MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

Monthly EM&A Report No. 92

[Period from 1 to 31 December 2021]

(January 2022)

Verified by: Claudine LEE

Position: Independent Environmental Checker

Date: 12 January 2022

MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

Monthly EM&A Report No. 92

[Period from 1 to 31 December 2021]

(January 2022)

Certified by:	Lisa Poon
Position:	Environmental Team Leader
Date:	12 January 2022

AECOM

MTR Corporation Limited

Consultancy Agreements
No. C11033B

Shatin to Central Link - Hung Hom to Admiralty Section

Monthly EM&A Report No. 92

[Period from 1 to 31 December 2021]

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1 INTRODUCTION

1.1 Background

1.1.1 The Shatin to Central Link (SCL) is a 17 km 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/F) was issued by Director of Environmental Protection (DEP) on 23 January 2019.

1.2 Project Programme

1.2.1 Eight 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 2021[1]. 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
1121(1)	NSL Cross Harbour Tunnels	March 2015	Penta-Ocean – China State JV	Wellab Limited
1122(2)	Admiralty South Overrun Tunnel	August 2016	Vinci Construction Grands Projects	AECOM Asia Co. Ltd.
1123	Exhibition Station and Western Approach Tunnels	June 2015	Leighton – China State JV	AECOM Asia Co. Ltd.
1124(6)	Admiralty SCL Related Works	February 2017	Build King SCL 1124 JV	Action-United Environmental Services and Consulting (AUES)
1126(3)	Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool	July 2014	Kaden Leader JV	Cinotech Consultants Ltd. (Cinotech)
1128(7)	South Ventilation Building to Admiralty Tunnels	November 2014	Dragages Bouygues J.V.	AECOM Asia Co. Ltd.
1129(4)	SCL – Advance Works for NSL	May 2014	Hsin Chong Construction Co. Ltd.	AECOM Asia Co. Ltd.

[1] The commissioning date of SCL(HUH-ADM) will very likely be deferred to 2021 to allow flexibility for the topside development of the Exhibition Station, and to cater for the construction works under other infrastructure projects on Hong Kong Island.

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
11227(5)	Advance Works for NSL Cross Harbour Tunnels	August 2014	Concentric-Hong Kong River Joint Venture	Cinotech Consultants Ltd. (Cinotech)

Note:
(1) The environmental team of Works Contract 1121 was taken over by Wellab Limited since 1 January 2019.
(2) Construction works under Works Contract 1122 were substantially completed since 10 November 2020 and the EM&A programme of the Project was terminated on 12 December 2020.
(3) Construction works under Works Contract 1126 was completed on 17 May 2015.
(4) Construction works under Works Contract 1129 was completed on 20 July 2015.
(5) Construction works in Victoria Harbour and Shek O Casting Basin under Works Contract 11227 were completed on 15 and 20 December 2014 respectively.
(6) Construction works under Works Contract 1124 were substantially completed since 30 September 2021 and the EM&A programme of the Project was terminated on 30 November 2021.
(7) Construction works under Works Contract 1128 were substantially completed since 30 September 2021 and the EM&A programme of the Project was terminated on 30 November 2021.

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 ninty-second EM&A Report for the Project which summarises the EM&A works undertaken by the respective Contractor's ETs during the period from 1 to 31 December 2021.

2 ENVIRONMENTAL MONITORING AND AUDIT

2.1 EM&A Results

2.1.1 The EM&A Report for Works Contracts 1121 and 1123 prepared by the respective Contractor's ETs are provided in **Appendices A** and **B** 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 All major construction works under Works Contract 1128 have been substantially completed since 30 September 2021, with only minor works remained. Hence, the EM&A programme of the Project was ceased on 30 November 2021. The Final EM&A Review Report, which summaries the impact monitoring results and audit findings for the Project during the reporting period from 17 November 2014 to 30 November 2021, is provided in **Appendix C**.

2.1.3 All major construction works under Works Contract 1124 have been substantially completed since 30 September 2021, with only minor works remained. Hence, the EM&A programme of the Project was ceased on 30 November 2021. The Final EM&A Review Report, which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 Feburary 2017 to 30 November 2021, is provided in **Appendix D**.

2.1.4 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
1121	Hung Hom & Victoria Harbour	• CBTS PMA Final Phase Mooring.
1123	Overall	• BD Inspection completed; and • RB Inspection on 30 Dec 2021.
	Zone 1 – PTI Area	• Station ABWF; and • Entrance B – inside ABWF.
	Zone 2	• Toilet – ABWF and BS Installtion; • Station ABWF; and • Entrance A – Inside ABWF.
	Zone 3 – Swimming Pool Area (including W4, W5, partial W6, W7a and W7b)	• Waterproofing and Screeding above Roof Slab; and • Station ABWF.
	Zone 4 – Tunnel at Tonnochy Road	• Station ABWF; and • WCSG Reprovision Works – Last Bored Pile.
	Fleming Road Junction - Area E	• Backfill.
	Western Vent Shaft and WAT - Area C	• WVS ABWF; and • Close C1 Opening.
	WAT - Area B	• N/A.
	WAT - Area A	• Backfilling.
	Area W22	• Material Storage.

2.1.5 During the reporting month, impact monitoring for air quality and construction noise were conducted in accordance with the EM&A Manual. No impact and post water quality monitorings were conducted in the reporting period. Details could be referred to **Table 2.4** and the respective Monthly EM&A Report. Continuous noise monitoring was not required in the reporting period according to the Continuous Noise Monitoring Plan (CNMP). No exceedances of the Action / Limit Level of 24-hour 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 **B**).

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 1121					
AM1	Harbourfront Horizon(1)(2)	41.9 – 97.2	182	260	No
Works Contract 1123(4)					
AM2	Wan Chai Sports Ground(5)(6)	21.2 – 61.9	160	260	No
AM4	Pedestrian Plaza	37.6 – 86.3	198	260	No

Note:
(1) Dust monitoring at AM1 (Harbourfront Horizon) was handed over to Works Contract 1121 from Works Contract 1112 in November 2020.
(2) Since the access to Harbourfront Horizon was rejected, the monitoring would be conducted at the alternative location, which is within the site boundary of Finger Pier adjacent to Harbourfront Horizon.
(3) No TSP monitoring is required under this works contract.
(4) Dust monitoring at AM3 (Existing Harbour Road Sports Centre) was handed over from Works Contract 1126 to Works Contract 1123 in June 2015 and terminated on 6 May 2017 as demolition of Existing Harbour Road Sports Centre commenced on 8 May 2017.
(5) 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.
(6) Dust monitoring at AM2 (Wan Chai Sports Ground) was handed over to Works Contract 1123 from Works Contract 1128 on 28 October 2015.
(7) Dust monitoring at AM4 (Pedestrian Plaza) was handed over to Works Contract 1123 from Works Contract 1128 on 1 April 2021.

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 1121(2)						
Works Contract 1123						
NM2(3)(4)(5)	Harbour Centre	65.9 – 67.4	69.6	< Baseline	75	No

Note:
(1) The measured noise levels are corrected against the corresponding baseline noise levels.
(2) No construction noise monitoring is required under this works contract.
(3) The impact monitoring at NM2 was handed over from Works Contract 1126 to Works Contract 1123 in June 2015.
(4) Access to the designated monitoring location NM2 (i.e. Block A, Causeway Centre) was denied before the commencement of impact monitoring under Works Contract 1126. Alternative noise monitoring location proposed at Harbour Centre was approved by the ER and agreed by IEC. It was approved by EPD on 18 December 2017. Impact noise monitoring was carried out at Harbour Centre from 20 August 2014 onwards.
(5) Impact noise monitoring has been carrying out on 7/F of Harbour Centre between 20 August and 15 December 2014, and on 8/F from 19 December 2014 onwards.
(6) Noise monitoring at NM1 (Hoi Kung Court) was handed over from Works Contract 1129 to Works Contract 1128 in August 2015.

Table 2.4 Summary of Impact Marine Water Quality Monitoring Results in the Reporting Period [(1)]

Locations	Parameters		
	Depth-averaged Dissolved Oxygen (mg/L)	Depth-averaged Turbidity (NTU)	Depth-averaged Suspended Solids (mg/L)
Shek O Casting Basin [(2)]			
Victoria Harbour [(3)(4)(5)]			

Notes:

(1) Marine water quality monitoring was conducted in the reporting period under Works Contract 1121.

(2) Removal of earth bunds at Shek O Casting Basin under Works Contract 1121 commenced on 17 March 2017 and the removal of dock gate at Shek O Casting Basin was completed on 30 April 2017. Removal of southern dock gate at Shek O under Works Contract 1121 commenced on 8 November 2017 and was completed on 20 November 2017. A post-project water quality monitoring was hence conducted from 22 November 2017 to 18 December 2017 according to Section 9.25 of the EM&A Manual.

(3) Dredging / filling works within the Victoria Harbour commenced on 22 April 2015. Water Quality Monitoring at Station 8 and 14 is suspended as these water intakes are not in use.

(4) All marine works within Causeway Bay Typhoon Shelter (i.e. Station 9) was completed in June 2019. According to the EM&A Manual under Works Contract 1121, a post-project marine water quality monitoring was commenced on 2 July 2019 and completed on 26 July 2019.

(5) The dredging / filling operation in Victoria Harbour has been completed on 31 December 2019. No water quality monitoring was carried out in Victoria Harbour during the reporting month. According to the EM&A Manual under Works Contract 1121, a post-project marine water quality monitoring at station C1, C2, 21, 34, A, WSD 9 and WSD 17 was commenced on 2 January 2020 and completed on 28 January 2020.

2.1.6 No environmental complaints, notification of summons and successful prosecutions were recorded in the reporting period. Log for environmental complaints, notification of summons and successful prosecutions is provided in **Table 2.5**.

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

Works Contract	Environmental Complaints	Notification of Summons	Successful Prosecutions
1121	0	0	0
1123	0	0	0

2.1.7 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/F). 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/F)	Submission	Submission date
Condition 1.11	Notification of Commencement Date of Construction of the Project	19 Dec 2012
Condition 2.3	Notification of Setup of Community Liaison Group	22 Jun 2016
Condition 2.5	Management Organisation of Main Construction Companies	5 Jan 2017
Condition 2.6	Construction Programme and EP Submission Schedule	5 Jan 2017
Condition 2.7	Construction Noise Mitigation Measures Plan (CNMMP) Works Contract 1126: Construction Noise Mitigation Measures Plan (CNMMP) Works Contract 1123: Construction Noise Mitigation Measures Plan (CNMMP)	 9 Jun 2014 (1st Submission) 24 Apr 2015 (1st Submission) 7 Jul 2015 (2nd Submission) 2 Oct 2015 (3rd Submission) 2 Jun 2016 (4th Submission) 28 Oct 2019 (5th Submission)
Condition 2.8	Continuous Noise Monitoring Plan (CNMP) Works Contract 1126: Continuous Noise Monitoring Plan (CNMP) Works Contract 1123: Continuous Noise Monitoring Plan (CNMP)	 9 Jun 2014 (1st Submission) 24 Apr 2015 (1st Submission) 7 Jul 2015 (2nd Submission) 2 Jun 2016 (3rd Submission) 28 Oct 2019 (4th Submission)
Condition 2.9	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1st Submission) 12 Sep 2012 (2nd Submission) 15 Oct 2012 (Approved)
Condition 2.10	Works Contract 11227: Silt Curtain Deployment Plan for Trial Trenching in Victoria Harbour Works Contract 1121: Silt Curtain Deployment Plan for Hung Hom Landfall and Trial Trench in Victoria Harbour Works Contract 1128: Silt Curtain Deployment Plan	11 Jul 2014 17 Feb 2015 (1st Submission) 2 Apr 2015 (2nd Submission) 27 Oct 2015 (3rd Submission) 29 Mar 2016 (4th Submission) 19 Dec 2017 & 15 Jan 2018 (5th Submission) 21 Mar 2018 (1st Submission) 13 Apr 2018 (2nd Submission) 17 Apr 2018 (Approved)
Condition 2.11	Works Contract 11227: Silt Screen Deployment Plan Works Contract 1121: Silt Screen Deployment Plan	11 Jul 2014 13 Feb 2015

EP Condition (EP-436/2012/F)	Submission	Submission date
Condition 2.12	Sediment Management Plan	6 Jul 2012 (1st Submission) 12 Sep 2012 (2nd Submission) 5 Oct 2012 (3rd Submission) 15 Oct 2012 (Approved) 3 Jul 2014 (4th Submission)
Condition 2.14	Visual, Landscape, Tree Planting & Tree Protection Plan	14 Nov 2012 (1st Submission) 3 Dec 2013 (2nd Submission) 21 Aug 2014 (3rd Submission) 9 Feb 2015 (4th Submission) 27 May 2016 (5th Submission) 29 Nov 2016 (6th Submission) 19 Jan 2017 (7th Submission) 11 Apr 2017 (8th Submission) 20 Apr 2017 (Approved) 7 Feb 2018 (9th Submission on 1122 revised landscape plans) 7 Mar 2018 (10th Submission) 9 Mar 2018 (Approved) 18 Jun 2019 (11th Submission on 1122 revised landscape plan) 5 Sep 2019 (12th Submission) 19 Aug 2020 (13th Submission on 1122 revised landscape plan) 21 Sep & 14 Oct 2020 (14th Submission) 28 Oct 2020 (Approved) 20 Oct 2021 (15th Submission)
Condition 2.23.1	Works Contract 11227: Silt Curtain Deployment Plan for Shek O Works Contract 1121: Silt Curtain Deployment Plan for Shek O	23 Jul 2014 (1st Submission) 31 Jul 2014 (Approved) 4 Feb 2015 (1st Submission) 4 Mar 2015 (2nd Submission) 9 Mar 2015 (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 Sep 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 2.26	As-built Drawings for Landscape and Visual Mitigation Measures	5 Jan 2018 (1st Submission on Lo Wu Access Road) 11 Dec 2020 (2nd Submission on Works Contract 1122)
Condition 2.28	Operational Ground-borne Noise Mitigation Measures Plan – Batch 1 Operational Ground-borne Noise Mitigation Measures Plan – Batch 2 Final Operational Ground-borne Noise Mitigation Measures Plan	26 Jun 2018 (1st Submission) 2 Apr 2019 (2nd Submission) 22 May 2019 (3rd Submission) 21 Mar 2019 (1st Submission) 22 May 2019 (2nd Submission) 31 Jul 2019 (3rd Submission) 15 Oct 2019 (Approved)
Condition 2.29	As-built Drawing for Operational Ground-borne Noise Mitigation Measures	21 Sep 2020 (1st Submission)

EP Condition (EP-436/2012/F)	Submission	Submission date
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 - 90	Reported in previous Monthly EM&A Reports
	Final EM&A Review Report for Works Contract 1127	12 Feb 2015
	Final EM&A Review Report for Works Contract 1126	25 Jun 2015 (1st Submission) 4 Sep 2015 (2nd Submission)
	Final EM&A Review Report for Works Contract 1129	30 Sep 2015
	Final EM&A Review Report for Works Contract 1122	11 Feb 2021
	Monthly EM&A Report No.91	14 December 2021

Appendix A

Monthly EM&A Report for December 2021 – SCL Works Contract 1121 NSL Cross Harbour Tunnels

MTR Corporation Limited

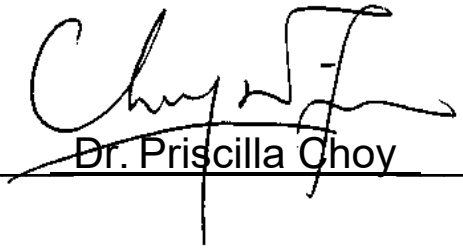
Shatin to Central Link –
Hung Hom to Admiralty Section

Monthly EM&A Report No. 82

[Period from 1 to 31 December 2021]

Works Contract 1121 – NSL Cross Harbour Tunnels

(December 2021)

Certified by: 
Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 10th January 2022

Penta Ocean – China State Joint Venture

Shatin to Central Link – Contract 1121 NSL Cross Harbour Tunnels

Monthly Environmental Monitoring and Audit Report for December 2021

(version 1.0)

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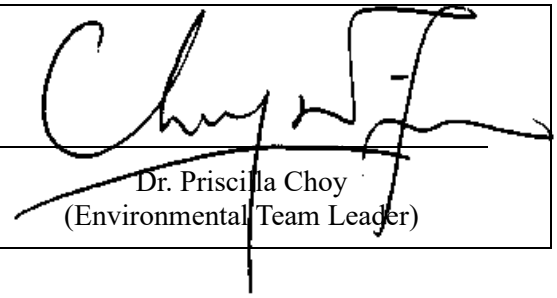

Dr. Priscilla Choy
(Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY

Introduction

1. This is the 82nd monthly Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Limited for **MTR Shatin to Central Link (SCL) Works Contract 1121 – NSL Cross Harbour Tunnels.** This report documents the findings of EM&A Works conducted from 1 to 31 December 2021.

Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month include:
   - CBTS PMA final phase mooring

Environmental Monitoring and Audit Progress

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

Regular Impact Air Quality Monitoring

- 24-hour TSP monitoring at AM1 Harbourfront Horizon 4 times

Water Quality Monitoring

4. No water quality monitoring was conducted in this reporting period.

Waste Management

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

Landscape and Visual

6. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 7 and 21 December 2021. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 6.

Environmental Site Inspection

7. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 7, 14, 21 and 28 December 2021. The representative of the EPD and IEC joined the site inspection on 7 December 2021. Details of the audit findings and implementation status are presented in Section 6.

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

8. No exceedance of the Action and Limit Levels of regular air quality monitoring was recorded during the reporting period.
9. No non-compliance event was recorded during the reporting period.

10. No environmental complaint was received and no notification of summon / successful prosecutions were received in this reporting period.

Reporting Changes

11. No reporting changes in this reporting period.

Future Key Issues

12. The site activity for the coming reporting month will include:

- CBTS PMA final phase mooring

13. A proposal for cessation of construction phase EM&A programme under Contract 1121 was submitted on 22 November 2021 for approval since all the major construction activites under Contract 1121 were completed on 30 October 2021. The proposal was under review by the EPD.

1 INTRODUCTION

1.1 Wellab Limited was appointed by Penta Ocean – China State Joint Venture (PCJV) 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 1121 – NSL Cross Harbour Tunnels (hereafter referred to as the Project).

Purpose of the Report

1.2 This is the 82nd EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 December 2021. The major construction works for Contract 1121 commenced on 2 March 2015.

Structure of the Report

1.3 The structure of the report is as follows:

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

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

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

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

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

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

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

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

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 The Shatin to Central Link – Hung Hom to Admiralty Section (hereafter referred to as SCL (HUH-ADM)) is an approximately 6 km 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.

2.3 Various Environmental Review Reports (ERR) / Supplementary Information Paper had been submitted for the following purposes:

Table 2.1 Environmental Review Reports/Supplementary Information Paper for this Project

Environmental Review Reports / Supplementary Information Paper	Date of Submission to EPD	Purpose(s)
Environmental Review Report – Design Changes of North Ventilation Building and Shek O Casting Basin	February 2014	To identify and assess the likely environmental issues pertinent to the proposed design changes at North Ventilation (NOV) Building and Shek O Casting Basin, and to identify any additional environmental mitigation measures that may be required for compliance with environmental standards.
Environmental Review Report – Variation for IMT Extension	February 2015	To identify and assess the likely environmental issues pertinent to the proposed alternative scheme of IMT extension.
Supplementary Information Paper for Optimized Scheme for IMT Construction in CBTS	January 2016	To demonstrate that no unacceptable impacts would be resulted from the Optimized Scheme in CBTS.
Environmental Review Report of Dredging Scenarios	November 2016	To demonstrate that unacceptable water quality impact is not anticipated from an alternative dredging option (including (i) using two smaller closed grab dredgers instead of one large closed grab dredger; and (ii) proposed daily production rate) within the open Victoria Harbour outside

		Causeway Bay Typhoon Shelter (CBTS)
Environmental Review Report – Arrangement of the fixed plant noise Sources at NOV	31 December 2018	To update the Fixed Plant Noise Sources at North Ventilation Building, Plant Rooms and Emergency Access (NOV)

2.4 Variation of environmental permit (VEP) was subsequently applied for EP-436/2012 and the latest Environmental Permit (EP No: EP-436/2012/F) was issued by Director of Environmental Protection (DEP) on 23 January 2019.

2.5 The construction of the SCL (HUH-ADM) has been divided into a series of civil construction Works Contracts and this Works Contract 1121 comprises of the Permanent Works and the associated Temporary works required for the construction of the North Ventilation Building (NOV) at the Hung Hom Landfall, and construction of cut & cover tunnel and Immersed Tunnel (IMT) sections extending across the harbour from the NOV to the Causeway Bay Typhoon Shelter (CBTS). This construction contract was awarded to Penta Ocean – China State Joint Venture (PCJV) in December 2014.

2.6 The IMT construction within CBTS has been completed in June 2019. The post-project water quality monitoring at Station 9 in Victoria Harbour has been completed on 26 July 2019 for four weeks. The silt screen at Windsor House has been handed over to Central-Wan Chai Bypass Project.

2.7 The Dredging / filling operation in Victoria Harbour has been completed in December 2019. The post-project water quality monitoring at Station C1, C2, 21, 34, A, WSD9 and WSD17 in Victoria Harbour has been completed on 28 January 2020 for four weeks. The silt screens maintained under this Project at water intake 21, 34, 35, WSD9 and WSD17 have been removed in mid-June 2020.

General Site Description

2.8 The site layout plans for the Works Contract 1121 are shown in **Figure 1a-1b**.

Construction Programme and Activities

2.9 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**.

- CBTS PMA final phase mooring

Project Organisation

2.10 The project organizational chart and contact details are shown in **Figure 2.**

Status of Environmental Licences, Notification and Permits

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

Table 2.2 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-436/2012/F	23/01/2019	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
EPD Ref no.: 384777	28/01/2015	N/A	Valid
EPD Ref no.: 384550	21/01/2015	N/A	Valid
EPD Ref no.: 384281	14/01/2015	N/A	Valid
Billing Account for Construction Waste Disposal			
Account No. 7021499	20/01/2015	N/A	Valid
Registration of Chemical Waste Producer			
Waste Producer No. 5213-147-P3174-03	02/03/2015	N/A	Valid
Waste Producer No. 5213-213-P3172-01	09/02/2015	N/A	Valid
Marine Dumping Permit			
-	-	-	-
Effluent Discharge License under Water Pollution Control Ordinance			
WT00036329-2020	24/07/2020	30/06/2025	Valid
Construction Noise Permit (CNP)			
GW-RE1043-21	01/11/2021	30/04/2022	Valid

Summary of EM&A Requirements

2.12 The EM&A programme under Works Contract 1121 requires regular dust and water quality monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:

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

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

2.14 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely marine water quality monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Dust Monitoring

3.1 In accordance with the EM&A Manual, impact 24-hour TSP monitoring should be conducted to monitor the air quality throughout the construction period. The impact monitoring works was handed over to MTR Contract 1121 from MTR Contract 1112 in November 2020. Impact 24-hour TSP monitoring were conducted for at least once in every six days at one air quality monitoring station. **Appendix B** shows the established Action and Limit Levels for the air quality monitoring work.

Monitoring Locations

3.2 Impact air quality monitoring were conducted at one designated air quality monitoring stations, namely AM1, according to the EM&A Manual. The locations of the air quality monitoring stations are described in **Table 3.1** and illustrated in **Figure 4**.

Table 3.1 Locations for Air Quality Monitoring Stations

Monitoring Stations	Location	Location of Measurement
AM1^	Harbourfront Horizon	Roof of the Site Office Building next to Harbourfront Horizon*

^Different IDs were used in various EM&A Manuals for dust monitoring location at Harbourfront Horizon, DMS-12 was used in EM&A Manual for SCL(TAW-HUH), AM2 were used in EM&A Manual and EIA report for SCL(MKK-HUH), and DMS-1 Works Contract 1112 were used in EM&A Manual and EIA report for HHS. AM1 was used in EM&A Manual and EIA report for SCL(HUH-ADM). For ease of future reference, the monitoring station namely as AM1, will be adopted for EM&A reporting for Works Contract 1121 when referring to this monitoring location upon the termination of MTR Contract 1112 EM&A programme.

*Air quality monitoring location at Harbourfront Horizon is the same as monitoring station CD6a as proposed in the EM&A Manual for "Kwun Tong Line Extension (KTE)". Access to Harbourfront Horizon was rejected by the owner during preparation for baseline monitoring for the KTE in early 2011. A representative monitoring location at the adjacent Finger Pier, at about 25m from Harbourfront Horizon, was adopted as an alternative monitoring location for KTE. This monitoring location is considered the most appropriate alternative monitoring location for AM2 and have been adopted for dust monitoring for MTR Contract 1112.

Monitoring Parameters, Frequency and Duration

3.3 **Table 3.2** summarizes the monitoring parameters and frequencies of impact air quality monitoring for the impact monitoring. The air quality monitoring schedule for this reporting period is shown in **Appendix D**.

Table 3.2 Impact Air Quality Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Period	Frequency
AM1	1-hour TSP	1 hour	3 times in every 6 days when one documented and valid complaint is received
	24-hour TSP	24 hours	Once in every 6 days

Monitoring Equipment

3.4 **Table 3.3** summarizes the equipment used in the air quality monitoring programme and **Appendix C** shows the copies of calibration certificates for the equipment at AM1.

Table 3.3 Air Quality Monitoring Equipment

Equipment	Model	Serial no.	Qty.
HVS Sampler	TISCH: Model no. TE-5170	1535	1
Calibrator	TISCH: Model TE-5025A	0993	1

Monitoring Methodology and QA/QC Procedure

Instrumentation

3.5 High Volume Sampler (HVS) (TISCH: Model no. TE-5170) completed with appropriate sampling inlets were deployed for air quality monitoring. Each sampler is 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 (Part 50).

HVS Installation

3.6 The following guidelines are adopted during the installation of HVS:

- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- No two samplers were placed less than 2 metres apart;
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler;
- A minimum of 2 metres of separation from walls, parapets and penthouses was required for rooftop samplers;
- A minimum of 2 metres of separation from any supporting structure, measured horizontally was required;
- No furnace or incinerator flue was nearby;
- Airflow around the sampler was unrestricted;
- The sampler was more than 20 metres from the dripline;
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring;
- Permission and access to the monitoring stations have been obtained to set up the samplers; and
- A secured supply of electricity was needed to operate the samplers.

Filters Preparation

3.7 Fiberglass filters have a collection efficiency of larger than 99% for particles of 0.3 μm diameter will be used. A HOKLAS accredited laboratory, Wellab Ltd., is responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for the monitoring team. Glass fibre filters, TE-G653 were labelled and sufficient filters that were clean and without pinholes were selected.

3.8 All filters, which are prepared by Wellab Ltd., are equilibrated in the conditioning

environment for 24 hours before weighing. The conditioning environment temperature is around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) is < 50% and not variable by more than ±5%. A convenient working RH is 40%.

Operating/Analytical Procedures

3.9 Operating/analytical procedures for the air quality monitoring are highlighted as follows:

- Prior to the commencement of the air quality monitoring, the flow rate of the HVS was properly set (between 1.1 m^3/min. and 1.4 m^3/min.).
- The power supply was checked to ensure the sampler worked properly.
- Upon sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centred 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. The applied pressure should be sufficient to avoid air leakage at the edges.
- The shelter lid was closed and secured with the aluminium strip.
- 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).
- After sampling, the filter was removed and sent to the Wellab Ltd. for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature 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 will be returned to Wellab for further analysis of TSP and RSP concentrations collected by each filter.

Weather record

3.10 The wind data was made reference from Hong Kong Observatory and is shown in **Appendix L**. The general weather conditions (i.e. sunny, cloudy or rainy) was recorded by the field staffs during the monitoring day.

Maintenance/Calibration

3.11 The following maintenance/calibration are required for the HVS:

- The high volume motors and their accessories were properly maintained by the monitoring team. Appropriate maintenances 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.
- All HVSs were calibrated (five point calibration) using TE-5170 Calibration Kit prior to the commencement of the impact monitoring. The five-point calibration would be carried out every two months

Regular Water Quality Monitoring

3.12 In accordance with the EM&A Manual and the ERRs, marine water quality monitoring should be carried out during the dredging and filling operation, and IMT construction within CBTS (for Station 9 only); and throughout the construction period of removal of earth bunds at Northern and Southern gates.

3.13 Water Quality Monitoring at Station 8 and 14 is suspended as the water intakes are not in use. The statuses of the intakes will be kept in view such that once the water intakes are occupied, water quality monitoring will resume. In the presence of temporary reclamation in the Causeway Bay Typhoon Shelter (CBTS) under this Project, only Dissolved Oxygen (DO) level monitoring would be maintained at Station 8 for checking of potential odour concern.

3.14 The water quality monitoring stations and control stations of Project are shown in **Figure 3**. The co-ordinates of the monitoring stations are listed in **Table 3.4**. As shown in **Table 3.4**, the locations are classified as Impact Station and Control Station according to their functions.

Table 3.4 Water Quality Monitoring Stations

Station	Description	Coordinates	
		Easting	North
Shek O Casting Basin			
GB3	Turtle Cove Beach	841120	810280
C3	Control Station for ebb tide	841200	806210
C4	Control Station for flood tide	843330	807320
Victoria Harbour			
8	Cooling Water Intake for Excelsior Hotel and World Trade Centre / No. 27 – 63 Paterson Street	837036	816008
9	Cooling Water Intake for Windsor House	837223	816150
14	Flushing Water Intake for Kowloon Station	834477	817891
21	Cooling Water Intake for East Rail Extension	836484	817642
34	Cooling Water Intake for Metropolis	836828	817844
A	Wan Chai WSD Flushing Water Intake (Reprovisioned)(1)	836268	816045
WSD9	Tai Wan WSD Flushing Water Intake(2)	837930	818357
WSD17	Quarry Bay WSD Flushing Water Intake	839863	817077
C1	Control Station 1	833977	817442
C2	Control Station 2	841088	817223

Note:
(1) According to the Baseline Water Quality Monitoring Report for SCL (MKK-HUH & HUH-ADM), the original coordinates of monitoring location A (Easting: 836286, Northing: 816024) is the exact location taken from the design of reprovisioned Wan Chai Salt Water Pumping Station and Salt Water Intake Culvert. Based on actual site condition for taking water sampling, minor adjustment was made on monitoring location.
(2) According to the Baseline Water Quality Monitoring Report for SCL (MKK-HUH & HUH-ADM), the original coordinates of monitoring location WSD9 (Easting: 838133, Northing: 817790) as proposed in WQMP were moved closer to sensitive receiver according to the actual site condition.

Monitoring Parameter, Frequency and Programme

3.15 Water quality monitoring was conducted in accordance with the requirements stipulated in the approved SCL (HUH-ADM) EM&A Manual and the ERRs. **Table 3.5** summarized the monitoring frequency and water quality parameters for the impact monitoring.

Table 3.5 Water Quality Impact Monitoring Programme

	Impact Monitoring
Monitoring Period	Victoria Harbour During the dredging and filling operation CBTS (Station 9 only) During IMT construction within CBTS Shek O Casting Basin Throughout the construction period of removal of earth bunds at Northern and Southern gates.
Monitoring Frequency(1)	3 Days in a Week, at mid-flood and mid-ebb tides
Monitoring Locations(3)(4)	GB3, C3, C4, 8, 9, 14, 21, 34, A, WSD9, WSD17, C1 and C2
Monitoring Parameters(2)	DO, temperature, turbidity, pH, salinity and SS
Intervals between 2 Sets of Monitoring	Not less than 36 hours
Tidal Range	Individual flood and ebb tides not less than 0.5m

Notes:
1. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5 m.
2. Turbidity, DO, pH, temperature and salinity should be measured in situ whereas SS should be determined by laboratory.
3. Water Quality Monitoring at Station 8 and 14 were suspended as the water intakes are not in use.
4. As the IMT construction within CBTS has been completed in June 2019, the post-project water quality monitoring at Station 9 in Victoria Harbour has been completed on 26 July 2019 for four weeks.
5. As the Dredging / filling operation in Victoria Harbour has been completed in December 2019, the post-project water quality monitoring at Station C1, C2, 21, 34, A, WSD9 and WSD17 in Victoria Harbour has been completed on 28 January 2020 for four weeks.

Monitoring Equipment and Methodology

pH Measurement Instrument

3.16 The instrument consisted of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It is readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 is used for calibration of the instrument before and after use.

Dissolved Oxygen and Temperature Measuring Equipment

3.17 The Dissolved Oxygen (DO) measuring equipment is portable and weatherproof. It is completed with cable and senor, and a DC power source. The equipment is capable of measuring:

- a DO level in the range of 0 - 20 mg·L^{-1} and 0 - 200% saturation; and
- a temperature of 0 - 45 degree Celsius (°C).

3.18 It has a membrane electrode with automatic temperature compensation complete with a cable.

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

Turbidity Measurement Instrument

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

Sampler

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

Water Depth Detector

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

Salinity

3.23 A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) is provided for measuring salinity of the water at each monitoring station.

Sample Containers and Storage

3.24 Water samples for SS monitoring were stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4 ^{o}C without being frozen) and delivered to the laboratory and analyzed as soon as possible after collection.

Monitoring Position Equipment

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

Calibration of In-Situ Instruments

3.26 The pH meter, DO meter and turbidimeter was checked and calibrated before use. DO

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

3.27 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment were made available so that monitoring can proceed uninterrupted even when some equipment are under maintenance, calibration, etc.

Laboratory Measurement / Analysis for Marine Water

3.28 Duplicate samples from each independent sampling event are required by EPD for all parameters. Analysis of suspended solids was carried out in a HOKLAS or other international accredited laboratory. Sufficient water samples were collected at the monitoring stations for carrying out the laboratory SS determinations, with detection limit shown in **Table 3.6**. The SS determination work was started within 24 hours after collection of the water samples. The analyses followed the standard methods according to **Table 3.6** and as described in "American Public Health Association (APHA) Standard Methods for the Examination of Water and Wastewater", 19th edition, unless otherwise specified.

Table 3.6 Analytical Methods to be applied to Marine Water Quality Samples

Determinant	Standard Method	Detection Limit
Suspended Solids (mg/L)	APHA 2540 D	0.1 mg/L

Action and Limit Levels

3.29 The action and limit levels for water quality monitoring are presented in **Appendix B**.

Event and Action Plan

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

Landscape and Visual

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

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, EM&A Manual and the ERR. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix I**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (November 2021)	14 December 2021

5 MONITORING RESULTS

Air Quality Monitoring

5.1 **Table 5.1** summarizes the monitoring results at AM1 in the reporting month. Detailed monitoring results and graphical presentations of 24-hour TSP monitoring results are shown in **Appendix E**.

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

Monitoring Station	Concentration (µg/m^3)		Action Level, µg/m^3	Limit Level, µg/m^3
	Average	Range		
AM1	71.3	41.9 – 97.2	182	260

5.2 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix H**.

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

Water Quality Monitoring

5.4 The Dredging / filling operation in Victoria Harbour has been completed on 31 December 2019. A post-project water quality monitoring at station C1, C2, 21, 34, A, WSD9 and WSD17 in Victoria Harbour has been completed on 28 January 2020 for four weeks.

5.5 The IMT construction within CBTS has been completed in June 2019. A post-project water quality monitoring at station 9 in Victoria Harbour has been completed on 26 July 2019 for four weeks.

5.6 The removal of southern dock gate has been completed on 20 November 2017. A post-project water quality monitoring had been completed on 18 December 2017 in Shek O for four weeks.

Waste Management

5.7 Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Non-inert C&D materials are made up of C&D waste which cannot be reused or recycled and has to be disposed of at the designated landfill sites. With reference to relevant handling records of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.2**. Details of waste management data is presented in **Appendix J**.

5.8 No inert C&D materials were generated during the reporting month by this Project. No inert C&D materials were received from SCL Contract 1111, 1112, 1114, 1123 and 1128. Since there were no inert C&D materials received or generated during the reporting month, no inert C&D materials were disposed as public fill. No chemical waste was collected by licensed collector during the reporting month. 13570 kg metal and 2480 kg paper/cardboard packaging were generated during the reporting month.

Table 5.2 Quantities of Waste Generated from the Project

Reporting Month	Quantity						
	C&D Materials (inert) [a]	Sediments (in bulk volume)	C&D Materials (non-inert)[b]				
			General Refuse	Chemical Waste	Recycled materials		
					Paper/ cardboard	Plastics	Metals
December 2021	*0m³*	*0 m³*	*5.1 tonnes*	*0 kg*	*2480 kg*	*0 kg*	*13570 kg*

Notes:
(a) Inert C&D materials include soft materials, rocks and artificial hard materials to be delivered to TKO 137 and TM 38 public fill reception sites or, alternatively, receptor sites to be identified for beneficial reuse as proposed by the Contractor.
(b) Non-inert C&D materials include C&D waste which cannot be reused or recycled and has to be disposed of at North East New Territories (NENT) Landfill. It also includes steel, paper/cardboard packaging waste, plastics. 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

5.9 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 7 and 21 December 2021. 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 F**.

6.2 Site audits were conducted on 7, 14, 21 and 28 December 2021 by ET. A joint site audit with the representative with, IEC, ER, the Contractor was carried out on 7 December 2021. The details of observations during site audit can refer to **Table 6.1**.

6.3 A joint site inspection with the representative of the EPD was carried out on 7 December 2021, at the presence of the representatives of ET, IEC, ER, and the Contractor. No specific comment was given on site.

Implementation Status of Environmental Mitigation Measures

6.4 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 I**.

6.5 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	--	--	--
Waste / Chemical Management	--	--	--
Permits/ Licenses	--	--	--

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

Water Monitoring

7.1 No water quality monitoring was conducted in the reporting month.

24-hour TSP Monitoring

7.2 No Exceedance of Action Limit Levels of air quality was recorded during the reporting period. The summary of exceedance is provided in **Appendix H**.

Summary of Environmental Non-Compliance

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

Summary of Environmental Complaint

7.4 No environmental complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix K**. The investigation status and result is also reported in **Appendix K**.

Summary of Environmental Summon and Successful Prosecution

7.5 There was no successful environmental prosecution and no notification of summons received in this reporting period. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix K**.

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:

- CBTS PMA final phase mooring

Key Issues in the Next Month

8.2 A proposal for cessation of construction phase EM&A programme under Contract 1121 was submitted on 22 November 2021 for approval since all the major construction activities under Contract 1121 were completed on 30 October 2021. The proposal was under review by the EPD.

Monitoring Schedule in the Next Month

8.3 The tentative schedule of regular impact air quality monitoring at the monitoring location in the next reporting period is presented in **Appendix D**.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 31 December 2021 in accordance with EM&A Manual and the requirement under EP.

9.2 A proposal for cessation of construction phase EM&A programme under Contract 1121 was submitted on 22 November 2021 for approval since all the major construction activities under Contract 1121 were completed on 30 October 2021. The proposal was under review by the EPD.

