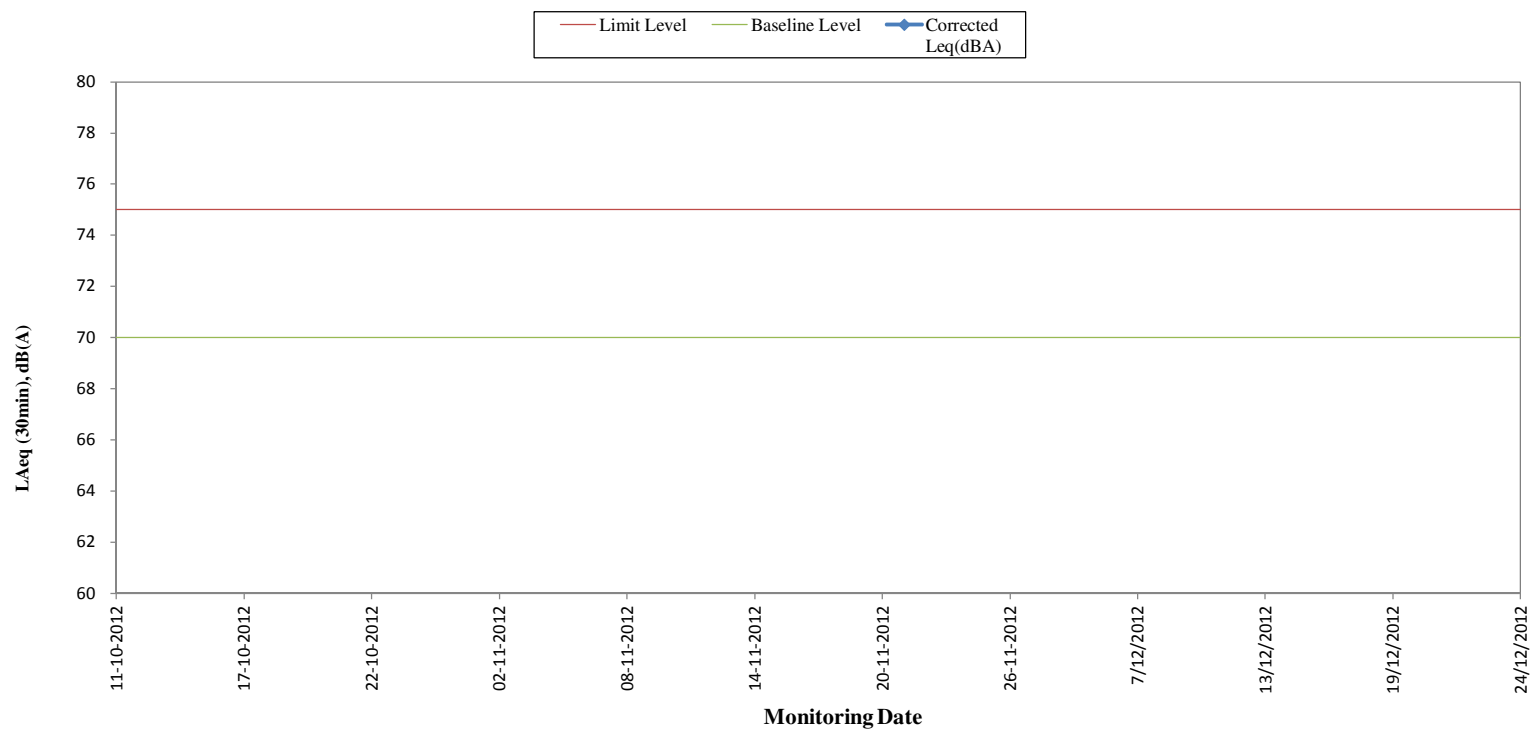


Remarks:

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



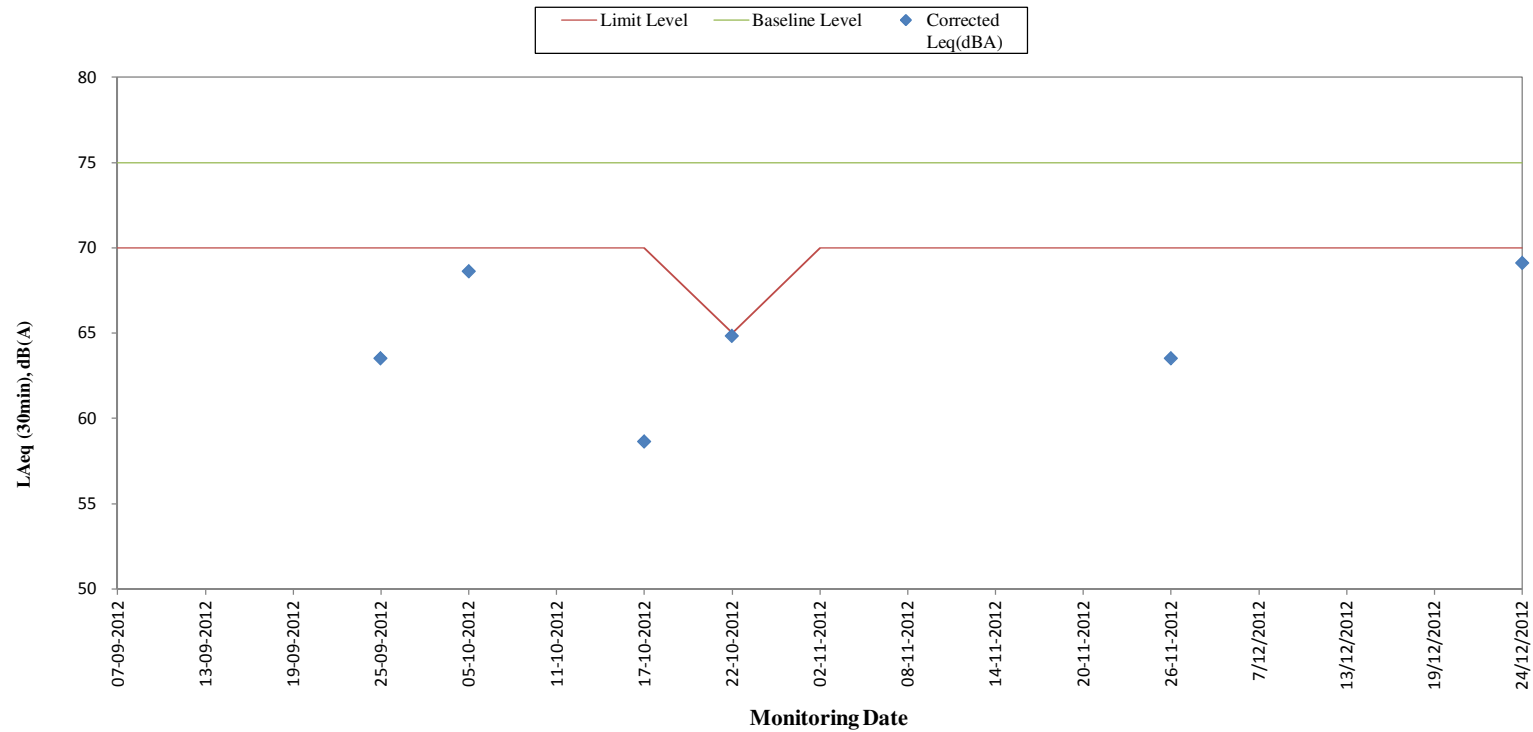
### Regular Noise Monitoring Results at NMS-CA-7 (Skytower Tower 2) (Leq, 30min) for the Past 3 Months



Remarks:

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

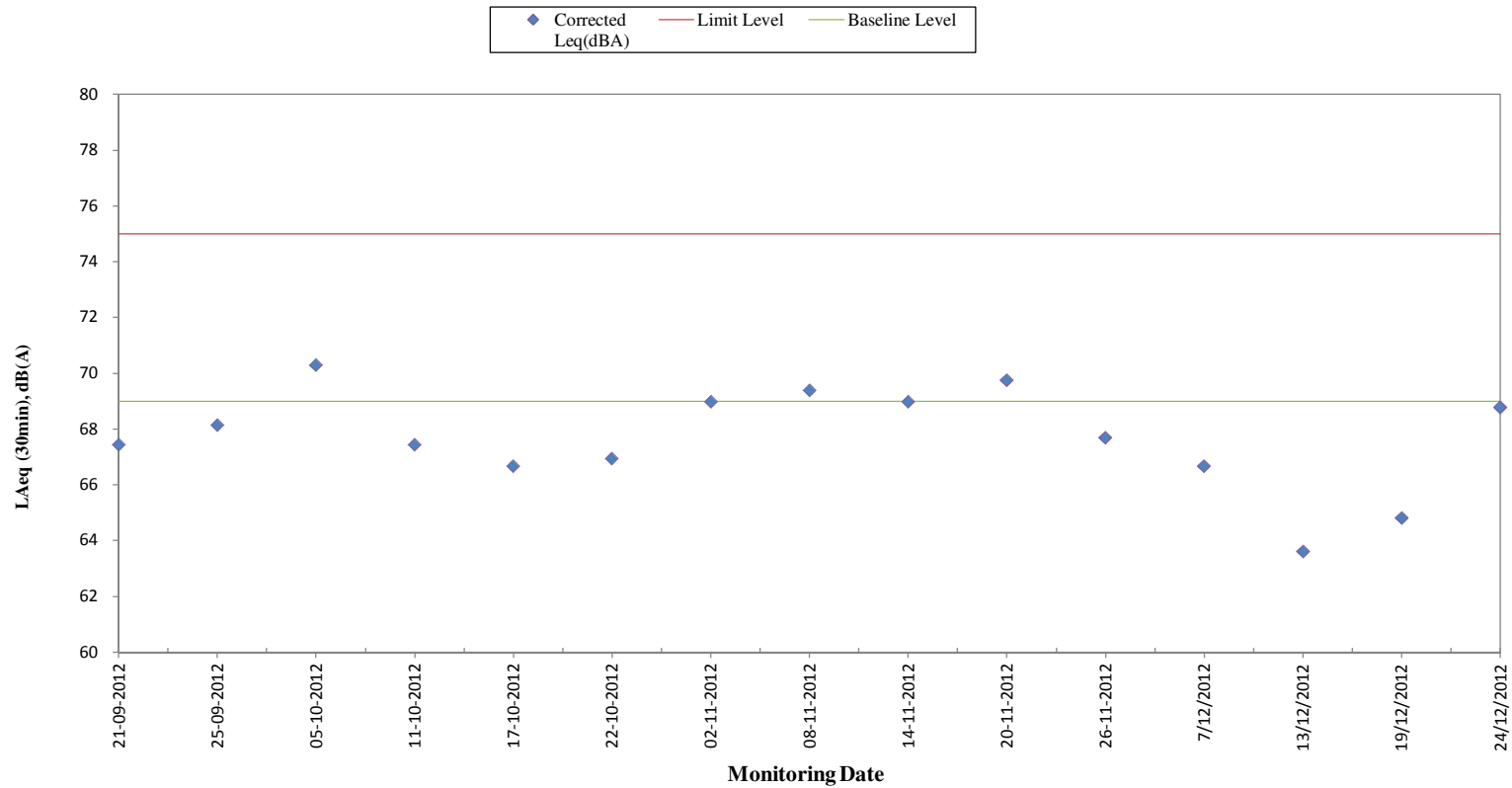
### Regular Noise Monitoring Results at NMS-CA- 8 (SKH Good Shepherd Primary School) (Leq, 30min) for the Past 4 Months



**Remarks:**

- The limit level is 65dB(A) during examination period (22th October 2012).
- for the corrected noise level without showing the in this graph, the measured noise level is below baseline level.

