MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

Monthly EM&A Report No. 9

[Period from 1 to 31 January 2015]

(February 2015)

Verified by: Fredrick Leong

Position: Independent Environmental Checker

Date: 12 February 2015

MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

Monthly EM&A Report No. 9

[Period from 1 to 31 January 2015]

(February 2015)

Certified by: Richard Kwan 

Position: Environmental Team Leader

Date: 12 February 2015

AECOM

MTR Corporation Limited

Consultancy Agreements
No. C11033B

Shatin to Central Link - Hung Hom to Admiralty Section

Monthly EM&A Report No. 9

[Period from 1 to 31 January 2015]

	Name	Signature
Prepared & Checked:	Joanne Tsoi	
Reviewed & Approved:	Josh Lam	

Version: A	Date: 12 February 2015

AECOM Asia Co. Ltd.
8/F, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong
Tel: (852) 3922 9000 Fax: (852) 3922 9797 www.aecom.com

Table of Contents

List of Tables

List of Appendices

1 INTRODUCTION

1.1 Background

1.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai to Hung Hom via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH) and Stabling Sidings at Hung Hom Freight Yard (HHS); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).

1.1.2 Shatin to Central Link – Hung Hom to Admiralty Section [SCL (HUH – ADM)] (hereafter referred to as "the Project") is part of the SCL.

1.1.3 The Environmental Impact Assessment (EIA) Report for SCL (HUH-ADM) (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) (EP No.: EP-436/2012) was granted on 22 March 2012 for construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-436/2012 and the latest Environmental Permit (EP No: EP-436/2012/A) was issued by Director of Environmental Protection (DEP) on 30 April 2014.

1.2 Project Programme

1.2.1 Five civil construction works contracts of the Project have been awarded since January 2014. The construction of the Project commenced in May 2014 and is expected to complete in 2020. The Project will have to interface with other infrastructure projects, including Wan Chai Development Phase II and Central-Wan Chai Bypass. **Table 1.1** summarises the information of the awarded Works Contracts.

Table 1.1 Summary of Awarded Works Contracts

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1126	Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool	July 2014	Kaden Leader JV	Cinotech Consultants Ltd. (Cinotech)
1128	South Ventilation Building to Admiralty Tunnels	November 2014	Dragages Bouygues J.V.	AECOM Asia Co. Ltd.
1129	SCL – Advance Works for NSL	May 2014	Hsin Chong Construction Co. Ltd.	AECOM Asia Co. Ltd.
11227(1)	Advance Works for NSL Cross Harbour Tunnels	August 2014	Concentric-Hong Kong River Joint Venture	Cinotech Consultants Ltd. (Cinotech)
1121	NSL Cross Harbour Tunnels	To be constructed	Penta-Ocean – China State JV	Cinotech Consultants Ltd. (Cinotech)

Note:
(1) Construction works in Victoria Harbour and Shek O Casting Basin under Works Contract 11227 were completed in 15 and 20 December 2014 respectively.

1.2.2 Works including trial trenching in Victoria Harbour and site levelling and rock filling in Shek O Casting Basin under Works Contract 11227 have completed in mid-December 2014. Post-project water quality monitoring of 4 weeks has also been undertaken and completed that Final EM&A Review Report will be submitted to EPD in February 2015.

1.3 Purpose of the Report

1.3.1 The Environmental Monitoring and Audit (EM&A) programme for the Project commenced in May 2014. This is the ninth EM&A Report for the Project which summarises the EM&A works undertaken by the respective Contractor's ETs during the period from 1 to 31 January 2015.

2 ENVIRONMENTAL MONITORING AND AUDIT

2.1 EM&A Results

2.1.1 The EM&A Report for Works Contracts 1129, 1126 and 1128 prepared by the respective Contractor's ETs 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
1126	Wan Chai Sports Ground (WCSG)	• Construction of Site Office; and • Material storage.
	Public Transport Interchange (PTI) Area	• Construction of Petrol Interception; • Soil Replacement Works; • Construction of Store Room; • Manhole construction & underground utilities connection; • Construction of ducting for street lighting; • Construction of footing for bus shelter and signage post; and • Construction of Temporary Public Toilet.
1128	Area W1 (Reclamation Works Area)	• Hoarding erection and road strengthening; and • Equipment mobilization.
	Area W4a (Canal Road box culvert)	• Modification of 1129's box culvert base slab and construction of steel platform; and • Extract of 1129 sheet piles that obstruct east Tunnel Boring Machine (TBM).
	Area W4b (Canal Road flyover)	• Sheetpile and start bulk excavation.
	Area W6 (Wan Shing Street)	• Coring through the pile cap and investigation of the existing piles in stage 2 TTMS.
	Area W8	• Tree felling, pruning for transplant, site clearance & installation, pretreatment & GI.
	Area 14a & 14b	• Sheet pile installation and ELS work; and • Construction of new road through Area W14
1129	Area W1	• Hoarding Erection for W1C; • Painting Temporary Star Case and E&M Installation; • Erect Eastern Pile Cap Temporary Staircase; • Grouting Trial for Underpinning; • Jack up Pile Cap; • Removal of Pile Cap Formwork; • Backfilling to +1.5mPD; • Erection of Covered Walkway; • Sheetpile Extraction; and • Pile Cap Construction.
	Area W2c	• Nil
	Area W3	• Remove Concrete Piles.

2.1.3 During the reporting month, impact monitoring for air quality and construction noise were conducted in accordance with the EM&A Manual and EP Condition 2.23.7. As construction works in Victoria Harbour and Shek O Casting Basin under Works Contract 11227 were completed in December 2014, no water quality impact monitoring was required to be conducted during this reporting period whilst the result of the post-project water quality monitoring was presented in the Final EM&A Review Report for Works Contract 11227 (February 2015) which will be submitted to EPD in February 2015. Continuous noise monitoring was also not required in the reporting period according to the Continuous Noise Monitoring Plan (CNMP). No exceedances of the Action/Limit Levels of 24-hr TSP and construction noise due to the Project construction were recorded. Results of air quality and construction noise are summarised in **Tables 2.2** and **2.3** respectively. Details of the monitoring requirements, locations, equipment and methodology are presented in the EM&A Reports (**Appendices A** to **C**).

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

Monitoring Station ID	Location	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Exceedance due to the Project Construction (Yes/No)
Works Contract 1126					
AM2	Wan Chai Sports Ground(1)	74.3 – 144.1	160	260	No
AM3	Existing Harbour Road Sports Centre	48.3 – 133.5	169	260	No
Works Contract 1128					
AM4	Pedestrian Plaza	85.5 – 160.9	198	260	No
Works Contract 1129(2)					

Note:
(1) The spectator stand at Wan Chai Sports Ground was not available for impact dust monitoring, therefore impact monitoring was conducted at the existing water pump room area at Wan Chai Sports Ground.
(2) No TSP monitoring is required under Works Contract 1129.

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

Monitoring Station ID	Location	Noise Level ($L_{Aeq,30mins}$, dB(A))			Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
		Measured	Baseline	Corrected(1)		
Works Contract 1126						
NM2(2)(3)	Harbour Centre	68.6 – 73.2	69.6	< Baseline – 70.7	75	No
Work Contract 1128 and 1129						
NM1	Hoi Kung Court	68.5 – 71.8	71	< Baseline – 64.1	75	No

Note:
(1) The measured noise levels are corrected against the corresponding baseline noise levels.
(2) Access to the designated monitoring location NM2 (i.e. Block A, Causeway Centre) was denied before the commencement of impact monitoring. Alternative noise monitoring location proposed at Harbour Centre was approved by the ER, agreed by IEC and EPD's formal approval is awaited. Impact noise monitoring was carried out at Harbour Centre from 20 August 2014 onwards.
(3) Impact noise monitoring has been carrying out on 7/F of Habour Centre between 20 August and 15 December 2014, and on 8/F from 19 December 2014 onwards.

2.1.4 No environmental complaints, notification of summons and successful prosecutions were received in the reporting period. Log for environmental complaints, notification of summons and successful prosecutions is provided in **Table 2.4**.

Table 2.4 Log for Environmental Complaints, Notification of Summons and Successful Prosecutions

Works Contract	Environmental Complaints	Notification of Summons	Successful Prosecutions
	Reporting Month	Reporting Month	Reporting Month
1126	0	0	0
1128	0	0	0
1129	0	0	0

2.1.5 Regular site inspections were conducted by the 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.

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 Report, EM&A Manual and EP (EP-436/2012/A). The status of required submissions under the EP as of the reporting period are summarised in **Table 3.1**.

Table 3.1 Summary of EP Submissions Status

EP Condition (EP-436/2012/A)	Submission	Submission date
Condition 1.11	Notification of Commencement Date of Construction of the Project	19 Dec 2012
Condition 2.3	Notification of Information of Community Liaison Groups	17 Mar 2014
Condition 2.5	Management Organisation of Main Construction Companies	4 Apr 2014
Condition 2.6	Construction Programme and EP Submission Schedule	19 Dec 2012
Condition 2.7	Construction Noise Mitigation Measures Plan (CNMMP)	9 Jun 2014 (1st Submission)
Condition 2.8	Continuous Noise Monitoring Plan (CNMP)	9 Jun 2014 (1st Submission)
Condition 2.9	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1st Submission) 12 Sept 2012 (2nd Submission) 15 Oct 2012 (approved)
Condition 2.10	Silt Curtain Deployment Plan for Trial Trenching in Victoria Harbour	11 Jul 2014
Condition 2.11	Silt Screen Deployment Plan	11 Jul 2014
Condition 2.12	Sediment Management Plan	6 Jul 2012 (1st Submission) 12 Sept 2012 (2nd Submission) 15 Oct 2012 (approved) 3 Jul 2014 (3rd submission)
Condition 2.14	Visual, Landscape, Tree Planting & Tree Protection Plan	14 Nov 2012 (1st Submission) 15 Feb 2013 (2nd Submission) 3 Dec 2013 (3rd Submission) 21 Aug 2014 (4th Submission)
Condition 2.23.1	Silt Curtain Deployment Plan for Shek O	23 Jul 2014 (1st Submission) 31 Jul 2014 (approved)
Condition 2.24	Contamination Assessment Plan (CAP) and Contamination Assessment Report (CAR)Remedial Action Plan (RAP) for the above-ground diesel tanks for Wan Chai Swimming Pool	CAP: 25 Sept 2012 (1st Submission) 12 Nov 2012 (2nd Submission) 22 Nov 2012 (approved) CAR: 19 Mar 2013 (1st Submission) 16 Apr 2013 (2nd Submission) 21 May 2013 (3rd Submission) 7 Jun 2013 (approved)
Condition 3.3	Baseline Monitoring Report (for noise and air quality)	4 Dec 2013 (1st Submission) 5 Feb 2014 (2nd Submission)
	Baseline Water Quality Monitoring Report	23 Sep 2014 (1st Submission) 18 Dec 2014 (2nd Submission)
	Baseline Water Quality Monitoring Report for Temporary Marine Works at Shek O Casting Basin	8 Jul 2014 (1st Submission) 11 Aug 2014 (2nd Submission)
Condition 3.4	Monthly EM&A Reports No.1 - 7 Monthly EM&A Report No.8	Reported in previous Monthly EM&A Reports 14 Jan 2015

Appendix A

Monthly EM&A Report for January 2015 – SCL Works Contract 1129 Advance Works for NSL

AECOM

Hsin Chong Construction Co. Ltd.

Shatin to Central Link -
Hung Hom to Admiralty Section

Works Contract 1129 -
Advance Works for NSL

Monthly EM&A Report for
January 2015

February 2015

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

Version: 0	Date: 12 February 2015

AECOM Asia Co. Ltd.
15/F, Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong
Tel: (852) 3922 9000 Fax: (852) 2317 7609 www.aecom.com

Table of Contents

Page

List of Tables

List of Figures

List of Appendices

EXECUTIVE SUMMARY

Shatin to Central Link Contract 1129 – Advance Works for North South Link (NSL) (hereafter called "the Project") covers part of the construction of the Shatin to Central Link (SCL) which aimed to comprises advance works for NSL – the extension of the existing East Rail Line (EAL) to Hong Kong Island.

The Project covers construction activities at Percival Street Footbridge, Causeway Flyover, Tunnel Approach Rest Garden (TARG) and demolition works at existing abandoned culvert near Wan Shing Street.

The EM&A programme commenced on 2 May 2014.The impact EM&A for the Project includes noise monitoring.

As informed by the Contractor, a part of works area in W2 has been handed over to other SCL contract on 25 and 27 August 2014, and another part of W2 has been handed over to other SCL contract on 25 October 2014.

This report documents the findings of EM&A works conducted in the period between 1 and 31 January 2015. As informed by the Contractor, major activities in the reporting period were:

Area W1
- Hoarding Erection for W1C;
- Painting Temporary Star Case and E&M Installation;
- Erect Eastern Pile Cap Temporary Staircase;
- Grouting Trial for Underpinning
- Jack up Pile Cap;
- Removal of Pile Cap Formwork;
- Backfilling to +1.5mPD;
- Erection of Covered Walkway;
- Sheetpile Extraction; and
- Pile Cap Construction.

Area W2
- Nil.

Area W3
- Remove Concrete Piles.

Breaches of Action and Limit Levels for Noise

No Action Level exceedance was recorded since no noise related complaint was received in the reporting month.

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

Complaint, Notification of Summons and Successful Prosecution

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

Reporting Changes

There was no reporting change in the reporting month.

Future Key Issues

Key issues to be considered in the coming month included:

Area W1
- Painting Temporary Star Case and E&M Installation;
- Jack up Pile Cap;
- Erection of Covered Walkway;
- Site Reinstatement; and
- Backfilling to +2mPD.

Area W2
- Nil.

Area W3
- Remove Concrete Piles.

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

1 INTRODUCTION

Hsin Chong Construction Co. Ltd (HC) was commissioned by MTR as the Civil Contractor for Works Contract 1129. AECOM Asia Company Limited (AECOM) was appointed by HC as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Project.

1.1 Purpose of the Report

1.1.1 This is the ninth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 to 31 January 2015.

1.2 Report Structure

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

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

2 PROJECT INFORMATION

2.1 Background

2.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).

2.1.2 The Environmental Impact Assessment (EIA) Reports for SCL – Hung Hom to Admiralty Section [SCL (HUH-ADM)] (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 22 March 2012, which covers SCL (HUH-ADM) EP No.: EP-436/2012), for the construction and operation. Variation of EP (VEP) (VEP-433/2014) was applied on 2 April 2014 and the latest EP (EP No. EP-436/2012/A) was issued by the Director of Environmental Protection (DEP) on 30 April 2014.

2.1.3 The construction of the SCL is divided into different civil construction works contracts and the Project covers construction activities at Percival Street Footbridge, Causeway Flyover, TARG and demolition works at existing abandoned culvert near Wan Shing Street under the EP.

2.1.4 As informed by the Contractor, a part of works area in W2 has been handed over to other SCL contract on 25 and 27 August 2014, and another part of W2 has been handed over to other SCL contract on 25 October 2014.
The works areas and site location of the Project is shown in **Figure 1.1**.

2.2 Site Description

2.2.1 The major construction activities under Works Contract 1129 include:

(a) Removal of 10 nos. of abandoned steel H-piles, provision of temporary staircase and diversion of pedestrians at Percival Street Footbridge; (Works Area W1)

(b) Underpinning of Pier A5 of Causeway Flyover including installation of 6 nos. 600mm diameter concrete bored piles and construction of pile cap; (Works Area W1)

(c) Site clearance, temporary take-up, storage and handover of feature stone at existing TARG, tree removal and utility diversions. Construction of temporary box culvert (in dry/wet season) without breakthrough of existing culvert at TARG; (Area W2) and

(d) Diversion and temporary support of utilities to facilitate pile extraction works at existing abandoned culvert near Wan Shing Street. Demolition on part of the abandoned culvert and removal of 6 nos. of 18” concrete square driven piles. Construction of minor slip road to facilitate road diversion. (Works Area W3)

2.3 Construction Programme and Activities

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

Area W1
- Hoarding Erection for W1C;
- Painting Temporary Star Case and E&M Installation;
- Erect Eastern Pile Cap Temporary Staircase;
- Grouting Trial for Underpinning
- Jack up Pile Cap;
- Removal of Pile Cap Formwork;
- Backfilling to +1.5mPD;
- Erection of Covered Walkway;
- Sheetpile Extraction; and
- Pile Cap Construction.

Area W2
- Nil.

Area W3
- Remove Concrete Piles.

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

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 2.1.**

Table 2.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
MTR	Residential Engineer (ER)	Construction Manager	Mr. T.C. Lam	3143 9129	3127 6424
		SCL Project Environmental Team Leader	Mr. Richard Kwan	2688 1283	2993 7577
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Mr. Fredrick Leong	2859 1739	2540 1580
HC	Contractor	Senior Project Manager	Mr. Nelson Cheng	2602 0918/ 9302 5927	2774 9322
		Assistant Environmental Manager	Mr. Andy Leung	9489 0035	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y T Tang	3922 9393	2317 7609

2.5 Status of Environmental Licences, Notification and Permits

2.5.1 Relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 2.2**.

Table 2.2 Status of Environmental Licenses, Notifications and Permits

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
Environmental Permit				
EP-436/2012/A	30 Apr 2014	-	Valid	-
Construction Noise Permit				
GW-RS1024-14	24 Sep 2014	20 Mar 2015	Valid	Applied for plant mobilization (0100-0500)
GW-RS0859-14	19 Aug 2014	18 Feb 2015	Valid	Applied for water pump at W1B (2300-0700)
GW-RS1042-14	29 Sep 2014	28 Mar 2015	Valid	Applied for work at W1 (1900-2300)
GW-RS0975-14	15 Sep 2014	14 Mar 2015	Valid	Applied for UMP installation at Wan Shing Street (2100-0600)
GW-RS1335-14	8 Dec 2014	7 Jan 2015	Valid	Applied for Road Marking Maintenance
Wastewater Discharge License				
WT00020241-2014	4 Nov 2014	30 Apr 2019	Valid	-
Chemical Waste Producer Registration				
WPN5213-135-H3563-01	26 Feb 2014	End of Contract	Valid	For Hung Hing Flyover & Percival Street (Area W1)
WPN5213-134-H3565-01	26 Feb 2014	End of Contract	Valid	For Tunnel Approach Road & Wan Shing Footbridge (Area W3)
Billing Account for Construction Waste Disposal				
7019335	13 Feb 2014	End of Contract	Valid	-
Notification Under Air Pollution Control (Construction Dust) Regulation				
370021	28 Jan 2014	End of Contract	Valid	-

3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.1 Construction Noise Monitoring

Monitoring Requirements

3.1.1 In accordance with the EM&A Manual, impact noise monitoring should be conducted for at least once a week during the construction phase of the Project. **Table 3.1** summarises the monitoring parameters, frequency and duration of impact noise monitoring. The Action and Limit level of the noise monitoring is provided in **Appendix D**.

Table 3.1 Noise Monitoring Parameters, Frequency and Duration

Parameter and Duration	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. Leq, L_{10} and L_{90} would be recorded.	At least once per week

Monitoring Equipment

3.1.2 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.2**.

Table 3.2 Noise Monitoring Equipment for Regular Noise Monitoring

Equipment	Brand and Model
Integrated Sound Level Meter	Rion (Model No. NL-31 (S/N: 00320528))
Acoustic Calibrator	Rion (Model No. NC-73 (S/N: 10307223)) and Rion (Model No. NC-74 (S/N: 34246490))

Monitoring Locations

3.1.3 The monitoring station for construction noise monitoring pertinent to the Project has been identified based on the approved EM&A Manuals for SCL (HUH-ADM) of the Project. Location of the noise monitoring station is summarised in **Table 3.3** and shown in **Figure 3.1**.

Table 3.3 Noise Monitoring Stations during Construction Phase

Identification No.	Noise Sensitive Receiver (NSR) ID in EIA Report	Noise Monitoring Station
NM1	CH2	Hoi Kung Court

Monitoring Methodology

3.1.4 Monitoring Procedure

(a) Façade measurement was made at NM1.

(b) The battery condition was checked to ensure the correct functioning of the meter.

(c) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

(i) frequency weighting: A
(ii) time weighting: Fast
(iii) time measurement: $L_{eq(30\text{-}minutes)}$ during non-restricted hours i.e. 0700 – 1900 on normal weekdays.

(d) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94 dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

(e) During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

(f) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(g) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.1.5 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

3.1.6 The schedule for environmental monitoring in January 2015 is provided in **Appendix F**.

3.2 Landscape and Visual

3.2.1 As per the EM&A Manuals, the landscape and visual mitigation measures shall be implemented and site inspections should be undertaken once every two weeks during the construction period. A summary of the implementation status is presented in **Section 6.**

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

4.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix C**. Status of required submissions under the EP during the reporting period is summarised in **Table 4.1.**

Table 4.1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.4 (EP-436/2012/A)	Monthly EM&A Report for December 2014	14 January 2015

5 MONITORING RESULTS

5.1 Construction Noise Monitoring

5.1.1 The monitoring results for noise are summarized in **Table 5.1** and the monitoring data is provided in **Appendix G**.

Table 5.1 Summary of Construction Noise Monitoring Results in the Reporting Period

ID	Range, dB(A), $L_{eq\ (30\ mins)}$	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
NM1 (*)	<Baseline – 64.1	75

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

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

5.1.3 No Limit Level exceedance of noise was recorded at all monitoring stations in the reporting month.

5.1.4 The event and action plan is annexed in **Appendix H**.

5.1.5 Major noise sources during the monitoring included construction noise from the Project site, nearby traffic noise and the community.

5.2 Waste Management

5.2.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

5.2.2 As advised by the Contractor, 40m^3 of inert C&D material was generated (0m^3 was disposed as public fills at CWPFBP and 40m^3 was disposed as fill bank at TKO137) in the reporting month. 16.9m^3 of general refuse was generated in the reporting month. No metals, no paper/cardboard packaging materials and no plastics were collected by recycling contractor in the reporting month. No inert C&D materials were reused on site. No chemical waste was collected by licensed contractor in the reporting period. The waste flow table is annexed in **Appendix J.**

5.2.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

5.2.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

5.3 Landscape and Visual

5.3.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted on 8 and 22 January 2015. A summary of the site inspection is provided in **Appendix C**. The observations and recommendations made during the site inspections are presented in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix C**.

6.1.2 In the reporting month, 4 site inspections were carried out on 8, 15, 22, and 29 January 2015. The one held on 8 January 2015 was a joint inspection with the IEC, ER, the Contractor and the ET. No site inspection was conducted by EPD during the reporting month. No non-compliance was recorded during the site inspections. Details of observations recorded during the site inspections are presented in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	8 January 2015	• Reminder: A damp stockpile at W1 was observed without coverage of impervious sheeting. The contractor was reminded to cover the stockpile properly to avoid dust dispersion.	The item was improved by the Contractor on 8 January 2015.
Noise	N/A	N/A	N/A
Water Quality	8 January 2015	• Gully near the site entrance at W3 was observed without proper mitigation measure to avoid any direct discharge. The Contractor was advised to block the gully with sand bag or cover it with metal plate.	The item was rectified by the Contractor on 8 January 2015.
Waste/ Chemical Management	N/A	N/A	N/A
Landscape & Visual	N/A	N/A	N/A
Permits/ Licenses	N/A	N/A	N/A

6.1.3 All the follow-up actions requested by Contractor's ET and IEC during the site inspection were undertaken as reported by the Contractor and confirmed into the following weekly site inspection conducted during the reporting period.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

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

7.1.2 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.

7.2 Summary of Environmental Non-Compliance

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

7.3 Summary of Environmental Complaints

7.3.1 No environmental related complaint was received in the reporting month. Cumulative statistics on environmental complaints is provided in **Appendix I**.

7.4 Summary of Environmental Summon and Successful Prosecutions

7.4.1 No environmental related prosecution or notification of summons was received in the reporting month. Cumulative statistics on notification of summons and successful prosecutions is provided in **Appendix I**.

8 FUTURE KEY ISSUES

8.1 Construction Programme for the Next Two Month

8.1.1 The major construction works in February and March 2015 will be:

Area W1
- Painting Temporary Star Case;
- E&M Installation;
- Jack up Pile Cap;
- Erection of Covered Walkway;
- Site Reinstatement; Backfilling to +2mPD; and
- Handed over to another SCL contract.

Area W2
- Nil.

Area W3
- Remove Portion of Abandoned Box Culvert;
- Concrete Piles Post-drilling;
- Construct Temporary Carriageway; and
- Removal of Concrete Piles.

8.2 Key Issues for the Coming Month

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

8.3 Monitoring Schedules for the Next Three Months

8.3.1 The tentative schedules for environmental monitoring in February, March and April 2015 are provided in **Appendix F**.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

9.1.1 Noise monitoring was carried out in the reporting month.

9.1.2 No noise complaint was received in the reporting month. Hence, no Action Level exceedance was recorded.

9.1.3 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.

9.1.4 4 nos. of environmental site inspections were carried out in January 2015. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

9.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

9.2 Recommendations

9.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:-

Air Quality Impact

- Implement effective measures to avoid dust impact.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- Implement effective measures to avoid surface runoff into the drainage system.

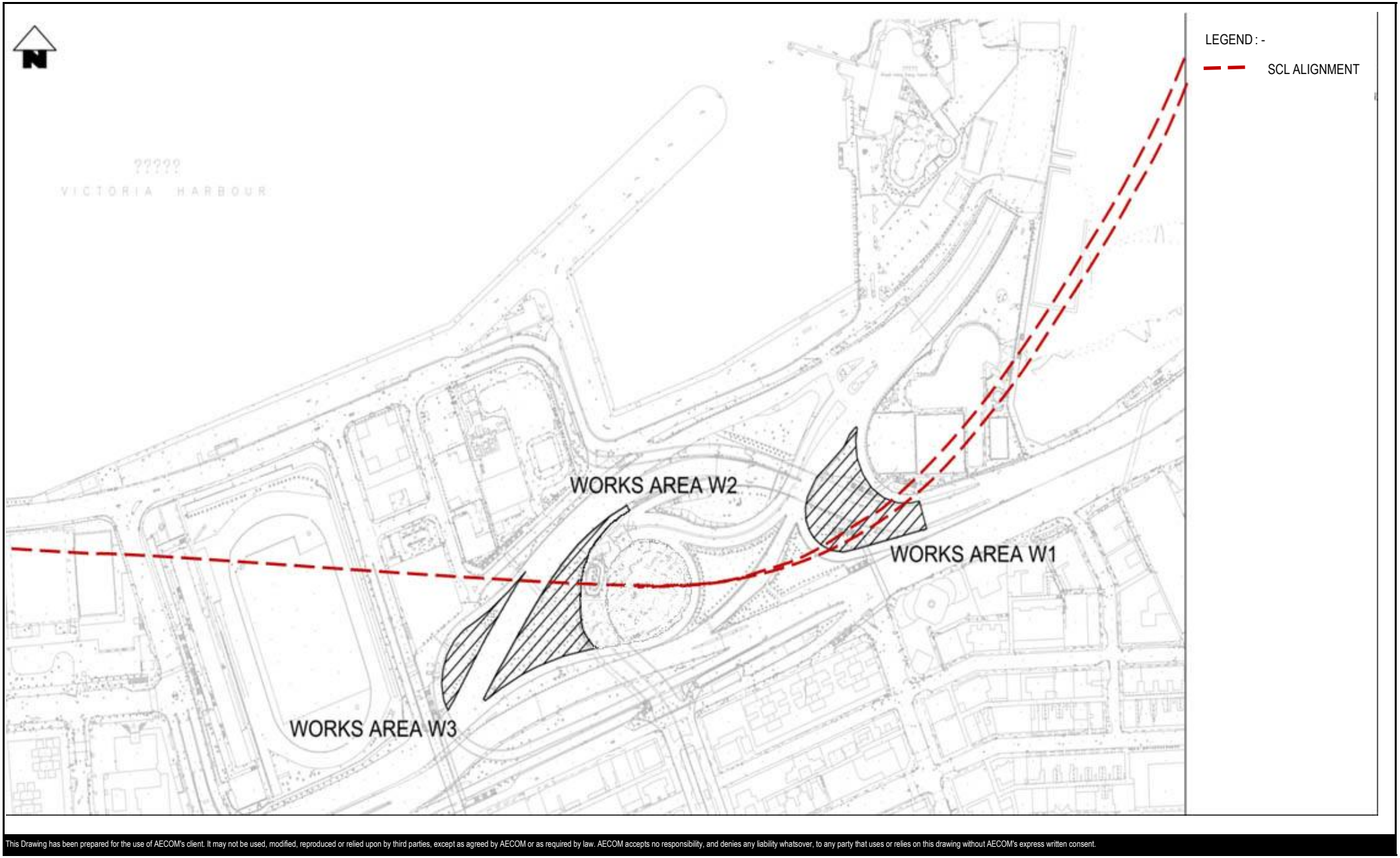
Chemical and Waste Management

- No specific observation was identified in the reporting month.

Permits/licenses

- No specific observation was identified in the reporting month.

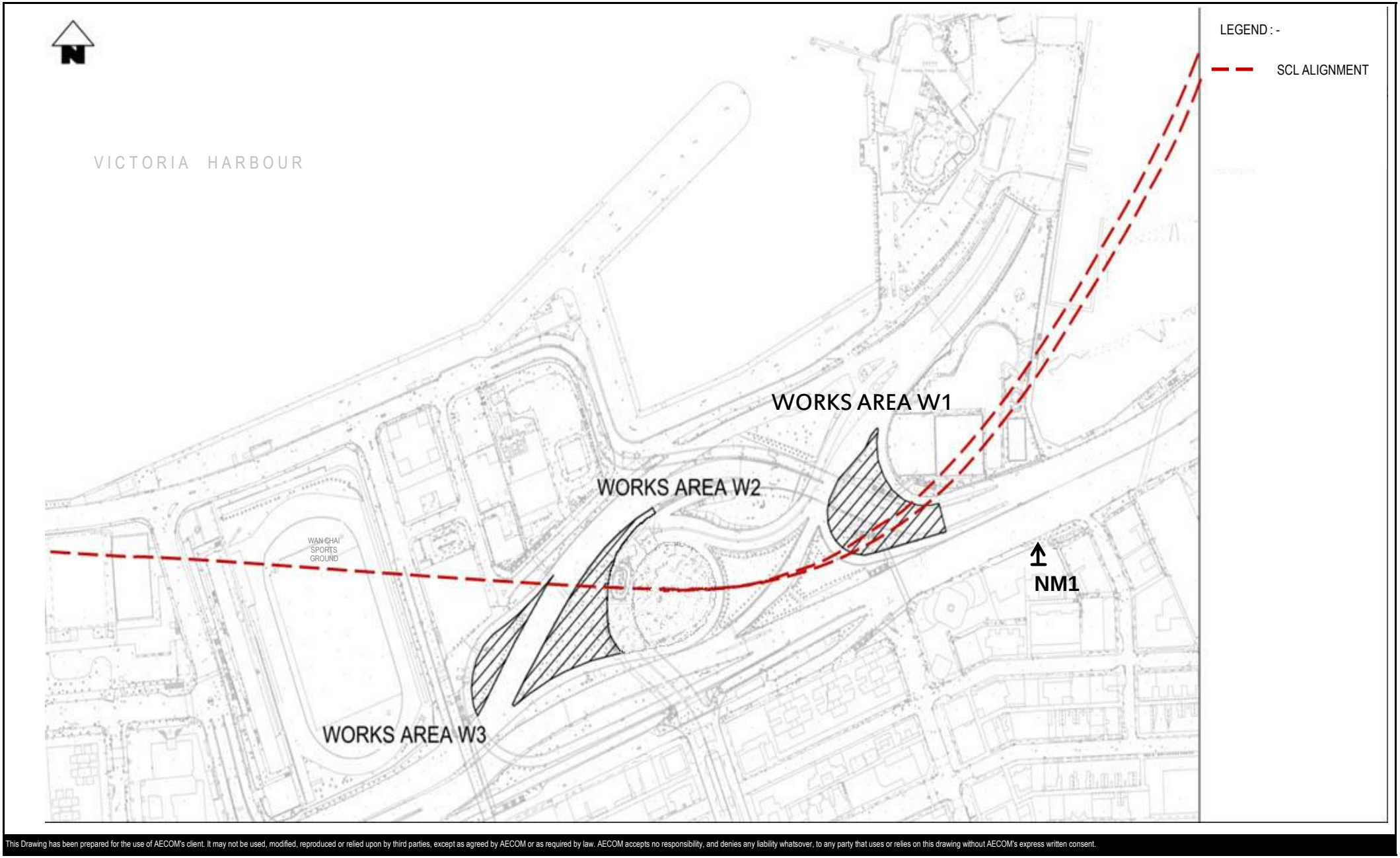
FIGURES



CONTRACT 1129
ADVANCED WORKS FOR NSL

WORKS AREA AND SITE LOCATION OF SCL1129

Project No.: - **Date: November 2014** **Figure 1.1**



CONTRACT 1129
ADVANCED WORKS FOR NSL

LOCATION OF AIR-BORNE NOISE SENSITIVE RECEIVER NM1

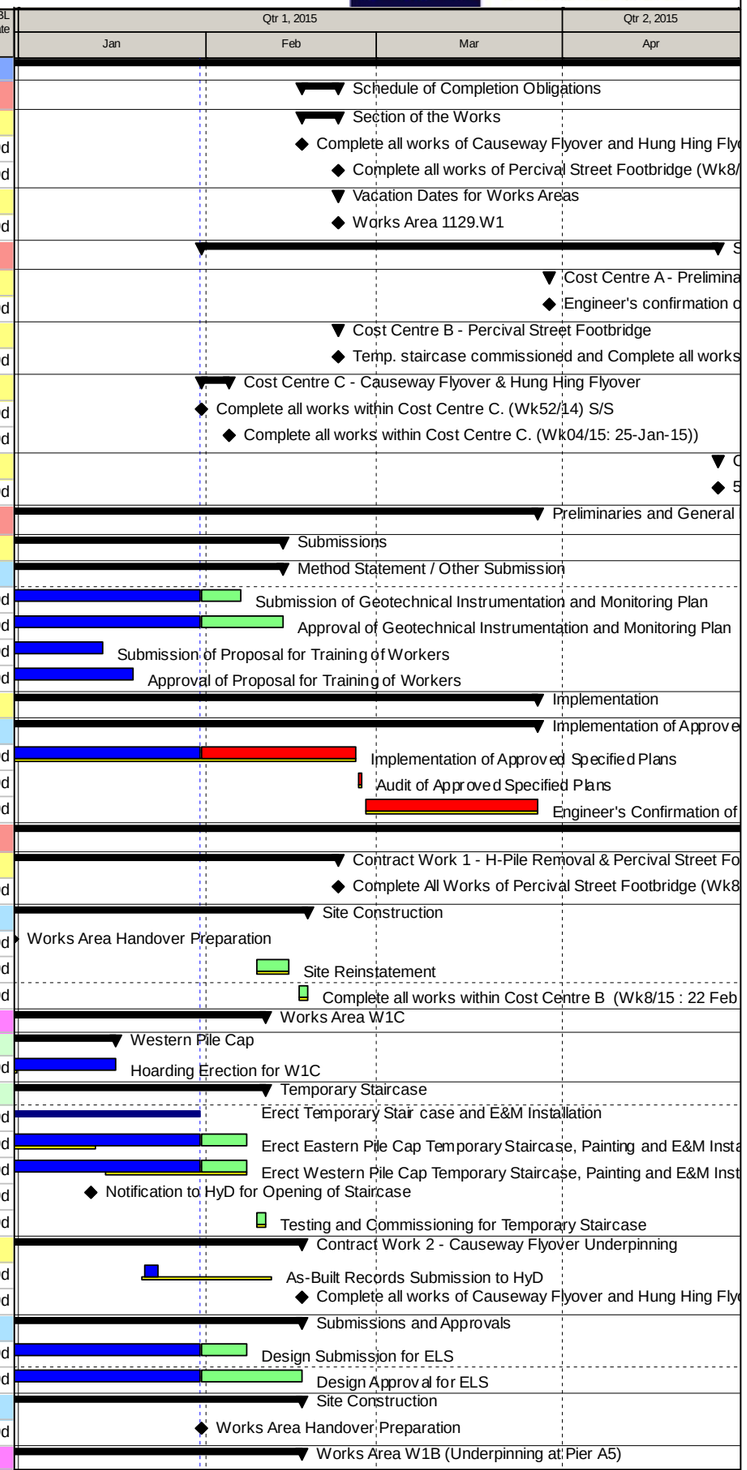
Project No.: - **Date: November 2014** **Figure 3.1**

APPENDIX A

Construction Programme

CONTRACT 1129 - ADVANCE WORK FOR NSL

Activity ID	Activity Name	Duration	BL Project Start	BL Project Finish	Start	Finish	TF	Variance - BL Project Finish Date
MTRC-1129 - Advance Work for NSL (Working Programme) 3MRP Jan								
Schedule of Completion Obligations								
Section of the Works								
01129.CD002B	Complete all works of Causeway Flyover and Hung Hing Flyover and ready for handover (Wk04/15)	0.00d		25-Jan-15		16-Feb-15*	-22.00d	-22.00d
01129.CD002A	Complete all works of Percival Street Footbridge (Wk8/15)	0.00d		22-Feb-15		22-Feb-15*	0.00d	0.00d
Vacation Dates for Works Areas								
01129.VD1060	Works Area 1129.W1	0.00d		22-Feb-15		22-Feb-15*	0.00d	0.00d
Schedule of Milestones								
Cost Centre A - Preliminaries								
01129.MSA04	Engineer's confirmation of satisfactory implementation of Approved Specified Plans. (Wk13/15)	0.00d		29-Mar-15		29-Mar-15*	0.00d	0.00d
Cost Centre B - Percival Street Footbridge								
01129.MSB03	Temp. staircase commissioned and Complete all works within Cost Centre B (Wk8/15)	0.00d		22-Feb-15		22-Feb-15*	0.00d	0.00d
Cost Centre C - Causeway Flyover & Hung Hing Flyover								
01129.MSC03-1	Complete all works within Cost Centre C. (Wk52/14) S/S	0.00d		28-Dec-14		31-Jan-15*	-33.00d	-33.00d
01129.MSC03	Complete all works within Cost Centre C. (Wk04/15: 25-Jan-15))	0.00d		25-Jan-15		04-Feb-15*	-10.00d	-10.00d
Cost Centre E - Abandoned Box Culvert Underneath Gloucester Road								
01129.MSE04	50% of Box culvert demolition & 50% pile removal works in no. completed. Traffic diversion of Route D impl'd (Wk17/15)	0.00d		26-Apr-15		26-Apr-15*	0.00d	0.00d
Preliminaries and General Requirements								
Submissions								
Method Statement / Other Submission								
01129.PG1610	Submission of Geotechnical Instrumentation and Monitoring Plan	56.00d	20-Mar-14	27-Aug-14	20-Mar-14 A	06-Feb-15	324.00d	-163.00d
01129.PG1620	Approval of Geotechnical Instrumentation and Monitoring Plan	28.00d	28-Mar-14	03-Sep-14	28-Mar-14 A	13-Feb-15	317.00d	-163.00d
01129.PG1370	Submission of Proposal for Training of Workers	72.00d	15-Aug-14	27-Aug-14	16-Jun-14 A	15-Jan-15 A		-140.00d
01129.PG1380	Approval of Proposal for Training of Workers	28.00d	29-Aug-14	10-Sep-14	29-Aug-14 A	20-Jan-15 A		-131.00d
Implementation								
Implementation of Approved Specified Plans								
01129.PG1180	Implementation of Approved Specified Plans	57.00d	22-Dec-14	25-Feb-15	22-Dec-14 A	25-Feb-15	0.00d	0.00d
01129.PG1290	Audit of Approved Specified Plans	1.00d	26-Feb-15	26-Feb-15	26-Feb-15	26-Feb-15	0.00d	0.00d
01129.PG1190	Engineer's Confirmation of Satisfactory Implementation	29.00d	27-Feb-15	27-Mar-15	27-Feb-15	27-Mar-15*	0.00d	0.00d
Construction Works								
Contract Work 1 - H-Pile Removal & Percival Street Footbridge Modification								
01129.CW11200B	Complete All Works of Percival Street Footbridge (Wk8/15 : 22 Feb 2015)	0.00d		22-Feb-15		22-Feb-15*	0.00d	0.00d
Site Construction								
01129.CW11161B1	Works Area Handover Preparation	0.00d		21-Aug-14		31-Dec-14 A		-108.00d
01129.CW11190B	Site Reinstatement	6.00d	09-Feb-15	14-Feb-15	09-Feb-15	14-Feb-15	1.00d	0.00d
01129.CW11161B10	Complete all works within Cost Centre B (Wk8/15 : 22 Feb 2015)	2.00d	16-Feb-15	17-Feb-15	16-Feb-15	17-Feb-15	1.00d	0.00d
Works Area W1C								
Western Pile Cap								
01129.CW11161B30	Hoarding Erection for W1C	14.00d	16-Dec-14	31-Dec-14	16-Dec-14 A	17-Jan-15 A		-13.00d
Temporary Staircase								
01129.CW11161B	Erect Temporary Stair case and E&M Installation	21.00d	08-Dec-14	07-Feb-15	18-Dec-14 A	07-Feb-15	1.00d	0.00d
01129.CW11161B40	Erect Eastern Pile Cap Temporary Staircase, Painting and E&M Installation	18.00d	08-Dec-14	13-Jan-15	18-Dec-14 A	07-Feb-15	7.00d	-22.00d
01129.CW11161B50	Erect Western Pile Cap Temporary Staircase, Painting and E&M Installation	21.00d	15-Jan-15	07-Feb-15	18-Dec-14 A	07-Feb-15	1.00d	0.00d
01129.CW11161B60	Notification to HyD for Opening of Staircase	0.00d		13-Jan-15		13-Jan-15 A		1.00d
01129.CW11161B20	Testing and Commissioning for Temporary Staircase	2.00d	09-Feb-15	10-Feb-15	09-Feb-15	10-Feb-15	7.00d	0.00d
Contract Work 2 - Causeway Flyover Underpinning								
01129.CW21150C10	As-Built Records Submission to HyD	8.00d	21-Jan-15	11-Feb-15	22-Jan-15 A	24-Jan-15 A		16.00d
01129.CW21160C	Complete all works of Causeway Flyover and Hung Hing Flyover and ready for handover (Wk4/15 : 25 Jan 2015)	0.00d		25-Jan-15		16-Feb-15*	-22.00d	-22.00d
Submissions and Approvals								
01129.CW11002B50	Design Submission for ELS	28.00d	20-Mar-14	23-Jul-14	25-Apr-14 A	07-Feb-15	260.00d	-166.00d
01129.CW11002B60	Design Approval for ELS	28.00d	04-Apr-14	06-Aug-14	15-Jul-14 A	16-Feb-15	253.00d	-161.00d
Site Construction								
01129.CW21161B	Works Area Handover Preparation	0.00d		24-Oct-14		31-Jan-15	-19.00d	-81.00d
Works Area W1B (Underpinning at Pier A5)								



Actual Level of Effort | Remaining Work | Summary
Primary Baseline | Critical Remaining Work
Actual Work | Milestone

Project ID: 3MRP(2015-01)

3-MONTH-ROLLING PROGRAMME (JANUARY 2015)

Date	Revision	Checked	Approved
31-Jan-15	Rev.-	AB	NC

Activity ID	Activity Name	Duration	BL Project Start	BL Project Finish	Start	Finish	TF	Variance - BL Project Finish Date
01129.CW21070C	Sheet Pile and ELS Works	24.00d	23-Oct-14	10-Dec-14	13-Dec-14 A	31-Dec-14 A		-15.00d
01129.CW21110C	Preparation Work and Pile Cap Construction (including night works)	7.00d	02-Dec-14	24-Dec-14	30-Dec-14 A	12-Jan-15 A		-12.00d
01129.CW21051Cb15	Grouting Trial for Underpinning	1.00d			06-Jan-15 A	08-Jan-15 A		
01129.CW21140C	Jack up Pile Cap (including 28-d concrete strength) (Assume Early Strength Achieved Earlier)	16.00d	27-Dec-14	20-Jan-15	13-Jan-15 A	04-Feb-15	-19.00d	-13.00d
01129.CW21070C80	Removal of Pile Cap Formwork	2.00d	27-Dec-14	29-Dec-14	13-Jan-15 A	14-Jan-15 A		-13.00d
01129.CW21070C90	Backfilling to +1.5mPD	2.00d	30-Dec-14	05-Jan-15	19-Jan-15 A	20-Jan-15 A		-13.00d
01129.CW21150C20	Erection of Covered Walkway	25.00d			22-Jan-15 A	14-Feb-15	-18.00d	
01129.CW21150C30	Sheet Pile Extraction	15.00d			22-Jan-15 A	30-Jan-15 A		
01129.CW21150C	Site Reinstatement (HKE and HyD Pillar Boxes, excl. 150mm Storm Drain, Lighting) (Wk4/15 : 25 Jan 2015)	10.00d	23-Jan-15	24-Jan-15	05-Feb-15	16-Feb-15	-19.00d	-19.00d
01129.CW21070C100	Backfilling to +2 mPD	2.00d	21-Jan-15	24-Jan-15	05-Feb-15	06-Feb-15	-11.00d	-11.00d
Contract Work 4 - Pile Removal at Tunnel Approach Road								
Site Construction								
Works Area W3B								
Stage 1								
01129.CW41200E	Remove 3 nos. Concrete Piles (Wk 17/15: 26 Apr 15)	45.00d	14-Jan-15	10-Mar-15	13-Dec-14 A	28-Feb-15	27.00d	8.00d
01129.CW41210E	Remove Portion of Abandoned Box Culvert (Wk 17/15: 26 Apr 15)	17.00d	11-Mar-15	02-Apr-15	02-Mar-15	20-Mar-15	27.00d	11.00d
01129.CW41220E	Concrete Piles Post-Drilling (1 no.)	8.00d	08-Apr-15	16-Apr-15	21-Mar-15	30-Mar-15	27.00d	11.00d
Stage 2								
01129.CW41240E	Construct Temporary Carriageway-	24.00d	02-May-15	30-May-15	31-Mar-15	02-May-15	27.00d	23.00d
Associated Works								
01129.AW1006F	TTM Submission for tree compensation at Victoria Road	12.00d	30-Apr-15	11-May-15	31-Mar-15	11-Apr-15	82.00d	30.00d
01129.AW1020F	TTM Approval for tree compensation at Victoria Road	30.00d	12-May-15	25-Jun-15	07-Apr-15	06-May-15	82.00d	50.00d

Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Project ID: 3MRP(2015-01)

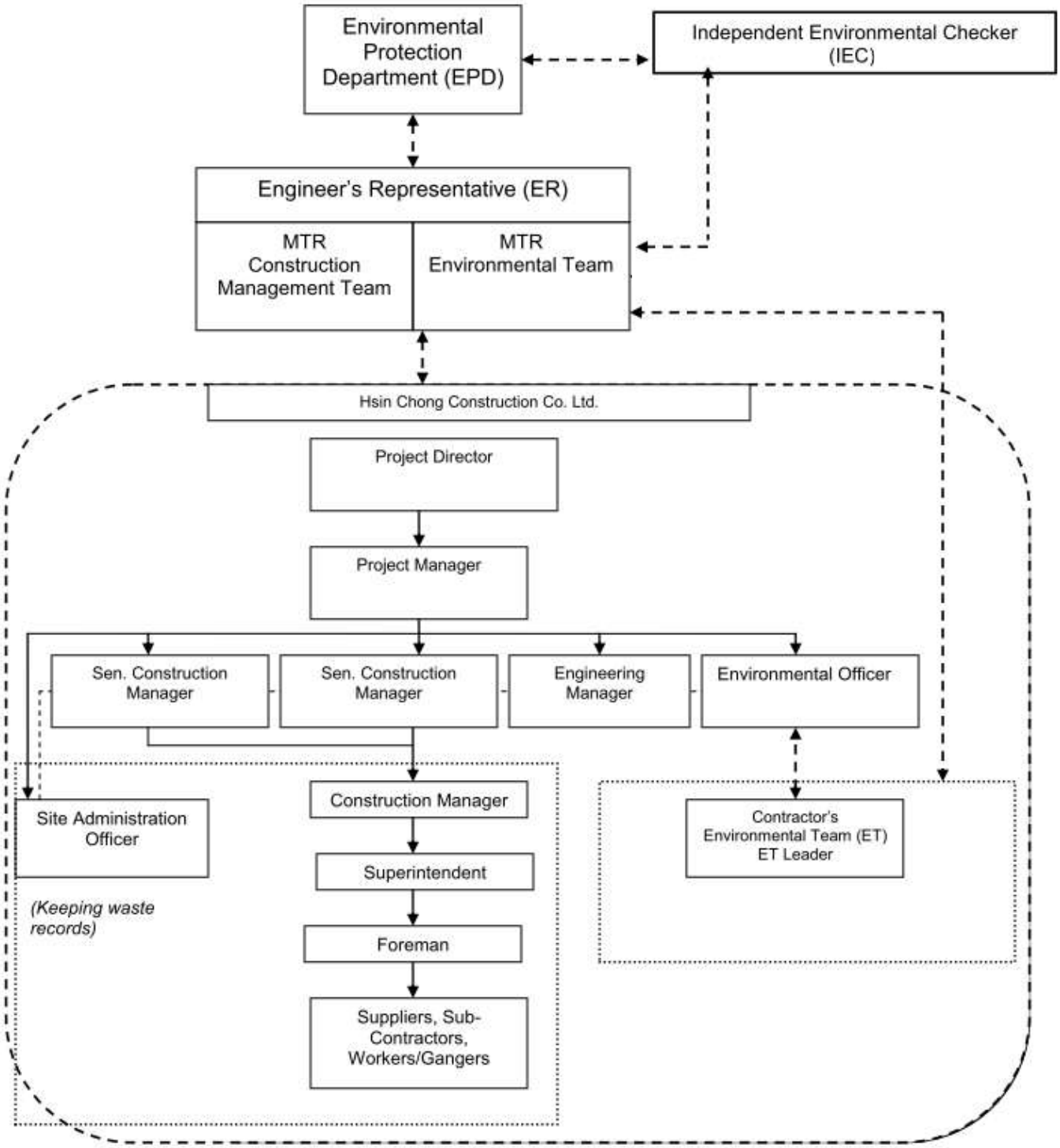
3-MONTH-ROLLING PROGRAMME (JANUARY 2015)