9.3 No exceedance of the Action and Limit Levels of regular air quality monitoring was recorded at the designated monitoring stations during the reporting month.

9.4 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.

9.5 A joint site inspection with the representative of the EPD was carried out on 7 December 2021.

9.6 No environmental complaint and no notification of summon / successful prosecution were received during the reporting month.

9.7 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.

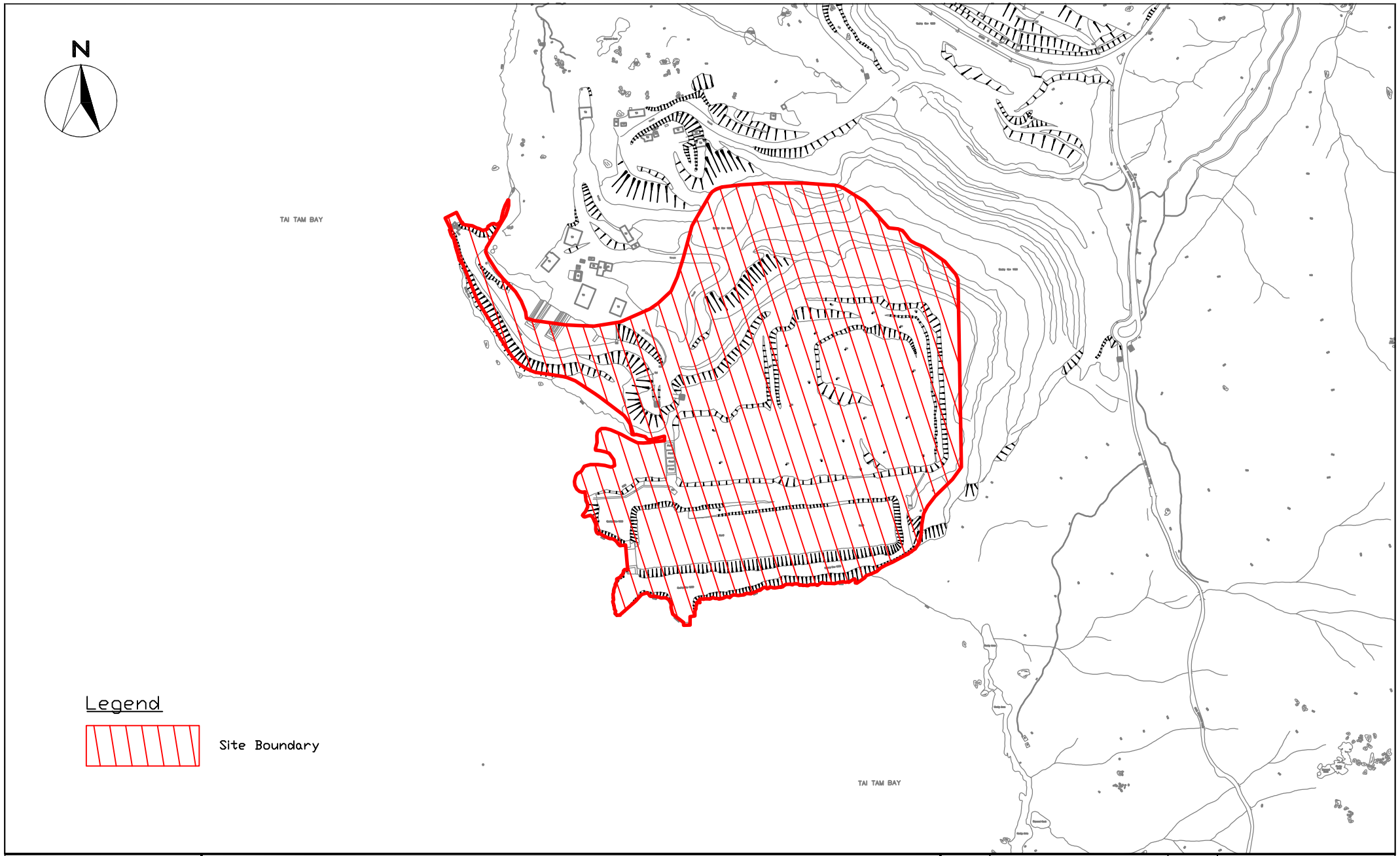
Recommendations

9.8 No environmental deficiency was recorded during the environmental audit performed in the reporting month. The following recommendations were made:

Air Quality

- To mitigate dust generation by providing adequate water spraying during dry days.

FIGURES



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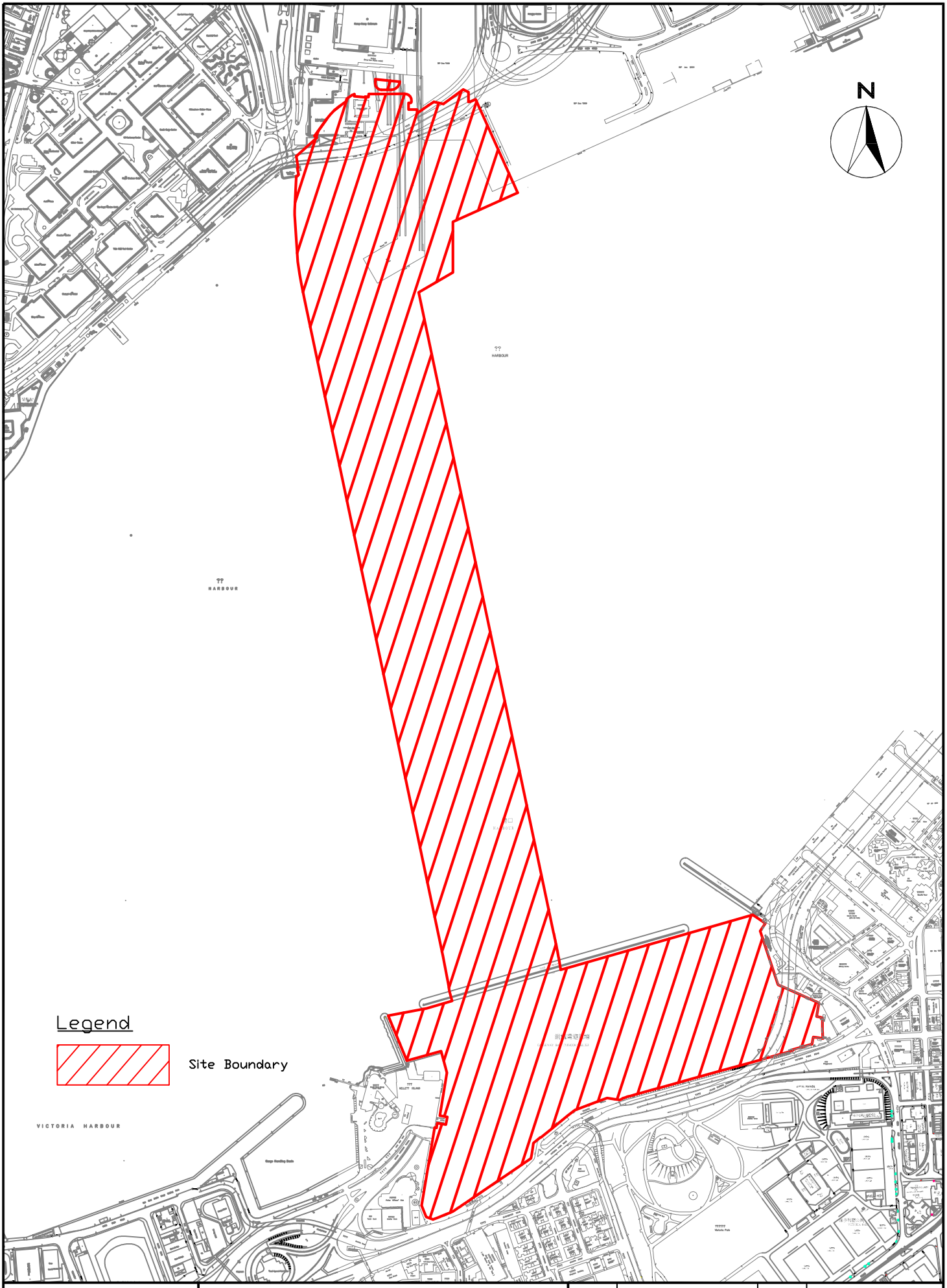
SCL 1121 - NSL Cross Harbour Tunnels

Site Layout Plan (Shek O)

SCALE	1:150	DATE	12/2014
CHECK	CHECK	DRAWN	VW
JOB No.	MA14047	FIGURE NO.	1a
		REV	-



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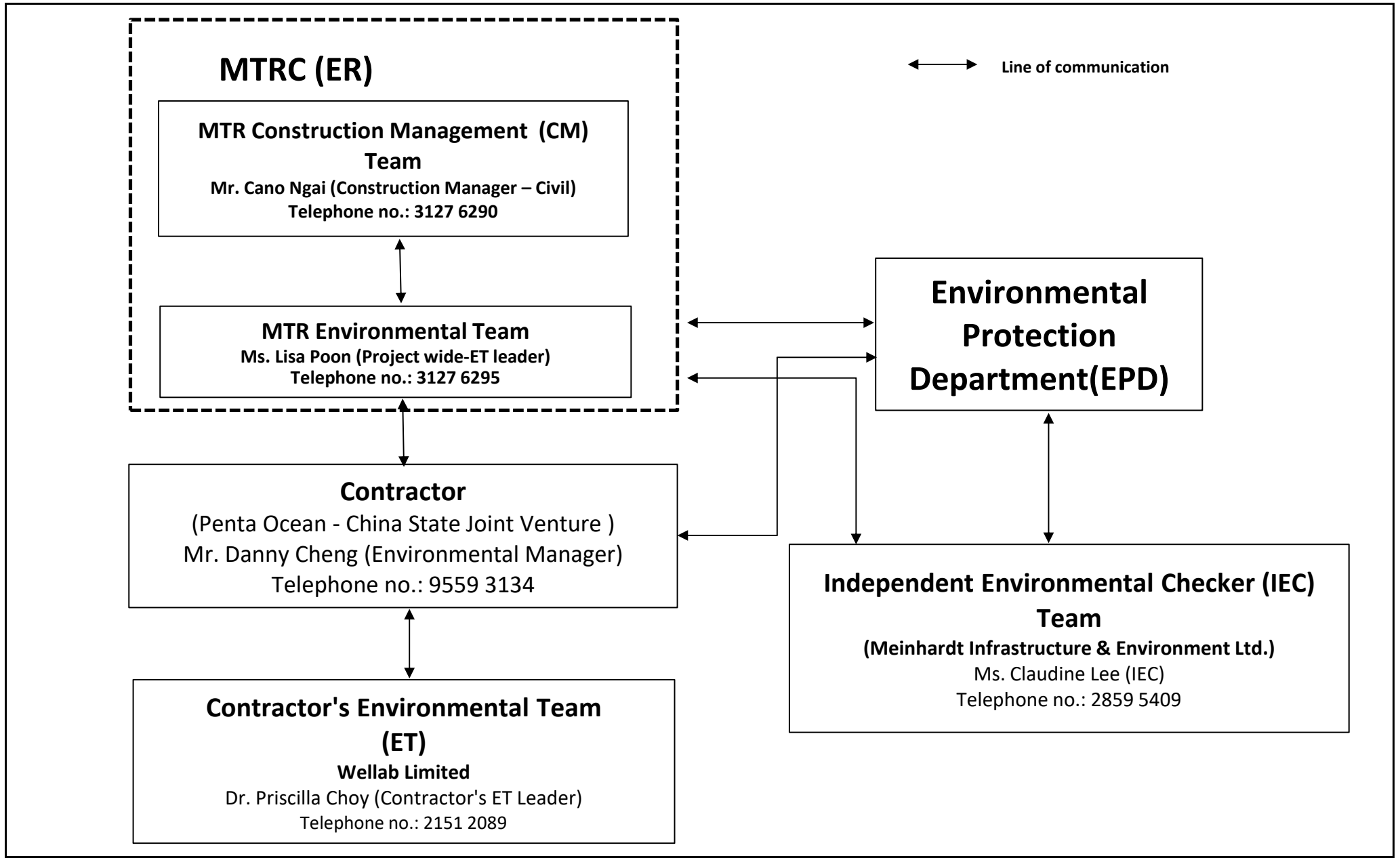
SCL 1121 - NSL Cross Harbour Tunnels

Site Layout Plan
(Victoria Harbour)

SCALE	1:220	DATE	1/2015
CHECK	JF	DRAWN	VW
JOB No.	MA14047	FIGURE NO.	1b
		REV	-

F:/Project_drawings



Title		Scale	Project
SCL Contract 1121 The Shatin to Central Link - NSL Cross Harbour Tunnels Project Organisation for Environmental Works		N.T.S	No. MA14047
		Date Jul-21	Figure 2

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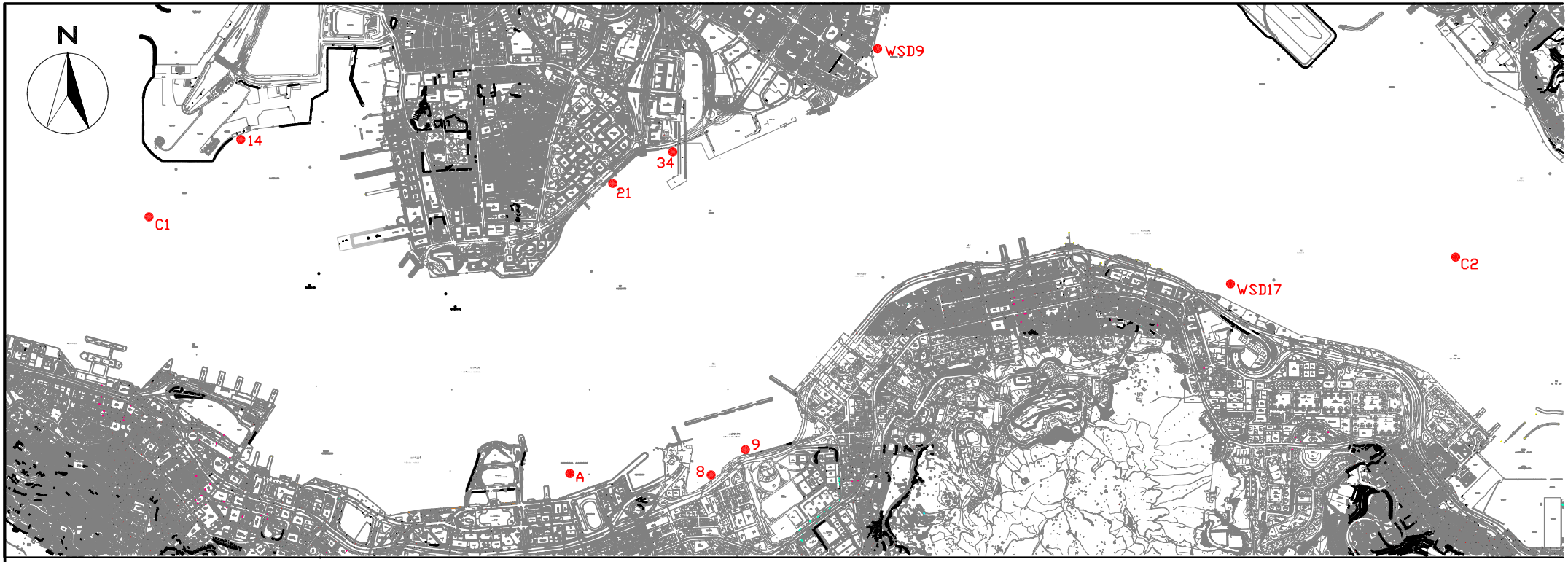

COORDINATE	EASTING	NORTHING
A	836268	816045
14	834477	817891
WSD9	837930	818357
WSD17	839863	817077
C1	833977	817442
C2	841088	817223
8	837036	816008
9	837223	816150
21	836484	817642
34	836828	817844

LEGEND

Water Quality Monitoring Station

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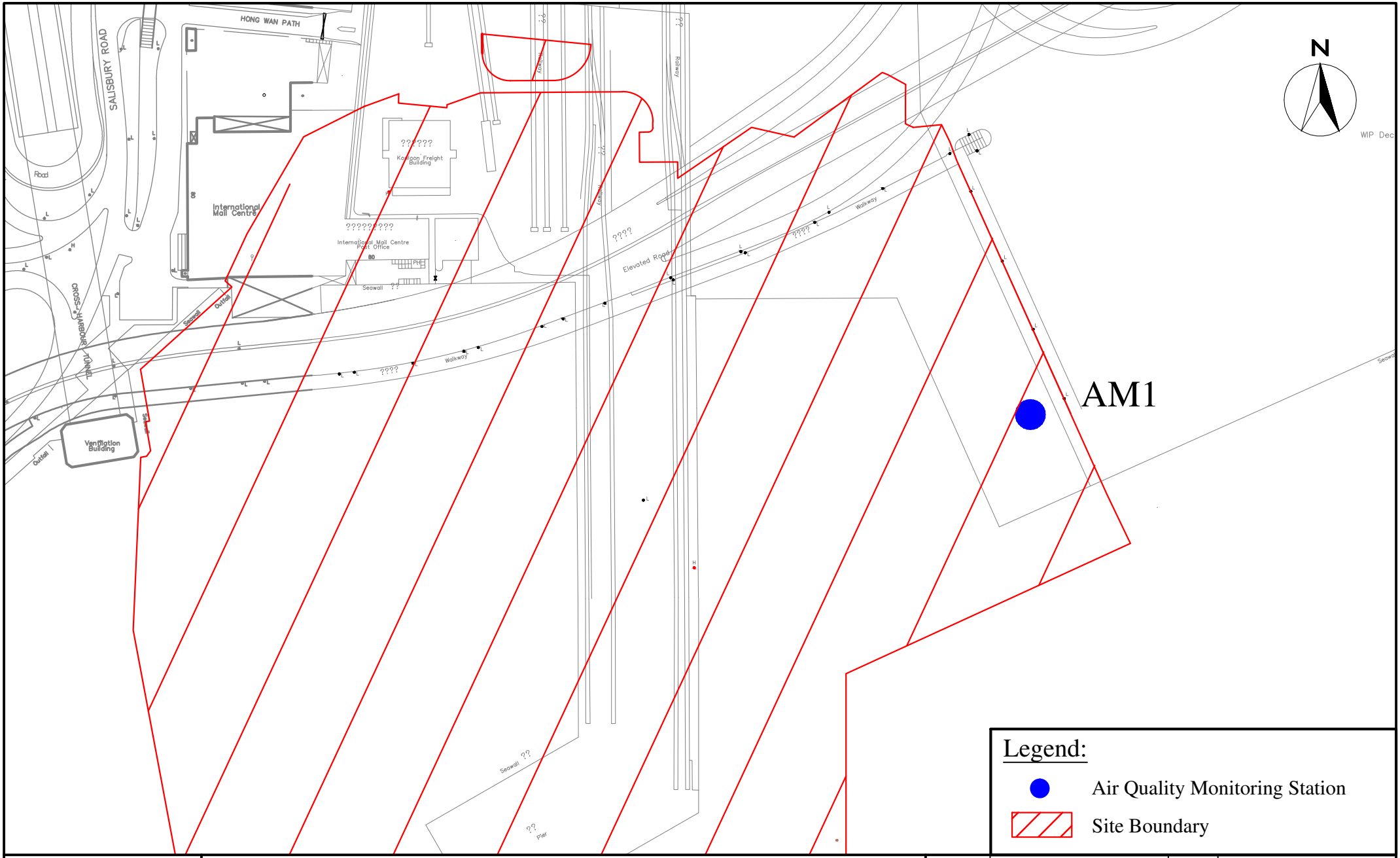
SCL 1121 - NSL Cross Harbour Tunnels

Locations of Water Quality Monitoring station in the Victoria Harbour

SCALE	1:30	DATE	1/2015
CHECK	JF	DRAWN	VW
JOB No.	MA14047	FIGURE NO. 3	REV –



WELLAB 匯力
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SCL 1121 - NSL Corss Harbour Tunnels

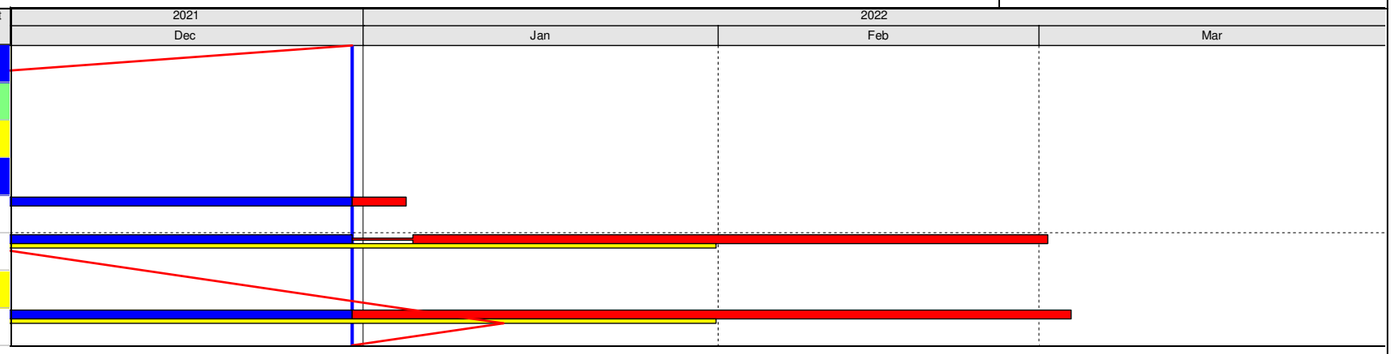
Air Quality Monitoring Station

SCALE	A4 @ 1:5000	DATE	Nov 2020
CHECK	EH	DRAWN	HC
Project No.	MA14047	FIGURE NO. 4	REV –

APPENDIX A
TENTATIVE CONSTRCUTION PROGRAMME

MTRC Shatin to Central Link Contract 1121
NSL Cross Harbour Tunnel

Activity ID	Activity Name	BL1 Start	BL1 Finish	BL Duration	Rem. Dur.	Start	Finish	Total Float
1121 - 86 - 3M Rolling Programme (11-01/2021)(Upda		06-May-21	31-Jan-22	232	54	20-Mar-21 A	03-Mar-22	-28
CONSTRUCTION		06-May-21	31-Jan-22	232	54	20-Mar-21 A	03-Mar-22	-28
Cost Centre E - CBTS Tunnels		06-May-21	31-Jan-22	271	61	06-May-21 A	01-Mar-22	-31
Final Phase Mooring		06-May-21	31-Jan-22	271	61	06-May-21 A	01-Mar-22	-31
01121.33820	Relocation of Vessels - Stage 4 - Anchorage Area	06-May-21	19-Jun-21	45	5	06-May-21 A	04-Jan-22	-31
01121.33830	Relocation of Vessels - Stage 5 - Private mooring area	27-Sep-21	31-Jan-22	127	56	27-Sep-21 A	01-Mar-22	-31
Statutory Inspection		30-Sep-21	31-Jan-22	106	54	20-Mar-21 A	03-Mar-22	-28
01121.15730	NSL Tunnel - Statutory Inspections	30-Sep-21	31-Jan-22	106	54	20-Mar-21 A	03-Mar-22	-28



Data Date: 31-Dec-21
Proj ID: 1121-UP86
Layout: 1121 - 3M Rolling 2021_12 (Dec-Feb)

- Current Milestone
- Baseline Milestone (PMP Rev. 1a)
- Actual Work
- Critical Remaining Work
- Remaining Work
- Baseline (PMP Rev.1a)
- Remaining Level of Effort
- 3M Rolling Prog (last month)

Updated 3M Rolling Programme Dec 2021 - Feb 2022
(Updated as of 31 Dec 2021)

Date	Revision	Checked	Approved
31-Dec-21			

APPENDIX B
ACTION AND LIMIT LEVELS

APPENDIX B – Action and Limit Levels

Derived Action and Limit Levels for Water Quality (Wet Season)

Parameters	Action Level	Limit Level
WSD Salt Water Intake (Station 14, A, WSD9, WSD17)		
DO in mg/L	<2.1	<2
SS in mg/L	6.0	6.0
Turbidity in NTU	4.7	6.5
Cooling Water Intake (Station 8, 9, 21 & 34)		
DO in mg/L	2.8	2.7
SS in mg/L	6.9	9.1
Turbidity in NTU	11.3	17.2
GB3		
DO in mg/L	5.5	5.3
SS in mg/L	4.5	4.5
Turbidity in NTU	2.1	2.4

Notes:
1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Derived Action and Limit Levels for Water Quality (Dry Season)

Parameters	Action Level	Limit Level
WSD Salt Water Intake (Station 14, A, WSD9, WSD17)		
DO in mg/L	<2.1	<2
SS in mg/L	6.9	6.9
Turbidity in NTU	5.0	7.0
Cooling Water Intake (Station 8, 9, 21 & 34)		
DO in mg/L	3.3	3.2
SS in mg/L	8.0	10.4
Turbidity in NTU	12.2	18.5
GB3		
DO in mg/L	6.8	6.5
SS in mg/L	9.3	9.3
Turbidity in NTU	5.0	5.6

Notes:
1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Action and Limit Levels for Air Quality

Monitoring Station	Action Level (ug/m^3)	Limit Level (ug/m^3)
AM1	182	260

APPENDIX C
CALIBRATION CERTIFICATES OF THE ENVIRONMENTAL MONITORING EQUIPMENT

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

File No. MA14047/WA03/007

Station	AM1 - Harbourfront Horizon	Operator:	HL
Date:	25-Oct-21	Next Due Date:	24-Dec-21
Equipment No.:	WA-12-03	Serial No.	1535

Ambient Condition			
Temperature, Ta (K)	298	Pressure, Pa (mmHg)	765.1

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	9.3	3.06	54.04	5.5	2.35
2	7.5	2.75	48.55	4.4	2.10
3	5.8	2.42	42.73	3.6	1.90
4	4.1	2.03	35.96	2.5	1.59
5	2.5	1.59	28.14	1.7	1.31

By Linear Regression of Y on X

Slope , mw = 0.0404 **Intercept, bw = 0.1570**

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.57**

Remarks: ______

Conducted by: 劉 Man Hei Signature: Hei Date: 25-10-2021

Checked by: Ho Ka Chun Signature: [signature] Date: 25/10/2021

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High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA14047/WA03/008

Station AM1 - Harbourfront Horizon Operator: HL

Date: 20-Dec-21 Next Due Date: 19-Feb-22

Equipment No.: WA-12-03 Serial No. 1535

Ambient Condition			
Temperature, Ta (K)	289.1	Pressure, Pa (mmHg)	767.5

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	9.9	3.21	56.68	5.9	2.48
2	7.6	2.81	49.70	4.7	2.21
3	5.7	2.44	43.07	3.6	1.94
4	4.1	2.07	36.57	2.5	1.61
5	2.7	1.68	29.72	1.8	1.37

By Linear Regression of Y on X

Slope , mw = **0.0420** **Intercept, bw :** **0.1096**

Correlation coefficient* = **0.9988**

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.52**

Remarks:

Conducted by: Ho Man Hei Signature: Date: 20-12-2021

Checked by: Ho Ka Chun Signature: Date: 20/12/2021

TISCH Environmental

RECALIBRATION DUE DATE:
January 28, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	January 28, 2021	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 763.5	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **0993**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4160	3.3	2.00
2	3	4	1	0.9980	6.4	4.00
3	5	6	1	0.8890	8.0	5.00
4	7	8	1	0.8500	8.8	5.50
5	9	10	1	0.7020	12.9	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0139	0.7160	1.4271	0.9957	0.7032	0.8776
1.0098	1.0118	2.0182	0.9916	0.9936	1.2411
1.0076	1.1334	2.2564	0.9895	1.1131	1.3875
1.0066	1.1842	2.3666	0.9885	1.1629	1.4553
1.0011	1.4261	2.8542	0.9831	1.4004	1.7551
QSTD	**m=**	**2.00902**	**QA**	**m=**	**1.25802**
	b=	**-0.01398**		**b=**	**-0.00860**
	r=	**0.99997**		**r=**	**0.99997**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

APPENDIX D
TENTATIVE IMPACT AIR QUALITY MONITORING SCHEDULE

Shatin to Central Link - Contract No. 1121
NSL Cross Harbour Tunnels
Impact Air Quality Monitoring Schedule (December 2021)

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

Air Quality Monitoring Station
AM1 - Harbourfront Horizon

Shatin to Central Link - Contract No. 1121
NSL Cross Harbour Tunnels
Tentative Impact Air Quality Monitoring Schedule (January 2022)

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

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

Air Quality Monitoring Station
AM1 - Harbourfront Horizon

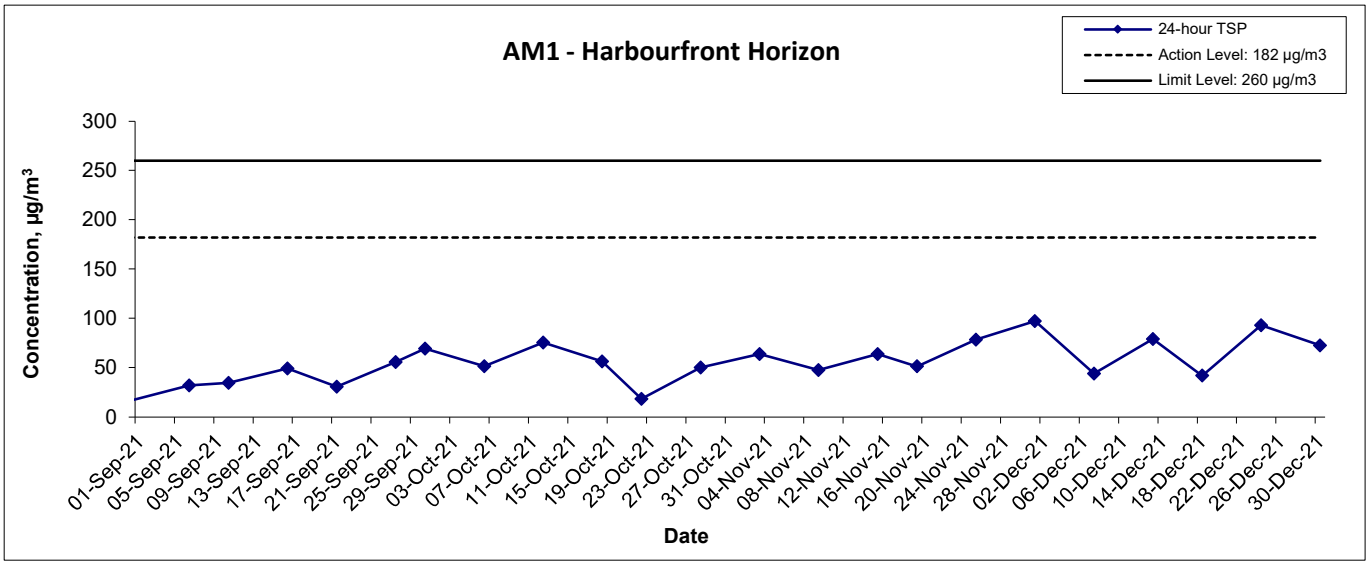
APPENDIX E
MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - 24-hour TSP Monitoring Results

Location AM1 - Habourfront Horizon

Start Date	Weather Condition	Air Temp. (K)	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			
1-Dec-21	Sunny	288.9	2.6724	2.8473	0.1749	13477.1	13501.1	24.0	1.25	1.25	1.25	1798.8	97.2
7-Dec-21	Sunny	292.5	3.5155	3.5940	0.0785	13501.1	13525.1	24.0	1.24	1.24	1.24	1785.9	44.0
13-Dec-21	Cloudy	291.5	3.4962	3.6377	0.1415	13525.1	13549.1	24.0	1.24	1.24	1.24	1788.7	79.1
18-Dec-21	Cloudy	289.7	2.6568	2.7320	0.0752	13549.1	13573.1	24.0	1.25	1.25	1.25	1796.7	41.9
24-Dec-21	Cloudy	292.2	2.6764	2.8379	0.1615	13573.1	13597.1	24.0	1.20	1.21	1.21	1736.1	93.0
30-Dec-21	Sunny	290.1	3.3653	3.4921	0.1268	13597.1	13621.1	24.0	1.21	1.21	1.21	1748.3	72.5
												Min	41.9
												Max	97.2
												Average	71.3

24-hr TSP Concentration Levels



Title	Contract No. 1121 Shatin to Central Link NSL Cross Harbour Tunnels Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA14047	WELLAB 匯力 consulting . testing . research
		Date Dec 21	Appendix E	

APPENDIX F
SITE AUDIT SUMMARY

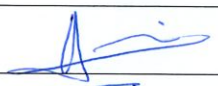
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	211207
Date	7 December 2021 (Tuesday)
Time	09:30-10:30

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 – Ecology / Others*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part E – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part F – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part G – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part H – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part I - Others*** • Follow-up on previous audit section (Ref. No.:211130), no environmental deficiency was identified during the site inspection.	

	Name	Signature	Date
Recorded by	Adrian Lam		7 December 2021
Checked by	Dr. Priscilla Choy		7 December 2021

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	211214
Date	14 December 2021 (Tuesday)
Time	09:30-10:30

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 – Ecology / Others*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part E – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part F – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part G – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part H – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part I - Others*** • Follow-up on previous audit section (Ref. No.:211207), no environmental deficiency was identified during the site inspection.	

	Name	Signature	Date
Recorded by	Adrian Lam		20 December 2021
Checked by	Dr. Priscilla Choy		20 December 2021

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	211221
Date	21 December 2021 (Tuesday)
Time	09:30-10:15

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 – Ecology / Others*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part E – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part F – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part G – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part H – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part I - Others*** • Follow-up on previous audit section (Ref. No.:211214), no environmental deficiency was identified during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam		21 December 2021
Checked by	Dr. Priscilla Choy		21 December 2021

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	211228
Date	28 December 2021 (Tuesday)
Time	09:30-10:30

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 – Ecology / Others*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part E – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part F – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part G – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part H – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part I - Others*** • Follow-up on previous audit section (Ref. No.:211221) No environmental deficiency was identified during the site inspection.	

	Name	Signature	Date
Recorded by	Adrian Lam		28 December 2021
Checked by	Dr. Priscilla Choy		28 December 2021

APPENDIX G
EVENT AND ACTION PLANS

Event and Action Plan for Marine Water Quality Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
Action level being exceeded by one sampling day	1. Inform the Contractor, IEC and ER; 2. Check monitoring data, all plant, equipment and the Contractor's working methods; and 3. Discuss remedial measures with the IEC and Contractor.	1. Discuss with the ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by the Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER the effectiveness of the implemented mitigation measures.	1. Discuss with the ET, IEC and Contractor on the implemented mitigation measures; 2. Make agreement on the remedial measures to be implemented; and 3. Supervise the implementation of agreed remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with the ET, IEC and ER and propose remedial measures to IEC and ER; and 7. Implement the agreed remedial measures.
Action level being exceeded by more than one consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Inform the Contractor, IEC and ER; 3. Check monitoring data, all plant, equipment and the Contractor's working methods; 4. Discuss remedial measures with the IEC and Contractor; and 5. Ensure remedial measures are implemented.	1. Discuss with the ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by the Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER the effectiveness of the implemented remedial measures.	1. Discuss with the ET, IEC and Contractor on the implemented mitigation measures; 2. Make agreement on the remedial measures to be implemented; and 3. Discuss with the ET and IEC on the effectiveness of the implemented remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with the ET, IEC and ER and propose remedial measures to IEC and ER within 3 working days of notification; and 7. Implement the agreed remedial measures.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Limit level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Inform the Contractor, IEC, EPD and ER; 3. Rectify unacceptable practice; 4. Check monitoring data, all plant, equipment and the Contractor's working methods; 5. Discuss with the ET and IEC and propose remedial measures to the IEC, EPD and ER; and 6. Ensure the agreed remedial measures are implemented.	1. Discuss with the ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER the effectiveness of the implemented remedial measures.	1. Discuss with the ET, IEC and Contractor on the implemented mitigation measures; 2. Request the Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; and 4. Assess the effectiveness of the implemented remedial measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET , IEC and ER and propose remedial measures to IEC and ER within 3 working days of notification; and 6. Implement the agreed remedial measures.
2. Limit level being exceeded by more than one consecutive sampling days	1. Inform the Contractor, IEC, EPD and ER; 2. Check monitoring data, all plant, equipment and the Contractor's working methods; 3. Discuss remedial measures with the IEC, EPD, ER and Contractor; 4. Ensure remedial measures are implemented; and 5. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Discuss with the ET, ER and Contractor on the implemented measures; 2. Review proposals on remedial measures submitted by the Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER the effectiveness of the implemented remedial measures.	1. Discuss with the ET, IEC and Contractor on the implemented mitigation measures; 2. Request the Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; 4. Discuss with the the ET, IEC and Contractor on the effectiveness of the implemented remedial measures; and 5. Consider and instruct, if necessary,	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with the ET, IEC and ER and propose remedial measures to IEC and ER within 3 working days of notification; 7. Implement the agreed remedial measures; and

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
			the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level.	8. As directed by the ER, to slow down or to stop all or part of the marine works or construction activities.

Event and Action Plan for Air Quality Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 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 IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 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 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.
LIMIT LEVEL				
1. Exceedance for one sample	1. Inform the IEC, EPD, Contractor and ER; 2. Repeat measurement to confirm	1. Check monitoring data submitted by the ET;	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET;	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	findings; 3. Increase monitoring frequency to daily; and 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	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.	3. Review and agree on the remedial measures proposed by the Contractor; and 4. Supervise implementation of remedial measures.	exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement agreed proposals; and 5. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Inform the 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, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the	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; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	results; and 7. If exceedance stops, cease additional monitoring.			

