Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension

Quarterly Environmental Monitoring and Audit Report (No. 1) – December 2022 to March 2023

2023-04-19

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Meinhardt Infrastructure and Environment Ltd
邁進基建環保工程顧問有限公司

10/F Genesis
33-35 Wong Chuk Hang Road
Hong Kong
香港黃竹坑道33-35號
創協坊10樓

Tel 電話: +852 2858 0738
Fax 傳真: +852 2540 1580

mail@meinhardt.com.hk
www.meinhardt-china.com
www.meinhardtgroup.com

Our Ref.: CL/91823/0363-VES
Date: 20 April 2023

By Email

Veolia Environmental Services Hong Kong Limited
40/F, One Taikoo Place
979 King's Road
Quarry Bay
Hong Kong

Attn.: Mr. Alvin Kam

Dear Sir

Re: Contract No. EP/SP/77/15
North-East New Territories Landfill Extension (NENTX)
Quarterly Environmental Monitoring and Audit Report (No.1) – December 2022 to March 2023

I refer to Section 2.6 to 2.10 and Section 12.3 of the approved Environmental Monitoring and Audit Manual, regarding the submission of a quarterly Environmental Monitoring and Audit report. I hereby verified the captioned "Quarterly Environmental Monitoring and Audit Report (No.1) – December 2022 to March 2023" dated 19 April 2023.

Should you have any queries, please do not hesitate to contact the undersigned at 2859 5409.

Yours faithfully
MEINHARDT INFRASTRUCTURE AND ENVIRONMENT LTD

Claudine Lee
Independent Environmental Checker

Aurecon Hong Kong Limited
Unit 1608, 16/F, Tower B,
Manulife Financial Centre,
223 – 231 Wai Yip Street, Kwun Tong
Hong Kong

T +852 3664 6888
F +852 3664 6999
E hongkong@aurecongroup.com
w aurecongroup.com

Ref: P521530-0000-REP-NN-0045

By Email

20 April 2023

Meinhardt Infrastructure & Environment Ltd.
10/F Genesis
33-35 Wong Chuk Hand Road
Hong Kong

Attn: Ms. Claudine Lee,

Dear Claudine,

Re: Contract No. EP/SP/77/15
Northeast New Territories Landfill Extension
Quarterly Environmental Monitoring and Audit Report (No. 1) – December 2022 to March 2023

In accordance with the requirement specified in Section 2.6 to 2.10 & Section 12.3 of Environmental Monitoring and Audit (EM&A) Manual, we are pleased to submit the certified "Quarterly Environmental Monitoring and Audit Report (No. 1) – December 2022 to March 2023" dated 19 April 2023 for your verification.

Should you require any further information or clarification, please do not hesitate to contact the undersigned or our Mr. Keith Chau on 3664 6788.

Yours faithfully,
For and on behalf of
Aurecon Hong Kong Limited

Fredrick Leong
Environmental Team Leader

Encl.
1. Quarterly Environmental Monitoring and Audit Report (No. 1) – December 2022 to March 2023

cc.
1. IEC - Ms. Claudine Lee (By email: claudinelee@meinhardt.com.hk)
2. IEC Representative – Ms. Echo Hung (By email: echohung@meinhardt.com.hk)

Document Control Record

Document prepared by:

Aurecon Hong Kong Limited
Unit 1608, 16/F, Tower B, Manulife Financial Centre,
223 – 231 Wai Yip Street, Kwun Tong, Kowloon
Hong Kong S. A. R.
T +852 3664 6888
F +852 3664 6999
E hongkong@aurecongroup.com
W aurecongroup.com

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Reviewer's signature		Approver's signature	
Name	Keith Chau	Name	Fredrick Leong
Title	Associate, Environmental	Title	Environmental Team Leader

Contents

Figure

Appendix

Executive Summary

Aurecon Hong Kong Limited (Aurecon) was appointed to undertake the role of Environmental Team (ET) and carry out Environmental Monitoring and Audit for the North East New Territories (NENT) Landfill Extension.

The construction phase and EM&A programme of the Project commenced on 1 December 2022.

This 1st Quarterly EM&A Report presents the EM&A works conducted from 1 December 2022 to 31 March 2023 in accordance with the EM&A Manual.

Summary of Construction Works undertaken during Report Period

The major construction works undertaken during the reporting period include:

Construction Activities Undertaken	Reporting Month			
	Dec 2022	Jan 2023	Feb 2023	Mar 2023
- Material loading and unloading, site traffic	✓	✓	✓	✓
- Permanent site office foundatio works with pouring of concrete			✓	✓
- Site clearance	✓	✓	✓	✓
- Installation of permanent fencing	✓	✓	✓	✓
- Site formation	✓	✓	✓	✓
- Tree felling	✓	✓	✓	✓

Environmental Exceedance

1-hr TSP Monitoring

No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the period.

24-hr TSP Monitoring

2 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.

4 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM3 were recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

Noise, Surface Water Quality & Landfill Gas Monitoring

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

Environmental Non-conformance/Compliant/Summons and Prosecution

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

One complaint on 20 December 2022 was received by the public relations officer of the Contractor in December 2022. There is no direct evidence showing that the complaint is likely related to NENTX. No environmental complaint was recorded at another dates in December 2022 and from January to March 2023.

No summons/prosecutions were received in this reporting period.

1. Introduction

1.1. Background

1.1.1. The North East New Territories Landfill Extension (the NENTX Project) is located adjacent to the existing North East New Territories (NENT) Landfill at Ta Kwu Ling. The extension site is located in a valley covering mainly the existing NENT Landfill Stockpile and Borrow Area that was formed to the east of the existing landfill as part of the original site development of the landfill, and layout plan shown in **Figure 1**.

1.1.2. The NENTX is a designated project. The Environmental Impact Assessment (EIA) Report (AEIAR-111/2007) and an Environmental Monitoring and Audit Manual were approved on 20 September 2007. The project is governed by an Environmental Permit (EP) (EP-292/2007) which was granted on 26 November 2007. A further of EP (FEP) was applied and the FEP (FEP-01/292/2007) was subsequently granted on 28 April 2022.

1.1.3. In accordance with the requirements specified in Section 2.6 to 2.10 and Section 12.3 of the approved Environmental Monitoring and Audit (EM&A) Manual, Quarterly EM&A report should be submitted to the Director of Environmental Protection (DEP) within 10 working days after the end of the reporting quarter. The submissions shall be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC).

1.1.4. The construction phase and EM&A programme of the Project commenced on 1 December 2022.

1.2. Nature, Scale and Scope of the captioned Designated Project

1.2.1 The Nature, Scale and Scope of the captioned Designated Project is presented in **Table 1-1**.

Table 1-1 Nature, Scale and Scope of the captioned Designated Project

Item(s)	Content
Nature of Designated Project	Construction and operation of a landfill for waste as defined in the "Waste Disposal Ordinance" (Cap. 354)
Scale and Scope of Designated Project	The Project mainly consists of the followings: - Construction and operation of a landfill extension of about 70 hectares with a target void space of at least 19 million cubic metres on the eastern side of the existing NENT Landfill, including the followings: - i. Site formation and preparation; ii. Installation of liner system; iii. Installation of leachate collection, treatment and disposal facilities; iv. Installation of gas collection, utilization and management facilities; v. Utilities provisions and drainage diversion; vi. Landfilling operation; vii. Restoration and aftercare in subsequent stages; and viii. Measures to mitigate environmental impacts as well as environmental monitoring and auditing to be implemented.

1.3. Purpose of this Report

1.3.1. This is the 1st Quarterly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 01 December 2022 to 31 March 2023.

1.4. Structure of the Report

1.4.1. The structure of the report is as follows:

Section 1 – Introduction
- details the background, purpose 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 Permit(s)/License(s) during the reporting period.

Section 3 – Air Quality Monitoring

- Construction Dust

Section 4 – Noise Monitoring

Section 5 – Water Quality Monitoring

- Groundwater Monitoring

- Surface Water Monitoring

Section 6 – Waste Management

Section 7 – Landfill Gas Monitoring

Section 8 – Landscape and Visual

Section 9 – Cultural Heritage

Section 10 – Ecological Monitoring

Section 11 – Site Inspection and Audit

Section 12 – Environmental Non-Conformance

Section 13 – Implementation Status on Environmental Mitigation Measures

Section 14 – Conclusion

2. Project Information

2.1. Construction Activities

2.1.1. A summary of the major construction activities undertaken in this reporting period is shown in **Table 2-1**. Construction programme is illustrated in **Appendix A**. Detailed construction activities are summarized in **Appendix B**.

Table 2-1 Major Construction Activities Undertaken in the Reporting Period

Construction Activities Undertaken	Reporting Month			
	Dec 2022	Jan 2023	Feb 2023	Mar 2023
- Material loading and unloading, site traffic	✓	✓	✓	✓
- Permanent site office foundation works with pouring of concrete			✓	✓
- Site clearance	✓	✓	✓	✓
- Installation of permanent fencing	✓	✓	✓	✓
- Site formation	✓	✓	✓	✓
- Tree felling	✓	✓	✓	✓

2.2. Project Organization & Management Structure

2.2.1. The Project Organization Chart & Management Structure are shown in **Appendix C**. The key personnel contact information is summarized in **Table 2-2**.

Table 2-2 Contact Information of Key Personnel

Party	Name	Contact Number
Contractor (Veolia Environmental Service Hong Kong Ltd.)	Mr. William Wan	2902 5296
Independent Environmental Checker (IEC) (Meinhardt Infrastructure and Environment Ltd.)	Ms. Claudine Lee	2859 5409
Environmental Team Leader (ETL) (Aurecon Hong Kong Limited)	Mr. Fredrick Leong	3664 6888

2.3. Status of Submission required under the FEP & EP during reporting period

2.3.1. The status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the FEP & EP during reporting period are presented in **Table 2-3**. The detail status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the FEP & EP for NENTX project are shown in **Appendix D**.