Date	Revision	Checked	Approved
31-Jan-15	Rev.-	AB	NC

APPENDIX B

Project Organization Structure

Appendix B Project Organisation Structure



APPENDIX C

Environmental Mitigation Measures Implementation Schedule

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Cultural Heritage Impact						
S4.93 & Table 4.2	Erection of decorative and sensibly designed hoarding along the boundary of the works area	To mitigate the temporary visual impact due to surface works.	Contractor	Works Areas in Causeway Bay and Wan Chai, and Works Shaft in Admiralty	Construction Phase	V
Ecological Impact						
S5.134	Accidental chemical spillage and construction site run-off to the receiving water bodies, mitigation measures such as removing the pollutants before discharge into storm drain and paving the section of construction road between the wheel washing bay and the public road as suggested in Sections 11.216 and 11.219 to 11.256 of the EIA Report shall be adopted.	To minimize the contamination of wastewater discharge	Contractor	All land based works areas	Construction Phase	V
Landscape and Visual Impact						
Construction Phase						
Table 7.9	CM1 - Trees unavoidably affected by the works shall be transplanted as far as possible in accordance with ETWB TC(W) 3/2006 – Tree Preservation.	Transplanting and reuse of affected trees.	MTR	Works Sites	Construction Phase	V
Table 7.9	CM2a - Compensatory tree planting shall be provided in accordance with ETWB TC(W) 3/2006 – Tree Preservation to compensate for felled trees and maintained until end of the establishment period.	Compensation for the removal of existing trees due to the Project.	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM2b - Compensatory shrub planting shall be provided to compensate for the loss of shrub planting in amenity areas.	Compensation for the removal of existing shrub planting due to the Project.	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM3 - Control of night-time lighting glare	Minimize the night time glare due to the Project during construction phase	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM4 - Erection of decorative screen hoarding compatible with the surrounding setting.	Minimize the visual impact of the Project during construction phase	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM5 - Management of facilities on work sites which give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs	Control of height and deposition/ arrangement of temporary facilities in works areas	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM6 - All hard and soft landscape areas disturbed temporarily during construction shall be reinstated on like-to-like basis to the satisfaction of the relevant Government Departments.	Reinstatement of temporary works areas.	MTR	Works Sites	Construction Phase	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Air Quality						
/	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	Works areas	Construction phase	V V V
Construction Dust Impact						
S8.89	Watering once every working hour on active works areas, exposed areas and paved haul roads to reduce dust emission by 91.7%. This dust suppression efficiency is derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.7 L/m2 for Kowloon side and 1.0 L/m2 for Hong Kong side once every working hour. Any potential dust impact and watering mitigation would be subject to the actual site condition. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the above water application intensity may not be unreservedly applied. While the above watering frequency is to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7 L/m2 for Kowloon side and 1.0 L/m2 for Hong Kong side to achieve the removal efficiency. The dust levels would be monitored and managed under an EM&A programme as specified in the EM&A Manual.	To minimize dust impact	Contractor	Works areas	Construction Phase	V
S8.90	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs. • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Provision of not less than 2.4m high hoarding from ground level along site	To minimize dust impacts	Contractor	Works areas	Construction phase	V V V V V V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. • Imposition of speed controls for vehicles on site haul roads. • Where possible, routing of vehicles and positioning of construction plant shall be at the maximum possible distance from ASRs. • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise					V V V V
Airborne Noise Impact						
Construction Phase						
S9.55	The following good site practices shall be implemented: • Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program • Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program • Mobile plant, if any, shall be sited as far from NSRs as possible • Machines and plant (such as trucks) that may be in intermittent use shall be shut down between work periods or shall be throttled down to a minimum • Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs • Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities	To minimize construction noise impact	Contractor	Works areas	Construction phase	V V V V V V
S9.56 & Table 9.16	The following quiet PME shall be used: • Crane lorry, mobile • Crane, mobile • Asphalt paver • Backhoe with hydraulic breaker • Breaker, excavator mounted (hydraulic) • Hydraulic breaker • Concrete lorry mixer • Poker, vibrator, hand-held • Concrete pump • Crawler crane, mobile • Mobile crane • Dump truck • Excavator • Truck • Rock drill	To minimize construction noise impact	Contractor	Works areas at: • Hung Hom • Cross Harbour section up to Breakwater of CBTS • Breakwater of CBTS to SOV • SOV to EXH • EXH • EXH to open space at the junction of Expo Drive and Convention Avenue • Open space at the junction of Expo Drive and Convention Avenue	Construction phase	N/A N/A N/A V N/A N/A N/A N/A N/A N/A N/A V V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	• Lorry • Wheel loader • Roller vibratory			to north of ADM • South of ADM to Overrun Tunnel		N/A V N/A
S9.58 – S9.59 & Table 9.17	Movable noise barrier shall be used for the following PME: • Air compressor • Asphalt paver • Backhoe with hydraulic breaker • Bar bender • Bar bender and cutter (electric) • Breaker, excavator mounted • Concrete pump • Concrete pump, stationary/lorry mounted • Excavator • Generator • Grout pump • Hand held breaker • Hydraulic breaker • Saw, concrete	To minimize construction noise impact	Contractor	Works areas at: • Cross Harbour section up to Breakwater of CBTS • Breakwater of CBTS to SOV • SOV to EXH • EXH • EXH to open space at the junction of Expo Drive and Convention Avenue • Open space at the junction of Expo Drive and Convention Avenue to north of ADM • South of ADM to Overrun Tunnel	Construction phase	V N/A V N/A N/A N/A N/A N/A V V N/A N/A N/A N/A
Water Quality Impact						
Construction Phase						
S11.222 to 11.245	The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” shall be followed where practicable. <u>Surface Run-off</u> • Surface run-off from construction sites shall be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers shall be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries shall be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks. • Silt removal facilities, channels and manholes shall be maintained and the deposited silt and grit shall be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage shall comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distances of 100 m shall be maintained between the discharge points of construction site runoff and the existing saltwater intakes. • Construction works shall be programmed to minimize soil excavation works in rainy	To minimize water quality impacts from construction site runoff and general construction activities	Contractor	Works areas	Construction Phase	V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces shall be covered e.g. by tarpaulin, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels shall be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements shall always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. • Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels shall be provided where necessary. • Measures shall be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they shall be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations shall be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites shall be covered with tarpaulin or similar fabric during rainstorms. • Manholes (including newly constructed ones) shall always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. • Good site practices shall be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis. <u>Boring and Drilling Water</u> • Water used in ground boring and drilling for site investigation or rock / soil anchoring shall as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater shall be discharged into storm drains via silt removal facilities. <u>Wheel Washing Water</u> • All vehicles and plant shall be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads. A wheel washing bay shall be provided at every site exit if practicable and wash-water shall have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road shall be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains. <u>Bentonite Slurries</u> • Bentonite slurries used in diaphragm wall and bore-pile construction shall be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the bentonite slurries shall either be d ewatered or mixed with inert fill material for disposal to a public filling area. • If the used bentonite slurry is intended to be disposed of through the public					V V V @ V V V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	drainage system, it shall be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the TM-DSS. Water for Testing & Sterilization of Water Retaining Structures and Water Pipes • Water used in water testing to check leakage of structures and pipes shall be used for other purposes as far as practicable. Surplus unpolluted water will be discharged into storm drains. • Sterilization is commonly accomplished by chlorination. Specific advice from EPD shall be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water shall be used again wherever practicable. Acid Cleaning, Etching and Pickling Wastewater • Acidic wastewater generated from acid cleaning, etching, pickling and similar activities shall be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater shall be tankered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters. Wastewater from Site Facilities • Wastewater collected from any temporary canteen kitchens, including that from basins, sinks and floor drains, shall be discharged into foul sewer via grease traps. In case connection to the public foul sewer is not feasible, wastewater generated from kitchens or canteen, if any, shall be collected in a temporary storage tank. A licensed waste collector shall be deployed to clean the temporary storage tank on a regular basis. • Drainage serving an open oil filling point shall be connected to storm drains via petrol interceptors with peak storm bypass. • Vehicle and plant servicing areas, vehicle wash bays and lubrication bays shall as far as possible be located within roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor. Oil leakage or spillage shall be contained and cleaned up immediately. Waste oil shall be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.					N/A N/A N/A N/A V
S11.246 & 11.247	Construction work force sewage discharges on site are expected to be discharged to the nearby existing trunk sewer or sewage treatment facilities. If disposal of sewage to public sewerage system is not feasible, appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment. The Contractor shall also be responsible for waste disposal and maintenance practices. Notices shall be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment.	To minimize water quality impacts due to sewage generated from construction workforce	Contractor	Works areas	Construction Phase	V
S11.248	In case seepage of uncontaminated groundwater occurs, groundwater shall be pumped out from the works areas and discharged into the storm system via silt removal facilities. Uncontaminated groundwater from dewatering process shall also be discharged into the storm system via silt traps.	To minimize impact from discharge of uncontaminated groundwater	Contractor	Works areas	Construction Phase	V
S11.249	If land contaminated site is identified from the Stage 2 SI work (refer to Sections 11.188 to 11.191 of the EIA Report), the following mitigation measures shall be	To control site run-off generated from any	Contractor	Any potential contaminated areas to	Construction Phase	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	implemented for the identified contaminated area. Any transient pile of contaminated soil / material shall be minimized and shall be bottom-lined, bunded and covered with impervious membrane during rain event to avoid generation of contaminated runoff. Appropriate intercepting channels and partial shelters shall be provided where necessary to prevent rainwater from collecting within trenches or footing excavations. Any contaminated water and wastewater generated from the decontamination process shall not be directly discharged to public sewers or site drainage. They shall be treated or tanked away as necessary for proper disposal in compliance with the TM-DSS.	potential contaminated works areas.		be identified from the Stage 2 SI		
S11.250 & S11.251	No direct discharge of groundwater from contaminated areas shall be adopted. If land contamination impact and generation of contaminated groundwater is identified from the Stage 2 SI works (refer to **Sections 11.189 to 11.192** of the EIA Report), the following mitigation measures shall be adopted. Any contaminated groundwater shall be either properly treated in compliance with the requirements of the TM-DSS or properly recharged into the ground. If wastewater treatment is deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as TPH) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM-DSS and shall be discharged into the foul sewers. If groundwater recharging wells are deployed, the recharging wells shall be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells shall be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in Section 2.3 of the TM-DSS. The baseline groundwater quality 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 substance such as TPH products shall be removed as necessary by installing the petrol interceptor. The Contractor shall apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.	To minimize potential water quality impact from discharge of contaminated groundwater	Contractor	Any potential contaminated areas to be identified from the Stage 2 SI	Construction Phase	N/A
S11.253	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas shall be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distances of 100 m shall be maintained between the discharge points of construction site effluent and the existing seawater intakes. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If	To minimize water quality impact from effluent discharges from construction sites	Contractor	All construction works areas	Construction Phase	V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring shall be carried out in accordance with the WPCO license which is under the ambit of Regional Office (RO) of EPD.					
S11.254	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation shall be observed and complied with for control of chemical wastes.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	V
S11.255	Any service shop and maintenance facilities shall be located on hard standings within a bunded area, and sumps and oil interceptors shall be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage shall only be undertaken within the areas appropriately equipped to control these discharges.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	V
S11.256	Disposal of chemical wastes shall be carried out in compliance with the Waste Disposal Ordinance. The “Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes” published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers shall be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area shall be selected at a safe location on site and adequate space shall be allocated to the storage area.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	V V V
Waste Management Implications						
Construction Phase						
S12.75	***Good Site Practices and Waste Reduction Measures*** • Prepare a Waste Management Plan (WMP) approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites; • Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection of waste; • Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • Separation of chemical wastes for special handling and appropriate treatment.	To reduce waste management impacts	Contractor	All Work Sites	Construction Phase	V V V V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S12.76	***Good Site Practices and Waste Reduction Measures (con't)*** • Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminum cans by providing separate labeled bins to enable this waste to be segregated from other general refuse generated by the workforce; • Proper storage and site practices to minimize the potential for damage or contamination of construction materials; • Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and • Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	V V V V V V
S12.77	***Good Site Practices and Waste Reduction Measures (con't)*** The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan shall incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP shall be submitted to the Engineer for approval. The Contractor shall implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP shall be reviewed regularly and updated by the Contractor, preferably in a monthly basis.	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	V
S12.78	***Good Site Practices and Waste Reduction Measures (con't)*** C&D materials would be reused in other local concurrent projects as far as possible. If all reuse outlets are exhausted during the construction phase, the C&D materials would be disposed of at Taishan, China as a last resort.	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	N/A
S12.79	***Storage, Collection and Transportation of Waste*** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: • Waste, such as soil, shall be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area shall be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • Different locations shall be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	Work Sites	Construction Phase	V V V V
S12.80	***Storage, Collection and Transportation of Waste (con't)*** Waste haulier with appropriate permits shall be employed by the Contractor for the collection and transportation of waste from works areas to respective disposal	To minimize potential adverse environmental	Contractor	Work Sites	Construction Phase	

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	outlets. The following suggestions shall be enforced to minimize the potential adverse impacts: • Remove waste in timely manner • Waste collectors shall only collect wastes prescribed by their permits • Impacts during transportation, such as dust and odour, shall be mitigated by the use of covered trucks or in enclosed containers • Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28) • Waste shall be disposed of at licensed waste disposal facilities • Maintain records of quantities of waste generated, recycled and disposed	impacts arising from waste collection and disposal				V V V V V V
S12.81	***Storage, Collection and Transportation of Waste (con't)*** • Implementation of trip ticket system with reference to DevB TC(W) No.6/2010 to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) shall be proposed.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	Work Sites	Construction Phase	V
S12.83 – 12.86	***Sorting of C&D Materials*** • Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. • Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. • The C&D materials shall at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled as far as practicable before delivery to PFRFs as mentioned for beneficial use in other projects. While opportunities for reusing the non-inert portion shall be investigated before disposal of at designated landfills. • Possibility of reusing the spoil in the Project will be continuously investigated in the detailed design and construction stages, it includes backfilling to cut and cover construction works for the Hung Hom south and north approach tunnels.	To minimize potential adverse environmental impacts during the handling, transportation and disposal of C&D materials	Contractor	Work Sites	Construction Phase	V V V V
S12.88	***Sediments*** • The basic requirements and procedures for excavated / dredged sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is managing the disposal facilities in Hong Kong for the dredged and excavated sediment, while EPD is the authority of issuing marine dumping permit under the Dumping at Sea Ordinance.	To ensure the sediment to be disposed of in an authorized and least impacted way	Contractor	All works areas with sediments concern	Construction Phase	N/A
S12.89	***Sediments (con't)*** • The contractor for the excavation / dredging works shall apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. A request for reservation of sediment disposal space have been submitted to MFC for onward discussions of disposal approach and feasible disposal sites and the letter is attached in Appendix 12.6. The Project	To determine the best handling and disposal option of the sediments	MTR / Contractor	All works areas with sediments concern	Detailed Design Stage and Construction Phase	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	proponent shall also be responsible for the application of all necessary permits from relevant authorities, including the dumping permit as required under DASO from EPD, for the disposal of dredged and excavated sediment prior to the commencement of the excavation works.					
S12.91 – 12.94	***Sediments (con't)*** • Stockpiling of contaminated sediments shall be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment shall be covered by tarpaulin and the area shall be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiling areas shall be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas shall be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, shall be collected and discharged according to the Water Pollution Control Ordinance (WPCO). • In order to minimise the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments shall be wetted during excavation / material handling and shall be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. • In order to minimise the exposure to contaminated materials, workers shall, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site.	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	N/A
S12.95	***Sediments (con't)*** • A possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal. The technology is readily available for the manufacture of the geosynthetic containers to the project-specific requirements. Similar disposal methods have been used for projects in Europe, the USA and Japan and the issues of	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	fill retention by the geosynthetic fabrics, possible rupture of the containers and sediment loss due to impact of the container on the seabed have been addressed.					
/	***Accidental spillage*** To prevent accidental spillage of chemicals, the following is recommended: • Proper storage and handling facilities will be provided. • All the tanks, containers, storage area will be bunded and the locations will be locked as far as possible from the sensitive watercourse and stormwater drains. • The contractor will register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities will be stored with suitable labels and warnings. • Disposal of chemical wastes will be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize potential adverse environmental impacts arising from accidental spillage	Contractor	Work Sites	Construction Phase	V V V V
S12.97	***Containers for Storage of Chemical Waste*** The Contractor shall register with EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for storage of chemical waste shall: • Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed; • Have a capacity of less than 450 litters unless the specifications have been approved by EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation.	To register with EPD as a Chemical waste producer and store chemical waste in appropriate containers	Contractor	Work Sites	Construction Phase	V V V
S12.98	***Chemical Waste Storage Area*** • Be clearly labeled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only; • Be enclosed on at least 3 sides; • Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; • Have adequate ventilation; • Be covered to prevent rainfall from entering; and • Be properly arranged so that incompatible materials are adequately separated.	To prepare appropriate storage areas for chemical waste at works areas	Contractor	Work Sites	Construction Phase	V V V V V V
S12.99	***Chemical Waste*** • Lubricants, waste oils and other chemical wastes would be generated during the maintenance of vehicles and mechanical equipments. Used lubricants shall be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place.	To clearly label the chemical waste at works areas	Contractor	Work Sites	Construction Phase	V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S12.100	***Collection and Disposal of Chemical Waste*** ***A trip-ticket system shall be operated in accordance with the Waste Disposal*** *(Chemical Waste) (General) Regulation* to monitor all movements of chemical waste. The Contractor shall employ a licensed collector to transport and dispose of the chemical wastes, to either the approved CWTC at Tsing Yi, or another licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.	To monitor the generation, reuse and disposal of chemical waste	Contractor	Work Sites	Construction Phase	V
S12.101	***General Refuse*** General refuse shall be stored in enclosed bins or compaction units separate from C&D materials and chemical waste. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D materials and chemical wastes. Preferably, an enclosed and covered area shall be provided to reduce the occurrence of wind-blown light material.	To properly store and separate from other C&D materials for subsequent collection and disposal	Contractor	Work Sites	Construction Phase	V
S12.102	***General Refuse (con't)*** The recyclable component of general refuse, such as aluminum cans, paper and cleansed plastic containers shall be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste shall be set up by the Contractor. The Contractor shall also be responsible for arranging recycling companies to collect these materials.	To facilitate recycling of recyclable portions of refuse	Contractor	Work Sites	Construction Phase	V
S12.103	***General Refuse (con't)*** The Contractor shall carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins shall also be provided in the sites as reminders.	To raise workers' awareness on recycling issue	Contractor	Work Sites	Construction Phase	V

Legend: V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable

APPENDIX D

Summary of Action and Limit Levels

Appendix D – Summary of Action and Limit Levels

Action and Limit Levels for Construction Noise
(0700 – 1900 hrs of normal weekdays)

ID	Location	Action Level	Limit Level
NM1	Hoi Kung Court	When one documented complaint is received	75 dB(A)

APPENDIX E

Calibration Certificates of Equipments

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-01 **Page** 1 **of** 2

Item tested

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

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	15-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

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

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

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:** 綜合試驗有限公司 SOILS & MATERIALS ENGINEERING COMPANY LTD.

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA1106 04-01 **Page** 2 **of** 2

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	N/A	N/A	
	Repeated at frequency of 100 Hz	N/A	N/A	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

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

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 07-Nov-2014

Checked by: Lam Tze Wai **Date:** 08-Nov-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10307223 / N.004.08
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	13-May-2015	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

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

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:**

SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA1106 04-02 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	94.02	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.002 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 988.9 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 1.3 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 07-Nov-2014

Checked by: Lam Tze Wai **Date:** 08-Nov-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0408 01-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-74
Serial/Equipment No.:	34246490 N.004.10
Adaptors used:	Yes

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	08-Apr-2014

Date of test: 15-Apr-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

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

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 23-Apr-2014 **Company Chop:**

SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. Tel : (852) 2873 6860
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓 Fax : (852) 2555 7533
E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA0408 01-02 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	93.88	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.003 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 1001.9 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 1.3 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 15-Apr-2014

Checked by: Lam Tze Wai **Date:** 23-Apr-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

APPENDIX F

EM&A Monitoring Schedules

Shatin to Central Link Contract 1129 - Advance Works for NSL
Impact Environmental Monitoring Schedule for January 2015

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

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

Noise Monitoring Station
NM1 Hoi Kung Court

Monitoring Frequency
Once per week

Shatin to Central Link Contract 1129 - Advance Works for NSL
Tentative Impact Environmental Monitoring Schedule for February 2015

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

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

Noise Monitoring Station
NM1 Hoi Kung Court

Monitoring Frequency
Once per week

Shatin to Central Link Contract 1129 - Advance Works for NSL
Tentative Impact Environmental Monitoring Schedule for March 2015

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

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

Noise Monitoring Station
NM1 Hoi Kung Court

Monitoring Frequency
Once per week

Shatin to Central Link Contract 1129 - Advance Works for NSL
Tentative Impact Environmental Monitoring Schedule for April 2015

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

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

Noise Monitoring Station
NM1 Hoi Kung Court

Monitoring Frequency
Once per week

APPENDIX G

Noise Monitoring Results and their Graphical Presentations

Appendix G - Impact Daytime Construction Noise Monitoring Results

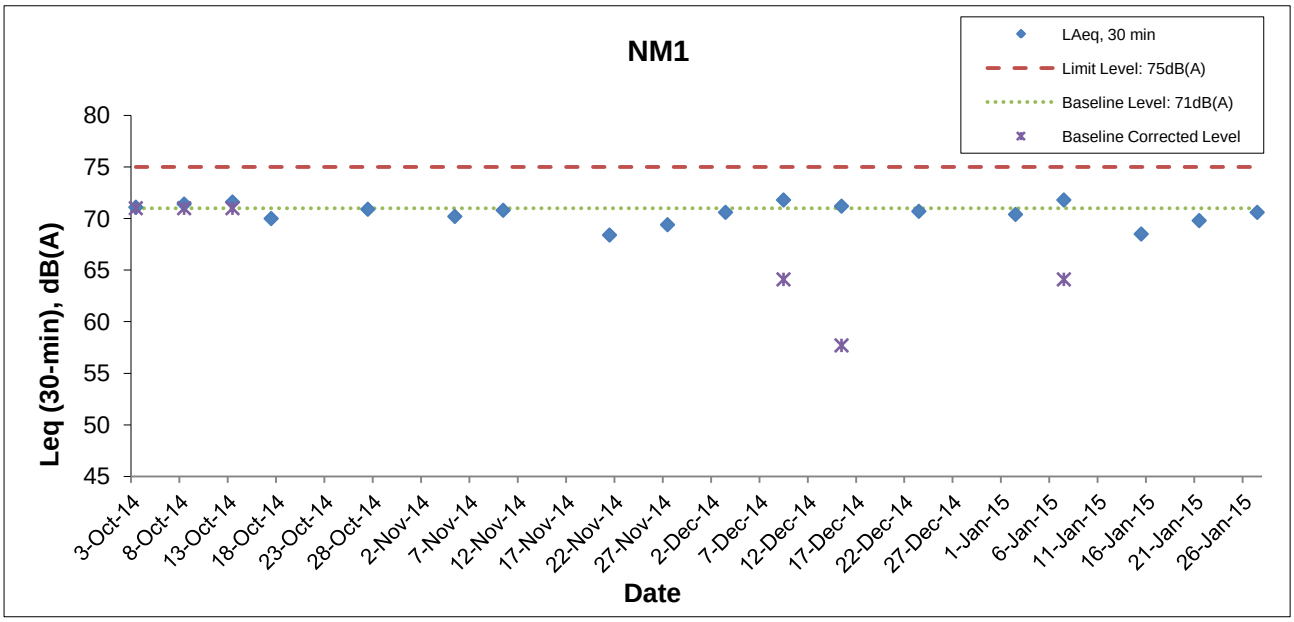
Daytime Noise Monitoring Results at Station NM1 - Hoi Kung Court, Rooftop-20/F

Date	Weather Condition	Noise Level for 30-min, dB(A)*				Baseline Corrected Level, dB(A) #	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
2-Jan-15	Sunny	10:45	66.9	71.8	70.4	<Baseline Level	71	75	N
7-Jan-15	Sunny	13:09	69.2	73.6	71.8	64.1	71	75	N
15-Jan-15	Sunny	10:45	66.8	70.2	68.5	<Baseline Level	71	75	N
21-Jan-15	Sunny	10:08	63.8	71.5	69.8	<Baseline Level	71	75	N
27-Jan-15	Fine	14:00	67.8	73.2	70.6	<Baseline Level	71	75	N

Remark:

* Façade measurement.

-The measured Leq is corrected against the corresponding Baseline Level.



Shatin Central Link
Contract No. 1129
Advance Works for NSL

Graphical Presentation of Impact Daytime Construction Noise Monitoring Results

Date: December 2014

Appendix G

APPENDIX H

Event Action Plan

Appendix H Event Action Plan

Event and Action Plan for Construction Noise Monitoring

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

APPENDIX I

Cumulative Statistics of Complaints, Notification of Summons and Successful Prosecutions

Appendix I

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

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

APPENDIX J

Waste Flow Table

SCL Contract 1129 Advance Works For NSL

updated to 31 January 2015

Monthly Summary C&D Material Flow Table for 2015

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m^3)					Quantity for off-site disposal of Non-inert C&D materials					
	Inert C&D material (m^3)					Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Sediment (m^3)
	CWPFBP(1)	TKO137FB(2)	TKO137SF(3)	^Other Site	**Total (m^3)**	Total	Total		Total	Total	Total
2015/01 (Actual)	*0.00*	*40.00*	*0.00*	*0.00*	*40.00*	0.00	0.00	0.00	0.00	16.90	0.00
2015/02 (Actual)											
2015/03 (Actual)											
2015/04 (Actual)											
2015/05 (Actual)											
2015/06 (Actual)											
Sub-total	**0.00**	***40.00***	***0.00***	***0.00***	**40.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.90**	**0.00**
2015/07 (Actual)											
2015/08 (Actual)											
2015/09 (Actual)											
2015/10 (Actual)											
2015/11 (Actual)											
2015/12 (Actual)											
Sub-total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total					**40.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.90**	**0.00**

Remark: ***Assume the density is 2 tonnes per cubic metre**

^Required to be approved by EPD and MTR

1 CWPFBP Chai Wan Public Fill Barging Point

2 TKO137FB Fill Bank at Tseung Kwan O Area 137

3 TKO137SF Sorting Facilities at Tseung Kwan O Area 137

Appendix B

Monthly EM&A Report for January 2015 – SCL Works Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

Monthly EM&A Report No.7

[Period from 1 to 31 January 2015]

Works Contract 1126 – Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

(February 2015)

Certified by: Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 11th February 2015

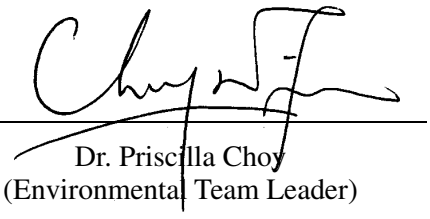
Kaden – Leader Joint Venture

Shatin to Central Link – Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Monthly Environmental Monitoring and Audit Report for January 2015

(Version 2.0)

Certified By



Dr. Priscilla Choy
(Environmental Team Leader)

REMARKS:

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

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

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

+TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

Introduction

1. This is the 7th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for **MTR Shatin to Central Link (SCL) Works Contract 1126 –Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool**. This report documents the findings of EM&A Works conducted from 1 to 31 January 2015.

Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month include:

At Wan Chai Sports Ground (WCSG)

- Construction Site Office; and
- Material storage.

At Public Transport Interchange (PTI) Area

- Construction of Petrol Interception;
- Soil Replacement Works;
- Construction of Store Room;
- Manhole construction & underground utilities connection;
- Construction of ducting for street lighting;
- Construction of footing for bus shelter and signage post; and
- Construction of Temporary Public Toilet.

Environmental Monitoring and Audit Progress

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

Regular Construction Noise and Construction Dust Monitoring

- Regular construction noise monitoring during normal working hours
  Noise Monitoring Station ID
  - NM2(1)(3)(4) (Harbour Centre) 4 times
- Construction Dust (24-hour TSP) Monitoring
  Dust Monitoring Station ID
  - AM2(1)(2) (Wan Chai Sports Ground) 6 times
  - AM3(1) (Existing Harbour Road Sports Centre) 6 times

Remarks:
(1) Station ID as identified in approved EM&A Manual for SCL(HUH-ADM).
(2) The spectator stand at Wan Chai Sports Ground was not available for impact dust monitoring, therefore impact monitoring was conducted at the existing water pump room area at Wan Chai Sports Ground.
(3) Access to the designated monitoring location NM2 (i.e. Block A, Causeway Centre) was denied before the commencement of impact monitoring. Alternative noise monitoring location proposed at Harbour Centre was approved by the ER, agreed by IEC and EPD's formal approval is awaited. Impact noise monitoring was carried out at Harbour Centre from 20 August 2014 onwards.
(4) Line-of-sight from Harbour Centre (7/F) to this Project is screened by the reprovision of Wan Chai Sports Centre which is currently under construction. Impact noise monitoring has been carrying out at Harbour Centre (8/F) instead of 7/F from 19 December 2014 onwards.

Waste Management

4. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. Details of waste management data is presented in Section 5 and **Appendix K**.

Landscape and Visual

5. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 7 and 21 January 2015. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 6.

Environmental Site Inspection

6. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 7, 14, 21 and 28 January 2015. The representative of the IEC joined the site inspection on 14 January 2015. Details of the audit findings and implementation status are presented in Section 6.

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

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

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

9. No Project related environmental complaint and notification of summons/successful prosecutions were received in this reporting period.

Reporting Changes

10. N/A

Future Key Issues

11. Major site activities for the coming reporting month will include:

At Wan Chai Sports Ground (WCSG)

- Construction Site Office; and
- Material storage.

At Public Transport Interchange (PTI) Area

- Construction of Store Room;
- Soil Replacement Works;
- Manhole construction & underground utilities connection;
- Construction of ducting for street lighting;
- Construction of footing for bus shelter and signage post; and

- Construction of Temporary Public Toilet.

12. Key environmental impacts to be considered in the coming month include:

- Dust impact from stockpile of dusty materials and unpaved works area;
- Wastewater from surface runoff;
- Waste management; and
- Noise impact from construction works.

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Kaden – Leader Joint Venture (KLJV) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL)Works Contract 1126 –Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool (hereafter referred to as the Project).

Purpose of the Report

1.2 This is the 7th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 January 2015. The major construction works for Contract 1126 commenced on 9 July 2014.

Structure of the Report

1.3 The structure of the report is as follows:

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

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

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

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

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

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

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

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

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 The Shatin to Central Link – Hung Hom to Admiralty Section (hereafter referred to as SCL (HUH-ADM)) is an approximately 6km extension of the East Rail Line including a rail harbor crossing from Hung Hom across the harbor to Admiralty on Hong Kong Island. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

2.2 The Environmental Impact Assessment (EIA) Report for SCL – Hung Hom to Admiralty Section [SCL (HUH-ADM)] (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, Environmental Permits (EP) (EP No: EP-436/2012) was granted on 22 March 2012 for their construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-436/2012 and the latest Environmental Permit (EP No: EP-436/2012/A) was issued by Director of Environmental Protection (DEP) on 30 April 2014.

2.3 The construction of the SCL (HUH-ADM) has been divided into a series of civil construction Works Contracts and this Works Contract 1126 comprises of the Permanent Works and the Temporary Works for the re-provisioning of Harbour Road Sports Centre (HRSC) and Wan Chai Swimming Pool (WCSP). The major construction works for Contract 1126 commenced on 9 July 2014.

General Site Description

2.4 The major works of this Project that was classified as Designated Project under the EIAO include the demolition of grandstand superstructure and water pump room of WCSG, and the temporary works for the future Public Transport Interchange (PTI) Area. The PTI area has been obtained in phases. The alignment and works area for the Works Contract 1126 are shown in **Figure 1**.

Construction Programme and Activities

2.5 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.

At Wan Chai Sports Ground (WCSG)

- Construction Site Office; and
- Material storage.

At Public Transport Interchange (PTI) Area

- Construction of Petrol Interception;
- Soil Replacement Works;
- Construction of Store Room;
- Manhole construction & underground utilities connection;
- Construction of ducting for street lighting;
- Construction of footing for bus shelter and signage post; and

- Construction of Temporary Public Toilet.

Project Organisation

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

Status of Environmental Licences, Notification and Permits

2.7 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.1**.

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

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-436/2012/A	30/04/2014	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
Ref no.: 370563	14/02/2014	N/A	Valid
Ref no.: 380674	17/10/2014	N/A	Valid
Billing Account for Construction Waste Disposal			
Account No.7019324	10/02/2014	N/A	Valid
Registration of Chemical Waste Producer			
5213-135-K3101-01(1)	14/05/2014	N/A	Valid
5213-135-K3131-01(2)	10/11/2014	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00019352-2014(1)	17/06/2014	30/06/2019	Valid
WT00020565-2014(2)	16/12/2014	31/12/2019	Valid
Construction Noise Permit (CNP)			
GW-RS0761-14(3)	01/08/2014	31/01/2015	Valid
GW-RS1194-14(4)	06/11/2014	05/05/2015	Valid
GW-RS0061-15(5)	23/01/2015	11/04/2015	Valid

Note:
(1) For the site area in WCSG
(2) For the site area in PTI Area
(3) For the use of A&A works in Wan Chai Sports Ground.
(4) For construction works in PTI Area.
(5) For construction works at the Junction of Hung Hing Road and Marsh Road.

Summary of EM&A Requirements

2.8 The EM&A programme under Works Contract 1126 require regular dust and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:

- All monitoring parameters;

- Action and Limit levels for all environmental parameters;
- Event / Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

2.9 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.

2.10 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely construction noise & dust monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Noise Monitoring

3.1 In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to the original baseline monitoring location was rejected, alternative location was proposed. The construction noise monitoring locations are listed in **Table 3.1** and shown in **Figure 2**.

Table 3.1 Regular Construction Noise Monitoring Location

Regular Construction Noise Monitoring Location	Description	Type of Measurement
NM2 (1)	Harbour Centre (8/F) (2) (3)	Façade

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HUH-ADM).
(2) Access to the designated monitoring location NM2 (i.e. Block A, Causeway Centre) was denied before the commencement of impact monitoring. Alternative noise monitoring location proposed at Harbour Centre was approved by the ER, agreed by IEC and EPD's formal approval is awaited. Impact noise monitoring was carried out at Harbour Centre from 20 August 2014 onwards.
(3) Line-of-sight from Harbour Centre (7/F) to this Project is screened by the reprovision of Wan Chai Sports Centre which is currently under construction. Impact noise monitoring has been carrying out at Harbour Centre (8/F) from 19 December 2014 onwards.

Monitoring Parameter and Frequency

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

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

Monitoring Equipment and Methodology

Field Monitoring

3.4 The monitoring procedures are as follows:

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

  - frequency weighting : A
  - time weighting : Fast
  - measurement time : 30 minutes (one set of 30-minute measurement of a $L_{eq,30}$

$_{min}$,reading)

- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station was checked with the portable wind meter. Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- At the end of the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- A façade correction of +3dB(A) shall be made to the noise parameter obtained by free field measurement.

Monitoring Equipment

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

Table 3.2 Noise Monitoring Equipment

Monitoring Equipment	Model (Serial no.)
Sound Level Meter	SVAN 957 (Serial no.: 21459 and 21460)
Calibrator	SV30A (Serial no.: 24791) B&K 4231 (Serial no.: 2326353)

Maintenance and Calibration

3.6 Maintenance and Calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals. Copies of calibration certificates are attached in **Appendix C**.

Action & Limit Level for Construction Noise Monitoring

3.7 The Action and Limit Levels are presented in **Appendix B** and the Event / Action Plan (EAP) for noise monitoring is presented in **Appendix I.**

Compliance Checking for Impact Monitoring

3.8 The Baseline noise monitoring was conducted between 1 and 14 September 2014 at Harbour Centre. The Baseline noise monitoring results (L_{eq}(30min.) dB(A)) during the period without construction works on normal weekdays ranged from 67.1dB(A) to 73.0dB(A). Result of the monitoring (i.e. 69.6dB(A)) was used for correcting the measured noise level during the construction stage of the Project for normal weekdays by this formula:

Measured L_{eq} at the Harbour Centre – Baseline Noise Level (69.6 dB)

= Construction Noise Level at the Harbour Centre

Continuous Noise Monitoring

3.9 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared submitted under EP Condition 2.8 and Condition 2.7 respectively, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria is anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (HUH-ADM) under Works Contract 1126.

Regular Construction Dust Monitoring

3.10 The proposed dust monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are listed in **Table 3.3** and shown in **Figure 3**. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.3 Dust Monitoring Location

Regular Dust Monitoring Location	Description
AM2(1)	Wan Chai Sports Ground (2)
AM3(1)	Existing Harbour Road Sports Centre

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HUH-ADM).
(2) The spectator stand at Wan Chai Sports Ground was not available for impact dust monitoring, therefore impact monitoring was conducted at the existing water pump room area at Wan Chai Sports Ground.

Monitoring Parameter and Frequency

3.11 The dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 24-hour TSP levels were monitored at the frequency and duration stated in **Table 3.4**. The TSP monitoring at two monitoring locations was conducted as per the schedule presented in **Appendix D**.

Table 3.4 Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring(1)	Throughout the construction period	24-hour TSP	Once per 6 days

Note:
(1) 1- hour TSP shall be conducted when one documented valid complaint is received.

Monitoring Equipment

3.12 **Table 3.5** summarizes the equipment used for the dust monitoring.

Table 3.5 Dust Monitoring Equipment

Equipment	Model and Make	Qty.
HVS	Tisch Environmental, Inc.; Model no. TE-5170, Serial no.: 1535	1
	GMWS Model no. GS-2310-105 Serial no.: 5280	1
Calibration Orifice	Tisch Environmental, Inc.; Model no. TE – 5025A Orifice ID: 0993	1

Instrumentation

3.13 High Volume Samplers (HVS) connected with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 Appendix B (Part 50).

HVS Installation

3.14 The following guidelines were adopted during the installation of HVS:

- A horizontal platform with appropriate support to secure the samplers against gusty wind should be provided;
- Two samplers should not be placed less than 2m apart;
- The distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
- A minimum of 2m separation from walls, parapets and penthouses is required for rooftops samplers;
- A minimum of 2m separation from any supporting structure, measures horizontally is required;
- No furnace or incinerator flue is located nearby the samplers;
- Airflow around the sampler is unrestricted;
- The sampler is more than 20m from the dripline;
- Any wire fence and gate to protect the sampler, should not cause any obstruction during monitoring;
- Permission must be obtained to set up the samplers and to obtain access to the

monitoring stations; and
- A secured supply of electricity is needed to operate the samplers.

Filters Preparation

3.15 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 μm diameter. A HOKLAS accredited laboratory, Wellab Ltd. (HOKLAS Registration No. 083), was responsible for the preparation of pre-weighed filter papers for Cinotech's monitoring team.

3.16 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

3.17 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

3.18 Operating/analytical procedures for the TSP monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard.
- The power supply was checked to ensure the sampler worked properly.
- The filter holding frame and the area surrounding the filter were cleaned.
- On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the air quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts to avoid air leakage at the edges.
- The shelter lid was closed and secured with the aluminum strip.
- A new flow rate record chart was set into the flow recorder.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- The flow rate of the HVS sampler would be verified to be constant and recorded on the data sheet before and after sampling.
- The elapsed time and other relevant information was recorded. After sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed and sent to the Wellab Ltd. for weighing.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

3.19 The following maintenance/calibration was required for the HVS:

- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. Copies of calibration certificates are attached in **Appendix C**.
- The HVS calibration orifice will be calibrated annually.

Action and Limit Levels for Dust Monitoring

3.20 The Action and Limit levels have been established and are presented in **Appendix B** and the Event / Action Plan (EAP) for dust monitoring is presented in **Appendix I.**

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 given in **Appendix J**.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

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

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (December 2014)	14 January 2015

5 MONITORING RESULTS

Regular Construction Noise Monitoring

5.1 A total of 4 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1126. No exceedance of the limit level was recorded at designated monitoring stations.

5.2 Based on observation during the on-site monitoring, road traffic nearby is considered as a potential noise source other than construction works of the Project that affects the monitoring results of the reporting month.

5.3 The noise monitoring results together with their graphical presentations are presented in **Appendix F** and a summary of the noise monitoring results in this reporting month is given in **Table 5.1**.

Table 5.1 Summary Table of Noise Monitoring Results during the reporting month

Parameter (1)	Location	Range, dB(A), $L_{eq\ (30\ mins)}$ (2)	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
Noise (NM2)	Harbour Centre (3)	< Baseline – 70.7	75

Remarks:

(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HUH-ADM).

(2) The Range presented in the above table was baseline corrected noise level.

(3) Line-of-sight from Harbour Centre (7/F) to this Project is screened by the reprovision of Wan Chai Sports Centre which is currently under construction. Impact noise monitoring has been carrying out at Harbour Centre (8/F) instead of 7/F from 19 December 2014 onwards.

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

Regular Dust Monitoring

5.5 12 sets of 24-hour TSP monitoring were carried out at the designated monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1126. The monitoring results together with their graphical presentations are presented in **Appendix E** and a summary of the dust monitoring results in this reporting month is given in **Table 5.2**.

Table 5.2 Summary Table of Dust Monitoring Results during the reporting month

Parameter	**Minimum µg/m³**	**Maximum µg/m³**	**Average µg/m³**	**Action Level, µg/m³**	**Limit Level, µg/m³**
24-hr TSP (AM2(1))	74.3	144.1	108.9	160	260
24-hr TSP (AM3(1))	48.3	133.5	102.9	169	260

Remarks: (1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HUH-ADM).

5.6 Based on observation during the on-site monitoring, road traffic emission nearby is considered as a potential dust source other than construction works of the Project that affects the monitoring results of the reporting month.

5.7 Wind monitoring data were obtained from Star Ferry Meteorological Station of Hong Kong Observatory and shown on **Appendix E**.

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

Waste Management

5.9 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse and recyclable wastes like plastics and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.3**. Details of waste management data is presented in **Appendix K**. 0 m^3 of inert C&D material was re-used on-site and by other projects.

Table 5.3 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) [(a)]	C&D Materials (non-inert) [(b)]				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/ cardboard	Plastics	Metals
January 2015	*2,100 m^3*	*32 m^3*	*0 kg*	*0 kg*	*0 kg*	*0 kg*

Notes:
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil,
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

Landscape and Visual

5.10 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 7 and 21 January 2015. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION

Site Audit

6.1 Site audit was carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audit are attached in **Appendix H**.

6.2 Site audits were conducted on 7, 14, 21 and 28 January 2015 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 14 January 2015. No site inspection was conducted by EPD during the reporting month. The details of observations during site audit can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix J**.

6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	--
Noise	--	--	--
Landscape and Visual	--	--	--
Air Quality	7 Jan 2015	Observation: Unpaved area in PTI Area was observed dry. The Contractor is reminded to provide water spray to avoid dust generation.	The observation was observed to be improved/rectified by the Contractor during the audit session on 14 January 2015.
	14 Jan 2015	Reminder: Visible smoke observed from the generator in PTI. The Contractor is reminded to repair the generator properly.	The observation was observed to be improved/rectified by the Contractor during the audit session on 21 January 2015.
	21 Jan 2015	Observation: Some works area in PTI Area was observed dry. The Contractor is reminded to provide water spray to avoid dust generation.	Follow up action will be reported in next reporting month.
	28 Jan 2015	Observation: Unpaved area in PTI Area was observed dry. The Contractor is reminded to provide water spray to avoid dust generation.	Follow up action will be reported in next reporting month.
	28 Jan 2015	Reminder: Visible smoke observed from generator in PTI. The Contractor is reminded to repair the generator properly.	Follow up action will be reported in next reporting month.
Waste / Chemical Management	31 Dec 2014	Reminder: Chemical waste container in PTI observed not labelled. The Contractor is reminded to provide clear label in compliance	The observation was observed to be improved/rectified by the Contractor during the

Parameters	Date	Observations and Recommendations	Follow-up
		with the COP.	audit session on 7 January 2015.
	7 Jan 2015	Observation: Chemical containers are observed stored in the Chemical waste container in PTI Area. The Contractor is reminded to store chemical waste only in the Storage Area.	The observation was observed to be improved/rectified by the Contractor during the audit session on 14 January 2015.
	21 Jan 2015	Observation: Container for lubricant was observed without secondary confinement in PTI Area. The Contractor is reminded to provide drip tray to chemical container.	The observation was observed to be improved/rectified by the Contractor during the audit session on 28 January 2015.
	21 Jan 2015	Reminder: Construction material and waste was accumulated in same area in PTI Area. The Contractor is reminded to set up designated area for construction material and waste for separation.	The observation was observed to be improved/rectified by the Contractor during the audit session on 28 January 2015.
Permits/ Licenses	--	--	--

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

7.1 No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period. The summary of exceedance is provided in **Appendix G**.

Summary of Environmental Non-Compliance

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

Summary of Environmental Complaint

7.3 No environmental Project-related complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix L**.

Summary of Environmental Summon and Successful Prosecution

7.4 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix L**.

8 FUTURE KEY ISSUES

Construction Programme for the Next Month

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

At Wan Chai Sports Ground (WCSG)

- Construction Site Office; and
- Material storage.

At Public Transport Interchange (PTI) Area

- Construction of Store Room;
- Soil Replacement Works;
- Manhole construction & underground utilities connection;
- Construction of ducting for street lighting;
- Construction of footing for bus shelter and signage post; and
- Construction of Temporary Public Toilet.

Key Issues in the Next Month

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

- Dust impact from stockpile of dusty materials and unpaved works area;
- Wastewater from surface runoff;
- Waste management; and
- Noise impact from construction works.

Monitoring Schedule in the Next Month

8.3 The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring at all the monitoring locations in the next 3 months is presented in **Appendix D**. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 31 January 2015 in accordance with EM&A Manual and the requirement under EP.

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

9.3 4 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 2 times of bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting period.

9.4 There was no Project related environmental complaint, successful prosecution or notification of summons received during the reporting month.

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

Recommendations

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

Water Quality

- N/A

Landscape and Visual

- N/A

Noise

- N/A

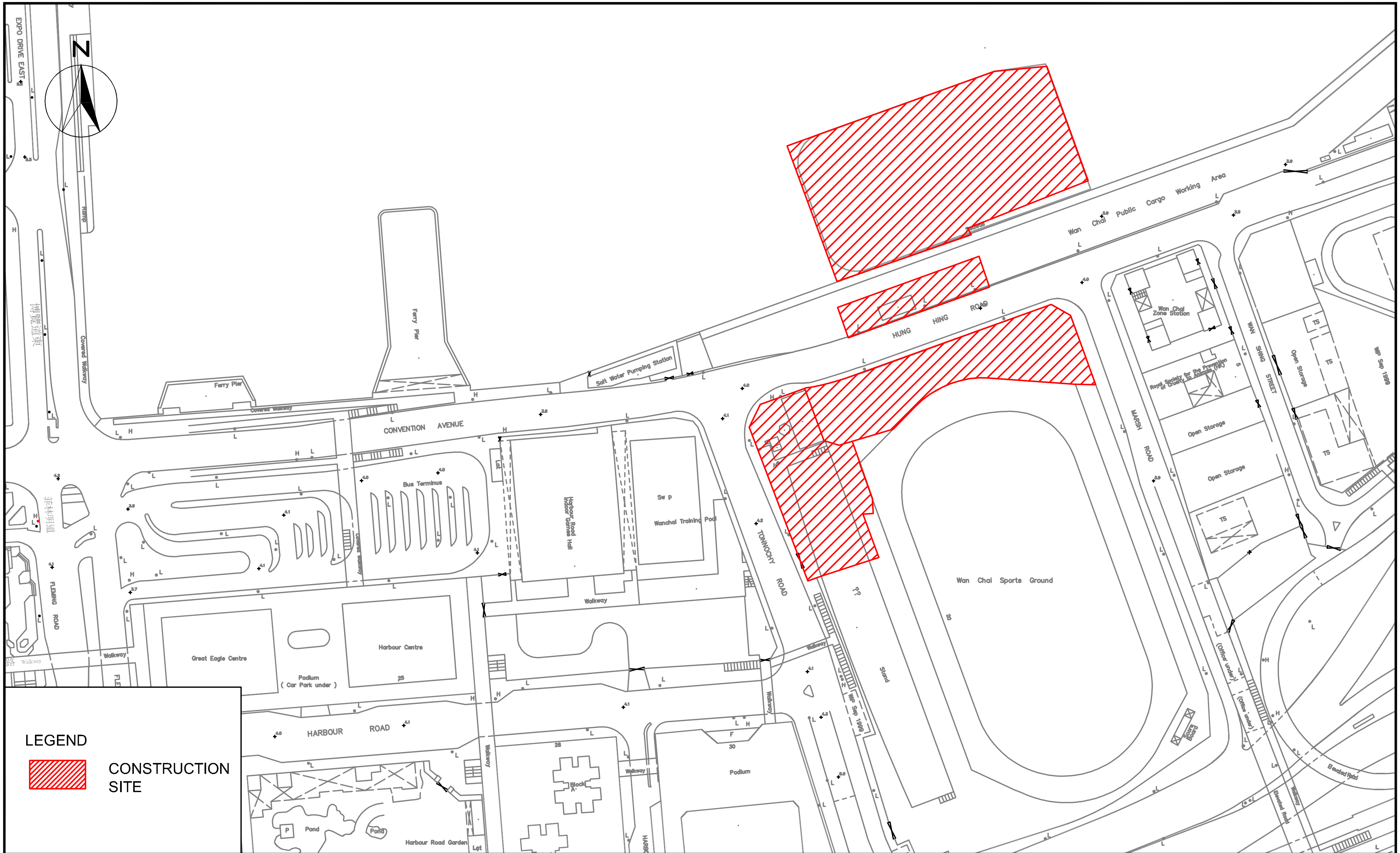
Air Quality

- The Contractor is reminded to perform regular maintenance of machinery.
- The Contractor is reminded to provide effective measure to prevent dust generation from unpaved area, haul road and stockpile of dusty material.

Waste/Chemical Management

- The Contractor is reminded to provide drip tray for chemical containers to avoid chemical leakage.
- The Contractor is reminded to store chemical waste only in the Chemical Waste Container.
- The Contractor is reminded to set up designated area for construction material and waste for separation.