APPENDIX H
SUMMARY OF EXCEEDANCE

APPENIDX H – SUMMARY OF EXCEEDANCE

Reporting Month: December 2021

Exceedance Report for 24-hr TSP (NIL)

APPENDIX I
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

SCL Works Contract 1121 - 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
Cultural Heritage Impact (Construction Phase)							
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	Construction phase	EIAO	N/A
Ecology (Construction Phase)							
S 5.133	The following mitigation measures in controlling water quality change shall be implemented: - Installation of silt curtains around the dredgers, where appropriate, during dredging activities; - Use of closed grab dredger during dredging; and - Reduction of dredging rate	To minimize changes in water quality impact on marine flora and fauna	Contractor	All reclamation and dredging works areas	Construction phase	• EIAO-TM	N/A N/A N/A
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	Minimise the contamination of wastewater discharge	Contractor	All land based works areas	Construction phase	• EIAO-TM	^
ERR S3.6.3	Installation of floating type silt curtains around the area of construction and removal of earth	Minimize indirect impact to the nearby subtidal and intertidal flora and fauna	Contractor	Shek O Casting Basin	Construction phase	• EIAO-TM	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
Fisheries Impact							
S5.132	The size of the dredging and underwater blasting areas shall be minimized as much as possible	To minimize loss of fishing ground and fisheries resources	Contractor/ MTR	All dredging and underwater blasting works areas	Construction phase	• EIAO-TM	N/A
S5.133	Mitigation measures recommended in Sections 11.200 to 11.207, 11.209 to 11.211 and 11.213 to 11.256 of the EIA Report to control water quality, i.e. use of effective site drainage in land-based construction site and installation of silt curtain surrounding the dredging point, use of closed grab dredger and reduction of dredging rate shall be implemented.	To minimize change in water quality impact on fisheries resources and operation	Contractor	Works Areas	Construction phase	• EIAO-TM	^
S6.59	After completion of armour rock filling, the final surfaces of the protective armour tock layer shall be checked by ultrasonic sounding survey. Measures such as removing the rock or breaking the rock into pieces shall be implemented in case of non-compliance	To minimize the IMT protrusion above the seabed	Contractor	Along IMT laying works areas	Construction phase	• EIAO-TM	N/A
Landscape & Visual (Construction Phase)							
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	^

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	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	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	All works sites	Construction phase	• EIAO-TM	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	All works sites	Construction phase	• EIAO-TM	N/A
Construction Dust Impact							
EP 2.25	All diesel fuelled construction plant used by the contractors within the works areas of the Project shall be powered by ultra-low sulphur diesel fuel.	Mitigating Aerial Emissions from Construction Plant	Contractor	All works areas	Construction phase	• EIAO-TM	^
Table 8.5	Barging facilities: (i) Pave all road surfaces within the barging facilities and provide watering once along with the haul road for every	To minimize dust impacts	Contractor	Barging facility at Shek O Casting Basin	Construction phase	APCO	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
	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.						N/A
	(iii) Vehicles leaving the barging facilities – Pass vehicles						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
	through the wheel washing facilities provided at site exits.						
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	APCO	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	To minimize dust impact	Contractor	Concrete Batching Plant	Construction phase	APCO	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
	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.						N/A N/A 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/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	To minimize dust impact	Contractor	Works areas at: • Hung Hom • Cross Harbour section up to Breakwater of CBTS Breakwater of CBTS to SOV • Shek O Casting Basin	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
	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/m^2 for Kowloon side and 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 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	To minimize dust impact	Contractor	Works areas at: • Hung Hom • Cross Harbour section up to Breakwater of CBTS • Breakwater of CBTS to SOV	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation	^ ^ ^ ^

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
	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						^ ^ ^ 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
	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.						N/A
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	^ ^ ^
/	Valid Non-road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^
Construction Noise (Airborne)							
S9.55	Implement the following good site practices:	Control construction	Contractor	Works areas	Construction	• 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
	• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	airborne noise			phase		^ ^ ^ ^ ^ ^
S9.56 & Table 9.16	The following quiet PME shall be used: • Crane lorry, mobile	To minimize construction noise impact	Contractor	Works areas at: • Hung Hom	Construction stage	• EIAO-TM	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
	• 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			• Cross Harbour section up to Breakwater of CBTS • Breakwater of CBTS to SOV			
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	To minimize construction noise impact	Contractor	Works areas at: • Cross Harbour section up to Breakwater of	Construction stage	• 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
	• 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			CBTS • Breakwater of CBTS to SOV			
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	Construction stage	• EIAO-TM	N/A
Water Quality (Construction Phase)							

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
S11.200 & 201	All excavation and tunnel construction works will be undertaken within the cofferdam and there will be no open dredging. Removal of fender piles of Hung Hom Bypass and minor marine piling works will be carried out prior to the construction of the elevated platform adjacent to the cofferdam at Hung Hom Landfall. Reinstatement of the fender piles will be carried out upon completion of tunnel section. Potential release of sediment due to abovementioned works could be minimized by installation of silt curtains surrounding the works area as appropriate. All excavation and tunnel construction works will be undertaken within the cofferdam. No open dredging shall be allowed.	To minimize release of sediment and contaminants during temporary reclamation.	Contractor	Marine works at Hung Hom Landfall	Construction phase	• EIAO-TM • WPCO	N/A N/A N/A
S11.202	All temporary reclamation works will adopt an approach where temporary seawalls will first be formed to enclose each phase of the temporary reclamation. Installation of diaphragm wall on temporary reclamation as well as any bulk filling will proceed behind the completed seawall. Any gaps that may need to be provided for marine access will be shielded by silt curtains to control sediment plume dispersion away from the	To minimize loss of fines and contaminants during temporary reclamations	Contractor	All temporary reclamation works areas	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
	site. Demolition of temporary reclamation including the demolition of the diaphragm wall and dredging to the existing seabed levels will also be carried out behind the temporary seawall. Temporary seawall will be removed after completion of all excavation and dredging works for demolition of the temporary reclamation.						N/A N/A
S11. 202	During construction of the temporary reclamation, temporary seawall will be partially constructed to protect the nearby seawater intakes from further dredging activities. For example, the seawalls along the southeast and northeast boundaries of PW1.1 shall be constructed first (above high water mark) so that the seawater intake at the inner water would be protected from the impacts from the remaining dredging activities along the northwest boundary.	To minimize water quality impact upon the cooling water intakes in CBTS from temporary reclamation works	Contractor	Temporary reclamation works areas in CBTS	Construction phase	• EIAO-TM • WPCO	N/A
S11. 202	Dredging will be carried out by closed grab dredger to minimize release of sediment and other contaminants during dredging.	To minimize loss of fines and contaminants during dredging in CBTS	Contractor	All temporary reclamation and dredging works areas within CBTS	Construction phase	• EIAO-TM • WPCO	N/A
S11. 202 & Table	Silt curtains will be deployed to fully enclose the closed grab	To minimize loss of fines	Contractor	All temporary	Construction	• EIAO-TM	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
11.25	dredger and shall be extended from water surface to the seabed, as far as practicable, during any dredging operation.	and contaminants during dredging in CBTS		reclamation and dredging works areas within CBTS	phase	• WPCO	
S11. 202 & Table 11.23	Silt screens will be installed at the cooling water intakes within the CBTS during the temporary reclamation period.	To minimize water quality impact upon the cooling water intakes in CBTS from marine construction activities	Contractor	Cooling water intakes inside CBTS	Construction phase	• EIAO-TM • WPCO	N/A
S11. 203 & Table 11.24	No more than two dredgers (of about 8 m^3 capacity each) shall be operated for dredging within the typhoon shelter at any time for the tunnel construction works. Moreover, the combined dredging rate for all concurrent dredging works (include dredging works for concurrent projects such as WDII and CWB) to be undertaken within the CBTS shall not exceed 4,500 m^3 per day (and 281 m^3 per hour with a maximum working period of 16 hours per day) throughout the entire construction period.	To minimize loss of fines and contaminants during dredging in CBTS	Contractor	All dredging works areas within CBTS	Construction phase	• EIAO-TM • WPCO	N/A
ERR 6.7.1	Closed grab dredger shall be used for any dredging operations, except at for removal of fill material at the gap at the IMT/ME4 interface, which will be carried out by air lift or	To minimize water quality impact in CBTS from marine construction	Contractor	All marine works areas within CBTS	Construction phase	• EIAO-TM • WPCO	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
	sand pump method	activities					
ERR 6.7.1	Fill materials removed by air lift or sand pumping method shall be stored inside impermeable compartment of the barge	To minimize water quality impact in CBTS from marine construction activities	Contractor	All marine works areas within CBTS	Construction phase	• EIAO-TM • WPCO	^
ERR 6.7.1	Bulk filling operation within CBTS shall be carried out by closed grab dredger and/or by feeding the fill material into a down pipe for placing of fill materials	To minimize water quality impact in CBTS from marine construction activities	Contractor	All marine works areas within CBTS	Construction phase	• EIAO-TM • WPCO	N/A
EP 2.18.1a	Pipe piles shall be used to form temporary seawalls for IMT construction within CBTS.	To minimize water quality impact in CBTS from IMT construction	Contractor	IMT construction works within CBTS	Construction phase	• EIAO-TM • WPCO	N/A
EP 2.18.1b	The temporary seawalls shall not be removed before completion of all dredging or filling works for IMT construction, except for a small section of pipe piles adjoining IMT11 to facilitate the necessary dredging works for placing the IMT11.	To minimize water quality impact in CBTS from IMT construction	Contractor	IMT construction works within CBTS	Construction phase	• EIAO-TM • WPCO	N/A
EP 2.18.1j	Water quality monitoring shall be conducted at cooling water intake 9 for Windsor House during IMT construction within CBTS. The monitoring frequency, parameters, equipment and methodology shall follow those for dredging and filling as	To minimize water quality impact in CBTS from IMT construction	Contractor	IMT construction works within CBTS	Construction phase	• EIAO-TM • WPCO	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
	stipulated in the EM&A Manual.						
S11. 204	Bulk filling along the IMT tunnel alignment for SCL shall be carried out after the bulk dredging works along the IMT alignment are completed. Hence, bulk dredging and bulk filling along the IMT alignment shall not be undertaken at the same time.	To minimize loss of fines and contaminants during IMT construction	Contractor	Marine works areas in Victoria Harbour	Construction phase	• EIAO-TM • WPCO	N/A
S11. 204	Dredging for IMT and SCL2 construction shall be carried out by closed grab dredger to minimize release of sediment and other contaminants during dredging.	To minimize loss of fines and contaminants during dredging in the Victoria Harbour	Contractor	Marine works areas in Victoria Harbour	Construction phase	• EIAO-TM • WPCO	N/A
S11.204	No more than one closed grab dredger shall be operated outside the CBTS in the open harbor for SCL construction.	To minimize loss of fines and contaminants from dredging in the Victoria Harbour	Contractor	Marine works areas in Victoria Harbour	Construction phase	• EIAO-TM • WPCO	N/A
S11. 204	Dredging for temporary reclamation outside the CBTS (at SCL2) shall not be carried out concurrently with the dredging / filling works for IMT construction.	To minimize loss of fines and contaminants from dredging / filling in the Victoria Harbour	Contractor	Marine works areas in Victoria Harbour	Construction phase	• EIAO-TM • WPCO	N/A
S11. 205	Floating type or frame type silt curtains shall be deployed around the dredging operations within 200m from the Hung Hom landfall.	To minimize loss of fines and contaminants from dredging in the Victoria	Contractor	Construction of northern IMT segment in the	Construction phase	• EIAO-TM • WPCO	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
		Harbour		near shore region within 200 m from the Hung Hom landfall			
EP 2.19e	Frame type silt curtains shall be deployed around the dredging operations for the remaining IMT segments outside 200 m from the Hung Hom landfall.	To minimize water quality impacts in Victoria Harbour from IMT construction	Contractor	Construction of northern IMT segment in Victoria Harbour outside 200m from the Hung Hom landfall	Construction phase	• EIAO-TM • WPCO	N/A
S11. 205 & Table 11.23	Silt screens shall be installed at the cooling water intakes for East Rail Extension, Metropolis and Hong Kong Coliseum (namely 21, 34 and 35 respectively) which are in close vicinity of the northern IMT segment.	To protect the beneficial use of water intakes along the Kowloon waterfront from dredging / filling activities	Contractor	Construction of northern IMT segment in the near shore region within 200 m from the Hung Hom landfall	Construction phase	• EIAO-TM • WPCO	N/A
S11.207	If underwater blasting is required for SCL construction, the following precautionary / mitigation measures shall be adopted:	To protect the water quality in Victoria Harbour from any possible underwater	Contractor	Marine works areas in Victoria Harbour	Construction phase	• EIAO-TM • WPCO	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
	• Charge shall be placed in cores within the rock in order that there will be no blast directly into the water. • In terms of the construction sequence, sediment dredging (within the planned IMT works area) shall be conducted prior to any underwater blasting.	blasting					
Table 11.23	Silt screens shall be installed at the WSD Flushing Water Intakes at Kowloon Station, Tai Wan, Quarry Bay and Wan Chai (namely Intakes 14, WSD9, WSD17 and A respectively) during any dredging / filling works outside the CBTS for temporary reclamation at SCL2 or for IMT construction	To protect the beneficial use of flushing water intakes in Victoria Harbour from dredging / filling activities	Contractor	Flushing water intake points in Victoria Harbour	Construction phase	• EIAO-TM • WPCO	N/A
S11.210 - S11.211 & Table 11.24 ERR S6.7.1	If the marine works for SCL are to be carried out concurrently with other dredging / filling activities in the Victoria Harbour, the production rates of any dredging / filling work to be undertaken outside the CBTS for SCL construction in the open harbour (including temporary reclamation at SCL2 and IMT construction, except for the area within 60m from the southern boundary of the temporary reclamation at Hung Hom Landfall) shall not exceed 2,500 m^3 per day at any time throughout the entire construction period. The hourly production rate for dredging or bulk filling within the open Victoria Harbour (outside the breakwater of CBTS, except for	To minimize loss of fines and contaminants from dredging / filling in the Victoria Harbour	Contractor	Marine works areas in Victoria Harbour	Construction phase	• EIAO-TM • WPCO	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
	the area within 60m from the southern boundary of the temporary reclamation at Hung Hom Landfall) shall not exceed 156 m^3 per hour (if there are other concurrent marine works in Victoria Harbour) and the maximum working hour for the dredging / bulk filling works shall be 16 hours per day. Silt screen shall be deployed at the Kowloon Station Intake to minimize the water quality impact. If the marine works for SCL are to be carried out with no other concurrent dredging / filling activities in the Victoria Harbour, the production rates of any dredging / filling work to be undertaken outside the CBTS for SCL construction in the open harbour (including temporary reclamation at SCL2 and IMT construction except for the area within 60m from the southern boundary of the temporary reclamation at Hung Hom Landfall) shall not exceed 4,500 m^3 per day at any time throughout the entire construction period. The hourly production rate for dredging or bulk filling within the open Victoria Harbour (outside the breakwater of CBTS except for the area within 60m from the southern boundary of the temporary reclamation at Hung Hom Landfall) shall not exceed 281 m^3 per hour (if there is no other concurrent marine works in Victoria Harbour) and 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
	maximum working hour for the dredging / bulk filling works shall be 16 hours per day. Silt screen shall be deployed at the Kowloon Station Intake to minimize the water quality impact. Only one chiseling machine or hydraulic breaker shall be adopted for rock breaking. For any dredging / filling work for IMT construction within 60m from the southern boundary of the temporary reclamation at Hung Hom Landfall: • The daily production rate shall not exceed 1,500m^3 per day • the hourly production rate shall not exceed 93m^3						^ ^
S11.215	The following good site practices shall be undertaken during filling and dredging: • mechanical grabs, if used, shall be designed and maintained to avoid spillage and sealed tightly while being lifted; • 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;	To minimize loss of fines and contaminants from dredging / filling	Contractor	Marine works areas	Construction phase	• EIAO-TM • WPCO	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
	• all hopper barges and dredgers 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 or dumping grounds; • loading of barges and hoppers shall be controlled to prevent splashing of dredged 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; • before commencement of the temporary reclamation works, the holder of the Environmental Permit shall submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.						N/A N/A N/A N/A
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	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	・ 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
	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.						^ ^
S11.217	The following mitigation measures are proposed to minimize the potential water quality impacts from any marine piling works: • The potential release of sediment or excavated materials could be controlled through the installation of silt curtains surrounding the working area as necessary. • Spoil shall be collected by sealed hopper barges for proper disposal.	To minimize release of sediment and pollutants from marine piling activities	Contractor	Marine piling works areas	Construction phase	・EIAO-TM ・WPCO	N/A N/A
S11.218	Silt screens are recommended to be deployed at the seawater intakes during the construction works period. Regular maintenance of the silt screens and refuse collection shall be performed at the silt screens at regular intervals on a	To avoid the pollutant and refuse entrapment problems at the silt screens to be installed at the water	Contractor	Proposed silt screens at water intakes	Construction phase	・EIAO-TM ・WPCO	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
	daily basis. The Contractor shall be responsible for keeping the water behind the silt screen free from floating rubbish and debris during the impact monitoring period.	intakes.					
S11.219	It is recommended that collection and removal of floating refuse shall be performed within the marine construction areas at regular intervals on a daily basis. The Contractor shall be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish during the dredging works.	To minimize water quality impacts from illegal dumping and littering from marine vessels and runoff from the coastal area	Contractor	Marine works area	Construction phase	• EIAO-TM • WPCO • WDO	^
S11.220 & 221	Any wastewater including washdown waters and any concrete curing waters generated from the casting basin shall be drained to the wastewater treatment unit. Appropriate treatment process such as sedimentation and oil removal shall be employed for the wastewater treatment units so that any discharge from the casting basin will comply with standards stipulated in the TM-DSS. Recovered oil from any oil interceptor shall be properly contained, labeled and stored on site prior to collection by licensed collectors for disposal. During the flooding of the basin with seawater (accomplished by pumps) no escape of water could occur as the cofferdam will still be in place. Prior to opening a channel through the	To minimize water quality impacts from the washdown, flooding and draining operation at Shek O Casting Basin	Contractor	Shek O Casting Basin	Construction phase	• EIAO-TM • WPCO	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
	cofferdam, water inside the basin will be skimmed of floating debris. A period of settling of 24 hours before opening the basin to the sea would allow much of the suspended material to settle out. The channel through the cofferdam will only be opened with the approval of the Site Engineer to the effect that all reasonable steps had been taken to remove contaminants.						
S11.222 to 11.245	The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" shall be followed where practicable.	To minimize water quality impacts from construction site runoff and general construction activities	Contractor	Works areas	Construction phase	• EIAO-TM • WPCO • TMDSS, • WDO, • ProPECC PN 1/94	^
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	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
	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.	To minimize impact from discharge of uncontaminated groundwater	Contractor	Works areas	Construction phase	• EIAO-TM • WPCO • TM-DSS • WDO	^
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 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	To minimize water quality impacts generated from the barging points.	Contractor	Barging Points	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
	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						
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 minimize 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	• 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.	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
	• 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.						^ ^
ERR S 8.5.1	Floating type silt curtains would be installed around the area of construction and removal of earth bund during the respective works.	minimize water quality impact at Shek O Casting Basin	Contractor	Shek O Casting Basin	Construction phase	• WPCO	N/A
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	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	^ ^ ^ ^ ^

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
	drainage systems, sumps and oil interceptors; and - Separation of chemical wastes for special handling and appropriate treatment.						^
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	achieve waste reduction	Contractor	All works sites	Construction phase	• Waste Disposal Ordinance (Cap. 354) • Land (Miscellaneous Provisions) Ordinance (Cap. 28)	^ ^ ^ ^ ^

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
	procedures, including waste reduction, reuse and recycle.						
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 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.	achieve waste reduction	Contractor	All works sites	Construction phase	• ETWB TCW No. 19/2005	^
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	^

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
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	minimize potential adverse environmental impacts arising from waste storage	Contractor	All works sites	Construction phase	-	^ ^ ^ ^
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	minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All works sites	Construction phase	-	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
	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						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	minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All works sites	Construction phase	• DEVB TCW No. 6/2010	^
S12.83 – 12.86	***Sorting of C&D Materials*** - Sorting to be performed to recover the inert materials,	minimize potential adverse environmental impacts	Contractor	All works sites	Construction phase	• DEVB TCW No. 6/2010	^

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
	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	during the handling, transportation and disposal of C&D materials				• ETWB TCW No. 33/2002 • ETWB TCW No. 19/2005	^ ^ ^
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	To ensure the sediment to be disposed of in an authorized and least impacted way	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	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
	dumping permit under the Dumping at Sea Ordinance						
S12.89	***Sediments*** 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	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	N/A
S12.91-12.94	***Sediments*** - 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	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	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
	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.						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
	Transport barges or vessels shall be equipped with automatic selfmonitoring 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.						N/A
S12.95	***Sediments*** 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	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance	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
	rupture of the containers and sediment loss due to impact of thecontainer on the seabed have been addressed.						
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	register with EPD as a Chemical waste producer and store chemical waste in appropriate containers	Contractor	All works sites	Construction phase	• Code of 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	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
	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.						^ ^ ^
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.	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	To monitor the generation, reuse and disposal of chemical waste	Contractor	All works sites	Construction phase	• Waste Disposal (Chemical Waste) (General) Regulation	^

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
	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 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.	properly store and separate from other C&D materials for subsequent collection and disposal	Contractor	All works sites	Construction phase	-	^
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	-	^
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	raise workers' awareness on recycling issue	Contractor	All works sites	Construction phase	-	^

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
	use of the bins shall also be provided in the sites as reminders						

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.

Observation/reminder was made during site audit but not yet improved/rectified by the contractor.

N/A Not Applicable

APPENDIX J
WASTE GENERATION IN THE REPORTING MONTH

Monthly Summary Waste Flow Table for _2021_ (year)

Contract No: SCL1121
Date Reported: Dec 2021

Month		Actual Quantities of Inert C&D Materials Generated Monthly									Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rocks and Large Broken Concrete (See Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill from 1111	Imported Fill from 1112	Imported Fill from 1114	Imported Fill from 1123	Imported Fill from 1128	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg)	(in '000tonne)
Jan	0.1902	0	0	0	0.1902	0	0	0	0	0	2.36	0.667	0	0	0.0352
Feb	0.2086	0	0	0	0.2086	0	0	0	0	0	2.11	1.684	0	0	0.0262
Mar	0.0312	0	0	0	0.0312	0	0	0	0	0	1.30	9.379	0	0	0.0268
Apr	0.0835	0	0	0	0.0835	0	0	0	0	0	4.84	1.183	0	0	0.0205
May	0.1145	0	0	0	0.1145	0	0	0	0	0	24.27	1.028	0	0	0.0256
June	0.0373	0	0	0	0.0373	0	0	0	0	0	0	1.049	0	0	0.0136
July	0.0487	0	0	0	0.0487	0	0	0	0	0	4.26	0.958	0	0	0.0251
Aug	0.2484	0	0	0	0.2484	0	0	0	0	0	6.36	6.552	0	0	0.0348
Sept	0.0413	0	0	0	0.0413	0	0	0	0	0	1.00	3.641	0	0	0.0263
Oct	0.0177	0	0	0	0.0177	0	0	0	0	0	3.31	1.287	0	0	0.0098
Nov	0.1022	0	0	0	0.1022	0	0	0	0	0	11.41	1.913	0.8	0	0.0166
Dec	**0.0000**	**0**	**0**	**0**	**0.0000**	**0**	**0**	**0**	**0**	**0**	**13.57**	**2.480**	**0**	**0**	**0.0051**
Total	**1.1236**	**0**	**0**	**0**	**1.1236**	**0**	**0**	**0**	**0**	**0**	**74.79**	**31.821**	**0.8**	**0**	**0.2656**

Notes:

(1) The performance targets are given below:

- All excavated materials to be sorted for recovering the inert portion of C&D materials, e.g. hard rocks, soil and broken concrete, for reuse on the Site or disposal to designated outlets;
- All metallic waste to be recovered for collection by recycling contractors;
- All cardboard and paper packaging (for plant, equipment and materials) to be recovered, properly stockpiled in dry and covered condition to prevent cross contamination;
- All chemical wastes to be collected and properly disposed of by specialist contractors; and
- All demolition debris to be stored to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware as well as other fitting / materials that have established recycling outlets.

(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(3) Broken concrete for recycling into aggregates.

(4) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(5) All the C&D material come from SCL1111, 1112, 1114, 1121, 1123, 1128 will be reussed in other project

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

Appendix K - 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
ESS41852/2016	4 May 2016/ CMP Vd at East Sha Chau	Contrary to: Sections 8 (1) (a) and 25 (1) (b) Dumping at Sea Ordinance	One (1) successful prosecution was recorded in August.	0	1

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

Reporting Month	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Number of Successful Prosecutions in Reporting Month
March 2015	0	0	0
April 2015	0	0	0
May 2015	0	0	0
June 2015	0	0	0
July 2015	0	0	0
August 2015	1	0	0
September 2015	1	0	0
October 2015	1	0	0
November 2015	1	0	0
December 2015	0	0	0
January 2016	0	0	0
February 2016	0	0	0
March 2016	1	0	0
April 2016	0	0	0
May 2016	1	0	0
June 2016	1	0	0
July 2016	1	0	0
August 2016	2	0	0
September 2016	0	0	0
October 2016	0	0	0
November 2016	1	1	0
December 2016	0	0	0
January 2017	0	0	0
February 2017	0	0	0
March 2017	0	0	0
April 2017	1	0	0
May 2017	0	0	0
June 2017	0	0	0
July 2017	0	0	0
August 2017	0	0	1
September 2017	0	0	0
October 2017	1	0	0
November 2017	0	0	0
December 2017	0	0	0
January 2018	0	0	0
February 2018	0	0	0
March 2018	1	0	0
April 2018	0	0	0
May 2018	0	0	0
June 2018	0	0	0
July 2018	0	0	0
August 2018	0	0	0
September 2018	0	0	0
October 2018	0	0	0
November 2018	0	0	0
December 2018	0	0	0
January 2019	0	0	0
February 2019	0	0	0
March 2019	1	0	0
April 2019	0	0	0
May 2019	0	0	0
June 2019	0	0	0
July 2019	1	0	0
August 2019	0	0	0
September 2019	0	0	0
October 2019	0	0	0
November 2019	0	0	0
December 2019	0	0	0
January 2020	0	0	0
February 2020	0	0	0
March 2020	0	0	0
April 2020	0	0	0
May 2020	1	0	0
June 2020	0	0	0
August 2020	0	0	0
September 2020	0	0	0
October 2020	0	0	0
November 2020	0	0	0
December 2020	0	0	0
January 2021	0	0	0
February 2021	0	0	0
March 2021	0	0	0
April 2021	0	0	0
May 2021	0	0	0
June 2021	0	0	0
July 2021	0	0	0
August 2021	1	0	0
September 2021	0	0	0
October 2021	0	0	0
November 2021	0	0	0
December 2021	0	0	0
Total	**18**	**1**	**1**

APPENDIX L
WIND DATA

APPENDIX L – Wind Data

EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG, December 2021

Date August	Number of hours of Reduced Visibility (hours)	Total Bright Sunshine (hours)	Daily Global Solar Radiation (MJ/m^2)	Total Evaporation (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1	0	9.7	18.12	4.7	010	41.0
2	0	9.6	17.81	4.1	010	25.2
3	0	9.7	18.32	4.3	360	26.8
4	0	9.6	17.57	3.1	070	29.8
5	0	9.5	17.04	3.6	060	27.2
6	0	9.6	17.46	3.1	010	21.4
7	0	6.2	12.44	3.2	070	32.3
8	0	9.6	17.18	4.2	080	42.5
9	0	9.6	16.29	2.9	070	25.5
10	0	9.5	17.06	3.3	070	29.8
11	0	9.6	16.91	2.8	070	27.7
12	0	9.5	16.23	3.8	060	19.4
13	8	6.6	12.65	2.8	010	23.5
14	7	7.0	13.78	2.9	070	21.8
15	1	2.7	8.38	2.3	070	26.3
16	0	4.1	11.64	2.8	050	23.8
17	0	0.9	8.21	5.5	010	33.0
18	0	6.1	12.25	4.9	010	32.2
19	0	1.2	9.16	3.2	070	36.0
20	0	-	2.35	1.0	050	45.5
21	0	0.1	3.26	1.1	360	35.0
22	0	2.0	8.72	2.1	360	15.8
23	1	2.9	9.99	2.1	080	25.4
24	14	1.0	6.69	1.7	040	9.5
25	3	3.7	10.66	3.2	070	32.3
26	7	0.5	3.34	2.6	010	35.0
27	0	1.4	9.00	1.4	010	31.3
28	11	0.4	7.67	1.5	030	21.8
29	8	6.9	13.56	2.8	360	12.6
30	5	8.7	14.67	2.5	080	19.7
31	1	4.2	9.34	2.3	080	30.1
Mean/Total	66	172.1	12.19	91.8	070	27.7
Normal	193.6	172.2	10.89	83.7	070	26.0
Station	Hong Kong International Airport	King's Park			Waglan Island	

Appendix B

Monthly EM&A Report for December 2021 – SCL Works Contract 1123 Exhibition Station and Western Approach Tunnel

AECOM

Leighton – China State J.V.

Shatin to Central Link -
Hung Hom to Admiralty Section

Works Contract 1123 -
Exhibition Station and Western Approach Tunnel

Monthly EM&A Report for
December 2021

[January 2022]

	Name	Signature
Prepared & Checked:	Barry Ho	
Reviewed, Approved & Certified:	Y W Fung (Contractor's Environmental Team Leader)	

Version: 0	Date: 7 January 2022

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EXECUTIVE SUMMARY

Shatin to Central Link Contract 1123 – Exhibition Station and Western Approach Tunnel (hereafter called "the Project") covers part of the construction of the Shatin to Central Link (SCL).

The Project comprises the construction of an underground station (Exhibition Station) and 300 m of cut and cover tunnel (Western Approach Tunnel) along Convention Avenue.

The EM&A programme commenced on 1 June 2015.The impact EM&A for the Project includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 31 December 2021. As informed by the Contractor, major activities in the reporting period were:

Location	Site Activities
Overall	• BD Inspection completed. • RB inspection on 30 Dec 2021.
Exhibition Station (Zone 1 - PTI Area)	• Station ABWF • Entrance B –inside ABWF
Harbour Road Sport Cenrtre (Zone 2)	• Toilet -ABWF and BS Installation • Station ABWF • Entrance A-Inside ABWF
Exhibition Station (Zone 3 - Swimming Pool Area) (including W7a, W7b, W4, W5 and partial W6)	• Waterproofing and screeding above roof slab • Station ABWF
Exhibition Station (Zone 4 - Tunnel at Tonnochy Road)	• Station ABWF • WCSG reprovision works-last Bored Pile
Fleming Road Junction Area E	• Backfill
Western Vent Shaft and WAT Area C	• WVS ABWF • Close C1 Opening
WAT Area B	• N/A
WAT Area A	• Backfilling
Area W22	• Material Storage

Breaches of Action and Limit Levels for Air Quality

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

Breaches of Action and Limit Levels for Noise

Regular Noise Monitoring

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

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

Complaint, Notification of Summons and Successful Prosecution

No complaint, 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 next three months included:

Location	Site Activities
Exhibition Station (Zone 1 - PTI Area)	• Station defect fixing • Handover to MTR Operation team
Harbour Road Sport Cenrtre (Zone 2)	• Station defect fixing • Toilet -ABWF/BS installation • External ABWF- stone cladding installation • Handover to MTR Operation team
Exhibition Station (Zone 3 - Swimming Pool Area) (including W7a, W7b, W4, W5 and partial W6)	• Station defect fixing • Handover to MTR Operation team
Exhibition Station (Zone 4 - Tunnel at Tonnochy Road)	• Defect fixing • Construction of Grandstand - RC structure
Western Vent Shaft and WAT Area C	• Close C1 opening • WVS ABWF-Defect Fixing • Handover to MTR Operation team
WAT Area B	• Reinstatement of MOE
WAT Area A	• Reinstatement of MOE
Area W22	• Material Storage

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

1 INTRODUCTION

Leighton – China State Joint Venture (JV) was commissioned by MTR as the Civil Contractor for Works Contract 1123. 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 seventy-eighth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period between 1 and 31 December 2021.

1.2 Report Structure

1.2.1 This monthly EM&A Report is organized 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) was subsequently applied and the latest EP (EP No. EP-436/2012/F) was issued by the Director of Environmental Protection (DEP) on 23 January 2019.

2.1.3 The construction of the SCL is divided into different civil construction works contracts and Works Contract 1123 – Exhibition Station and Western Approach involves the construction of an underground station (Exhibition Station) and 300m of cut and cover tunnel (Western Approach Tunnel) along Convention Avenue.

2.1.4 The site layout plan of the Project is shown in **Figure 1.1** and **Figure 1.2**.

2.2 Site Description

2.2.1 The major construction activities under Works Contract 1123 include:

(a) Site preparation;
(b) Demolition works;
(c) Utilities works;
(d) Box Culvert works;
(e) Diaphragm wall construction and piling works;
(f) Pile Removal works;
(g) Excavation & Lateral Support (ELS) works; and
(h) Reprovisioning/ Reinstatement works.

2.3 Construction Programme and Activities

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

Location	Site Activities
Overall	• BD Inspection completed. • RB inspection on 30 Dec 2021.
Exhibition Station (Zone 1 - PTI Area)	• Station ABWF • Entrance B –inside ABWF
Harbour Road Sport Cenrtre (Zone 2)	• Toilet -ABWF and BS Installation • Station ABWF • Entrance A-Inside ABWF
Exhibition Station (Zone 3 - Swimming Pool Area) (including W7a, W7b, W4, W5 and partial W6)	• Waterproofing and screeding above roof slab • Station ABWF
Exhibition Station (Zone 4 - Tunnel at Tonnochy Road)	• Station ABWF • WCSG reprovision works-last Bored Pile
Fleming Road Junction Area E	• Backfill
Western Vent Shaft and WAT Area C	• WVS ABWF • Close C1 Opening
WAT Area B	• N/A
WAT Area A	• Backfilling
Area W22	• Material Storage

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)	Senior Construction Manager – SCL Civil	Mr. Mike Bezzano	3959 2128	3959 2200
		SCL Project Environmental Team Leader	Ms. Lisa Poon	3127 6295	3127 6422
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Ms. Claudine Lee	2859 5409	2540 1580
JV	Contractor	Project Director	Mr. Brian Shepstone	3973 0838	31051126
		Environmental Engineer	Mr. Andy Leung	3973 1498	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y W Fung	3922 9366	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/F	23 Jan 2019	-	Valid	
Construction Noise Permit				
GW-RS0913-21	18 Dec 2021	30 Jan 2022	Valid	TTMS for Changeover of Hung Hing Road Stage 3
GW-RS0924-21	11 Dec 2021	26 Dec 2021	Valid	TTMS for Changeover of Fleming Road, Expo Drive East, Convention Ave Stage 3
GW-RS0737-21	1 Oct 2021	28 Mar 2022	Valid	WAT Area B surface crane relocation + Battery drill
GW-RS0365-21	19 Jun 2021	12 Dec 2021	Valid until 12 Dec 2021	TTMS for Changeover at Junction of Convention Avenue of Tonochy Road
GW-RS0496-21	29 Jun 2021	28 Dec 2021	Valid until 28 Dec 2021	EXH (General) 24-hr Temporary Footbridge Remedial works (Welding set, hand-drill/grinder) + ABWF works (Ground & Underground)
Wastewater Discharge License				
WT00031573-2018	23 Jul 2018	31 Jul 2023	Valid	For W15d, W13 & W6
WT00031235-2018	23 Jul 2018	31 Jul 2023	Valid	For W25
WT00037120-2020	18 Jan 2021	30 Sep 2025	Valid	For W1a, 1b
WT00038058-2021	13 Jul 2021	30 Apr 2025	Valid	For site portion W15a, W16, W17 &18a
WT00038215-2021	13 Jul 2021	30 Jun 2025	Valid	For site portion W9a, W9b, W10 W12T
Chemical Waste Producer Registration				
5213-135-L2881-01	02 Apr 2015	End of Contract	Valid	For whole site at Wan Chai Area
Marine Dumping Permit				
-	-	-	-	-
Billing Account for Construction Waste Disposal				
7021736	16 Feb 2015	End of Contract	Valid	For Disposal of C&D Waste
Notification Under Air Pollution Control (Construction Dust) Regulation				
385128	1 Mar 2015	End of Contract	Valid	For whole site at Wan Chai Area

3 ENVIRONMENTAL MONITORING REQUIREMENT

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 stations. 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:809 & 10273))
Calibration Kit	TISCH Environmental Orifice (Model TE-5025A (Orifice I.D.: 843))

Monitoring Locations

3.1.3 The monitoring station for construction dust monitoring pertinent to the Project has been identified based on the approved EM&A Manual for SCL (HUH-ADM) of the Project. The location of the construction dust monitoring stations are 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
AM2[1]	EXA6	Wanchai Sports Ground
AM3[2][3]	EXA5	Existing Harbour Road Sports Centre
AM4[4]	EXA4	Pedestrian Plaza

Note:
[1] The impact monitoring at AM2 was handed over from Contract SCL1128 on 28 October 2015.
[2] The impact monitoring at AM3 was handed over from Contract SCL1126 in June 2015.
[3] The impact monitoring at AM3 terminated on 6 May 2017 as demolition of Existing Harbour Road Sports Centre commenced on 8 May 2017.
[4] The impact monitoring at AM4 was handed over from Contract SCL1128 in April 2021.

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 December 2021 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 Equipment

3.2.2 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.4**.

Table 3.4 Noise Monitoring Equipment for Regular Noise Monitoring

Equipment	Brand and Model
Integrated Sound Level Meter	Model No. B&K 2270 (S/N: 2644597) Model No. B&K 2250-L (S/N: 2681366)
Acoustic Calibrator	Model No. MVI CAL21 (S/N: 34113610(2011)) Model No. B&K 4231 (S/N:3006428)

Monitoring Locations

3.2.3 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 3.5** and shown in **Figure 3.1**.

Table 3.5 Noise Monitoring Station during Construction Phase

Identification No.	Noise Sensitive Receiver (NSR) ID in EIA Report	Noise Monitoring Station	Alternative Noise Monitoring Location
NM2[1]	EX1	Causeway Centre, Block A	Harbour Centre[2]

Note:
[1] The impact monitoring at NM2 was handed over from Works Contract SCL1126 in June 2015.
[2] The Access to the designated monitoring location NM2 (i.e. Block A, Causeway Centre) was denied before the commencement of impact monitoring under Works Contract 1126. An alternative monitoring location at Harbour Centre was approved by the ER, agreed by IEC. The alternative monitoring location was approved by EPD on 18 December 2017.

Monitoring Methodology

3.2.4 Monitoring Procedure

(a) Façade measurements were made at NM2.

(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.

3.2.5 Maintenance and Calibration

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

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

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

Monitoring Schedule for the Reporting Month

3.2.6 The schedule for environmental monitoring in December 2021 is provided in **Appendix F**.

3.3 Continuous noise monitoring

3.3.1 According to EP conditions under EP-436/2012/F (Condition 2.7 and 2.8), the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP) were submitted to EPD in June 2016, it is predicted that no residual air-borne construction noise impact exceeding the relevant noise criteria is anticipated. No continuous noise monitoring is required under this Contract.

3.4 Landscape and Visual

3.4.1 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/F)	Monthly EM&A Report for November 2021	14 December 2021

5 MONITORING RESULTS

5.1 Construction Dust Monitoring

5.1.1 The monitoring station at AM2 was handed over from Contract SCL1128 on 28 October 2015.

5.1.2 The monitoring station at AM4 was handed over from Contract SCL1128 in April 2021.

5.1.3 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 (μg/m³)	Range (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
AM2[1]	42.8	21.2 – 61.9	160	260
AM4[2]	67.7	37.6 – 86.3	198	260

Note:
[1] The impact monitoring at AM2 was handed over from Contract SCL1128 on 28 October 2015
[2] The impact monitoring at AM4 was handed over from Contract SCL1128 in April 2021.

5.1.4 No Action and Limit Level exceedance were recorded for 24-hour TSP monitoring at the monitoring locations in the reporting month.