Table 2-3 Status of Submissions required under the FEP & EP during reporting period

FEP Condition	EP Condition	Submission / Measures	Status
2.1	2.3	Management Organization of Main Construction Companies	Submitted
2.2	2.4	Setting up of Community Liaison Group	Community Liaison Group was set up.
2.3	2.5	Submission of EM&A Manual	Submitted
2.5	2.7	Submission of Vegetation Survey (Transplantation Proposal)	Submitted
2.6	2.8	Submission of translocation proposal	Submitted
2.7	2.9	Submission of Transplantation Report and Transplantation Monitoring	Submitted 2nd monitoring (9 Dec 2022) 3rd monitoring (21 Dec 2022) 4th monitoring (13 Jan 2023) 5th monitoring (26 Jan 2023) 6th monitoring (8 Feb 2023) 7th monitoring (24 Feb 2023) 8th monitoring (20 Mar 2023)
2.8	2.10	Submission of Translocation Report and Translocation Monitoring	Translocation was carried out and the report submitted. 5th monitoring (29 Dec 2022) 6th monitoring (30 Jan 2023) 7th monitoring (24 Feb 2023) 8th monitoring (20 Mar 2023)
2.9	2.11	Submission of Detailed Landfill Gas Hazard Assessment Report	Submitted
2.10	2.12	Submission of Waste Management Plan	Submitted
3.2	3.2	Submission of Baseline Monitoring Report	Submitted
3.3	3.3	Submission of Monthly EM&A Report	1st report (Dec 2022) 2nd report (Jan 2023) 3rd report (Feb 2023) 4th report (Mar 2023)

2.4. Status of Environmental Approval Document

2.4.1. A summary of the relevant valid permits, licences, and/or notifications on environmental protection for this Project since the granting of the EP is presented in **Table 2-4**.

Table 2-4 Summary of the relevant valid permits, licences, and/or notifications on environmental protection

Permit / Licenses / Notification	Reference	Expiry Date	Remark
Environmental Permit (EP)	EP-292/2007	Throughout the Contract	Permit granted on 26 November 2007
Further Environmental Permit (FEP)	FEP-210/2022	Throughout the Contract	Permit granted on 28 April 2022
Notification of Construction Works as required under Air Pollution Control (Construction Dust) Regulation	479809	Throughout the Contract	Approved on 13 May 2022
Registration of Waste Producer under Waste Disposal Ordinance	7043692	Throughout the Contract	Approved on 13 April 2022
Registration as Chemical Waste Producer	5213-642-P1034-18	Throughout the Contract	Approved on 11 July 2022
Construction Noise Permit	GW-RN1151-22	28 February 2023	Approved on 29 November 2022 (cancelled with effect from 14 February 2023)
Construction Noise Permit	GW-RN0131-23	13 May 2023	Approved on 9 February 2023 (Cancelled with effect from 23 March 2023)
Construction Noise Permit	GW-RN0299-23	22 June 2023	Approved on 21 March 2023
Effluent Discharge License under Water Pollution Control Ordinance	WT00042301-2022	31 October 2027	Approved on 18 October 2022 Variation of Licence (Approved on 7 February 2023)

3. Air Quality Monitoring

3.1 Construction Dust

3.1.1 Monitoring Requirement

3.1.1.1 In accordance with the EM&A Manual, 1-hr & 24-hr Total Suspended Particulates (TSP) levels should be measured at the designated air quality monitoring stations in every 6 days to ensure that any deteriorating air quality could be readily detected, and timely action shall be undertaken to rectify such situation. For 1-hr TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs. The specific time to start and stop the 24- hr TSP monitoring shall be clearly defined for each location.

3.1.2 Monitoring Parameters, Frequency and Location

3.1.2.1 According to the EM&A Manual, three monitoring stations namely AM(D)1, AM(D)2 and AM(D)3 are selected for the impact monitoring.

3.1.2.2 A baseline monitoring plan has been submitted to IEC and EPD on 31 May 2022 including the proposal with justification of change of monitoring locations. Due to limited access to the original monitoring locations at AM(D)1, AM(D)2 and AM(D)3, the adjusted stations at AM1, AM2 and AM3 were agreed with IEC prior to the baseline and impact monitoring. The locations of adjusted dust monitoring locations are shown in **Figure 2**.

3.1.2.3 The locations of dust monitoring stations are shown in **Table 3-1**. The monitoring parameters, frequency and duration are shown in **Table 3-2**.

Table 3-1 Locations of Dust Monitoring Stations

Monitoring Station	Representative for	Monitoring Parameters
AM1	Tung Lo Hang	1-hr and 24-hr TSP
AM2	Heung Yuen Wai	1-hr and 24-hr TSP
AM3	Wo Keng Shan Tsuen	1-hr and 24-hr TSP

Remarks:

The contractor passed correspondence including original monitoring locations specified on the Approved EM&A Manual to the village representatives on 26 April 2022. After a meeting with Ta Kwu Ling District Rural Committee (RC) Chairman, representative from the RC and a few villagers on 1 May 2022, all the Village Heads of Wo Keng Shan Tsuen, Heung Yuen Wai and Lin Ma Hang verbally refused to accept our proposal for installation of dust and / or noise monitoring equipment within or next to their villages, for the baseline & impact monitoring.

AM(D)1 Tung Lo Hang, AM(D)2 Heung Yuen Wai, AM(D)3 Wo Keng Shan Tsuen are the air monitoring stations for the construction phase EM&A programme as identified in the approved EM&A Manual for the Project. The access to Tung Lo Hang, Heung Yuen Wai and Wo Keng Shan Tsuen were denied. A search for alternative air monitoring locations (AM1, AM2 & AM3) was carried out during the site visit.

The Baseline Monitoring Plan has been submitted to IEC and EPD including the proposal of change of monitoring locations on 31 May 2022. This arrangement was conducted between baseline and impact monitoring and has been agreed by the Independent Environmental Checker (IEC) and no comment received from EPD.

Due to the adjustment of the location of AM(D)1, AM(D)2 & AM(D)3to AM1, AM2 & AM3, the measured air quality levels at AM1, AM2 & AM3 would represent the air quality levels at AM(D)1, AM(D)2 & AM(D)3.

Table 3-2 Dust Impact Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Frequency and Duration
AM1, AM2, AM3	1-hr TSP	At least 3 times per 6 days
	24-hr TSP	1 time per 6 days

3.1.3 Monitoring Results

3.1.3.1 The impact dust monitoring results are summarized in **Table 3-3** and **Table 3-4.** The graphical presentations of monitoring data are presented in **Appendix E**.

Table 3-3 Summary of Impact 1-hr TSP Monitoring Results

Dust Monitoring Station	Average 1-hr TSP Concentration, µg/m³ (Range)				Action Level, µg/m³	Limit Level, µg/m³
	Dec 2022	Jan 2023	Feb 2023	Mar 2023		
AM1	54 (44 – 65)	49 (34 – 60)	27 (18 – 41)	45 (22 – 67)	>285	>500
AM2	54 (45 – 61)	42 (32 – 53)	28 (20 – 43)	49 (31 – 65)	>279	>500
AM3	63 (57 – 68)	52 (39 – 67)	33 (21 – 51)	47 (15 – 68)	>285	>500

Table 3-4 Summary of Impact 24-hr TSP Monitoring Results

Dust Monitoring Station	Average 24-hr TSP Concentration, µg/m³ (Range)				Action Level, µg/m³	Limit Level, µg/m³
	Dec 2022	Jan 2023	Feb 2023	Mar 2023		
AM1	114 (88 – 147)	98 (60 – 133)	145 (62 – 286)	184 (30 – 490)	>164	>260
AM2	65 (43 – 92)	53 (21 – 79)	89 (61 – 126)	78 (29 – 152)	>152	>260
AM3	140 (126 – 157)	85 (56 – 134)	181 (93 – 284)	162 (35 – 337)	>163	>260

3.1.3.2 The Summary of Impact 1-hr & 24-hr TSP Exceedance are shown in **Table 3-5**.

Table 3-5 Summary of Impact 1-hr & 24-hr TSP Exceedance

Dust Monitoring Station	Parameter / Level Exceedance	1-hr TSP	Exceedance Count	24-hr TSP	Exceedance Count
AM1	Action	-	0	1 Mar 2023* 3 Mar 2023*	2
	Limit	-	0	24 Feb 2023* 2 Mar 2023* 4 Mar 2023*	3
AM2	Action	-	0	-	0
	Limit	-	0	-	0
AM3	Action	-	0	18 Feb 2023* 3 Mar 2023* 4 Mar 2023* 8 Mar 2023*	4
	Limit	-	0	24 Feb 2023* 1 Mar 2023* 2 Mar 2023*	3

Remarks: * equal to non-project related

3.1.3.3 No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the period.

3.1.3.4 2 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related. The Notification of Environmental Quality Limits Exceedances are presented in **Appendix F**.

3.1.3.5 No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.

3.1.3.6 4 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM3 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related. The Notification of Environmental Quality Limits Exceedances are presented in **Appendix F**.

3.1.4 Recommended Mitigation Measures

3.1.4.1 The recommended dust mitigation measures from EIA report are listed as followed:

- The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.
- Dust emission from construction vehicle movement is confined within the worksites area.
- Watering facilities will be provided at every designated vehicular exit point.
- Good site practice is recommended during construction phase.

3.1.5 Event and Action Plan

3.1.5.1 Should non-compliance of the criteria occur, action in accordance with the action plan in **Table 3-6** shall be carried out.

Table 3-6 Event and Action Plan for dust impact

Event	ET	IEC	Contractor
Exceedance of Action Level			
Exceedance for one sample	• Identify source • Prepare Notification of Exceedance • Inform IEC and Contractor • Repeat measurement to confirm findings • Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below action level	• Verify the Notification of Exceedance • Check monitoring data submitted by ET and Contractor's working methods • Discuss with ET and Contractor on proposed remedial measures	• Rectify any unacceptable practice • Amend working methods if appropriate
Exceedance for two or more consecutive samples	• Identify source • Prepare Notification of Exceedance • Inform Contractor and IEC • Repeat measurements to confirm findings • Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below action level • Discuss with IEC for remedial action required • Ensure remedial measures are properly implemented • Continue monitoring at daily intervals if exceedance is due to the Project • If no exceedance for 3 consecutive days, cease additional monitoring	• Verify the Notification of Exceedance • Check monitoring data submitted by ET and Contractor's working methods • Discuss with ET and Contractor on proposed remedial measures • Review with analysed results submitted by ET • Review the proposed remedial measures by Contractor • Supervise the implementation of remedial measures	• Submit proposals for remedial actions to IEC within 3 working days of notification • Implement the agreed proposals • Amend proposal if appropriate

Event	ET	IEC	Contractor
Exceedance of Limit Level			
Exceedance for one sample	• Identify source • Prepare Notification of Exceedance • Inform IEC and Contractor • Repeat measurement to confirm findings • Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below limit level • Assess effectiveness of Contractor's remedial actions and keep EPD and IEC informed of the results	• Verify the Notification of Exceedance • Check monitoring data submitted by ET and Contractor's working methods • Discuss with ET and Contractor potential remedial actions • Supervise the implementation of remedial measures	• Take immediate action to avoid further exceedance • Submit proposals for remedial actions to IEC within 3 working days of notification • Implement the agreed proposals • Amend proposal if appropriate
Exceedance for two or more consecutive samples	• Identify source • Prepare Notification of Exceedance • Inform IEC and EPD the causes and actions taken for the exceedances • Discuss with IEC for remedial action required • Ensure remedial measures are properly implemented • Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and informed of the results • Increase monitoring frequency to confirm findings • If exceedance stops, cease additional monitoring	• Verify the Notification of Exceedance • Check monitoring data submitted by ET and Contractor's working methods • Discuss amongst ET and Contractor on the potential remedial actions. • Review Contractor's remedial actions whenever necessary to assure their effectiveness • Supervise the implementation of remedial measures	• Take immediate action to avoid further exceedance • Submit proposals for remedial actions to IEC of notification • Implement the agreed proposals • Resubmit proposals if problem still not under control • Stop the relevant activity of works until the exceedance is abated

4 Noise Monitoring

4.1 Monitoring Requirement

4.1.1 In accordance with the EM&A manual, noise impact monitoring shall be carried out at 2 monitoring stations NM1 and NM2 once a week during normal construction working hour (0700-1900 Monday to Saturday). The minimum logging interval shall be 30 minutes with average of 6 consecutive Leq 5 mins. L10 and L90 shall also be measured at 5 mins intervals.