FIGURES



LEGEND

CONSTRUCTION SITE

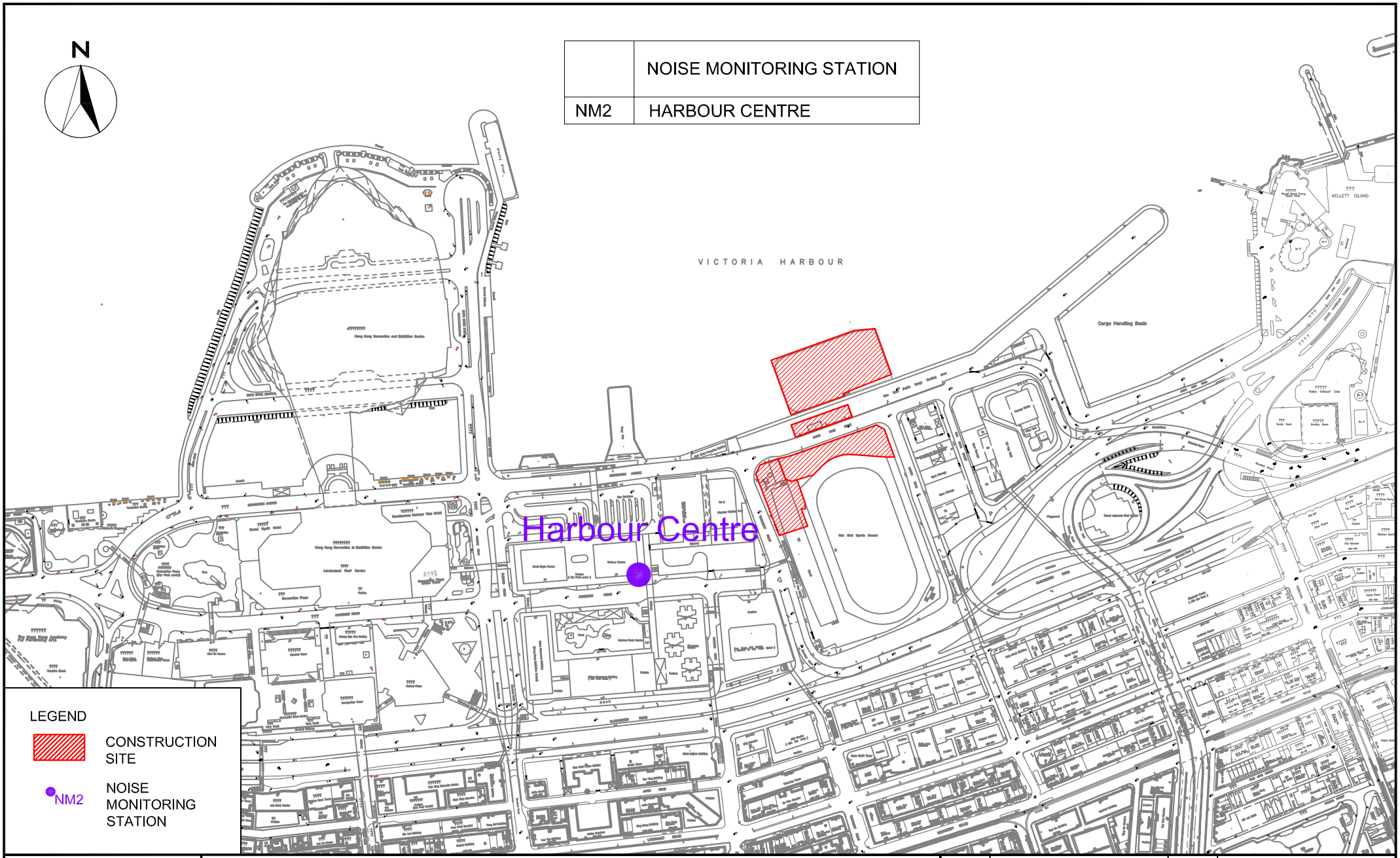
CINOTECH

Cinotech Consultants Limited

MTR 1126 REPROVISIONING OF HARBOUR ROAD SPORTS CENTRE AND WAN CHAI SWIMMING POOL

SITE LAYOUT PLAN

SCALE	1:2000 @ A4	DATE	NOV 2014	
CHECK	JF	DRAWN	JW	
JOB No.	MA14009	FIGURE NO.	1	REV -

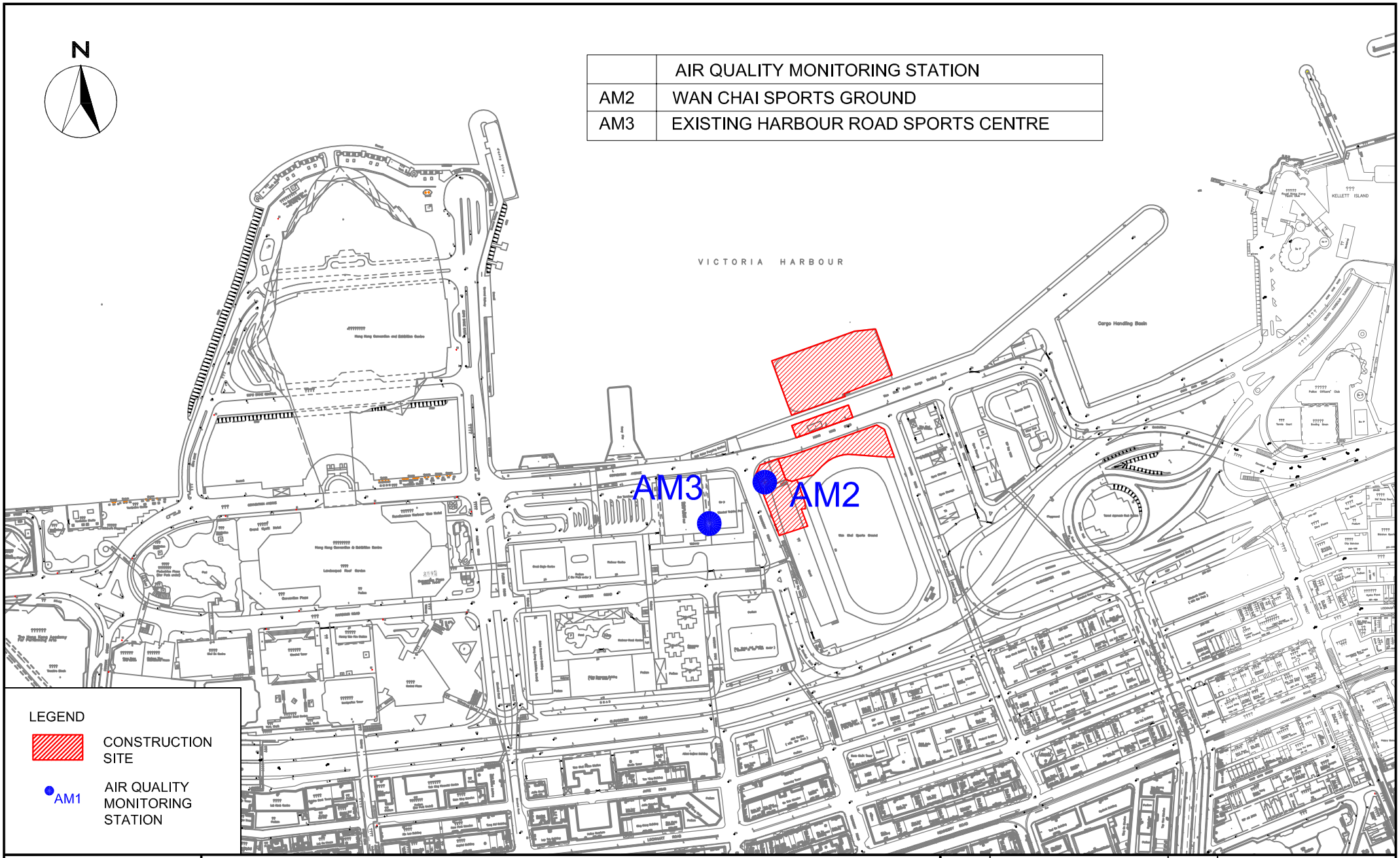


CINOTECH
Cinotech Consultants Limited

MTR 1126 REPROVISIONING OF HARBOUR ROAD SPORTS CENTRE AND WAN CHAI SWIMMING POOL

LOCATION OF NOISE MONITORING STATION

SCALE	1:5000 @ A4	DATE	NOV 2014
CHECK	JF	DRAWN	JW
JOB No.	MA14009	FIGURE NO. 2	REV -

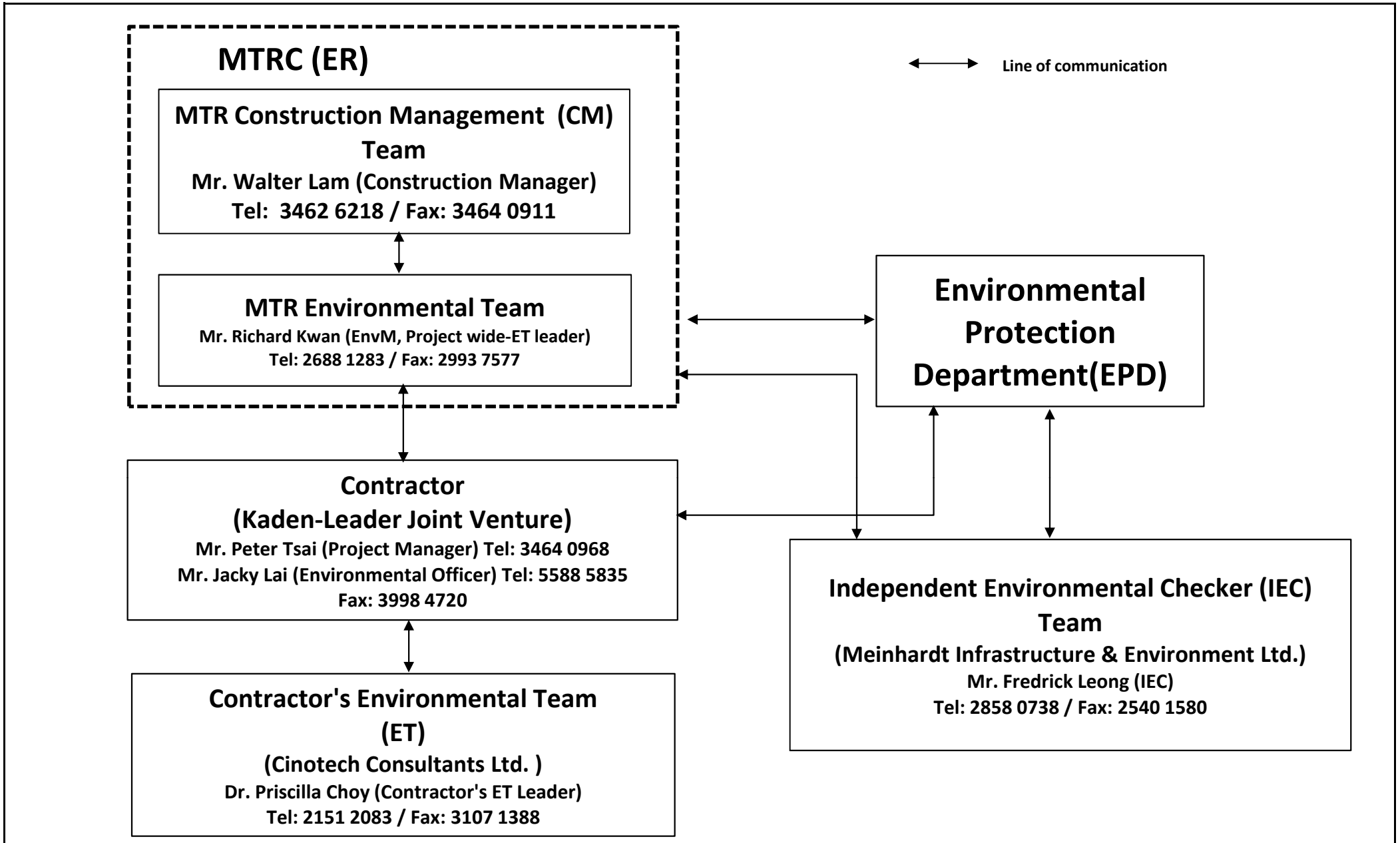


CINOTECH
Cinotech Consultants Limited

MTR 1126 REPROVISIONING OF HARBOUR ROAD SPORTS CENTRE AND WAN CHAI SWIMMING POOL

LOCATION OF AIR QUALITY MONITORING STATIONS

SCALE	1:5000 @ A4	DATE	NOV 2014
CHECK	JF	DRAWN	JW
JOB No.	MA14009	FIGURE NO. 3	REV -

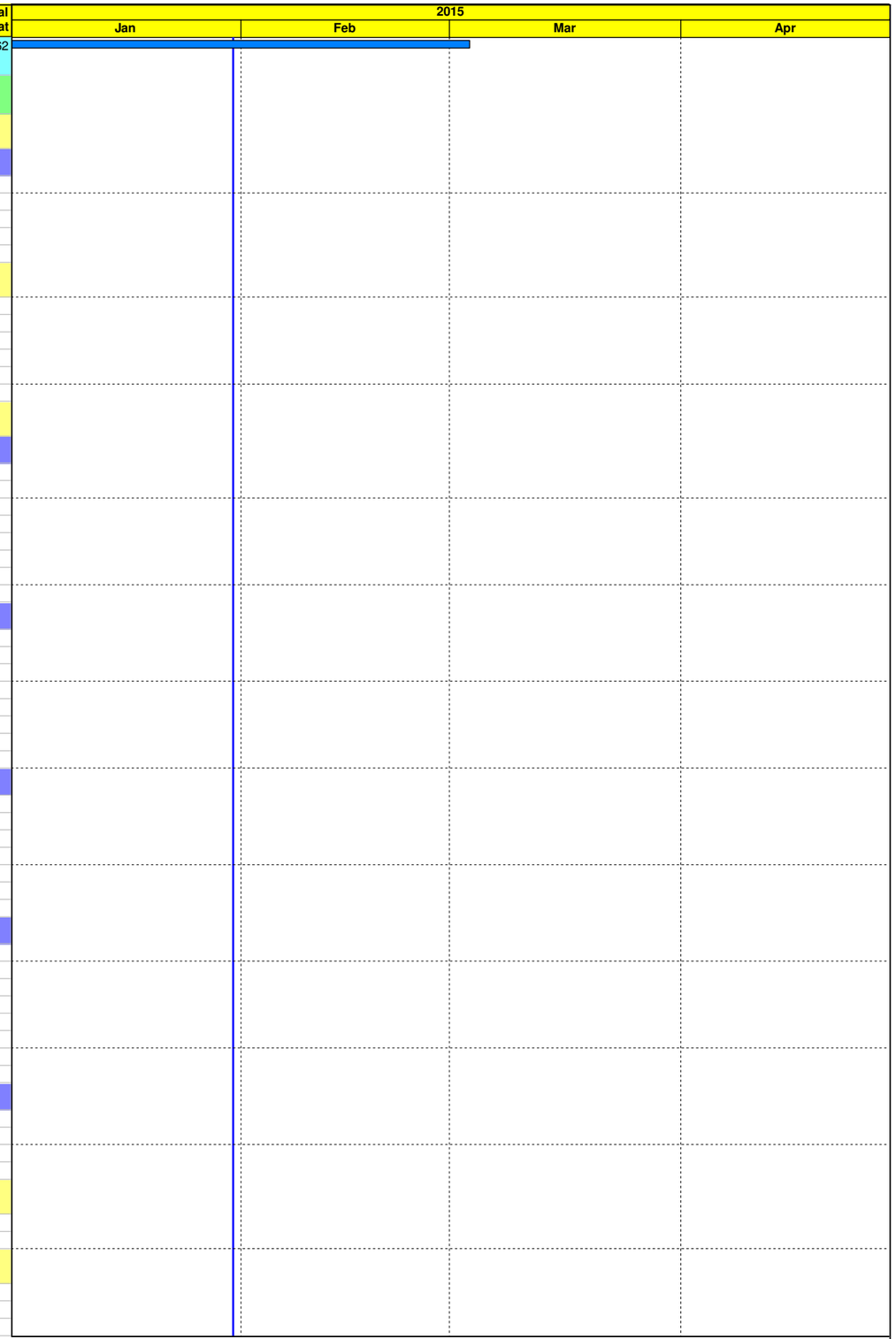


Title	Scale	Proposa
SCL Contract 1126 The Shatin to Central Link - Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool Project Organisation for Environmental Works	N.T.S	No. MA14009
	Date Jul-14	Figure 4

CINOTECH

APPENDIX A
TENTATIVE CONSTRCUTION PROGRAMME

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SCL1126 - Reprovisioning of HRSC & WCSP (20 Jan 2014) _ Revised		247	28-Apr-14 A	03-Mar-15	662
Cost Centre E - Temporary Reprovisioning Works at WCSG		108	28-Apr-14 A	30-Sep-14 A	
Design & Shop Drawing		56	28-Apr-14 A	01-Aug-14 A	
Weight Lifting Room		56	28-Apr-14 A	01-Aug-14 A	
A5840	Weight Lifting Room - Prepare & Submit - 1st Round	12	28-Apr-14 A	10-May-14 A	
A5850	Weight Lifting Room - Comment & Approval - 1st Round	6	11-May-14 A	22-May-14 A	
A5860	Weight Lifting Room - Prepare & Submit - 2nd Round	5	23-May-14 A	28-May-14 A	
A5870	Weight Lifting Room - Comment & Approval - 2nd Round	6	29-May-14 A	30-Jul-14 A	
A7120	Weight Lifting Room - ICC Submission & Approval	6	31-Jul-14 A	01-Aug-14 A	
Site Preparation		24	30-Apr-14 A	13-Jun-14 A	
A3755	Site Procession	0	03-Jun-14 A	03-Jun-14 A	
A3760	Erection of covered hoarding outside Sports Ground	24	30-Apr-14 A	31-May-14 A	
A3770	Erection of protective barrier inside Sports Ground	3	03-Jun-14 A	05-Jun-14 A	
A3780	Diversion of existing irrigation pipes	7	04-Jun-14 A	12-Jun-14 A	
A3790	Tree felling (32nos), transplantion (5nos) and tree protection	10	03-Jun-14 A	13-Jun-14 A	
A3800	Transport and storage the existing fitness / weight lifting equipments	5	03-Jun-14 A	05-Jun-14 A	
Site Works		93	05-Jun-14 A	10-Sep-14 A	
Fitness Room and Kiosk		73	05-Jun-14 A	06-Sep-14 A	
A3840	Earthworks and excavation for footing construction	7	05-Jun-14 A	07-Jun-14 A	
A3850	Construction of footing	7	09-Jun-14 A	12-Jun-14 A	
A3860	Constrcution of column & wall	7	13-Jun-14 A	25-Jun-14 A	
A3870	Construction of Roof slab & beam	6	24-Jun-14 A	27-Jun-14 A	
A3880	Roof finish - Waterproof / thermal insulation / floor finish / surface channel / fall arrest / etc.	25	03-Jul-14 A	30-Aug-14 A	
A3890	Internal finish for wall, floor & ceiling - screed/skirt/tile/paint/rubber sheet with carpet cover/signage/etc.	35	14-Jul-14 A	03-Sep-14 A	
A3900	External finish for wall - plaster / paint / metal works	30	02-Jul-14 A	02-Sep-14 A	
A3920	Building Service - MVAC, electrical, fire service, plumbing & drainage	30	02-Jul-14 A	06-Sep-14 A	
Male Changing Room with HR Pump Room and Store room		73	09-Jun-14 A	06-Sep-14 A	
A3930	Earthworks and excavation for footing construction	7	09-Jun-14 A	11-Jun-14 A	
A3940	Construction of footing	7	12-Jun-14 A	14-Jun-14 A	
A3950	Constrcution of column & wall	7	16-Jun-14 A	24-Jun-14 A	
A3960	Construction of Roof slab & beam	7	23-Jun-14 A	05-Jul-14 A	
A3970	Roof finish - Waterproof / thermal insulation / floor finish / surface channel / fall arrest / etc.	25	09-Jul-14 A	28-Aug-14 A	
A3980	Internal finish for wall, floor & ceiling - block wall/screed/skirt/tile/paint/minor/locker/toilet cubicle/signage/etc.	35	10-Jul-14 A	03-Sep-14 A	
A3990	External finish for wall - plaster / paint / metal works	30	09-Jul-14 A	02-Sep-14 A	
A4010	Building Service - MVAC, electrical, fire service, plumbing & drainage	30	07-Jul-14 A	06-Sep-14 A	
Marshall Seats		70	09-Jun-14 A	06-Sep-14 A	
A4020	Earthworks and excavation for footing construction	5	09-Jun-14 A	13-Jun-14 A	
A4030	Construction of footing	7	14-Jun-14 A	21-Jun-14 A	
A4040	Constrcution of column / wall / beam / slab	7	23-Jun-14 A	24-Jul-14 A	
A4050	Erection of structural steel roof including cladding & corrugated sheet	18	25-Jul-14 A	11-Aug-14 A	
A4060	Metal Works - zinc gutter / grating / downpipe / balustrade / railing	18	12-Aug-14 A	03-Sep-14 A	
A4070	Furnitures & finish - mass concrete fill / screed / stadium plastic seat	12	13-Aug-14 A	02-Sep-14 A	
A4080	Building Service - electrical, fire service, PA system	18	28-Jul-14 A	06-Sep-14 A	
Weightlifing Room		74	16-Jun-14 A	06-Sep-14 A	
A4090	Earthworks and excavation for footing construction	7	16-Jun-14 A	23-Jun-14 A	
A4100	Construction of footing	7	24-Jun-14 A	27-Jun-14 A	
A4110	Constrcution of column & wall	7	07-Jul-14 A	18-Jul-14 A	
A4120	Construction of Roof slab & beam	4	19-Jul-14 A	24-Jul-14 A	
A4130	Roof finish - Waterproof / thermal insulation / floor finish / surface channel / fall arrest / etc.	20	28-Jul-14 A	29-Aug-14 A	
A4140	Internal finish for wall, floor & ceiling - screed / skirt / tile / paint / signage / etc.	23	14-Aug-14 A	03-Sep-14 A	
A4150	External finish for wall - plaster / paint / metal works	30	31-Jul-14 A	02-Sep-14 A	
A4170	Building Service - MVAC, electrical, fire service	19	04-Aug-14 A	06-Sep-14 A	
Landscaping & External Work		79	16-Jun-14 A	10-Sep-14 A	
A4180	Demolition of existing warn up track for temporary reprovisioning works	7	30-Aug-14 A	04-Sep-14 A	
A4190	Footway / drainage / U-channel / paving / drainage pipe / etc.	42	16-Jun-14 A	06-Sep-14 A	
A4200	Building Service - Lamp pole / floodlight / street hydant / earthing tap / irrigation system / etc.	40	07-Jul-14 A	06-Sep-14 A	
A5570	Extension of warm up track - floor finish	4	05-Sep-14 A	10-Sep-14 A	
Testing & Commisioning		5	08-Sep-14 A	11-Sep-14 A	
A4210	Internal - MVAC / Electrical / FS / P&D	5	08-Sep-14 A	11-Sep-14 A	
A4220	External - Irrigation / Lighting / FS / P&D	5	08-Sep-14 A	11-Sep-14 A	
Statutory Inspection and Approval		58	28-Jul-14 A	30-Sep-14 A	
A4221	Form WWO46 Part IV Submission to WSD	4	08-Sep-14 A	10-Sep-14 A	
A4222	WSD Inspection	2	11-Sep-14 A	11-Sep-14 A	
A4223	Issue WWO46 Part V Certificate	4	12-Sep-14 A	23-Sep-14 A	

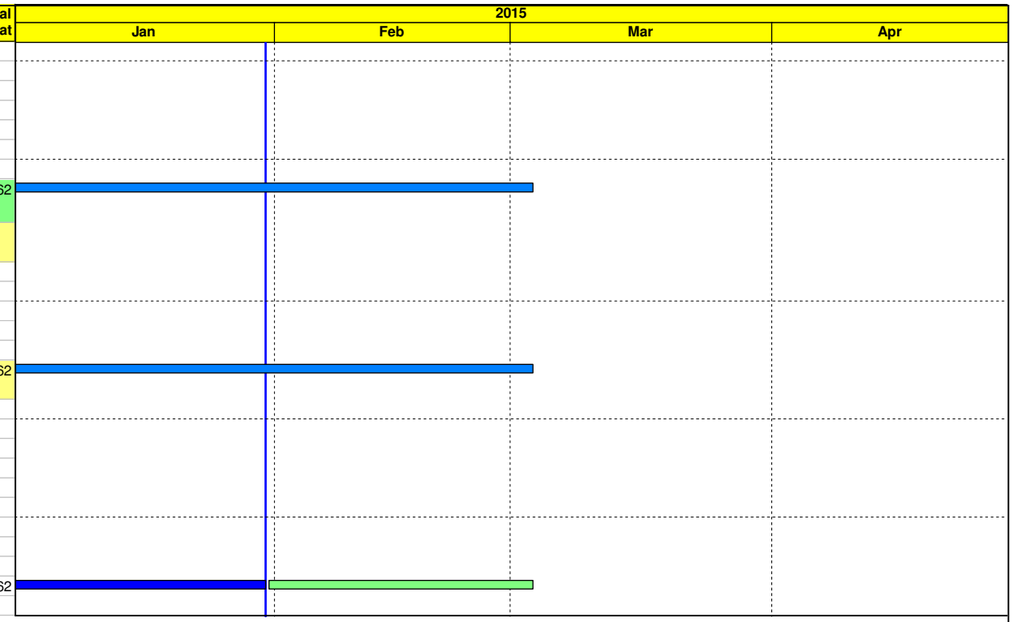


Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SCL1126 - Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Three Months Rolling Programme for WCSG (Jan 2015 ~ Apr 2015)

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
A4224	Submission of Final Amendment to FSD	2	28-Jul-14 A	28-Jul-14 A	
A4225	Approval of Final Amendment from FSD	24	29-Jul-14 A	29-Jul-14 A	
A4230	Submit Forms FS 314 & FS 501	10	29-Aug-14 A	24-Sep-14 A	
A4240	FS Inspection	1	25-Sep-14 A	25-Sep-14 A	
A4250	Obtain FS Certificate & OP	2	29-Sep-14 A	30-Sep-14 A	
A5590	Cleaning and Pre-handover to LCSD	1	10-Sep-14 A	11-Sep-14 A	
A5600	Site handover to LCSD (New Provisions)	1	12-Sep-14 A	12-Sep-14 A	
Cost Centre F - Demolition Works at WCSG		247	12-May-14 A	03-Mar-15	662
Demolition Plan		87	12-May-14 A	10-Jul-14 A	
A9560	Demolition Plan - Prepare & Submit - 1st Round	6	12-May-14 A	16-May-14 A	
A9570	Demolition Plan - Comment & Approval - 1st Round	6	17-May-14 A	23-May-14 A	
A9580	Demolition Plan - Prepare & Submit - 2nd Round	6	24-May-14 A	12-Jun-14 A	
A9590	Demolition Plan - Comment & Approval - 2nd Round	6	13-Jun-14 A	09-Jul-14 A	
A9600	Demolition Plan - ICC Submission & Approval	10	10-Jul-14 A	10-Jul-14 A	
Demolition Works		235	03-Jun-14 A	03-Mar-15	662
A9610	Site Procession	0	03-Jun-14 A	03-Jun-14 A	
A9620	Erection of covered hoarding and temp. staircase outside Sport Ground	12	03-Jun-14 A	16-Jun-14 A	
A9630	Erection of covered hoarding and temp. staircase inside Sport Ground	6	16-Jun-14 A	25-Jul-14 A	
A9640	Temporary works / precaution measures for demolition works	6	14-Jun-14 A	07-Jul-14 A	
A9650	Joint site inspection and obtain approval by ICC prior to actual demolition	3	08-Jul-14 A	08-Jul-14 A	
A9660	Demolition works	72	09-Jul-14 A	22-Sep-14 A	
A9670	Ground formation	26	23-Sep-14 A	26-Sep-14 A	
A9671	Pre-drill and Instrumentation installation (Piezometer and utilty settlement marker)	6	22-Sep-14 A	17-Oct-14 A	
A9680	Site cleaning and touch up	26	27-Sep-14 A	20-Oct-14 A	
A9681	Site container office	7	22-Nov-14 A	03-Mar-15	662
A9690	Ready for site handover and Handover	60	30-Sep-14 A	30-Sep-14 A	

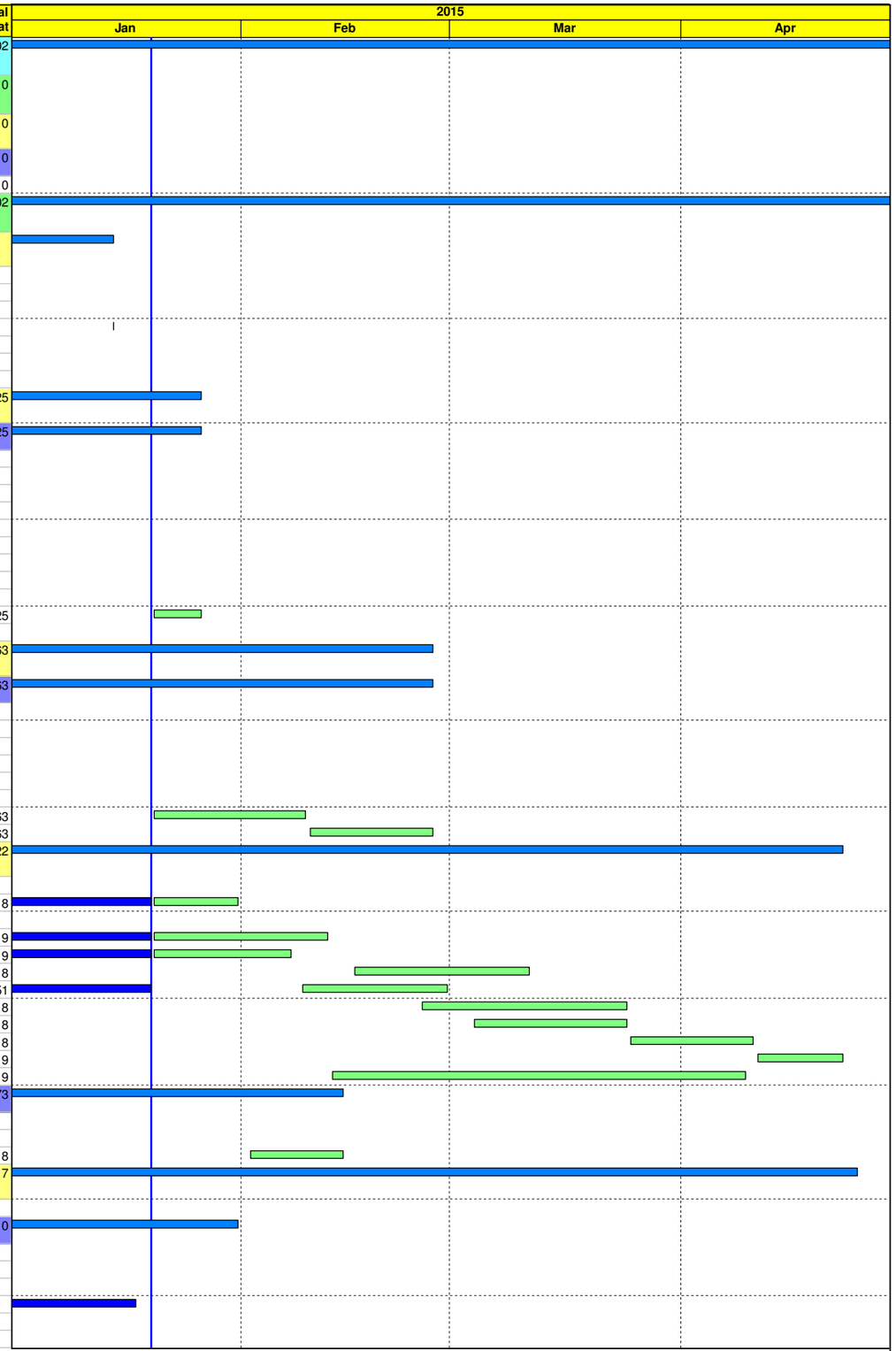


Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SCL1126 - Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Three Months Rolling Programme for WCSG (Jan 2015 ~ Apr 2015)

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SCL1126 - Reprovisioning of HRSC & WCSP (20 Jan 2014) _ Program		150	26-Aug-14 A	16-May-15	602
Contractual Dates and Project Key Dates		0	16-May-15	16-May-15	0
IPS Milestone Dates		0	16-May-15	16-May-15	0
Cost Centre H - Temporary PTI Facilities at Wan Chai North (Option1)		0	16-May-15	16-May-15	0
01126.MSH04	H4 - Complete all orks within Cost Centre H; Complete trial runs & Ready for handover to TD (Wk. 50/14, 15-Mar-15)	0		16-May-15*	0
Cost Centre H - Temporary Public Transport Interchange Facilities at		150	26-Aug-14 A	16-May-15	602
Site Procession		57	06-Oct-14 A	15-Jan-15 A	
A14400	Site procession for Area 1	1	06-Oct-14 A	06-Oct-14 A	
A14401	Site procession for Area 2	1	15-Oct-14 A	15-Oct-14 A	
A14402	Site procession for Area 3	1	31-Oct-14 A	31-Oct-14 A	
A14403	Site procession for remaining Area (portion of Area 2 & 3)	1	15-Jan-15 A	15-Jan-15 A	
A14410	UU detection and instrumentation installation	24	06-Oct-14 A	03-Nov-14 A	
A14420	Setting out	24	06-Oct-14 A	31-Oct-14 A	
A14425	Statutory approval letter (DSD, WSD, FSD & ICC)	1	20-Nov-14 A	15-Dec-14 A	
Area 1		68	08-Oct-14 A	26-Jan-15	25
Petrol interception		68	08-Oct-14 A	26-Jan-15	25
A14770	Excavation	6	08-Oct-14 A	15-Oct-14 A	
A14780	Blinding layer	1	16-Oct-14 A	16-Oct-14 A	
A14790	Rebar fixing for bottom slab	6	20-Oct-14 A	31-Oct-14 A	
A14800	Formwork erection for bottom slab	6	01-Nov-14 A	08-Nov-14 A	
A14810	Concreting for bottom slab	1	10-Nov-14 A	10-Nov-14 A	
A14820	Rebar fixing for wall and slab	6	11-Nov-14 A	15-Nov-14 A	
A14830	Formwork erection for wall and slab	6	17-Nov-14 A	22-Nov-14 A	
A14840	Cast in drainage & steel bar	4	24-Nov-14 A	27-Nov-14 A	
A14850	Concreting for wall and slab	1	09-Dec-14 A	09-Dec-14 A	
A14860	Applying finishes	6	20-Jan-15	26-Jan-15	25
A14870	Access ladder installation	6	09-Dec-14 A	09-Dec-14 A	
Area 2		30	24-Nov-14 A	26-Feb-15	63
Store Room		30	24-Nov-14 A	26-Feb-15	63
A14880	Excavation of footing	6	24-Nov-14 A	28-Nov-14 A	
A14890	Blinding layer	2	29-Nov-14 A	29-Nov-14 A	
A14900	Rebar fixing for footing	6	01-Dec-14 A	06-Dec-14 A	
A14910	Formwork erection for footing	6	08-Dec-14 A	16-Dec-14 A	
A14920	Cast in base	6	12-Dec-14 A	16-Dec-14 A	
A14930	Concreting for footing	1	17-Dec-14 A	17-Dec-14 A	
A14940	Structural steel installation	18	20-Jan-15	09-Feb-15	63
A14950	Profiled sheet installation	12	10-Feb-15	26-Feb-15	63
Facilities at Area 1 & 2		130	09-Oct-14 A	22-Apr-15	622
A14960	Excavation	36	09-Oct-14 A	29-Dec-14 A	
A14970	Manhole construction & underground utilities connection	50	10-Nov-14 A	31-Jan-15	8
A14975	Construction of hoarding footing	18	05-Nov-14 A	27-Dec-14 A	
A14980	Construction of ducting for street lighting	36	08-Dec-14 A	12-Feb-15	19
A14990	Construction of footing for bus shelter and signage post	28	16-Nov-14 A	07-Feb-15	19
A15000	Construction of concrete pavement, tactile and kerb	18	16-Feb-15	11-Mar-15	8
A15010	Roadside gully	32	17-Nov-14 A	28-Feb-15	51
A15020	Erection of bus shelter	24	25-Feb-15	24-Mar-15	8
A15030	Erection of signage post	18	04-Mar-15	24-Mar-15	8
A15035	Signage installation	12	25-Mar-15	10-Apr-15	8
A15040	Road marking	10	11-Apr-15	22-Apr-15	19
A15050	Construction of street lighting by HyD Lighting Division	42	13-Feb-15	09-Apr-15	19
Additional Works		79	28-Oct-14 A	14-Feb-15	673
A15560	GCO Probing and trial pits	12	28-Oct-14 A	06-Nov-14 A	
A15570	Boreholes and extensometer installation	18	21-Nov-14 A	06-Dec-14 A	
A15580	CBR Test	12	02-Feb-15	14-Feb-15	8
Temporary Toilet		91	24-Nov-14 A	24-Apr-15	17
A15530	Temporary toilet design confirmation	1	02-Dec-14 A	02-Dec-14 A	
Footing & Superstructure		26	24-Nov-14 A	31-Jan-15	0
A14430	Excavation of footing	5	24-Nov-14 A	28-Nov-14 A	
A14440	Blinding layer	1	29-Nov-14 A	29-Nov-14 A	
A14450	Rebar fixing for footing	3	01-Dec-14 A	10-Dec-14 A	
A14460	Formwork erection for footing	3	11-Dec-14 A	18-Jan-15 A	
A14470	Concreting of footing	1	19-Dec-14 A	19-Dec-14 A	
A14480	Backfilling and apply polyethlene sheet	3	22-Dec-14 A	24-Dec-14 A	

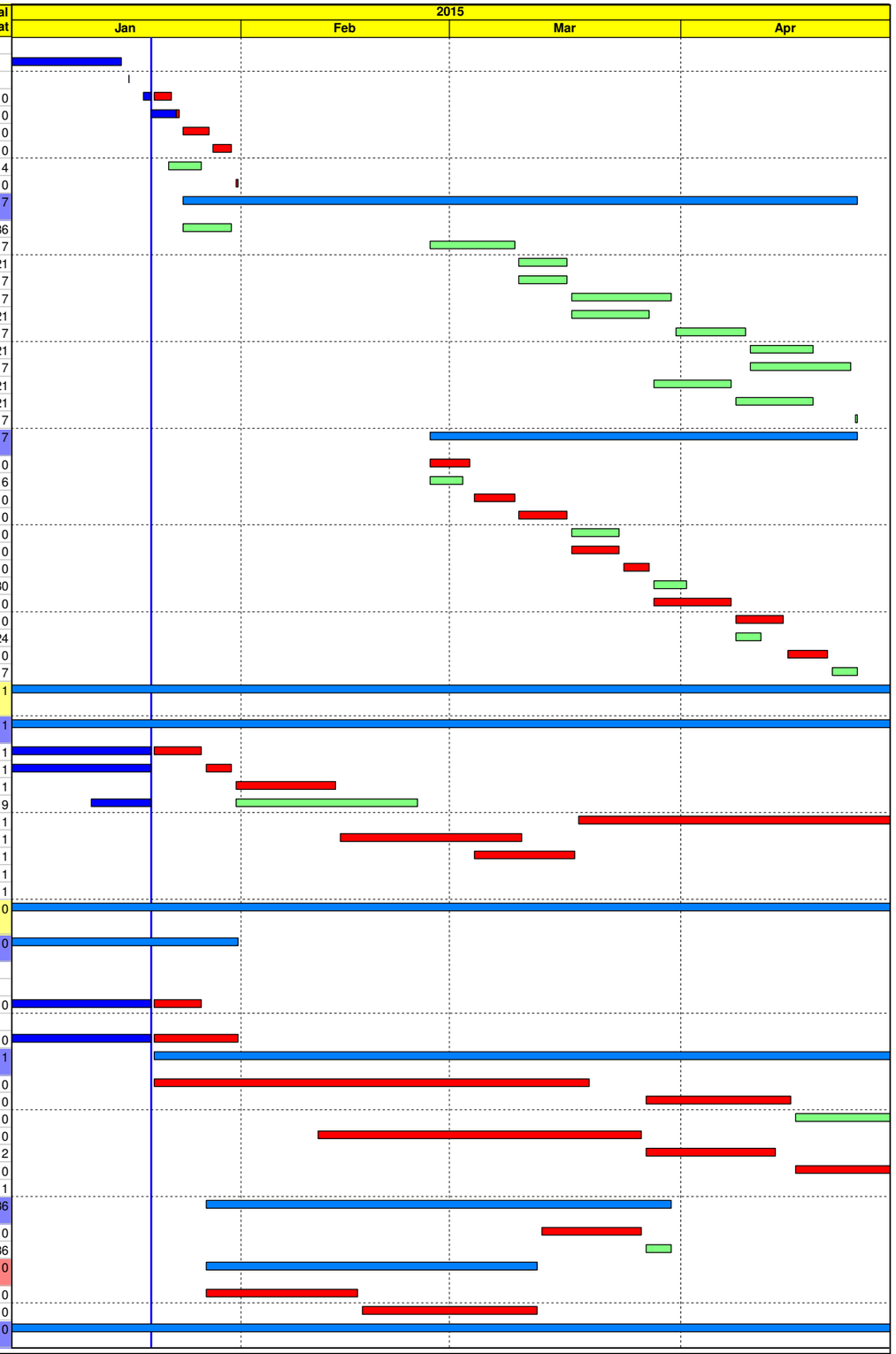


Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SCL1126 - Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Three Months Rolling Programme for Temporary PTI (Jan 2015 ~ Apr 2015)

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
A14490	Rebar fixing for on grade slab	3	25-Dec-14 A	30-Dec-14 A	
A14500	Formwork erection for on grade slab	3	31-Dec-14 A	16-Jan-15 A	
A14510	Concreting for on grade slab	1	17-Jan-15 A	17-Jan-15 A	
A14520	Rebar fixing for column and wall	3	19-Jan-15 A	22-Jan-15	0
A14530	Formwork erection for column and wall	2	20-Jan-15 A	23-Jan-15	0
A14540	Formwork erection for roof	3	24-Jan-15	27-Jan-15	0
A14550	Rebar fixing for roof	3	28-Jan-15	30-Jan-15	0
A14555	E&M conceal fixing	4	22-Jan-15	26-Jan-15	4
A14560	Concreting for column, wall and roof	1	31-Jan-15	31-Jan-15	0
External Wall		72	24-Jan-15	24-Apr-15	17
A14589	Backfilling	6	24-Jan-15	30-Jan-15	36
A14690	Plastering and tiling	10	26-Feb-15	09-Mar-15	17
A14700	Cat ladder installation	6	10-Mar-15	16-Mar-15	21
A14720	Meter cabinet installation	6	10-Mar-15	16-Mar-15	17
A14730	E&M fixing	12	17-Mar-15	30-Mar-15	17
A14740	Railing installation at Roof	10	17-Mar-15	27-Mar-15	21
A14745	Concrete footpath around the toilet	6	31-Mar-15	09-Apr-15	17
A14746	Disable ramp installation	8	10-Apr-15	18-Apr-15	21
A14747	Screening partition installation	12	10-Apr-15	23-Apr-15	17
A14750	Applying waterproofing at roof	6	28-Mar-15	07-Apr-15	21
A14760	Plastering and concrete roof tiling	10	08-Apr-15	18-Apr-15	21
A15220	Final touch up & cleaning	1	24-Apr-15	24-Apr-15	17
Fitting Out		47	26-Feb-15	24-Apr-15	17
A14570	Block wall erection	5	26-Feb-15	03-Mar-15	0
A14571	Window and louver installation	4	26-Feb-15	02-Mar-15	6
A14572	Applying waterproofing membrance	5	04-Mar-15	09-Mar-15	0
A14580	Plastering and tiling for wall and floor	6	10-Mar-15	16-Mar-15	0
A14600	E&M 1st fixing	6	17-Mar-15	23-Mar-15	10
A14620	Painting	6	17-Mar-15	23-Mar-15	0
A14630	Cubicle installation	4	24-Mar-15	27-Mar-15	0
A14635	Door installation	4	28-Mar-15	01-Apr-15	30
A14640	Sanitary fitting & furniture installation	6	28-Mar-15	07-Apr-15	0
A14650	E&M 2nd fixing	6	08-Apr-15	14-Apr-15	0
A14660	Sigange installation	4	08-Apr-15	11-Apr-15	24
A14670	E&M testing and commisioning	5	15-Apr-15	20-Apr-15	0
A14680	Final touch up & cleaning	4	21-Apr-15	24-Apr-15	17
Area 3		148	12-Nov-14 A	14-May-15	1
Facilities		148	12-Nov-14 A	14-May-15	1
A15430	Excavation	10	15-Dec-14 A	26-Jan-15	1
A15440	Manhole construction & underground utilities connection	12	12-Nov-14 A	30-Jan-15	1
A15450	Construction of ducting for street lighting	12	31-Jan-15	13-Feb-15	1
A15455	Construction of kerb line and road works at Hung Hing Road	18	12-Jan-15 A	24-Feb-15	19
A15456	Temporary traffic diversion along Hung Hing Road Works	46	18-Mar-15	14-May-15	1
A15460	Construction of footing for bus shelter and signage post	18	14-Feb-15	10-Mar-15	1
A15465	Construction of concrete pavement (Flexible Pavement as alternative	12	04-Mar-15	17-Mar-15	1
A15510	Road marking	3	12-May-15	14-May-15	1
A15520	Signage installation	10	29-Apr-15	11-May-15	1
External Works		149	26-Aug-14 A	15-May-15	0
TTA Submission & XP Application		103	24-Sep-14 A	31-Jan-15	0
A15170	Layout Confirmation by Transport Department	1	17-Dec-14 A	17-Dec-14 A	
A15180	Preparation of operation plan for Fleming Road Junction Convention Avenue	12	24-Sep-14 A	10-Oct-14 A	
A15190	Submission and Approval of operation plan for Fleming Road Junction Convetion Avenue	52	10-Oct-14 A	26-Jan-15	0
A15200	Preparation of operation plan for Hung Hing Road Junction Marsh Road	24	17-Nov-14 A	17-Dec-14 A	
A15210	Submission and Approval of operation plan for Hung Hing Road Junction Marsh Road	48	18-Dec-14 A	31-Jan-15	0
Hung Hing Road Junction Marsh Road		92	20-Jan-15	14-May-15	1
A15070	eProms ordering and Fabricated by EMSD	48	20-Jan-15	19-Mar-15	0
A15080	Construction of ducting and draw pits for traffic signal at Hung Hing Road (Link by link)	14	27-Mar-15	15-Apr-15	0
A15090	Construction of road island at Hung Hing Road	12	16-Apr-15	29-Apr-15	10
A15091	Construction of ducting and draw pits for traffic signal at Marsh Road	35	11-Feb-15	26-Mar-15	0
A15092	Construction of pedestrian crossing at Marsh Road	12	27-Mar-15	13-Apr-15	2
A15100	Installation of traffic signal	15	16-Apr-15	04-May-15	0
A15110	Road marking	3	12-May-15	14-May-15	1
Bus Stop at Convention Avenue		51	27-Jan-15	30-Mar-15	36
A15150	Removal of existing railing (3nos of bus stop)	12	13-Mar-15	26-Mar-15	0
A15160	Road marking (3nos of bus stop)	3	27-Mar-15	30-Mar-15	36
1 no of bus stop with bus shelter		36	27-Jan-15	12-Mar-15	0
A15540	Relocation of street lighting (1no of bus stop)	18	27-Jan-15	16-Feb-15	0
A15550	Construction of footing and erection of bus shelter	18	17-Feb-15	12-Mar-15	0
Bus Stop at Fleming Road		149	26-Aug-14 A	15-May-15	0

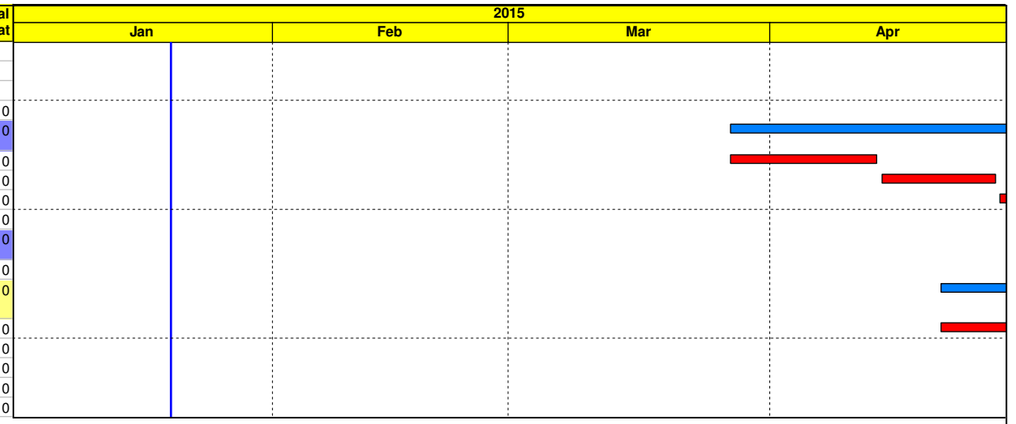


Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SCL1126 - Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Three Months Rolling Programme for Temporary PTI (Jan 2015 ~ Apr 2015)

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
A15230	Relocation of street lighting	18	10-Sep-14 A	11-Nov-14 A	
A15240	Relocation of signage	12	15-Sep-14 A	26-Sep-14 A	
A15250	Construction of bus lay-by	24	26-Aug-14 A	06-Dec-14 A	
A15260	Road marking	3	13-May-15	15-May-15	0
Modification Works at Fleming Road		39	27-Mar-15	15-May-15	0
A15280	Relocation of street lighting	12	27-Mar-15	13-Apr-15	0
A15290	Modification work of island	12	14-Apr-15	27-Apr-15	0
A15300	Relocation of traffic signal	12	28-Apr-15	12-May-15	0
A15310	Road marking	3	13-May-15	15-May-15	0
Bus Stop at Harbour Road		1	15-May-15	15-May-15	0
A15270	Road marking	1	15-May-15	15-May-15	0
Statutory Inspection and Handover		22	21-Apr-15	16-May-15	0
A15051	Submission of FS314 and 251	12	21-Apr-15	05-May-15	0
A15052	FSD Inspection	3	06-May-15	08-May-15	0
A15053	FS Certificate	6	09-May-15	15-May-15	0
A15055	Handover to MTR	1	16-May-15	16-May-15	0
A15060	Trial Run	10	05-May-15	15-May-15	0



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SCL1126 - Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Three Months Rolling Programme for Temporary PTI (Jan 2015 ~ Apr 2015)

APPENDIX B
ACTION AND LIMIT LEVELS

APPENDIX B – Action and Limit Levels

24-Hour TSP

Regular Dust Monitoring Location	Description	Action Level, µg/m^3	Limit Level, µg/m^3
AM2[(1)(2)]	Wan Chai Sports Ground	160	260
AM3[(1)]	Existing Harbour Road Sports Centre	169	260

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HUH-ADM).
(2) The spectator stand at Wan Chai Sports Ground was not available for impact dust monitoring, therefore impact monitoring was conducted at the existing water pump room area at Wan Chai Sports Ground.