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

5.1.6 Major dust sources during the monitoring included construction dust, nearby traffic emission and other nearby construction sites.

5.2 Regular Construction Noise Monitoring

5.2.1 The monitoring results for noise are summarized in **Table 5.2** and the monitoring data is provided in **Appendix H**.

Table 5.2 Summary of Construction Noise Monitoring Results in the Reporting Period

ID	Range, dB(A), $L_{eq\ (30\ mins)}$	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
NM2(*)	<Baseline	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.

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

5.2.3 No Limit Level exceedance of noise was recorded at the monitoring station in the reporting month.

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

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

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, 967 m^3 of inert C&D material was generated and disposed of as public fill in the reporting month. No inert C&D materials were reused in other projects or in the Contract in the reporting month. No fill material was imported in the reporting month. 174 m^3 general refuse was generated in the reporting month. 4,325 kg metal, 400 kg paper/cardboard packaging material and no plastic were collected by recycle contractor in the reporting month. No chemical waste was collected by licensed contractor in the reporting month. No Type 1 and Type 2 of Marine sediment were disposed of at Confined Marine Disposal Facility to the East of Sha Chau. The waste flow table is annexed in **Appendix K.**

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 Practice 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 10 and 24 December 2021. 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 2, 9, 17, 23, and 29 December 2021. Joint inspections with the IEC, ER, the Contractor and the ET were conducted on 17 December 2021. No non-compliance was recorded during the site inspection. 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	2 Dec 2021	• Unpacked cement was observed in Zone 4 and WAT. The Contractor should provide proper cover to prevent air pollution.	This item was rectified on 7 Dec 2021.
	17 Dec 2021	Reminder • The Contractor was reminded to cover the stockpile at Zone 1 to prevent dust emission.	This item was rectified on 29 Dec 2021.
Noise	Nil	Nil	Nil
Water Quality	9 Dec 2021	• Stagnant water was observed at Zone 2 and Zone 1. The Contractor should remove the stagnant water and the source of water leakage.	This item was rectified on 14 Dec 2021.
	9 Dec 2021	Reminder • The AuqaSed at Zone 3 was relocated on 2 December 2021. The Contractor was reminded to reconnect the power and make sure it is ready	This item was rectified on 31 Dec 2021.
	23 Dec 2021 29 Dec 2021	• The Contractor should reconnect the power and discharge point of AquaSed at Zone 3 and ensure it is ready to operate.	This item was rectified on 31 Dec 2021.
Waste/ Chemical Management	19 Nov 2021	Follow-up item of November 2021 • Precautionary measure should be provided for the chemical containers of AquaSed at Zone 3.	As reported by the Contractor on 31/12/2021, the order for drip tray was requested to the procurement team. Follow up action and inspection are required.
	29 Dec 2021	Reminder • Accumulated refuse was observed. The Contractor was reminded to remove the refuse regularly	This item was rectified on 6 Jan 2022.
Landscape & Visual	Nil	Nil	Nil
Permits/ Licenses	Nil	Nil	Nil

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

7 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 locations in the reporting month.

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

7.1.3 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 J**.

7.4 Summary of Environmental Summon and Successful Prosecutions

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

8 FUTURE KEY ISSUES

8.1 Construction Programme for the Next Three Month

8.1.1 The major construction works between January to March 2022 will be:

Location	Site Activities
Exhibition Station (Zone 1 - PTI Area)	• Station defect fixing • Handover to MTR Operation team
Harbour Road Sport Cenrtre (Zone 2)	• Station defect fixing • Toilet -ABWF/BS installation • External ABWF- stone cladding installation • Handover to MTR Operation team
Exhibition Station (Zone 3 - Swimming Pool Area) (including W7a, W7b, W4, W5 and partial W6)	• Station defect fixing • Handover to MTR Operation team
Exhibition Station (Zone 4 - Tunnel at Tonnochy Road)	• Defect fixing • Construction of Grandstand - RC structure
Western Vent Shaft and WAT Area C	• Close C1 opening • WVS ABWF-Defect Fixing • Handover to MTR Operation team
WAT Area B	• Reinstatement of MOE
WAT Area A	• Reinstatement of MOE
Area W22	• Material Storage

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 between January to March 2022 are provided in **Appendix F**.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

9.1.1 24-hour TSP and noise monitoring were carried out in the reporting month.

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

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

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

9.1.5 5 nos. of environmental site inspections were carried out in December 2021. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

9.1.6 No environmental complaint was received in the reporting month.

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

9.1.8 Referring to the Contractor's information, no 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

- The Contractor was reminded to cover the unpacked cement to avoid air pollution.
- The Contractor was reminded to cover or frequent watering for the open stockpiles to avoid dust emission.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- The Contractor was reminded to provide precautionary measures at the site boundary, e.g., bunding, to prevent surface runoff seeping.
- The Contractor was reminded to maintain the function of the wastewater treatment facility properly.

Chemical and Waste Management

- The Contractor was reminded to provide proper precautionary measure for the chemical containers to prevent chemical spillage.
- The Contractor was reminded to remove refuse regularly.

Landscape & Visual Impact

- No specific observation was identified in the reporting month.

Permits/licenses

- No specific observation was identified in the reporting month.

FIGURES

LEGEND:

PROPOSED SCL ALIGMENT

SCL SCHEME BOUMDARY

1123.W29 WORKS AREA

維多利亞港

VICTORIA HARBOUR

1123.W29 1123.W28 1123.W25 1123.W26 1123.W27 1123.W21R 1123.W23 1123.W21 1123.W22 1123.H1 1123.W20 1123.W19R 1123.W18a 1123.W19T 1123.W16 1123.W17 1123.W17T 1123.W14R 1123.W19 1123.W18b 1123.W14T 1123.W13 1123.W15d 1123.W15c 1123.W15b 1123.W15T 1123.W15a 1123.W15e 1123.W15f 1123.W15g 1123.W12d 1123.W6T 1123.W8T 1123.W13T 1123.W15T 1123.W12a 1123.W12T 1123.W8 1123.W6 1123.W7b 1123.W7a 1123.W3 1123.W5 1123.W4 1123.W11 1123.W12b 1123.W12c 1123.W9a 1123.W9b 1123.W10 1123.W1a 1123.W2 1123.W1b

EXPO DRIVE CENTRAL · CONVENTION AVENUE · HARBOUR ROAD · GLOUCESTER ROAD · JAFFE ROAD · LUNG WUI ROAD · FENWICK PIER STREET · HARCOURT ROAD · LUNG KING STREET · HUNG HING ROAD · FLEMING ROAD · TONNOCHY ROAD

Hong Kong Convention and Exhibition Centre · Grand Hyatt · Renaissance Harbour View Hotel · Harbour Road Sports Centre · Wan Chai Sports Ground · Wan Chai Waterfront Promenade · Bus Terminus · Ferry Pier · Central Pier · Convention Plaza · Harbour Road Garden · Sun Hung Kai Centre (Car Park under) · Wan Chai Police Station · Immigration Tower · Revenue Tower · Telecom House · Bank of East Asia Harbour View Centre · Academy Block · Theatre Block · Cotton House · Harcourt House · Island Shangri-La Hotel · Lee Theatre Plaza · Pico Tower · Lee Garden One · Lee Garden Two · Lee Garden Three · Lee Garden Four · Lee Garden Five · Lee Garden Six · Lee Garden Seven · Lee Garden Eight · Hysan Place · Sino Plaza · Causeway Centre · Hennessy Centre · Great Eagle Centre · Harbour Centre · China Resources Building · Central Plaza · Bank of China Tower · Cheung Kong Center · Two International Finance Centre · One International Finance Centre · Two Exchange Square · Three Exchange Square · Four 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Tower 994 · Tower 995 · Tower 996 · Tower 997 · Tower 998 · Tower 999 · Tower 1000

REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	C.F.WOO
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	19/MAR/2015

MTR

SHATIN TO CENTRAL LINK – CONTRACT 1123

ORIGINATOR

LEIGHTON 中建 Leighton - China State Joint Venture

CADD REF. 1123_LCS_SK_0382A.dgn

TITLE

CONTRACT 1123

EXHIBITION STATION AND WESTERN APPROACH TUNNEL

WORKS AREA

SCALE 1 : 3000 @A3

DRAWING NO. Figure 1.1

REV. A

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27/5/2015 17:45:38
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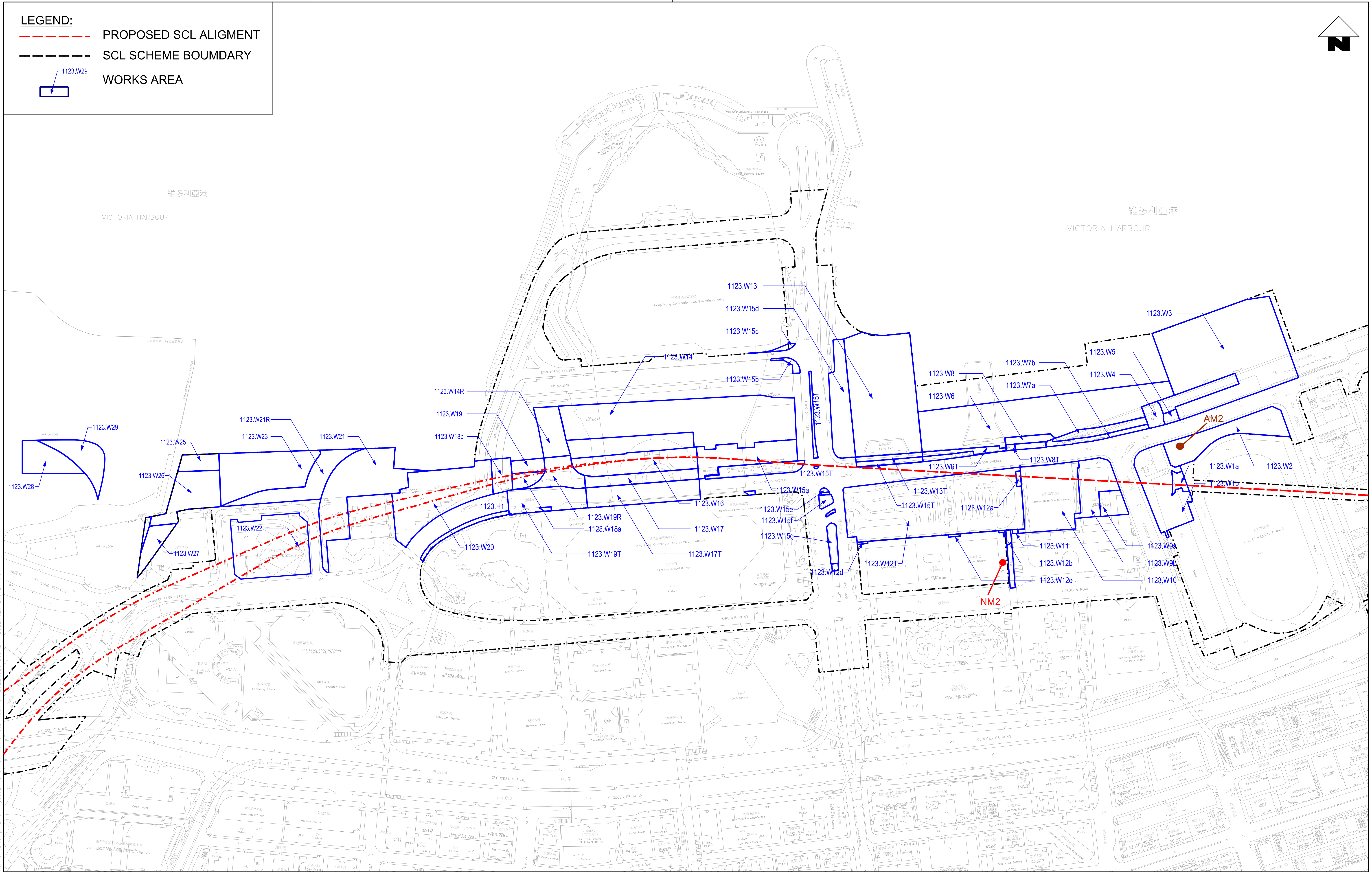

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APPROVED	---
DATE	19/MAR/2015

MTR

SHATIN TO CENTRAL LINK – CONTRACT 1123

ORIGINATOR

LEIGHTON
Leighton - China State Joint Venture

CADD REF. 1123_LCS_SK_0382A.dgn

TITLE
CONTRACT 1123
EXHIBITION STATION AND WESTERN APPROACH TUNNEL
WORKS AREA

SCALE 1 : 3000 @A3

DRAWING NO. Figure 3.1

REV. A

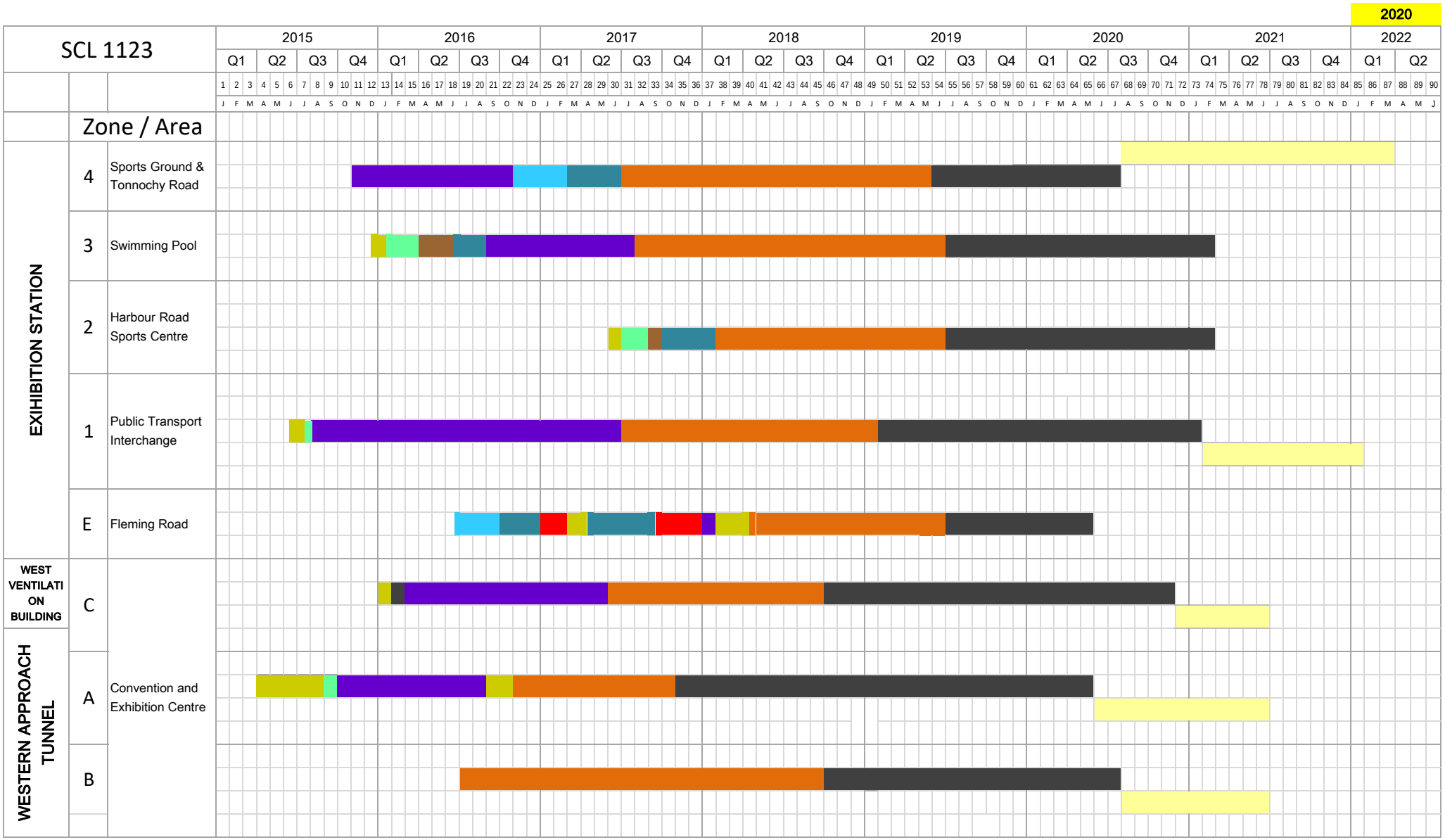
APPENDIX A

Construction Programme

MTR SCL 1123 - Exhibition Station and Western Approach Tunnel

High Level Programme

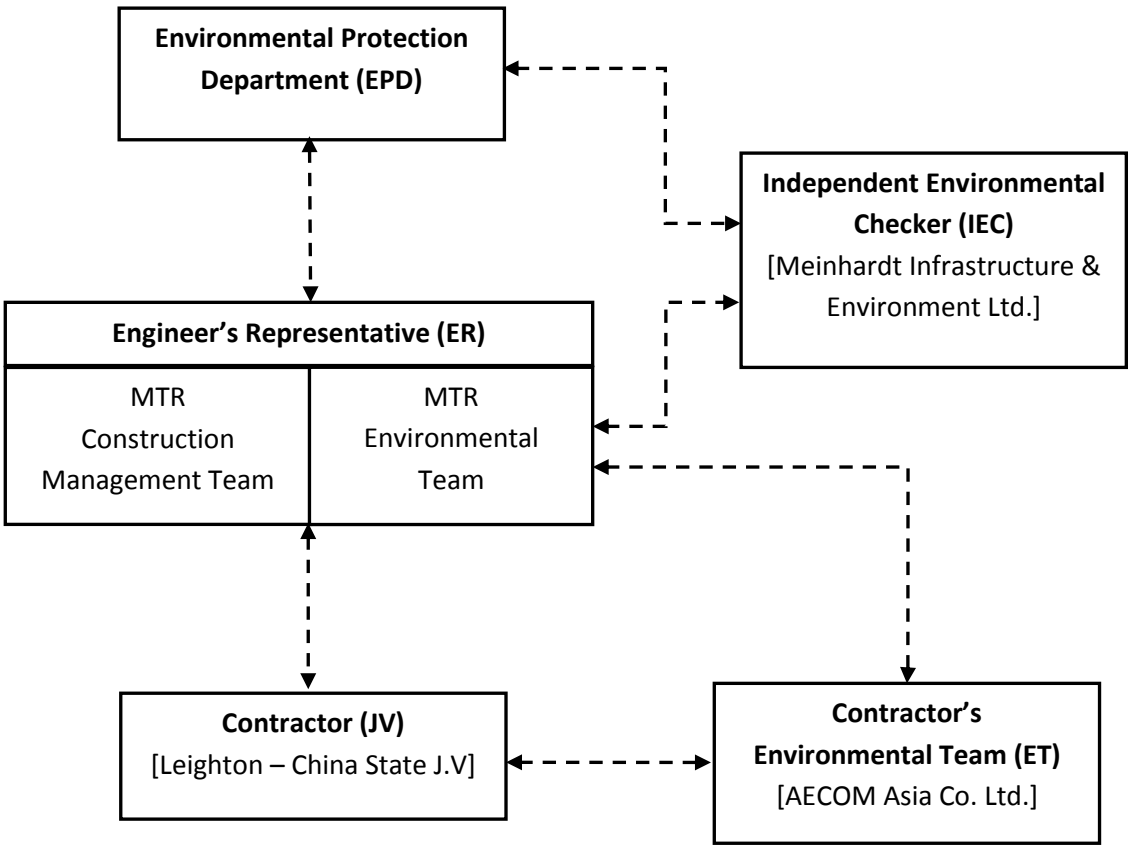
Leighton - China State Joint Venture



APPENDIX B

Project Organization Structure

Appendix B Project Organisation Structure



APPENDIX C

Implementation Schedule of Environmental Mitigation Measures

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
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 1.0 L/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.	To minimize dust impacts	Contractor	All barging points	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
	(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.					N/A 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	V
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	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
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	V V V @ V V V V V N/A V V
/	***Dust suppression measures (con't)*** • De-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement • The portion of any road where along the site boundary should be kept clear of dusty materials. • Use of frequent watering for any dusty construction process (e.g. breaking works) to reduce dust emissions.	To minimize dust impacts	Contractor	Works areas	Construction phase	@ V V
/	***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
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	To minimize construction noise impact	Contractor	Works areas	Construction phase	V 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
	• Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities					N/A
/	• Install movable noise barriers, acoustic mat or full enclosure, screen the noisy plants during operation • Air compressors or Hand-held breaker shall be fitted with valid noise emission labels during operation	To minimize construction noise impact	Contractor	Works areas	Construction phase	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 • 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	V V N/A V N/A N/A N/A N/A N/A V V V V V N/A 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 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	Construction phase	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
				Tunnel		
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 V 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 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
	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. 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. 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. • 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. 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.					V V N/A N/A N/A N/A N/A @ N/A N/A V 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	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	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
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 minimize 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	V

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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	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 N/A V
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 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	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
	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	***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 V V 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	V V N/A 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 N/A
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	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
	marine dumping permit under the Dumping at Sea Ordinance.					
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
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	To register with EPD as a Chemical waste producer and store chemical waste in appropriate containers	Contractor	Work Sites	Construction Phase	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
	• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation.					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
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	@
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
/	***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
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	To act as a general precautionary measure to screen soils for the presence contamination	Contractor	Within Project Boundary where signs of contamination is identified	During excavation works for Cut-and-Cover	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
	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).	during excavation works for Cut-and-Cover.				
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
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;	To minimise the potentially adverse effects on health and safety of construction workers during the course of site	Contractor	Identified contaminated sites	Site remediation and prior 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
	• 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.	remediation.				

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
AM2[1]	Wan Chai Sports Ground	160 μg/m^3	260 μg/m^3
AM3[2][3]	Existing Harbour Road Sports Centre	169 μg/m^3	260 μg/m^3
AM4[4]	Pedestrian Plaza	198 μg/m^3	260 μg/m^3

Note:
[1] The impact monitoring at AM2 was handed over from Contract SCL1128 on 28 October 2015.
[2] The impact monitoring at AM3 was handed over from Contract SCL1126 in June 2015.
[3] The impact monitoring at AM3 terminated on 6 May 2017 as demolition of Existing Harbour Road Sports Centre commenced on 8 May 2017.
[4] The impact monitoring at AM4 will be handed over from Contract SCL1128 in April 2021.

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

ID	Location	Action Level	Limit Level
NM2[1]	Harbour Centre[2]	When one documented complaint is received	75 dB(A)

Note:
[1] The impact monitoring at NM2 was handed over from Works Contract SCL1126 in June 2015.
[2] The Access to the designated monitoring location NM2 (i.e. Block A, Causeway Centre) was denied before the commencement of impact monitoring under Works Contract 1126. An alternative monitoring location at Harbour Centre was approved by the ER, agreed by IEC. The alternative monitoring location was approved by EPD on 18 December 2017.

APPENDIX E

Calibration Certificates of Equipments

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Wanchai Sports Ground	Operator:	Choi Wing Ho
Cal. Date:	15-Oct-21	Next Due Date:	15-Dec-21
Equipment No.:	A-001-72T	Serial No.	809

Ambient Condition			
Temperature, Ta (K)	300	Pressure, Pa (mmHg)	756.6

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	1.99914	Intercept, bc	-0.01375
Last Calibration Date:	7-Jan-21	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	7-Jan-22				

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	6.9	2.61	1.31	44.0	43.75
13	5.9	2.42	1.22	40.0	39.78
10	4.5	2.11	1.06	32.0	31.82
7	3.6	1.89	0.95	26.0	25.86
5	2.7	1.63	0.82	20.0	19.89

By Linear Regression of Y on X

Slope , mw = 49.6664 **Intercept, bw =** -21.0789

Correlation Coefficient* = 0.9986

*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 x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **43.73**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 15/10/21

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Wanchai Sports Ground	Operator:	Choi Wing Ho
Cal. Date:	14-Dec-21	Next Due Date:	14-Feb-22
Equipment No.:	A-001-72T	Serial No.	809

Ambient Condition			
Temperature, Ta (K)	295	Pressure, Pa (mmHg)	755.9

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	1.99914	Intercept, bc	-0.01375
Last Calibration Date:	7-Jan-21	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	7-Jan-22				

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	7.0	2.65	1.33	45.0	45.11
13	6.0	2.46	1.24	40.0	40.09
10	4.6	2.15	1.08	32.0	32.08
7	3.5	1.88	0.94	26.0	26.06
5	2.7	1.65	0.83	20.0	20.05

By Linear Regression of Y on X

Slope , mw = **49.4945** **Intercept, bw =** **-21.0384**

Correlation Coefficient* = **0.9992**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **43.20**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 14/12/21

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Pedestrian Plaza	Operator:	Choi Wing Ho
Cal. Date:	15-Oct-21	Next Due Date:	15-Dec-21
Equipment No.:	A-001-70T	Serial No.	10273

Ambient Condition			
Temperature, Ta (K)	300	Pressure, Pa (mmHg)	756.6

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	1.99914	Intercept, bc	-0.01375
Last Calibration Date:	07-Jan-21	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	07-Jan-22				

Calibration of TSP Sampler

Resistance Plate No.	Orifice			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	6.8	2.59	1.30	44.0	43.75
13	5.6	2.35	1.18	38.0	37.79
10	4.6	2.13	1.07	33.0	32.82
7	3.5	1.86	0.94	26.0	25.86
5	2.6	1.60	0.81	20.0	19.89

By Linear Regression of Y on X

Slope , mw = **48.2634** **Intercept, bw =** **-19.2178**

Correlation Coefficient* = **0.9997**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **43.77**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 15/10/21

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Pedestrian Plaza	Operator:	Choi Wing Ho
Cal. Date:	14-Dec-21	Next Due Date:	14-Feb-22
Equipment No.:	A-001-70T	Serial No.	10273

Ambient Condition			
Temperature, Ta (K)	295	Pressure, Pa (mmHg)	755.9

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	1.99914	Intercept, bc	-0.01375
Last Calibration Date:	07-Jan-21	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	07-Jan-22				

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	6.9	2.63	1.32	44.0	44.10
13	5.6	2.37	1.19	38.0	38.09
10	4.7	2.17	1.09	33.0	33.08
7	3.5	1.88	0.94	27.0	27.06
5	2.6	1.62	0.82	21.0	21.05

By Linear Regression of Y on X

Slope , mw = **45.0719** **Intercept, bw =** **-15.7435**

Correlation Coefficient* = **0.9990**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2}$ = **42.75**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 14/12/21

TISCH Environmental

RECALIBRATION DUE DATE:
January 7, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	January 7, 2021	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 756.4	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **0843**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3970	4.2	2.00
2	3	4	1	0.9930	6.4	4.00
3	5	6	1	0.8790	8.0	5.00
4	7	8	1	0.8420	8.7	5.50
5	9	10	1	0.6950	12.7	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0032	0.7181	1.4204	0.9944	0.7118	0.8817
1.0003	1.0073	2.0088	0.9915	0.9985	1.2469
0.9982	1.1356	2.2459	0.9894	1.1256	1.3941
0.9972	1.1843	2.3555	0.9885	1.1740	1.4621
0.9919	1.4272	2.8409	0.9832	1.4147	1.7634
QSTD	**m=**	**1.99914**	**QA**	**m=**	**1.25183**
	b=	**-0.01375**		**b=**	**-0.00854**
	r=	**0.99991**		**r=**	**0.99991**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
香港新界葵涌永基路22-24號好爸爸創科大廈
Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong
Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 21CA0309 02 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone	Pream
Manufacturer:	B & K	,	B & K	B & K
Type/Model No.:	2270	,	4950	ZC0032
Serial/Equipment No.:	2644597	,	2879980	29398
Adaptors used:	-	,	-	-

Item submitted by

Customer Name:	AECOM ASIA CO LTD
Address of Customer:	-
Request No.:	-
Date of receipt:	09-Mar-2021

Date of test: 22-Mar-2021

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	23-Aug-2021	CIGISMEC
Signal generator	DS 360	33873	19-May-2021	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1005 ± 5 hPa

Test specifications

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

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

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure 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: Feng Junqi **Date:** 24-Mar-2021 **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 condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 21CA0309 02 **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:	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	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

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

Test:	Subtest	Status	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 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:** 22-Mar-2021

Checked by: Chan Yuk Yiu **Date:** 24-Mar-2021

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.
香港新界葵涌永基路22-24號好爸爸創科大廈
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Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

HOKLAS 028
CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 21CA0319 01-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone	Preamp
Manufacturer:	B & K	B & K	B & K
Type/Model No.:	2250-L	4950	ZC0032
Serial/Equipment No.:	2681366	2665582	17190
Adaptors used:	-	-	-

Item submitted by

Customer Name:	AECOM ASIA CO LTD
Address of Customer:	-
Request No.:	-
Date of receipt:	19-Mar-2021

Date of test: 23-Mar-2021

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	23-Aug-2021	CIGISMEC
Signal generator	DS 360	33873	19-May-2021	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1005 ± 5 hPa

Test specifications

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

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

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure 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: Feng Junqi **Date:** 24-Mar-2021 **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 condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

綜合試驗有限公司
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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 21CA0319 01-01 **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 Uncertanity (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	0.8	
	Lin	Pass	1.6	
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	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

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

Test:	Subtest	Status	Expanded Uncertanity (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:** 23-Mar-2021

Checked by: Chan Yuk Yiu **Date:** 24-Mar-2021

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.
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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 21CA0319 01-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	MVI
Type/Model No.:	CAL21
Serial/Equipment No.:	34113610(2011) / N.004.11
Adaptors used:	Yes (BAC21)

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	19-Mar-2021

Date of test: 23-Mar-2021

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	11-May-2021	SCL
Preamplifier	B&K 2673	2743150	03-Jun-2021	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Jun-2021	CEPREI
Signal generator	DS 360	33873	19-May-2021	CEPREI
Digital multi-meter	34401A	US36087050	19-May-2021	CEPREI
Audio analyzer	8903B	GB41300350	18-May-2021	CEPREI
Universal counter	53132A	MY40003662	18-May-2021	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1005 ± 5 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: Feng Junqi **Date:** 24-Mar-2021 **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. The results apply to the item as received.

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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 21CA0319 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	93.98	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 = 0.010 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 = 1002.6 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 = 1.8 %**

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:** 23-Mar-2021

Checked by: Chan Yuk Yiu **Date:** 24-Mar-2021

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.
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HOKLAS 028
CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 21CA0401 02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	B & K
Type/Model No.:	4231
Serial/Equipment No.:	3006428
Adaptors used:	-

Item submitted by

Curstomer:	AECOM
Address of Customer:	-
Request No.:	-
Date of receipt:	01-Apr-2021

Date of test: 05-Apr-2021

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	11-May-2021	SCL
Preamplifier	B&K 2673	2743150	03-Jun-2021	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Jun-2021	CEPREI
Signal generator	DS 360	33873	19-May-2021	CEPREI
Digital multi-meter	34401A	US36087050	19-May-2021	CEPREI
Audio analyzer	8903B	GB41300350	18-May-2021	CEPREI
Universal counter	53132A	MY40003662	18-May-2021	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1010 ± 5 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: Feng Junqi **Date:** 07-Apr-2021 **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. The results apply to the item as received.

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SOILS & MATERIALS ENGINEERING CO., LTD.
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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 21CA0401 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	94.23	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 = 0.016 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 = 999.95 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 = 0.3 %**

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:** 05-Apr-2021

Checked by: Chan Yuk Yiu **Date:** 07-Apr-2021

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 1123 - Exhibition Station and Western Approach Tunnel
Tentative Impact Monitoring Schedule for December 2021

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

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

Air Quality Monitoring Station
AM2 Wan Chai Sports Ground
AM4 Pedestrain Plaza

Noise Monitoring Station
NM2 Harbour Centre

Monitoring Frequency
24-hr TSP Once every 6 days

Monitoring Frequency
Once per week

Shatin to Central Link Contract 1123 - Exhibition Station and Western Approach Tunnel
Tentative Impact Monitoring Schedule for January 2022

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

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

Air Quality Monitoring Station
AM2 Wan Chai Sports Ground
AM4 Pedestrain Plaza

Monitoring Frequency
24-hr TSP Once every 6 days

Noise Monitoring Station
NM2 Harbour Centre

Monitoring Frequency
Once per week

Shatin to Central Link Contract 1123 - Exhibition Station and Western Approach Tunnel
Tentative Impact Monitoring Schedule for February 2022

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

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

Air Quality Monitoring Station

AM2	Wan Chai Sports Ground
AM4	Pedestrain Plaza

Noise Monitoring Station

NM2	Harbour Centre

Monitoring Frequency

24-hr TSP	Once every 6 days

Monitoring Frequency

Once per week

Shatin to Central Link Contract 1123 - Exhibition Station and Western Approach Tunnel
Tentative Impact Monitoring Schedule for March 2022

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

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

Air Quality Monitoring Station

AM2	Wan Chai Sports Ground
AM4	Pedestrain Plaza

Monitoring Frequency

24-hr TSP	Once every 6 days

Noise Monitoring Station

NM2	Harbour Centre

Monitoring Frequency

Once per week

APPENDIX G

Air Quality Monitoring Results and their Graphical Presentations

Appendix G
Air Quality Monitoring Results

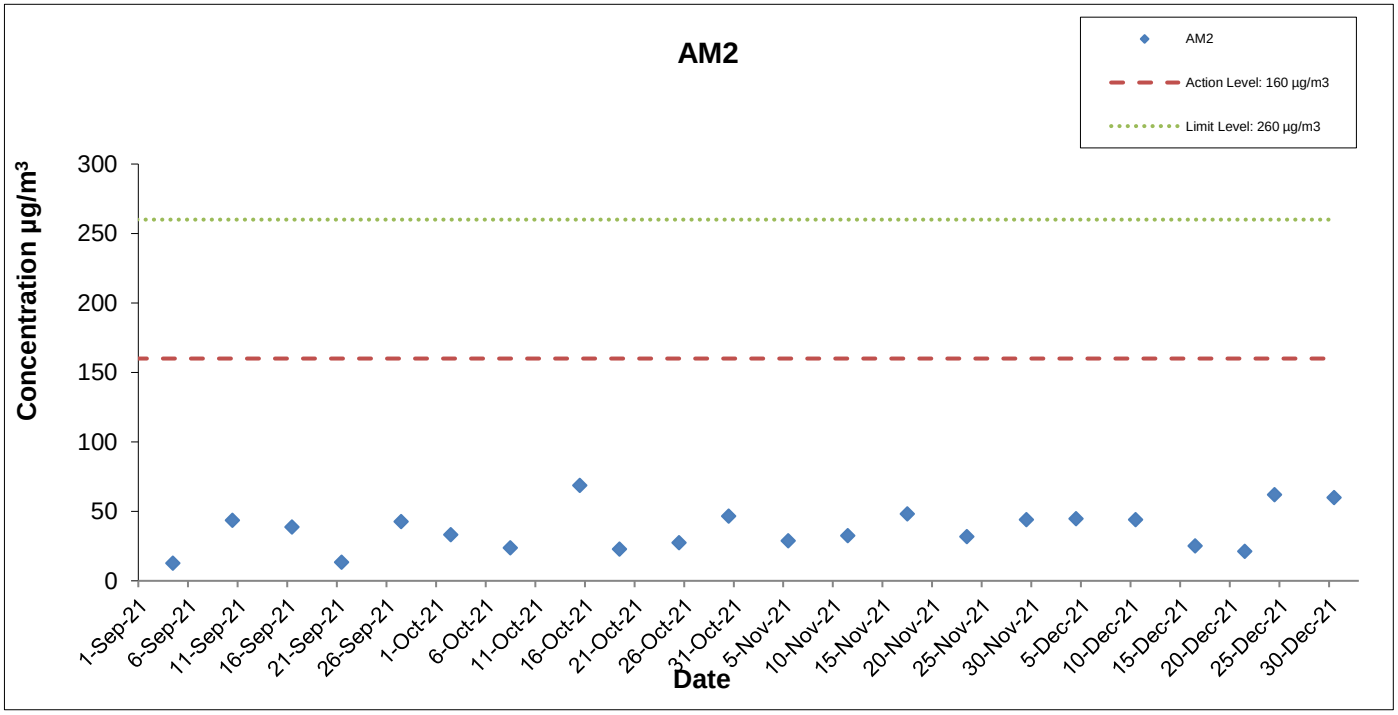
24-hour TSP Monitoring Results at Station AM2 (Wan Chai Sports Ground)

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.)	($\mu g/m^3$)
4-Dec-21	0:00	5-Dec-21	0:00	Sunny	18.1	1022.2	1.33	1.33	1.33	1916.6	2.6719	2.7574	0.0855	28016.67	28040.67	24.00	44.6
10-Dec-21	0:00	11-Dec-21	0:00	Fine	20.9	1020.7	1.33	1.33	1.33	1916.6	2.7929	2.8773	0.0844	28040.67	28064.67	24.00	44.0
16-Dec-21	0:00	17-Dec-21	0:00	Sunny	23.2	1015.8	1.33	1.33	1.33	1916.6	2.6639	2.7122	0.0483	28064.67	28088.67	24.00	25.2
21-Dec-21	0:00	22-Dec-21	0:00	Cloudy	17.3	1013.5	1.33	1.33	1.33	1916.6	2.7915	2.8321	0.0406	28088.67	28112.67	24.00	21.2
24-Dec-21	0:00	25-Dec-21	0:00	Fine	19.9	1017.2	1.33	1.33	1.33	1916.6	2.8265	2.9452	0.1187	28112.67	28136.67	24.00	61.9
30-Dec-21	0:00	31-Dec-21	0:00	Sunny	18.1	1024.6	1.33	1.33	1.33	1916.6	2.7984	2.9130	0.1146	28136.67	28160.67	24.00	59.8
																Average	**42.8**
																Minimum	**21.2**
																Maximum	**61.9**

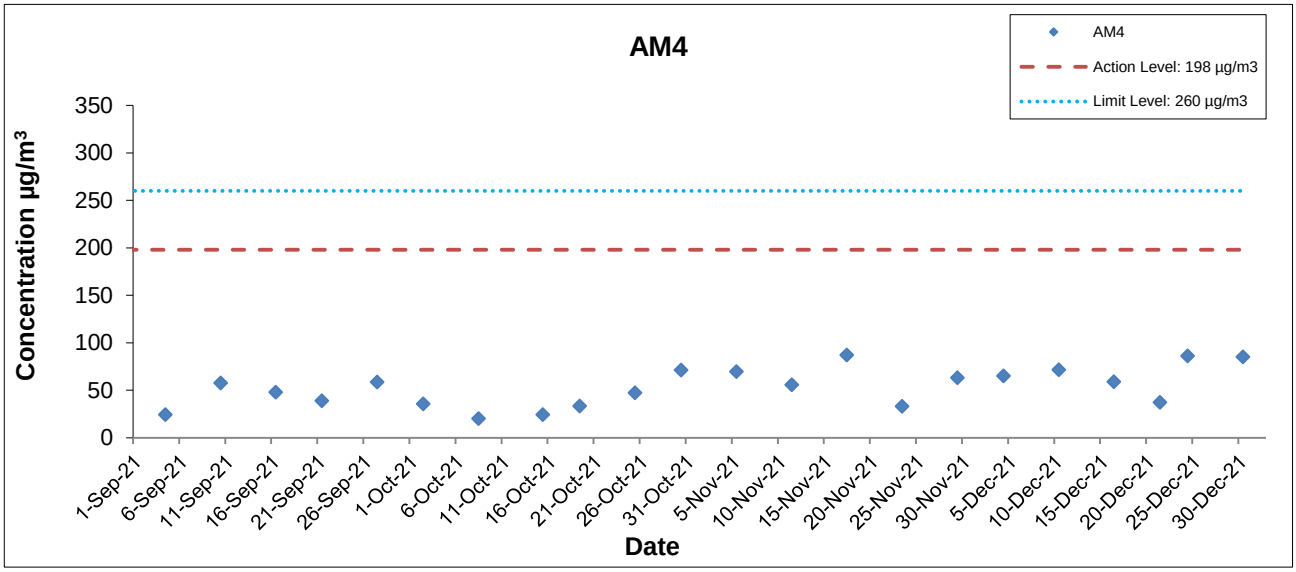
Appendix G
Air Quality Monitoring Results

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.)	($\mu g/m^3$)
4-Dec-21	0:00	5-Dec-21	0:00	Sunny	18.1	1022.2	1.33	1.33	1.33	1921.0	2.6800	2.8059	0.1259	27719.01	27743.01	24.00	65.5
10-Dec-21	0:00	11-Dec-21	0:00	Fine	20.9	1020.7	1.33	1.33	1.33	1921.0	2.7920	2.9300	0.1380	27743.01	27767.01	24.00	71.8
16-Dec-21	0:00	17-Dec-21	0:00	Sunny	23.2	1015.8	1.33	1.33	1.33	1921.0	2.6801	2.7938	0.1137	27767.01	27791.01	24.00	59.2
21-Dec-21	0:00	22-Dec-21	0:00	Cloudy	17.3	1013.5	1.33	1.33	1.33	1921.0	2.7924	2.8647	0.0723	27791.01	27815.01	24.00	37.6
24-Dec-21	0:00	25-Dec-21	0:00	Fine	19.9	1017.2	1.33	1.33	1.33	1921.0	2.8135	2.9793	0.1658	27815.01	27839.01	24.00	86.3
30-Dec-21	0:00	31-Dec-21	0:00	Sunny	18.1	1024.6	1.33	1.33	1.33	1921.0	2.8163	2.9805	0.1642	27839.01	27863.01	24.00	85.5
																Average	67.7
																Minimum	37.6
																Maximum	86.3



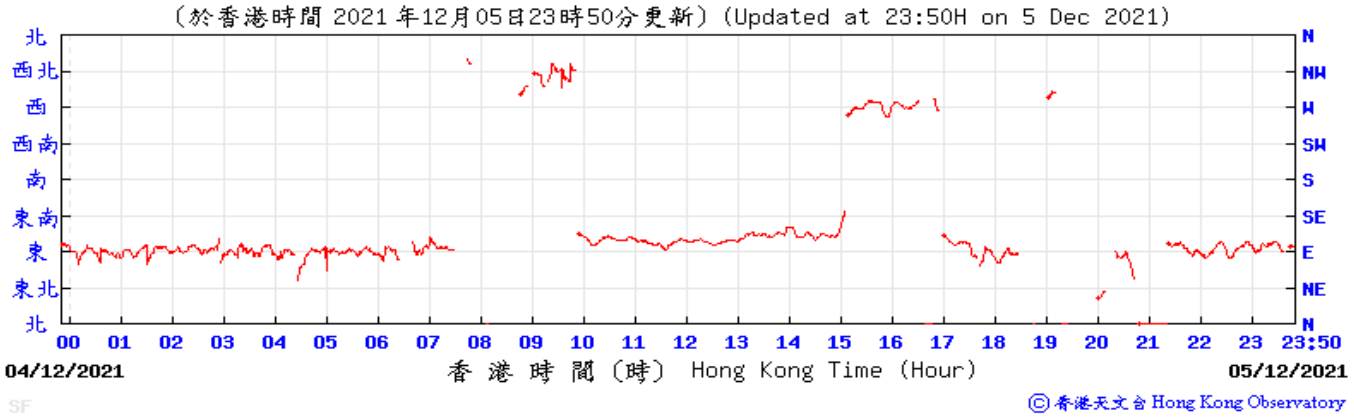
* The monitoring station at AM2 was handed over from Contract SCL1128 on 28 October 2015.