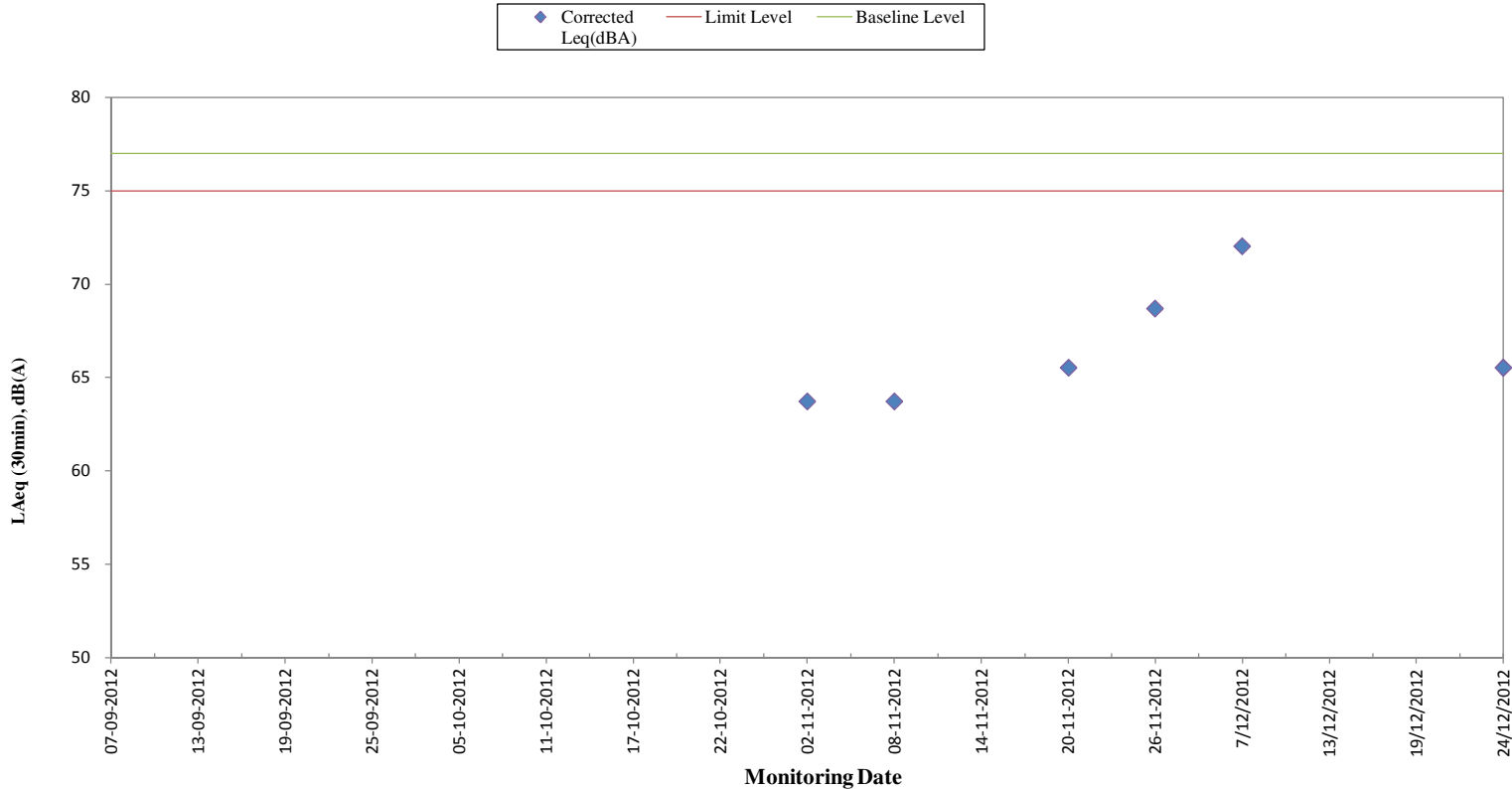
### Regular Noise Monitoring Results at NMS-CA-9 (Kong Yiu Mansion) (Leq, 30min ) for the Past 4 Months



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) (Leq, 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 Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	7	0	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	7	30	75.4	75.0	64.70679633	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	8	0	75.2	75.0	62.02835419	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	8	30	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	9	0	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	9	30	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	10	0	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	10	30	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	11	0	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	11	30	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	12	0	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	12	30	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	13	0	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	13	30	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	14	47	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	15	17	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	15	47	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	16	17	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	16	47	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	17	17	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	17	47	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	18	17	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	3	18	47	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	7	02	73.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	7	32	75.3	75.0	63.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	8	02	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	8	32	75.5	75.0	66.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	9	02	75.2	75.0	60.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	9	32	75.4	75.0	65	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	10	02	75.2	75.0	61.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	10	32	75.3	75.0	64.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	11	02	75.4	75.0	64.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	11	32	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	12	02	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	12	32	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	13	02	75.4	75.0	64.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	13	32	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	14	02	77.8	75.0	74.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	14	32	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	15	02	74.5	75.0	<Baseline Level	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	15	32	75.3	75.0	63.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	16	02	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	16	32	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	17	02	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	17	32	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	18	02	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	4	18	32	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	7	02	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	7	32	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	8	02	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	8	32	75.2	75.0	62.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	9	02	75.6	75.0	66.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	9	32	75.9	75.0	68.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	10	02	75.5	75.0	65.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	10	32	75.7	75.0	67.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	11	02	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	11	32	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	12	02	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	12	32	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	13	02	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	13	32	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	14	02	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	14	32	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	15	02	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	8	32	75.2	75.0	62.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	9	02	75.6	75.0	66.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	9	32	75.9	75.0	68.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	10	02	75.5	75.0	65.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	10	32	75.7	75.0	67.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	11	02	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	11	32	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	12	02	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	12	32	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	13	02	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	13	32	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	14	02	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	14	32	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	15	02	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	15	59	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	16	29	74.2	75.0	<Baseline Level	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	16	59	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	17	29	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	17	59	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	5	18	29	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	07	04	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	07	34	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	08	04	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	08	34	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	09	04	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	09	34	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	10	04	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	10	34	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	11	04	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	11	34	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	12	04	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	12	34	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	13	04	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	13	34	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	14	04	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	14	34	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	15	04	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	15	34	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	16	04	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	16	34	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	17	04	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	17	34	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	18	04	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	6	18	34	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	07	04	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	07	34	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	08	04	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	08	34	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	09	04	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	09	34	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	10	04	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	10	34	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	11	04	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	11	34	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	12	04	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	12	34	74.2	75.0	<Baseline Level	78	N



Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	13	04	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	13	34	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	14	04	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	14	34	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	15	15	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	15	45	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	16	15	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	16	45	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	17	15	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	17	45	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	18	15	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	7	18	45	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	07	00	73.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	07	30	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	08	00	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	08	30	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	09	00	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	09	30	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	10	00	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	10	30	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	11	00	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	11	30	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	12	00	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	12	30	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	13	00	79.0	75.0	76.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	13	30	79.6	75.0	77.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	14	00	79.1	75.0	77	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	14	30	79.4	75.0	77.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	15	00	79.8	75.0	78.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	15	30	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	16	00	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	16	30	79.6	75.0	77.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	17	00	78.0	75.0	75	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	17	30	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	18	00	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	8	18	30	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	07	00	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	07	30	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	08	00	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	08	30	75.4	75.0	64.8	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	09	00	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	09	30	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	10	00	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	10	30	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	11	00	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	11	30	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	12	00	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	12	37	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	13	07	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	13	37	76.2	75.0	70	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	14	07	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	14	37	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	15	07	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	15	37	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	16	07	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	16	37	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	17	07	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	17	37	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	18	07	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	10	18	37	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	07	02	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	07	32	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	08	02	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	08	32	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	09	02	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	09	32	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	10	02	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	10	32	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	11	02	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	11	32	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	12	02	73.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	12	32	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	13	02	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	13	32	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	14	02	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	14	32	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	15	02	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	15	32	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	16	02	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	16	32	74.6	75.0	<Baseline Level	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	17	02	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	17	32	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	18	02	73.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	11	18	32	73.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	07	02	72.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	07	32	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	08	02	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	08	32	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	09	02	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	09	32	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	10	02	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	10	32	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	11	02	73.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	11	32	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	12	02	73.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	12	32	72.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	13	02	73.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	13	32	73.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	14	02	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	14	32	72.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	15	02	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	15	32	73.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	16	09	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	16	39	73.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	17	09	72.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	17	39	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	18	09	73.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	12	18	39	72.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	07	04	73.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	07	34	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	08	04	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	08	34	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	09	04	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	09	34	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	10	04	73.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	10	34	73.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	11	04	73.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	11	34	72.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	12	04	73.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	12	34	73.4	75.0	<Baseline Level	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	13	04	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	13	34	73.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	14	04	73.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	14	34	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	15	04	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	15	34	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	16	04	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	16	34	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	17	04	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	17	34	73.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	18	04	73.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	13	18	34	73.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	06	29	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	07	29	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	07	59	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	08	29	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	08	59	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	09	29	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	09	59	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	10	34	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	11	04	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	11	34	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	12	04	72.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	12	34	73.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	13	04	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	13	34	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	14	04	73.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	14	34	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	15	04	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	15	36	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	16	06	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	16	36	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	17	06	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	17	36	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	18	06	73.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	14	18	36	73.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	07	01	72.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	07	31	73.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	08	01	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	08	31	74.3	75.0	<Baseline Level	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	09	01	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	09	31	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	10	01	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	10	31	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	11	01	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	11	31	77.9	75.0	74.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	12	01	78.6	75.0	76.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	12	31	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	13	01	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	13	31	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	14	01	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	14	31	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	15	01	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	15	31	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	16	01	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	16	31	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	17	01	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	17	31	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	18	01	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	15	18	31	73.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	07	01	72.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	07	31	73.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	08	01	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	08	31	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	09	01	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	09	31	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	10	01	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	10	31	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	11	01	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	11	31	73.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	12	01	73.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	12	34	73.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	13	4	79.4	75.0	77.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	13	34	79.2	75.0	77.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	14	4	79.4	75.0	77.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	14	34	79.5	75.0	77.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	15	4	80.3	75.0	78.8	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	15	34	77.0	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	16	4	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	16	34	80.9	75.0	79.6	78	Y

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	17	4	79.0	75.0	76.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	17	34	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	18	4	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	17	18	34	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	7	4	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	7	34	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	8	4	79.9	75.0	78.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	8	34	80.2	75.0	78.6	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	9	4	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	9	34	79.4	75.0	77.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	10	4	80.8	75.0	79.5	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	10	34	79.2	75.0	77.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	11	4	79.9	75.0	78.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	11	34	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	12	4	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	12	34	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	13	4	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	13	34	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	14	4	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	14	34	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	15	4	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	15	34	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	16	4	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	16	34	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	17	4	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	17	34	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	18	4	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	18	18	34	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	7	4	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	7	34	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	8	4	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	8	34	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	9	4	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	9	34	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	10	4	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	10	34	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	11	4	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	11	34	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	12	4	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	12	34	74.9	75.0	<Baseline Level	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	13	4	79.8	75.0	78.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	13	34	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	14	4	76.0	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	14	34	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	15	4	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	15	34	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	16	4	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	16	36	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	17	06	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	17	36	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	18	06	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	19	18	36	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	07	01	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	07	31	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	08	01	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	08	31	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	09	01	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	09	31	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	10	01	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	10	31	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	11	01	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	11	31	76.2	75.0	70	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	12	01	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	12	31	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	13	01	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	13	31	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	14	01	78.7	75.0	76.3	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	14	31	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	15	01	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	15	31	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	16	01	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	16	31	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	17	01	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	17	31	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	18	01	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	20	18	31	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	07	01	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	07	31	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	08	01	76.0	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	08	31	78.2	75.0	75.4	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	09	01	78.0	75.0	75	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	09	31	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	10	17	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	10	47	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	11	17	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	11	47	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	12	17	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	12	47	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	13	17	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	13	47	78.8	75.0	76.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	14	17	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	14	47	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	15	17	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	15	47	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	16	17	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	16	47	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	17	17	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	17	47	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	18	17	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	21	18	47	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	07	02	74.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	07	32	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	08	02	76.2	75.0	70	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	08	32	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	09	02	77.0	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	09	32	78.1	75.0	75.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	10	02	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	10	32	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	11	02	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	11	32	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	12	02	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	12	32	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	13	02	76.2	75.0	70	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	13	32	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	14	02	79.0	75.0	76.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	14	32	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	15	02	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	15	32	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	16	02	75.9	75.0	68.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	16	32	75.2	75.0	61.7	78	N