Construction Noise

Regular Construction Noise Monitoring Location[(1)]	Description	Time Period	Action Level	Limit Level
NM2[(1)(2)(3)]	Harbour Centre (8/F)	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HUH-ADM).
(2) Access to the designated monitoring location NM2 (i.e. Block A, Causeway Centre) was denied before the commencement of impact monitoring. Alternative noise monitoring location proposed at Harbour Centre was approved by the ER, agreed by IEC and EPD's formal approval is awaited. Impact noise monitoring was carried out at Harbour Centre from 20 August 2014 onwards.
(3) Line-of-sight from Harbour Centre (7/F) to this Project is screened by the reprovision of Wan Chai Sports Centre which is currently under construction. Impact noise monitoring has been carrying out at Harbour Centre (8/F) from 19 December 2014 onwards.

APPENDIX C
CALIBRATION CERTIFICATES FOR MONITORING EQUIPEMENT

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14009/53/0004

Station: AM2 - Wan Chai Sports Ground Operator: WK

Date: 27-Nov-14 Next Due Date: 26-Jan-15

Equipment No.: A-01-53 Serial No. 1535

Ambient Condition			
Temperature, Ta (K)	295.1	Pressure, Pa (mmHg)	764.5

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.6	3.43	59.41	6.8	2.63
2	8.7	2.97	51.51	5.4	2.34
3	7.5	2.76	47.85	4.6	2.16
4	5.0	2.25	39.15	3.1	1.77
5	3.3	1.83	31.89	2.0	1.43

By Linear Regression of Y on X

Slope , mw = 0.0441 **Intercept, bw =** 0.0391

Correlation coefficient* = 0.9986

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.69**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 27/11/14

Checked by: [illegible] Signature: [illegible] Date: 27 November 2014

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14009/53/0005

Station: AM2 - Wan Chai Sports Ground Operator: WK

Date: 21-Jan-15 Next Due Date: 20-Mar-15

Equipment No.: A-01-53 Serial No. 1535

Ambient Condition			
Temperature, Ta (K)	288.7	Pressure, Pa (mmHg)	769.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.4	3.45	59.72	7.0	2.70
2	8.7	3.01	52.23	5.2	2.33
3	7.4	2.78	48.20	4.5	2.17
4	5.0	2.29	39.70	3.1	1.80
5	3.2	1.83	31.84	2.0	1.45

By Linear Regression of Y on X

Slope , mw = 0.0447 **Intercept, bw =** 0.0204

Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.60**

Remarks:

Conducted by: WK Tang Signature: [signature] Date: 21/1/15

Checked by: [signature] Signature: [signature] Date: 21 January 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14009/41/0004

Station: AM3 - Existing Harbour Road Sports Centre Operator: WK

Date: 27-Nov-14 Next Due Date: 26-Jan-15

Equipment No.: A-01-41 Serial No. 5280

Ambient Condition			
Temperature, Ta (K)	295.4	Pressure, Pa (mmHg)	764.7

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	10.9	3.33	57.58	7.1	2.68
2	8.6	2.95	51.19	5.8	2.43
3	6.5	2.57	44.56	4.6	2.16
4	4.1	2.04	35.48	3.0	1.75
5	2.1	1.46	25.51	1.7	1.31

By Linear Regression of Y on X

Slope , mw = 0.0430 **Intercept, bw :** 0.2241

Correlation coefficient* = 0.9997

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.23**

Remarks:

Conducted by: WK. Tang Signature: Date: 27/11/14

Checked by: [illegible] Signature: Date: 27 November 2014

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14009/41/0005

Station: AM3 - Existing Harbour Road Sports Centre Operator: WK

Date: 21-Jan-15 Next Due Date: 20-Mar-15

Equipment No.: A-01-41 Serial No. 5280

Ambient Condition			
Temperature, Ta (K)	288.4	Pressure, Pa (mmHg)	769.8

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	10.9	3.38	58.46	7.4	2.78
2	8.7	3.02	52.28	5.9	2.48
3	6.4	2.59	44.90	4.6	2.19
4	4.2	2.10	36.45	3.1	1.80
5	2.2	1.52	26.50	1.7	1.33

By Linear Regression of Y on X

Slope , mw = 0.0450 **Intercept, bw =** 0.1535

Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.16

Remarks:

Conducted by: Wh Tang Signature: Kwan Date: 21/1/15

Checked by: [illegible] Signature: Date: 21 January 2015

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Description	Calibration Orifice	**Manufacturer**	TISCH
Serial No.	0993	**Temperature,Ta (K)**	299
Model No.	TE-5025A	**Pressure, Pa (mmHg)**	761.8
Date	27 September 2014	**Equipment No.:**	A-04-04

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

Y axis= SQRT[H_2O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.05398
Intercept (b) = -0.02487
Coefficient (r) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

Y axis= SQRT[H_2O(Ta/Pa)]

Qa Slope (m) = 1.28617
Intercept (b) = -0.01559
Coefficient (r) = 0.99996

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=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/140822/3
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse
PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 55%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse
PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/141003/2
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/141107/1
Date of Issue:	2014-11-08
Date Received:	2014-11-07
Date Tested:	2014-11-07
Date Completed:	2014-11-08
Next Due Date:	2015-11-07
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Equipment No.	: N-02-01

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 53 %

Methodology:

The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

APPENDIX D
IMPACT MONITORING SCHEDULE

Shatin to Central Link – Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool
Environmental Monitoring Schedule for January 2015

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

Noise Monitoring Station

NM2: Harbour Centre

Air Quality Monitoring Station

AM2: Wan Chai Sports Ground
AM3: Existing Harbour Road Sports Centre

Shatin to Central Link – Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool
Tentative Environmental Monitoring Schedule for February 2015

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

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Noise Monitoring Station

NM2: Harbour Centre

Air Quality Monitoring Station

AM2: Wan Chai Sports Ground
AM3: Existing Harbour Road Sports Centre

Shatin to Central Link – Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool
Tentative Environmental Monitoring Schedule for March 2015

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

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Noise Monitoring Station

NM2: Harbour Centre

Air Quality Monitoring Station

AM2: Wan Chai Sports Ground
AM3: Existing Harbour Road Sports Centre

Shatin to Central Link – Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool
Tentative Environmental Monitoring Schedule for April 2015

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

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Noise Monitoring Station

NM2: Harbour Centre

Air Quality Monitoring Station

AM2: Wan Chai Sports Ground
AM3: Existing Harbour Road Sports Centre

APPENDIX E
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONIS

Appendix E - 24-hour TSP Monitoring Results

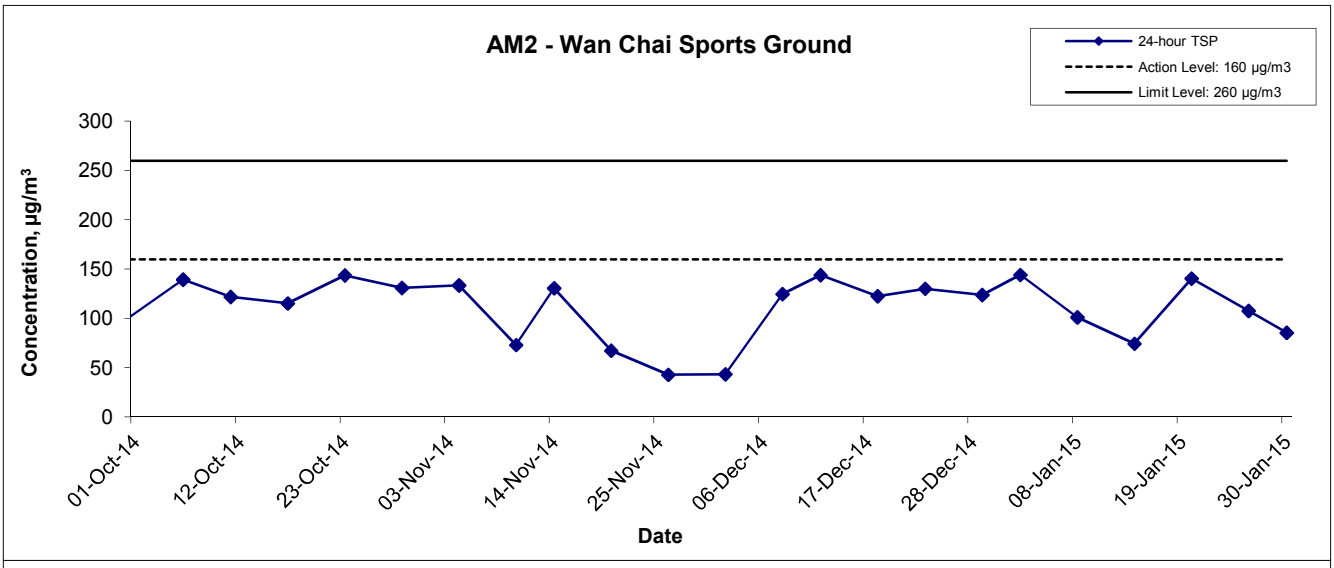
Location AM2 - Wan Chai Sports Ground

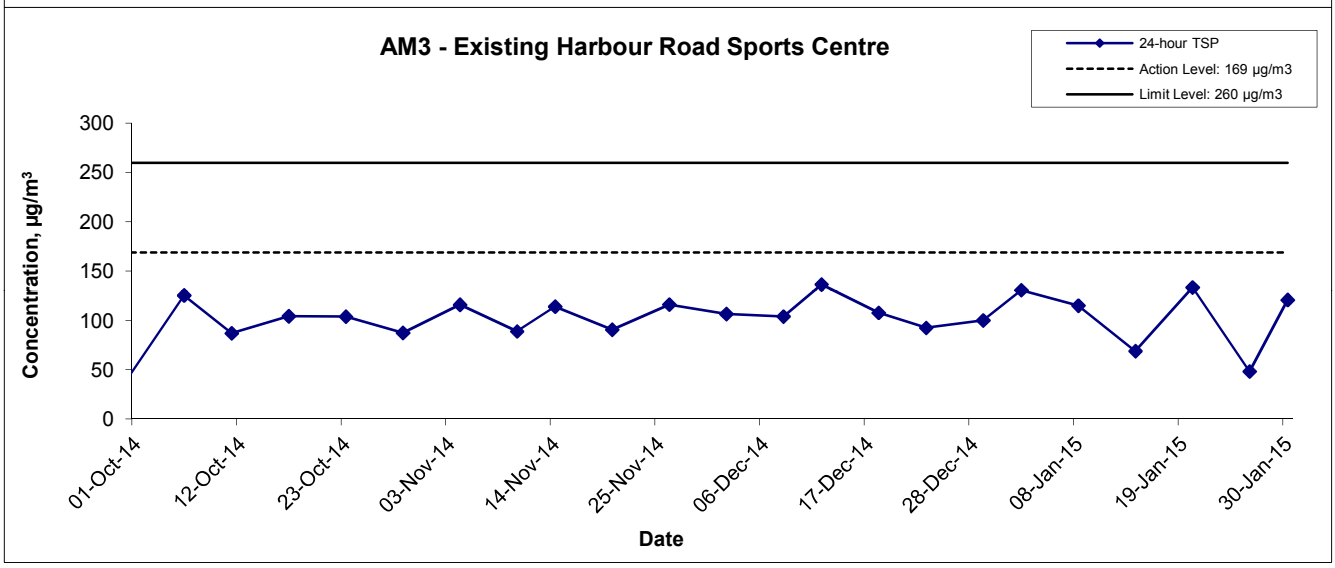
Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
					Initial	Final		Initial	Final		Initial	Final			
2-Jan-15	09:00	Sunny	287.2	772.8	3.1909	3.4489	0.2580	6426.4	6450.4	24.0	1.24	1.24	1.24	1789.8	144.1
8-Jan-15	09:00	Sunny	287.1	773.0	3.1913	3.3723	0.1810	6450.4	6474.4	24.0	1.24	1.24	1.24	1790.2	101.1
14-Jan-15	09:00	Sunny	286.6	770.7	3.1862	3.3192	0.1330	6474.4	6498.4	24.0	1.24	1.24	1.24	1789.0	74.3
20-Jan-15	09:00	Sunny	289.2	769.8	3.1787	3.4287	0.2500	6498.4	6522.4	24.0	1.24	1.24	1.24	1779.8	140.5
26-Jan-15	09:00	Sunny	291.9	767.9	3.2372	3.4244	0.1872	6522.4	6546.4	24.0	1.21	1.21	1.21	1738.2	107.7
30-Jan-15	09:00	Sunny	287.8	770.2	3.2358	3.3856	0.1498	6546.4	6570.4	24.0	1.22	1.22	1.22	1753.3	85.4
														Min	74.3
														Max	144.1
														Average	108.9

Location AM3 - Existing Harbour Road Sports Centre

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
					Initial	Final		Initial	Final		Initial	Final			
2-Jan-15	09:00	Sunny	287.5	772.5	3.2019	3.4348	0.2329	4087.3	4111.3	24.0	1.24	1.24	1.24	1781.2	130.8
8-Jan-15	09:00	Sunny	287.2	772.3	3.2380	3.4431	0.2051	4111.3	4135.3	24.0	1.24	1.24	1.24	1782.0	115.1
14-Jan-15	09:00	Sunny	286.8	770.9	3.1884	3.3113	0.1229	4135.3	4159.3	24.0	1.24	1.24	1.24	1781.5	69.0
20-Jan-15	09:00	Sunny	289.7	769.4	3.1791	3.4154	0.2363	4159.3	4183.3	24.0	1.23	1.23	1.23	1769.6	133.5
26-Jan-15	09:00	Sunny	292.4	767.3	3.2376	3.3218	0.0842	4183.3	4207.3	24.0	1.21	1.21	1.21	1743.6	48.3
30-Jan-15	09:00	Sunny	288.4	769.6	3.2378	3.4504	0.2126	4207.3	4231.3	24.0	1.22	1.22	1.22	1759.4	120.8
														Min	48.3
														Max	133.5
														Average	102.9

24-hour TSP Concentration Levels

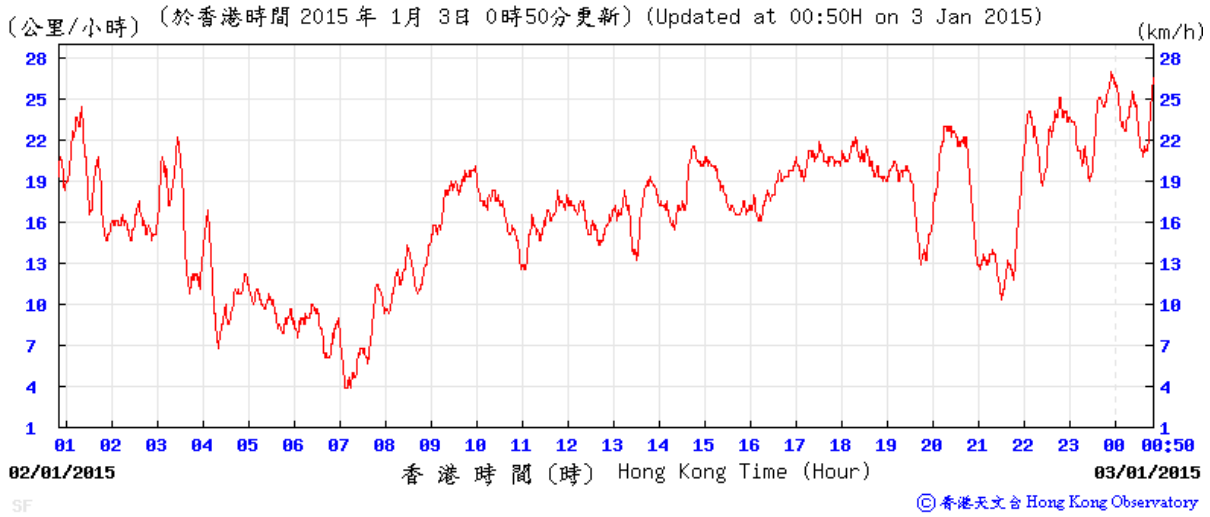


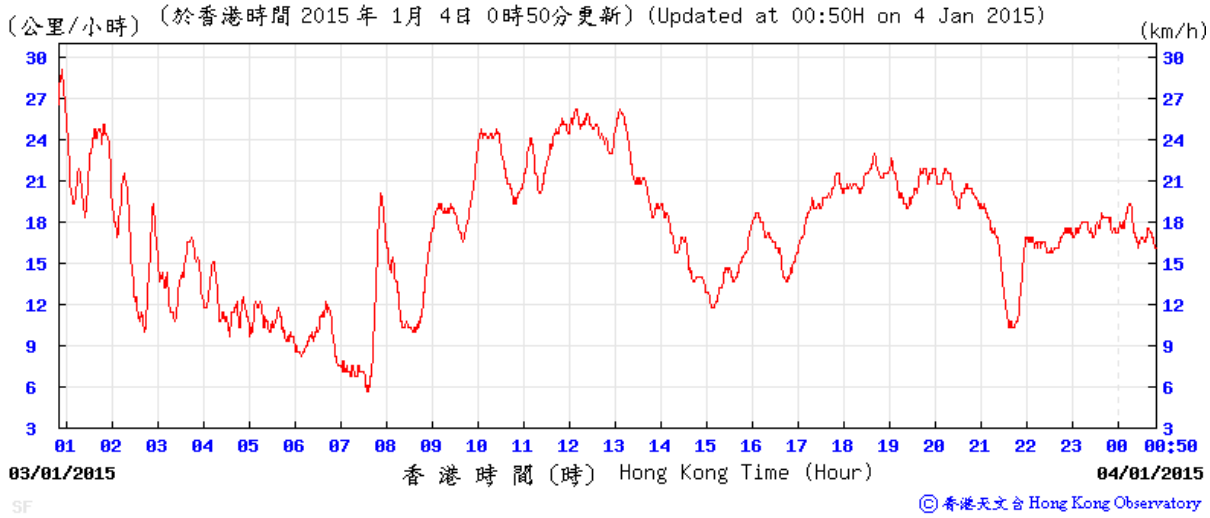


Title: Shatin to Central Link – Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S	Project No.: MA14009	CINOTECH
	Date: Jan 15	Appendix: E	

Average wind speed obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

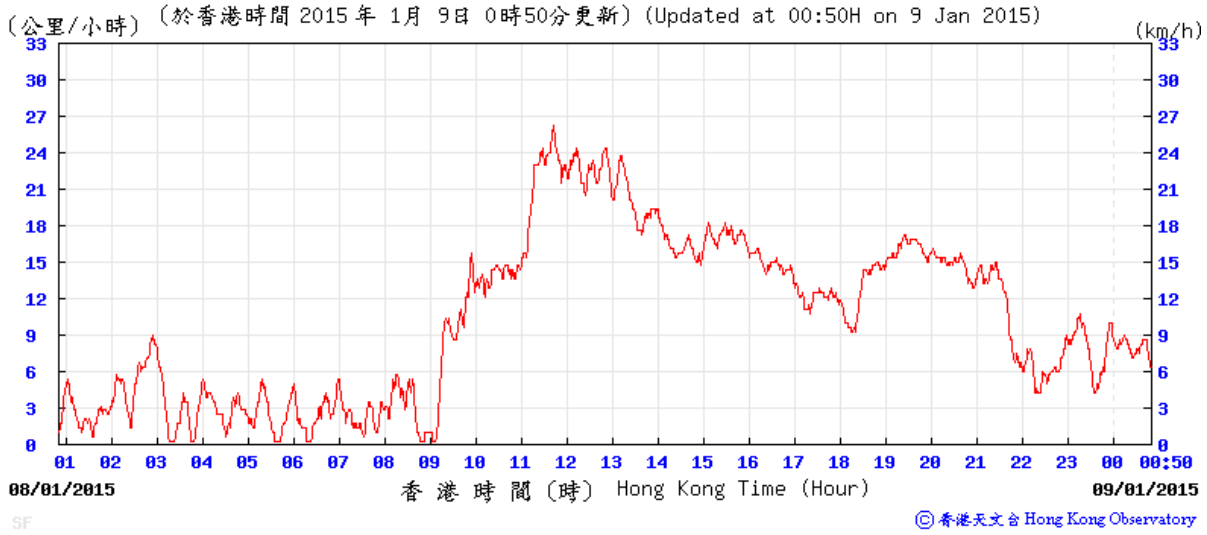
2-3 January 2015

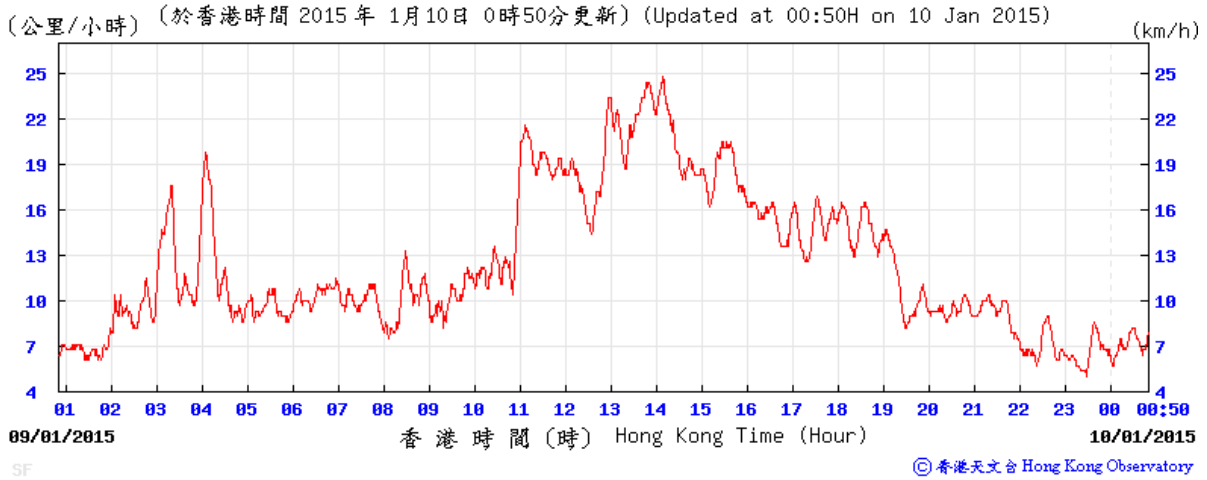




Average wind speed obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

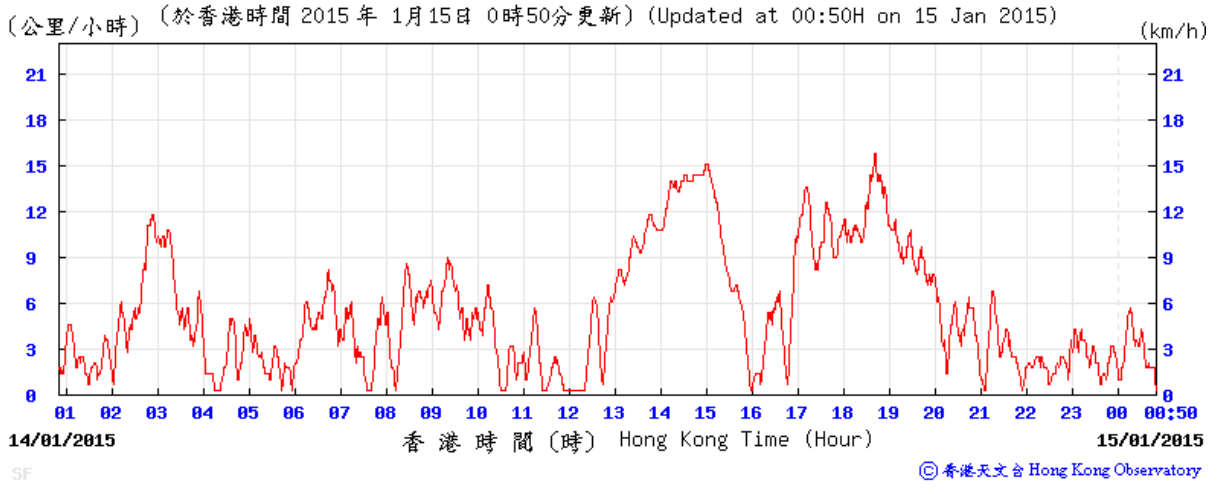
8-9 January 2015

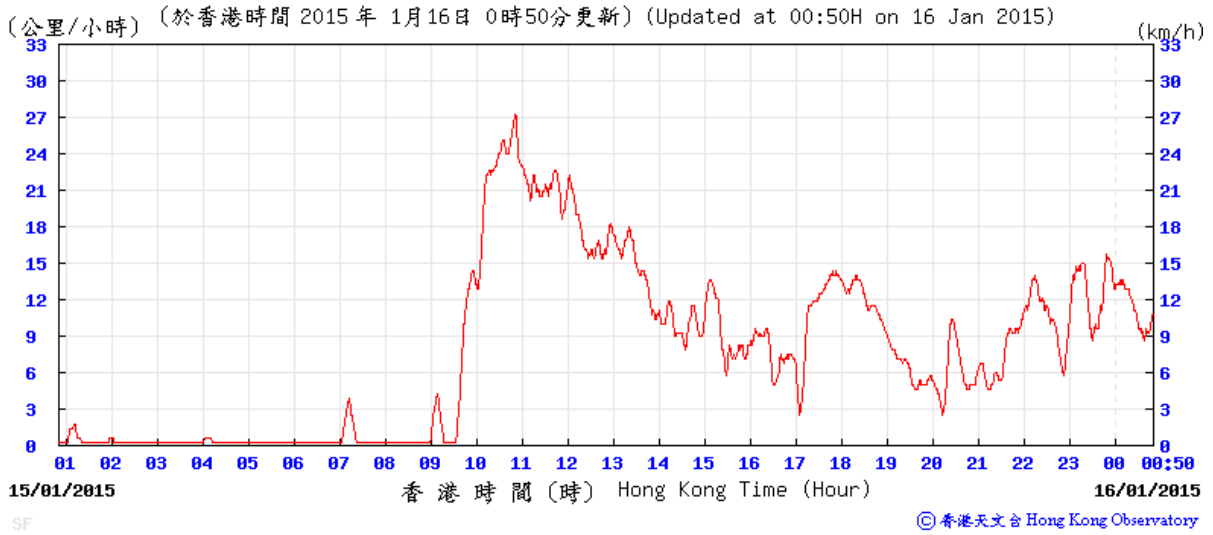




Average wind speed obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

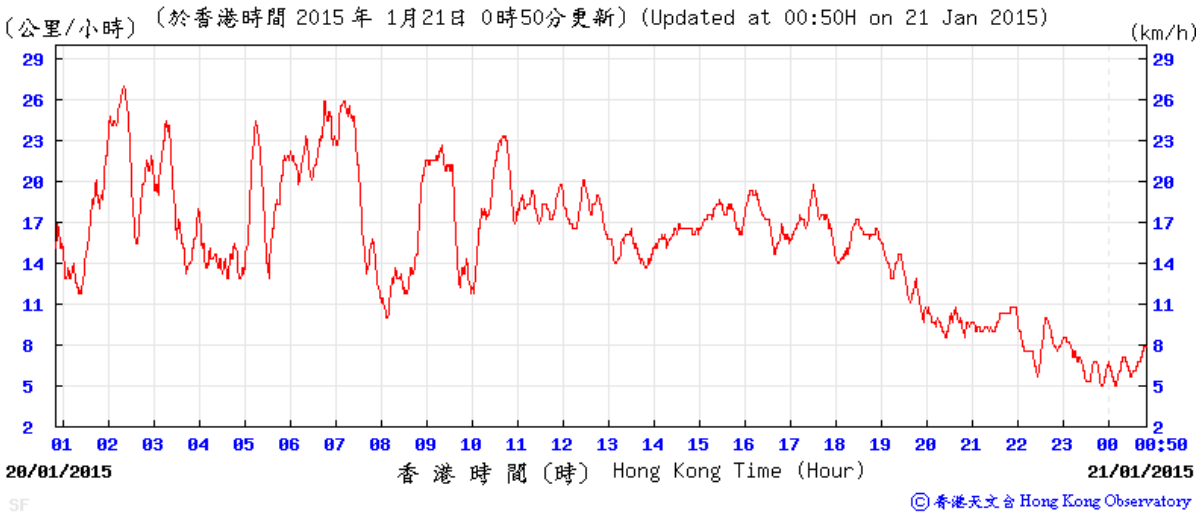
14-15 January 2015

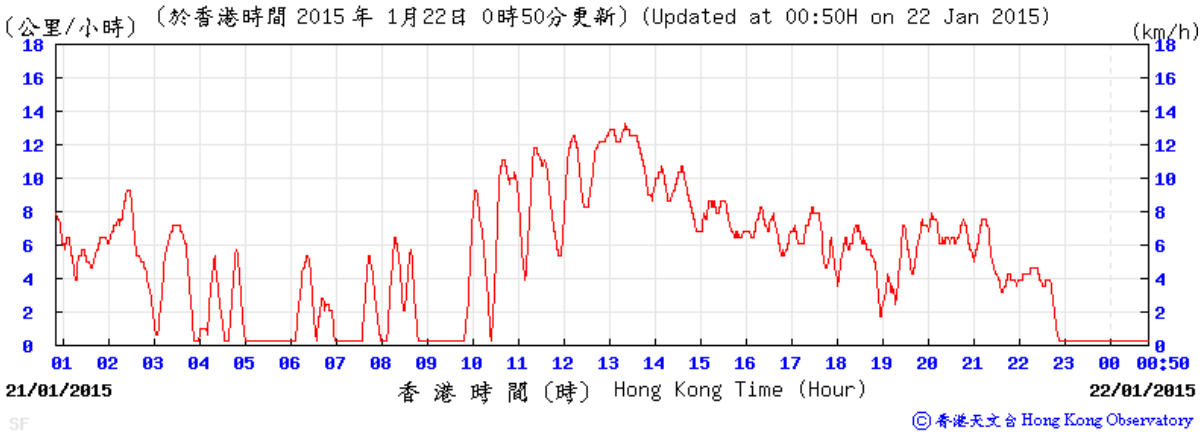




Average wind speed obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

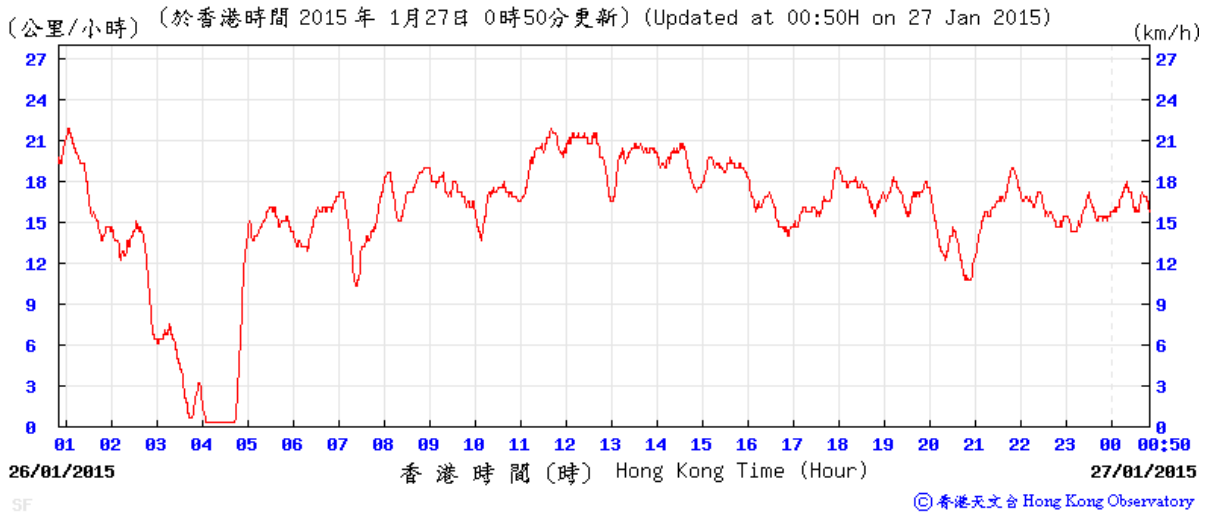
20-21 January 2015

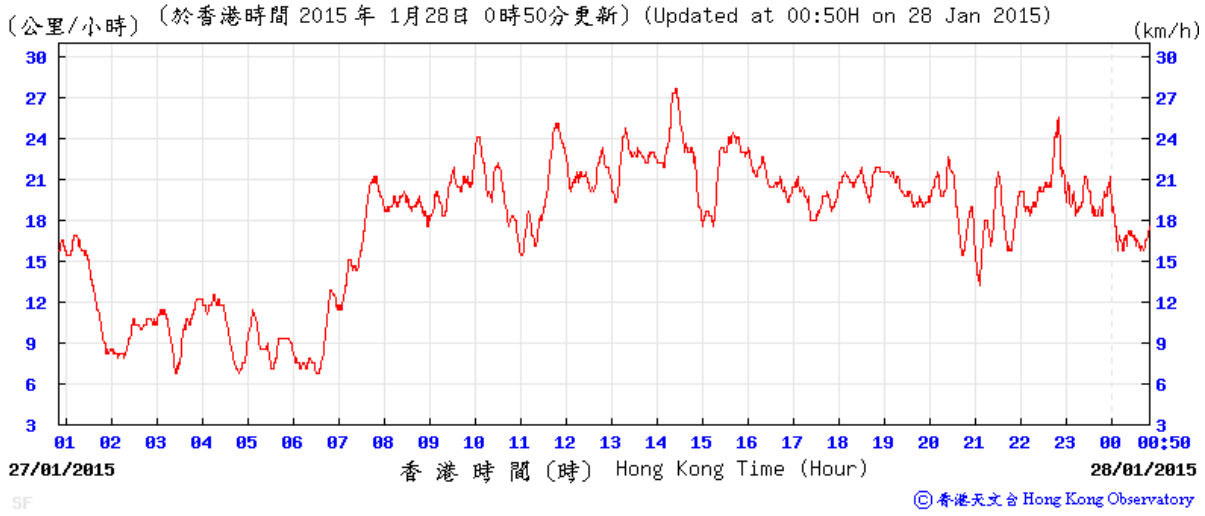




Average wind speed obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

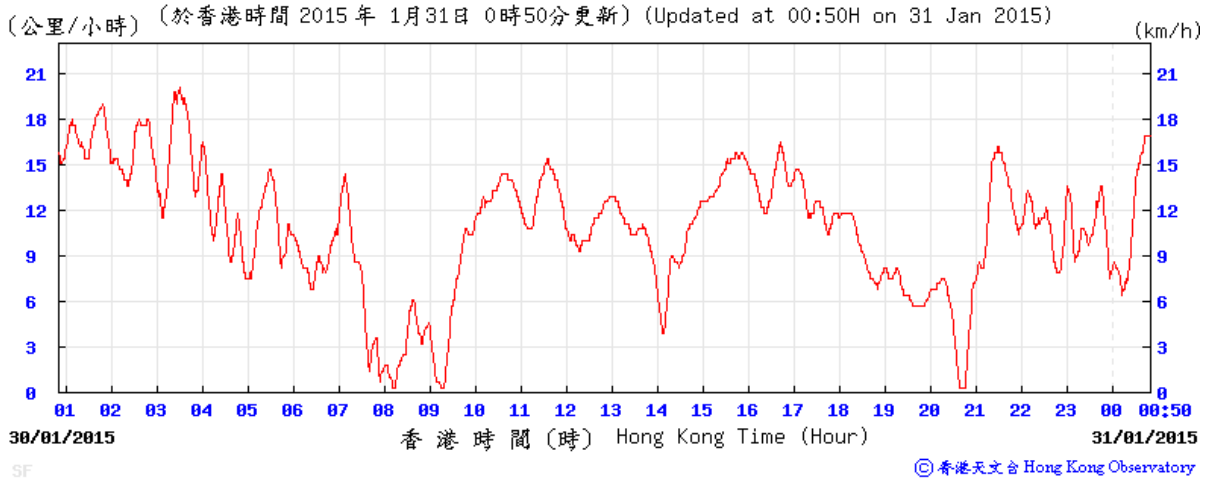
<u>26-27 January 2015</u>

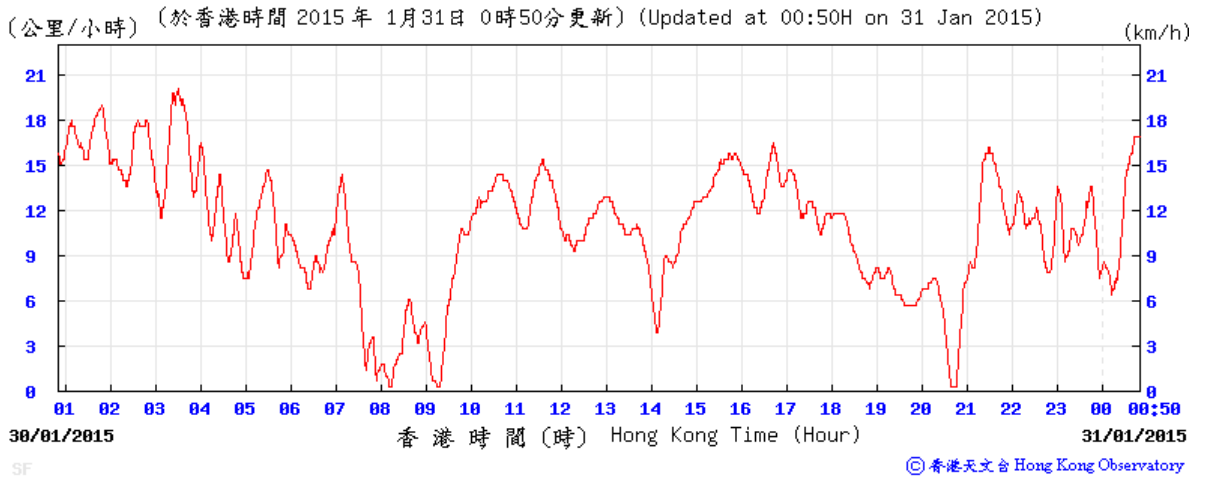




Average wind speed obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

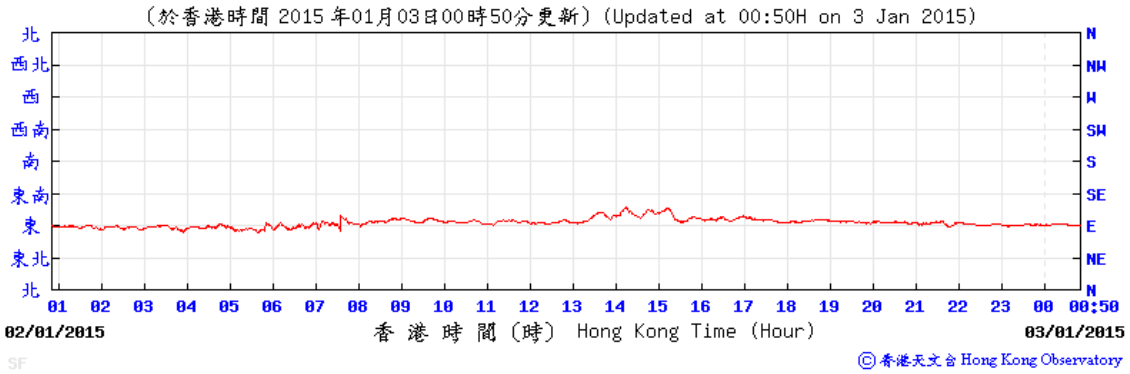
30-31 January 2015

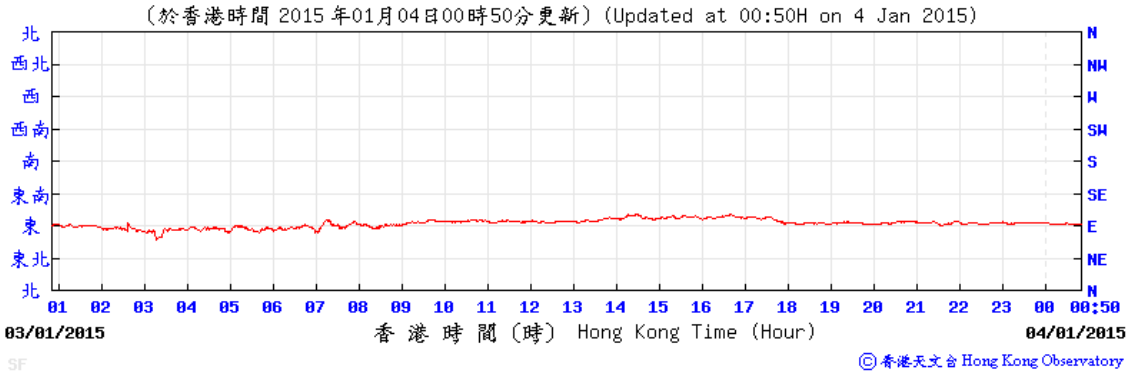




Wind direction obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

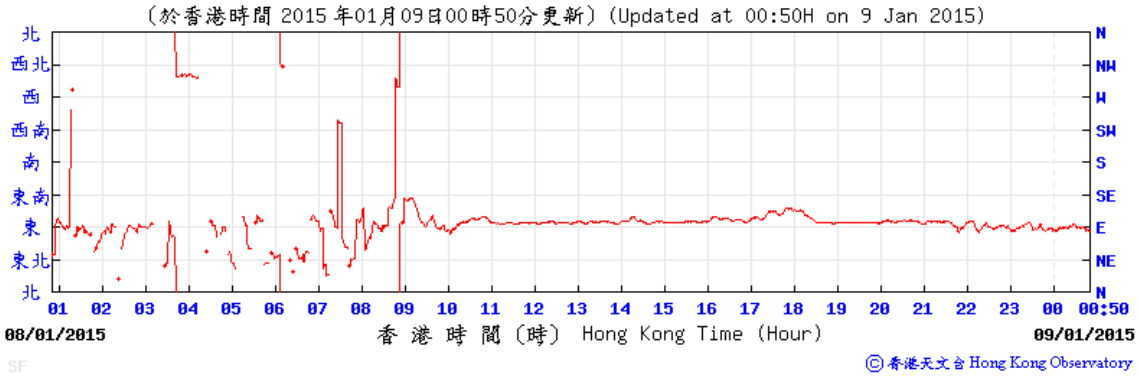
2-3 January 2015

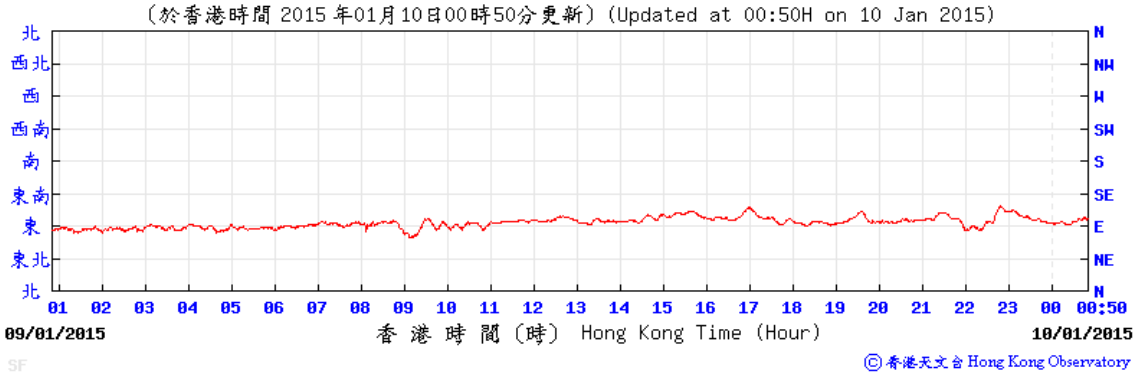




Wind direction obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

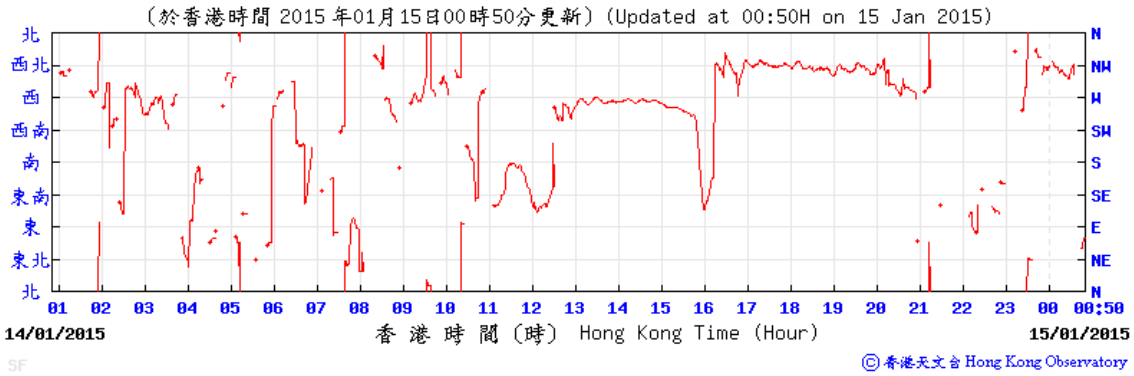
8-9 January 2015

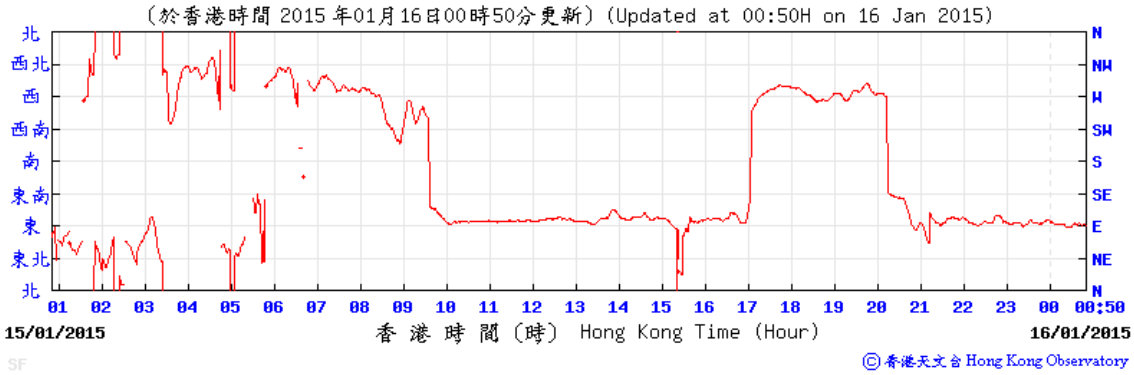




Wind direction obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

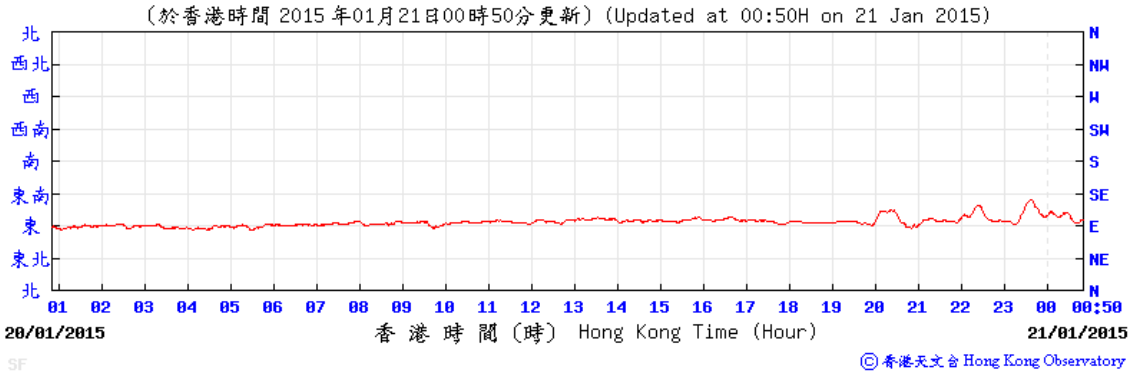
14-15 January 2015

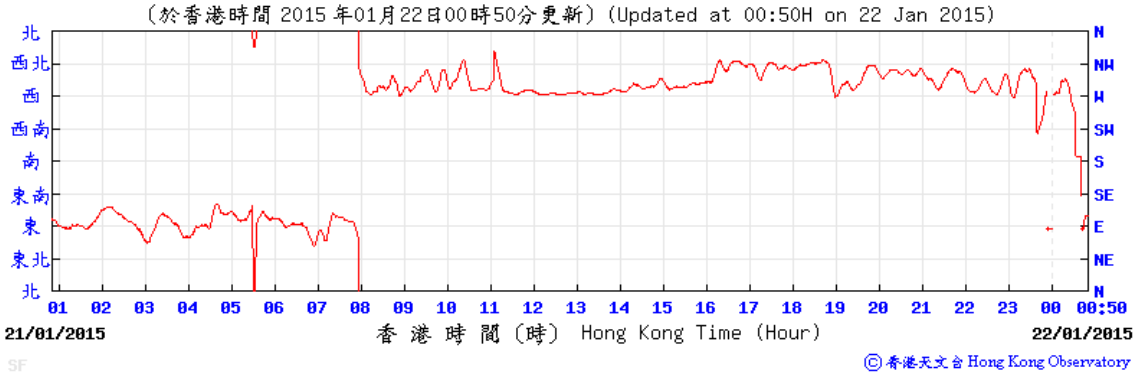




Wind direction obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

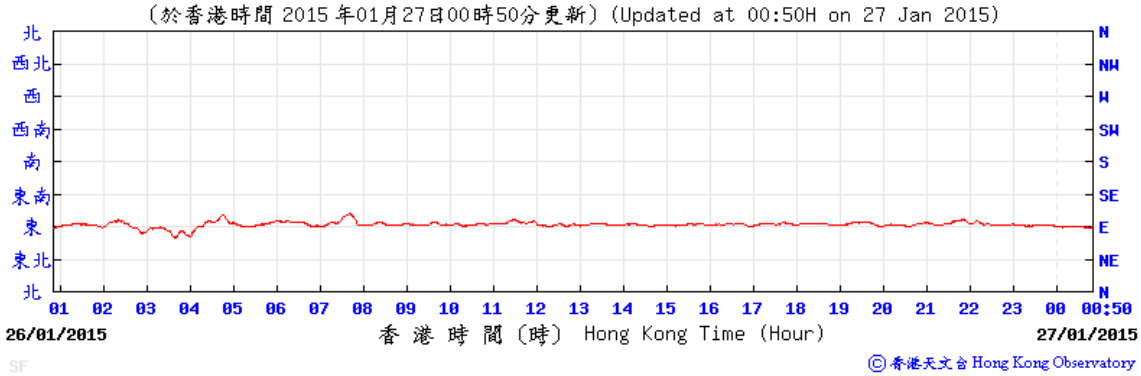
20-21 January 2015

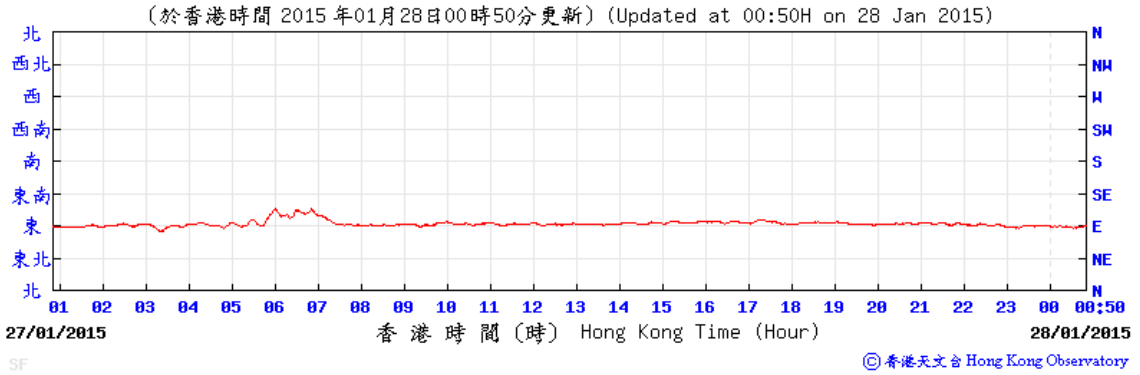




Wind direction obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

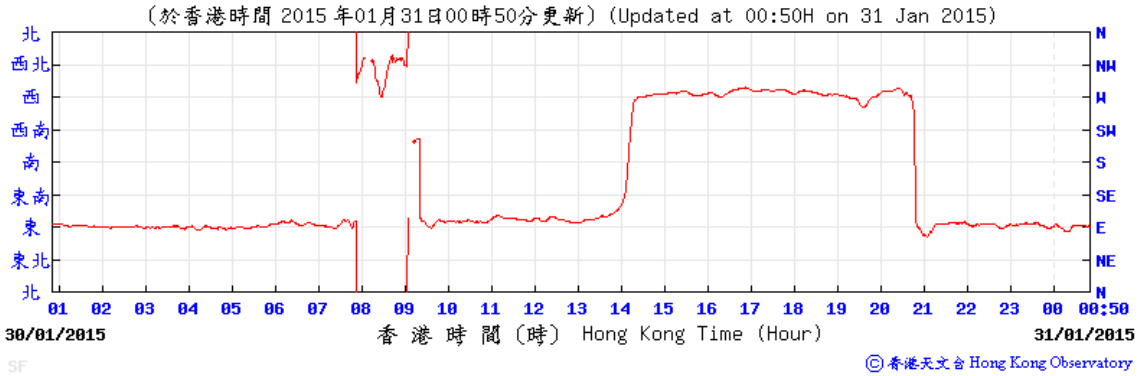
26-27 January 2015

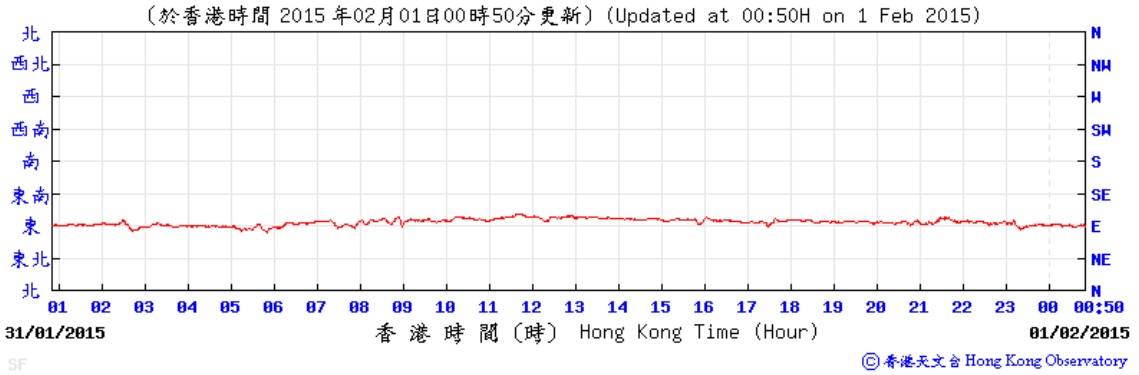




Wind direction obtained from the meteorological station at Star Ferry from the Hong Kong Observatory (HKO)