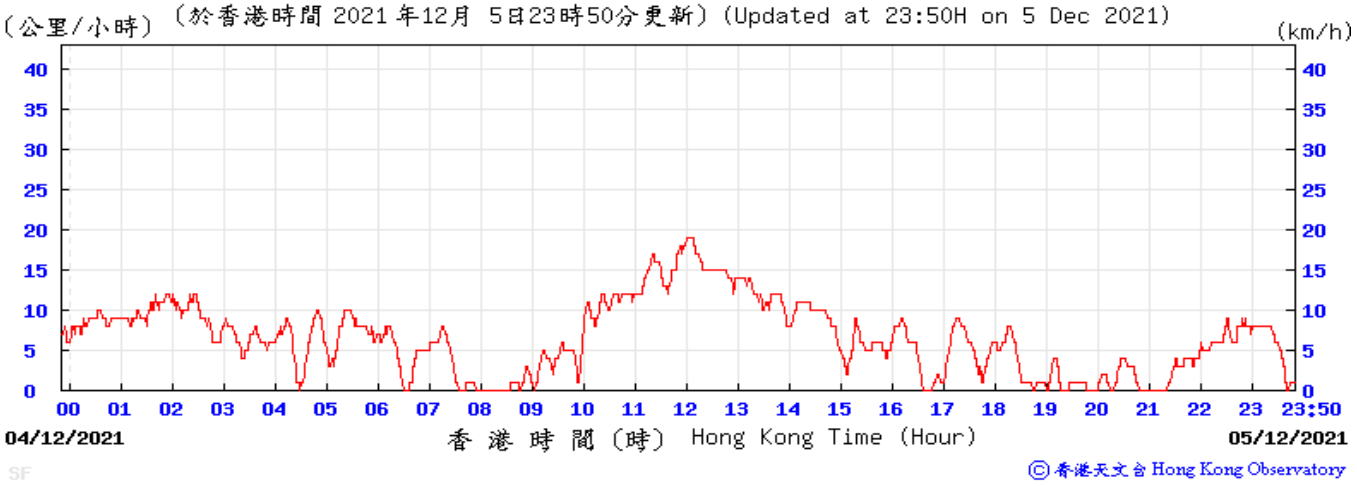
* The impact monitoring at AM4 will be handed over from Contract SCL1128 in April 2021.

Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, December 2021

Wind Direction:

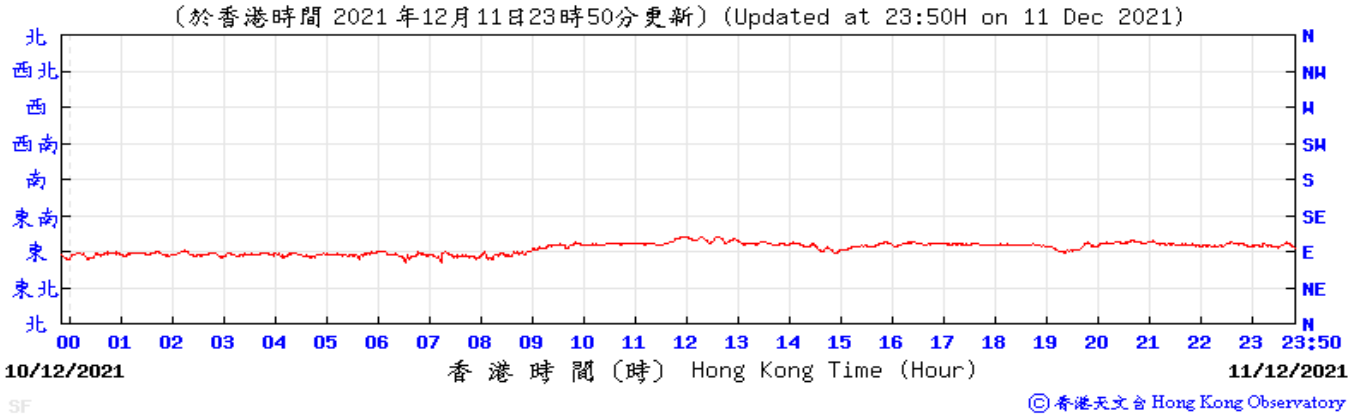


Wind Speed:

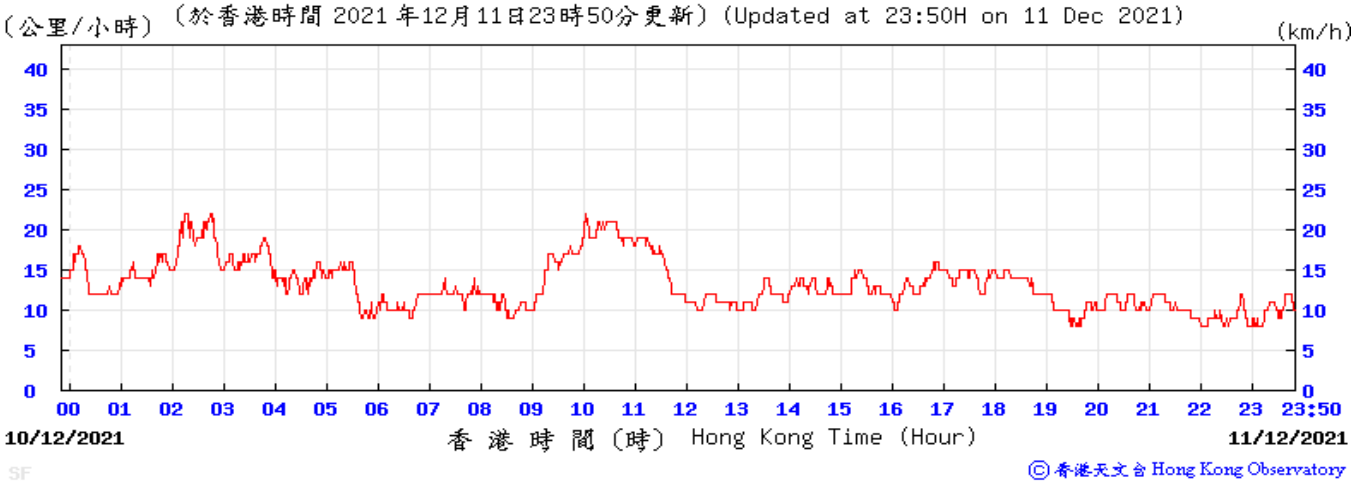


Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, December 2021

Wind Direction:

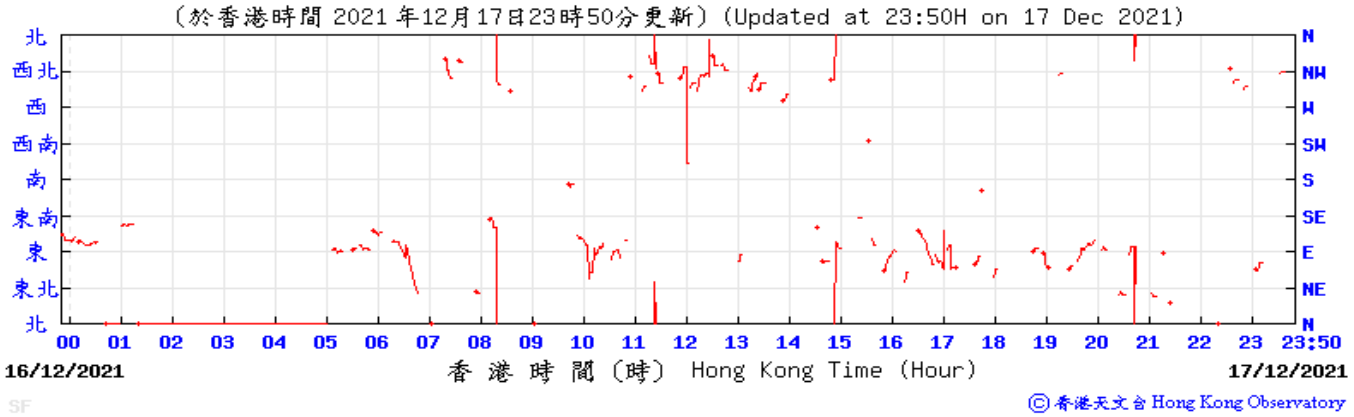


Wind Speed:

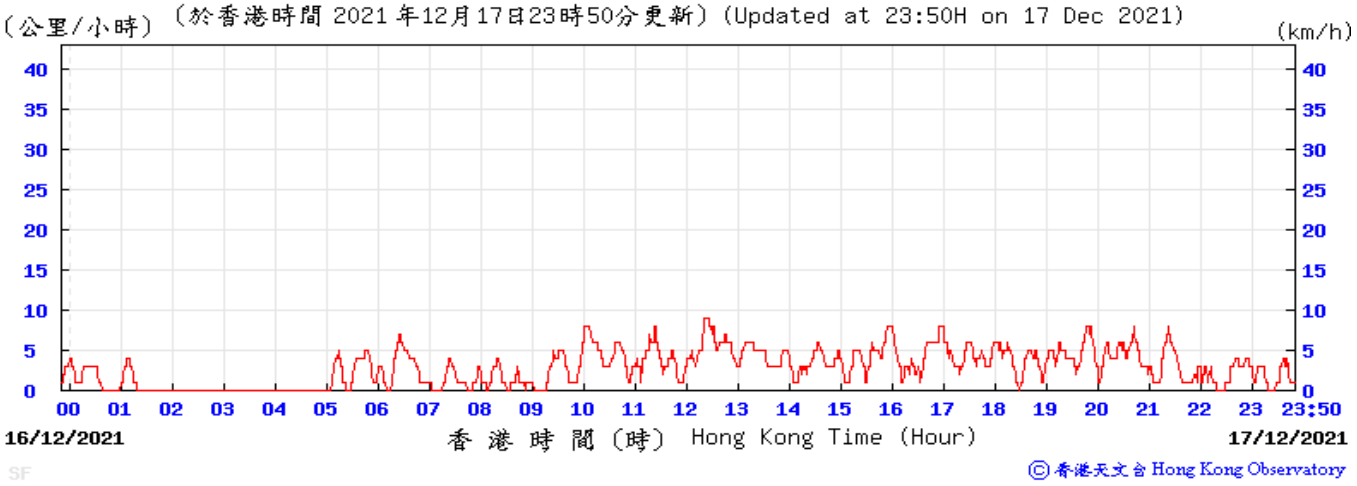


Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, December 2021

Wind Direction:

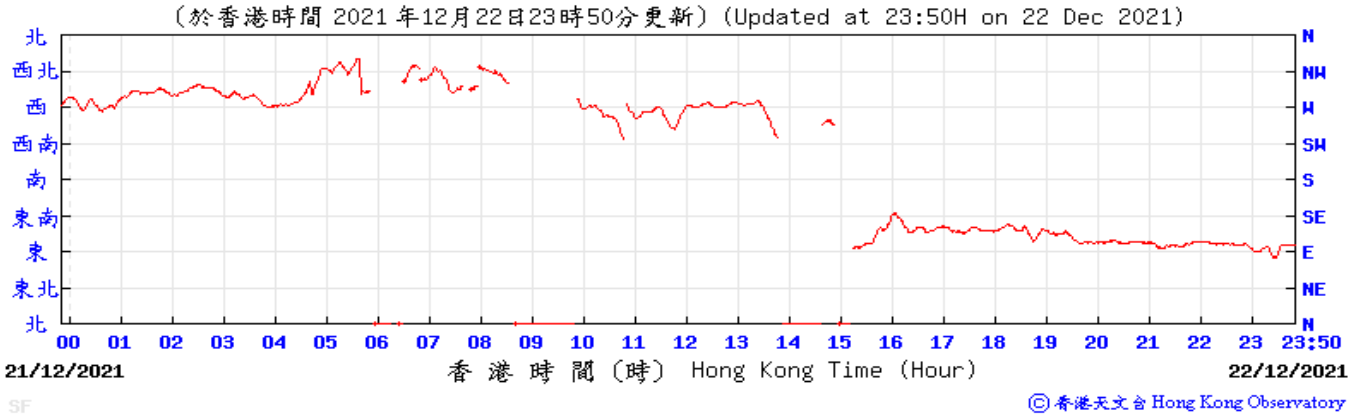


Wind Speed:

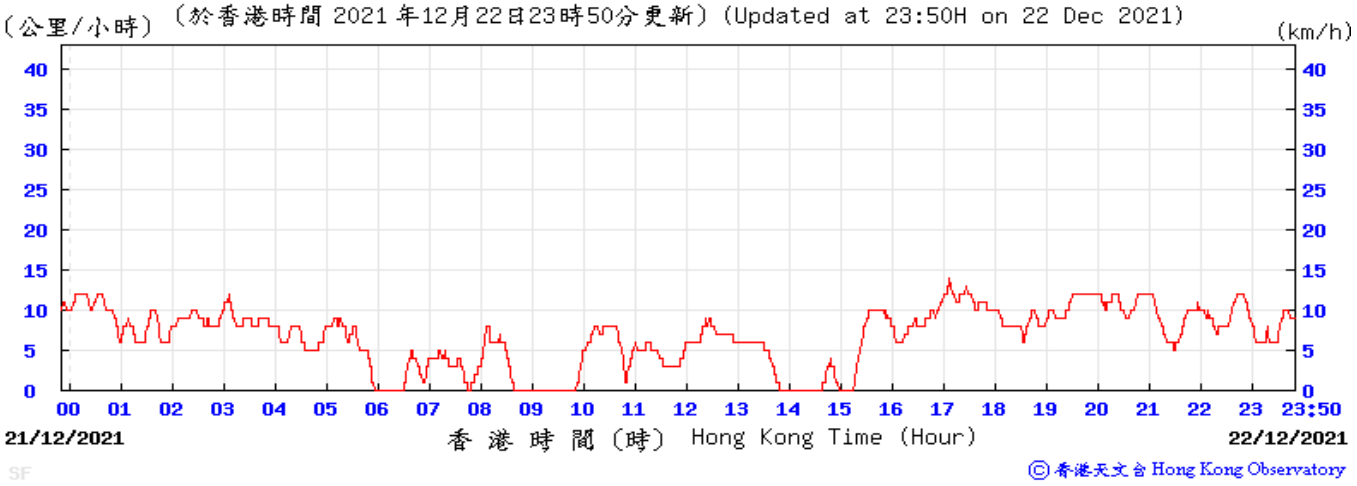


Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, December 2021

Wind Direction:

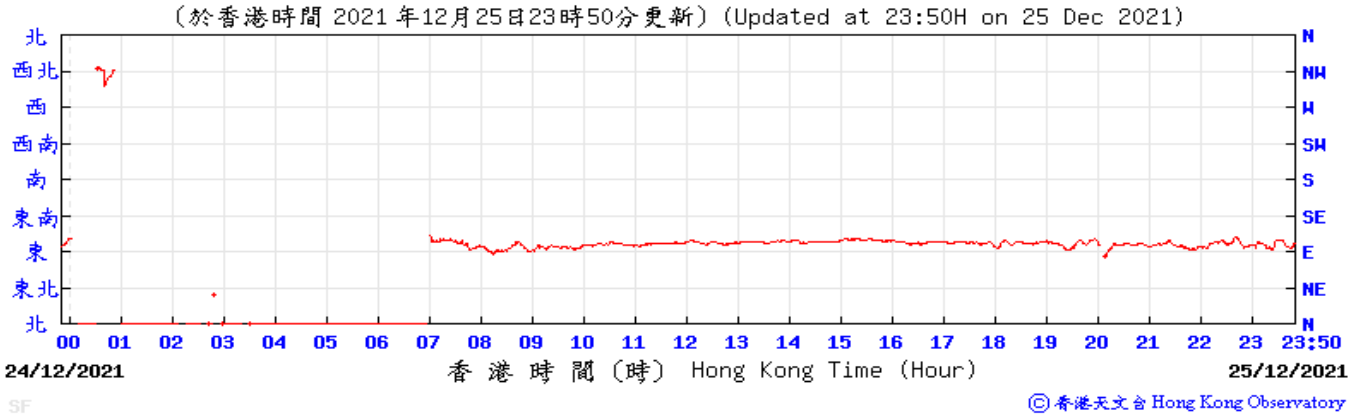


Wind Speed:

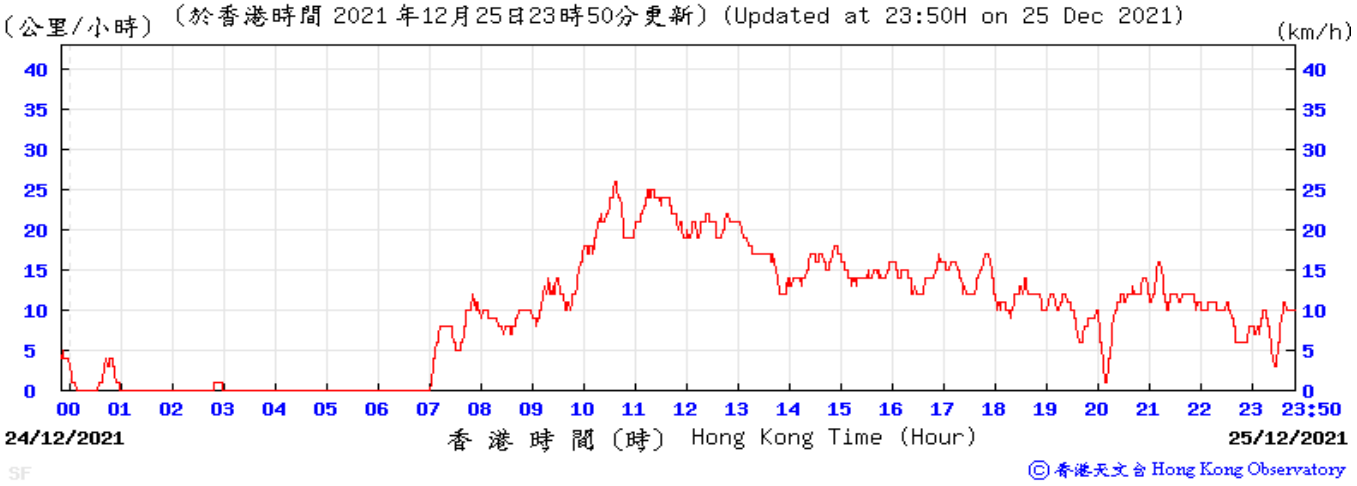


Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, December 2021

Wind Direction:

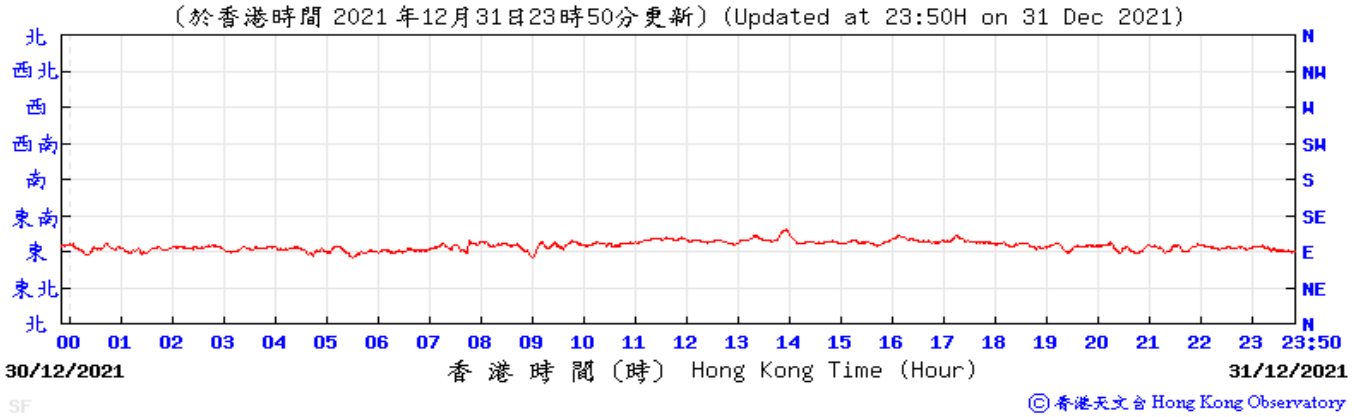


Wind Speed:

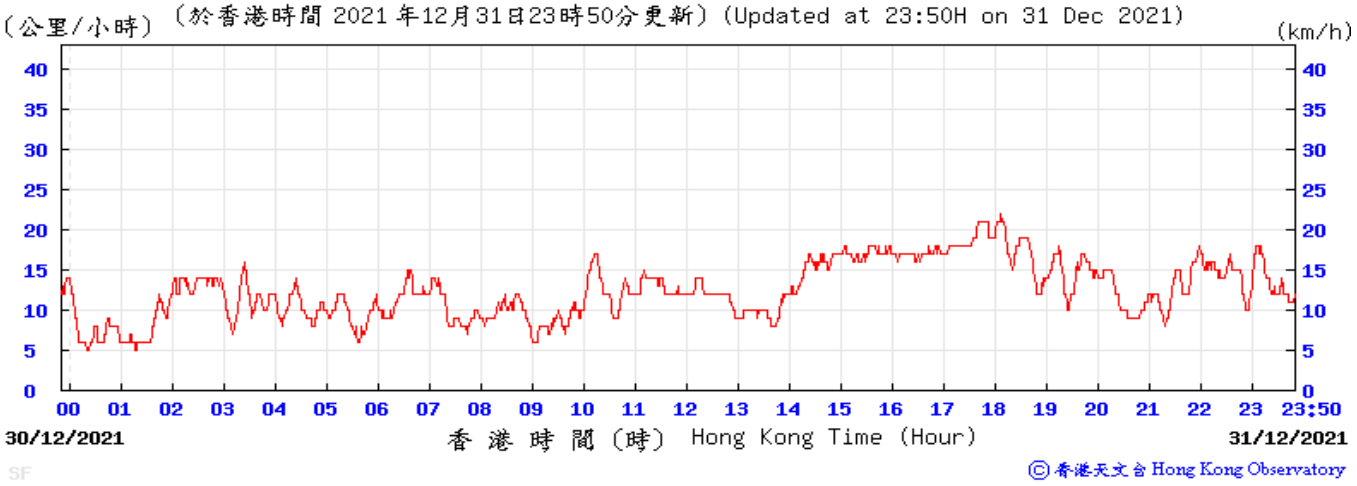


Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station, December 2021

Wind Direction:



Wind Speed:



APPENDIX H

Noise Monitoring Results and their Graphical Presentations

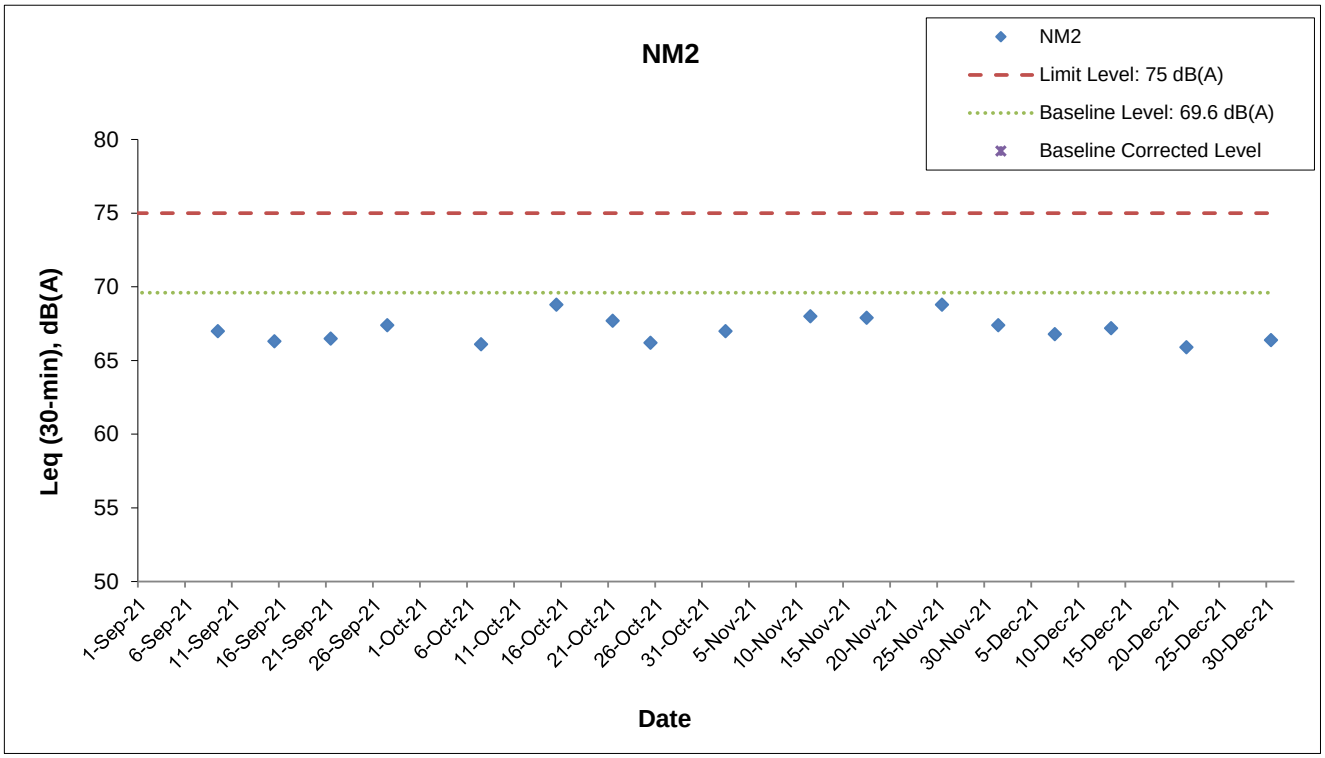
Appendix H Regular Construction Noise Monitoring Results

Daytime Noise Monitoring Results at Station NM2 (Harbour Centre)

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				
1-Dec-21	Sunny	10:30	63.6	68.0	67.4	<Baseline	69.6	75	N
7-Dec-21	Fine	10:25	63.6	68.3	66.8	<Baseline	69.6	75	N
13-Dec-21	Sunny	10:30	65.4	68.6	67.2	<Baseline	69.6	75	N
21-Dec-21	Cloudy	10:35	63.1	67.5	65.9	<Baseline	69.6	75	N
30-Dec-21	Sunny	10:40	63.4	67.1	66.4	<Baseline	69.6	75	N

+ - Façade measurement

Appendix H Regular Construction Noise Monitoring Results



Shatin Central Link Contract No. 1123
Exhibition Station and Western Approach Tunnel

Graphical Presentation of Impact Noise Monitoring Results

Date: January 2022

APPENDIX I

Event Action Plan

Appendix I 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 I 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 I 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 Event Action Plan

Event and Action Plan for Continuous Noise Monitoring

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action/Limit Level	1. Identify source ; 2. Repeat measurement. If two consecutive measurements exceed Action/Limit Level, the exceedance is then confirmed; 3. If exceedance is confirmed, notify IEC, ER and Contractor; 4. Investigate the cause of exceedance and ckeck Contractor's working procedures to determine possible mitigation to be implemented; 5. Discuss jointly with the IEC, ER and Contractor and formulate remedial measures; and 6. Assess effectiveness of Contractor's remedial actions and keep IEC and ER informed of the results.	1. Check monitoring data submitted by the Works Contract 1123 ET; 2. Check the Contractor's working method; 3. Discuss with the ER, Works Contract 1123 ET and Contractor on the potential remedial measures; and 4. Review and advise the Works Contract 1123 ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the Works Contract 1123 ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Ensure the proper implementation of remedial measures; and 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source with the Works Contract 1123 ET; 2. If exceedance is confirmed, investigation the cause of exceedance and take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET of notification; 4. Implement the agreed proposals; 5. Liaise with ER to optimize the effectiveness of the agreed mitigation; 6. Revise and resubmit proposals if problem still not under control; and 7. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

APPENDIX J

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

Appendix J

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. received in this month	Total no. received since project commencement
Environmental complaints	-	-	-	0	17
Notification of summons	-	-	-	0	2
Successful Prosecutions	-	-	-	0	0

APPENDIX K

Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE

Contract No.:MTR SCL 1123 - Exhibition Station and Western Approach
Reporting Month: December 2021

Monthly Summary Waste Flow Table for 2021

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					Actual Quantities of Marine Dumping Monthly	
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics	Chemical Waste	Others, e.g. general refuse	Type 1	Type 2
	(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)	(in '000m^3)	(in '000m^3)
Jan	2.855	0.000	0.000	0.000	2.855	0.582	57.165	0.000	0.000	0.000	0.640	0.000	0.000
Feb	1.673	0.000	0.000	0.000	1.673	0.408	68.720	0.250	0.045	0.000	0.461	0.000	0.000
Mar	1.596	0.000	0.000	0.000	1.596	1.059	134.887	0.180	0.018	0.000	0.576	0.000	0.000
Apr	0.604	0.000	0.000	0.000	0.604	1.066	3.786	0.160	0.019	0.000	0.471	0.000	0.000
May	0.338	0.000	0.000	0.000	0.338	0.101	5.499	0.170	0.026	0.000	0.123	0.000	0.000
Jun	0.450	0.000	0.000	0.000	0.450	0.000	32.445	0.000	0.000	0.000	0.124	0.000	0.000
Sub-total	7.517	0.000	0.000	0.000	7.517	3.216	302.502	0.760	0.108	0.000	2.396	0.000	0.000
July	0.538	0.000	0.000	0.000	0.538	0.000	0.000	0.000	0.000	0.000	0.086	0.000	0.000
August	0.215	0.000	0.000	0.000	0.215	0.000	13.260	0.100	0.000	0.000	0.024	0.000	0.000
September	0.775	0.000	0.000	0.000	0.775	0.000	15.250	0.535	0.110	0.000	0.244	0.000	0.000
October	1.132	0.000	0.000	0.000	1.132	0.000	8.580	0.400	0.066	0.000	0.144	0.000	0.000
November	0.717	0.000	0.000	0.000	0.717	0.000	14.475	0.000	0.000	0.000	0.146	0.000	0.000
December	0.967	0.000	0.000	0.000	0.967	0.000	4.325	0.400	0.000	0.000	0.174	0.000	0.000
Total	11.861	0.000	0.000	0.000	11.861	3.216	358.392	2.195	0.284	0.000	3.214	0.000	0.000

Comments:

1) Assumption: The densities of Rock, Soil, Mixed Rock and Soil, and Regular Spoil are 2.0 ton/m^3; the density of general refuse is 1.0 ton/m^3; the density of waste oil is 1.0 kg/L.
2) The cut-off date of waste amount in December is 31/12/2021 for Public Fill Facilities and Landfill.
3) The amounts of waste in December are 348.26 tons for Landfill and 1934.4 tons for Public Fill.
4) The amount of import fill in December is 0 tons, for cut-off date as 31/12/2021.
5) The amount of metal waste generated in December is 4325 kg, for cut-off date as 31/12/2021.
6) The amount of paper waste generated in December is 0 kg, for cut-off date as 31/12/2021.
7) The amount of plastic waste generated in December is 0 kg, for cut-off date as 31/12/2021.

Appendix C

Final EM&A Review Report for December 2021 – 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

Final EM&A Review Report

[January 2022]

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

Version: 0	Date: 05 January 2022

AECOM Asia Co. Ltd.
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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.

All construction works with environmental impact concerned have been completed. The cessation of construction phase EM&A programme under the Project was proposed on 08 October 2021 and EPD expressed no objection to the proposed cessation after the visit on 12 November 2021 and approved letter was obtained on 9 December 2021. Hence, the construction phase EM&A programme of the Project was terminated as agreed.

This report documents the findings of EM&A works conducted in the period 17 November 2014 to 30 November 2021. As informed by the Contractor, major activities undertaken in the construction phase were:

Location	**Site Activities**
Area W1	Ventilation Tunnel Works, Shaft Construction, Removal of Temporary Reclamation, Excavation, Ground Treatment, ELS Works, Reinstatement Works
Area W2	POC Demolition and Construction, D-wall Works, SOV Construction and Structure Works, EVA Construction, Retaining Wall Works, Pre-drilling, Piling, Excavation, ABFW, E&M Works, Remedial Works, Reinstatement Works, Defect Rectification
Area W3	Demolition, Excavation, Piling, Backfilling, ABWF Works, Reinstatement Works
Area W4	Piling, Excavation, Backfilling, Reinstatement Works
Area W6	Road Widening Works, Drilling, Ground Treatment, Excavation, Grouting Works
Area W8	D-wall Works, FPP Construction and Structure Works, ELS Works, Pre-Drilling, Piling, Excavation, Backfilling, External Works, ABWF Works, Defects Rectification
Area W10	Shaft Construction, Horizontal Grouting, Excavation, Backfilling
Area W14	Bored Piling, Pre-drilling, Drilling, ELS Works, Reinstatement Work
Area W15 & W16	Road Construction for Traffic Diversion, Piling, Ground Treatment

Breaches of Action and Limit Levels for Air Quality

One (1) Action level exceedance and one (1) Limit Level exceedance of air quality were recorded in the reporting period. Investigations for the exceedances were conducted and the results revealed that the recorded two air quality exceedances were not in relation to the construction works of the Project.

Breaches of Action and Limit Levels for Noise

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

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

Complaint, Notification of Summons and Successful Prosecution

Twelve (12) environmental complaints were received during the reporting period, in which seven (7) complaints regarding noise impact, three (3) complaints regarding water pollution, one (1) complaint regarding odour nuisance, and one (1) complaint regarding air nuisance and water pollution. Excepted one (1) compliant, all recorded environmental complaints were considered as non-project related. All the complaints were settled, no further complaint was received after the implementation of the mitigation measures.

No environmental summons / prosecutions were received in the reporting period.

Summary of the Overall EM&A Programme

The EM&A programme were found to be effective in monitoring impacts arising from the Project. The findings of the environmental monitoring program suggest that no adverse impacts on sensitive receivers at the designated monitoring locations were brought about by the Project.

In conclusion the Project was environmentally acceptable in terms of air quality and noise impact.

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 Final EM&A Review Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 17 November 2014 to 30 November 2021.

1.2 Report Structure

This final EM&A review report is organized as follows:

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Environmental Monitoring Requirement
- Section 4: Implementation Status of Environmental Mitigation Measures
- Section 5: Monitoring Results
- Section 6: Environmental Site Inspection
- Section 7: Environmental Non-conformance
- Section 8: Review of the Validity of EIA Prediction
- Section 9: Comments
- Section 10: Conclusions and Recommendation

2 PROJECT INFORMATION

2.1 Background

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

2.1.2 The Environmental Impact Assessment (EIA) Reports for SCL – 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) was subsequently applied and the latest EP (EP No. EP-436/2012/F) was issued by the Director of Environmental Protection (DEP) on 23 January 2019.