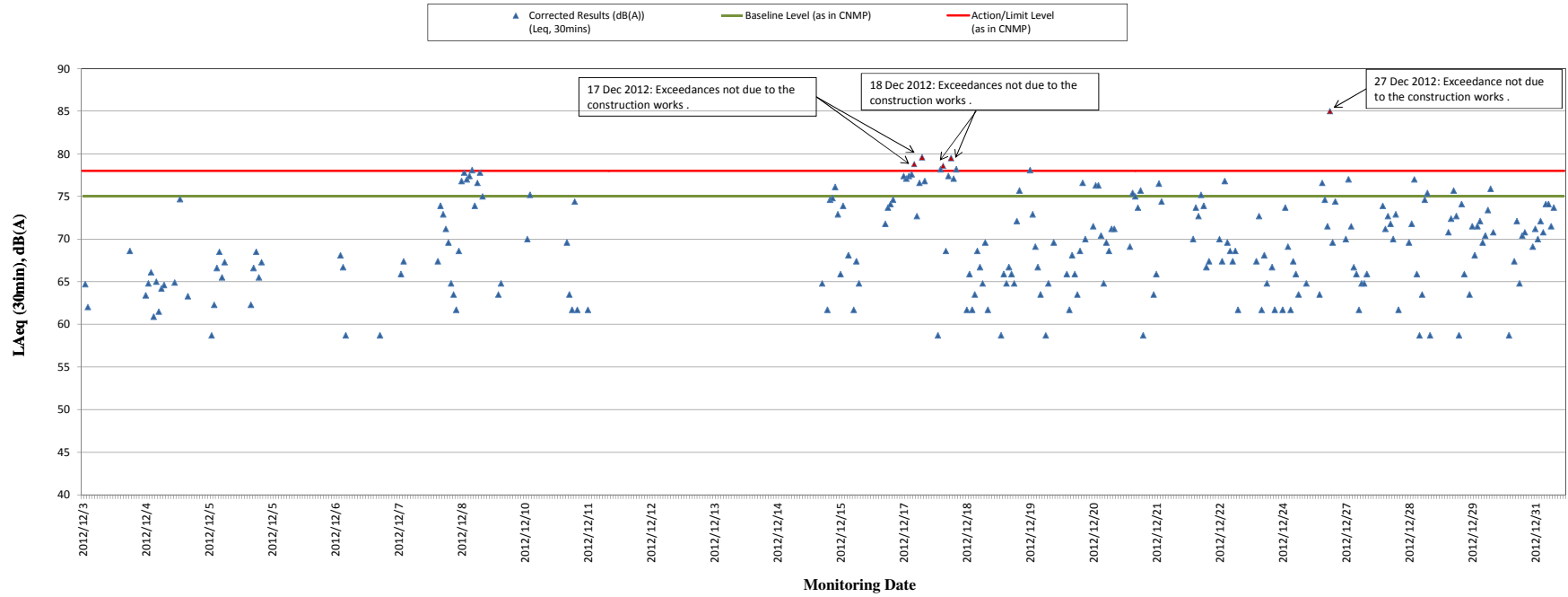
Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	17	02	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	17	32	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	18	02	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	22	18	32	75.0	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	07	02	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	07	32	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	08	02	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	08	32	77.0	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	09	02	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	09	32	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	10	02	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	10	32	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	11	02	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	11	32	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	12	02	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	12	32	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	13	02	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	13	32	77.4	75.0	73.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	14	19	76.0	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	14	49	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	15	19	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	15	49	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	16	19	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	16	49	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	17	19	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	17	49	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	18	19	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	24	18	49	73.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	06	59	73.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	07	29	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	07	59	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	08	29	78.9	75.0	76.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	08	59	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	09	29	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	09	59	85.4	75.0	85	78	Y
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	10	29	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	10	59	77.7	75.0	74.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	11	29	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	11	59	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	12	29	74.2	75.0	<Baseline Level	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	12	59	76.2	75.0	70	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	13	29	79.1	75.0	77	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	13	59	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	14	29	75.6	75.0	66.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	14	59	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	15	29	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	16	01	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	16	31	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	17	01	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	17	31	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	18	01	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	27	18	31	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	07	01	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	07	31	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	08	01	77.5	75.0	73.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	08	31	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	09	01	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	09	31	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	10	01	76.2	75.0	70	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	10	31	77.1	75.0	72.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	11	01	75.2	75.0	61.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	11	31	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	12	01	74.3	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	12	31	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	13	01	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	13	31	76.7	75.0	71.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	14	01	79.1	75.0	77	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	14	31	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	15	01	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	15	31	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	16	01	77.8	75.0	74.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	16	31	78.2	75.0	75.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	17	01	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	17	31	74.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	18	01	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	28	18	31	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	07	01	73.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	07	31	73.6	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	08	01	74.1	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	08	31	76.4	75.0	70.8	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	Exceedance
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	09	01	76.9	75.0	72.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	09	31	78.4	75.0	75.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	10	01	77	75.0	72.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	10	31	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	11	01	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	11	31	75.5	75.0	65.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	12	01	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	12	31	75.3	75.0	63.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	13	01	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	13	31	75.8	75.0	68.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	14	01	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	14	31	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	15	01	76.1	75.0	69.6	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	15	31	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	16	01	77.3	75.0	73.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	16	31	78.5	75.0	75.9	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	17	01	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	17	31	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	18	01	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	29	18	31	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	07	01	73.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	07	31	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	08	01	75.1	75.0	58.7	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	08	31	74.9	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	09	01	75.7	75.0	67.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	09	31	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	10	08	75.4	75.0	64.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	10	38	76.3	75.0	70.4	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	11	08	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	11	38	74.4	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	12	08	74.5	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	12	38	76	75.0	69.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	13	08	76.5	75.0	71.2	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	13	38	76.2	75.0	70	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	14	08	76.8	75.0	72.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	14	38	76.4	75.0	70.8	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	15	08	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	15	38	77.6	75.0	74.1	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	16	08	76.6	75.0	71.5	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	16	38	77.4	75.0	73.7	78	N

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (as in CNMP)	Corrected Results	Action/Limit	
									(dB(A)) (Leq, 30mins)	Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	17	08	74.8	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	17	38	74.7	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	18	08	74.2	75.0	<Baseline Level	78	N
MTW-16-1	SKH Good Shepherd Primary School	2012	12	31	18	38	74	75.0	<Baseline Level	78	N

**Continuous Noise Monitoring at MTW-16-1 (SKH Good Shepherd Primary School) in December 2012 - (Leq, 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

**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							
1-Dec-12	9:55	2-Dec-12	9:55	Cloudy	2.8180	2.9611	10472.38	10496.38	24.00	1.27	1.27	1.27	78	156.8	260	Construction work in progress	0107	6005
7-Dec-12	11:15	8-Dec-12	11:15	Fine	2.8005	2.9460	10496.38	10520.38	24.00	1.27	1.27	1.27	80	156.8	260	Construction work in progress	0107	6029
13-Dec-12	11:00	14-Dec-12	11:00	Sunny	2.8351	2.9803	10520.38	10544.38	24.00	1.27	1.27	1.27	79	156.8	260	Construction work in progress	0107	6053
19-Dec-12	10:16	20-Dec-12	10:16	Cloudy	2.7727	2.9011	10544.38	10568.38	24.00	1.27	1.27	1.27	70	156.8	260	Construction work in progress	0107	6079
24-Dec-12	10:40	25-Dec-12	10:40	Sunny	2.8400	2.9712	10568.38	10592.38	24.00	1.27	1.27	1.27	72	156.8	260	Construction work in progress	0107	5901
29-Dec-12	9:30	30-Dec-12	9:30	Cloudy	2.8069	2.9768	10592.38	10616.38	24.00	1.27	1.27	1.27	93	156.8	260	Construction work in progress	0107	6139
													Minimum	70				
													Average	79				
													Maximum	93				

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							
1-Dec-12	9:40	2-Dec-12	9:40	Cloudy	2.8000	2.9461	00625.17	00649.17	24.00	1.24	1.24	1.24	82	166.7	260	Construction work in progress	3574	6004
7-Dec-12	10:18	8-Dec-12	10:18	Fine	2.8146	2.9449	00649.17	00673.17	24.00	1.24	1.24	1.24	73	166.7	260	Construction work in progress	3574	6028
13-Dec-12	10:08	14-Dec-12	10:08	sunny	2.8382	2.9900	00673.17	00697.17	24.00	1.24	1.24	1.24	85	166.7	260	Construction work in progress	3574	6052
19-Dec-12	10:50	20-Dec-12	10:50	Cloudy	2.7832	2.9330	00697.17	00721.17	24.00	1.24	1.24	1.24	84	166.7	260	Construction work in progress	3574	6078
24-Dec-12	10:05	25-Dec-12	10:05	sunny	2.8369	2.9800	00721.17	00745.17	24.00	1.24	1.24	1.24	80	166.7	260	Construction work in progress	3574	5902
29-Dec-12	9:15	30-Dec-12	9:15	Cloudy	2.8100	2.9511	00745.17	00769.17	24.00	1.24	1.24	1.24	79	166.7	260	Construction work in progress	3574	6138
													Minimum	73				
													Average	80				
													Maximum	85				

Station DMS-8 SKH Good Shepherd Primary School

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <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							
1-Dec-12	9:25	2-Dec-12	9:25	Cloudy	2.8317	2.9616	00619.11	00643.11	24.00	1.22	1.22	1.22	74	152.2	260	Construction work in progress	3572	6003
7-Dec-12	8:53	8-Dec-12	8:53	Fine	2.8100	2.9467	00643.11	00667.11	24.00	1.22	1.22	1.22	78	152.2	260	Construction work in progress	3572	6027
13-Dec-12	9:23	14-Dec-12	9:23	Sunny	2.8322	2.9962	00667.11	00691.11	24.00	1.22	1.22	1.22	93	152.2	260	Construction work in progress	3572	6051
19-Dec-12	11:33	20-Dec-12	11:33	Cloudy	2.7789	2.9223	00691.11	00715.11	24.00	1.22	1.22	1.22	82	152.2	260	Construction work in progress	3572	6077
24-Dec-12	9:15	25-Dec-12	9:15	Sunny	2.8217	2.9771	00715.11	00739.11	24.00	1.22	1.22	1.22	88	152.2	260	Construction work in progress	3572	5901
29-Dec-12	8:53	30-Dec-12	8:53	Cloudy	2.8032	2.9541	00739.11	00763.11	24.00	1.22	1.22	1.22	86	152.2	260	Construction work in progress	3572	6137
													Minimum	74				
													Average	84				
													Maximum	93				

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							
1-Dec-12	9:15	2-Dec-12	9:15	Cloudy	2.8226	2.9494	11337.40	11361.40	24.00	1.21	1.21	1.21	73	160.9	260	Construction work in progress	0814	6002
7-Dec-12	9:05	8-Dec-12	9:05	Fine	2.8217	2.9591	11361.40	11385.40	24.00	1.21	1.21	1.21	79	160.9	260	Construction work in progress	0814	6026
13-Dec-12	8:17	14-Dec-12	8:17	Sunny	2.8314	2.9779	11385.40	11409.40	24.00	1.21	1.21	1.21	84	160.9	260	Construction work in progress	0814	6050
19-Dec-12	9:22	20-Dec-12	9:22	Cloudy	2.7809	2.9117	11409.40	11433.40	24.00	1.21	1.21	1.21	75	160.9	260	Construction work in progress	0814	6076
24-Dec-12	9:25	25-Dec-12	9:25	Sunny	2.8314	2.9595	11433.40	11457.40	24.00	1.21	1.21	1.21	74	160.9	260	Construction work in progress	0814	5900
29-Dec-12	8:42	30-Dec-12	8:42	Cloudy	2.7994	2.9577	11457.40	11481.40	24.00	1.21	1.21	1.21	91	160.9	260	Construction work in progress	0814	6136
													Minimum	73				
													Average	79				
													Maximum	91				