4.2 Monitoring Locations, Parameters and Frequency

4.2.1 According to the EM&A Manual, two monitoring stations namely NM1 and NM2 are selected for the impact monitoring.

4.2.2 A baseline monitoring plan has been submitted to IEC and EPD on 31 May 2022 including the proposal with justification of change of monitoring locations. Due to limited access to the original monitoring locations at NM1 and NM2, the adjusted stations at NM1a and NM2a were agreed with IEC prior to the baseline and impact monitoring. The noise monitoring locations are summarized in **Table 4-1** and shown in **Figure 2**. The frequency and duration are shown in **Table 4-2**.

Table 4-1 Noise Monitoring Locations

Monitoring Station	Representative for	Type of Measurement
NM1a	Wo Keng Shan Tsuen	Free field
NM2a	Lin Ma Hang	Free field

Remarks:

The contractor passed correspondence including original monitoring locations specified on the Approved EM&A Manual to the village representatives on 26 April 2022. After a meeting with Ta Kwu Ling District Rural Committee (RC) Chairman, representative from the RC and a few villagers on 1 May 2022, all the Village Heads of Wo Keng Shan Tsuen, Heung Yuen Wai and Lin Ma Hang verbally refused to accept our proposal for installation of dust and / or noise monitoring equipment within or next to their villages, for the baseline & impact monitoring.

NM1 Wo Keng Shan Tsuen & NM2 Lin Ma Hang are the noise monitoring stations for the construction phase EM&A programme as identified in the approved EM&A Manual for the Project. The access to Tung Lo Hang, Heung Yuen Wai and Wo Keng Shan Tsuen were denied. A search for alternative noise monitoring locations (NM1a & NM2a) was carried out during the site visit.

The Baseline Monitoring Plan has been submitted to IEC and EPD including the proposal of change of monitoring locations on 31 May 2022. This arrangement was conducted between baseline and impact monitoring and has been agreed by the Independent Environmental Checker (IEC) and no comments received from EPD. Noise measurement at NM1a & NM2a will be considered as free-field and a correction of +3dB(A) would be made to the noise monitoring results.

Due to the adjustment of the location of NM1 & NM2 to NM1a & NM2a, the measured noise levels at NM1 & NM2 would represent the noise levels at NM1 & NM2.

Table 4-2 Noise Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Frequency and Duration
NM1a and NM2a	L_{Aeq} (30mins) average of 6 consecutive L_{eq} (5min); L10 (5min) & L90 (5min)	once a week during normal construction working hour (0700-1900 Monday to Saturday)

4.3 Monitoring Results

4.3.1 The impact noise monitoring results are summarized in **Table 4-3**. The graphical presentations of monitoring data are presented in **Appendix E**.

Table 4-3 Summary of Noise Monitoring Results during normal working hours (07:00-19:00, Monday to Saturday)

Noise Monitoring Station	Average Leq, 30min, dB(A) (Range)				Action Level	Limit Level
	Dec 2022	Jan 2023	Feb 2023	Mar 2023		
NM1a	51.1 (48.2 – 54.0)	53.6 (51.1 – 56.1)	52.8 (47.0 – 54.9)	58.0 (53.1 – 62.3)	When one documented complaint is received	>75dB(A)
NM2a	48.1 (47.6 – 50.0)	49.8 (48.9 – 51.2)	50.2 (46.2 – 54.5)	57.1 (42.3 – 62.1)		

Remark:

(1) * A correction of +3 dB(A) was made to the free field measurements

(2) If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

4.3.2 No exceedance of Action and Limit Levels of construction noise was recorded during the reporting period. Therefore, there was no record of Notification of Environmental Quality Limits Exceedance in the **Appendix F**.

4.3.3 No particular observations are identified near the monitoring stations during the monitoring period.

4.4 Recommended Mitigation Measures

4.4.1 The recommended dust mitigation measures from EIA report are listed as followed:

1. Use of good site practices to limit noise emissions by considering the following:
    - 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 officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.

2. Select “Quiet plants” which comply with the BS 5228 Part 1 or TM standards.

4.5 Event and Action Plan

4.5.1 Should non-compliance of the criteria occurs, action in accordance with the action plan in **Table 4-4** shall be carried out.

Table 4-4 Event and action plan for construction noise monitoring

Event	ET	IEC	Contractor
Exceedance of Action Level	• Identify source, investigate the causes of exceedance • Prepare Notification of Exceedance • Inform IEC and Contractor • Report the results of investigation to IEC, and Contractor • Discuss with Contractor and IEC for formulate remedial measures • Ensure remedial measures are properly implemented • Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring	• Verify the Notification of Exceedance • Review the analysed results submitted by ET • Discuss with ET, and Contractor on the potential remedial actions • Review the proposed remedial measures • Supervise the implementation of remedial measures	• Submit noise mitigation proposals to IEC • Implement the agreed noise mitigation proposals
Exceedance of Limit Level	• Identify source, investigate the causes of exceedance • Prepare Notification of Exceedance • Inform IEC and Contractor • Repeat measurements to confirm findings • Discuss with Contractor and IEC for remedial measures • Ensure remedial measures are properly implemented • Assess effectiveness of Contractor's remedial actions and keep IEC and EPD informed of the results • Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring	• Verify the Notification of Exceedance • Review the analysed results submitted by ET • Discuss with ET, and Contractor on the potential remedial actions • Review the proposed remedial measures • Supervise the implementation of remedial measures	• Take immediate action to avoid further exceedance • Submit proposals for remedial actions to IEC of notification • Implement the agreed proposals • Resubmit proposals if problem still not under control • Stop the relevant portion of works as determined by project proponent until the exceedance is abated.

5 Water Quality Monitoring

5.1 Groundwater Monitoring

5.1.1 Monitoring Requirement

5.1.1.1 In accordance with the EM&A manual, groundwater quality monitoring shall be carried out at least once per month at the 35 designated groundwater monitoring locations (i.e ED1 to ED35). Based on the existing construction programme, site clearance and site formation works for future landfilling area are in progress. The groundwater monitoring locations ED1 to ED35 will be installed after the site formation work of the landfilling area. No groundwater monitoring is required before the completion of site formation work of the landfilling area.

5.2 Surface Water Monitoring

5.2.1 Monitoring Requirement

5.2.1.1 In accordance with the EM&A manual, impact surface water quality monitoring was carried out at the two designated surface water discharge points (i.e WM1 and WM2) for once per month from commencement of construction works of the Project.

5.2.2 Monitoring Locations, Parameters and Frequency

5.2.2.1 The monitoring locations are indicated in **Table 5-1** and **Figure 2**. The monitoring parameters, frequency and duration of surface water quality monitoring are summarized in **Table 5-2**.

Table 5-1 Surface water quality monitoring locations

Monitoring Station	Location	Coordinates (HK Grid)	
		Easting	Northing
WM1	Upstream of Lin Ma Hang River	836665	845020
WM2	Ping Yuen River	835592	844186

Table 5-2 Surface water quality monitoring Parameters, Frequency and Duration

Parameter	Frequency
pH, Electrical conductivity, DO, Turbidity, SS, Alkalinity, COD, BOD_5, TOC, Ammonia-nitrogen, TKN, Nitrate, Sulphate, Sulphite, Phosphate, Chloride, Sodium, Mg, Ca, K, Fe, Ni, Zn, Mn, Cu, Pb, Cd, Coliform Count, Oil and Grease	once per month

5.2.3 Monitoring Results

5.2.3.1 The summary of monitoring results are presented in **Table 5-3** & **Table 5-4**. Detailed graphical presentations at each monitoring station of surface water quality (DO, SS and Turbidity) at the monitoring stations are given in **Appendix E.**

5.2.3.2 No particular observations are identified near the monitoring stations during the monitoring period.

5.2.3.3 No exceedance of Action and Limit Levels of surface water monitoring was recorded during the reporting period. Therefore, there was no record of Notification of Environmental Quality Limits Exceedance in the **Appendix F**.