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 Centre Station (EXC) (formally named 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) Demolition of existing Police Officer's Club (POC);
(j) Reprovisioning of new POC;
(k) Other RRIW;
(l) Essential piling works at future Government, Institution and Community (GIC) site
(m) Diversion and modification of utilities and services;
(n) Modification, re-provisioning or reinstatement of footpath, carriageway or road features;
(o) Provisions for Designated and Interfacing Contracts;
(p) Tree felling, tree compensation, transplanting works and landscaping works;
(q) Permanent reprovisioning works at the Fleet Arcade;
(r) Miscellaneous signage; and
(s) External works comprising new and reinstated roads, footpaths, drains, landscaping, staircase and street furniture.

2.3 Construction Programme and Activities

2.3.1 All major construction works in the whole works area of the Project have been substantially completed since 30 September 2021, with only minor works remaining (such as defects rectification, electrical and mechanical works and general site cleaning). Hence, the cessation of construction phase EM&A programme under the Project was proposed on 08 October 2021 and EPD expressed no objection on 09 December 2021 to the proposed cessation.

2.3.2 The major construction activities undertaken in the construction phase are summarised below:-

Table 2.1 Major Construction Activities undertaken in Construction Phase

Location	Site Activities
Area W1	Ventilation Tunnel Works, Shaft Construction, Removal of Temporary Reclamation, Excavation, Ground Treatment, ELS Works, Reinstatement Works
Area W2	POC Demolition and Construction, D-wall Works, SOV Construction and Structure Works, EVA Construction, Retaining Wall Works, Pre-drilling, Piling, Excavation, ABFW, E&M Works, Remedial Works, Reinstatement Works, Defect Rectification
Area W3	Demolition, Excavation, Piling, Backfilling, ABWF Works, Reinstatement Works
Area W4	Piling, Excavation, Backfilling, Reinstatement Works
Area W6	Road Widening Works, Drilling, Ground Treatment, Excavation, Grouting Works
Area W8	D-wall Works, FPP Construction and Structure Works, ELS Works, Pre-Drilling, Piling, Excavation, Backfilling, External Works, ABWF Works, Defects Rectification
Area W10	Shaft Construction, Horizontal Grouting, Excavation, Backfilling
Area W14	Bored Piling, Pre-drilling, Drilling, ELS Works, Reinstatement Work
Area W15 & W16	Road Construction for Traffic Diversion, Piling, Ground Treatment

2.3.3 The construction programme can be referred to the respective monthly EM&A reports.

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix A**. The key personnel contact names and numbers for the Project are summarised in **Table 2.2.**

Table 2.2 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
MTR	Residential Engineer (ER)	Chief Construction Manager – SCL Civil	Mr. Jacky Mak	2171 3823	2171 3609
		SCL Project Environmental Team Leader	Ms. Lisa Poon	3127 6295	3127 6422
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Ms. Claudine Lee	2859 5409	2540 1580
JV	Contractor	Project Director	Mr. Eddie Chu	2171 3618	2171 3715
		Environmental Officer	Ms. Gemini Lam	9130 9104	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y T Tang	3922 9393	2317 7609

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 levels of the air quality monitoring is provided in **Appendix B**.

Monitoring Equipment

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

Table 3.1 Air Quality Monitoring Equipment

Equipment	Brand and Model	Serial No.
High Volume Sampler (24-hour TSP)	Andersen Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler Model No. GS 2310	10273 809
Calibration Kit	TISCH Environmental Orifice Model TE-5025A	0988 0843

Monitoring Locations

3.1.3 Two monitoring stations were set up at the proposed locations in accordance with the approved EM&A Manuals for SCL(HUH-ADM) as well as the works areas of the Project. The locations of the construction dust monitoring stations are summarised in **Table 3.2** and shown in **Figure 2.1.** The locations of air sensitive receivers related to the Project were also shown in **Figures 2.2**.

Table 3.2 Locations of Construction Dust Monitoring Stations

ID	Air Sensitive Receiver (ASR) ID in EIA Report	Dust Monitoring Station
AM2*1	EXA6	Wanchai Sports Ground
AM4*2	EXA4	Pedestrian Plaza

*1 The monitoring station at AM2 was handed over from Contract SCL1126 in April 2015 and handed over to Contract SCL1123 on 28 October 2015.
*2 The monitoring station at AM4 was handed over to Contract SCL1123 on 1 April 2021.

Monitoring Methodology

3.1.4 24-hour TSP Monitoring

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

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(iv) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
(v) No furnace or incinerator flues nearby.
(vi) Airflow around the sampler was unrestricted.
(vii) Permission was obtained to set up the samplers and access to the monitoring stations.
(viii) A secured supply of electricity was obtained to operate the samplers.
(ix) The sampler was located more than 20 meters from any dripline.
(x) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(xi) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±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 Manuals (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 can be referred to the respective monthly EM&A reports.

Monitoring Schedule for the Reporting Period

3.1.5 EM&A works were carried out in accordance with the requirements stipulated in the approved EM&A Manuals. 24-hour TSP air quality monitoring for the reporting period with respect to the construction programme can be referred to the respective monthly EM&A reports.

3.2 Regular Construction Noise Monitoring

Monitoring Requirements

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

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, L10 and L90 would be recorded.	At least once per week

Monitoring Equipment

3.2.2 Noise monitoring was performed using sound level meters 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 3.4**.

Table 3.4 Noise Monitoring Equipment for Regular Noise Monitoring

Equipment	Brand and Model	S/N
Integrated Sound Level Meters	Model No. B&K 2238	2285692 2800927
	Model No. B&K 2250	3001291
	Model No. B&K 2250-L	2681366
	Model No. B&K 2270	2644597 3007965
Acoustic Calibrators	Model No. B&K 4231	3006428 3014024
	Model No. Rion Co., Ltd. NC-73	10307223
	Model No. Rion Co., Ltd. NC-74	34246490

Monitoring Locations

3.2.3 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. Locations of the noise monitoring stations are summarised in **Table 3.5** and shown in **Figure 3.1**. The locations of noise sensitive receivers related to the Project were also shown in **Figures 2.3**.

Table 3.5 Locations of Regular Construction Noise Monitoring Station

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

* The noise monitoring at NM1 was handed-over from SCL1129 in August 2015.

Monitoring Methodology

3.2.4 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.

3.2.5 Maintenance and Calibration

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

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

(c) Calibration certificates of the sound level meters and acoustic calibrators can be referred to the respective monthly EM&A reports.

Monitoring Schedule for the Reporting Period

3.2.6 EM&A works were carried out in accordance with the requirements stipulated in the approved EM&A Manuals. Impact noise monitoring for the reporting period with respect to the construction programme can be referred to the respective monthly EM&A reports.

3.3 Landscape and Visual

3.3.1 As per the EM&A Manuals, the landscape and visual mitigation measures should be implemented and site inspections should be undertaken once every two weeks during the construction period. The event and action plan for landscape and visual during construction phase is presented in **Appendix C**.

3.4 Waste Management Implications

3.4.1 As per the EM&A Manuals, waste management mitigation measures should be included waste generation, storage, recycling, transport and disposal. Apart from site inspection, documents including licences, permits, disposal and recycling records should be reviewed and audited for compliance with the legislation and contract requirements. In addition, the routine site inspections should check the implementation of the recommended good site practices and other waste management mitigation measures.

3.5 Site Inspection

3.5.1 Regular site inspections should be carried out and led by the ER and attended by the Contractor and ET at least once per week during the construction phase. The areas of inspection should not be limited to the environmental conditions and the pollution control and mitigation measures within the works area, it should also review the environmental conditions of locations that are beyond the boundary of the works area but are likely to be affected directly or indirectly by the construction site activities of the Project.

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

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

Table 4.1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Date
Condition 2.10 (EP-436/2012/E)	Silt Curtain Deployment Plan (Rev. A)	21 March 2018
	Silt Curtain Deployment Plan (Rev. B)	13 April 2018
Condition 3.4 (EP-436/2012/A)	Monthly EM&A Report for November 2014	12 December 2014
	Monthly EM&A Report for December 2014	14 January 2015
	Monthly EM&A Report for January 2015	13 February 2015
	Monthly EM&A Report for February 2015	13 March 2015
Condition 3.4 (EP-436/2012/B)	Monthly EM&A Report for March 2015	14 April 2015
	Monthly EM&A Report for April 2015	14 May 2015
	Monthly EM&A Report for May 2015	12 June 2015
	Monthly EM&A Report for June 2015	14 July 2015
	Monthly EM&A Report for July 2015	13 August 2015
	Monthly EM&A Report for August 2015	14 September 2015
Condition 3.4 (EP-436/2012/B & EP-436/2012/C)	Monthly EM&A Report for September 2015	14 October 2015
Condition 3.4 (EP-436/2012/C)	Monthly EM&A Report for October 2015	12 November 2015
	Monthly EM&A Report for December 2015	14 January 2016
Condition 3.4 (EP-436/2012/C & EP-436/2012/D)	Monthly EM&A Report for January 2016	12 February 2016
Condition 3.4 (EP-436/2012/D)	Monthly EM&A Report for February 2016	14 March 2016
	Monthly EM&A Report for March 2016	14 April 2016
	Monthly EM&A Report for April 2016	13 May 2016
	Monthly EM&A Report for May 2016	14 June 2016
	Monthly EM&A Report for June 2016	14 July 2016
	Monthly EM&A Report for July 2016	12 August 2016
	Monthly EM&A Report for August 2016	14 September 2016

	Monthly EM&A Report for September 2016	14 October 2016
	Monthly EM&A Report for October 2016	14 November 2016
Condition 3.4 (EP-436/2012/E)	Monthly EM&A Report for November 2016	14 December 2016
	Monthly EM&A Report for December 2016	13 January 2017
	Monthly EM&A Report for January 2017	14 February 2017
	Monthly EM&A Report for February 2017	14 March 2017
	Monthly EM&A Report for March 2017	13 April 2017
	Monthly EM&A Report for April 2017	12 May 2017
	Monthly EM&A Report for May 2017	14 June 2017
	Monthly EM&A Report for June 2017	14 July 2017
	Monthly EM&A Report for July 2017	14 August 2017
	Monthly EM&A Report for August 2017	14 September 2017
	Monthly EM&A Report for September 2017	16 October 2017
	Monthly EM&A Report for October 2017	14 November 2017
	Monthly EM&A Report for November 2017	14 December 2017
	Monthly EM&A Report for December 2017	12 January 2018
	Monthly EM&A Report for January 2018	14 February 2018
	Monthly EM&A Report for February 2018	14 March 2018
	Monthly EM&A Report for March 2018	13 April 2018
	Monthly EM&A Report for April 2018	14 May 2018
	Monthly EM&A Report for May 2018	14 June 2018
	Monthly EM&A Report for June 2018	13 July 2018
	Monthly EM&A Report for July 2018	14 August 2018
	Monthly EM&A Report for August 2018	14 September 2018
	Monthly EM&A Report for September 2018	14 October 2018
	Monthly EM&A Report for October 2018	14 November 2018
	Monthly EM&A Report for November 2018	14 December 2018
	Monthly EM&A Report for December 2018	14 January 2019
Condition 3.4 (EP-436/2012/F)	Monthly EM&A Report for January 2019	14 February 2019
	Monthly EM&A Report for February 2019	14 March 2019
	Monthly EM&A Report for March 2019	15 April 2019
	Monthly EM&A Report for April 2019	14 May 2019

	Monthly EM&A Report for May 2019	14 June 2019
	Monthly EM&A Report for June 2019	12 July 2019
	Monthly EM&A Report for July 2019	14 August 2019
	Monthly EM&A Report for August 2019	13 September 2019
	Monthly EM&A Report for September 2019	14 October 2019
	Monthly EM&A Report for October 2019	14 November 2019
	Monthly EM&A Report for November 2019	13 December 2019
	Monthly EM&A Report for December 2020	14 January 2020
	Monthly EM&A Report for January 2020	14 February 2020
	Monthly EM&A Report for February 2020	13 March 2020
	Monthly EM&A Report for March 2020	14 April 2020
	Monthly EM&A Report for April 2020	14 May 2020
	Monthly EM&A Report for May 2020	11 June 2020
	Monthly EM&A Report for June 2020	14 July 2020
	Monthly EM&A Report for July 2020	14 August 2020
	Monthly EM&A Report for July 2020	14 August 2020
	Monthly EM&A Report for August 2020	14 September 2020
	Monthly EM&A Report for September 2020	14 October 2020
	Monthly EM&A Report for October 2020	13 November 2020
	Monthly EM&A Report for November 2020	14 December 2020
	Monthly EM&A Report for December 2020	14 January 2021
	Monthly EM&A Report for January 2021	11 February 2021
	Monthly EM&A Report for February 2021	12 March 2021
	Monthly EM&A Report for March 2021	14 April 2021
	Monthly EM&A Report for April 2021	14 May 2021
	Monthly EM&A Report for May 2021	11 June 2021
	Monthly EM&A Report for June 2021	14 July 2021
	Monthly EM&A Report for July 2021	13 August 2021
	Monthly EM&A Report for August 2021	14 September 2021
	Monthly EM&A Report for September 2021	13 October 2021
	Monthly EM&A Report for October 2021	12 November 2021
	Monthly EM&A Report for November 2021	14 December 2021

5 MONITORING RESULTS

5.1 Construction Dust Monitoring

5.1.1 The monitoring results for 24-hour TSP are summarised in **Table 5.1**. The graphical plots are presented in **Appendix E**. The meteorological data extracted from the nearest Automatic Weather Station can be referred to the respective monthly EM&A reports.

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

ID	Average (μg/m^3)	Range (μg/m^3)	Action Level (μg/m^3)	Limit Level (μg/m^3)
AM2*1	43.1	15.4 – 89.2	160	260
AM4*2	83.4	9.9 – 319.1	198	260

*1 The monitoring station at AM2 was handed-over from Contract SCL1126 in April 2015 and handed-over to Contract SCL1123 on 28 October 2015.
*2 The monitoring station at AM4 was handed-over to Contract SCL1123 on 1 April 2021.

5.1.2 One (1) exceedance of Action Level of 24-hour TSP was recorded at AM4 on 2 March 2017. Investigation of exceedance had been conducted and there is no adequate information to conclude the recorded action level exceedance is related to the Project. Details can be referred to the respective monthly EM&A report.

5.1.3 One (1) Limit Level exceedances at monitoring location AM4 was recorded on 11 January 2021. Based on the investigation, there was no adequate information to conclude the recorded Limit level exceedance was related to the Project-related construction works. Details can be referred to the respective monthly EM&A report.

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

5.1.5 Major dust sources during the monitoring included construction dust from the Project site and other nearby construction sites and also nearby traffic emission.

5.2 Regular Construction Noise Monitoring

5.2.1 The monitoring results for noise are summarized in **Table 5.2** and the graphical plot is provided in **Appendix F**.

Table 5.2 Summary of Impact Noise Monitoring Result in the Reporting Period

ID	Range, dB(A), $L_{eq\ (30\ mins)}$	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
NM1*	54.7 – 74.9	75

* The noise monitoring at NM1 was handed-over from SCL1129 in August 2015.

5.2.2 No noise complaint was received in the reporting period during 0700 to 1900 hours on normal weekdays; hence, no Action Level exceedance was recorded.

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

5.2.4 The event and action plan is annexed in **Appendix C**.

5.2.5 Major noise sources during the monitoring included construction noise from the Project site and other nearby construction sites, nearby traffic noise and noise from school activities and the community.

5.3 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, the actual amount of different types of waste disposed or reused in the reporting period are summarized in **Table 5.3**. The waste flow table is annexed in **Appendix G.**

Table 5.3 Summary of Waste Flow the Reporting Period

Waste Type Disposed / Reused			Actual Amount
Inert C&D Materials	Disposed	Public fill disposed at TKO137FB	176,692.0 m^3
		Public fill disposed at TKO137SF	39.5 m^3
		Public fill disposed at TM38FB	1,429.9 m^3
		Public fill disposed at CWPFBP	35,607.9 m^3
	Reused in Other Projects*		29,107.3 m^3
	Reused in Mainland		149,125.1 m^3
Non-inert C&D Materials	Recycled	Paper collected by recycling contractor	2,145.0 kg
	Disposed	Chemical waste collected by licensed contractor	1,505.4 kg
		General refuse disposed at landfill	4,778.4 m^3
Marine Dumping	Disposed	Type 1 marine dumping delivered to Hung Hom Barging Point	195.2 m^3
		Type 2 marine dumping delivered to Hung Hom Barging Point	85.4 m^3

* SCL1128 delivered the spoil to WDII C1, CWB, SCL 1121, SCL 1103, WDII C3, WDII C2, 8217, HY/2010/08, PSK226, SCL1112, Area 56A, M+ and XRL810B for beneficial use.

5.4 Landscape and Visual

5.4.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted. Summary of the site inspections in the reporting period can be referred to the respective monthly EM&A reports.

5.4.2 The event and action plan is annexed in **Appendix C**.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1.1 Site inspections were carried out on a weekly basis while joint site inspections were carried out on a monthly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project and ensure that all mitigation measures were implemented timely and properly. Summary of the site inspections in the reporting period can be referred to the respective monthly EM&A reports.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

7.1.1 One (1) Action level exceedance and one (1) Limit Level exceedance of air quality were recorded in March 2017 and January 2021 respectively. Investigations for the exceedances were conducted and the results revealed that the recorded two air quality exceedances were not in relation to the construction works of the Project.

7.1.2 No noise complaint during 0700 to 1900 hours on normal weekdays was received in the reporting period; hence, no Action Level exceedance was recorded.

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

7.2 Summary of Environmental Non-Compliance

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

7.3 Summary of Environmental Complaints

7.3.1 Twelve (12) environmental complaints were received during the reporting period, in which seven (7) complaints regarding noise impact, three (3) complaints regarding water pollution, one (1) complaint regarding odour nuisance, and one (1) complaint regarding air nuisance and water pollution. Excepted one (1) compliant, all recorded environmental complaints were considered as non-project related. All the complaints were settled, no further complaint was received after the implementation of the mitigation measures.

7.3.2 The detail of the recorded complaints and the cumulative statistics on environmental complaints is provided in **Appendix H**.

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 period. Cumulative statistics on notification of summons and successful prosecutions is provided in **Appendix H**.

8 REVIEW OF THE VALIDITY OF EIA PREDICTION AND IDENTIFICATION OF SHORTCOMINGS IN EIA RECOMMENDATIONS

8.1.1 Most of the air quality and all noise monitoring results in the reporting period were below the Action and Limit Levels. The result was in line with EIA prediction that with the implementation of mitigation measures and no shortcomings in EIA recommendations were identified.

8.1.2 During the reporting period, environmental mitigation measures and good site practices were implemented timely and properly. Environmental site inspections were carried out to monitor and audit the environmental performance and rectified where necessary.

8.1.3 The mitigation measures in EIA prediction and the approved EM&A manuals have been effectively implemented during the construction period.

8.1.4 The environmental monitoring methodology was considered well established as the monitoring results were found in line with EIA predictions.

8.1.5 With reviewing site inspection record related to landscape and visual, the Contractor implemented the landscape and visual mitigation measures correctly. The result was in line with EIA prediction that with the implementation of mitigation measures and no shortcomings in EIA recommendations were identified.

8.1.6 With reviewing waste flow record, the Contractor implemented the waste management mitigation measures correctly. The result was in line with EIA prediction that with the implementation of mitigation measures and no shortcomings in EIA recommendations were identified.

9 COMMENTS

9.1.1 The air quality and noise monitoring were properly conducted in accordance with the approved EM&A Manuals. The monitoring events were sufficient to justify the respective environmental impacts on the nearby sensitive receivers.

9.1.2 Even though a few exceedances of air quality monitoring were recorded, all exceedances were considered not related to the Project. The environmental monitoring results indicated that the construction activities with the implementation of mitigation measures in general complied with the relevant environmental requirements.

9.1.3 The mitigation measures in EIA prediction and the approved EM&A Manuals have been effectively implemented during the construction period.

9.1.4 The environmental monitoring methodology was considered well established as the monitoring results were found in line with EIA predictions

9.1.5 It is concluded that the overall environmental performance of the project is satisfactory. The overall EM&A programme was conducted satisfactorily. All aspects of the EM&A programme were reviewed and audited independently and objectively. The requirements in the EM&A Manuals are fully complied with.

10 CONCLUSIONS AND RECOMMENDATIONS

10.1.1 24-hour TSP and noise monitoring were carried out in the reporting period.

10.1.2 One (1) Action level exceedance and one (1) Limit Level exceedance of air quality were recorded in March 2017 and January 2021 respectively. Investigations for the exceedances were conducted and the results revealed that the recorded two air quality exceedances were not in relation to the construction works of the Project.

10.1.3 No noise complaint during 0700 to 1900 hours on normal weekdays was received in the reporting period; hence, no Action Level exceedance was recorded.

10.1.4 No exceedance of Limit Level of noise monitoring was recorded in the reporting period.

10.1.5 Twelve (12) environmental complaints were received during the reporting period, in which seven (7) complaints regarding noise impact, three (3) complaints regarding water pollution, one (1) complaint regarding odour nuisance, and one (1) complaint regarding air nuisance and water pollution. Excepted one (1) compliant, all recorded environmental complaints were considered as non-project related. All the complaints were settled, no further complaint was received after the implementation of the mitigation measures.

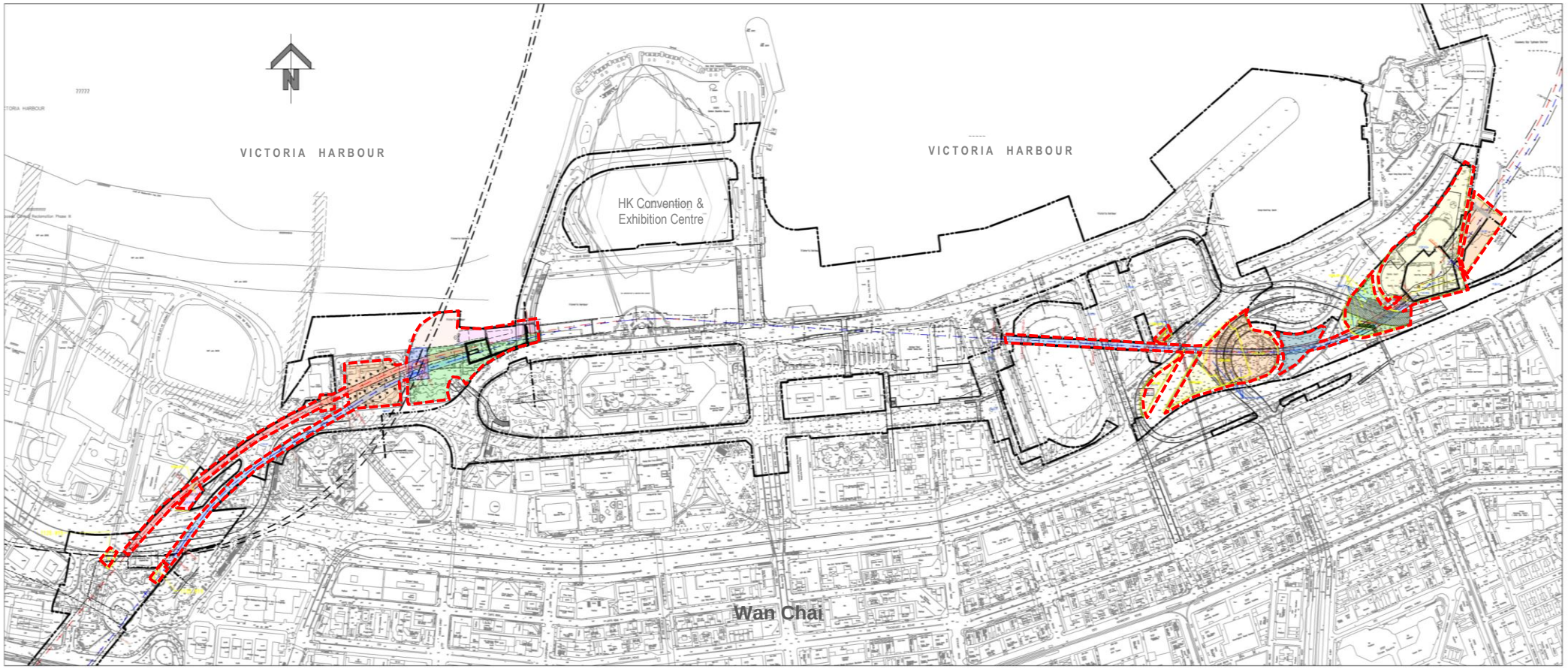
10.1.6 No environmental related prosecution or notification of summons was received in the reporting period.

10.1.7 All construction works with environmental impact concerned have been completed. The cessation of construction phase EM&A programme under the Project was proposed on 08 October 2021 and EPD expressed no objection to the proposed cessation after the visit on 12 November 2021 and approved letter was obtained on 9 December 2021. Hence, the construction phase EM&A programme of the Project was terminated as agreed.

10.1.8 The overall EM&A programme was conducted satisfactorily. All aspects of the EM&A programme were reviewed and audited independently and objectively. The requirements in the EM&A Manuals are fully complied with.

10.1.9 With the success of the overall EM&A programme, the deterioration of the environment caused by the Project was cost-effectively identified and necessary prompt effective mitigation measures were implemented to avoid any unacceptable impacts.

FIGURES

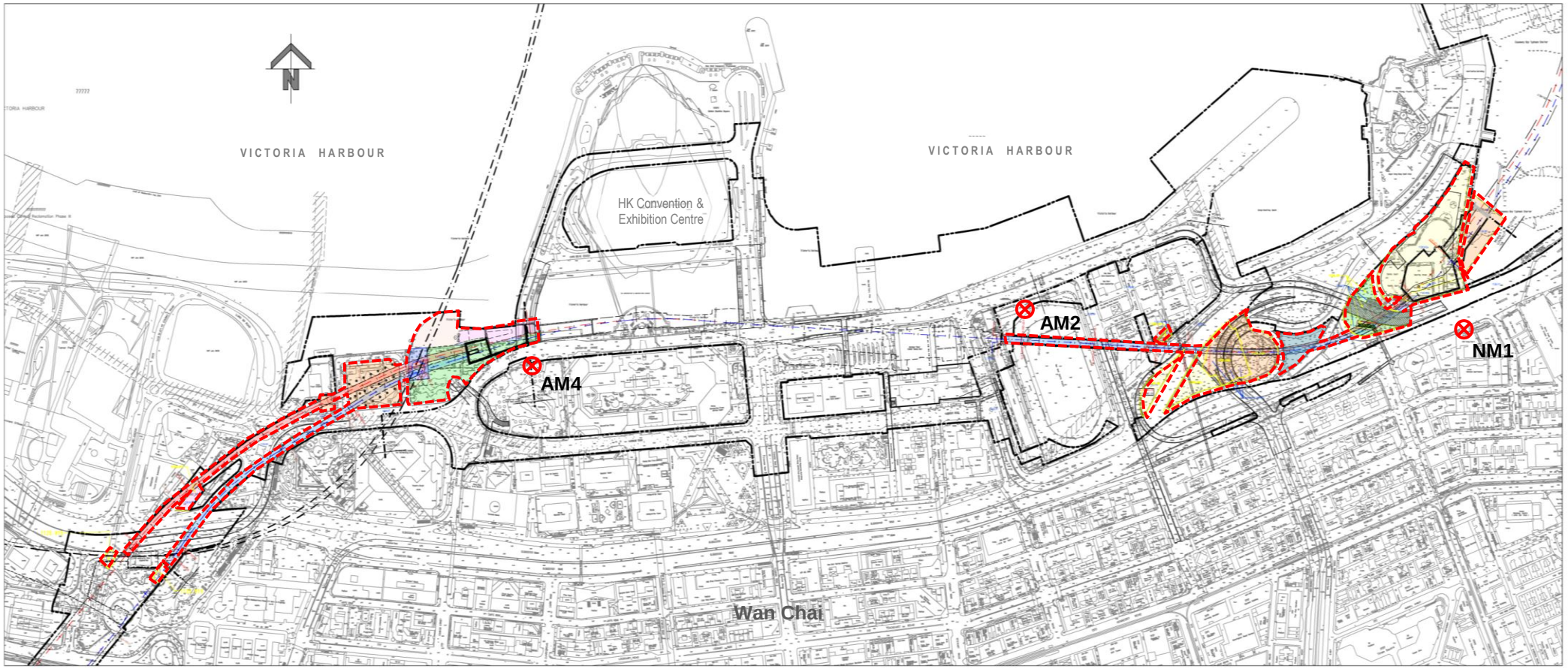


SCL Contract 1128
South Ventilation Building to Admiralty Tunnels

AECOM

SITE LAYOUT PLAN of SCL1128

Project No.: 60331173 **Date: February 2016** **Figure 1.1**



Site Alignment

Monitoring Location

#1 The air quality monitoring at AM2 was handed over from Contract SCL1126 in April 2015 and handed over to Contract SCL1123 on 28 October 2015.

#2 The air quality monitoring at AM4 was handed over to Contract SCL1123 on 1 April 2021.

* The noise monitoring at NM1 was handed-over from SCL1129 in August 2015.

SCL Contract 1128

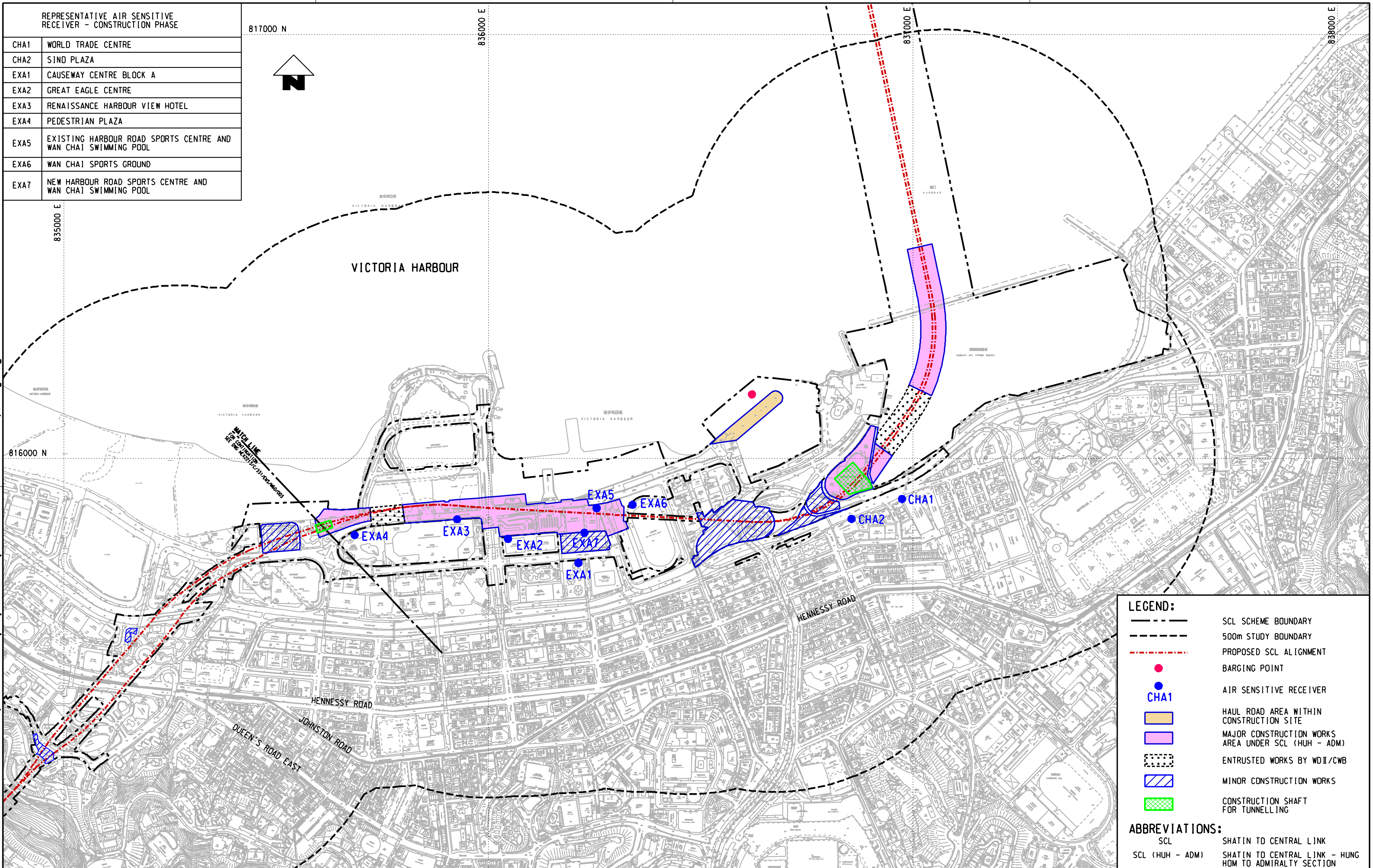
South Ventilation Building to Admiralty Tunnels

AECOM

Air Quality and Noise Monitoring Loactions

Project No.: 60331173 **Date: May 2021** **Figure 2.1**

	REPRESENTATIVE AIR SENSITIVE RECEIVER - CONSTRUCTION PHASE
CHA1	WORLD TRADE CENTRE
CHA2	SINO PLAZA
EXA1	CAUSEWAY CENTRE BLOCK A
EXA2	GREAT EAGLE CENTRE
EXA3	RENAISSANCE HARBOUR VIEW HOTEL
EXA4	PEDESTRIAN PLAZA
EXA5	EXISTING HARBOUR ROAD SPORTS CENTRE AND WAN CHAI SWIMMING POOL
EXA6	WAN CHAI SPORTS GROUND
EXA7	NEW HARBOUR ROAD SPORTS CENTRE AND WAN CHAI SWIMMING POOL



LEGEND:

- SCL SCHEME BOUNDARY
- 500m STUDY BOUNDARY
- PROPOSED SCL ALIGNMENT
- BARGING POINT
- CHA1 AIR SENSITIVE RECEIVER
- HAUL ROAD AREA WITHIN CONSTRUCTION SITE
- MAJOR CONSTRUCTION WORKS AREA UNDER SCL (HUH - ADM)
- ENTRUSTED WORKS BY WDII/CWB
- MINOR CONSTRUCTION WORKS
- CONSTRUCTION SHAFT FOR TUNNELLING

ABBREVIATIONS:

SCL	SHATIN TO CENTRAL LINK
SCL (HUH - ADM)	SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION

DRAWN	DXL
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	26/NOV/2010

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

MTR

SHATIN TO CENTRAL LINK

ORIGINATOR: AECOM

CADD REF. NEX2213_C_331_ENS_M60_002G.dgn

LOCATION OF AIR SENSITIVE RECEIVERS

SCALE 1 : 8000 (A3)

Figure 2.2 Locations of Air Sensitive Receivers

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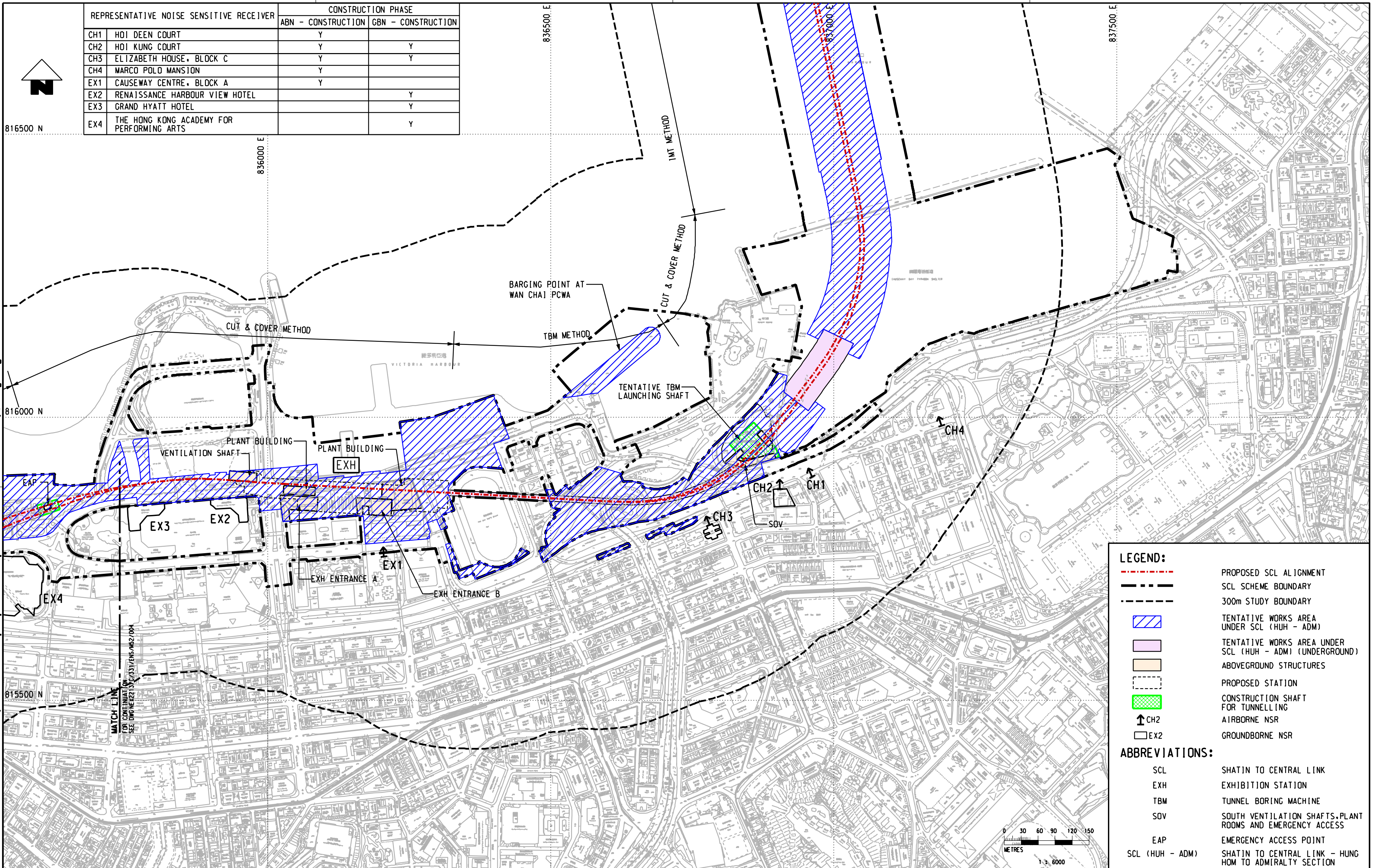
REPRESENTATIVE NOISE SENSITIVE RECEIVER		CONSTRUCTION PHASE	
		ABN - CONSTRUCTION	GBN - CONSTRUCTION
CH1	HOI DEEN COURT	Y	
CH2	HOI KUNG COURT	Y	Y
CH3	ELIZABETH HOUSE, BLOCK C	Y	Y
CH4	MARCO POLO MANSION	Y	
EX1	CAUSEWAY CENTRE, BLOCK A	Y	
EX2	RENAISSANCE HARBOUR VIEW HOTEL		Y
EX3	GRAND HYATT HOTEL		Y
EX4	THE HONG KONG ACADEMY FOR PERFORMING ARTS		Y