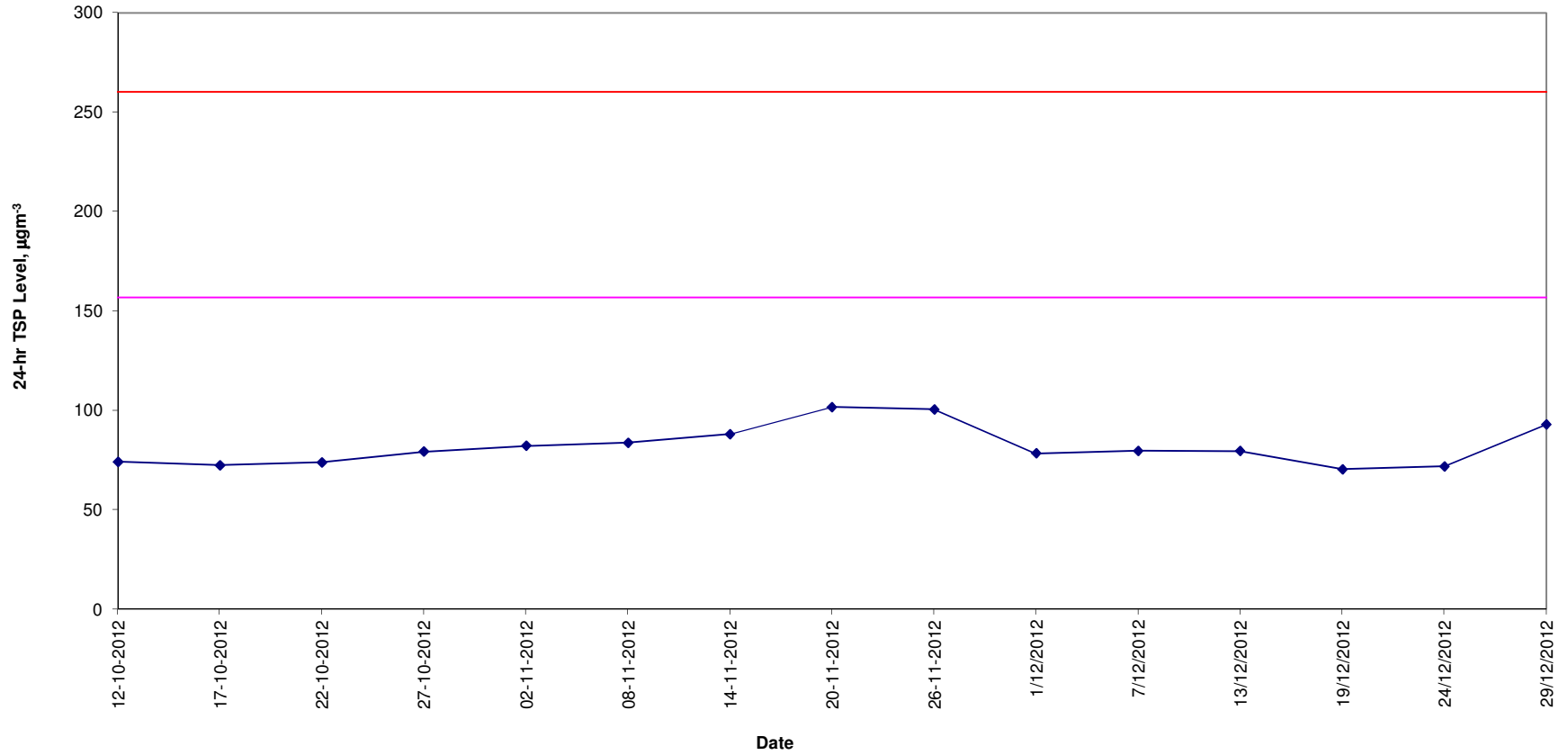


Station DMS-10 Chat Ma Mansion

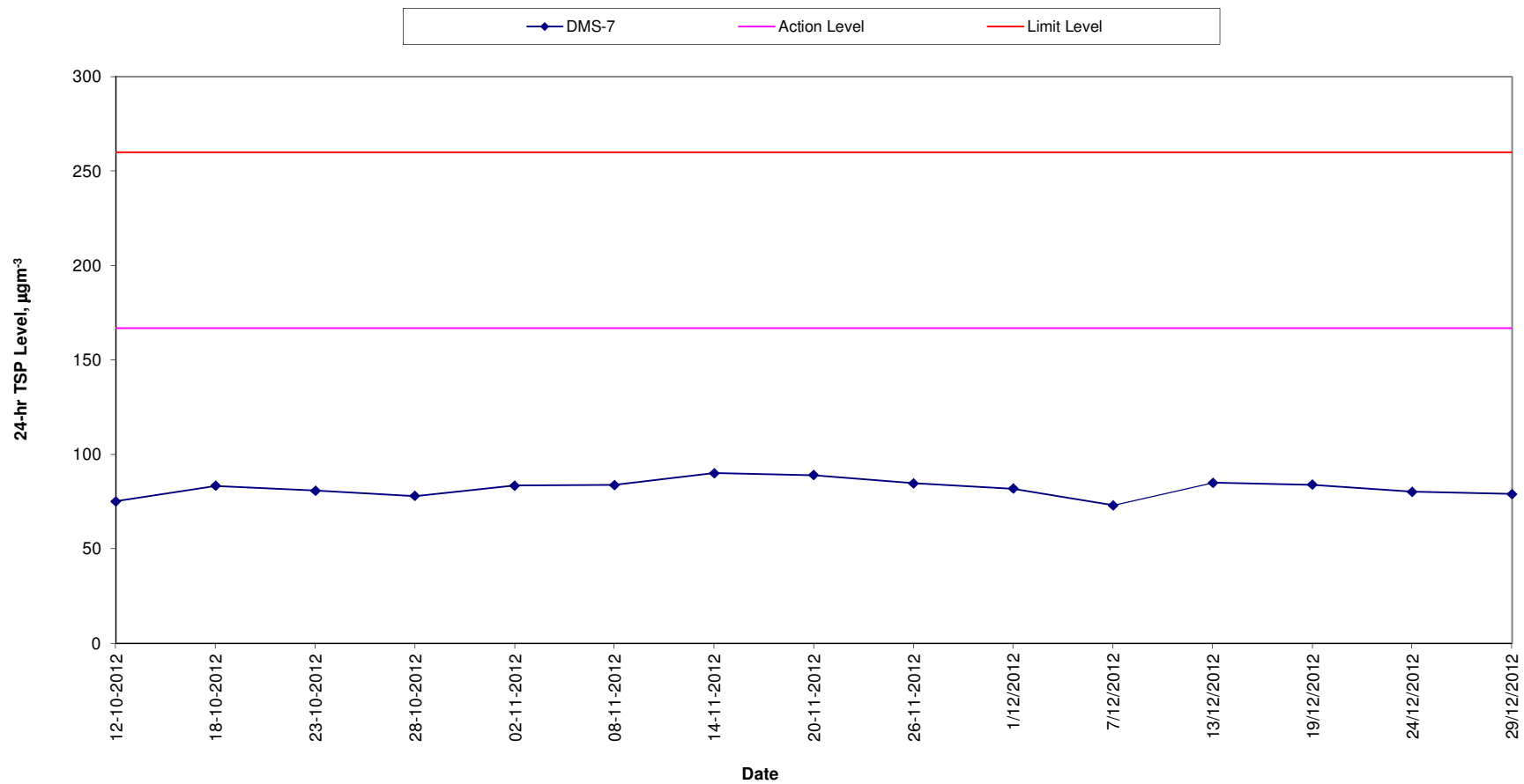
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)		Average	TSP Conc. (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final							
1-Dec-12	9:00	2-Dec-12	9:00	Cloudy	2.8137	2.9591	00613.20	00637.2	24.00	1.23	1.23	1.23	82	170.4	260	Construction work in progress	3573	6001
7-Dec-12	8:08	8-Dec-12	8:08	Fine	2.8085	2.9516	00637.20	00661.2	24.00	1.23	1.23	1.23	81	170.4	260	Construction work in progress	3573	6025
13-Dec-12	8:05	14-Dec-12	8:05	Sunny	2.8166	2.9811	00661.20	00685.20	24.00	1.23	1.23	1.23	93	170.4	260	Construction work in progress	3573	6049
19-Dec-12	8:43	20-Dec-12	8:43	Cloudy	2.7745	2.9191	00685.20	00709.20	24.00	1.23	1.23	1.23	82	170.4	260	Construction work in progress	3573	6075
24-Dec-12	8:03	25-Dec-12	8:03	Fine	2.7792	2.9301	00709.20	00733.20	24.00	1.23	1.23	1.23	85	170.4	260	Construction work in progress	3573	6099
29-Dec-12	8:30	30-Dec-12	8:30	Cloudy	2.8259	2.9755	00733.20	0757.20	24.00	1.23	1.23	1.23	84	170.4	260	Construction work in progress	3573	5923
													Minimum	81				
													Average	85				
													Maximum	93				

### Construction Dust Monitoring Results for the Past 3 Months DMS-6 (Katherine Building)

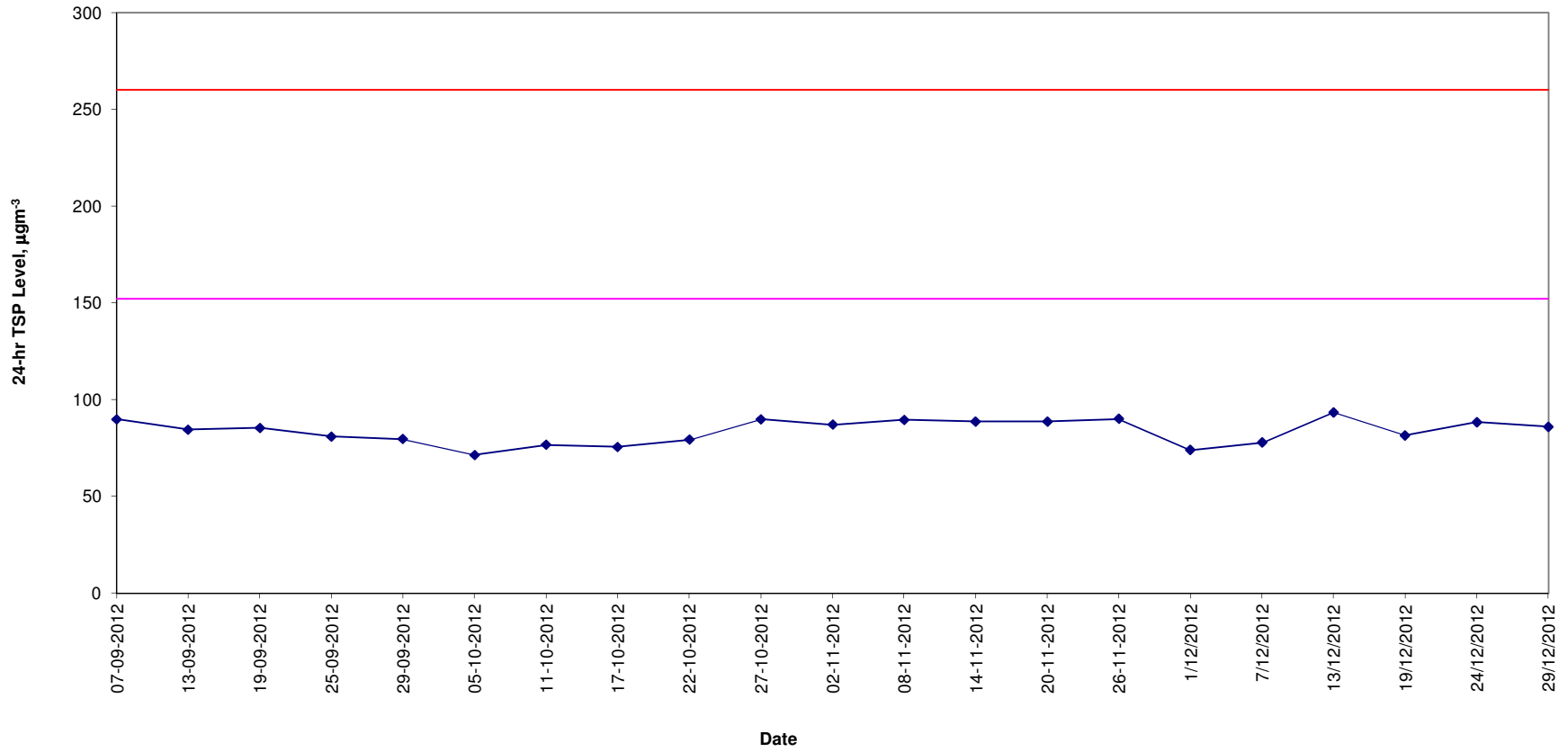
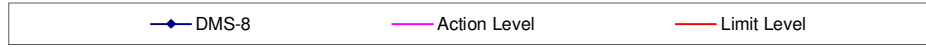
DMS-6    Action Level    Limit Level



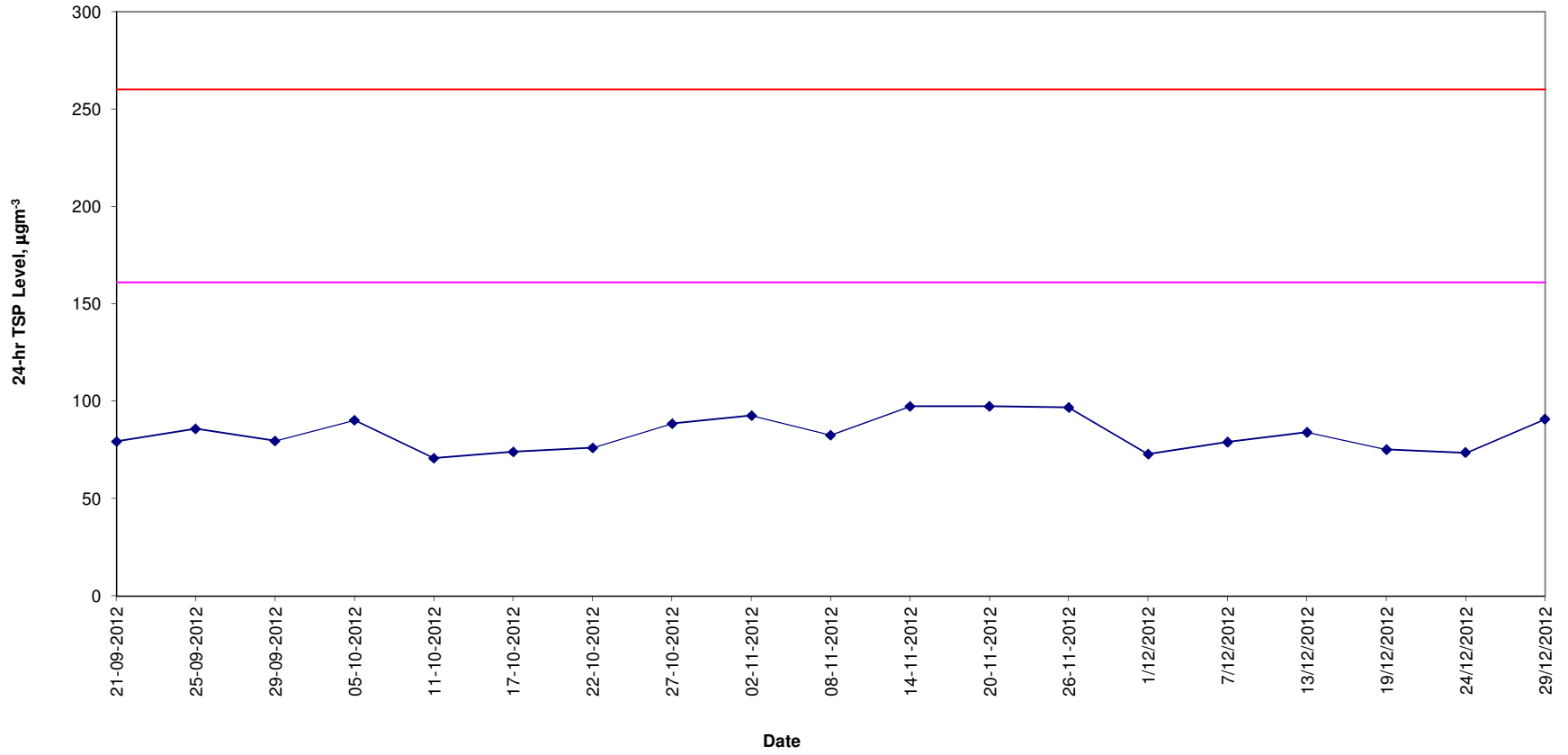
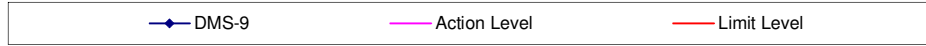
### Construction Dust Monitoring Results for the Past 3 Months DMS- 7 (Parc 22)