Table 5-3 Summary of Impact Surface Water Monitoring Results at WM1

Monitoring Parameter(s)	Monitoring Station WM1					
	Monitoring Results				Action Level	Limit Level
	Dec 2022	Jan 2023	Feb 2023	Mar 2023		
pH	7.4	7.1	7.4	7.1	>7.7	>7.8
Electrical Conductivity in µS/cm	58	51	83	63	---	---
DO in mg/L	10.8	10.5	7.7	7.6	<7.4	<4
Turbidity in NTU	8.6	6.6	5.0	6.3	>9.2	>9.5
SS in mg/L	3.4	7.1	3.4	2.1	>9.7	>11.4
Alkalinity	16	16	16	14	---	
COD	<5	5.0	<5	6		
BOD_5	<2	<2	<2	<2		
TOC	3	3	3	2		
Ammonia-nitrogen	0.02	0.02	0.11	0.06		
TKN	0.2	0.1	0.4	0.3		
Nitrate	0.01	0.02	0.02	0.01		
Sulphate	3	3	5	7		
Sulphite	<2	<2	<2	<2		
Phosphate	0.01	<0.01	<0.01	0.02		
Chloride	6	5	6	6		
Sodium	8540	7830	8390	7960		
Mg	410	440	420	440		
Ca	3180	3030	3100	3280		
K	290	290	550	400		
Fe	660	660	490	1310		
Ni	<1	<1	3.0	<1		
Zn	<10	<10	11.0	<10		
Mn	42	55	57	106		
Cu	<1	<1	1.0	<1		
Pb	<1	<1	<1	<1		
Cd	<0.2	<0.2	<0.2	<0.2		
Coliform Count	Not detected	26	24	Not Detected		
Oil and Grease	<5	<5	<5	<5		

Table 5-4 Summary of Impact Surface Water Monitoring Results at WM2

Monitoring Parameter(s)	Monitoring Station WM2					
	Monitoring Results				Action Level	Limit Level
	Dec 2022	Jan 2023	Feb 2023	Mar 2023		
pH	7.5	7.3	7.2	7.0	>7.6	>7.7
Electrical Conductivity in µS/cm	114	120	124	124	---	---
DO in mg/L	6.5	6.9	7.5	7.9	<5	<4
Turbidity in NTU	23.3	4.1	8.6	13.7	>108.3	>108.9
SS in mg/L	25.6	20.4	9.1	12.0	>94.5	>94.7
Alkalinity	35	38	42	36	---	
COD	<5	6	7	<5		
BOD_5	<2	<2	<2	<2		
TOC	3	2	5	3		
Ammonia-nitrogen	0.18	0.16	0.29	0.33		
TKN	0.4	0.3	0.4	0.5		
Nitrate	0.10	0.10	0.01	0.05		
Sulphate	8	7	5	5		
Sulphite	<2	<2	<2	<2		
Phosphate	<0.01	<0.01	<0.01	<0.01		
Chloride	6	7	6	6		
Sodium	6710	6400	5710	5810		
Mg	1140	1020	720	690		
Ca	12100	11200	7390	7020		
K	2310	1680	1130	1050		
Fe	6040	6040	10700	10600		
Ni	<1	<1	<1	<1		
Zn	21	31	34	20		
Mn	2150	2100	2910	3070		
Cu	2	2	1	1		
Pb	2	1	<1	<1		
Cd	<0.2	<0.2	<0.2	<0.2		
Coliform Count	320	21	4200	14		
Oil and Grease	<5	<5	<5	<5		

5.2.4 Recommended Mitigation Measure

5.2.4.1 The recommended surface water mitigation measures from EIA report are listed as followed:

- Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities.
- The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows.
- The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silts and sediment traps should be 5 minutes under maximum flow conditions.
- All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads.
- Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.
- Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.

5.2.5 Event and Action Plan

5.2.5.1 Should non-compliance of the criteria occurs, action in accordance with the action plan in **Table 5-5** shall be carried out.

Table 5-5 Event and Action Plan for Water Quality

Event	ET	IEC	Contractor
Action level being exceeded by one sampling day	• Repeat in situ measurement to confirm findings • Identify source(s) of impact • Prepare Notification of Exceedance • Inform IEC and Contractor • Check monitoring data, all plant, equipment and Contractor's working methods • Repeat measurement on next day of exceedance	• Verify Notification of Exceedance • Check monitoring data and Contractor's working methods	• Rectify unacceptable practice • Amend working methods if appropriate
Action level being exceeded by two or more consecutive sampling days	• Repeat in situ measurement to confirm findings • Identify source(s) of impact • Prepare Notification of Exceedance • Inform IEC and Contractor • Check monitoring data, all plant, equipment and Contractor's working methods • Discuss with Contractor and IEC for remedial measures • Ensure mitigation measures are implemented • Increase the monitoring frequency to daily until no exceedance of Action level • Repeat measurement on next day of exceedance	• Verify Notification of Exceedance • Check monitoring data and Contractor's working method • Discuss with ET and Contractor on possible remedial actions • Review the proposed mitigation measures • Supervise the implementation of mitigation measures	• Submit proposal of additional mitigation measures to IEC of notification • Implement the agreed mitigation measures • Amend proposal if appropriate

Event	ET	IEC	Contractor
Limit Level being exceeded by one sampling day	• Repeat in situ measurement to confirm findings • Identify source(s) of impact • Prepare Notification of Exceedance • Inform IEC and Contractor; • Check monitoring data, all plant, equipment and Contractor's working methods • Discuss mitigation measures with IEC and Contractor • Ensure mitigation measure are implemented	• Verify Notification of Exceedance • Check monitoring data submitted By ET and Contractor's working method • Discuss with ET and Contractor on possible remedial actions • Review the proposed mitigation measures • Supervise the implementation of mitigation measures	• Critically review the working method • Rectify unacceptable practice • Take immediate corrective actions to avoid further exceedance • Submit proposal of mitigation measures to IEC • Implement the agreed mitigation measures •
Limit level being exceeded by two or more consecutive sampling days	• Repeat in situ measurement to confirm findings • Identify source(s) of impact • Prepare Notification of Exceedance • Inform IEC, contractor and EPD • Check monitoring data, all plant, equipment and Contractor's working methods • Discuss mitigation measures with IEC and Contractor • Ensure mitigation measure are implemented	• Verify Notification of Exceedance • Check monitoring data submitted by ET and Contractor's working method • Discuss with ET and Contractor on possible remedial actions • Review the proposed mitigation measures • Supervise the implementation of mitigation measures	• Critically review the working method • Rectify unacceptable practice • Take immediate corrective actions to avoid further exceedance • Submit proposal of mitigation measures to IEC • Implement the agreed mitigation measures • Resubmit proposals if problem still not under control • Slow down or to stop relevant activity until exceedance is abated

6 Waste Management

6.1 Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials were made up of general refuse, steels and paper/cardboard packaging materials. Steel materials generated from the Project were also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Appendix G**.

6.2 The recommended waste management mitigation measures from EIA report are listed as followed:

- Implement a trip-ticket system to ensure that the movement of C&D materials are properly documented and verified in accordance with DEVB TC(W) No. 6/2010.
- Concrete and masonry should be used as general fill and steel reinforcement bars can be used by scrap steel mills.
- Proper areas should be designated for waste segregation and storage wherever site conditions permit.
- Maximise the use of reusable steel formwork to reduce the amount of C&D material.
- Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement.
- On-site sorting and segregation facility of all type of wastes is considered as one of the best practice in waste management and hence, should be implemented in all projects generating construction waste.
- The sorted public fill and C&D waste should be properly reused.
- Excavated slope, stockpiled material and bund walls should be covered by tarpaulin until used in order to prevent wind-blown dust during dry weather, and to reduce muddy runoff during wet weather.

7 Landfill Gas Monitoring

7.1 Monitoring Requirement during Construction

Monitoring for Construction Works

7.1.1 Intrinsically safe portable gas detectors should be used during excavation or when working in any confined spaces, which have the potential for presence of LFG and risk of explosion or asphyxiation. The monitoring equipment should alarm, both audibly and visually, when the concentrations of the following gases were exceeded:

- CH_4: >10% Lower Explosion Limit (LEL);
- CO_2: >0.5%; and
- O_2: <18% by volume.

7.2 Monitoring Location

Monitoring Locations

7.2.1 During the construction works within the NENT Landfill Extension site with excavation of 1m deep or more, LFG concentrations should be monitored before entry and periodically during the progress of works. If drilling is required, the procedures for safety management and working procedures as stipulated in EPD's Landfill Gas Hazard Assessment – Guidance Note should be strictly adopted.

7.2.2 The monitoring frequency and areas to be monitored should be set down prior to commencement of groundworks by the Safety Officer. All measurements in excavations should be made with the monitoring tube located not more than 10mm from the exposed ground surface. Monitoring of excavations should be undertaken as follows:

7.2.3 For excavation works deeper than 1m, measurements should be made:

• at ground surface prior to excavation;
• immediately before any worker enters the excavation;
• at the beginning of each working day for the entire period the excavation remains open; and
• periodically through the working day whilst workers are in the excavation.

7.2.4 For excavation between 300mm and 1m deep, measurements should be made:

• directly after the excavation has been completed; and
• periodically whilst the excavation remains open.

7.2.5 For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer.

7.2.6 The locations of LFG monitoring locations during reporting period are shown in **Table 7-1**. The Site formation layout plan is shown in **Figure 2**.

Table 7-1 Locations of LFG Monitoring during reporting period

Monitoring Period	Monitoring Location	Type of works
Dec 2022	Portion A +55 mpD Platform	Excavation Works
Jan to Feb 2023	Portion A +58 mpD,+55 mpD Platform	
Mar 2023	Portion A +55 mpD to 70 mpD Platform	

7.3 Monitoring Results

7.3.1 The LFG monitoring was conducted at Portion A +55 mpD Platform (Conducted on working days) in December 2022, conducted at Portion A +58 mpD,+55 mpD Platform (Conducted on working days) from January to February 2023 and conducted at Portion A +55 mpD to 70 mpD Platform (Conducted on working days) in March 2023. The LFG monitoring results are summarized in **Table 7-2.**

Table 7-2 Summary of LFG Monitoring Results

LFG Monitoring Station	Monitoring Date	Monitoring Parameter(s)			
		CH_4 in %	LEL in %/v	CO_2 in %	O_2 in %
		Average Monitoring Results (Range)			
Portion A +55 mpD Platform	Dec 2022	0	0	0	20.4 (20.1 – 20.8)
Portion A +58 mpD,+55 mpD Platform	Jan 2023	0	0	0	20.3 (20.1 – 20.6)
	Feb 2023	0	0	0	20.4 (20.1 – 20.6)
Portion A +55 mpD to 70 mpD Platform	Mar 2023	0	0	0	20.4 (20.2 – 20.8)
Action Level		>10% LEL	---	>0.5%** CO_2	<19%

* LEL: Lower Explosive Limit - concentrations in air below which there is not enough fuel to continue an explosion.

** This Limit Level of CO_2 at 0.5% is set for reference only, assuming no CO_2 emission from a particular location.

7.3.2 No exceedance of Limit Levels of LFG was recorded during the reporting period. Therefore, there was no record of Notification of Environmental Quality Limits Exceedance in the **Appendix F**.

7.3.3 No effect that arose from the other special phenomena and work progress of the concerned site was noted during the current monitoring month.