LEGEND:

- PROPOSED SCL ALIGNMENT
- SCL SCHEME BOUNDARY
- 300m STUDY BOUNDARY
- TENTATIVE WORKS AREA UNDER SCL (HUH - ADM)
- TENTATIVE WORKS AREA UNDER SCL (HUH - ADM) (UNDERGROUND)
- ABOVEGROUND STRUCTURES
- PROPOSED STATION
- CONSTRUCTION SHAFT FOR TUNNELLING
- CH2 AIRBORNE NSR
- EX2 GROUNDBORNE NSR

ABBREVIATIONS:

SCL	SHATIN TO CENTRAL LINK
EXH	EXHIBITION STATION
TBM	TUNNEL BORING MACHINE
SOV	SOUTH VENTILATION SHAFTS, PLANT ROOMS AND EMERGENCY ACCESS
EAP	EMERGENCY ACCESS POINT
SCL (HUH - ADM)	SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	HY
DESIGNED	---
CHECKED	LCR
APPROVED	---
DATE	02/AUG/2011

MTR

SHATIN TO CENTRAL LINK

ORIGINATOR

AECOM

CADD REF. NEX2213_C_331_ENS_M52_003C.dgn

LOCATIONS OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS FOR CONSTRUCTION PHASE

SCALE 1 : 6000 (A3)

Figure 2.3a Locations of Noise Sensitive Receivers

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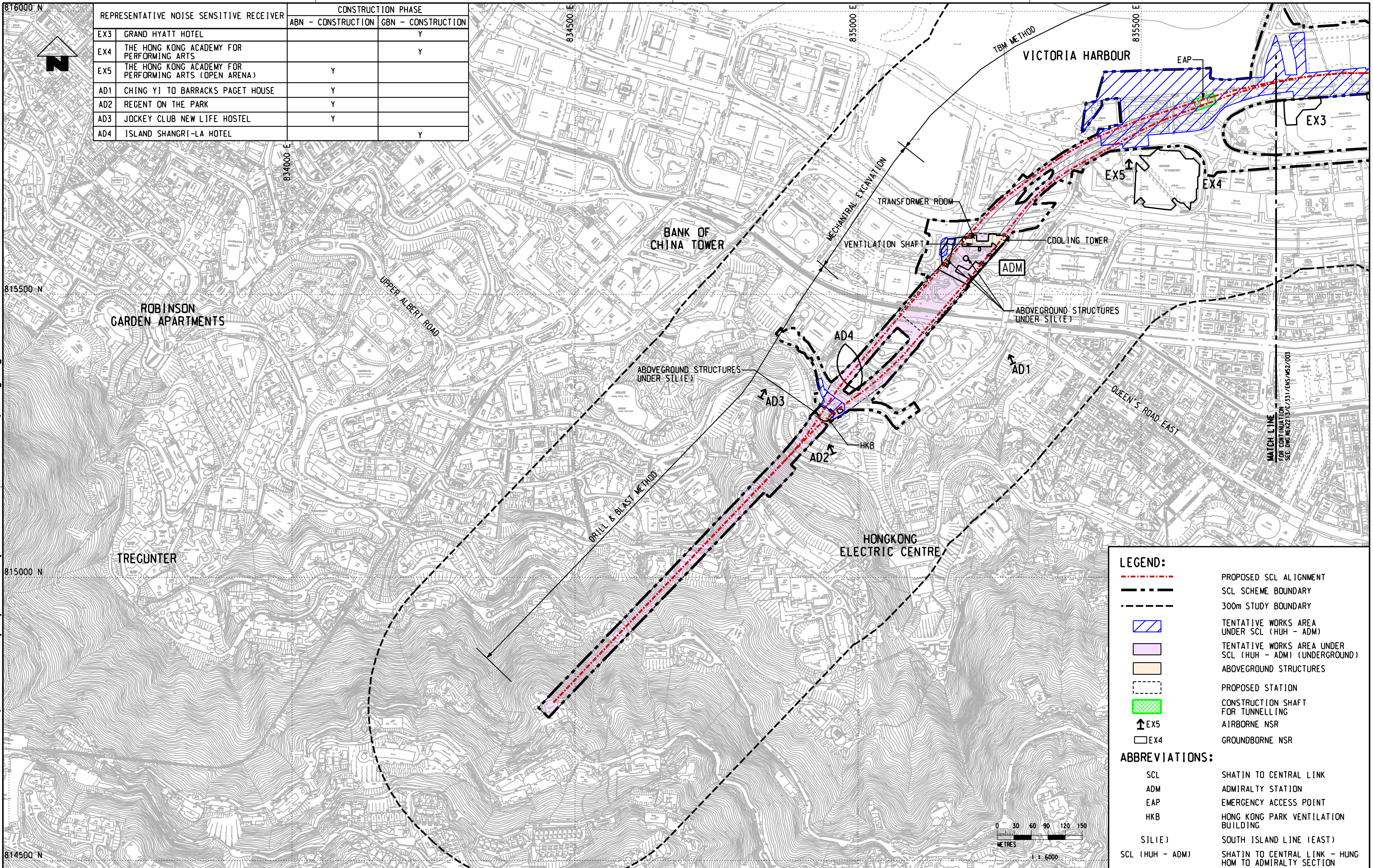
REPRESENTATIVE NOISE SENSITIVE RECEIVER		CONSTRUCTION PHASE	
		ABN - CONSTRUCTION	GBN - CONSTRUCTION
EX3	GRAND HYATT HOTEL		Y
EX4	THE HONG KONG ACADEMY FOR PERFORMING ARTS		Y
EX5	THE HONG KONG ACADEMY FOR PERFORMING ARTS (OPEN ARENA)	Y	
AD1	CHING YI TO BARRACKS PAGET HOUSE	Y	
AD2	REGENT ON THE PARK	Y	
AD3	JOCKEY CLUB NEW LIFE HOSTEL	Y	
AD4	ISLAND SHANGRI-LA HOTEL		Y



LEGEND:

(red dash-dot line)	PROPOSED SCL ALIGNMENT
(bold dash-dot line)	SCL SCHEME BOUNDARY
(dashed line)	300m STUDY BOUNDARY
(blue hatch)	TENTATIVE WORKS AREA UNDER SCL (HUH - ADM)
(pink fill)	TENTATIVE WORKS AREA UNDER SCL (HUH - ADM) (UNDERGROUND)
(beige fill)	ABOVEGROUND STRUCTURES
(dashed box)	PROPOSED STATION
(green hatch)	CONSTRUCTION SHAFT FOR TUNNELLING
EX5	AIRBORNE NSR
EX4	GROUNDBORNE NSR

ABBREVIATIONS:

SCL	SHATIN TO CENTRAL LINK
ADM	ADMIRALTY STATION
EAP	EMERGENCY ACCESS POINT
HKB	HONG KONG PARK VENTILATION BUILDING
SIL(E)	SOUTH ISLAND LINE (EAST)
SCL (HUH - ADM)	SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YJP
DESIGNED	---
CHECKED	LCR
APPROVED	---
DATE	04/NOV/2011

MTR

SHATIN TO CENTRAL LINK

ORIGINATOR

AECOM

CADD REF. NEX2213_C_331_ENS_M52_004E.dgn

LOCATIONS OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS FOR CONSTRUCTION PHASE

SCALE 1 : 6000 (A3)

Figure 2.3b Locations of Noise Sensitive Receivers

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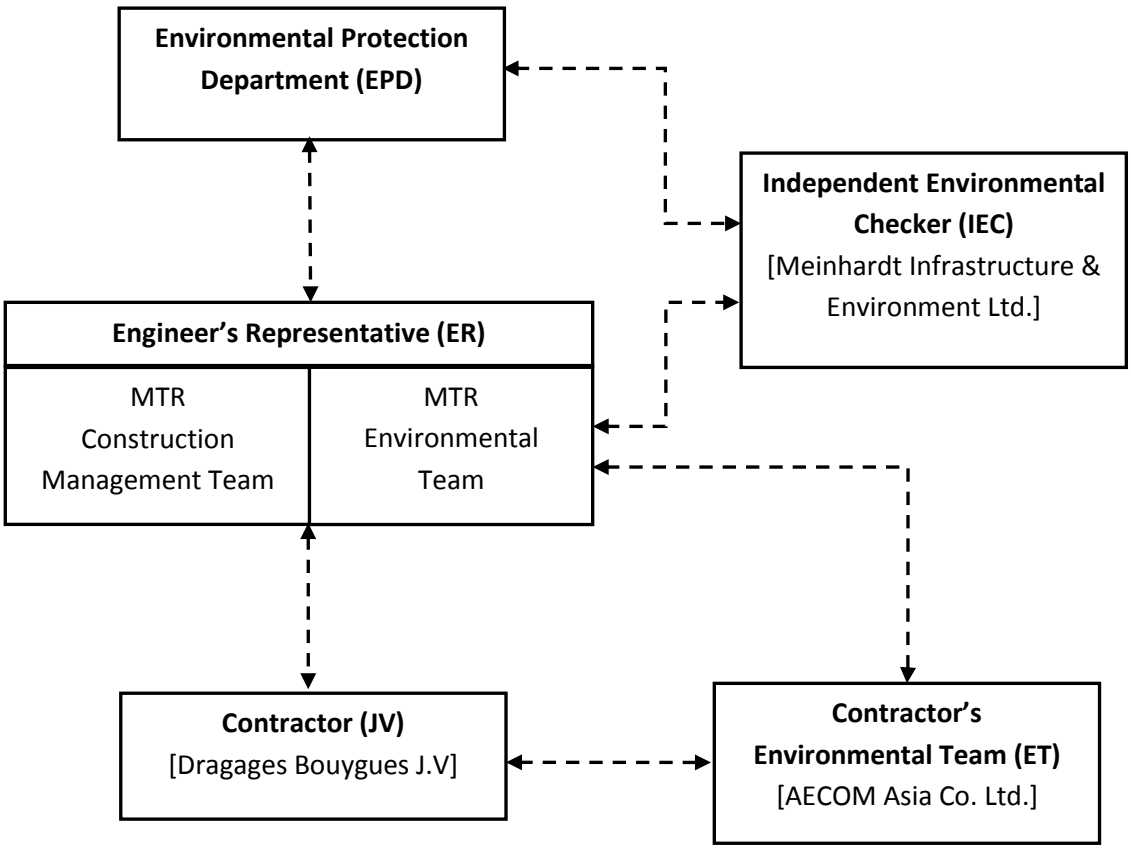
APPENDIX A

Project Organization Structure

Appendix A Project Organisation Structure



APPENDIX B

Summary of Action and Limit Levels

Appendix B – Summary of Action and Limit Levels

Table 1 Action and Limit Levels for 24-hour TSP

ID	Location	Action Level	Limit Level
AM2[#1]	Wan Chai Sports Ground	160 μg/m^3	260 μg/m^3
AM4[#2]	Pedestrian Plaza	198 μg/m^3	260 μg/m^3

#1 The monitoring station at AM2 was handed over from Contract SCL1126 in April 2015 and handed over to Contract SCL1123 on 28 October 2015.
#2 The monitoring station at AM4 was handed over to Contract SCL1123 on 1 April 2021.

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 handed-over from SCL Contract 1129 in August 2015.

APPENDIX C

Event Action Plan

Appendix C 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 C 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 C 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 D

Implementation Schedule of Environmental Mitigation Measures

Appendix D – 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	V
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	V
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	V
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	V
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	V
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	V
/	All retained/exist trees shall be properly protected during construction period.	Tree protection	Contractor	Works areas	Construction phase	V
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 D – 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	V V V
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	V
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	V
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 al dust impact and watering mitigation would be subject to the actual site condition. For example, 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 potentia 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

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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	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 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 V V V V V V V V V V V V	
/	***Dust suppression measures (con't)*** • De-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement	To minimize dust impacts	Contractor	Works areas	Construction phase	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

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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
/	• Install movable noise barriers, acoustic mat or full enclosure, screen the noisy plants during operation • Air compressors and Hand-held breaker shall be fitted with valid noise emission labels during operation	To minimize construction noise impact	Contractor	Works areas	Construction phase	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 • 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	V V V V V V V V V V V V V V V V V V
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 V V V V V V V V V V V V V
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	Construction phase	V V V V V V V V

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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
				Tunnel		
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 V V
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	To minimize water quality impacts from construction site runoff and general construction activities	Contractor	Works areas	Construction Phase	V V V V V V V V

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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
	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 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. <u>Acid Cleaning, Etching and Pickling Wastewater</u> • 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. <u>Wastewater from Site Facilities</u> • 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.					V V V V V V V V V 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

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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
S11.248	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 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	V
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	V
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	V V V V
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	To minimize water quality impact from effluent discharges from construction sites	Contractor	All construction works areas	Construction Phase	V

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	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.					
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
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	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	V

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	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.					
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	V
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 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	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

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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	V
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	V
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	V
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	V
/	***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.	To minimize potential adverse environmental impacts arising from accidental spillage	Contractor	Work Sites	Construction Phase	V V

Appendix D – 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 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.					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
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

Appendix D – 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	V
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	V
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	V
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	V

Appendix D – Environmental Mitigation Implementation Schedule

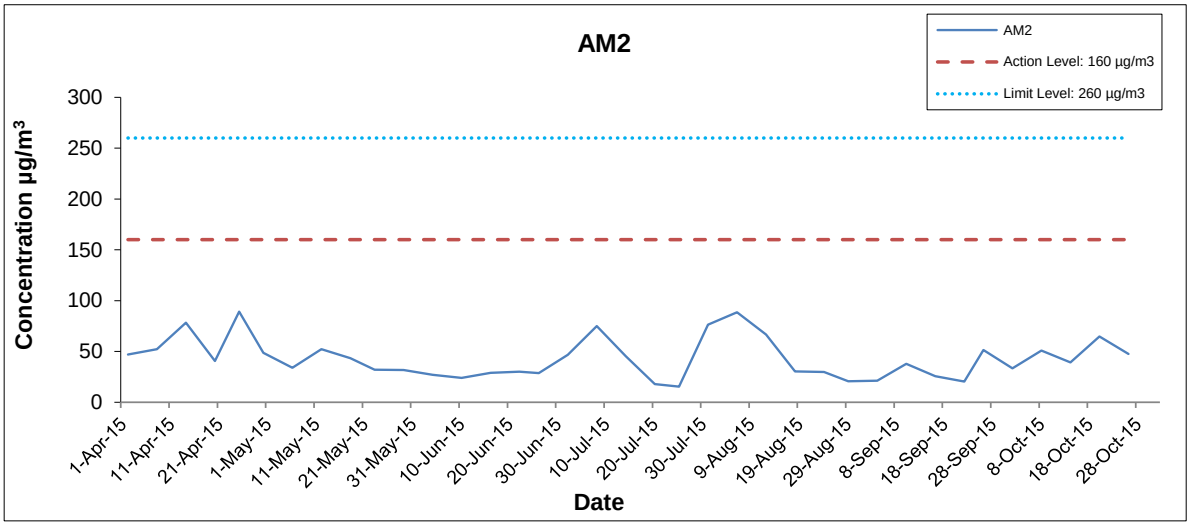
EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S13. 40	In order to minimize the potential adverse effects on health and 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	V

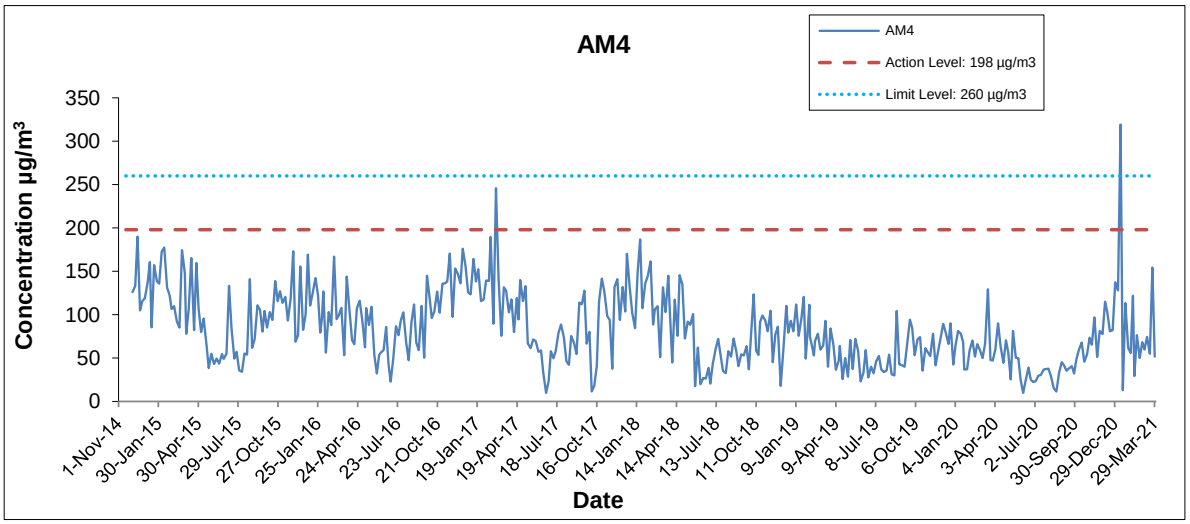
Legend: V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable

APPENDIX E

Air Quality Monitoring
Graphical Presentations

Air Quality Monitoring Result





*1 The air quality monitoring station at AM2 was handed over from Contract SCL1126 in April 2015 and handed over to Contract SCL1123 on 28 October 2015.
*2 The air quality monitoring station at AM4 was handed over to Contract SCL1123 on 1 April 2021.

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

AECOM

Graphical Presentation of Impact 24-hr TSP Monitoring Results

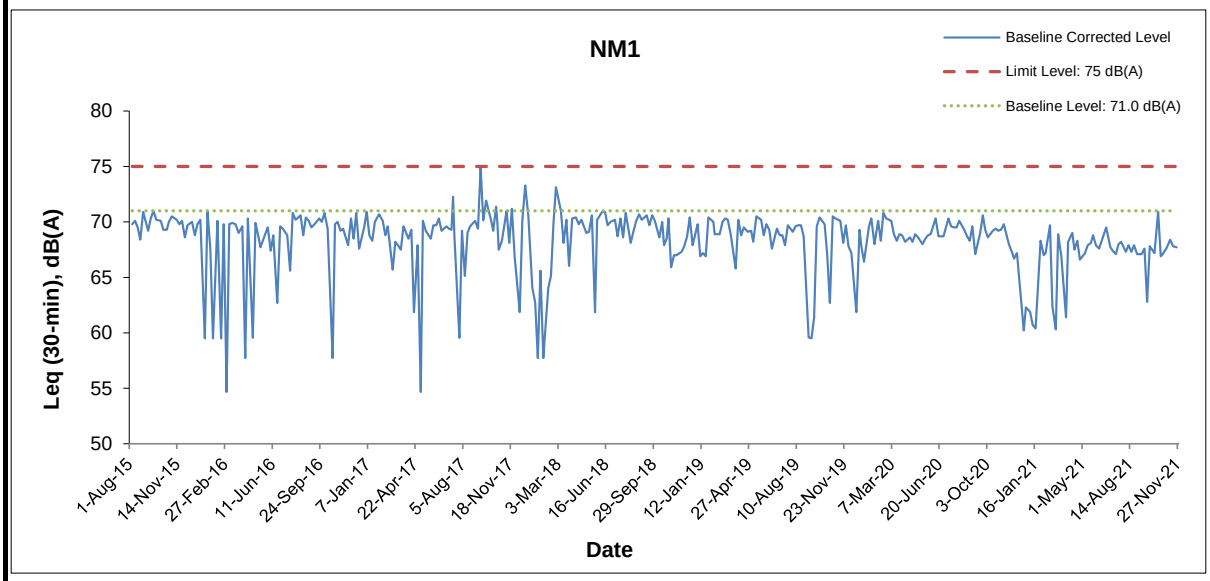
Date: April 2021

Appendix E

APPENDIX F

Noise Monitoring Graphical Presentations

Construction Noise Monitoring Results



*The noise monitoring station at NM1 was handed over from SCL1129 in August 2015.

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

Graphical Presentation of Impact Noise Monitoring Results

Date: December 2021

Appendix F

APPENDIX G

Summary of Waste Flow Table

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																			Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																			Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects													Reused in Mainland	**Total (m^3)**						Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)			Total	Total	Total	Total	Total	(m^3)	(m^3)
2014 Total	672.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	673.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
2015 Total	33,313.7	39.5	298.9	13,822.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47,475.1	0.0	0.0	0.0	0.0	356.3	0.0	0.0
2016 Total	48,226.7	0.0	473.6	21,682.8	6,571.8	971.8	15.5	762.5	1,099.4	54.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83,443.2	163,301.9	0.0	0.0	0.0	0.0	555.4	195.2	85.4
2017 Total	56,099.0	0.0	0.0	0.0	0.0	0.0	736.0	0.0	2,038.0	2,709.6	3,531.0	3,370.0	622.2	0.0	0.0	0.0	0.0	65,681.8	134,787.5	0.0	0.0	0.0	680.4	666.3	0.0	0.0
2018 Total	18,922.5	0.0	657.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	708.5	5,686.6	183.4	46.6	0.0	26,204.9	0.0	2,145.0	0.0	0.0	887.1	0.0	0.0
2019 Total	7,227.0	0.0	0.0	102.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7,329.4	0.0	0.0	0.0	425.0	849.6	0.0	0.0
2020 Total	10,690.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10,690.2	0.0	0.0	0.0	400.0	1,208.3	0.0	0.0
2021 Total	1,540.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,540.3	0.0	0.0	0.0	0.0	254.5	0.0	0.0
SUM	**176,692.0**	**39.5**	**1,429.9**	**35,607.9**	**6,571.8**	**971.8**	**751.5**	**762.5**	**3,137.4**	**2,764.4**	**3,531.0**	**3,370.0**	**622.2**	**708.5**	**5,686.6**	**183.4**	**46.6**	**149,125.1**	**392,002.4**	**0.0**	**2,145.0**	**0.0**	**1,505.4**	**4,778.4**	**195.2**	**85.4**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																		Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																		Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects												Reused in Mainland	**Total (m^3)**						Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)							(m^3)	(m^3)
2014/11	313.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	313.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014/12	359.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	360.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
2014 Total	**672.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**673.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.1**	**0.0**	**0.0**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																		Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																		Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects													Reused in Mainland	**Total (m^3)**						Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)			Total	Total	Total	Total	Total	(m^3)	(m^3)
2015/01	1,499.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,499.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0
2015/02	171.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	171.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0
2015/03	1,553.1	0.0	45.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,599.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0
2015/04	2,224.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,224.0	0.0	0.0	0.0	0.0	10.5	0.0	0.0
2015/05	4,496.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,500.4	0.0	0.0	0.0	0.0	11.3	0.0	0.0
2015/06	3,509.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,510.0	0.0	0.0	0.0	0.0	18.9	0.0	0.0
2015 Sub-total	**13,453.5**	**0.0**	**49.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**13,503.4**	**0.0**	**0.0**	**0.0**	**0.0**	**66.2**	**0.0**	**0.0**
2015/07	4,450.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,450.0	0.0	0.0	0.0	0.0	13.4	0.0	0.0
2015/08	4,481.6	0.0	0.0	377.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,858.8	0.0	0.0	0.0	0.0	65.0	0.0	0.0
2015/09	3,220.0	2.8	8.0	1,112.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,342.9	0.0	0.0	0.0	0.0	90.6	0.0	0.0
2015/10	2,480.8	33.9	11.7	996.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,522.9	0.0	0.0	0.0	0.0	57.2	0.0	0.0
2015/11	1,978.5	0.0	203.5	7,414.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9,596.6	0.0	0.0	0.0	0.0	26.0	0.0	0.0
2015/12	3,249.3	2.8	26.1	3,922.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7,200.5	0.0	0.0	0.0	0.0	37.9	0.0	0.0
2015 Total	**33,313.7**	**39.5**	**298.9**	**13,822.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**47,475.1**	**0.0**	**0.0**	**0.0**	**0.0**	**356.3**	**0.0**	**0.0**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																		Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																		Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects																			Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)	Reused in Mainland	**Total (m^3)**	Total	Total	Total	Total	Total	(m^3)	(m^3)
2016/01	2,621.5	0.0	18.0	1,105.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,745.0	0.0	0.0	0.0	0.0	40.6	0.0	0.0
2016/02	3,489.9	0.0	168.8	184.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,843.3	0.0	0.0	0.0	0.0	24.4	0.0	0.0
2016/03	4,937.3	0.0	16.3	257.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5,211.4	0.0	0.0	0.0	0.0	29.6	0.0	0.0
2016/04	5,385.1	0.0	26.0	747.0	4,814.0	207.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11,179.4	0.0	0.0	0.0	0.0	27.3	0.0	0.0
2016/05	7,126.9	0.0	7.4	3,863.9	1,525.8	764.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13,288.5	0.0	0.0	0.0	0.0	31.3	0.0	0.0
2016/06	4,768.4	0.0	7.2	11,516.9	232.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13,766.1	30,290.5	0.0	0.0	0.0	0.0	43.7	147.7	31.0
2016 Sub-total	**28,329.1**	**0.0**	**243.6**	**17,675.7**	**6,571.8**	**971.8**	**0.0**	**0.0**	**0.0**	**0.0**	**971.8**	**971.8**	**971.8**	**971.8**	**971.8**	**971.8**	**971.8**	**13,766.1**	**67,558.0**	**0.0**	**0.0**	**0.0**	**0.0**	**196.9**	**147.7**	**31.0**
2016/07	2,085.8	0.0	22.6	1,407.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12,369.5	15,885.1	0.0	0.0	0.0	0.0	29.5	47.5	46.4
2016/08	1,259.5	0.0	199.4	2,599.8	0.0	0.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7,350.8	11,424.9	0.0	0.0	0.0	0.0	79.0	0.0	8.1
2016/09	3,609.0	0.0	8.1	0.0	0.0	0.0	0.0	744.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5,341.1	9,703.0	0.0	0.0	0.0	0.0	79.8	0.0	0.0
2016/10	8,321.2	0.0	0.0	0.0	0.0	0.0	0.0	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11,318.2	19,656.9	0.0	0.0	0.0	0.0	63.5	0.0	0.0
2016/11	2,575.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,044.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24,081.5	27,701.3	0.0	0.0	0.0	0.0	46.0	0.0	0.0
2016/12	2,046.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.2	54.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9,216.1	11,372.6	0.0	0.0	0.0	0.0	60.7	0.0	0.0
2016 Total	**48,226.7**	**0.0**	**473.6**	**21,682.8**	**6,571.8**	**971.8**	**15.5**	**762.5**	**1,099.4**	**54.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**83,443.2**	**163,301.9**	**0.0**	**0.0**	**0.0**	**0.0**	**555.4**	**195.2**	**85.4**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																			Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																			Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects													Reused in Mainland	**Total (m^3)**						Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)			Total	Total	Total	Total	Total	(m^3)	(m^3)
2017/01	1,126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	613.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,785.0	0.0	0.0	0.0	0.0	64.0	0.0	0.0
2017/02	1,646.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	274.8	0.0	467.7	0.0	0.0	0.0	0.0	0.0	0.0	5,924.4	8,313.5	0.0	0.0	0.0	0.0	63.6	0.0	0.0
2017/03	1,242.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	592.2	3,370.0	0.0	0.0	0.0	0.0	0.0	5,204.5	10,409.0	0.0	0.0	0.0	0.0	58.3	0.0	0.0
2017/04	578.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.1	291.8	0.0	0.0	0.0	0.0	0.0	0.0	12,538.0	13,500.9	0.0	0.0	0.0	0.0	60.0	0.0	0.0
2017/05	3,392.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,150.2	0.0	1,419.7	0.0	0.0	0.0	0.0	0.0	0.0	16,186.3	22,148.8	0.0	0.0	0.0	0.0	35.4	0.0	0.0
2017 Sub-total	**7,985.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2,038.0**	**139.1**	**2,771.3**	**3,370.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**39,853.2**	**56,157.2**	**0.0**	**0.0**	**0.0**	**0.0**	**281.3**	**0.0**	**0.0**
2017/06	3,421.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,635.7	6,148.1	0.0	0.0	0.0	0.0	40.8	0.0	0.0
2017/07	3,206.1	0.0	0.0	0.0	0.0	0.0	736.0	0.0	0.0	2,396.7	54.8	0.0	622.2	0.0	0.0	0.0	0.0	1,256.1	8,271.8	0.0	0.0	0.0	0.4	61.6	0.0	
2017/08	3,005.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.4	53.7	0.0	0.0	0.0	0.0	0.0	0.0	3,945.6	7,086.6	0.0	0.0	0.0	0.0	59.3	0.0	0.0
2017/09	2,482.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,757.2	6,239.8	0.0	0.0	0.0	0.0	56.3	0.0	0.0
2017/10	12,792.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	495.7	0.0	0.0	0.0	0.0	0.0	0.0	5,230.3	18,518.3	0.0	0.0	0.0	0.0	45.4	0.0	0.0
2017/11	11,350.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	155.6	0.0	0.0	0.0	0.0	0.0	0.0	6,908.4	18,414.6	0.0	0.0	0.0	0.0	53.1	0.0	0.0
2017/12	11,855.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,095.4	13,951.1	0.0	0.0	0.0	680.0	68.5	0.0	0.0
2017 Total	**56,099.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**736.0**	**0.0**	**2,038.0**	**2,709.6**	**3,531.0**	**3,370.0**	**622.2**	**0.0**	**0.0**	**0.0**	**0.0**	**65,681.8**	**134,787.5**	**0.0**	**0.0**	**0.0**	**680.4**	**666.3**	**0.0**	**0.0**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																		Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																		Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects												Reused in Mainland	**Total (m^3)**						Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)			Total	Total	Total	Total	Total	(m^3)	(m^3)
2018/01	3,047.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	708.5	3,748.9	0.0	0.0	0.0	7,504.3	0.0	0.0	0.0	0.0	38.3	0.0	0.0
2018/02	2,092.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	547.7	87.3	0.0	0.0	2,727.9	0.0	0.0	0.0	0.0	41.6	0.0	0.0
2018/03	2,107.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,389.9	96.1	0.0	0.0	3,593.6	0.0	800.0	0.0	0.0	108.3	0.0	0.0
2018/04	207.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	207.4	0.0	165.0	0.0	0.0	33.0	0.0	0.0
2018/05	3,007.4	0.0	657.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,664.8	0.0	0.0	0.0	0.0	48.1	0.0	0.0
2018/06	4,794.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.0	0.0	4,825.0	0.0	0.0	0.0	0.0	58.4	0.0	0.0
2018 Sub-total	**15,256.2**	**0.0**	**657.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**708.5**	**5,686.6**	**183.4**	**31.0**	**0.0**	**22,523.1**	**0.0**	**965.0**	**0.0**	**0.0**	**327.7**	**0.0**	**0.0**
2018/07	1,607.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.6	0.0	1,623.0	0.0	0.0	0.0	0.0	80.8	0.0	0.0
2018/08	422.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	422.2	0.0	1,180.0	0.0	0.0	115.6	0.0	0.0
2018/09	359.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	359.7	0.0	0.0	0.0	0.0	94.3	0.0	0.0
2018/10	473.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	473.2	0.0	0.0	0.0	0.0	86.2	0.0	0.0
2018/11	268.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	268.1	0.0	0.0	0.0	0.0	84.2	0.0	0.0
2018/12	535.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	535.6	0.0	0.0	0.0	0.0	98.1	0.0	0.0
2018 Total	**18,922.5**	**0.0**	**657.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**708.5**	**5,686.6**	**183.4**	**46.6**	**0.0**	**26,204.9**	**0.0**	**2,145.0**	**0.0**	**0.0**	**887.1**	**0.0**	**0.0**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																		Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																		Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects																			Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)	Reused in Mainland	**Total (m^3)**	Total	Total	Total	Total	Total	(m^3)	(m^3)
2019/01	800.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	800.7	0.0	0.0	0.0	0.0	90.6	0.0	0.0
2019/02	649.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	649.5	0.0	0.0	0.0	0.0	79.0	0.0	0.0
2019/03	1,392.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,392.3	0.0	0.0	0.0	0.0	78.1	0.0	0.0
2019/04	1,046.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,046.5	0.0	0.0	0.0	0.0	73.5	0.0	0.0
2019/05	918.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	918.9	0.0	0.0	0.0	0.0	65.1	0.0	0.0
2019/06	375.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	375.6	0.0	0.0	0.0	0.0	69.7	0.0	0.0
2019 Sub-total	**5,183.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**5,183.5**	**0.0**	**0.0**	**0.0**	**0.0**	**456.0**	**0.0**	**0.0**
2019/07	243.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	243.2	0.0	0.0	0.0	425.0	56.5	0.0	0.0
2019/08	149.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	149.2	0.0	0.0	0.0	0.0	64.9	0.0	0.0
2019/09	76.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	76.1	0.0	0.0	0.0	0.0	51.4	0.0	0.0
2019/10	449.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	449.7	0.0	0.0	0.0	0.0	81.4	0.0	0.0
2019/11	498.5	0.0	0.0	102.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	600.9	0.0	0.0	0.0	0.0	56.0	0.0	0.0
2019/12	626.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	626.8	0.0	0.0	0.0	0.0	83.4	0.0	0.0
2019 Total	**7,227.0**	**0.0**	**0.0**	**102.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**7,329.4**	**0.0**	**0.0**	**0.0**	**425.0**	**849.6**	**0.0**	**0.0**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																		Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																		Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects																			Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)	Reused in Mainland	**Total (m^3)**	Total	Total	Total	Total	Total	(m^3)	(m^3)
2020/01	518.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	518.0	0.0	0.0	0.0	0.0	58.1	0.0	0.0
2020/02	668.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	668.0	0.0	0.0	0.0	0.0	50.5	0.0	0.0
2020/03	118.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	118.2	0.0	0.0	0.0	0.0	97.8	0.0	0.0
2020/04	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0	0.0	0.0	128.7	0.0	0.0
2020/05	2,057.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,057.9	0.0	0.0	0.0	0.0	148.5	0.0	0.0
2020/06	2,388.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,388.8	0.0	0.0	0.0	0.0	151.8	0.0	0.0
2020 Sub-total	**5,764.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**5,764.2**	**0.0**	**0.0**	**0.0**	**0.0**	**635.3**	**0.0**	**0.0**
2020/07	1,866.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,866.2	0.0	0.0	0.0	0.0	96.4	0.0	0.0
2020/08	1,565.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,565.5	0.0	0.0	0.0	0.0	93.9	0.0	0.0
2020/09	820.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	820.5	0.0	0.0	0.0	400.0	133.0	0.0	0.0
2020/10	240.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	240.3	0.0	0.0	0.0	0.0	95.5	0.0	0.0
2020/11	261.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	261.8	0.0	0.0	0.0	0.0	74.5	0.0	0.0
2020/12	171.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	171.7	0.0	0.0	0.0	0.0	79.6	0.0	0.0
2020 Total	**10,690.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**10,690.2**	**0.0**	**0.0**	**0.0**	**400.0**	**1,208.3**	**0.0**	**0.0**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

SCL Contract 1128 **Appendix G - Summary of Waste Flow Table**

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m3)																		Quantity for off-site disposal of Non-inert C&D materials					Quantities of Marine Dumping (Sediment)	
	Inert C&D material (m3)																		Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m^3)	Disposed as MD at Hung Hom Barging Point	
					Reuse in Other Projects																			Type 1	Type 2
	TKO137FB (1)	TKO137SF (2)	TM38FB (3)	CWPFBP (4)	WDII C1 (5)	CWB (6)	SCL1121 (7)	SCL 1103 (8)	WDII C3 (9)	WDII C2 (10)	8217 (11)	HY/2010/08 (12)	SCL 1112 (13)	Area 56A (14)	M+ (15)	XRL 810B (16)	PSK226 (17)	Reused in Mainland	**Total (m^3)**	Total	Total	Total	Total	Total	(m^3)	(m^3)
2021/01	691.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	691.3	0.0	0.0	0.0	0.0	27.2	0.0	0.0
2021/02	82.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.6	0.0	0.0	0.0	0.0	47.4	0.0	0.0
2021/03	177.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	177.1	0.0	0.0	0.0	0.0	22.3	0.0	0.0
2021/04	343.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	343.6	0.0	0.0	0.0	0.0	44.0	0.0	0.0
2021/05	227.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	227.4	0.0	0.0	0.0	0.0	37.8	0.0	0.0
2021/06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.2	0.0	0.0
2021 Sub-total	**1,522.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1,522.0**	**0.0**	**0.0**	**0.0**	**0.0**	**219.8**	**0.0**	**0.0**
2021/07	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	30.6	0.0	0.0
2021/08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0
2021/09	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021/10	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021/11	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.9	0.0	0.0
2021 Total	**1,540.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1,540.3**	**0.0**	**0.0**	**0.0**	**0.0**	**254.5**	**0.0**	**0.0**

Remark: ***Assume the density is 2 tonnes per cubic metre for inert C&D materials, general waste and marine sediment.**

1.0	**TKO137FB**	**Fill Bank at Tseung Kwan O Area 137**
2.0	**TKO137SF**	**Sorting Facilities at Tseung Kwan O Area 137**
3.0	**TM38FB**	**Fill Bank at Tuen Mun**
4.0	**CWPFBP**	**Chai Wan Public Fill Barging Point**
5.0	**WDII C1**	**HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre**
6.0	**CWB**	**HK/2009/15 Central – Wan Chai Bypass - Tunnel (Causeway Bay Typhoon Shelter Section)**
7.0	**SCL1121**	**Cross Harbour Tunnels**
8.0	**SCL1103**	**Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange**
9.0	**WDII C3**	**Wan Chai development Phase II - Central-Wan Chai Bypass at Wan Chai West**
10.0	**WDII C2**	**HK/2009/02 Wan Chai Development Phase 2, Central - WanChai Bypass at Wan Chai East**
11.0	**8,217.0**	**Backfilling of the Shek Yam Construction Adit**
12.0	**CWB-**	**Wan Chai Bypass — Tunnel (Slip Road 8 Section)**
13.0	**SCL1112**	**Hung Hom Station & Stabling Sidings**
14.0	**Area 56A**	**Construction site at Area 56A, Kau To, Sha Tin**
15.0	**M+**	**Main Works Contract for M+ Museum Project**
16.0	**XRL 810 B**	**West Kowloon Terminus Station South**
17.0	**PSK226**	**J3698 PSK226 - Proposed Residential Development at T.P.T.L. 226 Pak Shek Kok (Gammon)**

APPENDIX H

Cumulative Statistics of Complaints, Notification of Summons and Successful Prosecutions

Appendix H
Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Statistics on Environmental Complaints