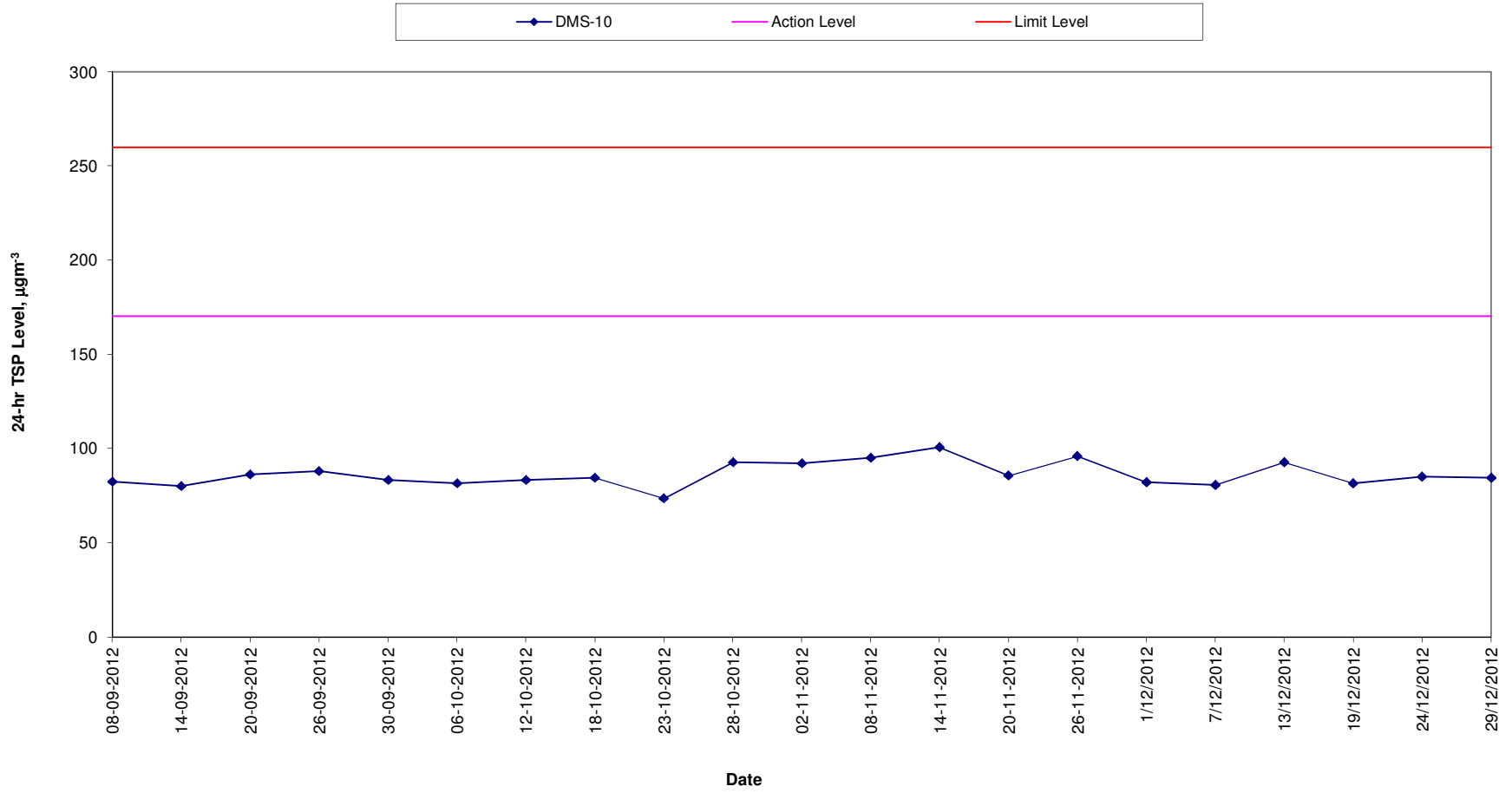
**Construction Dust Monitoring Results for the Past 4 Months  
DMS-8 (SKH Good Shepherd Primary School)**



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

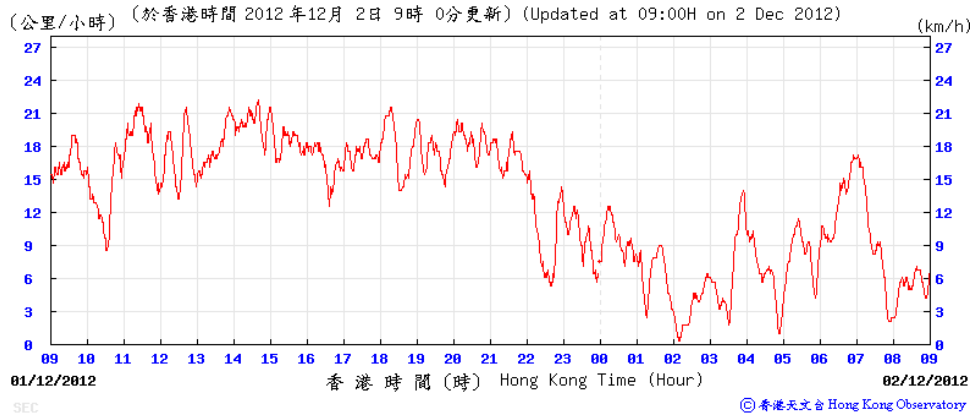
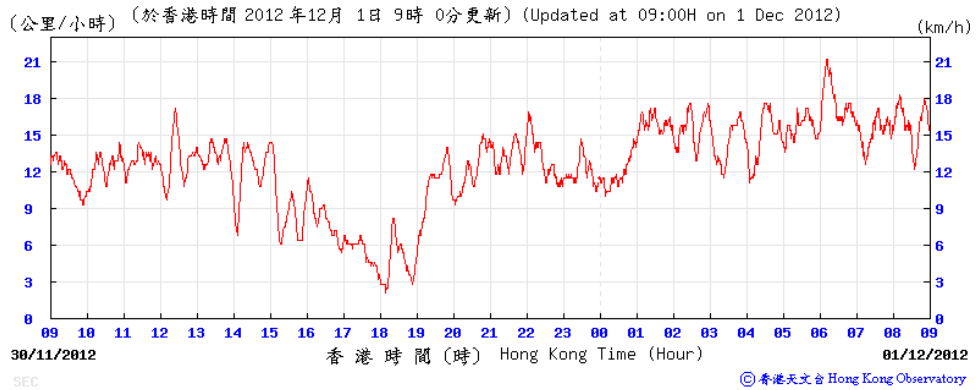


**Construction Dust Monitoring Results for the Past 4 Months  
DMS-10 (Chat Ma Mansion)**

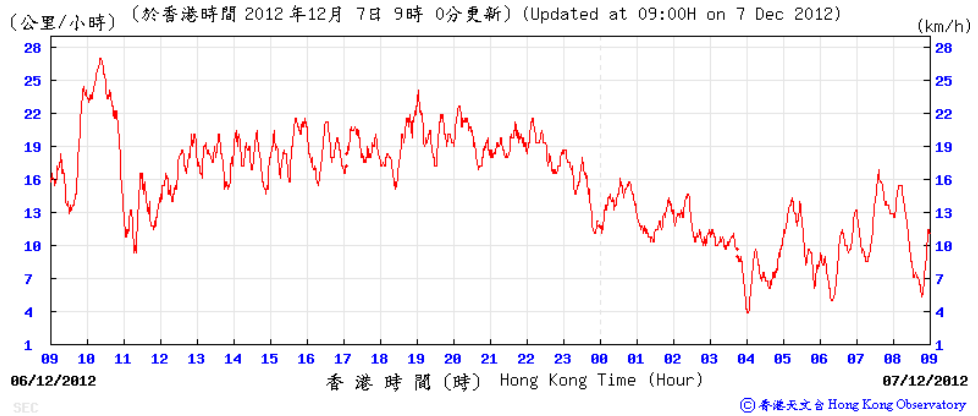


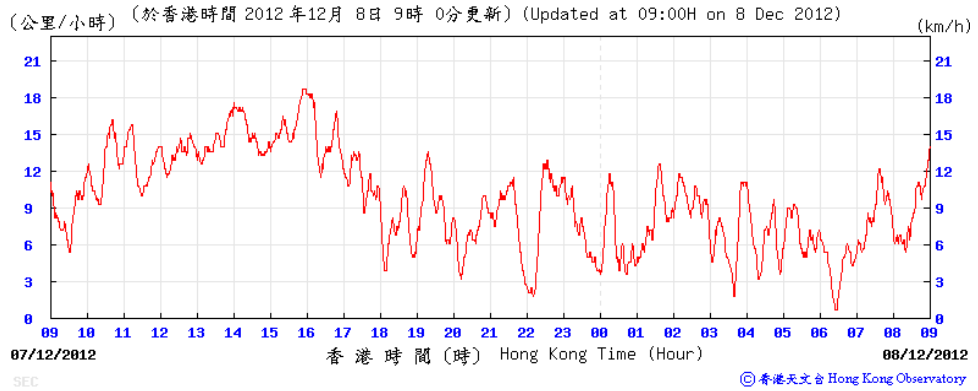
# Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

## 1 - 2 December 2012

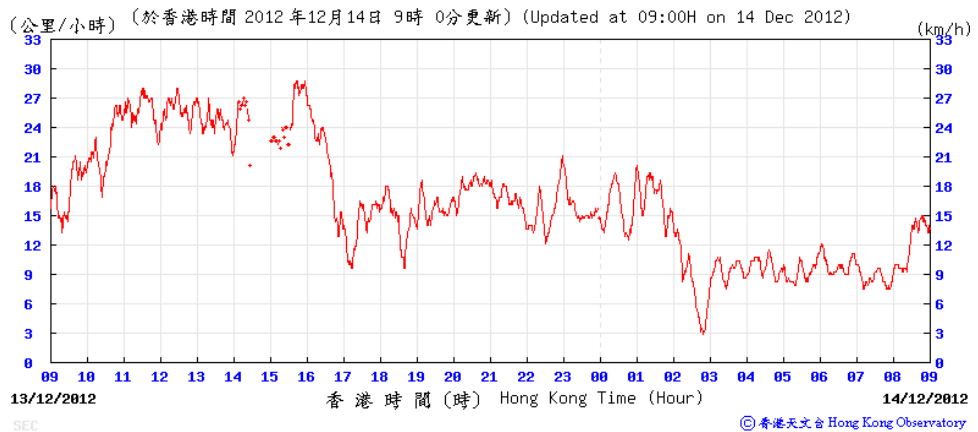
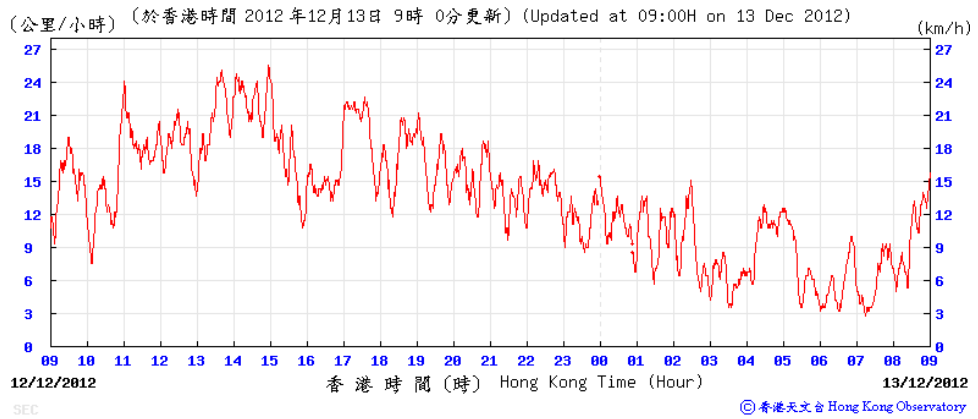