7.4 Recommended Mitigation Measures

7.4.1 The recommended landfill gas mitigation measures from EIA report are listed as followed:

- Special LFG precautions should be taken due to close proximity of NENT landfill extension site to existing landfill to avoid potential hazards of LFG exposure (ignition, explosion, asphyxiation, toxicity).
- Prominent safety warning signs should be erected on-site to alert all personnel and visitors of LFG hazards during excavation works.
- No smoking or burning should be permitted on-site.
- Prominent 'No smoking' and ‘No Naked Flames’ signs should be erected on-site.
- No worker should be allowed to work alone at any time in excavated trenches or confined areas on-site.
- Adequate fire fighting equipment should be provided on-site.

- Construction equipment should be equipped with vertical exhaust at least 0.6m above ground installed with spark arrestors.
- Electrical motors and extension cords should be explosion-proof and intrinsically safe for use on-site.
- 'Permit to Work' system should be implemented.
- Welding, flame-cutting or other hot works should be conducted only under 'Permit to Work' system following clear safety requirements, gas monitoring procedures and presence of qualified persons to supervise the works.

7.5 Event and Action Plan (EAP)

7.5.1 Should non-compliance of the criteria occur, action in accordance with the action plan in **Table 7-3** shall be carried out.

Table 7-3 Action Plan for the monitoring during construction phase

Parameter	Monitoring Result	Action
Oxygen (O_2)	Action Level <19% O_2	Ventilate trench/void to restore O_2 to >19%
	Limit Level <18% O_2	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore O_2 to >19%
Methane (CH_4)	Action Level >10% LEL*	Prohibit hot works Increase ventilation to restore CH_4 to <10% LEL
	Limit Level >20% LEL*	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CH_4 to <10% LEL
Carbon dioxide (CO_2)	Action Level** >0.5%** CO_2	Ventilate to restore CO_2 to <0.5%
	Limit Level >1.5% CO_2	Stop works Evacuate personnel / prohibit entry Increase ventilation to restore CO_2 to <0.5%

* LEL: Lower Explosive Limit - concentrations in air below which there is not enough fuel to continue an explosion.

** This Action Level of CO_2 at 0.5% is set for reference only, assuming no CO_2 emission from a particular location.

Depending on the baseline CO_2 levels, the Action Level at a particular location will be changed.

8 Landscape and Visual

8.1 Monitoring Requirement

8.1.1 In order to monitor the landscape and visual impact after providing mitigation measures effectively, all the specified and affected LCAs, LRs and VSRs should be monitored. Implementation of the mitigation measures during construction phase of the Project has been monitored through the regular site inspection/audit.

8.1.2 All relevant environmental mitigation measures listed in the approved EIA Report and the EM&A Manual, and their implementation status are summarised in **Appendix H**.

8.2 Result and Observation

8.2.1 Measures to mitigate the landscape and visual impacts during the construction phase has been checked to ensure compliance with the intended aims of the measures within the reporting period. The progress of the engineering works are regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken.

8.2.2 In order to monitor the landscape and visual impact after providing mitigation measures effectively, all the specified and affected LCAs, LRs and VSRs should be monitored. Implementation of the mitigation measures during construction phase of the Project has been monitored through the regular site inspection/audit.

9 Cultural Heritage

9.1.1 The Mitigation measures for preservation of the cultural landscape feature located within the project area was conducted before commencement of construction of the project based on the requirement of Survey Report and Mapping Records for Boulder Paths BP1 & 2 & Conditions of G2, G4, G5 G6, G7, G8, G14, G15, G25, G26 and G27 within NENTX.

9.1.2 The survey and mapping works carried out on 25 April 2022 and the verification works carried out on 23 August 22 confirmed that both 2 boulder paths BP1 and BP2 are fall outside the site boundary and the Project area.

9.1.3 All the affected graves within the waste boundary have been removed in accordance with section 119(1) of the Public Health and Municipal Services Ordinance (Cap 132). Removal of the graves as shown on Figure 2 attached to the FEP was proven by the visit of graves on 22 August 2022. All the graves as shown on Figure 2 attached to the FEP were abandoned and removed and no mitigation or preservation measures is necessary.

9.1.4 The Survey Report and Mapping Records for Boulder Paths BP1 & 2 was certified by ET on 10 Oct 2022, was verified by IEC and submitted to EPD on 12 Oct 2022. The Conditions of G2, G4, G5 G6, G7, G8, G14, G15, G25, G26 and G27 within NENTX was certified by ET, was verified by IEC and submitted to EPD on 15 Oct 2022. No later than four weeks before commencement of construction of the project in accordance with Condition 2.4 of the FEP-01/292/2007.

9.1.5 Implementation of the mitigation measures such as permanent fencing to protect the boulder path and setting up warning notices during construction phase of the Project has been monitored through the regular site inspection/audit. The permanent fencing locations are shown in **Appendix I**. In case of any presence of undiscovered grave during construction phase, AMO will be informed as soon as possible.

10 Ecological Monitoring

10.1.1 In the reporting period, the post-translocation monitoring for the Endemic Freshwater Crab *Somanniathelphusa zanklon* was conducted on 29 December 2022, 30 January 2023, 24 February 2023 & 20 March 2023 based on the requirement of the approved Revised Translocation Proposal for the Endemic Freshwater Crab *Somanniathelphusa zanklon*. The 5th to 8th Post-Translocation Monitoring Reports (December 2022 to March 2023) presents the details of requirements, monitoring results and site inspection with photos. During the reporting period, no *S. zanklon* individual is identified.

10.1.2 The post-transplantation monitoring was conducted on 9 & 21 December 2022, 13 & 26 January 2023, 8 & 24 February 2023 and 20 March 2023 based on the requirement of the approved Transplantation Proposal for Plant Species of Conservation Importance (Rev.1). The 2nd to 8th Post-transplantation Monitoring and Audit Reports (9th December 2022 to 20th March 2023) present the details of requirements, monitoring results and site inspection with photos. During the reporting period, the numbers, measurements, and health conditions of the transplanted plant species are recorded.

10.1.3 The details of requirements, monitoring results and site inspection with photos for the post-translocation monitoring and post-transplantation monitoring would be reported separately.

10.1.4 The milestone of the ecological monitoring is presented in **Table 10-1.** The softcopies of the submissions are provided in https://www.nentx-ema.com/ep-submissions/.

Table 10-1 Milestone of the Ecological Monitoring

Type of Monitoring	Monitoring Event No.	Monitoring Date
Post-translocation Monitoring	1st (Aug 2022)	29 Aug 2022
	2nd (Sep 2022)	28 Sep 2022
	3rd (Oct 2022)	28 Oct 2022
	4th (Nov 2022)	22 Nov 2022
	5th (Dec 2022)	29 Dec 2022
	6th (Jan 2023)	30 Jan 2023
	7th (Feb 2023)	24 Feb 2023
	8th (Mar 2023)	20 Mar 2023
Post-transplantation Monitoring	2nd	9 Dec 2022
	3rd	21 Dec 2022
	4th	13 Jan 2023
	5th	26 Jan 2023
	6th	8 Feb 2023
	7th	24 Feb 2023
	8th	20 Mar 2023

11 Site Inspection and Audit

11.1.1 Site Inspection and audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project Site.

11.1.2 Total 17 weekly environmental site inspections were conducted during the reporting period. 4 of them were the joint environmental site inspections with the representatives of the ER, the Contractor, IEC and the ET. There was no noncompliance recorded during the site inspections.