	Date Received	Subject	Project Related	Total no. received since the Project commencement
Environmental Complaints	29 February 2016	An environmental complaint was received by EPD on 25 February 2016. The complaint regarding construction work was being carried out during night-time around 1800-2000 hours daily at the construction site near Convention Avenue and Fenwick Pier Street that caused noise nuisance. After investigations, the Contractor has granted Construction Noise Permit for construction works carrying out at restricted hours and complied with the permit requirement at that time, hence the complaint was considered as non-project related.	Non-Project Related	12
	3 August 2016	An environmental complaint was received by EPD on 3 August 2016. The complaint regarding muddy water discharge at the temporary barging facility outside Lung Wo Road. After investigation, it was concluded that there was no leakage of muddy material from the barging facility. This complaint was considered as project related. Mitigation measures had been implemented as preventive measures, and no further complaint was received after the implementation of the mitigation measures.	Project Related	
	23 February 2017	An environmental noise complaint was received by EPD on 20 February 2017. The complaint was about the construction work was being carried out during night-time around 10:15pm on 19 February 2017 (Sunday) at a construction site near the Royal Hong Kong Yacht Club that caused noise nuisance. After investigation, the Contractor has granted Construction Noise Permit for construction works carrying out at restricted hours and complied with the permit requirement at that time, hence the complaint was considered as non-project related.	Non-Project Related	
	14 March 2017	An environmental noise complaint was received by EPD on 6 March 2017. The complaint was about the construction work (i.e. operation of excavator mounted with breaker) was being carried out at around 0200 hours on 4 March 2017 at the MTR Dragages Bouygues Joint Venture site near Police Officer Club that caused noise nuisance. After investigation, the Contractor has granted Construction Noise Permit for construction works carrying out at restricted hours and complied with the permit requirement at that time, hence the complaint was considered as non-project related.	Non-Project Related	

	4 July 2017	An environmental noise complaint was received by EPD on 7 July 2017. The complaint was about the construction work was being carried out from day-time to 23:30 on 28 June 2017; from day-time to 22:15 on 29 June 2017; from daytime to 23:00 on 30 June 2017; from daytime to 20:45 on 1 July 2017; and from daytime to 18:00 on 2 July 2017, at the MTR Dragages Bouygues Joint Venture site near Ex-Police Officer's' Club that caused noise nuisance. After investigation, the Contractor has granted Construction Noise Permit for construction works carrying out at restricted hours and complied with the permit requirement at that time, hence the complaint was considered as non-project related.	Non-Project Related	
	9 October 2017	An environmental noise complaint was received by EPD in late September 2017. The complaint was about the construction work was being carried out from 02:00 to 05:00 am on 21 & 22 September 2017; from day-time round 07:00 am to restricted hours after 0700 pm after CNP renewal; as well as on 18 & 19 September 2017 at the MTR Dragages Bouygues Joint Venture site near Ex-Police Officer's Club that caused noise nuisance. After investigation, the Contractor has granted Construction Noise Permit for construction works carrying out at restricted hours and complied with the permit requirement at that time, hence the complaint was considered as non-project related.	Non-Project Related	
	17 October 2017	An environmental noise complaint was received by EPD on 17 October 2017. The complaint was about the construction work was being carried out on 3 October 2017 (night-time); as well as on 10 October 2017 (around 01:00 am), i.e operation of excavator and breaker, at MTR Dragages Bouygues Joint Venture site near Ex-Police Officer's' Club that caused noise nuisance. After investigation, the Contractor has granted Construction Noise Permit for construction works carrying out at restricted hours and complied with the permit requirement at that time, hence the complaint was considered as non-project related.	Non-Project Related	
	8 January 2018	An environmental odour complaint was received by EPD on 8 January 2018. The complaint regarding malodour was scented from a flyover near Gloucester Road, next to the contract construction site. After investigation, this complaint was considered as non-project related. Mitigation measures had been implemented at the contract construction site to prevent odour nuisance. No further complaint was received after the implementation of the mitigation measures. The complaint was settled.	Non-Project Related	
	29 January 2018	An environmental odour complaint was received by EPD in late January 2018. The complaint regarding Cheung Sha Wan (CSW) Barging Point (outside Yuen Fat Wharf, Tai Kok Tsui) collected C&D waste from SCL, causing air nuisance and water pollution. After investigation, this complaint was considered as non-project related. Mitigation measures had been implemented at Wan Chai Works Area and Cheung Sha Wan Wharf (i.e. CSW Barging Point) to prevent air nuisance and water pollution. No further complaint was received after the implementation of the mitigation measures. The complaint was settled.	Non-Project Related	

	16 January 2019	An environmental complaint was received by EPD on 14 and 15 January 2019.The complaint regarding milky water discharge was found at Victoria Harbour near Causeway Bay Typhoon Shelter on 12 January 2019. After investigation, no milky water was generated from project site to the discharge point on related complaint date. The complaint was considered as non-project related. The complaint was settled.	Non-Project Related	
	19 September 2019	An environmental complaint was received by EPD on 19 September 2019. The complaint regarding noise was emanated from a SCL's construction site at Ex-Police Officer Club on 1 and 8 September 2019 (Sundays) and caused noise nuisance to the nearby residents. After investigation, the Contractor has granted Construction Noise Permit for construction works carrying out at restricted hours and complied with the permit requirement at that time, hence the complaint was considered as non-project related.	Non-Project Related	
	21 January 2021	An environmental complaint was received by EPD on 17 January 2021. The complaint regarding muddy water discharge at the temporary barging facility outside Lung Wo Road. After investigation, it was concluded that there was no leakage of muddy material from the barging facility. This complaint was considered as project related. Mitigation measures had been implemented as preventive measures, and no further complaint was received after the implementation of the mitigation measures.	Non-Project Related	

Cumulative Notifications of Summons and Successful Prosecutions

Notification of summons	-	-	-	0
Successful Prosecutions	-	-	-	0

Appendix D

Final EM&A Review Report for December 2021 – SCL Works Contract 1124 Admiralty SCL Related Works

MTR Corporation Limited

Shatin to Central Link –
Admiralty SCL Related Works

Final EM&A Review Report

Verified by: Nicola Hon

Position: Environmental Team Leader

Date: 12 January 2022

JOB NO.: TCS00838/16

MTR SHATIN TO CENTRAL LINK – CONTRACT 1124 ADMIRALTY SCL RELATED WORKS

FINAL ENVIRONMENTAL MONITORING AND AUDIT REVIEW REPORT

PREPARED FOR

BUILD KING SCL 1124 JV

Date	Reference No.	Prepared By	Certified By
12 January 2022	TCS00838/16/600/R0083v2	Martin Li (Environmental Consultant)	Nicola Hon (Environmental Team Leader)

Version	Date	Remarks
1	7 January 2022	First Submission
2	12 January 2022	Amended against IEC's comments

EXECUTIVE SUMMARY

ES.01 Build King SCL 1124 Joint Venture (hereinafter 'JV") has been awarded by the MTR Corporation Limited (MTR) of the Contract No. MTR 1124 – Admiralty SCL Related Works (hereinafter "Contract 1124').

ES.02 Admiralty Station (ADM) will become an interchange station for four railway lines. The works of Contract 1124 are mainly the Alteration and Additional (A&A) works at the interface between the existing Admiralty Station (ADM) and the new ADM, construction of internal structure at the new ADM and associated road works and building services etc.

ES.03 The Environmental Monitoring and Audit (EM&A) Programme for Contract 1124 was commenced on 1 February 2017. All major construction works of this Contract have been substantially completed since 30 September 2021, with only minor works remained. Upon the substantially completion of the construction work on 30 September 2021, a proposal for cessation of EM&A Programme under Contract 1124 was submitted to Environmental Protection Department (EPD) on 27 October 2021. It was proposed to cease the construction EM&A programme for this Contract with effective from 1 December 2021. The proposal was approved by EPD on 14 December 2021 and the EM&A Programme was therefore ceased on 30 November 2021.

ES.04 This is the Final Environmental Monitoring and Audit Review Report summarizing the impact monitoring results and audit findings for Contract 1124 throughout the construction phase between **1 February 2017** and **30 November 2021**.

ENVIRONMENTAL COMPLAINT

ES.05 One (1) environmental complaint was recorded throughout the construction phase. The complaint was received in December 2017 regarding the dust generation from dump truck vehicle without proper cover. Upon receipt of the complaint, follow-up actions were taken by the Contractor and the implementation of mitigation measures was satisfied by ER, IEC and ET. The complaint was settled and was reported in the Monthly EM&A report for December 2017.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.06 No environmental summons or successful prosecutions were recorded throughout the construction phase.

ES.07 In general, monitoring findings indicated that the implemented environmental mitigation measures were effective to alleviate adverse environmental impacts generated from the construction of the Project, confirming that the EIA predictions on the environmental impacts and the associated recommendations on the environmental mitigation measures were precise.

ES.08 The environmental protection performance of the construction works under the Project was in general satisfactory.

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LIST OF TABLES

LIST OF APPENDICES

1 INTRODUCTION

1.1 PROJECT 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 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).

1.1.2 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) was subsequently applied and the latest EP (EP No. EP-436/2012/F) was issued by the Director of Environmental Protection (DEP) on 31 December 2018.

1.1.3 The general layout of the Project is shown in ***Appendix A***.

1.1.4 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") was appointed by the Contractor as an Environmental Team (hereinafter referred as "the ET") to implement the relevant Environmental Monitoring and Audit (EM&A) programme in accordance with the EM&A Manual and EP during construction phase of the project.

1.1.5 The EM&A Programme for Contract 1124 was commenced on 1 February 2017. Upon the substantially completion of the construction work on 30 September 2021, a proposal for cessation of EM&A Programme under Contract 1124 was submitted to Environmental Protection Department (EPD) on 27 October 2021. The proposal was approved by EPD on 14 December 2021 and the EM&A Programme was therefore ceased on 30 November 2021.

1.1.6 This is the Final Environmental Monitoring and Audit Review Report summarizing the impact monitoring results and audit findings for Contract 1124 throughout the construction phase between **1 February 2017** and **30 November 2021**.

1.1.7 This Final EM&A Review Report presents the details of the EM&A program and the associated monitoring findings, to review monitoring methodology, practicality and effectiveness of the EIA process and the EM&A program.

1.2 REPORT STRUCTURE

1.2.1 The Final Environmental Monitoring and Audit Review Report is structured into the following sections:-

Section 1	***Introduction***
Section 2	***Project Organization and Works under the Contract***
Section 3	***Summary of Impact Monitoring Requirement***
Section 4	***Waste Management***
Section 5	***Site Inspection***
Section 6	***Environmental Complaint and Non-Compliance***
Section 7	***Implementation Statue of Mitigation Measures***
Section 8	***Conclusions and Recommendation***

2 PROJECT ORGANIZATION, WORKS UNDER THE CONTRACT AND SUBMISSION UNDER EP

2.1 PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

2.1.1 The organization structure and contact details of key personnel with respect to environmental management are shown in ***Appendix B***.

2.2 MAJOR WORK DURING THE CONSTRUCTION PHASE

2.2.1 The major construction activities under contract 1124 throughout the construction phase are listed below:-

- Alteration and Additional (A&A) works at the interface between the existing ADM and the new ADM;
- Construction of internal structures at the new ADM;
- Alteration and addition works for plant rooms;
- Demolition of Vent Shaft X;
- Road works including drainage, traffic aids, road markings, lighting, signage, utilities diversion, demolition, reinstatement and TTM schemes to facilitate the construction works and any works require TTM submission;
- Tree planting and soft and hard landscaping works;
- Construction of ABWF works.
- Supply and installation of doors and ironmongeries, signs and advertising panels, Customer Service Centre (CUC), Platform Supervisor Booths (PSB) and Common Station Components etc.

2.2.2 All major construction works of this Contract have been substantially completed since 30 September 2021, with only minor works remained. A proposal was submitted to EPD to cease the construction EM&A programme for this Contract with effective from 1 December 2021. The proposal was accepted by EPD on 14 December 2021 and the EM&A Programme was therefore ceased on 30 November 2021.

2.3 SUBMISSION UNDER EP

2.3.1 The required submission under the EP for the Contract is summarized in ***Table 2-1.***

Table 2-1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Requirement
Condition 3.4	Monthly EM&A Report No. 1 to 58 (Feb 2017 to Nov 2021)	Within two weeks after the end of the reporting month

2.3.2 All the submissions under the EP for the Contract were submitted within the required timeframe.

3 SUMMARY OF IMPACT MONITORING REQUIREMENT

GENERAL

3.1.1 The impact monitoring for air quality, construction noise as well as landscape and visual are not required for Contract 1124.

3.1.2 The impact monitoring requirement for Contract 1124 shall include waste management and site inspection.

4 WASTE MANAGEMENT

4.1 GENERAL WASTE MANAGEMENT

4.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

4.2 RECORDS OF WASTE QUANTITIES

4.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

4.2.2 The quantities of waste for disposal in this Reporting Period are summarized in ***Tables 4-1*** and ***4-2*** and the Monthly Summary Waste Flow Table is shown in ***Appendix C***. Whenever possible, materials were reused on-site as far as practicable.

Table 4-1 Summary of Quantities of Inert C&D Materials for the Project

Type of Waste	Quantity						Disposal Location
	2017	2018	2019	2020	2021	Total	
Total C&D Materials (Inert) ('000 m^3)	1.5307	0.261	0.096	0.024	0	1.9117	-
Reused in this Contract (Inert) ('000m^3)	0	0	0	0	0	0	-
Reused in other Projects (Inert) ('000m^3)	0	0	0	0	0	0	-
Disposal as Public Fill (Inert) ('000m^3)	1.5307	0.261	0.096	0.024	0	1.9117	TKO 137

Table 4-2 Summary of Quantities of C&D Wastes for the Project

Type of Waste	Quantity						Disposal Location
	2017	2018	2019	2020	2021	Total	
Metals ('000kg)	0	0	0	0	0	0	-
Paper / Cardboard Packing ('000kg)	0	0	0	0	0	0	-
Plastics ('000kg)	0	0	0	0	0	0	-
Chemical Wastes ('000kg)	0	0	0	0	0	0	-
General Refuses ('000m^3)	0.5827	2.007	1.824	1.691	1.303	7.4077	SENT

5 SITE INSPECTION

5.1 REQUIREMENTS

5.1.1 According to the EM&A Manual, the environmental site inspection shall be formulated by ET Leader. Weekly environmental site inspections should be carried out to monitor the implementation of mitigation measures and environmental performance.

5.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

5.2.1 During the Construction Phase, weekly environmental site audits were undertaken by ER with representatives of the Contractor and ET throughout the construction period to evaluate the site environmental performance. The representative of IEC joined the site audit once per month. No non-compliances of environmental impacts were registered, indicating that mitigation measures implemented were effective and sufficient for the construction activities undertaken. Observations and reminders recorded during site inspections and audit were rectified by specified deadlines. Summary of the site inspections throughout the reporting period can be referred to in the respective monthly EM&A reports.

6 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

6.1 NON-COMPLIANCE

6.1.1 No non-compliance was identified during regular site inspection and environmental audit. No associated remedial actions were recommended.

6.2 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

6.2.1 One (1) environmental complaint was received during the Construction Phase. Summary of environmental complaint is presented in ***Table 6-1*** below.

Table 6-1 Statistical Summary of Environmental Complaints

Time Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
2017	1	1	Air Quality
2018	0	1	N/A
2019	0	1	N/A
2020	0	1	N/A
2021	0	1	N/A

6.2.2 An environmental complaint regarding the dust generation from dump truck vehicle without proper cover was received in December 2017. Upon receipt of the complaint, the Contractor reviewed their procedures for dump truck leaving the site and additional measures were implemented to ensure all the dump skip of the dump trucks were properly covered before leaving the site. The complaint was considered as an isolated incident which resulted of careless mistake of the dump truck driver. The implementation of mitigation measures was satisfied by ER, IEC and ET, and the complaint was settled and reported in the Monthly EM&A report for December 2017.

6.3 NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

6.3.1 No notifications of summons and successful prosecutions were recorded during the Construction Phase. No associated remedial actions were recommended.

7 IMPLEMENTATION STATUS OF MITIGATION MEASURES

7.1 GENERAL REQUIREMENTS

7.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the EM&A Manual covered the issues of dust, noise, water quality and waste management and they are summarized presented in ***Appendix D***.

7.1.2 The Contractor has implemented the environmental mitigation measures and requirements as stated in the EIA reports, the EP and EM&A Manuals subject to the site condition. The major environmental mitigation measures implemented by the Contract throughout the construction phase are summarized in ***Table 7-1***.

Table 7-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	• Wastewater to be treated by the filtration systems i.e. sedimentation tank before to discharge.
Air Quality	• Maintain wet surface on access road • All vehicles must use wheel washing facility before off site • Sprayed water during breaking works
Noise	• Restrain operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday. CNP was granted for construction works during restricted hours • Keep good maintenance of plants • Shut down the plants when not in used.
Waste and Chemical Management	• On-site sorting prior to disposal • Follow requirements and procedures of the “Trip-ticket System” • Predict required quantity of concrete accurately • Collect the unused fresh concrete at designated locations in the sites for subsequent disposal
General	• The site was generally kept tidy and clean.

8 REVIEW OF THE VALIDITY OF EIA PREDICITON AND EFFECTIVENESS OF RECOMMENDED MITIGATION MEASURES

8.1 VALIDITY OF EIA PREDICTION

8.1.1 During the reporting period, recommended environmental mitigation measures were properly implemented. Environmental site inspections were carried out to monitor and audit the environmental performance and determine whether rectification is necessary.

8.1.2 The mitigation measures in EIA prediction and the approved EM&A manuals have been effectively implemented during the construction period. The performance of the environmental mitigation measures was considered satisfactory and the inspection findings were found in line with EIA predictions.

8.2 EFFECTIVENESS OF THE MITIGATION MEASURES

8.2.1 The overall effectiveness of EM&A programme and the efficiency of recommended mitigation measures from the EIA are considered cost-effective and precise.

8.2.2 With the implementation of the mitigation measures by the Contractor, no noise complaint (action level exceedance of construction noise) was received under the Contract during the construction phase. No non-compliance with regard to air quality, construction noise and water quality were recorded during the regularly site inspection and audit throughout the construction phase. Hence, the EIA prediction are proven to be cost-effective and no shortcoming in the EIA was found.

9 CONCLUSIONS AND RECOMMENTATIONS

9.1 CONCLUSIONS

9.1.1 The EM&A Programme for Contract 1124 was commenced on 1 February 2017. All major construction works of this Contract have been substantially completed since 30 September 2021, with only minor works remained. Upon the substantially completion of the construction work on 30 September 2021, a proposal for cessation of EM&A Programme under Contract 1124 was submitted to EPD on 27 October 2021. It was proposed to cease the construction EM&A programme for this Contract with effective from 1 December 2021. The proposal was approved by EPD on 14 December 2021 and the EM&A Programme was therefore ceased on 30 November 2021.

9.1.2 No non-compliance was recorded from weekly site inspection during the construction phase of the Contract, indicating no adverse environmental impacts of air quality, construction noise, and water quality were generated from the construction activities under the Project. This also implies that the implemented environmental mitigation measures were effective to alleviate the adverse environmental impacts generated from the construction works under the Project.

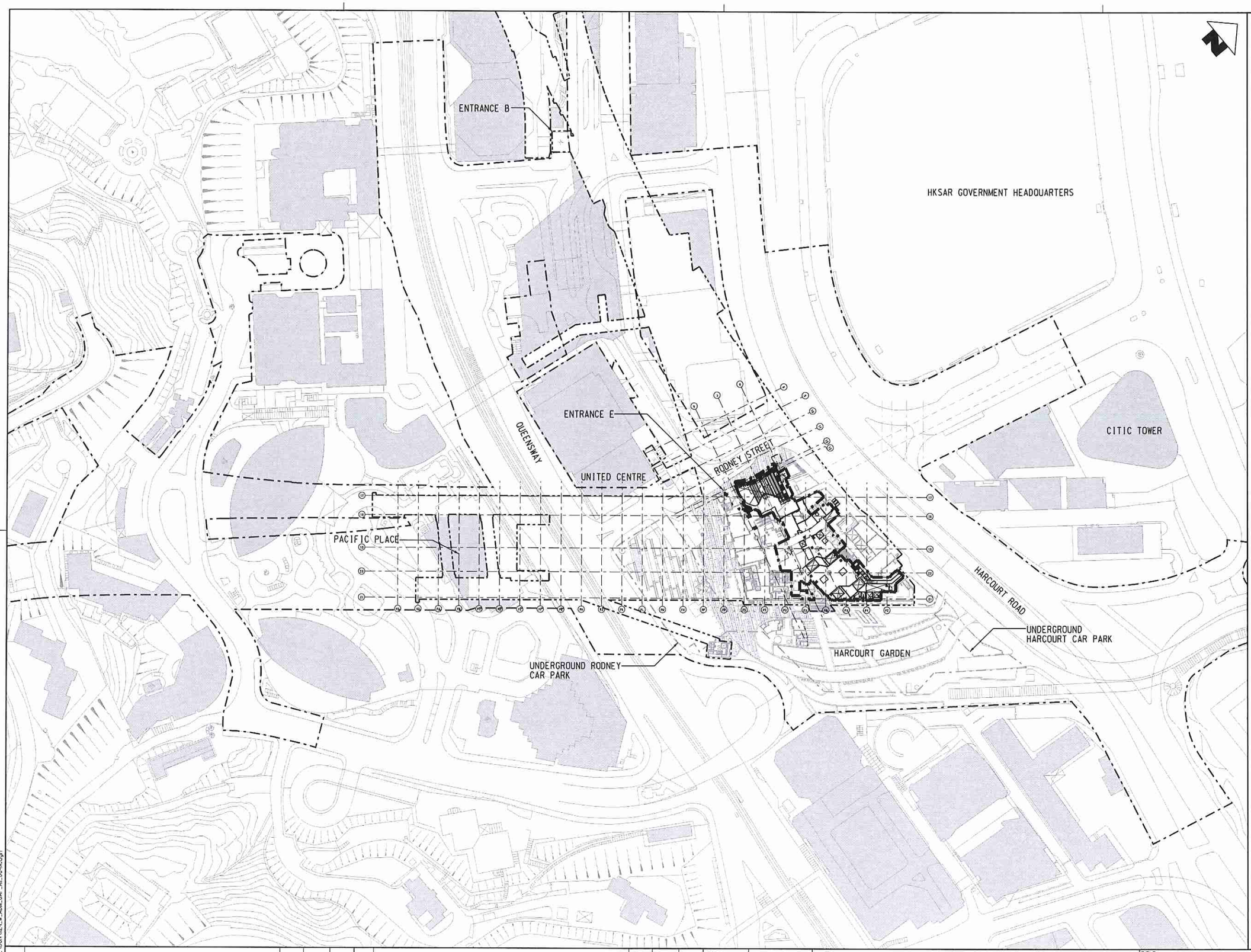
9.1.3 Since impact monitoring for air quality and construction noise monitoring are not required for Contract 1124, monitoring data analysis cannot be made against the environmental quality performance limits (Action and Limit Levels).

9.1.4 One (1) documented complaint was received during the Construction Phase of the Contract. The complaint was well-settled and implementation of mitigation measures was satisfied by ER, IEC and ET. No notification of summons or successful prosecution was received throughout the Construction Period.

END OF TEXT

Appendix A

PROJECT SITE LAYOUT PLAN



NOTES:

- GAZETTAL BOUNDARY FOR RAILWAY DEVELOPMENT
- STATION BOUNDARY
- SCL RELATED WORKS BOUNDARY

RECEIVED
27 APR 2016
BY:.....

Build King SCL 1124 Joint Venture
FOR CONSTRUCTION

0 10 20 30 40 50
METRES
1 : 1000

REV	DESCRIPTION	BY	DATE	APPROVED
A	WORKING DRAWING	SC	18MAR16	TS

DRAWN	WSC
DESIGNED	TF
CHECKED	JH
APPROVED	IT
DATE	3/18/2016

MTR

SHATIN TO CENTRAL LINK

ORIGINATOR ARUP

Supported by : Widnell Limited, Urbis Limited, Kenneth Ng & Associates

CADD REF. 1124_W_ADM_OAP_A11_004A.dgn

TITLE
CONTRACT 1124
ADMIRALTY SCL RELATED WORKS

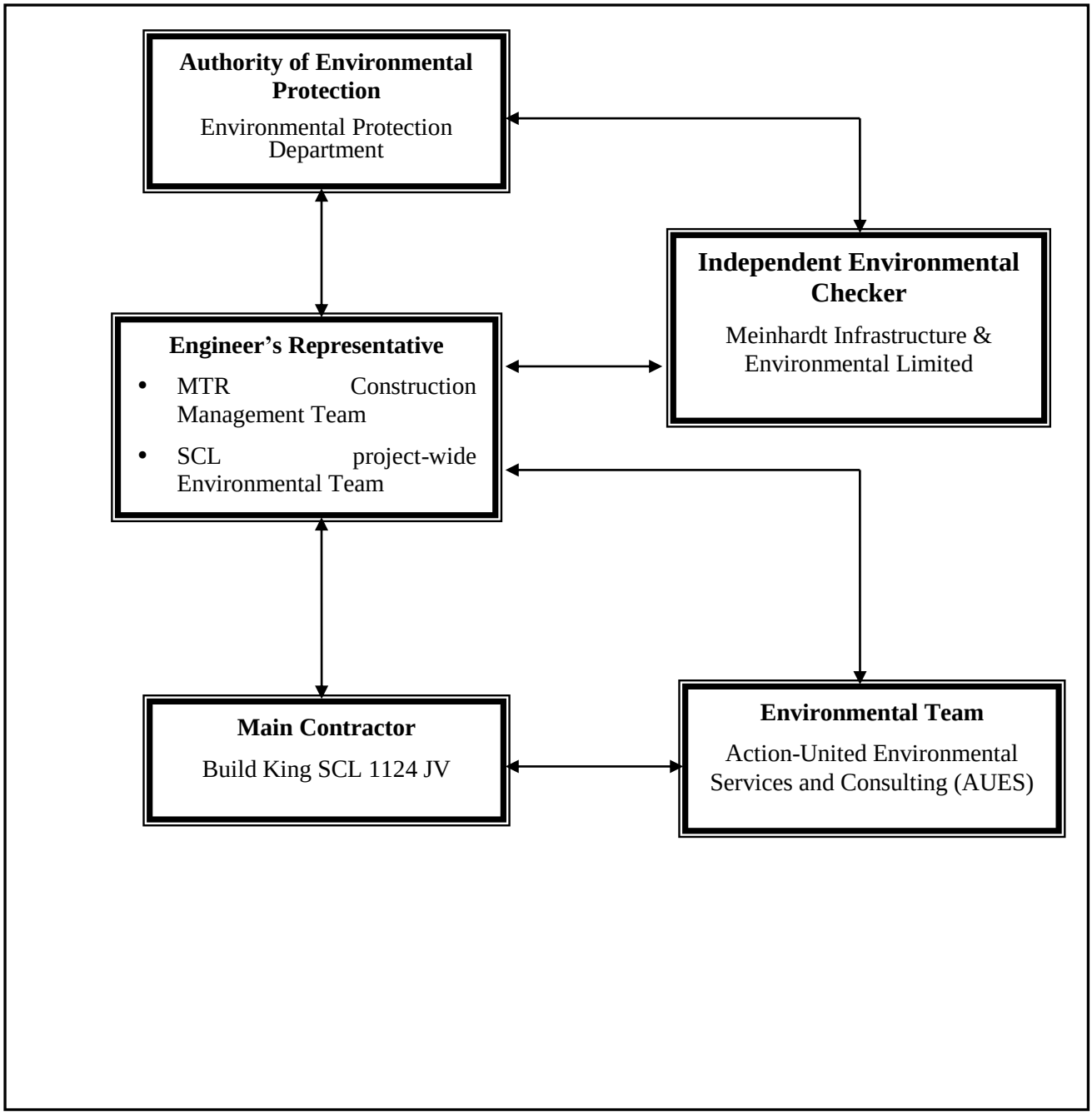
GROUND FLOOR LEVEL LOCATION PLAN
AT +6.000mPD

SCALE	DRAWING NO.	REV.
1 : 1000	1124/W/ADM/OAP/A11/004	A

PLOT DRV: G:\C90\Project office\CADD Working\CAD_ADMIN (Common)\PLOTDRIVER\ADM_PDF_COLOUR_A3-Alpit
MODELNAME: Default PRINTED BY: justin.chiu 31/03/2016 2:29:24 PM
FILENAME: C:\Pbr\1124 - ADM\DGN\1124_W_ADM_OAP_A11_004A.dgn

Appendix B

ORGANIZATION STRUCTURE AND CONTACT DETAILS OF RELEVANT PARTIES



Project Organization Structure

Contact Details of Key Personnel

Organization	Role	Position	Name of Key Staff	Tel No.	Fax No.
MTR	Resident Engineer	Chief Construction Manager (SCLC)	Mr. Jacky Mak	3127 6202	2171 2829
MTR	Chief Environmental Manager	SCL project-wide Environmental Team Leader	Ms. Lisa Poon	3127 6295	2993 7557
Meinhardt	Independent Environmental Checker		Ms. Claudine Lee	2859 5409	2540 1580
Build King SCL 1124 JV	Contractor	Project Director	Mr. Simon Liu	2272 3680	2528 1751
Build King SCL 1124 JV	Contractor	General Manager	Mr. Yee Hon Wing	2272 3680	2528 1751
Build King SCL 1124 JV	Contractor	Environmental Officer	Mr. Nash Wong	2272 3680	2528 1751
AUES	Contractor's Environmental Team	Environmental Team Leader	Ms. Nicola Hon	2959 6059	2959 6079
AUES	Contractor's Environmental Team	Environmental Consultant	Mr. Ben Tam	2959 6059	2959 6079
AUES	Contractor's Environmental Team	Environmental Consultant	Mr. Martin Li	2959 6059	2959 6079

Legend:

MTR – MTR Corporation Limited

Meinhardt – Meinhardt Infrastructure & Environmental Limited

Build King SCL 1124 JV - Build King SCL 1124 Joint Venture

AUES – Action-United Environmental Services & Consulting

Appendix C

SUMMARY OF WASTE FLOW TABLE

Monthly Summary Waste Flow Table for 2017

Name of Employer: MTR Corporation Limited									Contract No.: MTR1124				
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Rock	Soil	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Feb	0.0089	0	0	0	0.0089	0	0	0	0	0	0	0	0.0887
Mar	0.0115	0.007	0	0	0.0045	0	0	0	0	0	0	0	0.1526
Apr	0.0150	0	0	0	0.0150	0	0	0	0	0	0	0	0.0856
May	0.4145	0.4145	0	0	0	0	0	0	0	0	0	0	0.0290
Jun	0.4218	0.4218	0	0	0	0	0	0	0	0	0	0	0.0147
Jul	0.1560	0.1560	0	0	0	0	0	0	0	0	0	0	0.0100
Aug	0.1300	0.1300	0	0	0	0	0	0	0	0	0	0	0.0249
Sep	0.1300	0.1300	0	0	0	0	0	0	0	0	0	0	0.0650
Oct	0.0320	0.0320	0	0	0	0	0	0	0	0	0	0	0.0414
Nov	0.1230	0.1230	0	0	0	0	0	0	0	0	0	0	0.0324
Dec	0.0880	0.0880	0	0	0	0	0	0	0	0	0	0	0.0384
Total	1.5307	1.5023	0	0	0.0284	0	0	0	0	0	0	0	0.5827

MTR 1124
Monthly Summary Waste Flow Table for 2018

Name of Employer: MTR Corporation Limited									Contract No.: MTR1124				
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Rock	Soil	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Jan	0.023	0.023	0	0	0	0	0	0	0	0	0	0	0.204
Feb	0.031	0.031	0	0	0	0	0	0	0	0	0	0	0.241
Mar	0.034	0.034	0	0	0	0	0	0	0	0	0	0	0.225
Apr	0.011	0.011	0	0	0	0	0	0	0	0	0	0	0.301
May	0.021	0.021	0	0	0	0	0	0	0	0	0	0	0.284
Jun	0.027	0.027	0	0	0	0	0	0	0	0	0	0	0.188
Jul	0.022	0.022	0	0	0	0	0	0	0	0	0	0	0.144
Aug	0.027	0.027	0	0	0	0	0	0	0	0	0	0	0.111
Sep	0.015	0.015	0	0	0	0	0	0	0	0	0	0	0.066
Oct	0.021	0.021	0	0	0	0	0	0	0	0	0	0	0.073
Nov	0.015	0.015	0	0	0	0	0	0	0	0	0	0	0.099
Dec	0.014	0.014	0	0	0	0	0	0	0	0	0	0	0.071
Total	0.261	0.261	0	0	0.00	0	0	0	0	0	0	0	2.007

Notes:

1) Density of waste materials:

Bentonite, broken concrete, building debris, mixed rock & soil , soil, slurry	=	2.0
General Refuse	=	1.0
Waste Oil	=	1.0

MTR 1124
Monthly Summary Waste Flow Table for 2019

Name of Employer: MTR Corporation Limited									Contract No.: MTR1124				
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Rock	Soil	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Jan	0.019	0.019	0	0	0	0	0	0	0	0	0	0	0.119
Feb	0.015	0.015	0	0	0	0	0	0	0	0	0	0	0.068
Mar	0.023	0.023	0	0	0	0	0	0	0	0	0	0	0.137
Apr	0.003	0.003	0	0	0	0	0	0	0	0	0	0	0.107
May	0.025	0.025	0	0	0	0	0	0	0	0	0	0	0.163
Jun	0.011	0.011	0	0	0	0	0	0	0	0	0	0	0.125
Jul	0.000	0	0	0	0	0	0	0	0	0	0	0	0.241
Aug	0.000	0	0	0	0	0	0	0	0	0	0	0	0.232
Sep	0.000	0	0	0	0	0	0	0	0	0	0	0	0.191
Oct	0.000	0	0	0	0	0	0	0	0	0	0	0	0.177
Nov	0.000	0	0	0	0	0	0	0	0	0	0	0	0.138
Dec	0.000	0	0	0	0	0	0	0	0	0	0	0	0.126
Total	0.096	0.096	0	0	0	0	0	0	0	0	0	0	1.824

Notes:

1) Density of waste materials:

Bentonite, broken concrete, building debris, mixed rock & soil , soil, slurry	=	2.0
General Refuse	=	1.0
Waste Oil	=	1.0

MTR 1124
Monthly Summary Waste Flow Table for 2020

Name of Employer: MTR Corporation Limited									Contract No.: MTR1124				
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Rock	Soil	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Jan	0.000	0	0	0	0	0	0	0	0	0	0	0	0.175
Feb	0.005	0	0	0	0.005	0	0	0	0	0	0	0	0.097
Mar	0.000	0	0	0	0	0	0	0	0	0	0	0	0.149
Apr	0.000	0	0	0	0	0	0	0	0	0	0	0	0.097
May	0.000	0	0	0	0	0	0	0	0	0	0	0	0.102
Jun	0.004	0	0	0	0.004	0	0	0	0	0	0	0	0.098
Jul	0.015	0.015	0	0	0	0	0	0	0	0	0	0	0.136
Aug	0.000	0	0	0	0	0	0	0	0	0	0	0	0.123
Sep	0.000	0	0	0	0	0	0	0	0	0	0	0	0.119
Oct	0.000	0	0	0	0	0	0	0	0	0	0	0	0.152
Nov	0.000	0	0	0	0	0	0	0	0	0	0	0	0.276
Dec	0.000	0	0	0	0	0	0	0	0	0	0	0	0.166
Total	0.024	0.015	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.691

Notes:

1) Density of waste materials:

Bentonite, broken concrete, building debris, mixed rock & soil , soil, slurry	=	2.0
General Refuse	=	1.0
Waste Oil	=	1.0

MTR 1124
Monthly Summary Waste Flow Table for 2021

Name of Employer: MTR Corporation Limited									Contract No.: MTR1124				
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Rock	Soil	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Jan	0.000	0	0	0	0	0	0	0	0	0	0	0	0.139
Feb	0.000	0	0	0	0	0	0	0	0	0	0	0	0.065
Mar	0.000	0	0	0	0	0	0	0	0	0	0	0	0.115
Apr	0.000	0	0	0	0	0	0	0	0	0	0	0	0.164
May	0.000	0	0	0	0	0	0	0	0	0	0	0	0.137
Jun	0.000	0	0	0	0	0	0	0	0	0	0	0	0.179
Jul	0.000	0	0	0	0	0	0	0	0	0	0	0	0.154
Aug	0.000	0	0	0	0	0	0	0	0	0	0	0	0.108
Sep	0.000	0	0	0	0	0	0	0	0	0	0	0	0.072
Oct	0.000	0	0	0	0	0	0	0	0	0	0	0	0.038
Nov	0.000	0	0	0	0	0	0	0	0	0	0	0	0.132
Dec	0.000	0	0	0	0	0	0	0	0	0	0	0	0.000
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.303

Notes:

1) Density of waste materials:

Bentonite, broken concrete, building debris, mixed rock & soil , soil, slurry	=	2.0
General Refuse	=	1.0
Waste Oil	=	1.0

Appendix D

IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
Culture Heritage Impact (Construction Phase)					
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	V
Ecological Impact (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 11.216 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	V
Landscape and Visual Impact (Contraction 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	N/A
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	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 trees due to the Project.	MTR	Works Sites	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	V
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	V
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	Control of height and deposition/	MTR	Works Sites	V

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EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	site to minimize visual impact to adjacent VSRs	arrangement of temporary facilities in works areas			
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	N/A
/	All retained/exist trees shall be properly protected during construction period.	Tree protection	Contractor	Works Sites	N/A
Dust Impact (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	Works Sites	V
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	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	To minimize dust impact	Contractor	Works areas	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	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				
/	Dust suppression measures (con't) • De-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement	To minimize construction impact	Contractor	Works areas	V
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	To minimize construction noise impact	Contractor	Works areas	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	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				
/	• Install movable noise barriers, acoustic mat or full enclosure, screen the noisy plants during operation • Air compressors shall be fitted with valid noise emission labels during operation	To minimize construction noise impact	Contractor	Works areas	N/A
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 Tunne	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	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 •	N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	breaker • Saw, concrete			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	
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 Tunne	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.	To minimize water quality impacts from construction site runoff and general construction activities	Contractor	Works area	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	To minimize water quality impacts from	Contractor	Works area	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	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.	construction site runoff and general construction activities			
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 area	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	V
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 chemica	Contractor	All construction works areas	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	To minimize water quality impact from	Contractor	All construction works areas	N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	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	accidental spillage of chemical			
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	V
Waste Management (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 construction works areas	V
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 achieve waste reduction	Contractor	All construction works areas	V

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	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.				
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 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 construction works areas	V
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	To achieve waste reduction	Contractor	All construction works areas	V
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	All construction works areas	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
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 storage	Contractor	All construction works areas	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 storage	Contractor	All construction works areas	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	All construction works areas	V

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EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	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	All construction works areas	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	All construction works areas	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	works areas	V
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	works areas	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	To properly store and separate from other C&D materials for	Contractor	works areas	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	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	subsequent collection and disposal			
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	works areas	V
S12.103	3 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	works areas	V

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