## 7 - 8 December 2012

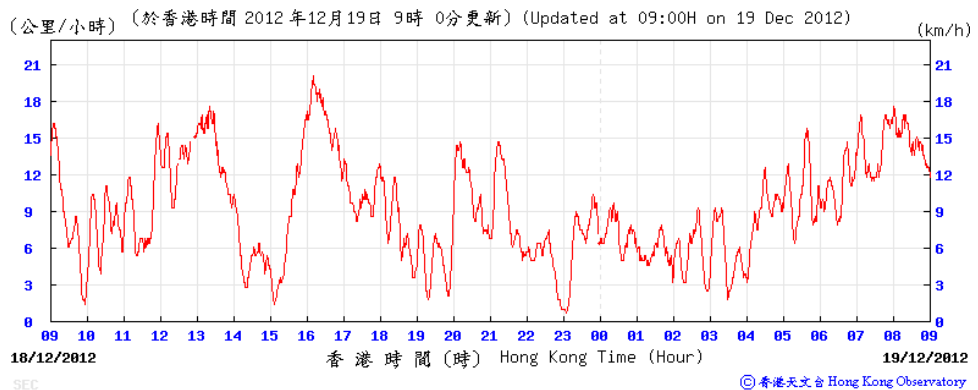




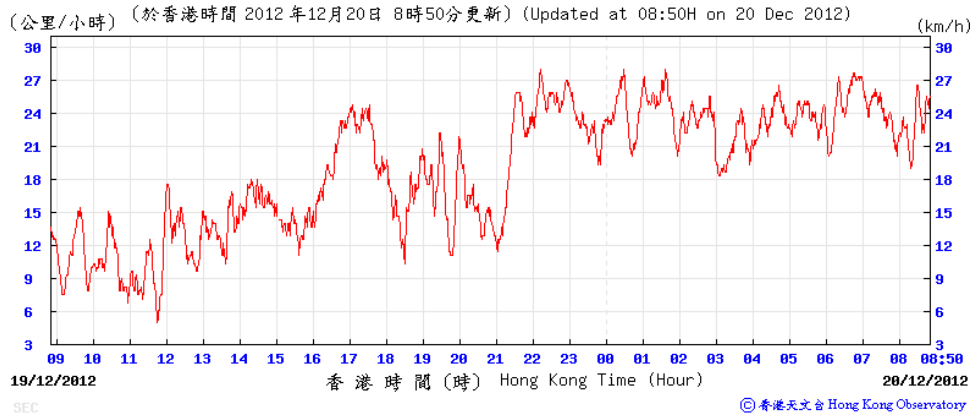
### 13 – 14 December 2012



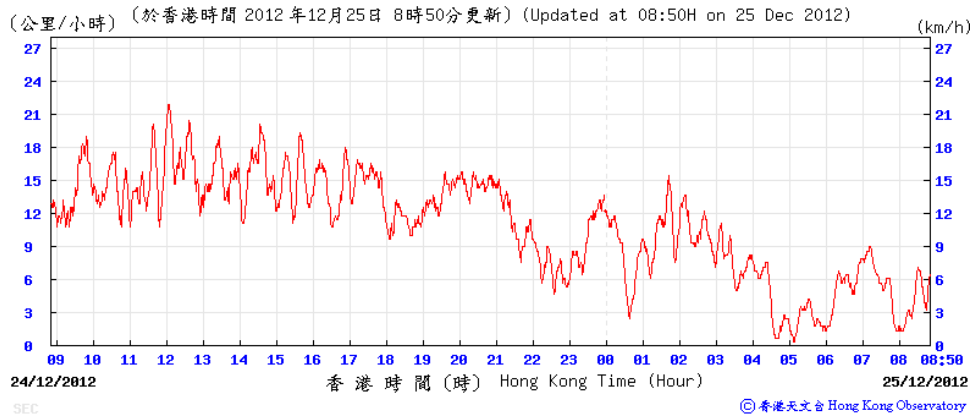
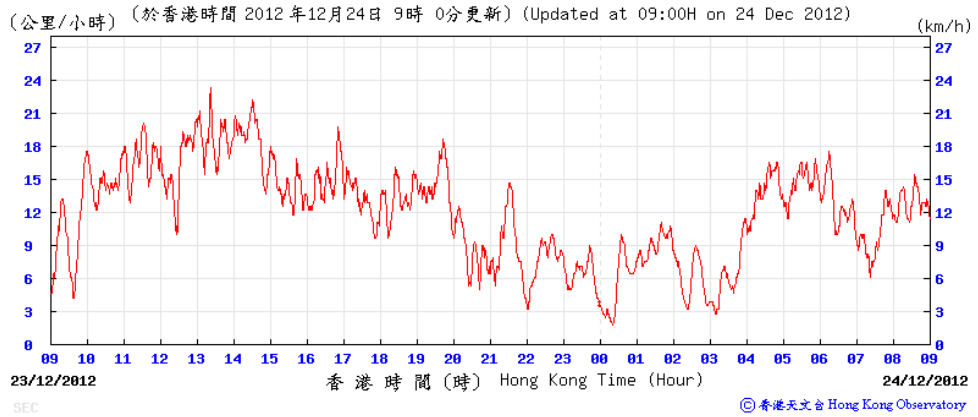
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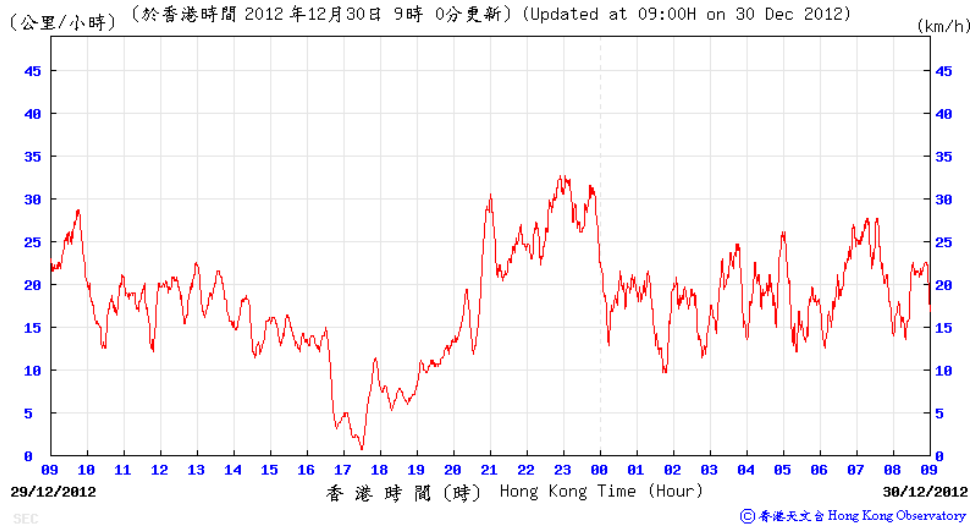
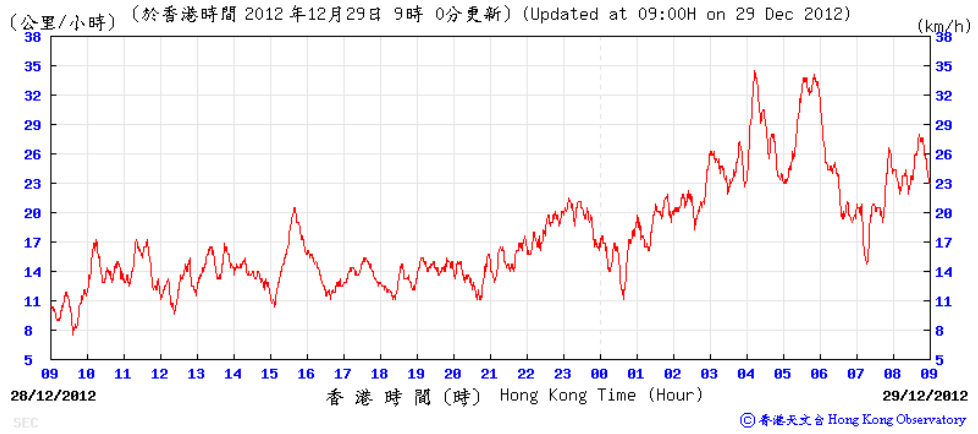




24 - 25 December 2012

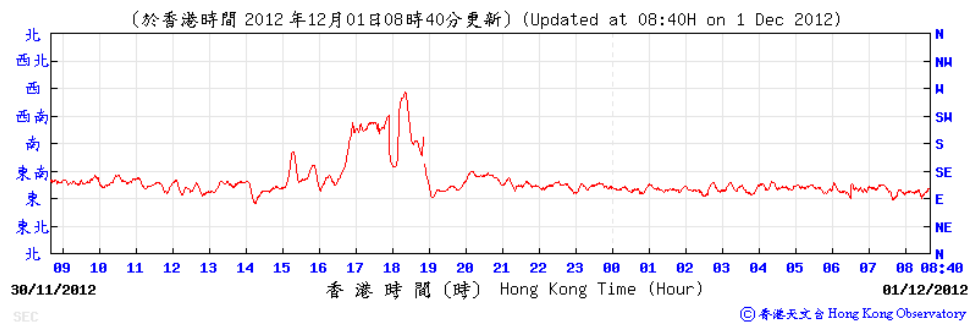


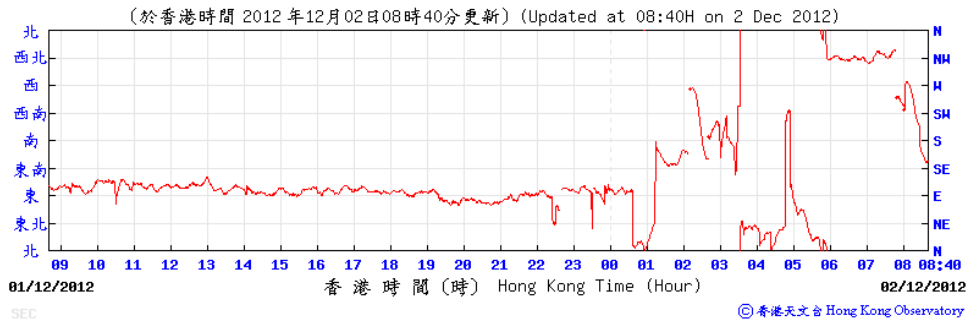
29 - 30 December 2012



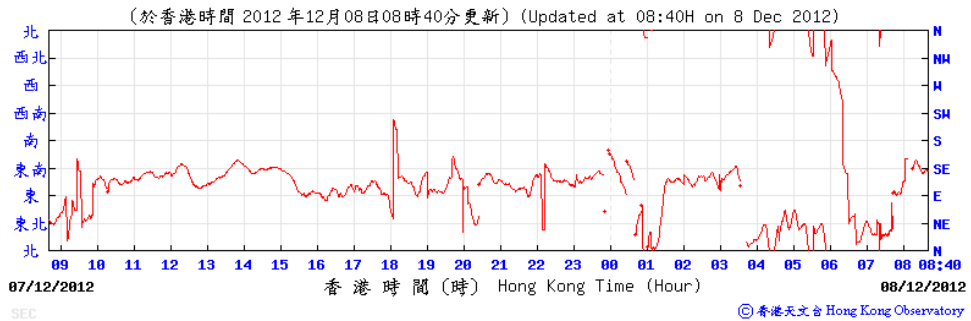
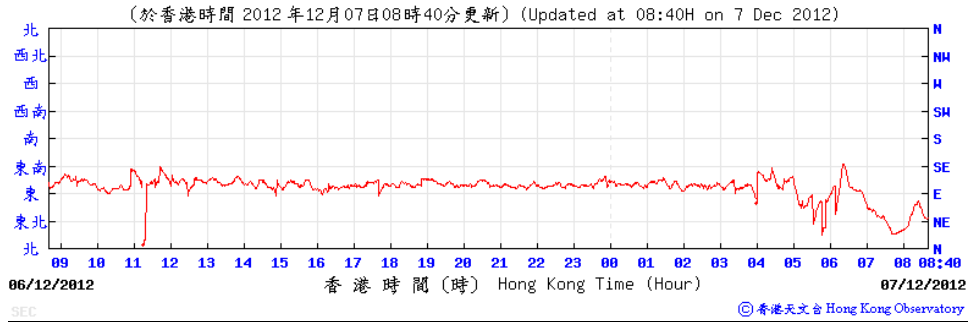
**Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)**