11.1.3 Details of observations and recommendations are summarized in **Table 11-1**.

Table 11-1 Observations and Recommendations of Site Audit

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	12 Dec 2022	**Reminder:** The vehicle exit road shall be kept clear of dusty materials.	The Contractor was reminded to schedule watering for the vehicle exist road.
	28 Dec 2022	**Observation:** The vehicle road is covered with dusty materials in Portion A.	The vehicle entrance shall be kept clear of dusty materials.
	28 Dec 2022	**Observation:** The work area is dry and fugitive dust is observed from loading and unloading activity in Portion D.	The Contractor has been recommended to schedule watering for work area and to spray with water during loading and unloading activities.
	3 Jan 2023	**Observation:** The work area was dry and fugitive dust was observed from loading and unloading activity in Portion A and Portion D.	The Contractor has been recommended to schedule watering for the work area.
	9 Jan 2023	**Observation:** The work area in SBA was observed dry and fugitive dust was observed.	The Contractor has been recommended to schedule watering for work area in SBA area.
	16 Jan 2023	**Reminder:** The vehicle entrance was not maintained properly in Portion A.	The Contractor has been reminded to repave the road section between the washing facilities and the exit point.
	16 Jan 2023	**Reminder:** Open stockpile was observed in Portion D.	The Contractor has been reminded to cover the open stockpile with impervious sheets.
	27 Jan 2023	**Observation:** Dusty stockpiles were observed in SBA.	The contractor was recommended that dusty stockpile shall be covered with impervious sheet to prevent dust dispersion.
	27 Jan 2023	**Reminder:** The exposed earth was dry and dusty in Portion D.	The Contractor has been reminded to cover the exposed earth with impervious sheets or other means to prevent dust dispersion.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	27 Jan 2023	**Reminder:** Water spray or dust suppression shall be provided during mechanical breaking operation in SBA.	The Contractor has been reminded to spray water on surface continuously during breaking work.
	1 Feb 2023	**Observation:** Vehicle washing was implemented in SBA.	The Contractor has been recommended to provide vehicle washing facility at the exit of SBA.
	1 Feb 2023	**Reminder:** The unpaved area in Portion D was dry and dusty. Dry and fugitive dust was observed in the work area in Portion A.	The Contractor has been reminded to increase the frequency of watering to the unpaved area in Portion D and work area in Portion A.
	1 Feb 2023	**Reminder:** The open stockpiles in SBA were not covered with impervious sheets.	The Contractor has been reminded to cover the stockpile with impervious sheets.
	6 Feb 2023	**Observation:** Fugitive dust was observed in Portion A and D.	The Contractor has been recommended to increase the frequently of watering unpaved area and work area or other dust suppression method in Portion A and D to minimize dust dispersion.
	13 Feb 2023	**Reminder:** The Contractor was reminded that the frequently of watering unpaved area and work area or other dust suppression method in Portion A is reminded should be increased.	The frequently of watering unpaved area and work area or other dust suppression method in Portion A was increased.
	20 Feb 2023	**Observation:** The fugitive dust was observed in Portion A.	The Contractor was recommended to increase the frequency of watering to the unpaved area and work area in Portion A.
	20 Feb 2023	**Observation:** The lack of NRMN Label was observed in the generator at SBA.	The Contractor was recommended to label the NRMN Label on the generator at SBA.
	27 Feb 2023	**Observation:** The site area in SBA was dry and fugitive dust was observed.	The Contractor has been recommended to schedule watering and to increase the frequency of watering if necessary in SBA.
	27 Feb 2023	**Observation:** Vehicle washing shall be implemented in SBA.	The Contractor has been recommended to implement vehicle washing at the exit of Portion.
	27 Feb 2023	**Observation:** More than 20 bags of cement were not covered entirely by impervious sheets in SBA.	The Contractor has been recommended to cover the cement bags entirely.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Air Quality	27 Feb 2023	**Reminder:** The Contractor has been reminded to schedule watering for Portion D.	The Contractor has been reminded to schedule watering and to increase the frequency of watering if necessary in Portion D.
	6 Mar 2023	**Reminder:** The Contractor was reminded to increase the frequency of watering at unpaved road and works area of SBA and Portion D.	The frequency of watering at unpaved road and works area of SBA and Portion D should be increased.
	13 Mar 2023	**Observation:** Fugitive dust was observed from the breaking and excavation works in Portion E3-1. 1.	The Contractor has been reminded to spray water on surface or the dusty material during breaking and excavation works.
	13 Mar 2023	**Reminder:** The Contractor was reminded to increase the frequency of watering at unpaved road and works area of Portion A.	The frequency of watering at unpaved road and works area of Portion A should be increased.
	20 Mar 2023	**Observation:** Stockpiles of dusty material are not covered with impervious sheets.	The Contractor has been reminded to fully cover the stockpiles of dusty material with impervious sheets.
	20 Mar 2023	**Reminder:** The Contractor was reminded to increase the frequency of watering in construction site to prevent dust dispersion.	Frequency of watering in the construction site should be increased to prevent dust dispersion.
	27 Mar 2023	**Observation:** Sand and silt were observed at the vehicle entrance in SBA.	The contractor has been recommended that the vehicle entrance shall be kept clear.
Noise	No specific observation was identified in the reporting period.		
Water Quality	5 Dec 2022	**Reminder:** Open cut slope shall be covered with impervious sheeting.	The Contractor was reminded to cover the exposed slopes with impervious sheet to minimize dust dispersion.
	12 Dec 2022	**Reminder:** The Contractor was reminded to cover the exposed slope with impervious sheet for upcoming rainfall in this week.	All exposed slopes shall be covered with impervious sheets during rainfall.
	19 Dec 2022	**Observation:** Sediments are accumulated in the channel at the vehicle wash bay.	The Contractor was recommended to remove the sediments at least on a weekly basis.
	3 Jan 2023	**Observation:** Rotten leaves and sediments were observed in the channel at Portion D.	The Contractor has been recommended to clean up the channel at Portion D.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Water Quality	16 Jan 2023	**Reminder:** The vehicle entrance was not maintained properly in Portion A.	Earth bund shall be provided at the vehicle washing entrance to prevent leakage of the run-off.
	16 Jan 2023	**Reminder:** Sand and silt were accumulated in the channel of the vehicle washing.	The Contractor has been reminded to remove the sand and silt in the channel regularly.
	6 Feb 2023	**Observation:** Sand and silt shall be regularly removed from the sump pit in the vehicle washing bay in Portion A.	The Contractor has been recommended to remove sand and silt in the sump pit and the channel at the vehicle washing bay regularly.
	27 Feb 2023	**Observation:** Construction runoff in the lower area at Portion D shall be collected and divided to silt removal facilities.	The Contractor has been recommended to ensure construction runoff shall be divided into silt removal facilities.
Waste and Chemical Management	5 Dec 2022	**Observation:** The accumulated waste shall be disposed regularly.	The Contractor was recommended to increase the frequency of waste disposal to avoid accumulate waste.
	12 Dec 2022	**Observation:** The accumulated waste is observed.	The Contractor was recommended to increase the frequency of waste disposal to avoid accumulation of waste.
	28 Dec 2022	**Reminder:** Latex paint drums are observed without drip trays in Portion A.	Drip tray shall be provided for latex paint drums
	9 Jan 2023	**Reminder:** Plant equipment was placed on the ground without impervious sheets in SBA.	The Contractor has been reminded to place the maintenance parts and equipment on impervious sheet to prevent land contamination.
	27 Jan 2023	**Observation:** Oil stains were observed under the excavator in Portion D.	The contractor was recommended that Oil stains shall be cleared and disposed of as chemical waste.
	1 Feb 2023	**Reminder:** The plant equipment in SBA was placed on the ground without impervious sheets.	Plant equipment shall be placed on the impervious sheets.
	13 Mar 2023	**Observation:** Paint containers were observed without drip tray.	Drip tray shall be provided to the paint containers.
	20 Mar 2023	**Observation:** Chemical containers in SBA were observed without drip tray.	Drip tray shall be provided to all chemical containers.

Parameter	Date	Observation and Reminders	Follow-up Action Taken
Waste and Chemical Management	27 Mar 2023	**Observation:** Chemical containers were observed in the open area and some of them were not placed inside the drip tray.	The Contractor has been recommended to storage chemical containers properly and chemical container shall be placed inside the drip tray when it is in outdoor.
Landscape and Visual Impact	No specific observation was identified in the reporting period.		
Permit / Licenses	No specific observation was identified in the reporting period.		

11.1.4 Environmental Protection Department-Regional Office (North) conducted general site inspection on 23 December 2022 & 18 January 2023. No special findings were identified during the inspection.

11.1.5 No Environmental Protection Department-Regional Office (North) conducted general site inspection from February to March 2023.

12 Environmental Non-conformance

12.1 Summary of Monitoring Exceedance

1-hr TSP Monitoring

12.1.1 No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the reporting period.

24-hr TSP Monitoring

12.1.2 2 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

12.1.3 No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.

12.1.4 4 Action Level Exceedance and 3 Limit Level Exceedance for 24-hr TSP monitoring at AM3 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

12.1.5 The Summary of Impact 1-hr & 24-hr TSP Exceedance are shown in **Table 12-1**.

Table 12-1 Summary of Impact 1-hr & 24-hr TSP Exceedance

Dust Monitoring Station	Parameter / Level Exceedance	1-hr TSP	Exceedance Count	24-hr TSP	Exceedance Count
AM1	Action	-	0	1 Mar 2023* 3 Mar 2023*	2
	Limit	-	0	24 Feb 2023* 2 Mar 2023* 4 Mar 2023*	3
AM2	Action	-	0	-	0
	Limit	-	0	-	0
AM3	Action	-	0	18 Feb 2023* 3 Mar 2023* 4 Mar 2023* 8 Mar 2023*	4
	Limit	-	0	24 Feb 2023* 1 Mar 2023* 2 Mar 2023*	3

Remarks: * equal to non-project related

Noise, Surface Water Quality & Landfill Gas Monitoring

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

12.2 Summary of Environmental Non-compliance

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

12.3 Summary of Environmental Complaint

12.3.1 One complaint on 20 December 2022 was received by the public relations officer of the Contractor during the reporting period. The complaint lodged regarding presenting much dusty materials at roundabout at Wo Keng Shan Road & dusty flying problem at Kowloon-bound traffic at Lung Shan Tunnel. After Investigation, it was found that no dusty materials or wastes were transported out from the NENTX site during the complaint period in accordance with the construction record. In addition, it was observed that the wheel washing facilities with high pressure water jet have been provided at all sites exit of NENTX (i.e. Portion A and D) and all vehicles were cleaned before allowing them to leave the construction site to ensure that no mud or debris would be brought to the public area. All site vehicles of NENTX are also required to go through the auto wheel washing facility, which is managed by the operator of the NENT landfill, before entering the public area. The road section between the washing facilities and the exit point was paved with concrete, or bituminous materials were implemented in all site entrances/exits. No mud generated from vehicles under the NENTX project after exiting the site entrance were observed. Therefore, there is no direct evidence showing that the complaint is likely related to NENTX. No environmental complaint was recorded at another dates in December 2022.

12.3.2 No environmental complaint was recorded from January to March 2023.

12.3.3 The cumulative statistics on environmental complaints are presented in **Table 12-1**.

Table 12-1 Cumulative Statistics on Environmental Complaints

Reporting Period	Environmental Aspects					No. of Environmental Complaints
	Air Quality	Noise	Water Quality	Waste	Ecology	
Dec 2022	1*	0	0	0	0	1
Jan 2023	0	0	0	0	0	0
Feb 2023	0	0	0	0	0	0
Mar 2023	0	0	0	0	0	0
Total	1	0	0	0	0	1

Remarks: * equal to non-project related after the investigation

12.4 Summary of Environmental Summons and Successful Prosecution

12.4.1 No summons was received during the reporting period

13 Implementation Status on Environmental Mitigation Measures

13.1.1 The Contractor has generally implemented environmental mitigation measures and requirements as stated in the EIA Report, the EP and EM&A Manual and the contract documents. The implemented mitigation measures are considered effective. The implementation status during the reporting period is summarized in **Appendix H**.

14 Conclusion

14.1.1 1-hr & 24-hr TSP impact monitoring was carried out in the reporting month. No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the period.

14.1.2 No Action / Limit Level exceedance for 1-hr TSP impact monitoring at AM1, AM2 & AM3 was recorded during the period.

14.1.3 2 Action Level exceedance and 3 Limit Level exceedance for 24-hr TSP monitoring at AM1 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

14.1.4 No Action / Limit Level exceedance for 24-hr TSP monitoring at AM2 was recorded during the period.

14.1.5 4 Action Level exceedance and 3 Limit Level exceedance for 24-hr TSP monitoring at AM3 was recorded during the reporting period. The exceedance was considered likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related.

14.1.6 Construction noise monitoring was carried out in the reporting month. No Action / Limit Level exceedance at NM1a & NM2a was recorded during the period.

14.1.7 Site clearance of future landfilling area is in progress. The installation of groundwater monitoring boreholes will be installed after the site formation work of the landfilling area. The target commencement period of groundwater monitoring will be in 2026. No groundwater monitoring is required before the completion of site formation work of the landfilling area.

14.1.8 Surface water monitoring was carried out in the reporting month. No Action / Limit Level exceedance at WM1 & WM2 was recorded during the reporting period.

14.1.9 Landfill Gas Monitoring was carried out in the reporting month. No exceedance of Limit Levels of LFG was recorded during the reporting period.

14.1.10 In terms of cultural heritage, implementation of the mitigation measures such as permanent fencing to protect the boulder path and setting up warning notices during construction phase of the Project has been monitored through the regular site inspection/audit in the reporting period. All the mitigation measures are in order.

14.1.11 Post-translocation Monitoring was carried out in the reporting period. No *S. zanklon individual* was found. Post-transplantation monitoring was carried out in the reporting month. The numbers, measurements and health conditions of the transplanted species are recorded.