30-31 January 2015



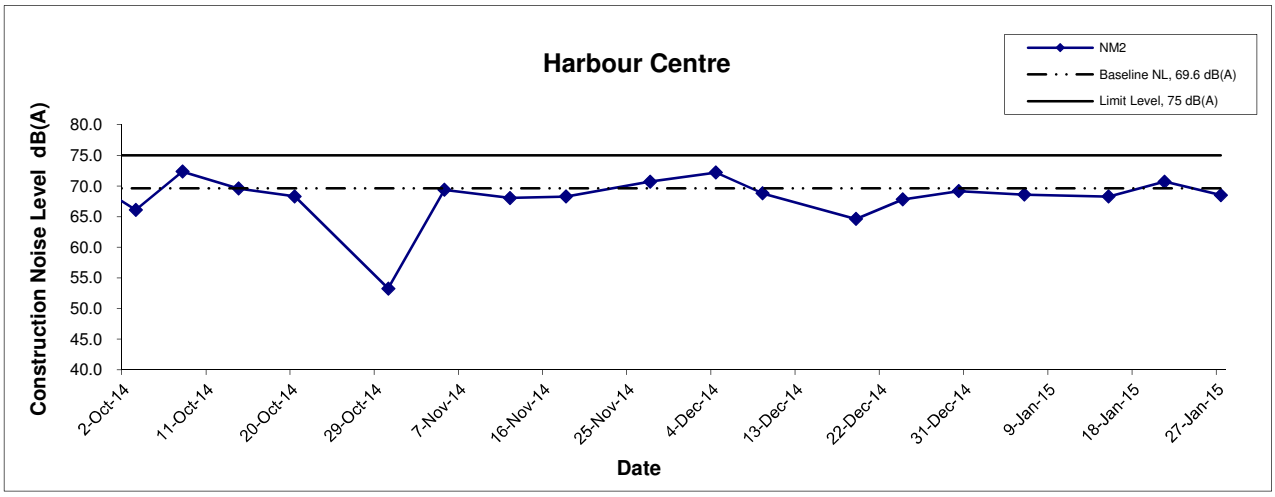


APPENDIX F
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

App F - Noise Monitoring Results

Location NM2 - Harbour Centre							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
6-Jan-15	11:00	Sunny	68.6	69.8	67.1	69.6	68.6 Measured $\leq$ Baseline
15-Jan-15	11:15	Sunny	72.0	73.6	69.8		68.3
21-Jan-15	10:30	Sunny	73.2	73.9	72.2		70.7
27-Jan-15	10:00	Cloudy	72.1	75.3	69.4		68.5

Noise Levels



Title: Shatin to Central Link - Contract 1126 Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Jan 15	Project No.: MA14009 Appendix: F	CINOTECH

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: January 2015

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX H
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150107
Date	7 January 2015 (Wednesday)
Time	10:00 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
	Part B – Water Quality • No environmental deficiency was identified during the site inspection. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality***	
150107-O01	• Unpaved area in PTI Area was observed dry. The Contractor is reminded to provide water spray to avoid dust generation.	D 5
	Part E - Construction Noise Impact • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management***	
150107-O02	• Chemical containers are observed stored in the Chemical waste container. The Contractor is reminded to store chemical waste only in the Storage Area.	F 3iii
	Part G – Permits/Licenses • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.:141231), all environmental deficiencies were observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Johnny Fung		7 January 2015
Checked by	Dr. Priscilla Choy		7 January 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150114
Date	14 January 2015 (Wednesday)
Time	10:00 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
150114-O01	***Part B – Water Quality*** • Some soil material was observed accumulated near the entrance of the Generator Room in WCSP at Harbour Road. The Contractor is reminded to clear the materials to avoid washout to public area. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection.	B 2
150114-R02	***Part D – Air Quality*** • Visible smoke observed from the generator in PTI. The Contractor is reminded to repair the generator properly. ***Part E - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part G – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.:150107), all environmental deficiencies were observed improved/rectified by the Contractor.	D 15

	Name	Signature	Date
Recorded by	Johnny Fung		14 January 2015
Checked by	Dr. Priscilla Choy		14 January 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150121
Date	21 January 2015 (Wednesday)
Time	13:30 – 14:45

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

Ref. No.	Remarks/Observations	Related Item No.
150121-O01	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • Some works area in PTI Area was observed dry. The Contractor is reminded to provide water spray to avoid dust generation. ***Part E - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection.	D 5
150121-O02 150121-R03	***Part F – Waste/Chemical Management*** • Container for lubricant was observed without secondary confinement in PTI Area. The Contractor is reminded to provide drip tray to chemical container. • Construction material and waste was accumulated in same area in PTI Area. The Contractor is reminded to set up designated area for construction material and waste for separation. ***Part G – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.:150114), all environmental deficiencies were observed improved/rectified by the Contractor.	F 10 F 4iii

	Name	Signature	Date
Recorded by	Johnny Fung		21 January 2015
Checked by	Dr. Priscilla Choy		21 January 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150128
Date	28 January 2015 (Wednesday)
Time	13:30 – 15:45

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

Ref. No.	Remarks/Observations	Related Item No.
150128-O01 150128-R02	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • Unpaved area in PTI Area was observed dry. The Contractor is reminded to provide water spray to avoid dust generation. • Visible smoke observed from generator in PTI. The Contractor is reminded to repair the generator properly. ***Part E - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part G – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.:150121), follow up action is needed to reviewed for item no. 150121-O01 during the next site inspection.	D 5 D15

	Name	Signature	Date
Recorded by	Johnny Fung		28 January 2015
Checked by	Dr. Priscilla Choy		28 January 2015

APPENDIX I
EVENT AND ACTION PLANS

Appendix I - Event and Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	1. Notify the Contractor, IEC and ER 2. Discuss with the ER and Contractor on the remedial measures required; and 3. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. .	1. Confirm receipt of notification of complaint in writing; 2. Review and agree on the remedial measures proposed by the Contractor; and 3. Supervise implementation of remedial measures.	1. Investigate the complaint and propose remedial measures ; 2. Report the results of investigation to the IEC, ET and ER; 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification.; and 4. Implement noise mitigation proposals.
Limit Level	1. Notify the Contractor, IEC, EPD and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures ; and 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; and 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the	1. Identify source and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; and

Appendix I - Event and Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	Contractor's remedial measures and keep IEC, EPD and ER informed of the results; and 7. If exceedance stops, cease additional monitoring the results.		exceedance is abated	6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
ACTION LEVEL				
1. Exceedance for one sample	1. Inform the Contractor, IEC and ER; 2. Discuss with the Contractor on the remedial measures required; 3. Repeat measurement to confirm findings; and 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; and 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing;	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; and 3. Amend working methods agreed with the ER as appropriate.
2.Exceedance for two or more consecutive samples	1. Inform the Contractor, IEC and ER; 2. Discuss with the ER and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; and 6. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; and 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; and 3. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal as appropriate.

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

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

APPENDIX J
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

SCL Works Contract 1126 - Environmental Mitigation Implementation Schedule

EIA 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)							
S5.134	Accidental chemical spillage and construction site run-off to the receiving water bodies, mitigation measures such as removing the pollutants before discharge into storm drain and paving the section of construction road between the wheel washing bay and the public road as suggested in Sections 11.216and 11.219 to 11.256 of the EIA Report shall be adopted	Minimise the contamination of wastewater discharge	Contractor	All land based works areas	Construction phase	• EIAO-TM	^
Landscape & Visual (Construction Phase)							
Table 7.9	CM1 - Trees unavoidably affected by the works shall be transplanted as far as possible in accordance with ETWB TC(W) 3/2006 – Tree Preservation	Transplanting and reuse of affected trees	MTR	All works sites	Construction phase	• EIAO-TM • ETWB TC(W) 3/2006	^
Table 7.9	CM2a - Compensatory tree planting shall be provided in accordance with ETWB TC(W) 3/2006 – Tree Preservation to compensate for felled trees and maintained until end of the establishment period.	Compensation for the removal of existing trees due to the Project.	MTR	All works sites	Construction phase	• EIAO-TM • ETWB TC(W) 3/2006	^
	CM2b - Compensatory shrub planting shall be provided to compensate for the loss of shrub planting in amenity areas.	Compensation for the removal of existing shrub planting due to the Project.	MTR	All works sites	Construction phase	• EIAO-TM	^

SCL Works Contract 1126 - Environmental Mitigation Implementation Schedule

EIA 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
Table 7.9	CM3 - Control of night-time lighting glare	Minimize the night time glare due to the Project during construction phase	MTR	All works sites	Construction phase	• EIAO-TM	^
Table 7.9	CM4 - Erection of decorative screen hoarding compatible with the surrounding setting.	Minimize the visual impact of the Project during construction phase	MTR	All works sites	Construction phase	• EIAO-TM	^
Table 7.9	CM5 - Management of facilities on work sites which give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	Control of height and deposition/arrangement of temporary facilities in works areas	MTR	All works sites	Construction phase	• EIAO-TM	^
Table 7.9	CM6 - All hard and soft landscape areas disturbed temporarily during construction shall be reinstated on like to-like basis to the satisfaction of the relevant Government Departments	Reinstatement of temporary works areas	MTR	All works sites	Construction phase	• EIAO-TM	^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S7.126	The following good site practice measures shall also be incorporated in the construction phase of the project: • Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works. • Existing trees to be retained on site shall be carefully protected during construction.	Minimize landscape and visual impact	Contractor	All works areas	Construction phase	• EIAO-TM	N/A ^
Construction Dust Impact							
S8.89	Watering once every working hour on active works areas, exposed areas and paved haul roads to reduce dust emission by 91.7%. This suppression efficiency is derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.0 L/m^2 for Hong Kong side once every working hour. Any potential dust impact and watering mitigation would be subject to the actual site condition. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the above water application intensity may not be unreservedly applied. While the above watering frequency is to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.0 L/m^2 for Hong Kong side to achieve the removal efficiency. The dust levels would be monitored and managed under an EM&A	Minimize dust impact	Contractor	All works areas	Construction phase	• APCO	*

EIA 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
	programme as specified in the EM&A Manual.						
S8.90	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in	Minimize dust impact	All works areas	Construction phase	• APCO • Air Pollution Control (Construction dust) Regulation	All works areas	* ^ ^ ^ ^ ^ ^

EIA 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
	dry seasons/ periods. • Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. • Imposition of speed controls for vehicles on site haul roads. • Where possible, routing of vehicles and positioning of construction plant shall be at the maximum possible distance from ASRs. • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.						^ ^ ^ ^ ^
Air Quality (Construction Phase)							
/	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ * ^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Construction Noise (Airborne)							
S9.55	The following good site practices shall be implemented: ・Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program ・Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program ・Mobile plant, if any, shall be sited as far from NSRs as possible ・Machines and plant (such as trucks) that may be in intermittent use shall be shut down between work periods or shall be throttled down to a minimum ・Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs ・Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	Minimize construction noise impact	Contractor	All works areas	Construction phase	・ EIAO-TM	^ ^ ^ ^ ^ ^
S9.56 & Table 9.16	The following quiet PME shall be used: • Crane lorry, mobile • Crane, mobile • Asphalt paver	To minimize construction noise impact	Contractor	Works areas under this Contract	Construction phase	・ EIAO-TM	N/A N/A N/A

EIA 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
	• Backhoe with hydraulic breaker						N/A
	• Breaker, excavator mounted (hydraulic)						N/A
	• Hydraulic breaker						N/A
	• Concrete lorry mixer						N/A
	• Poker, vibrator, hand-held						N/A
	• Concrete pump						N/A
	• Crawler crane, mobile						N/A
	• Mobile crane						N/A
	• Dump truck						N/A
	• Excavator						N/A
	• Truck						N/A
	• Rock drill						N/A
	• Lorry						N/A
	• Wheel loader						N/A
	• Roller vibratory						N/A
S9.58 – S9.59 & Table 9.17	Movable noise barrier shall be used for the following PME: • Air compressor • Asphalt paver • Backhoe with hydraulic breaker • Bar bender • Bar bender and cutter (electric)	Minimize construction noise impact	Contractor	Works areas under this Contract	Construction phase	• EIAO-TM	 N/A N/A N/A N/A N/A

EIA 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
	• Breaker, excavator mounted • Concrete pump • Concrete pump, stationary/lorry • Excavator • Generator • Grout pump • Hand held breaker • Hydraulic breaker • Saw, concrete						N/A N/A N/A N/A N/A N/A N/A N/A N/A
S9.60 & Table 9.17	Noise insulating fabric shall be used for • Drill rig, rotary type • Piling, diaphragm wall, bentonite filtering plant • Piling, diaphragm wall, grab and chisel • Piling, diaphragm wall, hydraulic extractor • Piling, large diameter bored, grab and chisel • Piling, hydraulic extractor • Piling, earth auger, auger • Rock drill, crawler mounted (pneumatic)	Minimize construction noise impact	Contractor	Works areas under this Contract	Construction phase	• EIAO-TM	 N/A N/A N/A N/A N/A N/A N/A N/A N/A
Water Quality (Construction Phase)							
S11.216	The following mitigation measures are proposed to minimize the potential water quality impacts from the construction works at or close	minimize release of construction wastes	Contractor	Construction works at or close	Construction phase	• EIAO-TM • WPCO	

EIA 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
	to the seafront: ・Temporary storage of construction materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction and demolition materials shall be located well away from the seawater front and storm drainage during carrying out of the works. ・Stockpiling of construction and demolition materials and dusty materials shall be covered and located away from the seawater front and storm drainage. ・Construction debris and spoil shall be covered up and/or disposed of as soon as possible to avoid being washed into the nearby receiving waters.	from construction works at or close to the seafront		to the seafront			^ ^ ^
S11.222 to 11.245	The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” shall be followed where practicable. <u>Surface Run-off</u> ・ Surface run-off from construction sites shall be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers shall be provided on site to properly direct stormwater to such silt removal facilities. Perimeter	minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	・EIAO-TM ・WPCO ・TM-DSS ・WDO ・ProPECC PN 1/94	^

EIA 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
	channels at site boundaries shall be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks. • Silt removal facilities, channels and manholes shall be maintained and the deposited silt and grit shall be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage shall comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distances of 100 m shall be maintained between the discharge points of construction site runoff and the existing saltwater intakes. • Construction works shall be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces shall be covered e.g. by tarpaulin, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels shall be provided (e.g. along the						^ ^

EIA 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
	crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements shall always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. • Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels shall be provided where necessary. • Measures shall be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they shall be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations shall be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites shall be covered with tarpaulin or similar fabric during rainstorms. • Manholes (including newly constructed ones) shall always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul						N/A ^ ^ ^

EIA 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
	sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. • Good site practices shall be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis. <u>Boring and Drilling Water</u> • Water used in ground boring and drilling for site investigation or rock / soil anchoring shall as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater shall be discharged into storm drains via silt removal facilities. <u>Wheel Washing Water</u> • All vehicles and plant shall be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads. A wheel washing bay shall be provided at every site exit if practicable and wash-water shall have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road shall be paved with backfall to reduce vehicle tracking of soil						^ N/A ^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	and to prevent site run-off from entering public road drains. <u>Bentonite Slurries</u> • Bentonite slurries used in diaphragm wall and bore-pile construction shall be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the bentonite slurries shall either be dewatered or mixed with inert fill material for disposal to a public filling area. • If the used bentonite slurry is intended to be disposed of through the public drainage system, it shall be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the TM-DSS. <u>Water for Testing & Sterilization of Water Retaining Structures and Water Pipes</u> • Water used in water testing to check leakage of structures and pipes shall be used for other purposes as far as practicable. Surplus unpolluted water will be discharged into storm drains. • Sterilization is commonly accomplished by chlorination. Specific advice from EPD shall be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water shall be used again wherever practicable.						N/A N/A ^ N/A

EIA 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
	Wastewater from Building Construction • Before commencing any demolition works, all sewer and drainage connections shall be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains. • Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities shall not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it shall undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary. Acid Cleaning, Etching and Pickling Wastewater • Acidic wastewater generated from acid cleaning, etching, pickling and similar activities shall be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater shall be tankered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters. Wastewater from Site Facilities • Wastewater collected from any temporary canteen kitchens, including that from basins, sinks and floor drains, shall be						^ ^ ^ ^

EIA 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
	discharged into foul sewer via grease traps. In case connection to the public foul sewer is not feasible, wastewater generated from kitchens or canteen, if any, shall be collected in a temporary storage tank. A licensed waste collector shall be deployed to clean the temporary storage tank on a regular basis. • Drainage serving an open oil filling point shall be connected to storm drains via petrol interceptors with peak storm bypass. • Vehicle and plant servicing areas, vehicle wash bays and lubrication bays shall as far as possible be located within roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor. Oil leakage or spillage shall be contained and cleaned up immediately. Waste oil shall be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.						^ ^
S11.246 & 11.247	Construction work force sewage discharges on site are expected to be discharged to the nearby existing trunk sewer or sewage treatment facilities. If disposal of sewage to public sewerage system is not feasible, appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment. The Contractor shall also be responsible for	minimize water quality impacts due to sewage generated from construction workforce	Contractor	All works areas	Construction phase	• EIAO-TM • WPCO • TM-DSS • WDO	^

EIA 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
	waste disposal and maintenance practices. Notices shall be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment.						
S11.248	In case seepage of uncontaminated groundwater occurs, groundwater shall be pumped out from the works areas and discharged into the storm system via silt removal facilities. Uncontaminated groundwater from dewatering process shall also be discharged into the storm system via silt traps	minimize impact from discharge of uncontaminated groundwater	Contractor	All works areas	Construction phase	• EIAO-TM • WPCO • TM-DSS	^
S11. 253	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas shall be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring shall be carried out in accordance with the WPCO license which is under the ambit of Regional Office (RO) of EPD.	minimize water quality impact from effluent discharges from construction sites	Contractor	All construction works areas	Construction phase	• EIAO-TM • WPCO • TM-DSS	^

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S11.254	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation shall be observed and complied with for control of chemical wastes.	minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction phase	• EIAO-TM • WPCO • TM-DSS • WDO	^
S11.255	Any service shop and maintenance facilities shall be located on hard standings within a bunded area, and sumps and oil interceptors shall be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage shall only be undertaken within the areas appropriately equipped to control these discharges.	minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction phase	• EIAO-TM • WPCO • TM-DSS • WDO	*
S11.256	Disposal of chemical wastes shall be carried out in compliance with the Waste Disposal Ordinance. The “Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes” published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers shall be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area shall be selected at a safe location on site and	minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction phase	• EIAO-TM • WPCO • TM-DSS • WDO	^ ^ ^

EIA 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
	adequate space shall be allocated to the storage area.						
Waste Management (Construction Waste)							
S12.75	***Good Site Practices and Waste Reduction Measures*** - Prepare a Waste Management Plan (WMP) approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites; - Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures; - Provision of sufficient waste disposal points and regular collection of waste; - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and - Separation of chemical wastes for special handling and appropriate treatment.	reduce waste management impacts	Contractor	All works sites	Construction phase	• Waste Disposal Ordinance (Cap. 354) • Land (Miscellaneous Provisions) Ordinance (Cap. 28) • DEVB TCW No. 6/2010	^ ^ ^ ^ ^
S12.76	***Good Site Practices and Waste Reduction Measures (Con't)*** - Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.);	achieve waste reduction	Contractor	All works sites	Construction phase	• Waste Disposal Ordinance (Cap. 354) • Land	^

EIA 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 of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; - Encourage collection of aluminum cans by providing separate labeled bins to enable this waste to be segregated from other general refuse generated by the workforce; - Proper storage and site practices to minimize the potential for damage or contamination of construction materials; - Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and - Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.					(Miscellaneous Provisions) Ordinance (Cap. 28)	^ ^ ^ ^ ^
S12.77	***Good Site Practices and Waste Reduction Measures (Con't)*** - The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWBTCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to	achieve waste reduction	Contractor	All works sites	Construction phase	・ETWB TCW No. 19/2005	^

EIA 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
	be generated from the construction activities. Such a management plan shall incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP shall be submitted to the Engineer for approval. The Contractor shall implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP shall be reviewed regularly and updated by the Contractor, preferably in a monthly basis.						
S12.78	C&D materials would be reused in other local concurrent projects as far as possible. If all reuse outlets are exhausted during the construction phase, the C&D materials would be disposed of at Taishan, China as a last resort.	achieve waste reduction	Contractor	All works sites	Construction phase	・ETWB TCW No. 19/2005	^
S12.79	***Storage, Collection and Transportation of Waste*** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: - Waste, such as soil, shall be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; - Maintain and clean storage areas routinely; - Stockpiling area shall be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and	minimize potential adverse environmental impacts arising from waste storage	Contractor	All works sites	Construction phase	- ETWB TCW No. 19/2005	^ ^ ^

EIA 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
	- Different locations shall be designated to stockpile each material to enhance reuse						^
S12.80	***Storage, Collection and Transportation of Waste (Con't)*** Waste haulier with appropriate permits shall be employed by the Contractor for the collection and transportation of waste from works areas to respective disposal outlets. The following suggestions shall be enforced to minimize the potential adverse impacts: - Remove waste in timely manner - Waste collectors shall only collect wastes prescribed by their permits - Impacts during transportation, such as dust and odour, shall be mitigated by the use of covered trucks or in enclosed containers - Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28) - Waste shall be disposed of at licensed waste disposal facilities - Maintain records of quantities of waste generated, recycled and disposed	minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All works sites	Construction phase	- ETWB TCW No. 19/2005	^ ^ ^ ^ ^ ^
S12.81	***Storage, Collection and Transportation of Waste (Con't)***	minimize potential	Contractor	All works sites	Construction	• DEVB TCW	

EIA 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
	- Implementation of trip ticket system with reference to DevB TC(W) No.6/2010 to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) shall be proposed	adverse environmental impacts arising from waste collection and disposal			phase	No. 6/2010	^
S12.83 – 12.86	***Sorting of C&D Materials*** - Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. - Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. - The C&D materials shall at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled as far as practicable before delivery to PFRFs as mentioned for beneficial use in other projects. While opportunities for reusing the non-inert portion shall be investigated before disposal of at designated landfills. - Possibility of reusing the spoil in the Project will be continuously investigated in the detailed design and construction stages, it includes backfilling to cut and cover construction works for the Hung Hom south and north approach	minimize potential adverse environmental impacts during the handling, transportation and disposal of C&D materials	Contractor	All works sites	Construction phase	・DEVB TCW No. 6/2010 ・ETWB TCW No. 33/2002 ・ETWB TCW No. 19/2005	^ * ^ ^
S12.97	***Containers for Storage of Chemical Waste***	register with EPD	Contractor	All works sites	Construction	・Code of	

EIA Ref.	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
	The Contractor shall register with EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for storage of chemical waste shall: - Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed; - Have a capacity of less than 450 litters unless the specifications have been approved by EPD; and - Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation	as a Chemical waste producer and store chemical waste in appropriate containers			phase	Practice on the Packaging, Labelling and Storage of Chemical Wastes	^ ^ ^
S12.98	***Chemical Waste Storage Area*** - Be clearly labeled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only; - Be enclosed on at least 3 sides; - Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; - Have adequate ventilation;	prepare appropriate storage areas for chemical waste at works areas	Contractor	All works sites	Construction phase	• Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes	* ^ ^ ^

EIA 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
	- Be covered to prevent rainfall from entering; and - Be properly arranged so that incompatible materials are adequately separated.						^ ^
S12.98	***Chemical Waste*** - Lubricants, waste oils and other chemical wastes would be generated during the maintenance of vehicles and mechanical equipments. Used lubricants shall be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place.	clearly label the chemical waste at works areas	Contractor	All works sites	Construction phase	・Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes	^
S12.100	***Collection and Disposal of Chemical Waste*** A trip-ticket system shall be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical waste. The Contractor shall employ a licensed collector to transport and dispose of the chemical wastes, to either the approved CWTC at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation	To monitor the generation, reuse and disposal of chemical waste	Contractor	All works sites	Construction phase	・Waste Disposal (Chemical Waste) (General) Regulation	^
S12.101	***General Refuse*** General refuse shall be stored in enclosed bins or compaction units separate from C&D materials and chemical waste. A reputable waste collector shall be employed by the contractor to remove general	properly store and separate from other C&D materials for subsequent collection	Contractor	All works sites	Construction phase	- Public Health and Municipal Services Ordinance (Cap.	^

EIA 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
	refuse from the site, separately from C&D materials and chemical wastes. Preferably, an enclosed and covered area shall be provided to reduce the occurrence of wind-blown light material.	and disposal				132)	
S12.102	***General Refuse (Con't)*** The recyclable component of general refuse, such as aluminum cans, paper and cleansed plastic containers shall be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste shall be set up by the Contractor. The Contractor shall also be responsible for arranging recycling companies to collect these materials.	facilitate recycling of recyclable portions of refuse	Contractor	All works sites	Construction phase	- Public Health and Municipal Services Ordinance (Cap. 132)	^
S12.102	***General Refuse (Con't)*** The Contractor shall carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins shall also be provided in the sites as reminders	raise workers' awareness on recycling issue	Contractor	All works sites	Construction phase	- Public Health and Municipal Services Ordinance (Cap. 132)	^

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

- Non-compliance but rectified by the contractor

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

N/A Not Applicable

APPENDIX K
WASTE GENERATION IN THE REPORTING MONTH

Contract No: **MTR SCL 1126 - Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool**

Date of Report: **January, 2015**

Monthly Summary Waste Flow Table for 2015 at Wan Chai Sports Ground and Passengener Transport Interchange

Monthly	Actual Quantities of C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly					Remarks
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse (see Note 3)	
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)	
Jan	2.100	0.000	0.000	0.000	2.100	0.000	0.000	0.000	0.000	0.000	0.032	
Feb												
Mar												
Apr												
May												
Jun												
Sub-total	2.100	0.000	0.000	0.000	2.100	0.000	0.000	0.000	0.000	0.000	0.032	
Jul												
Aug												
Sep												
Oct												
Nov												
Dec												
Total	2.100	0.000	0.000	0.000	2.100	0.000	0.000	0.000	0.000	0.000	0.032	

Notes:

1) The waste flow table shall also include C&D mateials that are specified in the contract to be imported for use at the site.
2) Plastic refer to plastic bottle/ containers, plastic sheets/ foam from packaging material.
3) The general refuse with non-recyclable materials were disposed to Landfill.
   Assume the densities of Rock, Soil, Mix Rock and Soil, are Regular Spoil to be 2.0 tonnes/m^3. Assumption the densities of general refuse is 1.0 tonnes/m^3

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

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

Cumulative Complaint Log

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

Cumulative Log for Notifications of Summons

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

Cumulative Log for Successful Prosecutions

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

Appendix C

Monthly EM&A Report for January 2015 – SCL Works Contract 1128 South Ventilation Building to Admiralty Tunnels

AECOM

Dragages Bouygues J.V.

Shatin to Central Link -
Hung Hom to Admiralty Section

Works Contract 1128 -
South Ventilation Building (SOV) to Admiralty Tunnels

Monthly EM&A Report for
January 2015

February 2015

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

Version: 0	Date: 12 February 2015

AECOM Asia Co. Ltd.
15/F, Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong
Tel: (852) 3922 9000 Fax: (852) 2317 7609 www.aecom.com

Table of Contents

List of Tables

List of Figures

List of Appendices

EXECUTIVE SUMMARY

Shatin to Central Link Contract 1128 – South Ventilation Building (SOV) to Admiralty Tunnels (hereafter called "the Project") covers part of the construction of the Shatin to Central Link (SCL).

The Project comprises the Permanent Works and the associated temporary works necessary for TBM tunnels between SOV and Admiralty Tunnels, short sections of cut and cover tunnels near SOV and Fenwick Pier Emergency Egress Point (FPP), Re-provisioning, Remedial and Improvement Works (RRIW) for government and public bodies facilities.

The EM&A programme commenced on 17 November 2014.The impact EM&A for the Project includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 31 January 2015. As informed by the Contractor, major activities in the reporting period were:

Area W1:
- Hoarding erection and road strengthening;
- Equipment mobilization.

Area W4a:
- Modification of 1129's box culvert base slab and construction of steel platform;
- Extract of 1129 sheet piles that obstruct east TBM.

Area W4b
- Sheetpile and start bulk excavation.

Area W6
- Coring through the pile cap and investigation of the existing piles in stage 2 TTMS.

Area W8
- Tree felling, pruning for transplant, site clearance & installation, pretreatment & GI.

Area 14a & 14b
- Sheet pile installation and ELS work;
- construction of new road through Area W14

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action / Limit Level of air quality was recorded in the reporting month.

Breaches of Action and Limit Levels for Noise

Noise monitoring was carried out by SCL Contract 1129. Thus, no noise monitoring and no Action/Limit Level exceedance of noise were performed in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

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

Reporting Changes

There was no reporting change in the reporting month.

Future Key Issues

Key issues to be considered in the coming month included:-

- TTMS Implementation;
- Ground Investigation – Additional borehole and Obstruction detection;
- Underground utilities detection and diversion;

- Instrumentation installation;
- Sheet pile installation & ELS at Canal road flyover;
- Sheet pile installation and New bored piles construction at DSD Wan Chai west sewage screening plant;
- Preparation works at Canal road box culvert; and
- Pile detection at Wan Shing Street.

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

1 INTRODUCTION

Dragages Bouygues J.V. (JV) was commissioned by MTR as the Civil Contractor for Works Contract 1128. AECOM Asia Company Limited (AECOM) was appointed by JV as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Project.

1.1 Purpose of the Report

1.1.1 This is the third monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 to 31 January 2015.

1.2 Report Structure

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

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

2 PROJECT INFORMATION

2.1 Background

2.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).

2.1.2 The Environmental Impact Assessment (EIA) Reports for SCL – Hung Hom to Admiralty Section [SCL (HUH-ADM)] (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 22 March 2012, which covers SCL (HUH-ADM) EP No.: EP-436/2012), for the construction and operation. Variation of EP (VEP) (VEP-433/2014) was applied on 2 April 2014 and the latest EP (EP No. EP-436/2012/A) was issued by the Director of Environmental Protection (DEP) on 30 April 2014.

2.1.3 The construction of the SCL is divided into different civil construction works contracts and the Project comprises the Permanent Works and the associated temporary works necessary for TBM tunnels between SOV and Admiralty Tunnels, short sections of cut and cover tunnels near SOV and Fenwick Pier Emergency Egress Point (FPP), Re-provisioning, Remedial and Improvement Works (RRIW) for government and public bodies facilities under the EP.

2.1.4 The site layout plan of the Project is shown in **Figure 1.1**.

2.2 Site Description

2.2.1 The major construction activities under Works Contract 1128 include:

(a) Taking over the 160m section of the SCL tunnels (ME4 Tunnel) constructed under the Central Wan Chai Bypass (CWB) project and construction of walkways, sealing, connection and various finishing works inside the tunnels;
(b) Construction of cut and cover tunnels connecting from South Ventilation Building (SOV) to the ME4 Tunnel;
(c) Removal of temporary reclamation and reinstatement of seawall;
(d) Construction of SOV;
(e) Bored tunnels between SOV and Exhibition Station (EXH);
(f) Construction of cut and cover tunnels connecting from the SCL tunnels under Convention Avenue by Contract 1123 to the bored tunnels as stated in sub-clause
(g) Construction of Fenwick Pier Emergency Egress Point (FPP);
(h) Bored tunnels between Fenwick Pier Emergency Egress Point (FPP) and Admiralty Station (ADM);
(i) Pile/obstruction detections and removals for construction of SCL running tunnels and for future North Island Line (NIL) running tunnels;
(j) Demolition of existing Police Officer's Club (POC);
(k) Reprovisioning of new POC;
(l) Other RRIW;
(m) Essential piling works at future Government, Institution and Community (GIC) site
(n) Diversion and modification of utilities and services;
(o) Modification, re-provisioning or reinstatement of footpath, carriageway or road features;
(p) Provisions for Designated and Interfacing Contracts;
(q) Tree felling, tree compensation, transplanting works and landscaping works;
(r) Permanent reprovisioning works at the Fleet Arcade;
(s) Miscellaneous signage; and
(t) External works comprising new and reinstated roads, footpaths, drains, landscaping, staircase, street furniture and the like.

2.3 Construction Programme and Activities

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

Area W1:
- Hoarding erection and road strengthening;
- Equipment mobilization.

Area W4a:
- Modification of 1129's box culvert base slab and construction of steel platform;
- Extract of 1129 sheet piles that obstruct east TBM.

Area W4b
- Sheetpile and start bulk excavation.

Area W6
- Coring through the pile cap and investigation of the existing piles in stage 2 TTMS.

Area W8
- Tree felling, pruning for transplant, site clearance & installation, pretreatment & GI.

Area 14a & 14b
- Sheet pile installation and ELS work;
- construction of new road through Area W14

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

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 2.1.**

Table 2.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
MTR	Residential Engineer (ER)	Construction Manager	Mr. T.C. Lam	3143 9129	3127 6424
		SCL Project Environmental Team Leader	Mr. Richard Kwan	2688 1283	2993 7577
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Mr. Fredrick Leong	2859 1739	2540 1580
JV	Contractor	Project Director	Mr. Alain Hervio	6112 9197	2171 3715
		Environmental Manager	Mr. Marcus Cheung	6628 2685	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y T Tang	3922 9393	2317 7609

2.5 Status of Environmental Licences, Notification and Permits

2.5.1 Relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 2.2**.

Table 2.2 Status of Environmental Licenses, Notifications and Permits

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
Environmental Permit				
EP-436/2012/A	30-Apr-2014	-	Valid	-
Construction Noise Permit				
GW-RS1216-14	7-Nov-14	6-May-15	Valid	Lung King Street near DSD Screening Plant (W14)
GW-RS1271-14	15-Nov-14	14-May-15	Valid	Rest Garden near Wan Chai Interchange (W4)
GW-RS1345-14	4-Dec-14	1-Jun-15	Valid	Wai Chai Intercharge – Tunnel Approach Rest Garden (W4a/b)
GW-RS1377-14	12-Dec-14	9-Mar-15	Valid	Lung King Street near DSD Screening Plant (W14)
Wastewater Discharge License				
WT00020512-2014	9-Dec-2014	31-Dec-2019	Valid	Victoria Park Road near Police Officer Club (POC) (W1)
WT00020473-2014	9-Dec-2014	31-Dec-2019	Valid	Gloucester Road near Hung Hing Road (W4)
WT00020474-2014	9-Dec-2014	31-Dec-2019	Valid	Wang Shing Street (W6)
WT00020475-2014	9-Dec-2014	31-Dec-2019	Valid	Lung King Street (W14)
WT00020595-2014	22-Dec-2014	31-Dec-2019	Valid	Junction of Tonnochy Road and Hung Hing Road near Wan Chai Sports Ground
Chemical Waste Producer Registration				
5213-135-D2551-01	16-Dec-14	End of the Project	Valid	Gloucester Road near Hung Hing Road (W4)
5213-134-D2552-01	16-Dec-14	End of the Project	Valid	Lung King Street near DSD Screening Plant (W14)
5111-151-D2552-02	5-Jan-15	End of the Project	Valid	Victoria Park Road near POC (W1)
Billing Account for Construction Waste Disposal				
7020686	15-Sep-14	End of Contract	Valid	For disposal of C&D waste to public fills and landfills
Notification Under Air Pollution Control (Construction Dust) Regulation				
378806	2-Sep-14	End of Contract	Valid	For Wan Chai, Casueway Bay, Hong Kong Island
380227	7-Oct-14	End of Contract	Valid	For Gloucester Road near Cross Harbour Tunnel
380228	7-Oct-14	End of Contract	Valid	Near Convention Avenue and Fenwick Pier Street, HK Island

3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.1 Construction Dust Monitoring

Monitoring Requirements

3.1.1 In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level at the designated air quality monitoring station is required. Impact 24-hour TSP monitoring should be carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in **Appendix D**.

Monitoring Equipment

3.1.2 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at the designated monitoring station. The HVS meets all the requirements of the EM&A Manual. Brand and model of the equipment is given in **Table 3.1**.

Table 3.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
High Volume Sampler (24-hour TSP)	Andersen Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. GS 2310 (S/N:10273))
Calibration Kit	TISCH Environmental Orifice (Model TE-5025A (Orifice I.D.: 0988))

Monitoring Locations

3.1.3 One monitoring station was set up at the proposed location in accordance with the approved EM&A Manuals for SCL (HUH-ADM) as well as the works areas of the Project. The location of the construction dust monitoring station is summarised in **Table 3.2** and shown in **Figure 3.1**.

Table 3.2 Locations of Construction Dust Monitoring Station

ID	Air Sensitive Receiver (ASR) ID in EIA Report	Dust Monitoring Station
AM4	EXA4	Pedestrian Plaza

Monitoring Methodology

3.1.4 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS as far as practicable:-

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) Two samplers should not be placed less than 2m apart from each others;
(iii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iv) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(v) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
(vi) No furnace or incinerator flues nearby.
(vii) Airflow around the sampler was unrestricted.
(viii) The sampler was located more than 20 meters from any dripline.
(ix) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.

(x) Permission was obtained to set up the samplers and access to the monitoring station.
(xi) A secured supply of electricity was obtained to operate the sampler.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.
(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminium strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.3 m^3/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.
(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
(ii) HVSs were calibrated using TE-5025A Calibration Kit upon installation and thereafter at bi-monthly intervals.
(iii) Calibration certificate of the TE-5025A Calibration Kit and the HVSs are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

3.1.5 The schedule for environmental monitoring in January 2015 is provided in **Appendix F**.

3.2 Construction Noise Monitoring

Monitoring Requirements

3.2.1 In accordance with the EM&A Manual, impact noise monitoring should be conducted for at least once a week during the construction phase of the Project. **Table 3.3** summarises the monitoring parameters, frequency and duration of impact noise monitoring. The Action and Limit level of the noise monitoring is provided in **Appendix D**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Parameter and Duration	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. Leq, L_{10} and L_{90} would be recorded.	At least once per week

Monitoring Locations

3.2.2 The monitoring station for construction noise monitoring pertinent to the Project has been identified based on the approved EM&A Manual for SCL (HUH-ADM) of the Project. Location of the noise monitoring station is summarised in **Table 3.4** and shown in **Figure 3.1**.

Table 3.4 Noise Monitoring Station during Construction Phase

Identification No.	Noise Sensitive Receiver (NSR) ID in EIA Report	Noise Monitoring Station
NM1*	CH2	Hoi Kung Court

* The noise monitoring at NM1 was carried out by SCL Contract 1129. Upon the completion of their EM&A programmes, the monitoring works would be taken up by this Project.

3.3 Landscape and Visual

3.3.1 As per the EM&A Manuals, the landscape and visual mitigation measures shall be implemented and site inspections should be undertaken once every two weeks during the construction period. A summary of the implementation status is presented in **Section 6.**

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

4.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix C.** Status of required submissions under the EP during the reporting period is summarised in **Table 4.1.**

Table 4.1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.4 (EP-436/2012/A)	Monthly EM&A Report for December 2014	14 January 2015

5 MONITORING RESULTS

5.1 Construction Dust Monitoring

5.1.1 The monitoring results for 24-hour TSP are summarised in **Table 5.1**. Detailed air quality monitoring results and wind monitoring data extracted from the nearest Automatic Weather Station are presented in **Appendix G**.

Table 5.1 Summary of 24-hour TSP Monitoring Result in the Reporting Period

ID	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM4	135.7	85.5 – 160.9	198	260

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

5.1.3 The event and action plan is annexed in **Appendix I**.

5.1.4 Major dust sources during the monitoring included construction dust from nearby traffic emission and other nearby construction sites.

5.2 Construction Noise Monitoring

5.2.1 Noise monitoring at NM1 was carried out by SCL Contract 1129. Thus, no noise monitoring and no Action/Limit Level exceedance of noise were performed in the reporting month.

5.3 Waste Management

5.3.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

5.3.2 As advised by the Contractor, 1,499m^3 of inert C&D material was generated (1,499m^3 was disposed of as fill bank at TKO137) in the reporting month. 5.1m^3 general refuse was generated in the reporting month. No metals, no paper/cardboard packaging material and no plastic was collected by recycling contractor in the reporting month. No inert C&D materials were reused on site. No chemical waste was collected by licensed contractor in the reporting period. The waste flow table is annexed in **Appendix J.**

5.3.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

5.3.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

5.4 Landscape and Visual

5.4.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 5 and 19 January 2015. A summary of the site inspection is provided in **Appendix C**. The observations and recommendations made during the site inspections are presented in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix C**.

6.1.2 In the reporting month, 4 site inspections were carried out on 5, 12, 19 and 26 January 2015. Joint inspection with the IEC, ER, the Contractor and the ET was conducted on 12 January 2015. No site inspection was conducted by EPD during the reporting month. No non-compliance was recorded during the site inspections. Details of observations recorded during the site inspections are presented in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	12 Jan 2015	• Exposed area at W8, W14 and CWSG was observed dry. The Contractor should water the exposed area timely as dust suppression.	The item was rectified by the Contractor on 19 January 2015.
Noise	N/A	N/A	N/A
Water Quality	29 Dec 2014	• The sedimentation facilities at W4 and W14 were observed insufficient and ineffective respectively. The Contractor should ensure the sedimentation facilities are functional.	The item was rectified (W14) and improved (W4) by the Contractor on 5 and 12 January 2015 respectively.
	5 Jan 2015	• The treatment facility at W4 was still observed insufficient. The Contractor should provide sufficient treatment facility on site.	The item was improved by the Contractor on 12 January 2015.
	12 Jan 2015	• Reminder: Seepage of water from the box culvert was still observed. The Contractor was reminded that the quality of water discharge should meet the requirement of the WPCO discharge license.	The item was rectified by the Contractor on 19 January 2015.
	19 Jan 2015	• Potential surface runoff from site was observed at W8. The Contractor was advised to provide preventive measures to avoid any potential runoff from site.	The item was rectified by the Contractor on 26 January 2015.
Waste/ Chemical Management	29 Dec 2014	• Improper storage of painting materials and uncovered valve of drip tray were observed at W1. The Contractor should storage the painting material with drip tray or equivalent measures and cover/seal the valve of drip tray properly.	The item was rectified by the Contractor on 5 January 2015.
	12 Jan 2015	• Chemical container without provision of drip tray was observed at W14. The Contractor should provide drip tray for chemical container. • Reminder: The Contractor was reminded to cover/seal the valve of drip tray at W4 to avoid potential chemical leakage.	The item was rectified by the Contractor on 19 January 2015.
	26 Jan 2015	• No proper waste collection point/container was observed at W1. The Contractor should provide proper waste collection facility on site.	The item was rectified by the Contractor on 29 January 2015.
Landscape & Visual	N/A	N/A	N/A
Permits/ Licenses	12 Jan 2015	• No copy of EP was displayed at the entrance of W8. The Contractor should display the copy of EP at every site exit/entrance properly.	The item was rectified by the Contractor on 29 January 2015.
	5 and 26 Jan 2015	• Reminder: The Contractor was reminded to display the EP at the entrance gate of W8 properly.	The item was rectified by the Contractor on 29 January 2015.

6.1.3 All the follow-up actions requested by Contractor's ET and IEC during the site inspection were undertaken as reported by the Contractor and confirmed into the following weekly site inspection conducted during the reporting period.

6.1.4 The items of which their inspection for follow-up actions were outstanding as recorded in the last reporting month have already been rectified by the Contractor as confirmed by the ET during the reporting period.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

7.1.1 All 24-hour TSP result was below the Action and Limit level at all monitoring location in the reporting month.

7.1.2 No noise monitoring was carried out in the reporting month. Thus, no Action/ Limit Level exceedance for noise was performed in the reporting month.

7.2 Summary of Environmental Non-Compliance

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

7.3 Summary of Environmental Complaints

7.3.1 No environmental related complaint was received in the reporting month. Cumulative statistics on environmental complaints is provided in **Appendix I**.

7.4 Summary of Environmental Summon and Successful Prosecutions

7.4.1 No environmental related prosecution or notification of summons was received in the reporting month. Cumulative statistics on notification of summons and successful prosecutions is provided in **Appendix I**.

8 FUTURE KEY ISSUES

8.1 Construction Programme for the Next Three Month

8.1.1 The major construction works in between February and April 2015 will be:

- TTMS Implementation;
- Ground Investigation – Additional borehole and Obstruction detection;
- Underground utilities detection and diversion;
- Instrumentation installation;
- Sheet pile installation & ELS at Canal road flyover;
- Sheet pile installation and New bored piles construction at DSD Wan Chai west sewage screening plant;
- Preparation works at Canal road box culvert; and
- Pile detection at Wan Shing Street.

8.2 Key Issues for the Coming Month

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

8.3 Monitoring Schedule for the Next Three Month

8.3.1 The tentative schedules for environmental monitoring in February 2015 to April 2015 are provided in **Appendix F**.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

9.1.1 24-hour TSP monitoring was carried out in the reporting month.