1 - 2 December 2012

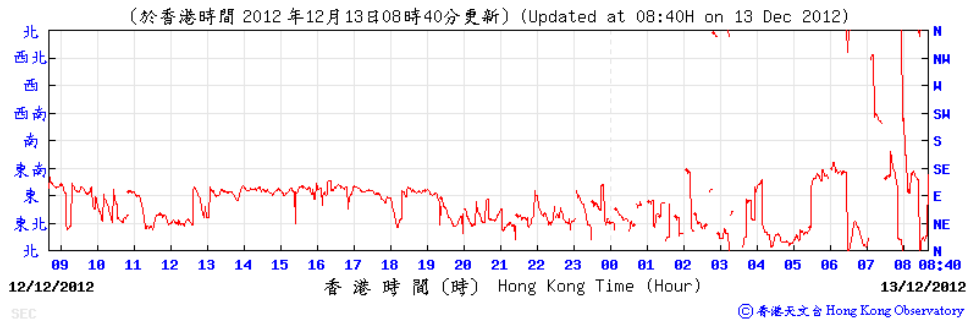


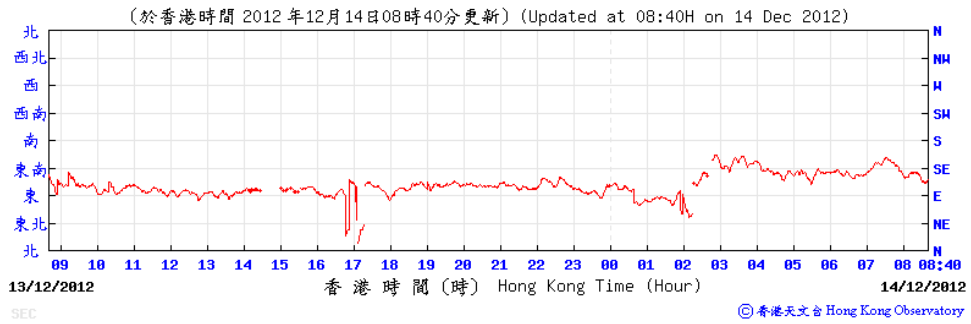


### 7 – 8 December 2012

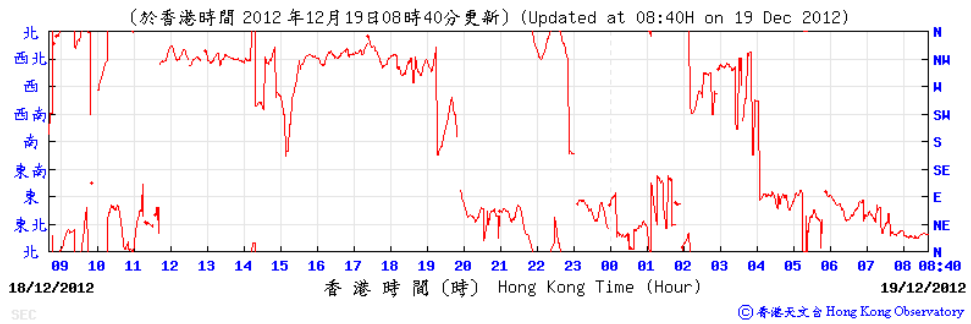
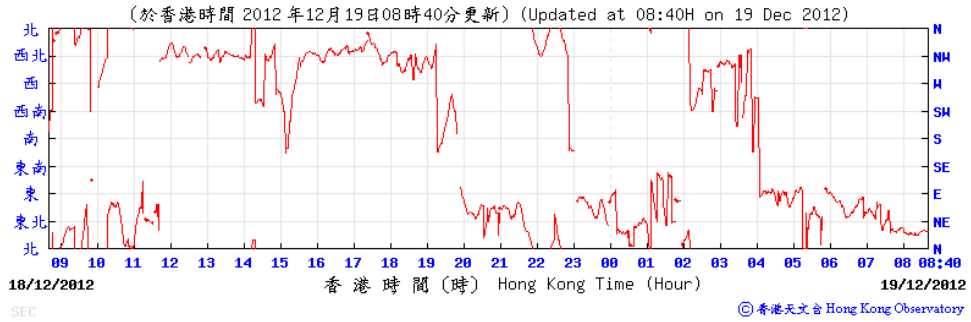


### 13 – 14 December 2012

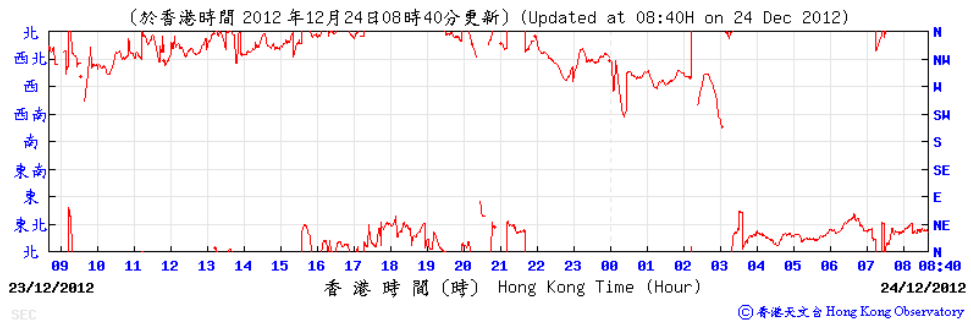


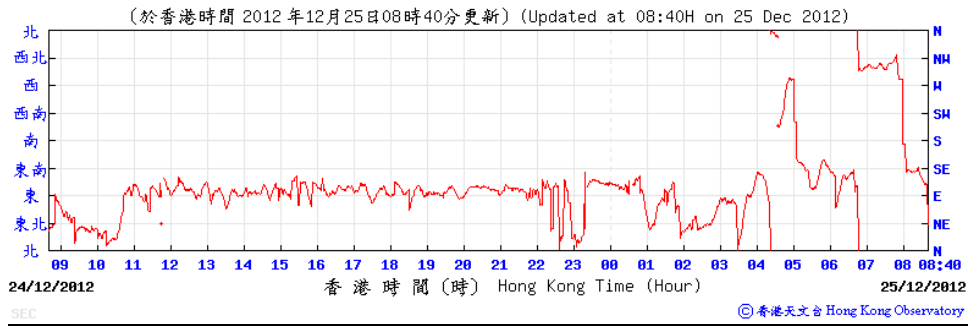


19 - 20 December 2012

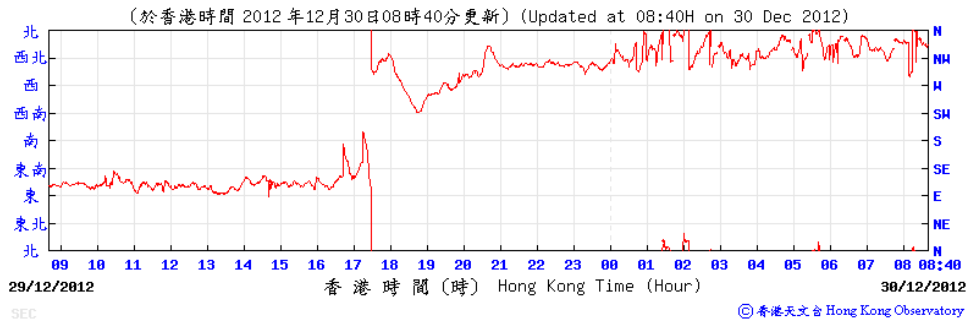
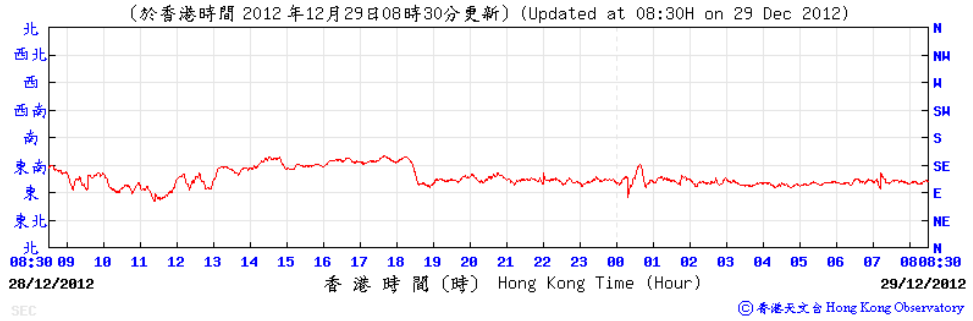


24 - 25 December 2012





29 - 30 December 2012



Annex K

## Waste Flow Table

## Annex K – Waste Flow Table

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

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 8)	Metals	Paper/ cardboard packaging	Plastics (See Note 2)	Chemical Waste	Others, e.g. general refuse ( See Note 5)	
	(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	--	--	--	--	--	--	--	--	--	--	--	--
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
Total	17.472	0.000	0.605	0.000	0.028	16.839	12.800	0.396	5.315	0.000	0.887	6.804

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 Quantities of other non-inert C&D wastes generated in November 2012 were updated by the Contractor in December 2012.
- 7 The waste flow table was updated on 29 December 2012.
- 8 Inert C&D Material was delivered to contract 1108A from 10-Dec-2012.

Annex L

## Investigation reports



**Investigation Report of Environmental Quality Limit Exceedance**

Date	17 Dec 2012
Time	15:04 – 15:34 16:34 – 17:04
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq}$ (30mins)
Action / Limit Levels	78 dB(A) (according to the updated Construction Noise Mitigation Measures Plan, CNMMP)
Measured Level (With baseline level adjustment)	78.8 dB(A) (1504-1534) 79.6 dB(A) (1634-1704)
Possible reason	<p>Based on site record on 17 Dec 2012, the following works were carried out and the equipment were employed throughout the day:</p> <ol style="list-style-type: none"> <li>1. TKW Market: demolishing bus-stop and its shelter by mini breaker;</li> <li>2. Gainfull Centre: trial trenching for exposing underground utilities carried out by breaker and grab lorry; and</li> <li>3. SKH Good Shepherd Primary School: demolishing bus-stop and its shelter.</li> </ol> <p>Apart from 1109 construction works, vehicle movement on Ma Tau Wai Road was also the other potential noise source contributing to the measured levels.</p> <p>By reviewing the recorded noise levels throughout the day on 17 Dec 2012, no exceedance were recorded except the aforementioned two 30-min periods. In particular, the noise levels were below the Action/Limit Levels immediately before and after each of exceedance periods.</p> <p>In view of same construction works carried out and same equipment employed throughout the day; no exceedance recorded immediate before and after each of exceedance periods and contribution from other potential noise source in vicinity (ie, traffic), it is considered that the exceedance is not due to 1109 construction works.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> <li>1. The mini breaker tips had been covered with acoustic fabric to mitigate the noise. Movable noise fabrics as barrier had also been erected on the site hoarding.</li> <li>2. As the Contractor has provided the possible and</li> </ol>

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

	<p>feasible mitigation measures to mitigate the noise and the exceedance is considered not due to the construction works, no additional action is considered necessary.</p> <p>3. However, the Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level.</p>
Remarks	N/A

Prepared by: Winnie Ko, 1109 ET Leader  
Date 3 January 2012

**Investigation Report of Environmental Quality Limit Exceedance**

Date	18 Dec 2012
Time	0834 – 0904 1004 – 1034
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq}$ (30mins)
Action / Limit Levels	78 dB(A) (according to the updated Construction Noise Mitigation Measures Plan, CNMMP)
Measured Level (With baseline level adjustment)	78.6 dB(A) (0834-0904) 79.5 dB(A) (1004-1034)
Possible reason	<p>Based on site record on 18 Dec 2012, the following works were carried out and the equipment were employed throughout the day:</p> <ol style="list-style-type: none"> <li>1. TKW Market: demolishing bus-stop and its shelter by mini backhoe; and</li> <li>2. SKH Good Shepherd Primary School: trial trenching for exposing underground utilities by backhoe.</li> </ol> <p>Apart from 1109 construction works, vehicle movement on Ma Tau Wai Road was also the other potential noise source contributing to the measured levels.</p> <p>By reviewing the recorded noise levels throughout the day on 18 Dec 2012, no exceedance were recorded except the aforementioned two 30-min periods. In particular, the noise levels were below the Action/Limit Levels immediately before and after each of exceedance periods.</p> <p>In view of same construction works carried out and same equipment employed throughout the day; no exceedance recorded immediate before and after each of exceedance periods and contribution from other potential noise source in vicinity (ie, traffic), it is considered that the exceedance is not due to 1109 construction works.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> <li>1. Movable noise fabrics as barrier had been erected on the site hoarding.</li> <li>2. As the Contractor has provided the possible and feasible mitigation measures to mitigate the noise and the exceedance is considered not due to the construction works, no additional action is</li> </ol>

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

	considered necessary.  3. However, the Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level.
Remarks	N/A

Prepared by: Winnie Ko, 1109 ET Leader

Date 3 January 2012

**Investigation Report of Environmental Quality Limit Exceedance**

Date	27 Dec 2012
Time	0959 - 1029
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq}$ (30mins)
Action / Limit Levels	78 dB(A) (according to the updated Construction Noise Mitigation Measures Plan, CNMMP)
Measured Level (With baseline level adjustment)	85.0 dB(A)
Possible reason	<p>Based on site record on 27 Dec 2012, the following works were carried out:</p> <ol style="list-style-type: none"> <li>1. TKW Market: demolishing planter by mini breaker;</li> <li>2. SKH Good Shepherd Primary School: trail trenching for exposing underground utilities by mini backhoe.</li> </ol> <p>Vehicle movement on Ma Tau Wai Road and other unknown sources were also the other potential noise source contributing to the abnormal noise exceedance.</p> <p>Before and after the 30-min period with exceedance, the noise levels were all well below the Action/Limit Levels. Besides, the construction works carried out during exceedance period was same as that before and after the exceedance period. Based on the above, it is therefore considered that the exceedance was not due to the construction works.</p>
Action Taken / Action to be Taken	<ol style="list-style-type: none"> <li>1.The mini breaker tip had been covered with acoustic fabric to mitigate the noise. Movable noise fabrics as barrier had also been erected on the site hoarding.</li> <li>2.As the exceedance is not due to the construction works, no additional action is considered necessary. However, the Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level.</li> </ol>
Remarks	N/A

Prepared by: Winnie Ko, 1109 ET Leader  
 Date: 4 January 2012

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
Overall Total	0	0

---

**Appendix C**

**1<sup>st</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 31 December 2012]

Works Contract 1101 – Ma On Shan Modification  
Works

(January 2013)

Certified by: James Choi 

Position: Environmental Team Leader

Date: 14/1/2013.