14.1.12 Seventeen environmental site inspections were carried out in the reporting month. Recommendations on mitigation measures for Permit/ Licenses were given to the Contractor for remediating the deficiencies identified during the site inspections.

14.1.13 One complaint on 20 December 2022 was received by the public relations officer of the Contractor in December 2022. There is no direct evidence showing that the complaint is likely related to NENTX. No environmental complaint was recorded at another dates in December 2022 and from January to March 2023.

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

14.1.15 No notification of summons and prosecution was received during the reporting period.

Comment and Recommendations

14.1.16 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.

14.1.17 According to the environmental audit performed in the reporting period, the following recommendations were made:

Air Quality Impact

- The contractor was recommended to schedule watering for the vehicle exist road & all work areas.
- The vehicle entrance shall be kept clear of dusty materials. (Portion A)
- The Contractor was recommended to spray with water during loading and unloading activities. (Portion D)
- The Contractor was reminded to repave the road section between the washing facilities and the exit point. (Portion A)
- The Contractor was reminded to cover the open stockpile with impervious sheets at all work areas.
- The Contractor was reminded to cover the exposed earth with impervious sheets or other means to prevent dust dispersion. (Portion D)
- The Contractor was recommended to provide vehicle washing facility. (SBA)
- The Contractor was recommended to label the NRMN Label on the generator. (SBA)
- The Contractor was recommended to implement vehicle washing at the exit of Portion.
- The Contractor was recommended to cover the cement bags entirely. (SBA)
- The contractor has been recommended that the vehicle entrance shall be kept clear.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- The Contractor was reminded to cover the exposed slopes with impervious sheet to minimize dust dispersion at all work areas.
- The Contractor was recommended to remove the sediments at least on a weekly basis. (Portion A)
- The Contractor was recommended to clean up the channel. (Portion D)
- Earth bund shall be provided at the vehicle washing entrance to prevent leakage of the run-off. (Portion A)
- The Contractor was reminded to remove the sand and silt in the sump pit and the channel regularly.
- The Contractor was recommended to ensure construction runoff shall be divided into silt removal facilities.

Waste and Chemical Management

- The Contractor was recommended to increase the frequency of waste disposal to avoid accumulate waste.
- Drip tray shall be provided for paint containers.
- The Contractor was reminded to place the maintenance parts and equipment on impervious sheet to prevent land contamination.
- The contractor was recommended that Oil stains shall be cleared and disposed of as chemical waste.
- The Contractor has been recommended to storage chemical containers properly and chemical container shall be placed inside the drip tray when it is in outdoor.

Landscape and Visual Impact

- No specific observation was identified in the reporting month.

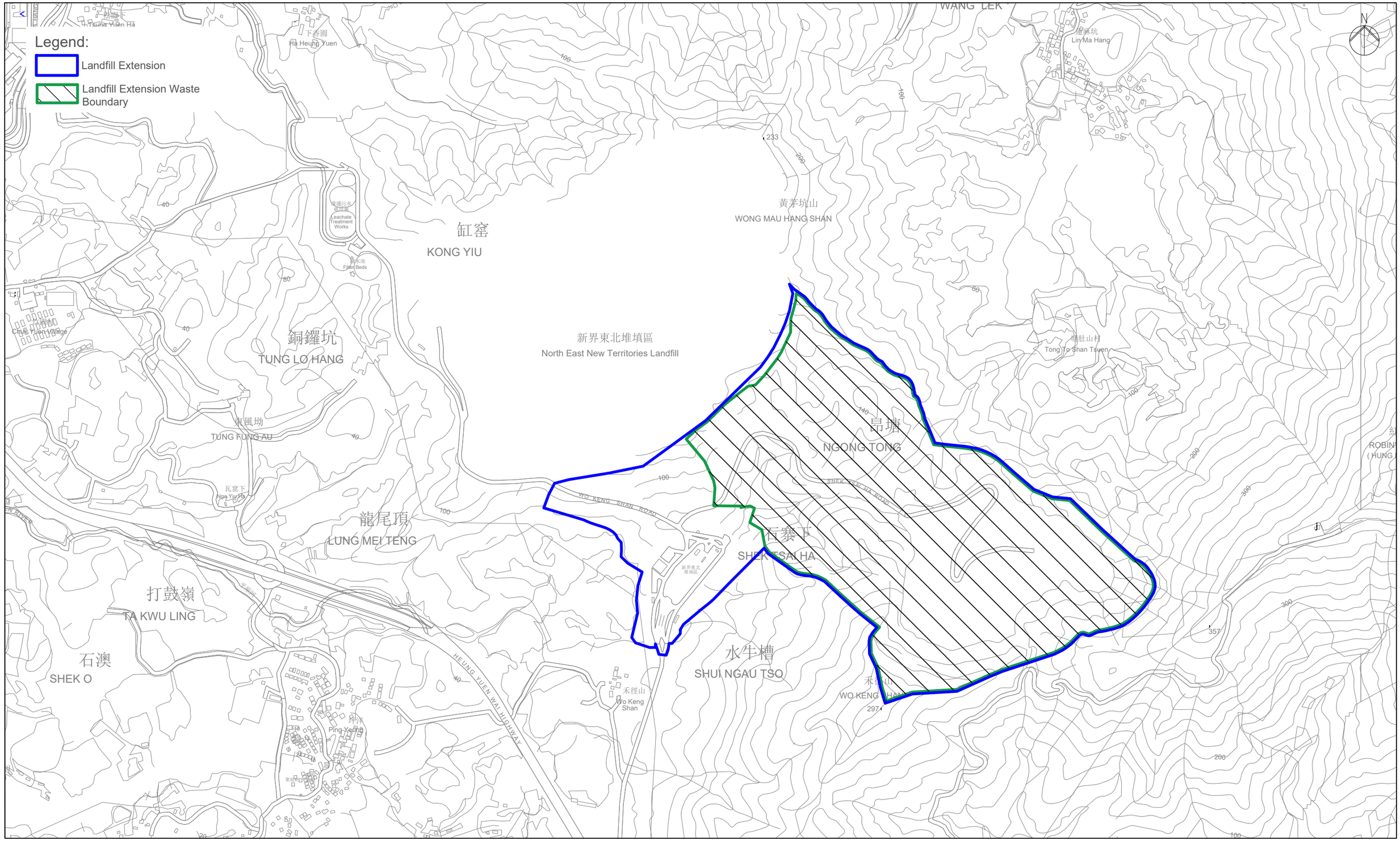
Permit / Licenses

- No specific observation was identified in the reporting month.

14.1.18 The Contractor has generally implemented environmental mitigation measures and requirements as stated in the EIA Report, the EP and EM&A Manual and the contract documents. The implemented mitigation measures are considered effective.

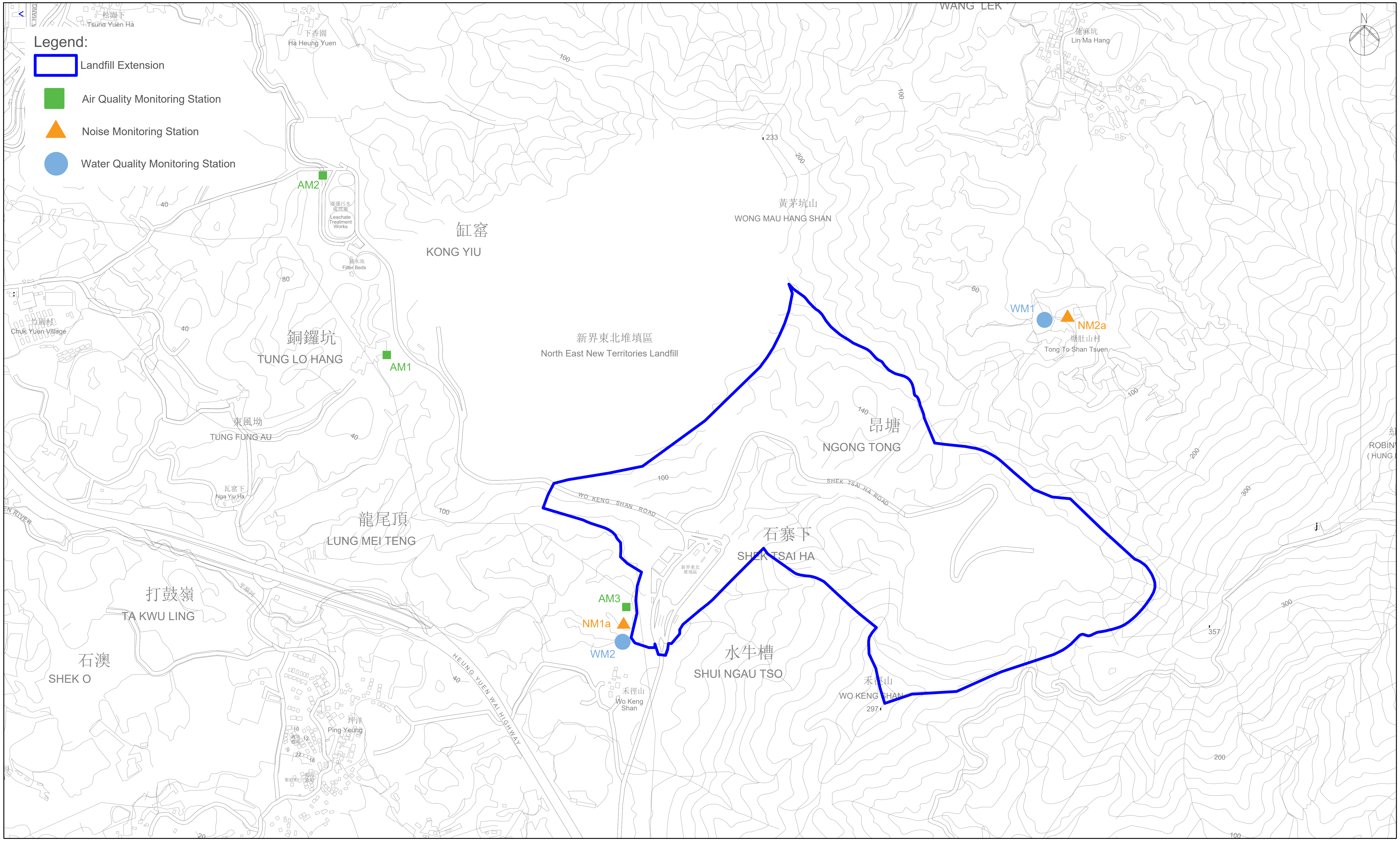
14.1.19 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Figure 1 Location of the Project Site