9.1.2 All 24-hour TSP monitoring result complied with the Action / Limit Level at in the reporting month.

9.1.3 No noise monitoring was carried out in the reporting month. Thus, no Action/ Limit Level exceedance for noise was performed in the reporting month.

9.1.4 4 nos. of environmental site inspections were carried out in January 2015. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

9.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

9.2 Recommendations

9.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:-

Air Quality Impact

- Implement effective measures to avoid dust impact.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- Implement sufficient sedimentation facility to ensure the discharged water meet the requirement of discharge license;
- Implement preventive measures to avoid surface runoff from the site.

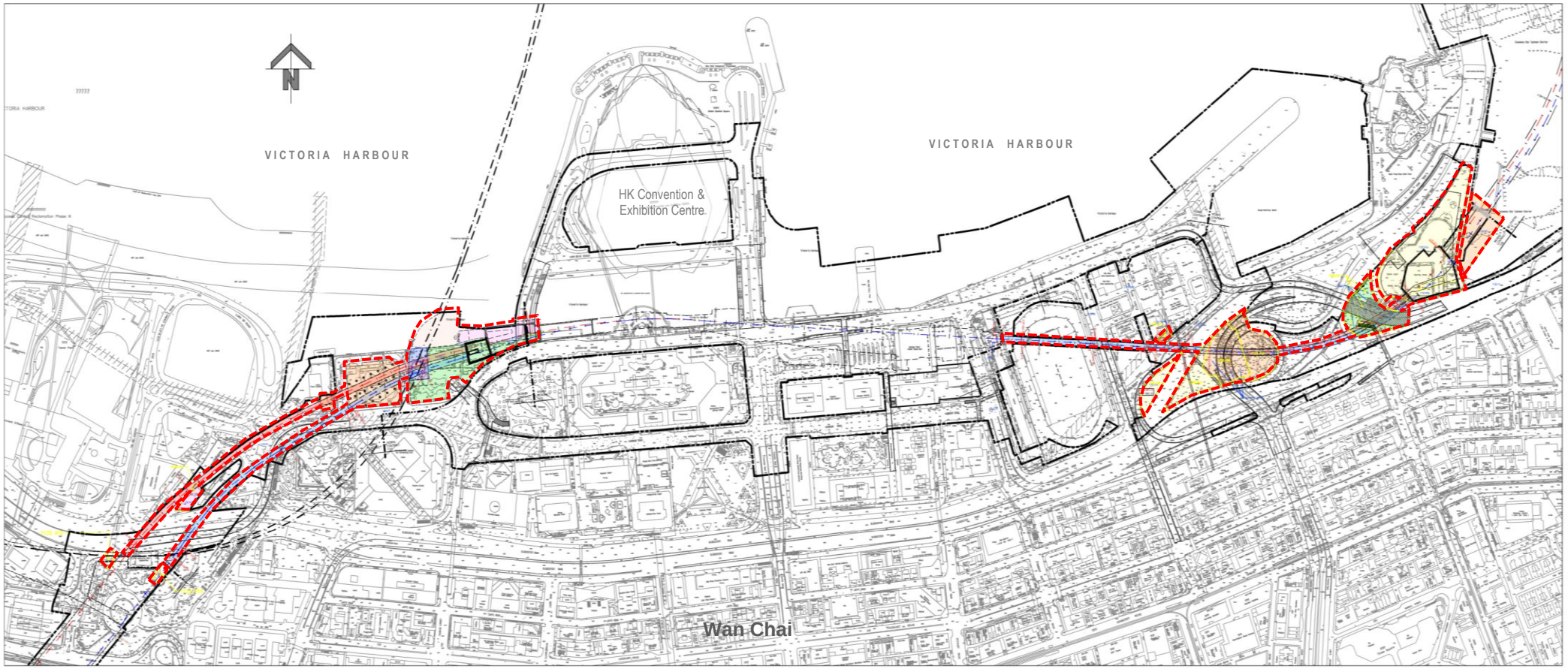
Chemical and Waste Management

- Provide proper chemical and waste management.

Permits/licenses

- Display all relevant permit/license(s) at every site entrances/exits.

FIGURES

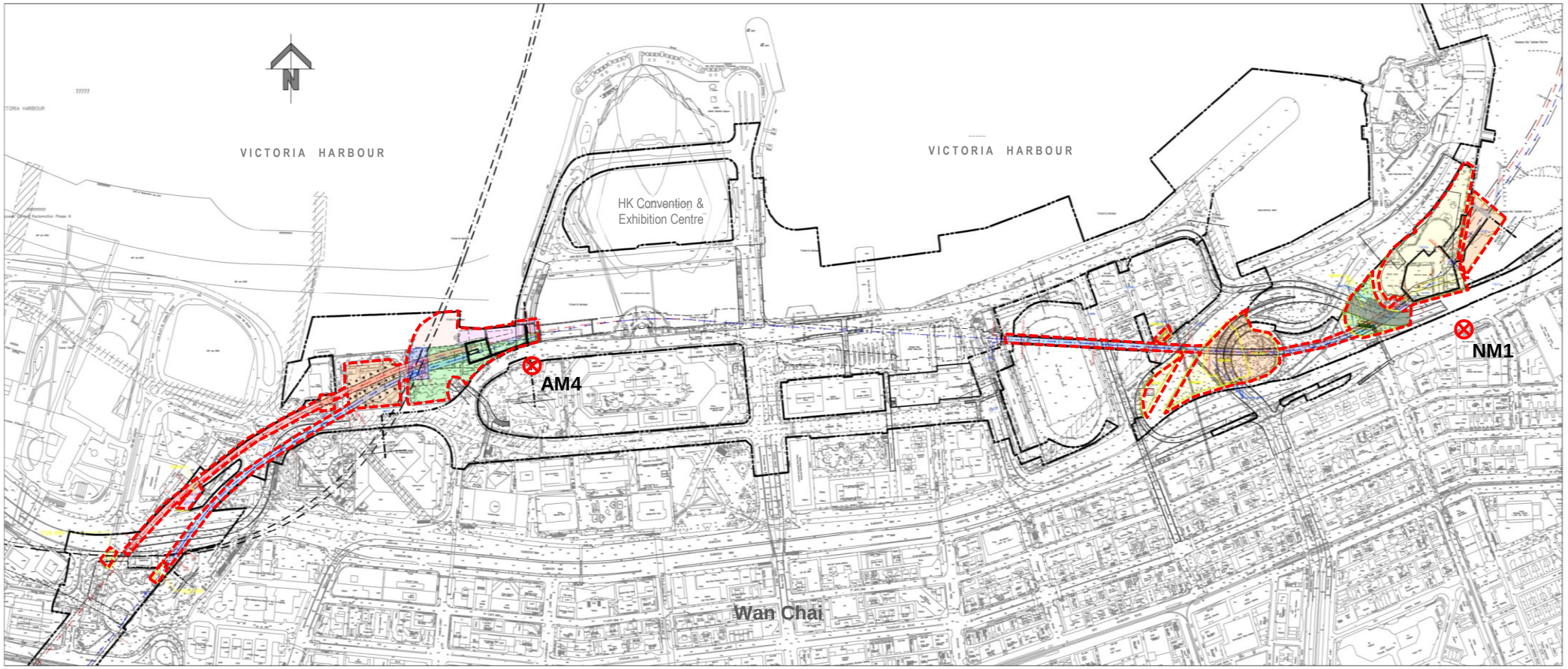


SCL Contract 1128
South Ventilation Building to Admiralty Tunnels

AECOM

SITE LAYOUT PLAN of SCL1128

Project No.: 60331173 **Date: December 2014** **Figure 1.1**



* The noise monitoring at NM1 was carried out by SCL Contract 1129. Upon the completion of their EM&A programmes, the monitoring works would be taken up by this Project.

SCL Contract 1128
South Ventilation Building to Admiralty Tunnels

AECOM

Air Quality and Noise Monitoring Loactions

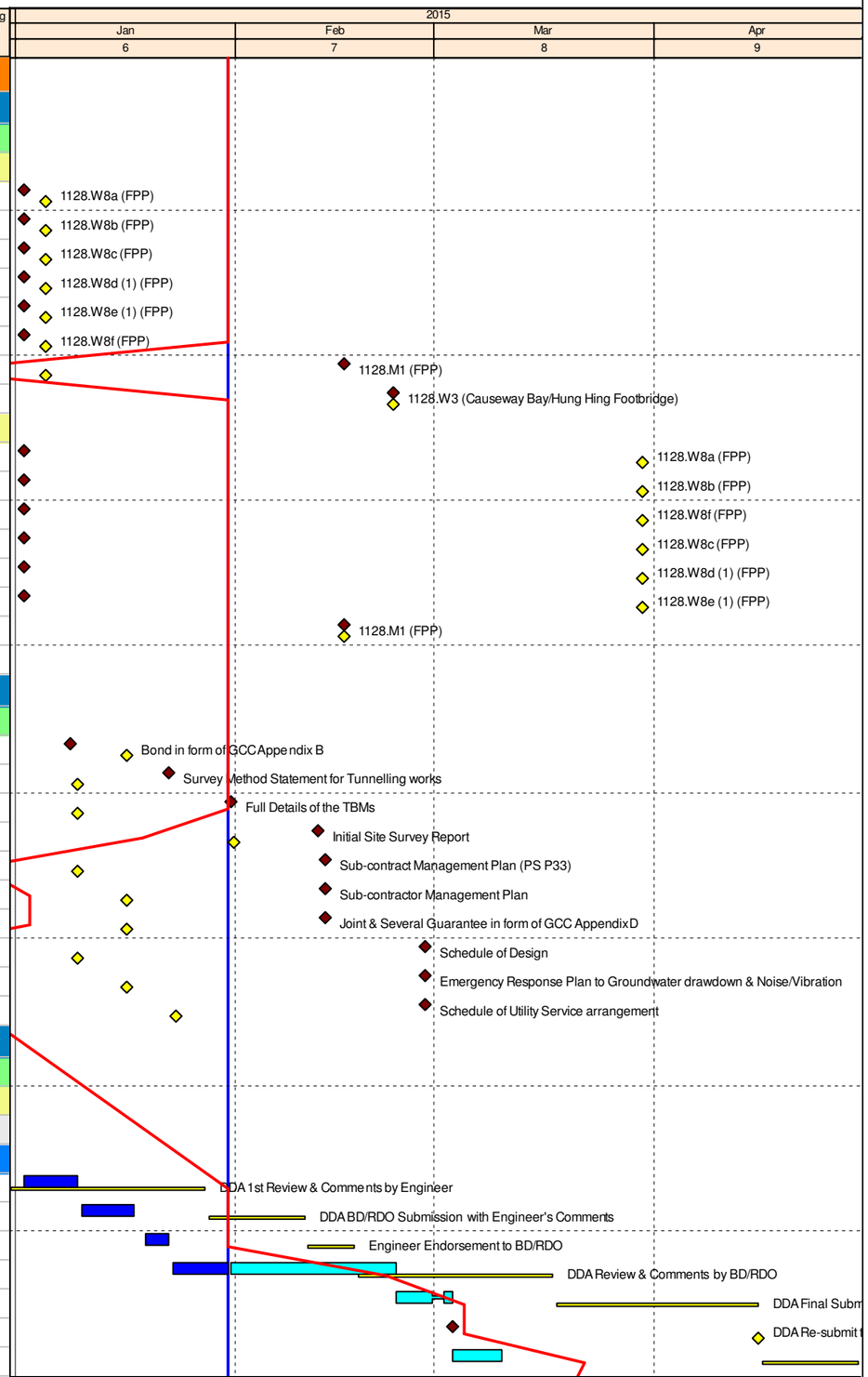
Project No.: 60331173 **Date: December 2014** **Figure 3.1**

APPENDIX A

Construction Programme

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
SCL 1128 - SOV to Admiralty Tunnel_PMP_A_1_3 Month Rolling Programme (Feb-15 to Apr-15)						
Contract Dates						
Schedule of Access Dates for Works Areas						
Early Possession Date/ Access Date						
01128.EAD170	1128.W8a (FPP)	0	02-Jan-15 A		100%	0
01128.EAD180	1128.W8b (FPP)	0	02-Jan-15 A		100%	0
01128.EAD190	1128.W8c (FPP)	0	02-Jan-15 A		100%	0
01128.EAD200	1128.W8d (1) (FPP)	0	02-Jan-15 A		100%	0
01128.EAD220	1128.W8e (1) (FPP)	0	02-Jan-15 A		100%	0
01128.EAD240	1128.W8f (FPP)	0	02-Jan-15 A		100%	0
01128.EAD370	1128.M1 (FPP)	0	16-Feb-15*		0%	0
01128.EAD060	1128.W3 (Causeway Bay/Hung Hing Footbridge)	0	23-Feb-15*		0%	0
Late Possession Date/ Access Date						
01128.LAD170	1128.W8a (FPP)	0	02-Jan-15 A		100%	0
01128.LAD180	1128.W8b (FPP)	0	02-Jan-15 A		100%	0
01128.LAD240	1128.W8f (FPP)	0	02-Jan-15 A		100%	0
01128.LAD190	1128.W8c (FPP)	0	02-Jan-15 A		100%	0
01128.LAD200	1128.W8d (1) (FPP)	0	02-Jan-15 A		100%	0
01128.LAD220	1128.W8e (1) (FPP)	0	02-Jan-15 A		100%	0
01128.LAD380	1128.M1 (FPP)	0	16-Feb-15*		0%	0
01128.LAD060	1128.W3 (Causeway Bay/Hung Hing Footbridge)	0	18-May-15*		0%	0
Cost Centre A - Preliminaries						
General Submission (LOA: 18-Aug-14)						
01128.GSA130	Bond in form of GCC Appendix B	0		08-Jan-15 A	100%	0
01128.GSA310	Survey Method Statement for Tunnelling works	0		22-Jan-15 A	100%	0
01128.GSA340	Full Details of the TBMs	0		31-Jan-15 A	100%	0
01128.GSA350	Initial Site Survey Report	0		12-Feb-15*	0%	0
01128.GSA110	Sub-contract Management Plan (PS P33)	0		13-Feb-15*	0%	0
01128.GSA120	Sub-contractor Management Plan	0		13-Feb-15*	0%	0
01128.GSA150	Joint & Several Guarantee in form of GCC Appendix D	0		13-Feb-15*	0%	0
01128.GSA030	Schedule of Design	0		27-Feb-15*	0%	0
01128.GSA210	Emergency Response Plan to Groundwater drawdown & Noise/Vibration	0		27-Feb-15*	0%	0
01128.GSA270	Schedule of Utility Service arrangement	0		27-Feb-15*	0%	0
Cost Centre B - Cut & Cover Tunnel to SOV (Advance Shaft)						
Design Submission						
Advance Launch Shaft at Area W1 (Alternative Scheme)						
Temporary ELS - Part 1 D.Wall						
DDA						
01128.BDS00050	DDA 1st Review & Comments by Engineer	28	02-Jan-15 A	09-Jan-15 A	100%	0
01128.BDS00060	DDA BD/RDO Submission with Engineer's Comments	12	10-Jan-15 A	17-Jan-15 A	100%	0
01128.BDS00070	Engineer Endorsement to BD/RDO	7	19-Jan-15 A	22-Jan-15 A	100%	0
01128.BDS00080	DDA Review & Comments by BD/RDO	28	23-Jan-15 A	23-Feb-15	15%	24
01128.BDS00090	DDA Final Submission with BD/RDO's Comments with ICE if required	7	23-Feb-15	03-Mar-15	0%	7
01128.BDS00100	DDA Re-submit to Engineer	0		03-Mar-15	0%	0
01128.BDS00110	DDA Final Review & Approval by Engineer	7	03-Mar-15	10-Mar-15	0%	7



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

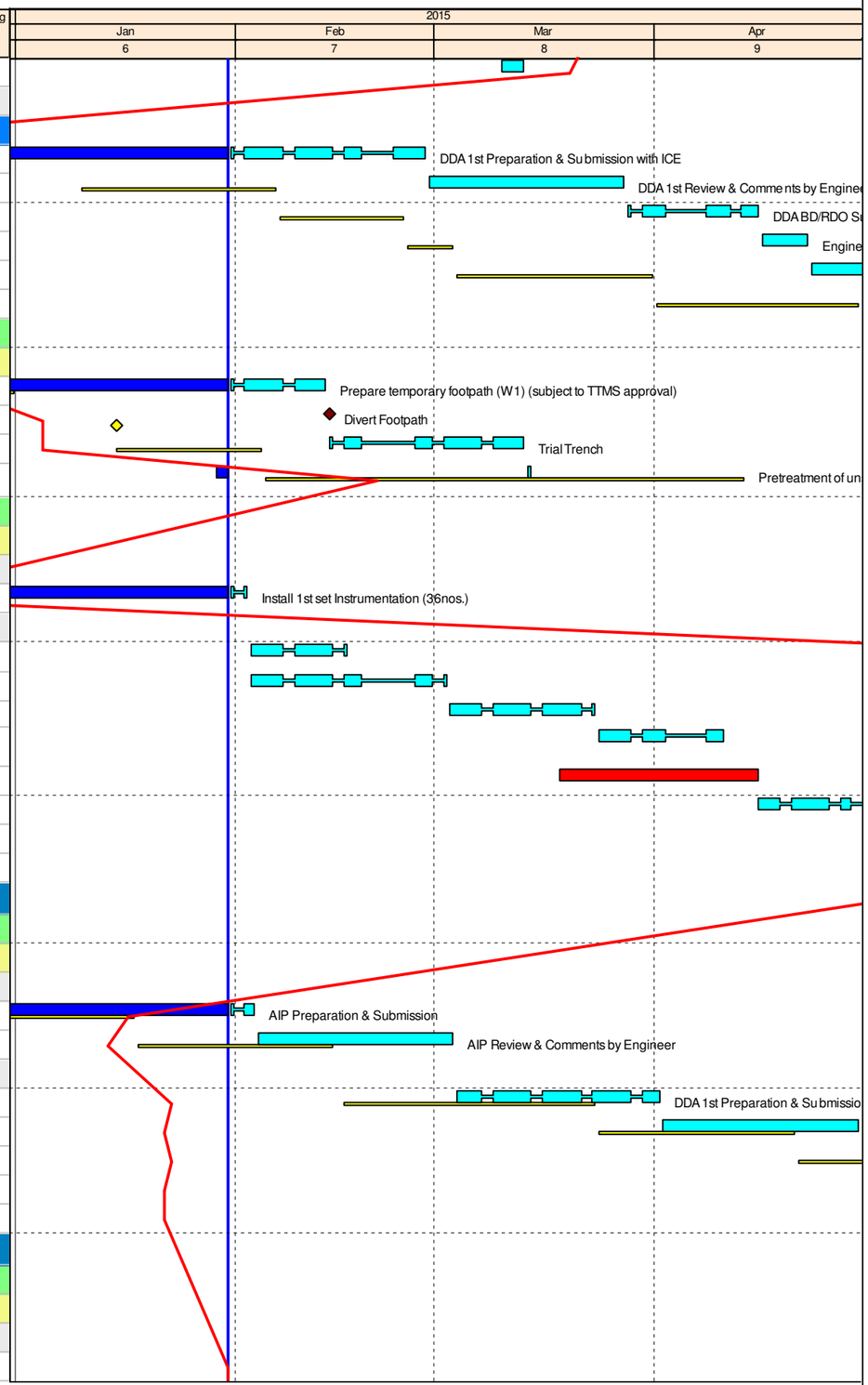
3 Month Rolling Programme (Data Date: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
01128.BDS00120	Construction Drawings Submission	3	10-Mar-15	13-Mar-15	0%	3
Temporary ELS - Part 2 Struting Design						
DDA						
01128.BDS00160	DDA 1st Preparation & Submission with ICE	28	04-Oct-14 A	27-Feb-15	25%	21
01128.BDS00170	DDA 1st Review & Comments by Engineer	28	28-Feb-15	27-Mar-15	0%	28
01128.BDS00180	DDA BD/RDO Submission with Engineer's Comments	12	28-Mar-15	15-Apr-15	0%	12
01128.BDS00190	Engineer Endorsement to BD/RDO	7	16-Apr-15	22-Apr-15	0%	7
01128.BDS00200	DDA Review & Comments by BD/RDO	28	23-Apr-15	20-May-15	0%	28
01128.BDS00210	DDA Final Submission with BD/RDO's Comments with ICE if required	21	21-May-15	15-Jun-15	0%	21
Site Preparation						
TTMS & Enabling works						
01128.CCB00080	Prepare temporary footpath (W1) (subject to TTMS approval)	30	25-Nov-14 A	13-Feb-15	90%	12
01128.CCB00090	Divert Footpath	0	14-Feb-15		0%	0
01128.CCB00100	Trial Trench	18	14-Feb-15	13-Mar-15	0%	18
01128.CCB00110	Pretreatment of unsuitable ground (FF22-FF46, NF16-NF38, Total: 48 holes)	30	29-Jan-15 A	14-Mar-15	2%	1
D.Wall & Excavation						
Cofferdam						
Works Area W1 access						
01128.CCB00121	Install 1st set Instrumentation (36nos.)	14	17-Nov-14 A	02-Feb-15	85.71%	2
Works Area W2a, 2b & 2c access						
01128.CCB00130	Guide Wall (61m, 5m/d)	12	03-Feb-15	16-Feb-15	0%	12
01128.CCB00150	Pre-treatment 38% Complete	18	03-Feb-15	02-Mar-15	0%	18
01128.CCB00152	Pre-treatment 76% Complete	18	03-Mar-15	23-Mar-15	0%	18
01128.CCB00154	Pre-treatment 100% Complete	12	24-Mar-15	10-Apr-15	0%	12
01128.CCB00160	Diaphragm wall 38% Complete	20	18-Mar-15*	15-Apr-15	0%	20
01128.CCB00162	Diaphragm wall 76% Complete	20	15-Apr-15	11-May-15	0%	20
01128.CCB00164	Diaphragm wall 100% Complete	13	11-May-15	29-May-15	0%	13
01128.CCB00170	Shear Pin (10 panels) / Toe Grout, (3 rigs, 1 panel/day)	10	29-May-15	11-Jun-15	0%	10
Cost Centre C - South Ventilation Building (SOV)						
Design Submission						
Temporary ELS - Part 1 D.Wall						
AIP						
01128.CDS00010	AIP Preparation & Submission	28	13-Dec-14 A	03-Feb-15	89.29%	3
01128.CDS00020	AIP Review & Comments by Engineer	28	04-Feb-15	03-Mar-15	0%	28
DDA						
01128.CDS00040	DDA 1st Preparation & Submission with ICE	25	04-Mar-15	01-Apr-15	0%	25
01128.CDS00050	DDA 1st Review & Comments by Engineer	28	02-Apr-15	29-Apr-15	0%	28
01128.CDS00060	DDA BD/RDO Submission with Engineer's Comments	12	30-Apr-15	14-May-15	0%	12
01128.CDS00070	Engineer Endorsement to BD/RDO	7	15-May-15	21-May-15	0%	7
01128.CDS00080	DDA Review & Comments by BD/RDO	28	22-May-15	18-Jun-15	0%	28
Cost Centre D - SOV to EXH TBM Tunnels						
Design Submission						
Instrumentation and Monitoring						
AIP						
01128.DDS00010	AIP Preparation & Submission	28	02-May-15	04-Jun-15	0%	28



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

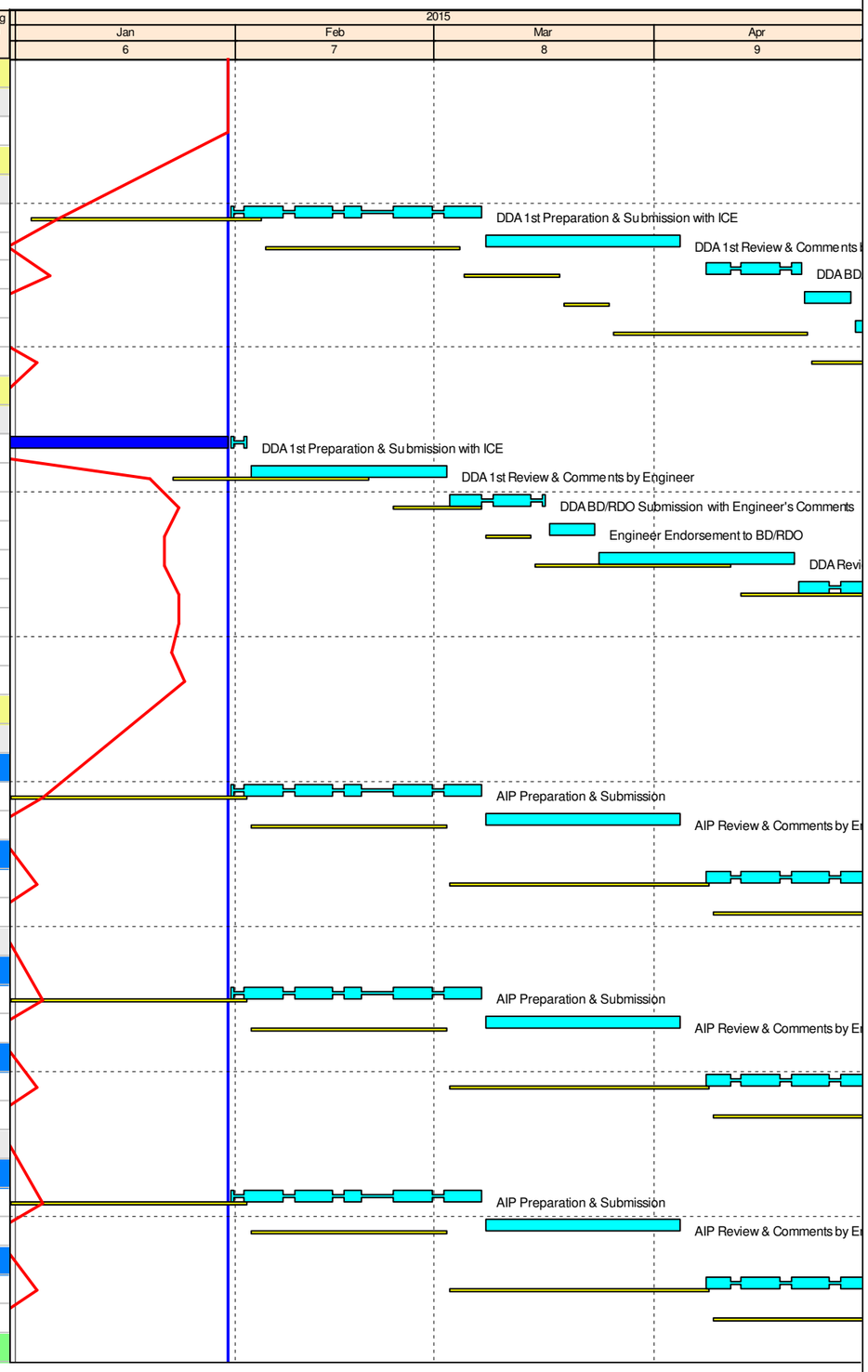
SCL 1128 - SOV to Admiralty Tunnels

3 Month Rolling Programme (Data Data: 31-Jan-15)

1128			
Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
Existing Structure Assessement (ground movements)						
AIP						
01128.DDS00130	AIP Preparation & Submission	28	02-May-15	04-Jun-15	0%	28
Ground Treatment Design						
DDA						
01128.DDS00280	DDA 1st Preparation & Submission with ICE	28	31-Jan-15	07-Mar-15	0%	28
01128.DDS00290	DDA 1st Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
01128.DDS00300	DDA BD/RDO Submission with Engineer's Comments	12	08-Apr-15	21-Apr-15	0%	12
01128.DDS00310	Engineer Endorsement to BD/RDO	7	22-Apr-15	28-Apr-15	0%	7
01128.DDS00320	DDA Review & Comments by BD/RDO	28	29-Apr-15	26-May-15	0%	28
01128.DDS00330	DDA Final Submission with BD/RDO's Comments with ICE if required	21	27-May-15	19-Jun-15	0%	21
Eastern TBM Tunnel Lining Design						
DDA						
01128.DDS00640	DDA 1st Preparation & Submission with ICE	28	12-Nov-14 A	02-Feb-15	95%	2
01128.DDS00650	DDA 1st Review & Comments by Engineer	28	03-Feb-15	02-Mar-15	0%	28
01128.DDS00660	DDA BD/RDO Submission with Engineer's Comments	12	03-Mar-15	16-Mar-15	0%	12
01128.DDS00670	Engineer Endorsement to BD/RDO	7	17-Mar-15	23-Mar-15	0%	7
01128.DDS00680	DDA Review & Comments by BD/RDO	28	24-Mar-15	20-Apr-15	0%	28
01128.DDS00690	DDA Final Submission with BD/RDO's Comments with ICE if required	21	21-Apr-15	15-May-15	0%	21
01128.DDS00700	DDA Re-submit to Engineer	0		15-May-15	0%	0
01128.DDS00710	DDA Final Review & Approval by Engineer	14	16-May-15	29-May-15	0%	14
01128.DDS00720	Construction Drawings Submission	12	30-May-15	12-Jun-15	0%	12
Sump Pit (SP5) Submission						
Instrumentation and Monitoring						
AIP						
01128.DDS00850	AIP Preparation & Submission	28	31-Jan-15	07-Mar-15	0%	28
01128.DDS00870	AIP Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
DDA						
01128.DDS00880	DDA 1st Preparation & Submission with ICE	28	08-Apr-15	11-May-15	0%	28
01128.DDS00890	DDA 1st Review & Comments by Engineer	28	12-May-15	08-Jun-15	0%	28
Existing Structure Assessement (ground movements)						
AIP						
01128.DDS00970	AIP Preparation & Submission	28	31-Jan-15	07-Mar-15	0%	28
01128.DDS00990	AIP Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
DDA						
01128.DDS01000	DDA 1st Preparation & Submission with ICE	28	08-Apr-15	11-May-15	0%	28
01128.DDS01010	DDA 1st Review & Comments by Engineer	28	12-May-15	08-Jun-15	0%	28
Temporary Support and Strengthening Structures						
AIP						
01128.DDS01090	AIP Preparation & Submission	28	31-Jan-15	07-Mar-15	0%	28
01128.DDS01110	AIP Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
DDA						
01128.DDS01120	DDA 1st Preparation & Submission with ICE	28	08-Apr-15	11-May-15	0%	28
01128.DDS01130	DDA 1st Review & Comments by Engineer	28	12-May-15	08-Jun-15	0%	28
Associated Works						



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

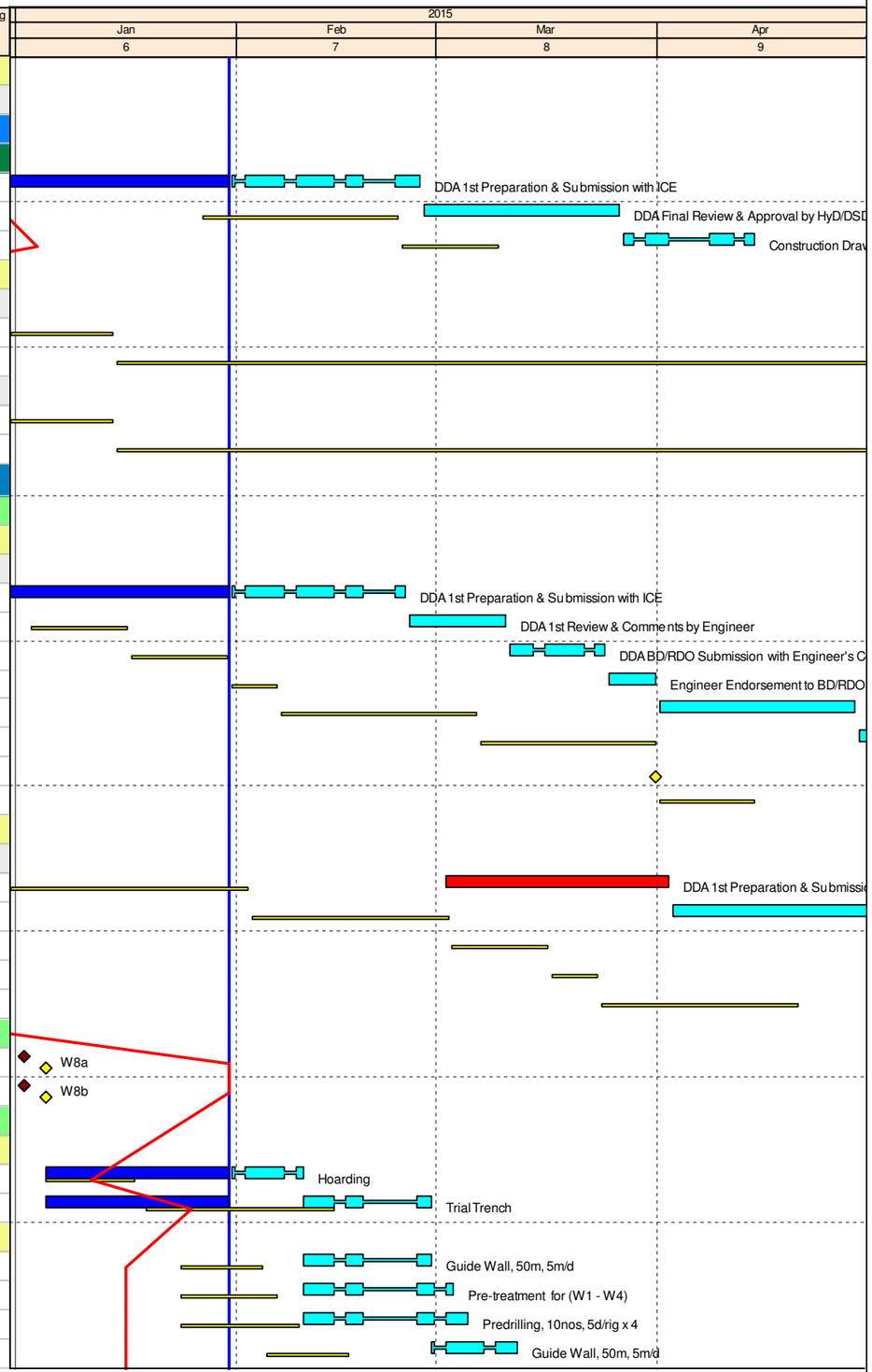
SCL 1128 - SOV to Admiralty Tunnels

3 Month Rolling Programme (Data Date: 31-Jan-15)

1128			
Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
Grouting - Wan Chai Sport Ground (Eastern & Western Running Tracks)						
Design Submission						
Permanent Concrete Slab						
DDA						
01128.DDS01350	DDA 1st Preparation & Submission with ICE	28	04-Oct-14 A	26-Feb-15	85%	20
01128.DDS01360	DDA Final Review & Approval by HyD/DSD/RDO/Engineer	28	27-Feb-15	26-Mar-15	0%	28
01128.DDS01370	Construction Drawings Submission	12	27-Mar-15	14-Apr-15	0%	12
Sea Wall Grouting						
Sea Wall Grouting at U97+687						
01128.CCD00940	Prepare TTMs submission	12	02-May-15*	16-May-15	0%	12
01128.CCD00950	TTMs Comments & Approval	150	18-May-15	24-Nov-15	0%	150
Sea Wall Grouting at U97+628						
01128.CCD01000	Prepare TTMs submission	12	02-May-15*	16-May-15	0%	12
01128.CCD01010	TTMs Comments & Approval	150	18-May-15	24-Nov-15	0%	150
Cost Centre E - Tunnel Boring Machine Launching Shaft (FPP)						
Design Submission						
Temporary ELS - Part 1 D.Wall						
DDA						
01128.EDS00030	DDA 1st Preparation & Submission with ICE	27	17-Nov-14 A	24-Feb-15	33%	18
01128.EDS00040	DDA 1st Review & Comments by Engineer	14	25-Feb-15	10-Mar-15	0%	14
01128.EDS00050	DDA BD/RDO Submission with Engineer's Comments	12	11-Mar-15	24-Mar-15	0%	12
01128.EDS00060	Engineer Endorsement to BD/RDO	7	25-Mar-15	31-Mar-15	0%	7
01128.EDS00070	DDA Review & Comments by BD/RDO	28	01-Apr-15	28-Apr-15	0%	28
01128.EDS00080	DDA Final Submission with BD/RDO's Comments with ICE if required	21	29-Apr-15	23-May-15	0%	21
01128.EDS00090	DDA Re-submit to Engineer	0		23-May-15	0%	0
01128.EDS00100	DDA Final Review & Approval by Engineer	14	24-May-15	06-Jun-15	0%	14
Temporary ELS - Part 2 Struting Design						
DDA						
01128.EDS00140	DDA 1st Preparation & Submission with ICE	28	02-Mar-15*	02-Apr-15	0%	28
01128.EDS00150	DDA 1st Review & Comments by Engineer	28	03-Apr-15	30-Apr-15	0%	28
01128.EDS00160	DDA BD/RDO Submission with Engineer's Comments	12	02-May-15	15-May-15	0%	12
01128.EDS00170	Engineer Endorsement to BD/RDO	7	16-May-15	22-May-15	0%	7
01128.EDS00180	DDA Review & Comments by BD/RDO	28	23-May-15	19-Jun-15	0%	28
Site Possession						
01128.CCE00020	W8a	0	02-Jan-15 A		100%	0
01128.CCE00030	W8b	0	02-Jan-15 A		100%	0
Area 1						
Enabling Works						
01128.CCE00090	Hoarding	12	05-Jan-15 A	10-Feb-15	30%	8
01128.CCE00100	Trial Trench	14	05-Jan-15 A	28-Feb-15	30%	10
Cofferdam						
01128.CCE00110	Guide Wall, 50m, 5m/d	10	10-Feb-15	28-Feb-15	0%	10
01128.CCE00130	Pre-treatment for (W1 - W4)	12	10-Feb-15	03-Mar-15	0%	12
01128.CCE00120	Predrilling, 10nos, 5d/rig x 4	14	10-Feb-15	05-Mar-15	0%	14
01128.CCE001000	Guide Wall, 50m, 5m/d	10	28-Feb-15	12-Mar-15	0%	10



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

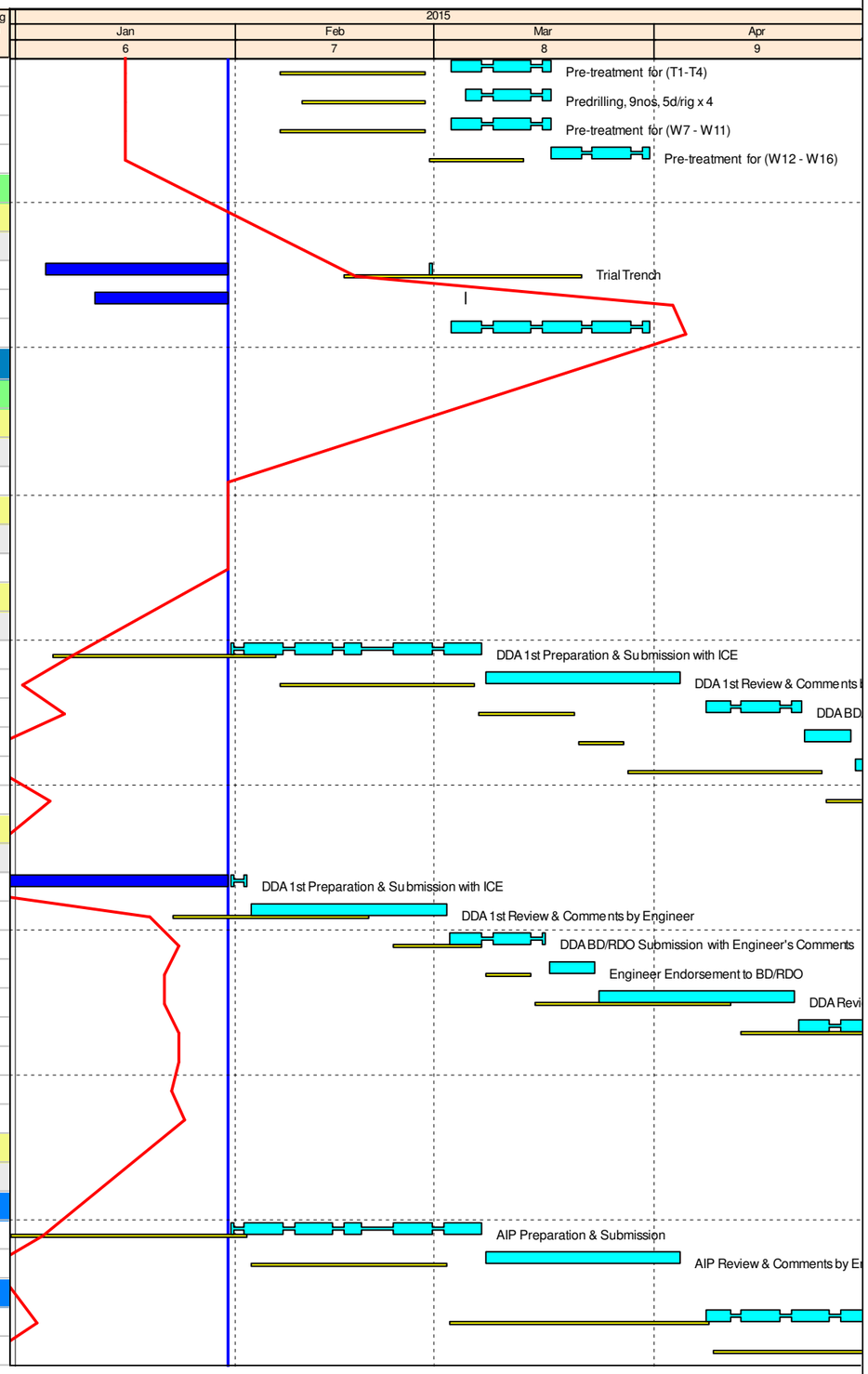
3 Month Rolling Programme (Data Date: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
01128.CCE00140	Pre-treatment for (T1-T4)	12	03-Mar-15	17-Mar-15	0%	12
01128.CCE001010	Predrilling, 9nos, 5d/rig x 4	10	05-Mar-15	17-Mar-15	0%	10
01128.CCE001020	Pre-treatment for (W7 - W11)	12	03-Mar-15	17-Mar-15	0%	12
01128.CCE001030	Pre-treatment for (W12 - W16)	12	17-Mar-15	31-Mar-15	0%	12
Area 2 & B						
Cofferdam						
Works Area W8						
01128.CCE00630	Trial Trench	14	05-Jan-15 A	28-Feb-15	30%	1
01128.CCE00640	Predrilling, 12 nos, 5d/rig x 3	20	12-Jan-15 A	05-Mar-15	8%	0
01128.CCE00650	Pre-treatment	24	03-Mar-15	31-Mar-15	0%	24
Cost Centre F - FPP to ADM TBM Tunnels						
Design Submission						
Instrumentation and Monitoring						
AIP						
01128.FDS00010	AIP Preparation & Submission	28	02-May-15	04-Jun-15	0%	28
Existing Structure Assessement (ground movements)						
AIP						
01128.FDS00140	AIP Preparation & Submission	28	02-May-15	04-Jun-15	0%	28
Ground Treatment Design						
DDA						
01128.FDS00290	DDA 1st Preparation & Submission with ICE	28	31-Jan-15	07-Mar-15	0%	28
01128.FDS00300	DDA 1st Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
01128.FDS00310	DDA BD/RDO Submission with Engineer's Comments	12	08-Apr-15	21-Apr-15	0%	12
01128.FDS00320	Engineer Endorsement to BD/RDO	7	22-Apr-15	28-Apr-15	0%	7
01128.FDS00330	DDA Review & Comments by BD/RDO	28	29-Apr-15	26-May-15	0%	28
01128.FDS00340	DDA Final Submission with BD/RDO's Comments with ICE if required	21	27-May-15	19-Jun-15	0%	21
Western TBM Tunnel Lining Design						
DDA						
01128.FDS00650	DDA 1st Preparation & Submission with ICE	28	12-Nov-14 A	02-Feb-15	95%	2
01128.FDS00660	DDA 1st Review & Comments by Engineer	28	03-Feb-15	02-Mar-15	0%	28
01128.FDS00670	DDA BD/RDO Submission with Engineer's Comments	12	03-Mar-15	16-Mar-15	0%	12
01128.FDS00680	Engineer Endorsement to BD/RDO	7	17-Mar-15	23-Mar-15	0%	7
01128.FDS00690	DDA Review & Comments by BD/RDO	28	24-Mar-15	20-Apr-15	0%	28
01128.FDS00700	DDA Final Submission with BD/RDO's Comments with ICE if required	21	21-Apr-15	15-May-15	0%	21
01128.FDS00710	DDA Re-submit to Engineer	0		15-May-15	0%	0
01128.FDS00720	DDA Final Review & Approval by Engineer	14	16-May-15	29-May-15	0%	14
01128.FDS00730	Construction Drawings Submission	12	30-May-15	12-Jun-15	0%	12
Sump Pit (SP1) Submission						
Instrumentation and Monitoring						
AIP						
01128.FDS00980	AIP Preparation & Submission	28	31-Jan-15	07-Mar-15	0%	28
01128.FDS01000	AIP Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
DDA						
01128.FDS01010	DDA 1st Preparation & Submission with ICE	28	08-Apr-15	11-May-15	0%	28
01128.FDS01020	DDA 1st Review & Comments by Engineer	28	12-May-15	08-Jun-15	0%	28



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

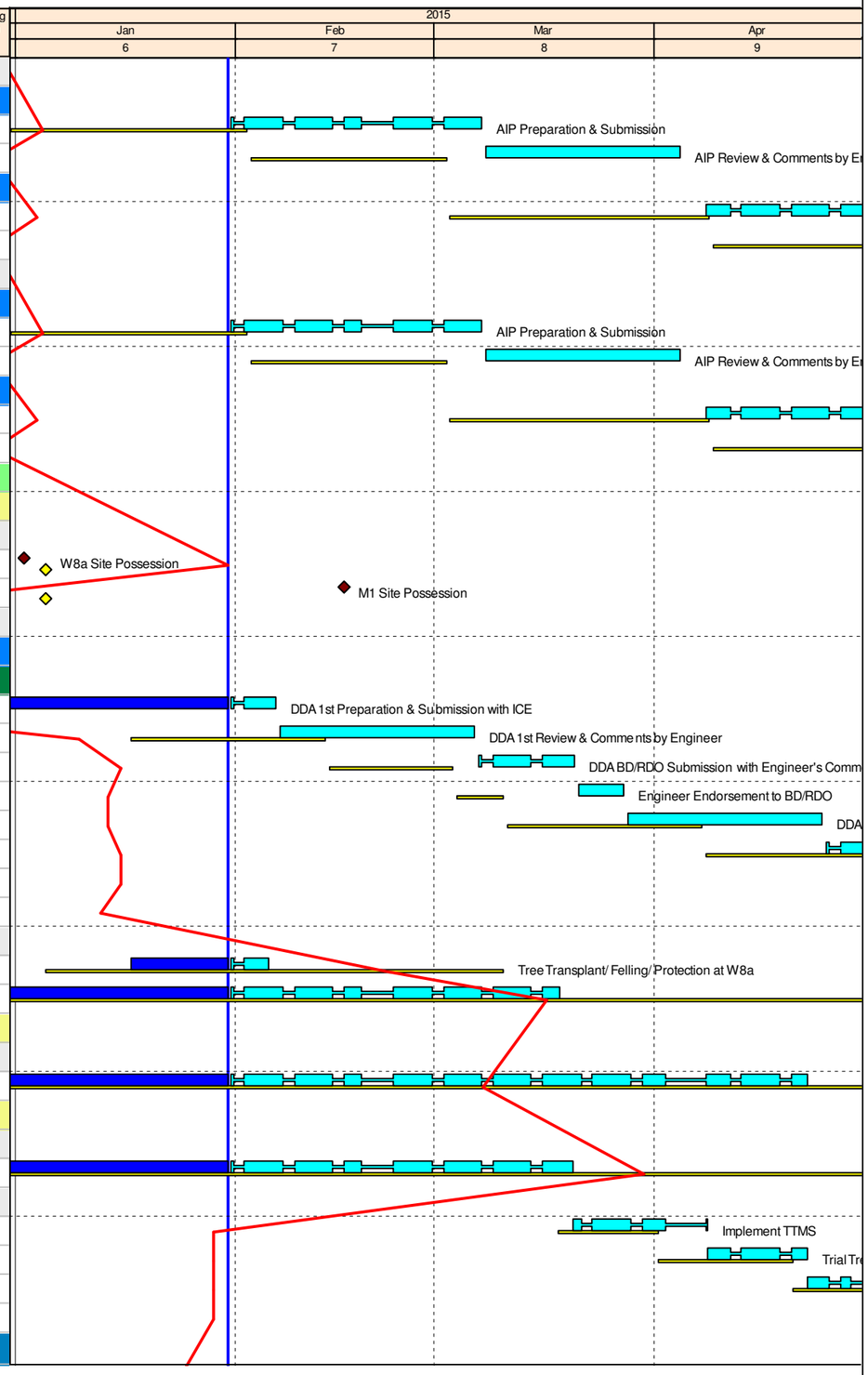
3 Month Rolling Programme (Data Data: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
Existing Structure Assessement (ground movements)						
AIP						
01128.FDS01100	AIP Preparation & Submission	28	31-Jan-15	07-Mar-15	0%	28
01128.FDS01120	AIP Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
DDA						
01128.FDS01130	DDA 1st Preparation & Submission with ICE	28	08-Apr-15	11-May-15	0%	28
01128.FDS01140	DDA 1st Review & Comments by Engineer	28	12-May-15	08-Jun-15	0%	28
Temporary Support and Strengthening Structures						
AIP						
01128.FDS01220	AIP Preparation & Submission	28	31-Jan-15	07-Mar-15	0%	28
01128.FDS01230	AIP Review & Comments by Engineer	28	08-Mar-15	04-Apr-15	0%	28
DDA						
01128.FDS01250	DDA 1st Preparation & Submission with ICE	28	08-Apr-15	11-May-15	0%	28
01128.FDS01260	DDA 1st Review & Comments by Engineer	28	12-May-15	08-Jun-15	0%	28
Associated Works						
Grouting - Lung King St. (TWL Crossing at SVB)						
Site Possession						
01128.CCF00550	W8a Site Possession	0	02-Jan-15A		100%	0
01128.CCF00540	M1 Site Possession	0	16-Feb-15		0%	0
Design Submission						
SVB Working Shaft - Temporary ELS						
DDA						
01128.FDS01490	DDA 1st Preparation & Submission with ICE	28	25-Oct-14A	06-Feb-15	90%	6
01128.FDS01500	DDA 1st Review & Comments by Engineer	28	07-Feb-15	06-Mar-15	0%	28
01128.FDS01510	DDA BD/RDO Submission with Engineer's Comments	12	07-Mar-15	20-Mar-15	0%	12
01128.FDS01520	Engineer Endorsement to BD/RDO	7	21-Mar-15	27-Mar-15	0%	7
01128.FDS01530	DDA Review & Comments by BD/RDO	28	28-Mar-15	24-Apr-15	0%	28
01128.FDS01540	DDA Final Submission with BD/RDO's Comments with ICE if required	21	25-Apr-15	20-May-15	0%	21
01128.FDS01550	DDA Re-submit to Engineer	0		20-May-15	0%	0
01128.FDS01560	DDA Final Review & Approval by Engineer	14	21-May-15	03-Jun-15	0%	14
TTMS Submission & Works						
01128.CCF00580	Tree Transplant/ Felling/ Protection at W8a	50	17-Jan-15A	05-Feb-15	90%	5
01128.CCF00590	TTMs Comment & Approval for Western Vertical Grout at Lung King St.	156	03-Nov-14A	18-Mar-15	76.28%	37
Grouting - Pile Protection HK Red Cross Bldg						
TTMS Submission						
01128.CCF00790	TTMs Comment & Approval for Harcourt Rd.	156	22-Nov-14A	22-Apr-15	59.62%	63
Grouting - Admiralty Station (UT/DT Entries, TWL near ADM)						
TTMS Submission						
01128.CCF01020	TTMs Comment & Approval for Works at ADM	156	20-Nov-14A	20-Mar-15	75.33%	38
Grouting - ADM from Surface						
01128.CCF01040	Implement TTMS	12	20-Mar-15	08-Apr-15	0%	12
01128.CCF01050	Trial Trench	12	08-Apr-15	22-Apr-15	0%	12
01128.CCF01060	GI	12	22-Apr-15	08-May-15	0%	12
01128.CCF01070	Mobilization for Pre-grout from Surface - DT Tam	18	08-May-15	02-Jun-15	0%	18
Cost Centre G - Police Officers' Club (RRIW)						