## SCL Contract No. 1101

## Ma On Shan Line Modification Works

### Monthly EM&A Report (SCL) (December 2012)

for

**Sun Fook Kong Joint Venture**

Prepared By	Checked By	Approved for Issue
E Yue 	A Lee 	J Choi 
Version	0	Date
		10 January 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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## **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. 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 in accordance with the contract specific EM&A Manual. The works areas 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, Shek Mun Storage Yard and Tai Shui Hang of which EM&A programme according to the EM&A Manual of SCL (TAW-HUH) should be implemented.

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, Shek Mun Storage Yard and Tai Shui Hang.

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. 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.

During the reporting month, major construction activities undertaken by the Contractor included construction of concrete paving, site clearance and storage of construction material at To Shek Storage Yard and erection of steel structure of noise cover at Tai Wai Mei Tin Road. Some works were also carried out during restricted hours in the reporting month which included site setting out and drilling work at Tai Wai Mei Tin Road.

According to the information provided by the Contractor, no C&D materials and chemical wastes were disposed of in the reporting month.

No environmental complaint was received during the reporting month.

No Notifications of Summons was received during the reporting month.

The major construction activities in the upcoming months will include erection of steel structure and installation of noise absorptive panel 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 in order to minimize the potential environmental impacts due to the construction works of the Project.

## 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, Shek Mun Storage Yard and Tai Shui Hang 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 construction activities of the Construction Works include:

- Noise cover over the viaduct near at Tai Wai Station (TAW); and
- Tree felling and compensation, tree transplanting and landscape works.

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

### 1.3 Purpose of this Report

This is the 1<sup>st</sup> monthly EM&A report summarising audit findings of the EM&A program carried out according to EM&A Manual for SCL (TAW-HUH) for the Construction Works undertaken by the ET during the reporting month in December 2012.

As there is no designated air quality, noise and water quality monitoring stations for works sites at Tai Wai Mei Tin Road, To Shek, Shek Mun Storage Yard and Tai Shui Hang, 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:

Tai Wai Mei Tin Road:

- Site setting out and drilling work during restricted hours
- Erection of steel structure of noise cover

To Shek Storage Yard:

- Construction of concrete paving
- Site clearance
- Storage of construction material

### **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 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 qualities of waste materials generated during the reporting month are shown in the waste flow table given in *Appendix C*.

**Table 2.1 Waste Generated in the Reporting Month**

<b>Waste Type</b>	<b>Quantity this month tonnes</b>	<b>Cumulative-to-Date tonnes</b>
Inert C&D materials disposed	0	18.83
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 off to NENT Landfill	0	7.52
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 7, 12, 18, 24 December 2012. 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, recommendations made by the ET and photo records 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 complaints were 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 Remaining Works.

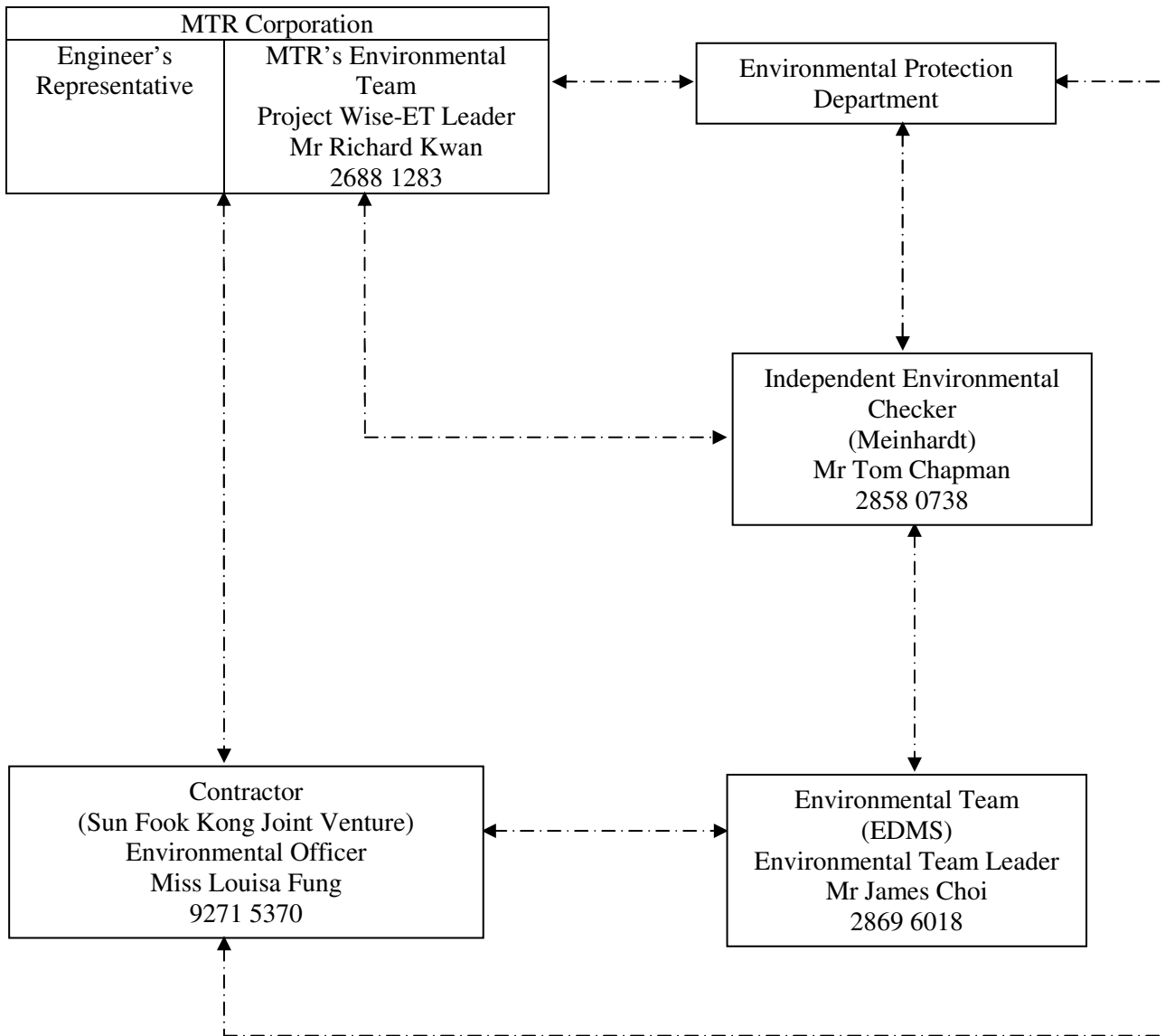
The major construction activities in the upcoming months will include erection of steel structure and installation of noise absorptive panel at Tai Wai Mei Tin Road during restricted hours. It is anticipated that construction noise will be the key issue. The Contractor has been reminded to properly implement construction noise control 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



## **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	Granted Date	Expired Date
Environmental Permit for Shatin to Central Link (SCL) - Tai Wai to Hung Hom Section (Register No. AEIAR-167/2012)	EP-438/2012/B	28 June 2012	12 July 2012	N/A
Wastewater Discharge Licence for Tai Wai Station	WT00014550-2012	5 November 2012	19 November 2012	30 November 2017
Chemical Waste Producer at Tai Wai Station	5213-757-S3683-02	6 September 2012	8 October 2012	N/A
Construction Noise Permit for Tai Wai Station	GW-RN0524-12	19 October 2012	6 November 2012	15 May 2013
Wastewater Discharge Licence for the To Shek Storage Yard	WT00014628-2012	N/A	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

EP Condition	Submission	Date of Submission
No EP submission in the reporting month under SCL Contract No. 1101.		

**APPENDIX C**

**WASTE FLOW TABLE**



**Waste Flow Table for 2012 (year) (in Tonnes) for SCL**

Month	Actual Quantities of Inert C&D Wastes 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</b>	0	0	0	0	0	0
October	<b>0</b>	0	0	0	0	0	0
November	18.83	0	0	18.83	0	7.52	0
December	0	0	0	0	0	0	0
<b>Total</b>	<b>18.83</b>	<b>0</b>	<b>0</b>	<b>18.83</b>	<b>0</b>	<b>7.52</b>	<b>0</b>

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

## **APPENDIX D**

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

**Environmental Site Walk on 7.12.2012**

<b><i>ET's Observations and Recommendations</i></b>	<b><i>Follow-up Action</i></b>
No site observation at Tai Wai Mei Tin Road, To Shek, Shek Mun Storage Yard and Tai Shui Hang	NA
<b><i>Photo</i></b>	<b><i>Photo</i></b>
NA	NA

**Environmental Site Walk on 12.12.2012**

<b><i>ET's Observations and Recommendations</i></b>	<b><i>Follow-up Action</i></b>
No site observation at Tai Wai Mei Tin Road, To Shek, Shek Mun Storage Yard and Tai Shui Hang	NA
<b><i>Photo</i></b>	<b><i>Photo</i></b>
NA	NA

**Environmental Site Walk on 18.12.2012**

<b><i>ET's Observations and Recommendations</i></b>	<b><i>Follow-up Action</i></b>
No site observation at Tai Wai Mei Tin Road, To Shek, Shek Mun Storage Yard and Tai Shui Hang	NA
<b><i>Photo</i></b>	<b><i>Photo</i></b>
NA	NA

**Environmental Site Walk on 24.12.2012**

<b><i>ET's Observations and Recommendations</i></b>	<b><i>Follow-up Action</i></b>
No site observation at Tai Wai Mei Tin Road, To Shek, Shek Mun Storage Yard and Tai Shui Hang	NA
<b><i>Photo</i></b>	<b><i>Photo</i></b>
NA	NA

## **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> <li>• No on-site burning of waste;</li> <li>• Waste and refuse in appropriate receptacles.</li> </ul>	Minimise ecological impacts	Contractor	All construction sites	During construction	<ul style="list-style-type: none"> <li>• ProPECC PN 1/94</li> </ul>	^

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
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> <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</li> </ul>	Minimize visual & landscape impact	Contractor	Within Project Site	Contraction stage	TM-EIAO	^

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system.</p> <ul style="list-style-type: none"> <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> 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	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
Construction Dust Impact								
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <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>	^
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> </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</li> </ul>	^

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor



EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<ul style="list-style-type: none"> <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> <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,</li> </ul>					criteria	

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</p> <ul style="list-style-type: none"> <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 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</li> </ul>						

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		should be fitted with an effective fabric filter or equivalent air pollution control system; 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 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> <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</li> </ul>	Control construction airborne noise	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>• Annex 5, TM-EIA</li> </ul>	^

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.						
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the 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	^
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)								

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
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 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</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>	^

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>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.</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 surface 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 minimize the ingress of site drainage into excavations. If the excavation of trenches</li> </ul>						

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>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.</p> <ul style="list-style-type: none"> <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 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</li> </ul>						

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

\* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		<p>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.</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</li> </ul>						

Remarks:

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		(April to September) as far as practicable. <ul style="list-style-type: none"> <li>Adopt best management practices.</li> </ul>						
S10.7.1	W3	<u>Sewage Effluent</u> <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	Construction stage	<ul style="list-style-type: none"> <li>Water Pollution Control Ordinance</li> <li>TM-water</li> </ul>	^
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended: <ul style="list-style-type: none"> <li>All the tanks, containers, storage area should be banded 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>	^
<b>Waste Management (Construction Waste)</b>								
S11.4.1.1	WM1	<u>On-site sorting of C&amp;D material</u> <ul style="list-style-type: none"> <li>Geological assessment should be carried out by competent persons on site during excavation to identify</li> </ul>	Separation of unsuitable rock from ending up at	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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		<p>materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke roke should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Apilte Dyke rock, etc should also be explored.</p>	<p>concrete batching plants and be turned into concrete for structural use</p>					
S11.5.1	WM2	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> <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>	<p>Good site practice to minimize the waste generation and recycle the C&amp;D materials as far as practicable so</p>	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>• Land (Miscellaneous Provisions) Ordinance</li> <li>• Waste</li> </ul>	^

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		<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 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>	as to reduce the amount for final disposal				<p>Disposal Ordinance</p> <ul style="list-style-type: none"> <li>ETWB TCW No.19/2005</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</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	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal</li> </ul>	^

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		<p>possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</p> <ul style="list-style-type: none"> <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>	amount for final disposal				<p>Ordinance</p> <ul style="list-style-type: none"> <li>ETWB TCW No.19/2005</li> </ul>	
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 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 incompatible materials are adequately separated;</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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		<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>	^

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**APPENDIX F**

**ENVIRONMENTAL COMPLAINT LOG**

**Appendix F Environmental Complaint Log**

<b>Complaint Log No.</b>	<b>Date of Receipt</b>	<b>Complainant</b>	<b>Nature of Complaint</b>	<b>Date Investigated</b>	<b>Outcome</b>	<b>Date of Reply</b>
Nil	Nil	Nil	Nil	Nil	Nil	Nil

Note: Fill in "NIL" for no complaint



**APPENDIX G**

**UPDATED CONSTRUCTION PROGRAMME**



## **APPENDIX H**

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





# Shek Mun Storage Yard