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

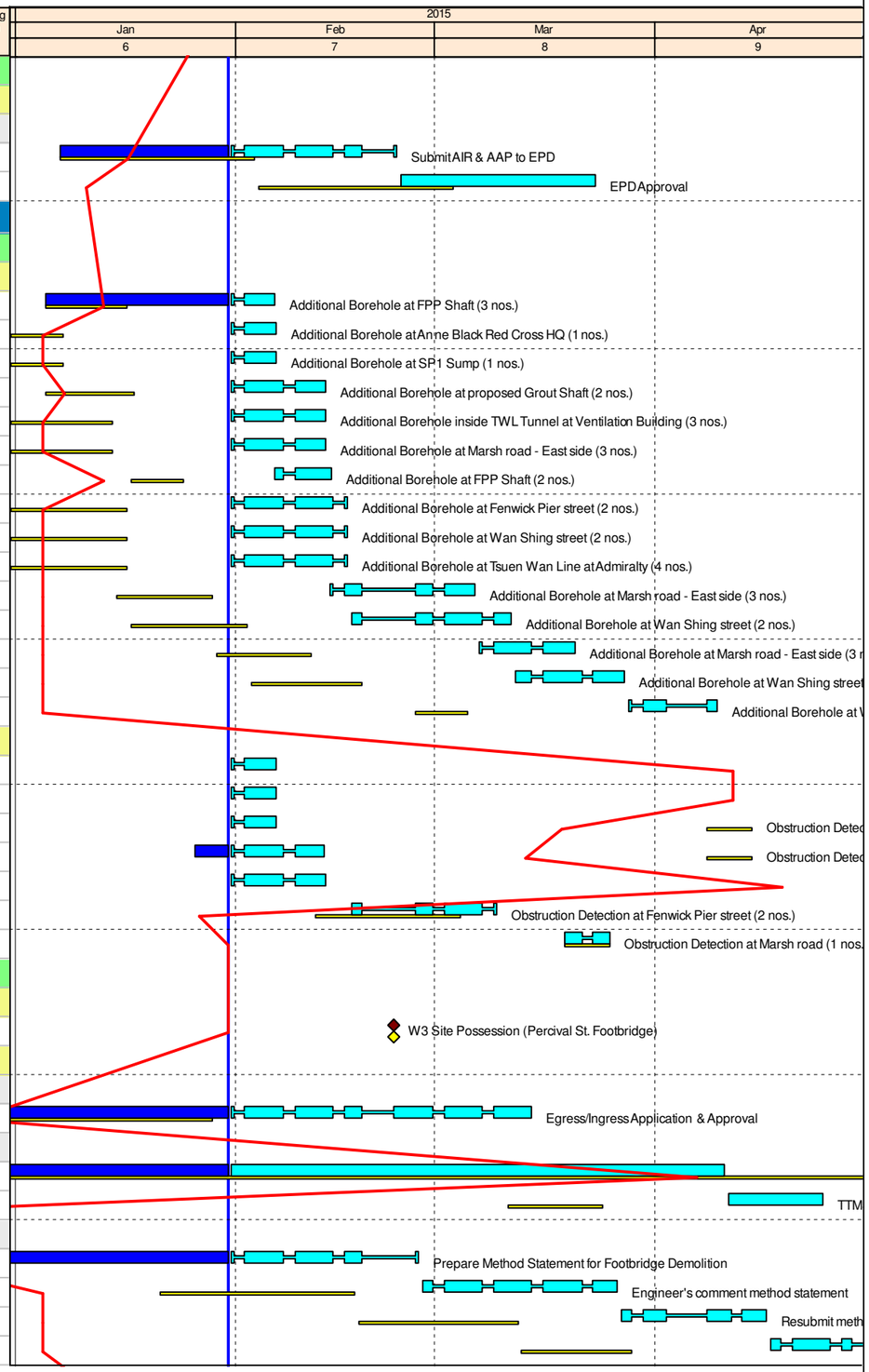
3 Month Rolling Programme (Data Data: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
Site Preparation						
Demolition of POC						
POC - EPD Submission						
01128.CCG00060	Submit AIR & AAP to EPD	24	07-Jan-15 A	23-Feb-15	29.17%	17
01128.CCG00070	EPD Approval	28	24-Feb-15	23-Mar-15	0%	28
Cost Centre H - Other RRIW Works						
Ground Investigation						
Additional Borehole						
01128.CCH03480	Additional Borehole at FPP Shaft (3 nos.)	11	05-Jan-15 A	06-Feb-15	50%	6
01128.CCH03040	Additional Borehole at Anne Black Red Cross HQ (1 nos.)	6	31-Jan-15	06-Feb-15	0%	6
01128.CCH03430	Additional Borehole at SP1 Sump (1 nos.)	6	31-Jan-15	06-Feb-15	0%	6
01128.CCH03470	Additional Borehole at proposed Grout Shaft (2 nos.)	12	31-Jan-15	13-Feb-15	0%	12
01128.CCH03490	Additional Borehole inside TWL Tunnel at Ventilation Building (3 nos.)	12	31-Jan-15	13-Feb-15	0%	12
01128.CCH03530	Additional Borehole at Marsh road - East side (3 nos.)	12	31-Jan-15	13-Feb-15	0%	12
01128.CCH03760	Additional Borehole at FPP Shaft (2 nos.)	7	06-Feb-15	14-Feb-15	0%	7
01128.CCH03450	Additional Borehole at Fenwick Pier street (2 nos.)	14	31-Jan-15	16-Feb-15	0%	14
01128.CCH03540	Additional Borehole at Wan Shing street (2 nos.)	14	31-Jan-15	16-Feb-15	0%	14
01128.CCH03030	Additional Borehole at Tsuen Wan Line at Admiralty (4 nos.)	14	31-Jan-15	16-Feb-15	0%	14
01128.CCH03740	Additional Borehole at Marsh road - East side (3 nos.)	12	14-Feb-15	06-Mar-15	0%	12
01128.CCH03670	Additional Borehole at Wan Shing street (2 nos.)	14	17-Feb-15	11-Mar-15	0%	14
01128.CCH03750	Additional Borehole at Marsh road - East side (3 nos.)	12	07-Mar-15	20-Mar-15	0%	12
01128.CCH03680	Additional Borehole at Wan Shing street (2 nos.)	14	12-Mar-15	27-Mar-15	0%	14
01128.CCH03690	Additional Borehole at Wan Shing street (1 nos.)	7	28-Mar-15	09-Apr-15	0%	7
Obstruction Detection						
01128.CCH03070	Obstruction Detection at Anne Black Red Cross HQ (1 nos.)	6	31-Jan-15	06-Feb-15	0%	6
01128.CCH03440	Obstruction Detection at Harcourt Road (1 nos.)	6	31-Jan-15	06-Feb-15	0%	6
01128.CCH03590	Obstruction Detection at Canal Road Flyover (1 nos.)	6	31-Jan-15	06-Feb-15	0%	6
01128.CCH03560	Obstruction Detection at Wan Shing street (3 nos.)	14	26-Jan-15 A	13-Feb-15	20%	11
01128.CCH03580	Obstruction Detection at Gloucester road (2 nos.)	12	31-Jan-15	13-Feb-15	0%	12
01128.CCH03500	Obstruction Detection at Fenwick Pier street (2 nos.)	12	17-Feb-15	09-Mar-15	0%	12
01128.CCH03550	Obstruction Detection at Marsh road (1 nos.)	6	19-Mar-15	25-Mar-15	0%	6
CHT Slip Road Footbridge Diversion						
Site Possession						
01128.CCH00010	W3 Site Possession (Percival St. Footbridge)	0	23-Feb-15		0%	0
TTMS & MS Submission						
Egress/Ingress for Percival Street Footbridge						
01128.CCH00020	Egress/Ingress Application & Approval	48	01-Dec-14 A	14-Mar-15	29.17%	34
TTMS for CHT Footbridge Underpinning						
01128.CCH00120	TTMS Approval	183	15-Dec-14 A	10-Apr-15	61.75%	70
01128.CCH00130	TTMS Notification	14	11-Apr-15	24-Apr-15	0%	14
MS for Percival Street Footbridge Demolition						
01128.CCH00030	Prepare Method Statement for Footbridge Demolition	24	01-Dec-14 A	26-Feb-15	29.17%	17
01128.CCH00040	Engineer's comment method statement	24	27-Feb-15	26-Mar-15	0%	24
01128.CCH00050	Resubmit method statement	14	27-Mar-15	16-Apr-15	0%	14
01128.CCH00060	Approval of method statement	14	17-Apr-15	05-May-15	0%	14



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

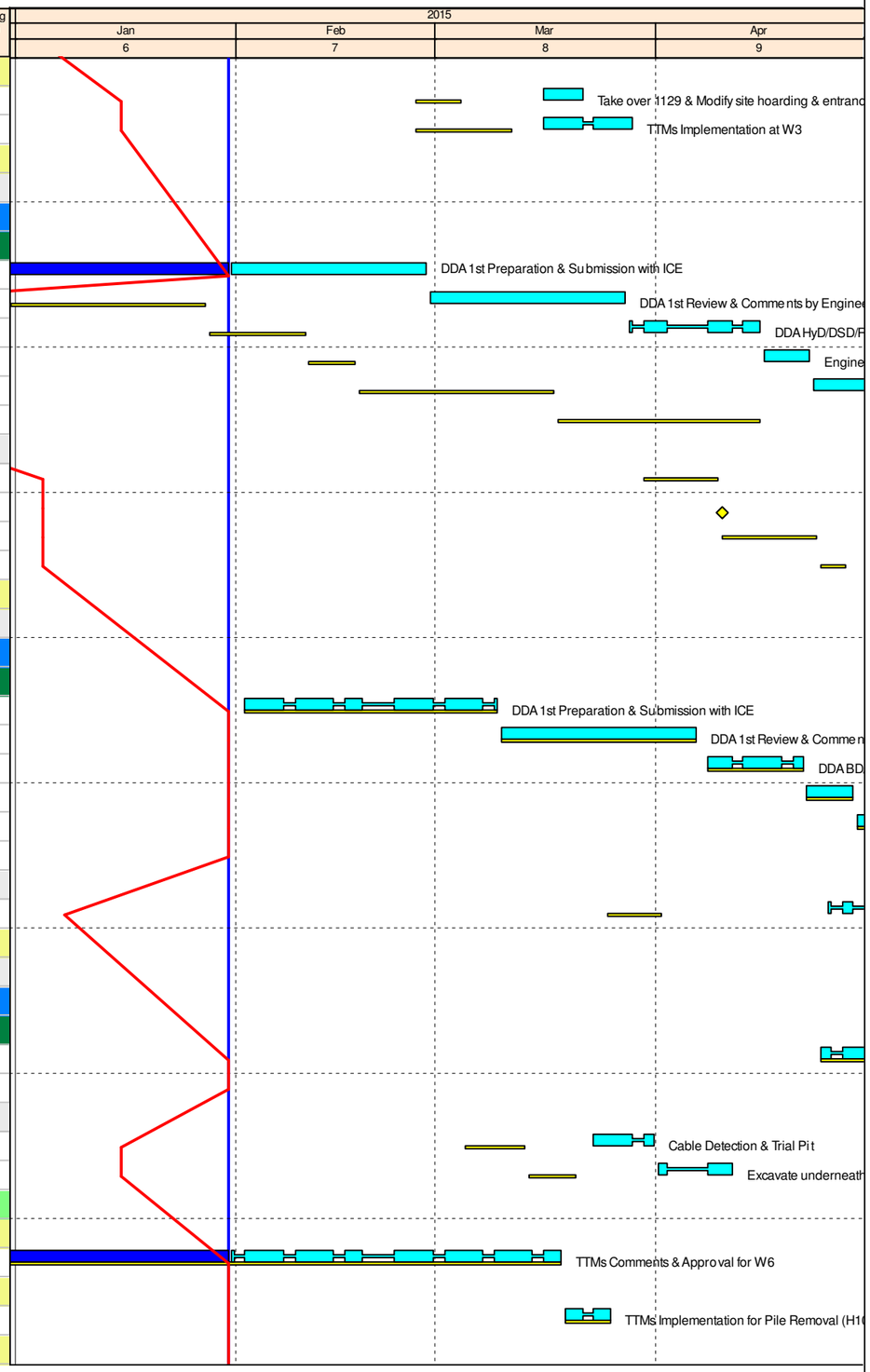
3 Month Rolling Programme (Data Date: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
TTMS Works						
01128.CCH00140	Take over 1129 & Modify site hoarding & entrance	6	16-Mar-15	21-Mar-15	0%	6
01128.CCH00150	TTMs Implementation at W3	12	16-Mar-15	28-Mar-15	0%	12
Pile Removal - Percival Street Footbridge (H16)						
Design Submission						
Temporary ELS						
DDA						
01128.HDS00010	DDA 1st Preparation & Submission with ICE	28	22-Dec-14 A	27-Feb-15	25%	28
01128.HDS00020	DDA 1st Review & Comments by Engineer/HyD/DSD	28	28-Feb-15	27-Mar-15	0%	28
01128.HDS00030	DDA HyD/DSD/RDO Submission with Engineer's Comments	12	28-Mar-15	15-Apr-15	0%	12
01128.HDS00040	Engineer Endorsement to HyD/DSD/RDO	7	16-Apr-15	22-Apr-15	0%	7
01128.HDS00050	DDA Review & Comments by HyD/DSD/RDO	28	23-Apr-15	20-May-15	0%	28
01128.HDS00060	DDA Final Submission with HyD/DSD/RDO's Comments with ICE if required	21	21-May-15	15-Jun-15	0%	21
Load Transfer of existing Footbridge Decking & Demolition						
01128.CCH00160	Prepare footpath diversion	6	06-May-15	12-May-15	0%	6
01128.CCH00170	Diversion of Footpath -->after TTMs implementation	0	14-May-15		0%	0
01128.CCH00180	Erect Temp. Supporting Steel Frame & Jack below the Main Deck	12	14-May-15	29-May-15	0%	12
01128.CCH00190	Load Transfer	3	30-May-15	02-Jun-15	0%	3
Cross Harbour Tunnel Footbridge (Underpinning)						
Design Submission						
Temporary ELS						
DDA						
01128.HDS00090	DDA 1st Preparation & Submission with ICE	28	02-Feb-15	09-Mar-15	0%	28
01128.HDS00100	DDA 1st Review & Comments by Engineer	28	10-Mar-15	06-Apr-15	0%	28
01128.HDS00110	DDA BD/RDO Submission with Engineer's Comments	12	08-Apr-15	21-Apr-15	0%	12
01128.HDS00120	Engineer Endorsement to BD/RDO	7	22-Apr-15	28-Apr-15	0%	7
01128.HDS00130	DDA Review & Comments by BD/RDO	28	29-Apr-15	26-May-15	0%	28
01128.HDS00140	DDA Final Submission with BD/RDO's Comments with ICE if required	21	27-May-15	19-Jun-15	0%	21
East CHT						
01128.CCH00440	Cable detection & Trial trench	7	25-Apr-15	05-May-15	0%	7
Causeway/Hung Hing Flyover (Underpinning)						
Design Submission						
Temporary Sheet Pile Cofferdam						
DDA						
01128.HDS00220	DDA 1st Preparation & Submission with ICE	28	24-Apr-15	28-May-15	0%	28
01128.HDS00230	DDA 1st Review & Comments by Engineer	28	29-May-15	25-Jun-15	0%	28
Stage 1						
01128.CCH00640	Cable Detection & Trial Pit	8	23-Mar-15	31-Mar-15	0%	8
01128.CCH00650	Excavate underneath Deck 5-6 for grouting	6	01-Apr-15	11-Apr-15	0%	6
Wan Shing St. Pile Removal Works (H10)						
TTMS Submission						
01128.CCH00950	TTMs Comments & Approval for W6	156	08-Sep-14 A	18-Mar-15	76.28%	37
TTMS Works						
01128.CCH00960	TTMs Implementation for Pile Removal (H10)	6	19-Mar-15	25-Mar-15	0%	6
Pile Removal - Wan Shing St. Footbridge (H10)						



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

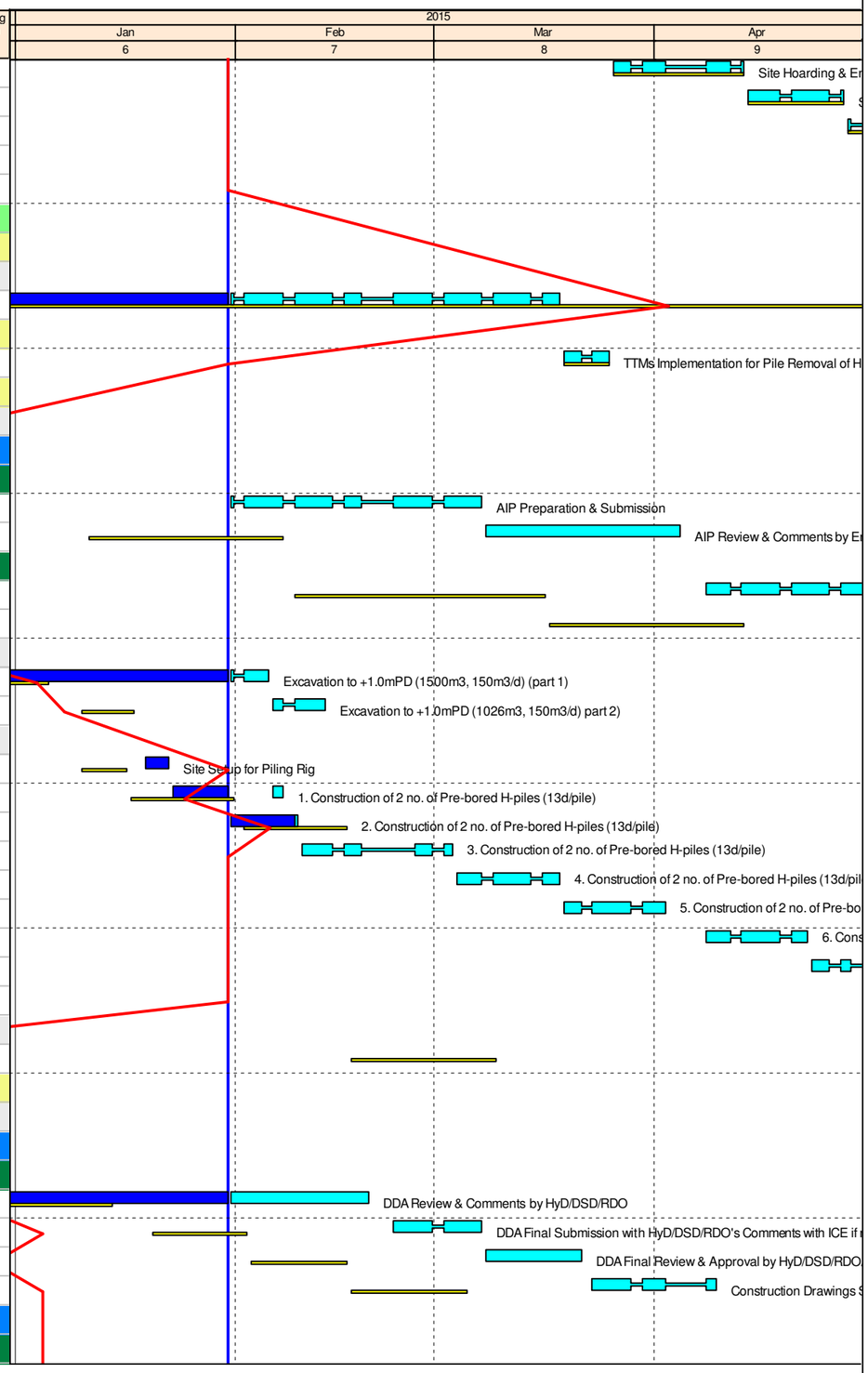
SCL 1128 - SOV to Admiralty Tunnels

3 Month Rolling Programme (Data Date: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
01128.CCH00990	Site Hoarding & Entrance	12	26-Mar-15	13-Apr-15	0%	12
01128.CCH01000	Site Setup & Mobilization	12	14-Apr-15	27-Apr-15	0%	12
01128.CCH01010	GI for Pile Removal (Pile/3d/rig)	3	28-Apr-15	02-May-15	0%	3
01128.CCH01020	Pile Removal for 1 no. Dia.600mm Bored Pile (UT Ch 97+473)	20	04-May-15	29-May-15	0%	20
01128.CCH01030	Post-drilling for Pile Removal & Backfilling (Pile/3d/rig) (UT Ch 97+473)	4	30-May-15	03-Jun-15	0%	4
TARG (Pile Removal: D03, H13, D04 & Trunk Sewers)						
TTMS Submission						
Ingress/Egress						
01128.CCH01120	TTMs Comments & Approval for W4a/ W4b (Stage 2)	156	22-Nov-14 A	18-Mar-15	76.28%	37
TTMS Works						
01128.CCH01150	TTMs Implementation for Pile Removal of H10 & Grouting Works (Stage 2)	6	19-Mar-15	25-Mar-15	0%	6
Canal Rd. Flyover (H13) - Pile Removal & Underpining (Alternative scheme - 16nos. Pre-bored H-pile)						
Design Submission						
Temporary Steel Frame to Support the Jacks						
AIP						
01128.HDS00710	AIP Preparation & Submission	28	31-Jan-15	07-Mar-15	0%	28
01128.HDS00720	AIP Review & Comments by Engineer/HyD/DSD/RDO	28	08-Mar-15	04-Apr-15	0%	28
DDA						
01128.HDS00730	DDA 1st Preparation & Submission with ICE	28	08-Apr-15	11-May-15	0%	28
01128.HDS00740	DDA 1st Review & Comments by Engineer/HyD/DSD	28	12-May-15	08-Jun-15	0%	28
Stage 1 - ELS						
01128.CCH01210	Excavation to +1.0mPD (1500m3, 150m3/d) (part 1)	10	22-Dec-14 A	05-Feb-15	85%	5
01128.CCH03780	Excavation to +1.0mPD (1026m3, 150m3/d) part 2)	7	06-Feb-15	13-Feb-15	0%	7
Piling Works						
01128.CCH01220	Site Setup for Piling Rig	6	19-Jan-15 A	22-Jan-15 A	100%	0
01128.CCH01230	1. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	23-Jan-15 A	07-Feb-15	80%	2
01128.CCH01240	2. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	31-Jan-15 A	09-Feb-15	2%	1
01128.CCH03840	3. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	10-Feb-15	03-Mar-15	0%	13
01128.CCH03850	4. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	04-Mar-15	18-Mar-15	0%	13
01128.CCH03860	5. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	19-Mar-15	02-Apr-15	0%	13
01128.CCH03870	6. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	08-Apr-15	22-Apr-15	0%	13
01128.CCH03880	7. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	23-Apr-15	09-May-15	0%	13
01128.CCH03890	8. Construction of 2 no. of Pre-bored H-piles (13d/pile)	13	11-May-15	28-May-15	0%	13
Stage 2						
01128.CCH01241	Install King post, Strut and Wailing	12	29-May-15	12-Jun-15	0%	12
Canal Rd. Box Culvert & Pile Removal (D03) - Option 1: Re-sequence Comforming Scheme						
Design Submission						
Temporary ELS						
DDA						
01128.HDS01040	DDA Review & Comments by HyD/DSD/RDO	28	18-Dec-14 A	19-Feb-15	28.57%	20
01128.HDS01050	DDA Final Submission with HyD/DSD/RDO's Comments with ICE if required	12	23-Feb-15	07-Mar-15	0%	12
01128.HDS01060	DDA Final Review & Approval by HyD/DSD/RDO/Engineer	14	08-Mar-15	21-Mar-15	0%	14
01128.HDS01070	Construction Drawings Submission	12	23-Mar-15	09-Apr-15	0%	12
Temporary Steel Working Platform						
DDA						



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

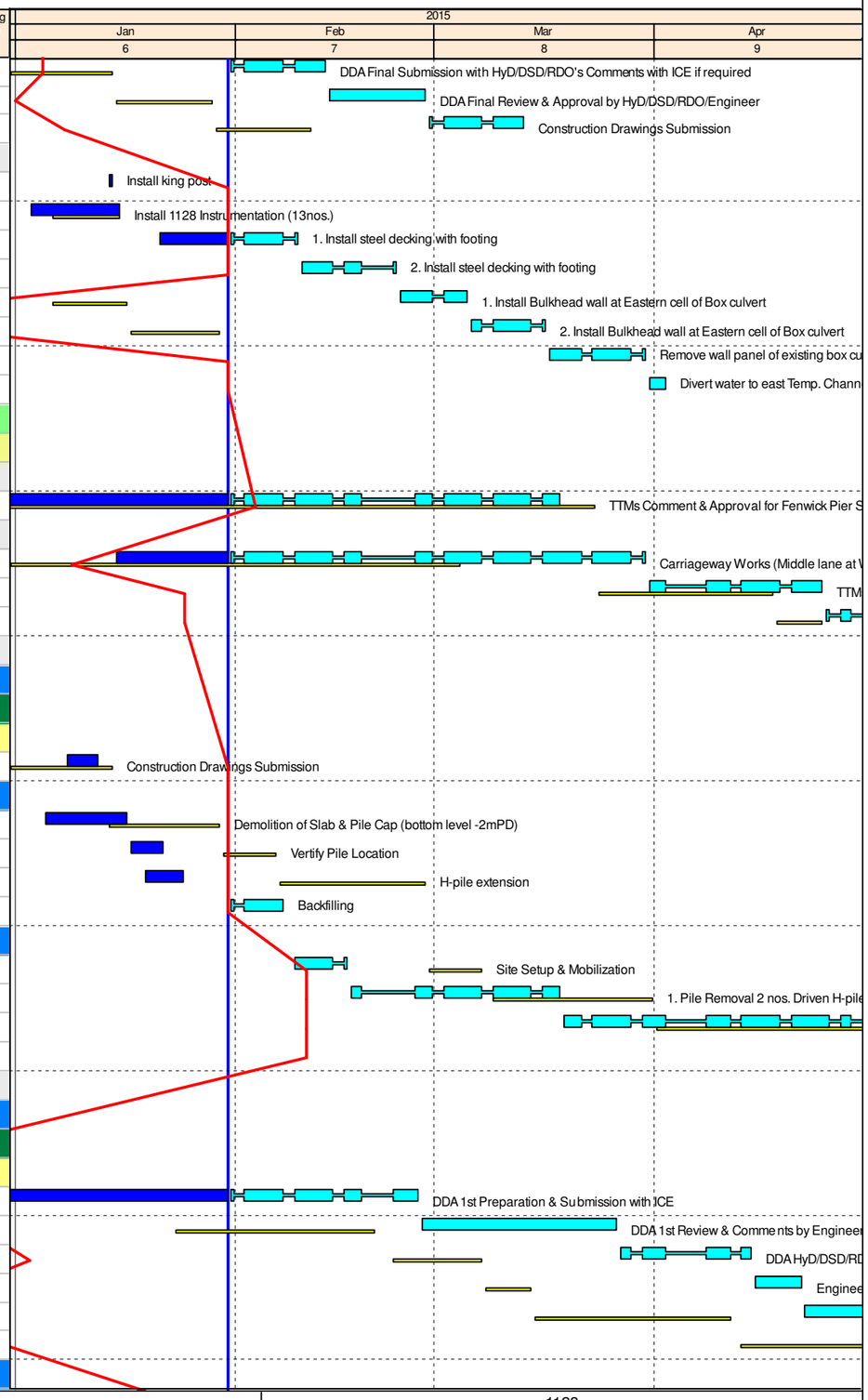
3 Month Rolling Programme (Data Date: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
01128.HDS01130	DDA Final Submission with HyD/DSD/RDO's Comments with ICE if required	12	31-Jan-15	13-Feb-15	0%	12
01128.HDS01140	DDA Final Review & Approval by HyD/DSD/RDO/Engineer	14	14-Feb-15	27-Feb-15	0%	14
01128.HDS01150	Construction Drawings Submission	12	28-Feb-15	13-Mar-15	0%	12
Stage 1 (1st Dry Season - Jan-15 to Mar-15)						
01128.CCH03920	Install king post	12	14-Jan-15A	14-Jan-15A	100%	0
01128.CCH03790	Install 1128 Instrumentation (13nos.)	9	03-Jan-15A	15-Jan-15A	100%	0
01128.CCH03930	1. Install steel decking with footing	9	21-Jan-15A	09-Feb-15	80%	8
01128.CCH03940	2. Install steel decking with footing	9	10-Feb-15	23-Feb-15	0%	9
01128.CCH01440	1. Install Bulkhead wall at Eastern cell of Box culvert	9	24-Feb-15	05-Mar-15	0%	9
01128.CCH03800	2. Install Bulkhead wall at Eastern cell of Box culvert	9	06-Mar-15	16-Mar-15	0%	9
01128.CCH03950	Remove wall panel of existing box culvert	12	17-Mar-15	30-Mar-15	0%	12
01128.CCH03960	Divert water to east Temp. Channel	3	31-Mar-15	02-Apr-15	0%	3
DSD Wan Chai West Sewage Screening Plant (B13), Lung King St. Box Culvert (D01) & Fleet Arcade (B11)						
Fenwick Pier Street						
TTMS Submission						
01128.CCH01800	TTMs Comment & Approval for Fenwick Pier Street	156	10-Sep-14A	18-Mar-15	78.21%	34
TTMS Works						
01128.CCH01820	Carriageway Works (Middle lane at W14)	48	15-Jan-15A	30-Mar-15	10%	44
01128.CCH01830	TTMs Implementation of Ingress/Egress for Carriageway (Stage 0)	18	31-Mar-15	24-Apr-15	0%	18
01128.CCH01840	TTMs Implementation at Fenwick Pier St. (Stage 1) - Footpath Maintain, Road Closure & Diversion	6	25-Apr-15	04-May-15	0%	6
Pile Removal - DSD Wan Chai West Sewage Screening Plant (B13)						
Design Submission						
Temporary ELS						
DDA						
01128.HDS01560	Construction Drawings Submission	12	08-Jan-15A	12-Jan-15A	100%	0
Stage 1 ELS						
01128.CCH01940	Demolition of Slab & Pile Cap (bottom level -2mPD)	14	05-Jan-15A	16-Jan-15A	100%	0
01128.CCH01950	Vertify Pile Location	7	17-Jan-15A	21-Jan-15A	100%	0
01128.CCH03640	H-pile extension	12	19-Jan-15A	24-Jan-15A	100%	0
01128.CCH03970	Backfilling	7	31-Jan-15	07-Feb-15	0%	7
Stage 2 Pile Removal						
01128.CCH01960	Site Setup & Mobilization	7	09-Feb-15	16-Feb-15	0%	7
01128.CCH03320	1. Pile Removal 2 nos. Driven H-pile (pile/20d/team, x2 teams)	20	17-Feb-15	18-Mar-15	0%	20
01128.CCH03330	2. Pile Removal 2 nos. Driven H-pile (pile/20d/team, x2 teams)	40	19-Mar-15	11-May-15	0%	40
01128.CCH03340	3. Pile Removal 2 nos. Driven H-pile (pile/20d/team, x2 teams)	40	12-May-15	04-Jul-15	0%	40
Pile Removal - Lung King St. Box Culvert (D01) & Fleet Arcade (B11)						
Design Submission						
Lung King St. Box Culvert - Temporary ELS						
DDA						
01128.HDS01410	DDA 1st Preparation & Submission with ICE	28	25-Oct-14A	26-Feb-15	28.57%	20
01128.HDS01420	DDA 1st Review & Comments by Engineer/HyD/DSD	28	27-Feb-15	26-Mar-15	0%	28
01128.HDS01430	DDA HyD/DSD/RDO Submission with Engineer's Comments	12	27-Mar-15	14-Apr-15	0%	12
01128.HDS01440	Engineer Endorsement to HyD/DSD/RDO	7	15-Apr-15	21-Apr-15	0%	7
01128.HDS01450	DDA Review & Comments by HyD/DSD/RDO	28	22-Apr-15	19-May-15	0%	28
01128.HDS01460	DDA Final Submission with HyD/DSD/RDO's Comments with ICE if required	21	20-May-15	13-Jun-15	0%	21
Stage 1 - 2015 (Wet Season) Preparation Works for Box Culvert & Pile Removal for Fleet Arcade						



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

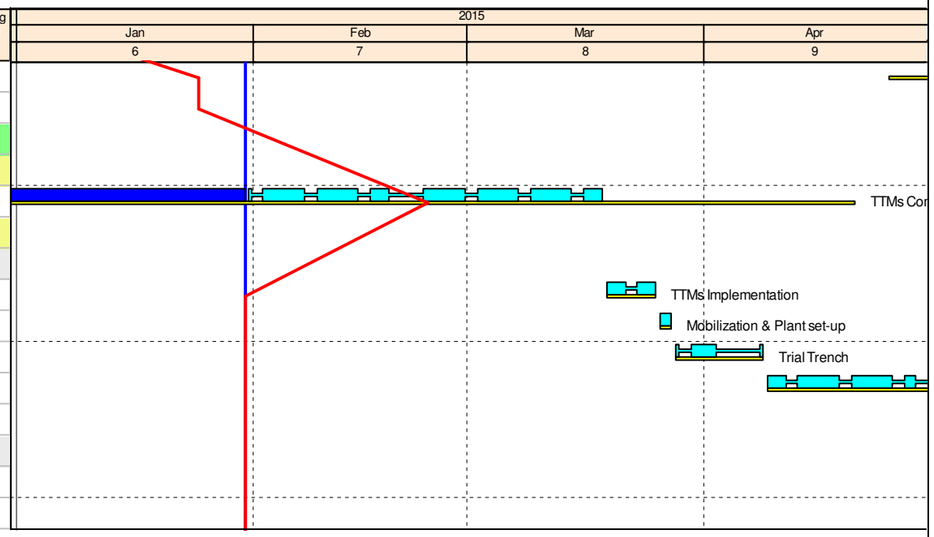
3 Month Rolling Programme (Data Data: 31-Jan-15)

1128

Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

DRAGAGES - BOUYGUES JOINT VENTURE

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Remaining Duration
01128.CCH02020	Stie Hoarding & Entrance ---> subject to TTMS (Stage 1)	12	05-May-15	19-May-15	0%	12
01128.CCH02030	Demolition Road Surface	12	20-May-15	04-Jun-15	0%	12
Works at Marsh Road (Left-in Sheet piles)						
TTMS Submission						
01128.CCH02450	TTMs Comments & Appro val for Marsh Rd.	156	09-Oct-14 A	18-Mar-15	76.28%	37
Works at Marsh Rd. (Left-in piles)						
Stage 1						
01128.CCH02460	TTMs Implementation	6	19-Mar-15	25-Mar-15	0%	6
01128.CCH02470	Mobilization & Plant set-up	2	26-Mar-15	27-Mar-15	0%	2
01128.CCH02480	Trial Trench	6	28-Mar-15	08-Apr-15	0%	6
01128.CCH02490	G.I. for Left-in Sheet piles at 1500mm dia. drainage	20	09-Apr-15	04-May-15	0%	20
01128.CCH02500	Reinstatement	12	05-May-15	19-May-15	0%	12
Stage 2						
01128.CCH02510	TTMs Implementation	6	20-May-15	28-May-15	0%	6
01128.CCH02520	Trial Trench	6	29-May-15	04-Jun-15	0%	6



Primary Baseline
Actual Work
Non Critical Activity
Critical Activity
Baseline Milestone
Milestone

11283MRP150131

SCL 1128 - SOV to Admiralty Tunnels

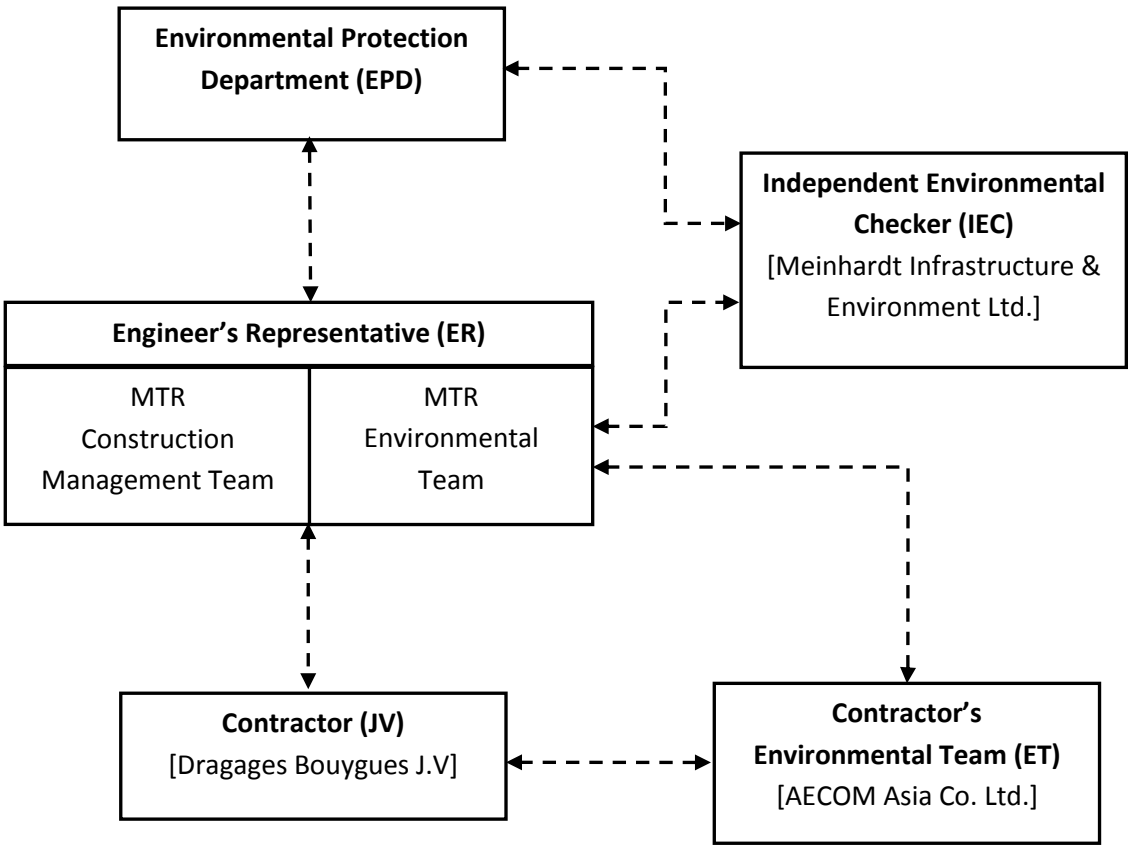
3 Month Rolling Programme (Data Date: 31-Jan-15)

1128			
Date	Revision	Checked	Approved
31-Jan-15	1128 - 3MRP		

APPENDIX B

Project Organization Structure

Appendix B Project Organisation Structure



APPENDIX C

Environmental Mitigation Measures Implementation Schedule

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Cultural Heritage Impact						
S4.93 & Table 4.2	Erection of decorative and sensibly designed hoarding along the boundary of the works area	To mitigate the temporary visual impact due to surface works.	Contractor	Works Areas in Causeway Bay and Wan Chai, and Works Shaft in Admiralty	Construction Phase	V
Ecological Impact						
S5.134	Accidental chemical spillage and construction site run-off to the receiving water bodies, mitigation measures such as removing the pollutants before discharge into storm drain and paving the section of construction road between the wheel washing bay and the public road as suggested in Sections 11.216 and 11.219 to 11.256 of the EIA Report shall be adopted.	To minimize the contamination of wastewater discharge	Contractor	All land based works areas	Construction Phase	N/A
Landscape and Visual Impact						
Construction Phase						
Table 7.9	CM1 - Trees unavoidably affected by the works shall be transplanted as far as possible in accordance with ETWB TC(W) 3/2006 – Tree Preservation.	Transplanting and reuse of affected trees.	MTR	Works Sites	Construction Phase	V
Table 7.9	CM2a - Compensatory tree planting shall be provided in accordance with ETWB TC(W) 3/2006 – Tree Preservation to compensate for felled trees and maintained until end of the establishment period.	Compensation for the removal of existing trees due to the Project.	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM2b - Compensatory shrub planting shall be provided to compensate for the loss of shrub planting in amenity areas.	Compensation for the removal of existing shrub planting due to the Project.	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM3 - Control of night-time lighting glare	Minimize the night time glare due to the Project during construction phase	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM4 - Erection of decorative screen hoarding compatible with the surrounding setting.	Minimize the visual impact of the Project during construction phase	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM5 - Management of facilities on work sites which give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs	Control of height and deposition/ arrangement of temporary facilities in works areas	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM6 - All hard and soft landscape areas disturbed temporarily during construction shall be reinstated on like-to-like basis to the satisfaction of the relevant Government Departments.	Reinstatement of temporary works areas.	MTR	Works Sites	Construction Phase	N/A
Air Quality						
/	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	Works areas	Construction phase	V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Construction Dust Impact						
Table 8.5	Barging facilities: (i) Transportation of spoils to the barging point – Pave all road surfaces within the barging facilities and provide watering once along with the haul road for every working hours to reduce dust emission by 91.7%. This dust suppression efficiency is derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.0 L/m^2 once every working hour. Any potential dust impact and watering mitigation would be subject to the actual site condition. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the above water application intensity may not be unreservedly applied. While the above watering frequency is to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.0L/m^2 to achieve the removal efficiency. The dust levels would be monitored and managed under an EM&A programme as specified in the EM&A Manual. (ii) Unloading of spoil materials – Undertake the unloading process within a 3-sided screen with top tipping hall. Provide water spraying and flexible dust curtains at the discharge point for dust suppression. (iii) Vehicles leaving the barging facilities – Pass vehicles through the wheel washing facilities provided at site exits.	To minimize dust impacts	Contractor	All barging points	Construction phase	N/A
S8.63	For concrete batching plant, the requirements and mitigation measures stipulated in the *Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2(93)* shall be followed and implemented.	To minimize dust impact	Contractor	Concrete Batching Plant	Construction phase	N/A
Table 8.6	During operation of concrete batching plant: (i) Unloading of aggregates from the tipper trucks to receiving hopper – unload the aggregates from the tipper trucks to the receiving hopper equipped with enclosures on 3 sides and top cover, and water spraying system. (ii) Unloading of cement and PFA from tankers into the silo – Directly load the cement and PFA into the silo via a flexible duct. Install dust collectors at cement/PFA silos. (iii) Storage of aggregates in overhead storage bins – Store the aggregates in fully enclosed overhead storage bins. Cover the top of overhead storage bins with cladding. Install water spraying system at the top of storage bins for watering the aggregates, and fully enclose aggregates storage bins. (iv) Weighing and batching of cementitious materials – Perform the whole process of weighing and mixing in a fully enclosed environment. Equip all the mixers with dust collectors. (v) Loading of concrete from mixer into transit mixer of a truck – Directly load the concrete from the mixer into the transit mixer of a truck in “wet form”. (vi) Tipper trucks and cement tankers leaving the Concrete Batching Plant – Haul road within the site is unpaved. Install wheel washing pit at the gate of the concrete batching plant. (vii) Transportation of materials within the plant – Provide watering twice a day would be provided.	To minimize dust impacts	Contractor	Concrete Batching Plant	Construction phase	N/A
S8.89	Watering once every working hour on active works areas, exposed areas and paved haul roads to reduce dust emission by 91.7%. This dust suppression efficiency is derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.7 L/m2 for Kowloon side and 1.0 L/m2 for Hong Kong side once every working hour. Any potential dust impact and watering mitigation would be subject to the actual site condition. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the above water application intensity may not be unreservedly applied. While the above watering frequency is to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7 L/m2 for Kowloon side and 1.0 L/m2 for Hong Kong side to achieve the removal efficiency. The dust levels would be monitored and managed under an EM&A programme as specified in the EM&A Manual.	To minimize dust impact	Contractor	Works areas	Construction Phase	@

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S8.89	Enclosing the unloading process at barging point by a 3-sided screen with top tipping hall, provision of water spraying and flexible dust curtains to reduce dust emission	To minimize dust impact	Contractor	All barging points	Construction phase	N/A
S8.90	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs. • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. • Imposition of speed controls for vehicles on site haul roads. • Where possible, routing of vehicles and positioning of construction plant shall be at the maximum possible distance from ASRs. • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise	To minimize dust impacts	Contractor	Works areas	Construction phase	@ @ N/A N/A N/A V N/A V V V V N/A V
Airborne Noise Impact						
Construction Phase						
S9.55	The following good site practices shall be implemented: • Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program • Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program • Mobile plant, if any, shall be sited as far from NSRs as possible • Machines and plant (such as trucks) that may be in intermittent use shall be shut down between work periods or shall be throttled down to a minimum • Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs • Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities	To minimize construction noise impact	Contractor	Works areas	Construction phase	V N/A V V V N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S9.56 & Table 9.16	The following quiet PME shall be used: • Crane lorry, mobile • Crane, mobile • Asphalt paver • Backhoe with hydraulic breaker • Breaker, excavator mounted (hydraulic) • Hydraulic breaker • Concrete lorry mixer • Poker, vibrator, hand-held • Concrete pump • Crawler crane, mobile • Mobile crane • Dump truck • Excavator • Truck • Rock drill • Lorry • Wheel loader • Roller vibratory	To minimize construction noise impact	Contractor	Works areas at: • Hung Hom • Cross Harbour section up to Breakwater of CBTS • Breakwater of CBTS to SOV • SOV to EXH • EXH • EXH to open space at the junction of Expo Drive and Convention Avenue • Open space at the junction of Expo Drive and Convention Avenue to north of ADM • South of ADM to Overrun Tunnel	Construction phase	N/A N/A N/A V N/A N/A N/A N/A N/A N/A N/A V V V N/A N/A N/A N/A
S9.58 – S9.59 & Table 9.17	Movable noise barrier shall be used for the following PME: • Air compressor • Asphalt paver • Backhoe with hydraulic breaker • Bar bender • Bar bender and cutter (electric) • Breaker, excavator mounted • Concrete pump • Concrete pump, stationary/lorry mounted • Excavator • Generator • Grout pump • Hand held breaker • Hydraulic breaker • Saw, concrete	To minimize construction noise impact	Contractor	Works areas at: • Cross Harbour section up to Breakwater of CBTS • Breakwater of CBTS to SOV • SOV to EXH • EXH • EXH to open space at the junction of Expo Drive and Convention Avenue • Open space at the junction of Expo Drive and Convention Avenue to north of ADM • South of ADM to Overrun Tunnel	Construction phase	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A
S9.60 & Table 9.17	Noise insulating fabric shall be used for • Drill rig, rotary type • Piling, diaphragm wall, bentonite filtering plant • Piling, diaphragm wall, grab and chisel • Piling, diaphragm wall, hydraulic extractor • Piling, large diameter bored, grab and chisel • Piling, hydraulic extractor • Piling, earth auger, auger • Rock drill, crawler mounted (pneumatic)	To minimize construction noise impact	Contractor	Works areas at: • Cross Harbour section up to Breakwater of CBTS • Breakwater of CBTS to SOV • SOV to EXH • EXH • EXH to open space at the junction of Expo Drive and Convention Avenue • Open space at the junction of Expo Drive and Convention Avenue to north of ADM • South of ADM to Overrun Tunnel	Construction phase	N/A N/A N/A N/A N/A N/A N/A N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Water Quality Impact						
Construction Phase						
S11.216	The following mitigation measures are proposed to minimize the potential water quality impacts from the construction works at or close to the seafront: • Temporary storage of construction materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction and demolition materials shall be located well away from the seawater front and storm drainage during carrying out of the works. • Stockpiling of construction and demolition materials and dusty materials shall be covered and located away from the seawater front and storm drainage. • Construction debris and spoil shall be covered up and/or disposed of as soon as possible to avoid being washed into the nearby receiving waters.	To minimize release of construction wastes from construction works at or close to the seafront	Contractor	Construction works at or close to the seafront	Construction Phase	V N/A N/A
S11.222 to 11.245	The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” shall be followed where practicable. <u>Surface Run-off</u> • Surface run-off from construction sites shall be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers shall be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries shall be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks. • Silt removal facilities, channels and manholes shall be maintained and the deposited silt and grit shall be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage shall comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distances of 100 m shall be maintained between the discharge points of construction site runoff and the existing saltwater intakes. • Construction works shall be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces shall be covered e.g. by tarpaulin, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels shall be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements shall always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. • Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels shall be provided where necessary. • Measures shall be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they shall be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations shall be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites shall be covered with tarpaulin or similar fabric during rainstorms. • Manholes (including newly constructed ones) shall always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. • Good site practices shall be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	To minimize water quality impacts from construction site runoff and general construction activities	Contractor	Works areas	Construction Phase	@ V V N/A N/A N/A V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	Boring and Drilling Water • Water used in ground boring and drilling for site investigation or rock / soil anchoring shall as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater shall be discharged into storm drains via silt removal facilities.					V
	Wheel Washing Water • All vehicles and plant shall be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads. A wheel washing bay shall be provided at every site exit if practicable and wash-water shall have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road shall be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.					V
	Bentonite Slurries • Bentonite slurries used in diaphragm wall and bore-pile construction shall be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the bentonite slurries shall either be dewatered or mixed with inert fill material for disposal to a public filling area.					N/A
	• If the used bentonite slurry is intended to be disposed of through the public drainage system, it shall be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the TM-DSS.					N/A
	Water for Testing & Sterilization of Water Retaining Structures and Water Pipes • Water used in water testing to check leakage of structures and pipes shall be used for other purposes as far as practicable. Surplus unpolluted water will be discharged into storm drains.					N/A
	• Sterilization is commonly accomplished by chlorination. Specific advice from EPD shall be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water shall be used again wherever practicable.					N/A
	Acid Cleaning, Etching and Pickling Wastewater • Acidic wastewater generated from acid cleaning, etching, pickling and similar activities shall be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater shall be tankered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters.					N/A
	Wastewater from Site Facilities • Wastewater collected from any temporary canteen kitchens, including that from basins, sinks and floor drains, shall be discharged into foul sewer via grease traps. In case connection to the public foul sewer is not feasible, wastewater generated from kitchens or canteen, if any, shall be collected in a temporary storage tank. A licensed waste collector shall be deployed to clean the temporary storage tank on a regular basis.					N/A
	• Drainage serving an open oil filling point shall be connected to storm drains via petrol interceptors with peak storm bypass.					N/A
	• Vehicle and plant servicing areas, vehicle wash bays and lubrication bays shall as far as possible be located within roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor. Oil leakage or spillage shall be contained and cleaned up immediately. Waste oil shall be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.					N/A
S11.246 & 11.247	Construction work force sewage discharges on site are expected to be discharged to the nearby existing trunk sewer or sewage treatment facilities. If disposal of sewage to public sewerage system is not feasible, appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment. The Contractor shall also be responsible for waste disposal and maintenance practices. Notices shall be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment.	To minimize water quality impacts due to sewage generated from construction workforce	Contractor	Works areas	Construction Phase	N/A
S11.248	In case seepage of uncontaminated groundwater occurs, groundwater shall be pumped out from the works areas and discharged into the storm system via silt removal facilities. Uncontaminated groundwater from dewatering process shall also be discharged into the storm system via silt traps.	To minimize impact from discharge of uncontaminated groundwater	Contractor	Works areas	Construction Phase	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S11.249	If land contaminated site is identified from the Stage 2 SI work (refer to Sections 11.188 to 11.191 of the EIA Report), the following mitigation measures shall be implemented for the identified contaminated area. Any transient pile of contaminated soil / material shall be minimized and shall be bottom-lined, bunded and covered with impervious membrane during rain event to avoid generation of contaminated runoff. Appropriate intercepting channels and partial shelters shall be provided where necessary to prevent rainwater from collecting within trenches or footing excavations. Any contaminated water and wastewater generated from the decontamination process shall not be directly discharged to public sewers or site drainage. They shall be treated or tanked away as necessary for proper disposal in compliance with the TM-DSS.	To control site run-off generated from any potential contaminated works areas.	Contractor	Any potential contaminated areas to be identified from the Stage 2 SI	Construction Phase	N/A
S11.250 & S11.251	No direct discharge of groundwater from contaminated areas shall be adopted. If land contamination impact and generation of contaminated groundwater is identified from the Stage 2 SI works (refer to Sections 11.189 to 11.192 of the EIA Report), the following mitigation measures shall be adopted. Any contaminated groundwater shall be either properly treated in compliance with the requirements of the TM-DSS or properly recharged into the ground. If wastewater treatment is deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as TPH) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM-DSS and shall be discharged into the foul sewers. If groundwater recharging wells are deployed, the recharging wells shall be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells shall be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in Section 2.3 of the TM-DSS. The baseline groundwater quality 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 substance such as TPH products shall be removed as necessary by installing the petrol interceptor. The Contractor shall apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.	To minimize potential water quality impact from discharge of contaminated groundwater	Contractor	Any potential contaminated areas to be identified from the Stage 2 SI	Construction Phase	N/A
S11.252	The following good site practices shall be adopted for the proposed barging points: • all vessels shall 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 • all hopper barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material • construction activities shall not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site • loading of barges and hoppers shall be controlled to prevent splashing of material into the surrounding water. Barges or hoppers shall not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation	To minimize water quality impacts generated from the barging points.	Contractor	Barging points	Construction Phase	N/A
S11.253	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas shall be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distances of 100 m shall be maintained between the discharge points of construction site effluent and the existing seawater intakes. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring shall be carried out in accordance with the WPCO license which is under the ambit of Regional Office (RO) of EPD.	To minimize water quality impact from effluent discharges from construction sites	Contractor	All construction works areas	Construction Phase	@

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S11.254	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation shall be observed and complied with for control of chemical wastes.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	V
S11.255	Any service shop and maintenance facilities shall be located on hard standings within a bunded area, and sumps and oil interceptors shall be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage shall only be undertaken within the areas appropriately equipped to control these discharges.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	N/A
S11.256	Disposal of chemical wastes shall be carried out in compliance with the Waste Disposal Ordinance. The “Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes” published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers shall be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area shall be selected at a safe location on site and adequate space shall be allocated to the storage area.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	N/A N/A N/A
Waste Management Implications						
Construction Phase						
S12.75	***Good Site Practices and Waste Reduction Measures*** • Prepare a Waste Management Plan (WMP) approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites; • Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection of waste; • Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • Separation of chemical wastes for special handling and appropriate treatment.	To reduce waste management impacts	Contractor	All Work Sites	Construction Phase	V V @ N/A N/A N/A
S12.76	***Good Site Practices and Waste Reduction Measures (con’t)*** • Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminum cans by providing separate labeled bins to enable this waste to be segregated from other general refuse generated by the workforce; • Proper storage and site practices to minimize the potential for damage or contamination of construction materials; • Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and • Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	N/A V N/A V V V
S12.77	***Good Site Practices and Waste Reduction Measures (con’t)*** The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan shall incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials.	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	The EMP shall be submitted to the Engineer for approval. The Contractor shall implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP shall be reviewed regularly and updated by the Contractor, preferably in a monthly basis.					
S12.78	***Good Site Practices and Waste Reduction Measures (con't)*** C&D materials would be reused in other local concurrent projects as far as possible. If all reuse outlets are exhausted during the construction phase, the C&D materials would be disposed of at Taishan, China as a last resort.	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	N/A
S12.79	***Storage, Collection and Transportation of Waste*** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: • Waste, such as soil, shall be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area shall be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • Different locations shall be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	Work Sites	Construction Phase	N/A N/A N/A N/A
S12.80	***Storage, Collection and Transportation of Waste (con't)*** Waste haulier with appropriate permits shall be employed by the Contractor for the collection and transportation of waste from works areas to respective disposal outlets. The following suggestions shall be enforced to minimize the potential adverse impacts: • Remove waste in timely manner • Waste collectors shall only collect wastes prescribed by their permits • Impacts during transportation, such as dust and odour, shall be mitigated by the use of covered trucks or in enclosed containers • Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28) • Waste shall be disposed of at licensed waste disposal facilities • Maintain records of quantities of waste generated, recycled and disposed	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	Work Sites	Construction Phase	N/A N/A N/A N/A N/A N/A
S12.81	***Storage, Collection and Transportation of Waste (con't)*** • Implementation of trip ticket system with reference to DevB TC(W) No.6/2010 to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) shall be proposed.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	Work Sites	Construction Phase	V
S12.83 – 12.86	***Sorting of C&D Materials*** • Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. • Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. • The C&D materials shall at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled as far as practicable before delivery to PFRFs as mentioned for beneficial use in other projects. While opportunities for reusing the non-inert portion shall be investigated before disposal of at designated landfills. • Possibility of reusing the spoil in the Project will be continuously investigated in the detailed design and construction stages, it includes backfilling to cut and cover construction works for the Hung Hom south and north approach tunnels.	To minimize potential adverse environmental impacts during the handling, transportation and disposal of C&D materials	Contractor	Work Sites	Construction Phase	V V V V
S12.88	***Sediments*** • The basic requirements and procedures for excavated / dredged sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is managing the disposal facilities in Hong Kong for the dredged and excavated sediment, while EPD is the authority of issuing marine dumping permit under the Dumping at Sea Ordinance.	To ensure the sediment to be disposed of in an authorized and least impacted way	Contractor	All works areas with sediments concern	Construction Phase	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S12.89	***Sediments (con't)*** • The contractor for the excavation / dredging works shall apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. A request for reservation of sediment disposal space have been submitted to MFC for onward discussions of disposal approach and feasible disposal sites and the letter is attached in Appendix 12.6. The Project proponent shall also be responsible for the application of all necessary permits from relevant authorities, including the dumping permit as required under DASO from EPD, for the disposal of dredged and excavated sediment prior to the commencement of the excavation works.	To determine the best handling and disposal option of the sediments	MTR / Contractor	All works areas with sediments concern	Detailed Design Stage and Construction Phase	N/A
S12.91 – 12.94	***Sediments (con't)*** • Stockpiling of contaminated sediments shall be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment shall be covered by tarpaulin and the area shall be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiling areas shall be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas shall be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, shall be collected and discharged according to the Water Pollution Control Ordinance (WPCO). • In order to minimise the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments shall be wetted during excavation / material handling and shall be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. • In order to minimise the exposure to contaminated materials, workers shall, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site.	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	N/A
S12.95	***Sediments (con't)*** • A possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal. The technology is readily available for the manufacture of the geosynthetic containers to the project-specific requirements. Similar disposal methods have been used for projects in Europe, the USA and Japan and the issues of fill retention by the geosynthetic fabrics, possible rupture of the containers and sediment loss due to impact of the container on the seabed have been addressed.	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	N/A
/	***Accidental spillage*** To prevent accidental spillage of chemicals, the following is recommended: • Proper storage and handling facilities will be provided. • All the tanks, containers, storage area will be bunded and the locations will be locked as far as possible from the sensitive watercourse and stormwater drains. • The contractor will register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities will be stored with suitable labels and warnings. • Disposal of chemical wastes will be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize potential adverse environmental impacts arising from accidental spillage	Contractor	Work Sites	Construction Phase	@ @ V N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S12.97	***Containers for Storage of Chemical Waste*** The Contractor shall register with EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for storage of chemical waste shall: • Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed; • Have a capacity of less than 450 litters unless the specifications have been approved by EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation.	To register with EPD as a Chemical waste producer and store chemical waste in appropriate containers	Contractor	Work Sites	Construction Phase	N/A N/A N/A
S12.98	***Chemical Waste Storage Area*** • Be clearly labeled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only; • Be enclosed on at least 3 sides; • Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; • Have adequate ventilation; • Be covered to prevent rainfall from entering; and • Be properly arranged so that incompatible materials are adequately separated.	To prepare appropriate storage areas for chemical waste at works areas	Contractor	Work Sites	Construction Phase	N/A N/A N/A N/A N/A N/A
S12.99	***Chemical Waste*** • Lubricants, waste oils and other chemical wastes would be generated during the maintenance of vehicles and mechanical equipments. Used lubricants shall be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place.	To clearly label the chemical waste at works areas	Contractor	Work Sites	Construction Phase	N/A
S12.100	***Collection and Disposal of Chemical Waste*** ***A trip-ticket system shall be operated in accordance with the Waste Disposal*** *(Chemical Waste) (General) Regulation* to monitor all movements of chemical waste. The Contractor shall employ a licensed collector to transport and dispose of the chemical wastes, to either the approved CWTC at Tsing Yi, or another licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.	To monitor the generation, reuse and disposal of chemical waste	Contractor	Work Sites	Construction Phase	N/A
S12.101	***General Refuse*** General refuse shall be stored in enclosed bins or compaction units separate from C&D materials and chemical waste. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D materials and chemical wastes. Preferably, an enclosed and covered area shall be provided to reduce the occurrence of wind-blown light material.	To properly store and separate from other C&D materials for subsequent collection and disposal	Contractor	Work Sites	Construction Phase	V
S12.102	***General Refuse (con't)*** The recyclable component of general refuse, such as aluminum cans, paper and cleansed plastic containers shall be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste shall be set up by the Contractor. The Contractor shall also be responsible for arranging recycling companies to collect these materials.	To facilitate recycling of recyclable portions of refuse	Contractor	Work Sites	Construction Phase	N/A
S12.103	***General Refuse (con't)*** The Contractor shall carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins shall also be provided in the sites as reminders.	To raise workers' awareness on recycling issue	Contractor	Work Sites	Construction Phase	V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Land Contamination Impact						
S13.23–13.24	For construction works at sites under the current stage of site investigation (Stage 1 SI): • Precautionary measures such as visual inspection are recommended to be undertaken during construction activities that disturb soil. The inspection process shall involve a visual observation of excavated soils for discolouration and the presence of oils, together with identifying the presence of odours, which may also indicate soil and/or groundwater contamination. • If soil materials suspected to be contaminated are encountered during excavation, sampling and testing shall be undertaken to verify the presence of contamination. The soil extracted during demolition, excavation and cut & cover construction shall be temporary stockpiled. Shall concentrations of contaminants of concern (COCs) exceed relevant RBRGs as indicated by laboratory analyses, remediation works shall be undertaken with reference to the Contamination Assessment Report (CAR) and Remediation Action Plans (RAP).	To act as a general precautionary measure to screen soils for the presence contamination during excavation works for Cut-and-Cover.	Contractor	Within Project Boundary where signs of contamination is identified	During excavation works for Cut-and-Cover	N/A
S13.30	For some sites with currently no SI proposed (i.e. sites ID 2-02, 2-18, 2-22, 2-23, 2-27, 2-28), to be conservative, visual inspection shall be conducted during demolition and excavation to detect any abnormal colour, smell or other characteristics of the soil, due to the nearby land use and/ or construction method. If abnormal colour, smell or other characteristics of contamination are identified for any of these sites, sampling and testing shall be undertaken to verify the presence of contamination. The soil extracted during demolition, excavation and cut & cover construction shall be temporary stockpiled. Should the concentrations of contaminants of concern (COCs) exceed relevant RBRGs as indicated by laboratory analyses, remediation works shall be undertaken with reference to the CAR and RAP.	To act as a general precautionary measure to screen soils for the presence contamination during excavation works for Cut-and-Cover.	Contractor	Areas with no SI proposed (Sites ID 2-02, 2-18, 2-22, 2-23, 2-27, 2-28)	During excavation works for Cut-and-Cover	N/A
S13.36 – 13.38	For areas inaccessible for proper site appraisal and investigation (Stage 2 SI) (i) Site 2-15 • Upon site access being granted, visual inspection shall be carried out where intrusive works and soil excavation is encountered, for attention on any potential contamination due to its current operation • A supplementary CAP shall then be submitted to EPD for endorsement. • A CAR/RAP shall be prepared and submitted to EPD for endorsement on completion of the SI and analytical testing. • Shall remediation be undertaken a Remediation Report (RR) shall be prepared and submitted to EPD for endorsement to demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP. Information such as soil treatment/ disposal records (including trip tickets), confirmatory sampling results, and photographs shall be included in the aforesaid RR. • No construction work shall be carried out prior to the endorsement of the RR by EPD.	To identify areas with land contamination concern, report laboratory results and propose remediation measures if necessary. To ensure remediation works have been undertaken to before the commencement of any construction works of the Project.	Contractor	Areas unable to be accessed during Stage 1 SI (Site 2-15)	After land resumption and prior to the construction works commencement at the site	N/A
S13.39	Potential Remediation of Contaminated Soil • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Supply of suitable clean backfill material is needed after excavation; • If remediation is required with chemical oxidation proposed as a contaminant mass reduction technology, chemicals will be securely and separately stored away from sources of ignition or oxidisable items. Handling will be undertaken by personnel with appropriate training and personal protective equipment (PPE). • Vehicles containing any excavated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates shall be sealed to prevent any discharge during transport or during wet conditions; • Speed control for the trucks carrying contaminated materials shall be enforced; • Vehicle wheel and body washing facilities at the site's exit points shall be established and used; and • Pollution control measures for air emissions e.g. from biopile blower, noise emissions e.g. from blower, and water discharges e.g. runoff control shall be implemented and complied with relevant regulations and guidelines.	To remediate contaminated soil	Contractor	Identified contaminated sites	Site remediation	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S13. 40	In order to minimize the potential adverse effects on health and safety of construction workers during the course of site remediation, the Occupation Safety and Health Ordinance (OSHO) (Chapter 509) and its subsidiary Regulations shall be followed by all site personnel working on the site at all times. In addition, the following basic health and safety measures shall be implemented as far as possible: • Set up a list of safety measures for site workers; • Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers; and • Provide first aid training and materials to site workers.	To minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation.	Contractor	Identified contaminated sites	Site remediation and prior to construction phase	N/A

Legend: V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable

APPENDIX D

Summary of Action and Limit Levels

Appendix D – Summary of Action and Limit Levels

Table 1 Action and Limit Levels for 24-hour TSP

ID	Location	Action Level	Limit Level
AM4	Pedestrian Plaza	198 $\mu g/m^3$	260 $\mu g/m^3$

Table 2 Action and Limit Levels for Construction Noise (0700 – 1900 hrs of normal weekdays)

ID	Location	Action Level	Limit Level
NM1*	Hoi Kung Court	When one documented complaint is received	75 dB(A)

* The noise monitoring at NM1 was carried out by SCL Contract 1129. Upon the completion of their EM&A programmes, the monitoring works would be taken up by this Project.

APPENDIX E

Calibration Certificates of Equipments

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Pedestrian Plaza	Operator:	Shum Kam Yuen
Cal. Date:	24-Nov-14	Next Due Date:	24-Feb-15
Equipment No.:	A-001-70T	Serial No.	10273

Ambient Condition			
Temperature, Ta (K)	295	Pressure, Pa (mmHg)	764.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-May-15				

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.4	2.74	1.39	45.0	45.35
13	6.2	2.51	1.28	39.0	39.30
10	5.0	2.25	1.15	35.0	35.27
7	3.4	1.86	0.95	27.0	27.21
5	2.2	1.49	0.76	21.0	21.16

By Linear Regression of Y on X

Slope , mw = 37.8140 **Intercept, bw =** -8.1030

Correlation Coefficient* = 0.9954

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2}$ = **40.74**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 25/11/14

TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 28, 2014 Rootsmeter S/N 0438320 Ta (K) - 296
Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3790	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8260	8.8	5.50
5	NA	NA	1.00	0.6830	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9917	0.7191	1.4113		0.9957	0.7221	0.8874
0.9875	1.0159	1.9959		0.9915	1.0201	1.2549
0.9854	1.1339	2.2315		0.9894	1.1385	1.4030
0.9843	1.1916	2.3405		0.9883	1.1965	1.4715
0.9790	1.4333	2.8227		0.9829	1.4392	1.7747
Qstd slope (m) =		1.97518		Qa slope (m) =		1.23683
intercept (b) =		-0.01001		intercept (b) =		-0.00630
coefficient (r) =		0.99998		coefficient (r) =		0.99998
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

APPENDIX F

EM&A Monitoring Schedules

Shatin to Central Link Contract 1128 - South Ventilation Building to Admiralty Tunnels
Impact Environmental Monitoring Schedule for January 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Dec			1-Jan	2-Jan	3-Jan
4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan
	Air Quality (AM4)					Air Quality (AM4)
11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
			Air Quality (AM4)			
18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan
		Air Quality (AM4)				
25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
	Air Quality (AM4)					Air Quality (AM4)

Air Quality Monitoring Station
AM4 Pedestrian Plaza

Monitoring Frequency
24-hr TSP Once every 6 days

Shatin to Central Link Contract 1128 - South Ventilation Building to Admiralty Tunnels
Tentative Impact Environmental Monitoring Schedule for February 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb
					Air Quality (AM4)	
8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb
				Air Quality (AM4)		
15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb
			Air Quality (AM4)			
22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb
		Air Quality (AM4)				Air Quality (AM4)

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

Air Quality Monitoring Station
AM4 Pedestrian Plaza

Monitoring Frequency
24-hr TSP Once every 6 days

Shatin to Central Link Contract 1128 - South Ventilation Building to Admiralty Tunnels
Tentative Impact Environmental Monitoring Schedule for March 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar
					Air Quality (AM4)	
8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar
				Air Quality (AM4)		
15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar
			Air Quality (AM4)			
22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar
		Air Quality (AM4)				
29-Mar	30-Mar	31-Mar				
	Air Quality (AM4)					

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

Air Quality Monitoring Station
AM4 Pedestrian Plaza

Monitoring Frequency
24-hr TSP Once every 6 days

Shatin to Central Link Contract 1128 - South Ventilation Building to Admiralty Tunnels
Tentative Impact Environmental Monitoring Schedule for April 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Apr	2-Apr	3-Apr	4-Apr
				Air Quality (AM4)		
5-Apr	6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr
			Air Quality (AM4)			
12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
		Air Quality (AM4)				
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
	Air Quality (AM4)					Air Quality (AM4)
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr		
				Air Quality (AM4)		

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

Air Quality Monitoring Station
AM4 Pedestrian Plaza

Monitoring Frequency
24-hr TSP Once every 6 days

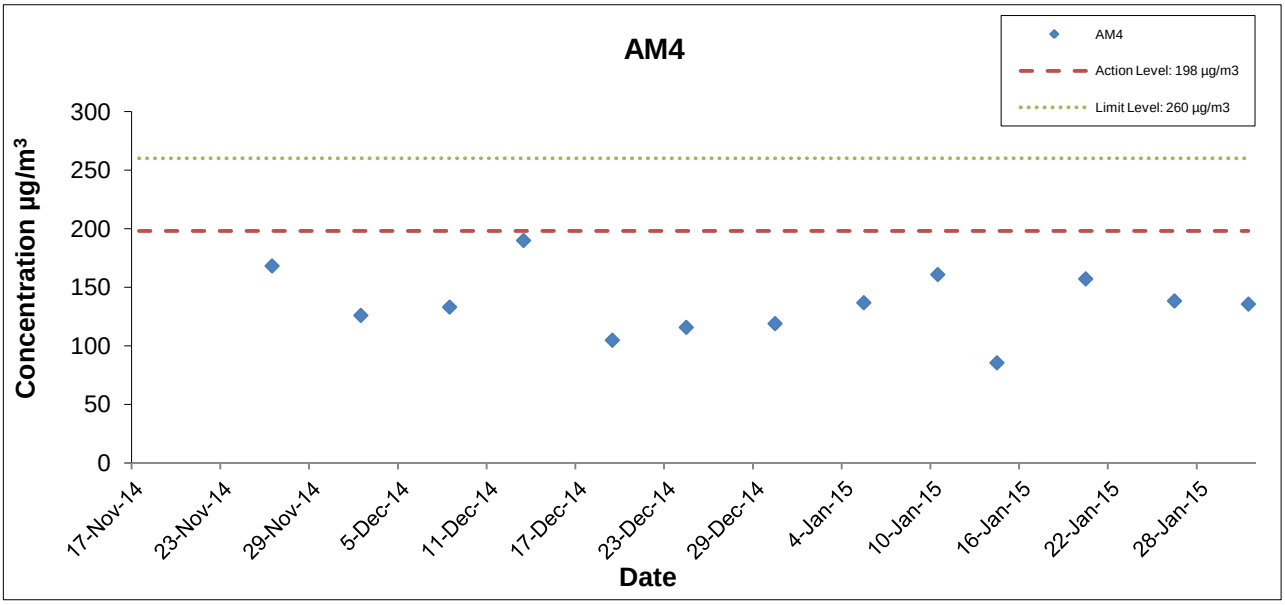
APPENDIX G

Air Quality Monitoring Results and their Graphical Presentations

Appendix G
Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station AM4 (Pedestrian Plaza)

Start		End		Weather	Air	Atmospheric	Flow Rate (m^3/min.)		Av. flow	Total vol.	Filter Weight (g)		Particulate	Elapse Time		Sampling	Conc.
Date	Time	Date	Time	Condition	Temp. (^oC)	Pressure (hPa)	Initial	Final	(m^3/min)	(m^3)	Initial	Final	weight(g)	Initial	Final	Time(hrs.)	($\mu g/m^3$)
5-Jan-15	0:00	6-Jan-15	0:00	Fine	19.0	1014.5	1.27	1.27	1.27	1833.1	2.7284	2.9792	0.2508	17097.00	17121.00	24.00	136.8
10-Jan-15	0:00	11-Jan-15	0:00	Sunny	16.3	1023.4	1.27	1.27	1.27	1833.1	2.7145	3.0094	0.2949	17121.00	17145.00	24.00	160.9
14-Jan-15	0:00	15-Jan-15	0:00	Sunny	13.7	1022.0	1.27	1.27	1.27	1833.1	2.6797	2.8365	0.1568	17145.00	17169.00	24.00	85.5
20-Jan-15	0:00	21-Jan-15	0:00	Fine	15.9	1021.3	1.27	1.27	1.27	1833.1	2.7593	3.0474	0.2881	17169.00	17193.00	24.00	157.2
26-Jan-15	0:00	27-Jan-15	0:00	Sunny	18.6	1018.5	1.27	1.27	1.27	1833.1	2.6961	2.9497	0.2536	17193.00	17217.00	24.00	138.3
31-Jan-15	0:00	1-Feb-15	0:00	Cloudy	15.5	1025.6	1.27	1.27	1.27	1833.1	2.7215	2.9702	0.2487	17217.00	17241.00	24.00	135.7
																Average	**135.7**
																Minimum	**85.5**
																Maximum	**160.9**



Shatin Central Link Contract No. 1128
South Ventilation Building to Admiralty Tunnels

AECOM

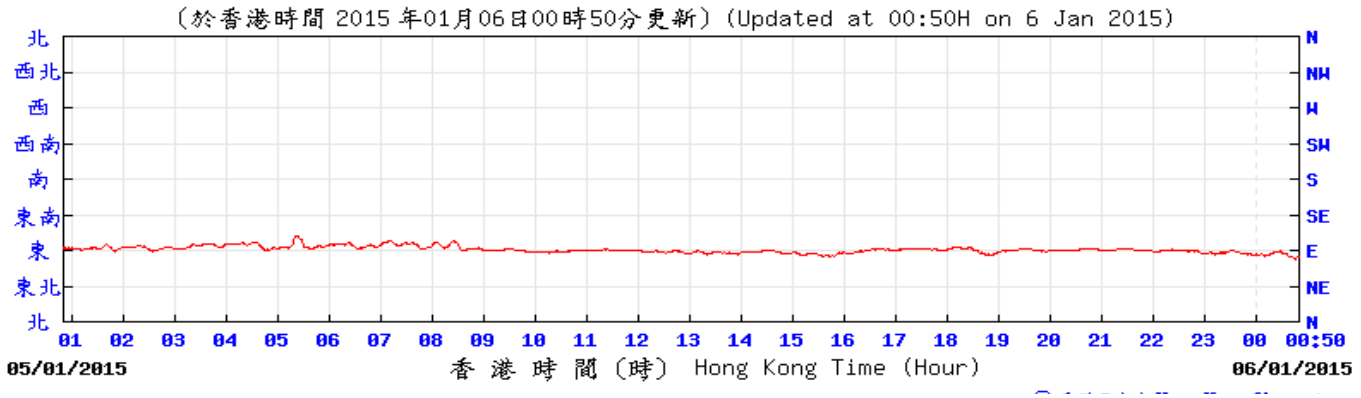
Graphical Presentation of Impact 24-hr TSP Monitoring Results

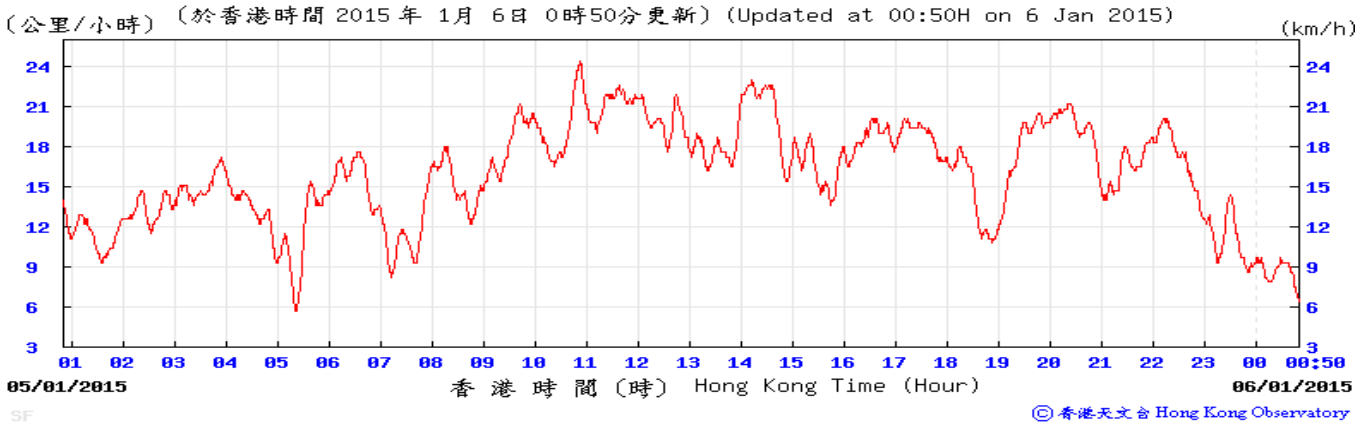
Date: February 2015

Appendix G

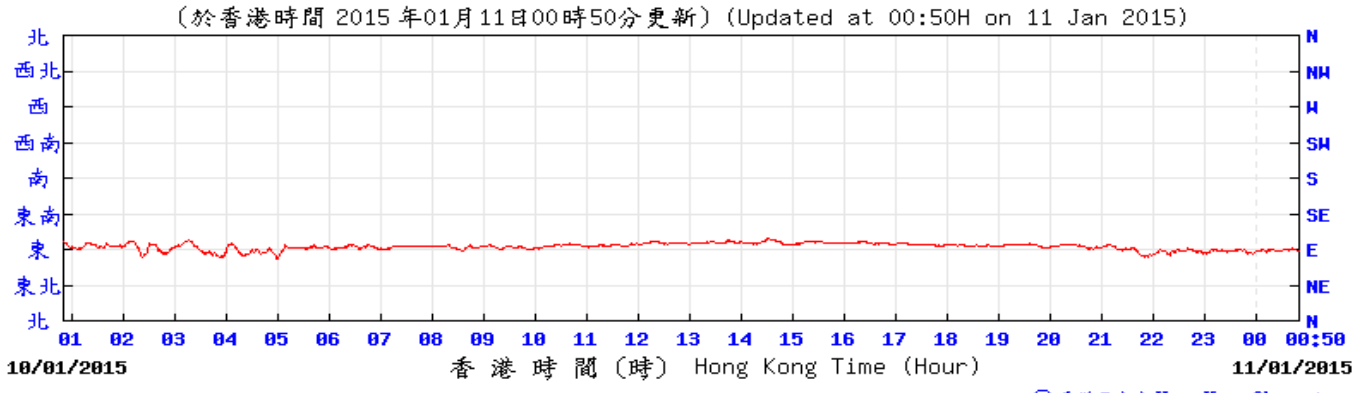
Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, January 2015

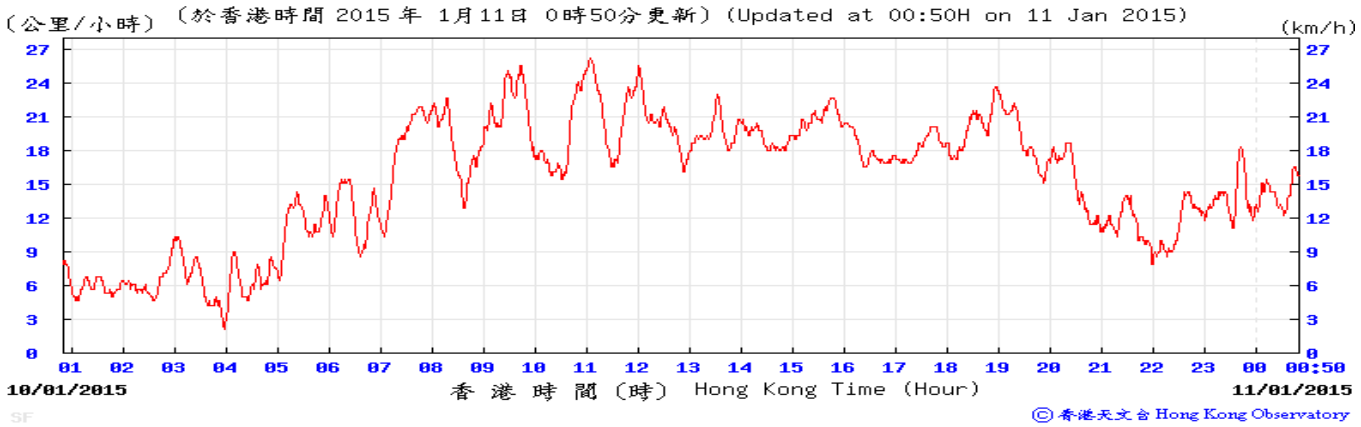
5-Jan-15





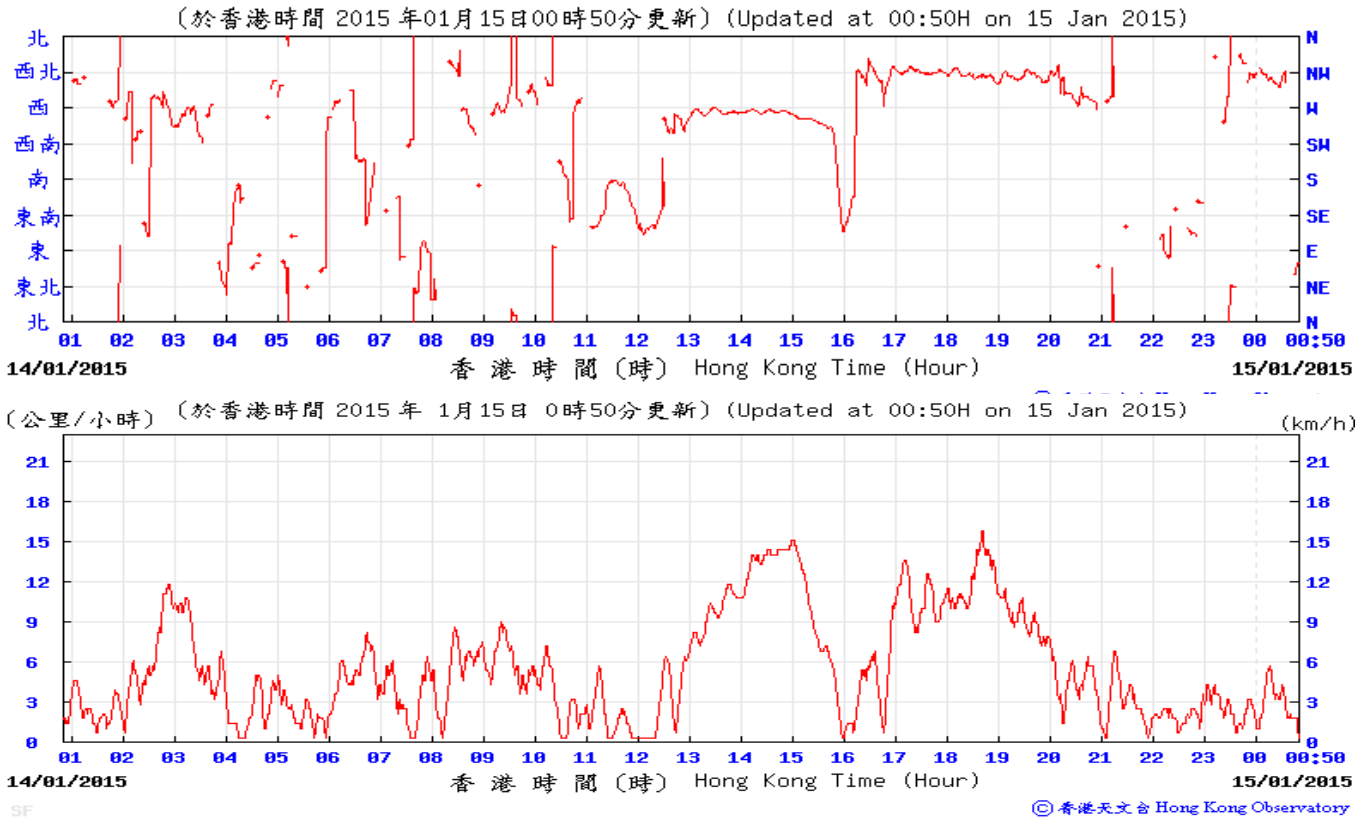
10-Jan-15



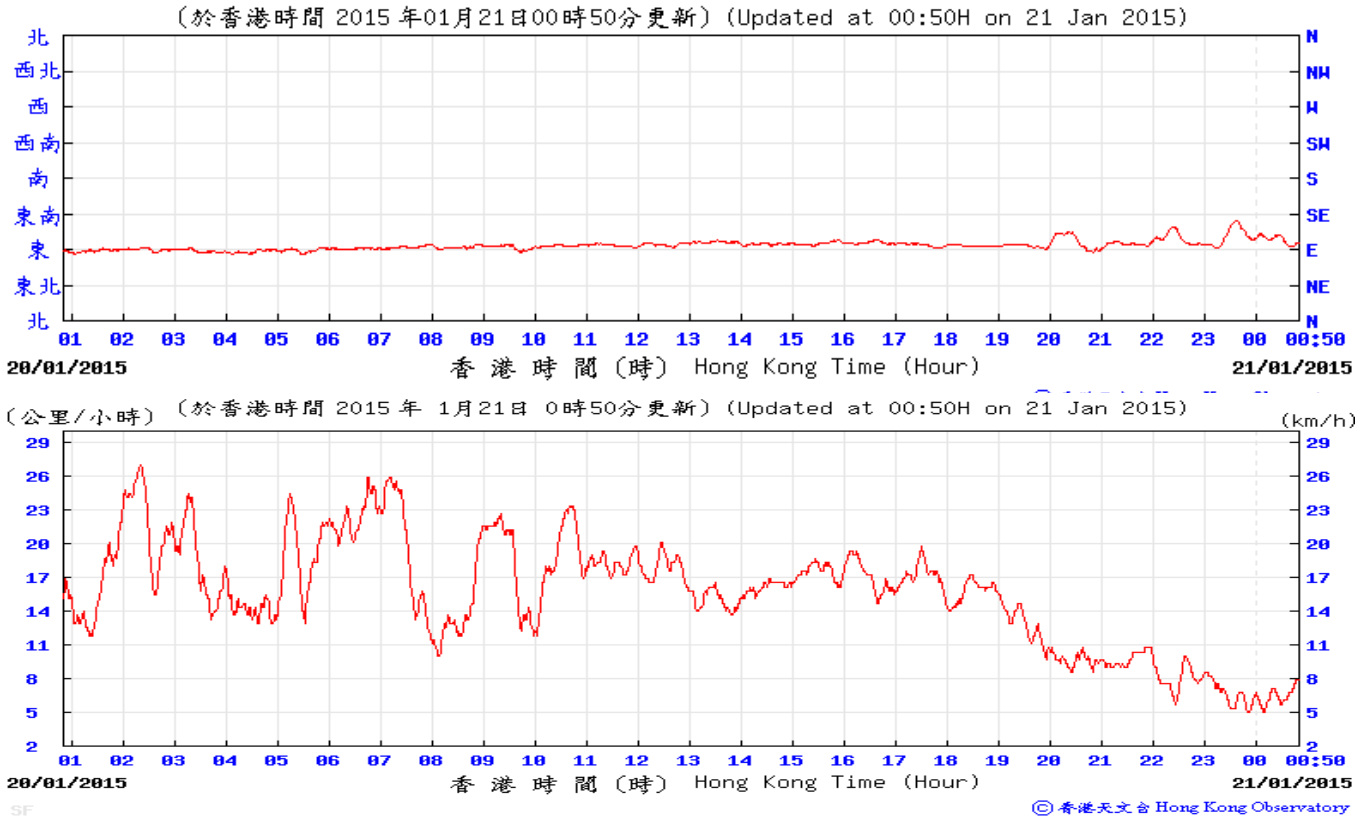


Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, January 2015

14-Jan-15

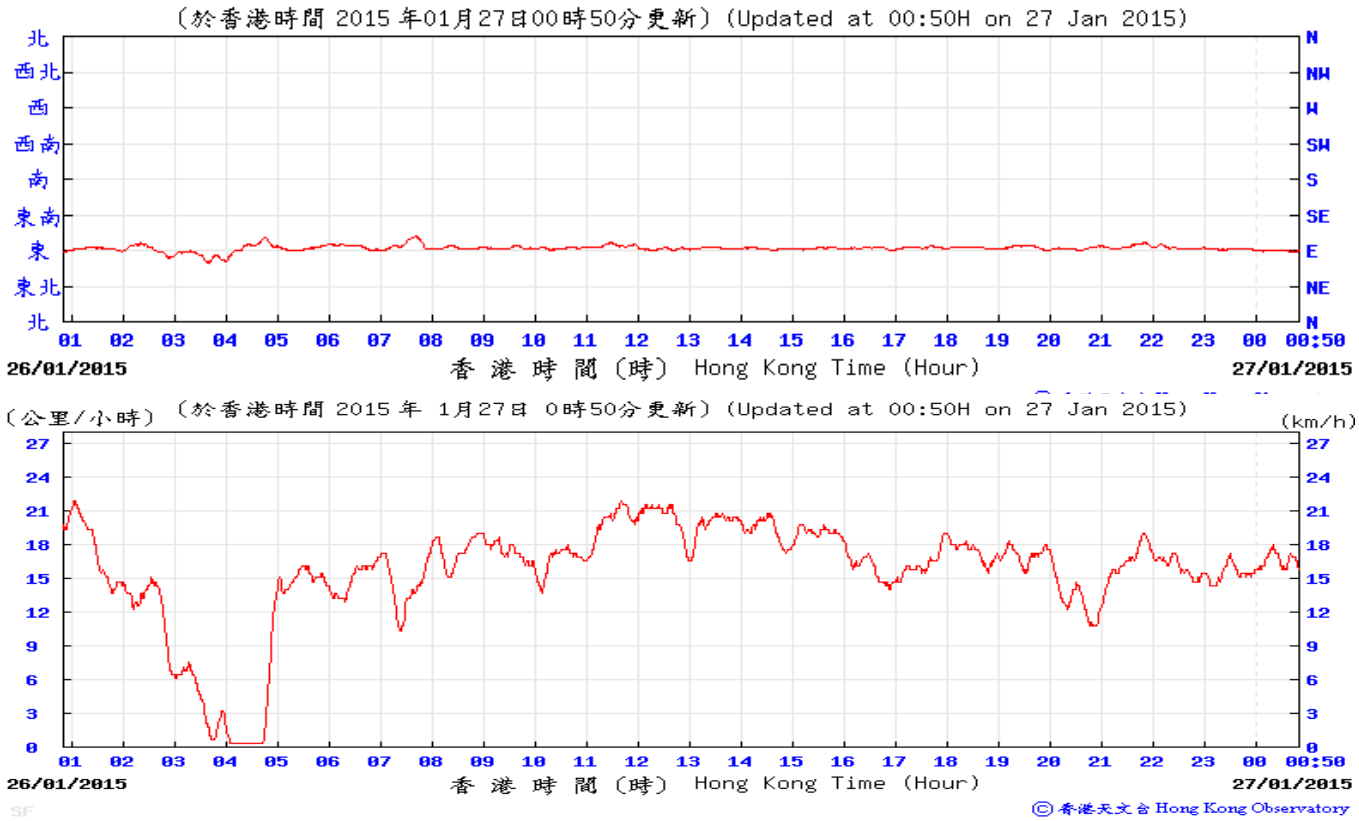


20-Jan-15

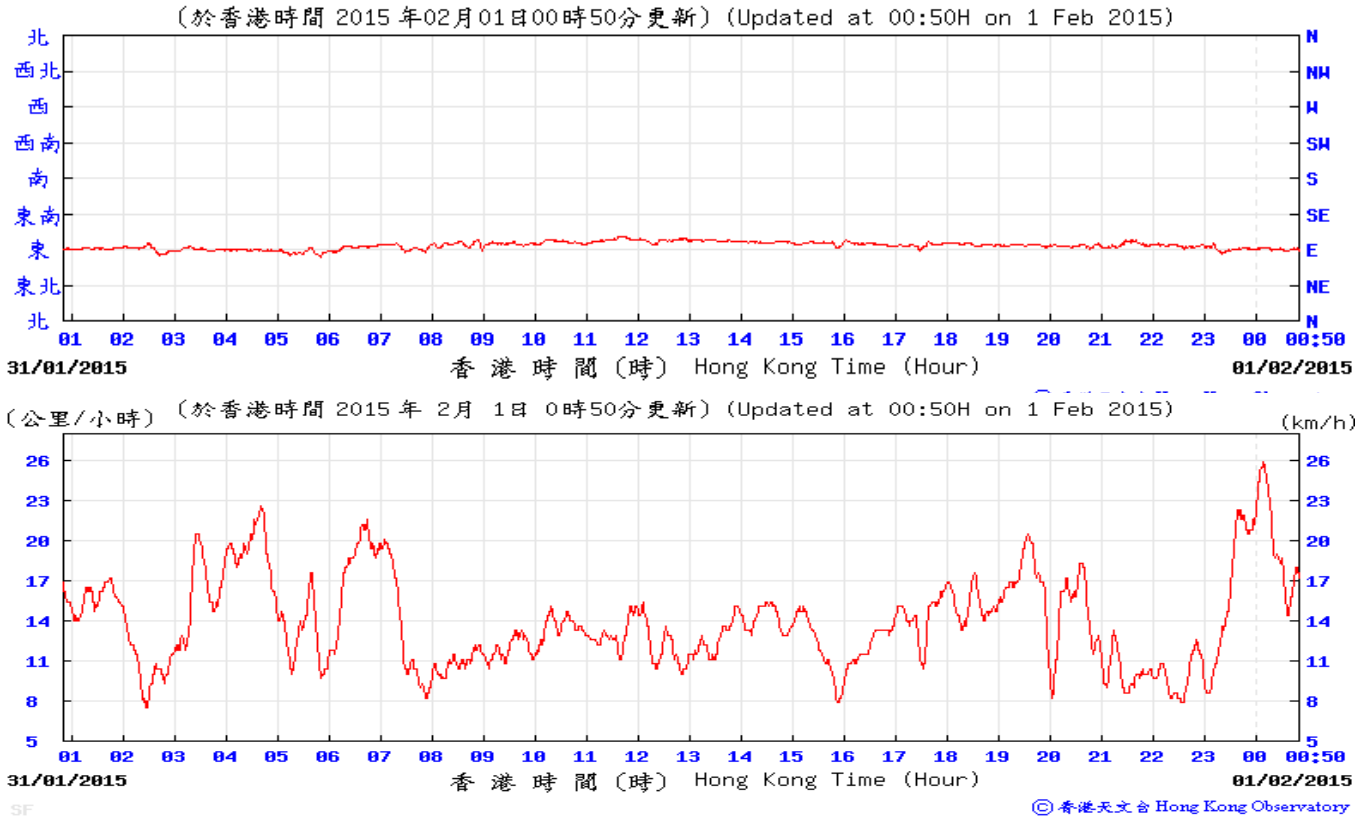


Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, January 2015

26-Jan-15



31-Jan-15



APPENDIX H

Event Action Plan

Appendix H Event Action Plan

Event / Action Plan for Construction Dust Monitoring

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
ACTION LEVEL				
Exceedance for one sample	1. Inform the Contractor, IEC and ER; 2. Discuss with the Contractor and IEC on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing.	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
Exceedance for two or more consecutive samples	1. Inform the Contractor, IEC and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

Appendix H Event Action Plan

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

Appendix H Event Action Plan

Event and Action Plan for Construction Noise Monitoring

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

APPENDIX I

Cumulative Statistics of Complaints, Notification of Summons and Successful Prosecutions

Appendix I

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

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

APPENDIX J

Waste Flow Table

SCL Contract 1128

Appendix J - Monthly Summary C&D Material Flow Table

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m^3)						Quantity for off-site disposal of Non-inert C&D materials					
	Inert C&D material (m^3)						Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Sediment (m^3)
	CWPFBP(1)	TKO137FB(2)	TKO137SF(3)	TM38FB	^Other Site	**Total (m^3)**	Total	Total	Total	Total	Total	Total
2015/01 (Actual)	***0***	***1,499***	***0***	***0***	***0***	***1,499***	***0***	***0***	***0***	***0***	***5.1***	***0***
2015/02	-	-	-	-	-	-	-	-	-	-	-	-
2015/03	-	-	-	-	-	-	-	-	-	-	-	-
2015/04	-	-	-	-	-	-	-	-	-	-	-	-
2015/05	-	-	-	-	-	-	-	-	-	-	-	-
2015/06	-	-	-	-	-	-	-	-	-	-	-	-
2015 Sub-total	**0**	**1,499**	**0**	**-**	**0**	**1,499**	**0**	**0**	**0**	**0**	**5.1**	**0**
2015/07	-	-	-	-	-	-	-	-	-	-	-	-
2015/08	-	-	-	-	-	-	-	-	-	-	-	-
2015/09	-	-	-	-	-	-	-	-	-	-	-	-
2015/10	-	-	-	-	-	-	-	-	-	-	-	-
2015/11	-	-	-	-	-	-	-	-	-	-	-	-
2015/12	-	-	-	-	-	-	-	-	-	-	-	-
2015 Total	**0**	**1,499**	**0**	**0**	**0**	**1,499**	**0**	**0**	**0**	**0**	**5**	**0**

Remark: ***Assume the density is 2 tonnes per cubic metre**
^Required to be approved by EPD and MTR

1 **CWPFBP** **Chai Wan Public Fill Barging Point**
2 **TKO137FB** **Fill Bank at Tseung Kwan O Area 137**
3 **TM38FB** **Fill Bank at Tuen Mun**
4 **TKO137SF** **Sorting Facilities at Tseung Kwan O Area 137**