Aurecon Hong Kong Limited	North-East New Territories (NENT) Landfill Extension Location Plan of the Project Site	Figure 1.1 Scale: 1:10000

Figure 2 Impact Air, Noise & Surface Water Quality Monitoring Locations


Legend:
Landfill Extension
Air Quality Monitoring Station
Noise Monitoring Station
Water Quality Monitoring Station
AM1
AM2
AM3
NM1a
NM2a
WM1
WM2
缸窰
KONG YIU
黃茅坑山
WONG MAU HANG SHAN
新界東北堆填區
North East New Territories Landfill
銅鑼坑
TUNG LO HANG
東風坳
TUNG FUNG AU
龍尾頂
LUNG MEI TENG
打鼓嶺
TA KWU LING
石澳
SHEK O
昂塘
NGONG TONG
石寨下
SHEK TSAI HA
水牛槽
SHUI NGAU TSO
WO KENG SHAN
Wo Keng Shan
WO KENG SHAN ROAD
SHEK TSAI HA ROAD
HEUNG YUEN WAI HIGHWAY
Tong To Shan Tsuen
Lin Ma Hang
Chuk Yuen Village
Ha Heung Yuen
Tsung Yuen Ha
Ping Yeung
Nga Yiu Ha
WANG LEK
N

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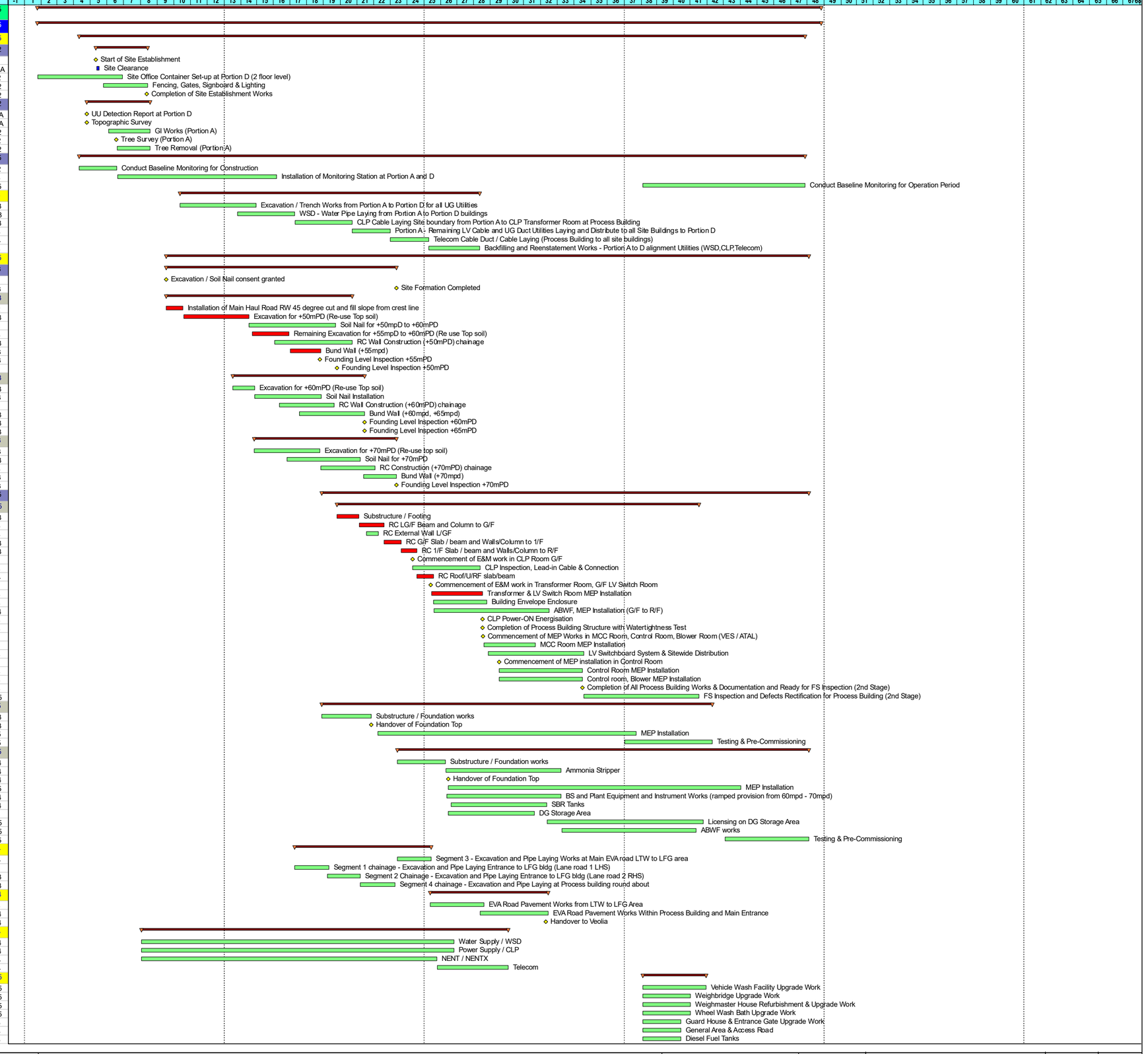
North-East New Territories (NENT) Landfill Extension
Impact Monitoring Locations

Figure 2

Scale: 1:10000

Appendix A Construction Programme

Activity ID	Activity Name	OD	Start	Finish
NENTX		1432	25-Jan-22 A	27-Dec-25
CONSTRUCTION - INITIAL WORKS PHASE 1		1432	25-Jan-22 A	27-Dec-25
PORTION A - Advance Works & Site Establishment		1403	11-Apr-22 A	27-Nov-25
SITE ESTABLISHMENT AND MOBILISATION		202	12-May-22 A	14-Aug-22
05-0001	Start of Site Establishment	0	12-May-22 A	
05-0002	Site Clearance	12	13-May-22 A	18-May-22 A
05-0003	Site Office Container Set-up at Portion D (2 floor level)	60	13-May-22 A	29-Jun-22
05-0004	Fencing, Gates, Signboard & Lighting	80	25-May-22	14-Aug-22
05-0005	Completion of Site Establishment Works	0		12-Aug-22
SITE SURVEY & INVESTIGATION WORKS		75	25-Apr-22 A	18-Aug-22
05-0007	UU Detection Report at Portion D	0		25-Apr-22 A
05-0008	Topographic Survey	0		25-Apr-22 A
05-0009	GI Works (Portion A)	75	04-Jun-22	18-Aug-22
05-0010	Tree Survey (Portion A)	0		17-Jun-22
05-0011	Tree Removal (Portion A)	59	19-Jun-22	18-Aug-22
ENVIRONMENTAL MONITORING		1138	11-Apr-22	27-Nov-25
05-0018	Conduct Baseline Monitoring for Construction	60	11-Apr-22	18-Jun-22
05-0019	Installation of Monitoring Station at Portion A and D	250	20-Jun-22	06-Apr-23
05-0020	Conduct Baseline Monitoring for Operation Period	255	04-Feb-25	27-Nov-25
SITEWIDE Underground UTILITIES (Portion A to Portion D)		470	12-Oct-22	11-Apr-24
05-0012	Excavation / Trench Works from Portion A to Portion D for all UG Utilities	120	12-Oct-22	28-Feb-23
05-0013	WSD - Water Pipe Laying from Portion A to Portion D buildings	90	25-Jan-23	09-May-23
05-0014	CLP Cable Laying Site boundary from Portion A to CLP Transformer Room at Process Building	90	10-May-23	22-Aug-23
05-0015	Portion A - Remaining LV Cable and UG Duct Utilities Laying and Distribute to all Site Buildings t	60	22-Aug-23	31-Oct-23
05-0016	Telecom Cable Duct / Cable Laying (Process Building to all site buildings)	60	31-Oct-23	09-Jan-24
05-0017	Backfilling and Reenstatement Works - Portion A to D alignment Utilities (WSD,CLP,Telecom)	80	09-Jan-24	11-Apr-24
PORTION A - Infrastructure Treatment Area		1174	17-Sep-22	04-Dec-25
SITE FORMATION		397	17-Sep-22	11-Nov-23
05-0021	Excavation / Soil Nail consent granted	0	17-Sep-22	
05-0022	Site Formation Completed	0		11-Nov-23
Soil Ground Platform at +50mPD/+55mPD		320	17-Sep-22	22-Aug-23
05-0023	Installation of Main Haul Road RW 45 degree cut and fill slope from crest line	28	17-Sep-22	17-Oct-22
05-0024	Excavation for +50mPD (Re-use Top soil)	111	19-Oct-22	15-Feb-23
05-0025	Soil Nail for +50mpD to +60mPD	150	15-Feb-23	23-Jul-23
05-0026	Remaining Excavation for +55mpD to +60mPD (Re use Top soil)	64	21-Feb-23	29-Apr-23
05-0027	RC Wall Construction (+50mPD) chainage	134	03-Apr-23	22-Aug-23
05-0028	Bund Wall (+55mpd)	54	02-May-23	26-Jun-23
05-0029	Founding Level Inspection +55mPD	0		24-Jun-23
05-0030	Founding Level Inspection +50mPD	0		26-Jul-23
Soil Ground Platform at +60mPD (LTW Plant)		229	17-Jan-23	14-Sep-23
05-0031	Excavation for +60mPD (Re-use Top soil)	36	17-Jan-23	25-Feb-23
05-0032	Soil Nail Installation	115	25-Feb-23	27-Jun-23
05-0033	RC Wall Construction (+60mPD) chainage	96	12-Apr-23	20-Jul-23
05-0034	Bund Wall (+60mpd, +65mpd)	117	18-May-23	14-Sep-23
05-0035	Founding Level Inspection +60mPD	0		14-Sep-23
05-0036	Founding Level Inspection +65mPD	0		14-Sep-23
Soil Ground Platform at +70mPD (LTW Plant)		248	25-Feb-23	11-Nov-23
05-0037	Excavation for +70mPD (Re-use top soil)	113	25-Feb-23	24-Jun-23
05-0038	Soil Nail for +70mPD	130	26-Apr-23	06-Sep-23
05-0039	RC Construction (+70mPD) chainage	96	26-Jun-23	03-Oct-23
05-0040	Bund Wall (+70mpd)	56	13-Sep-23	11-Nov-23
05-0041	Founding Level Inspection +70mPD	0		11-Nov-23
PROCESS TREATMENT AREA		891	28-Jun-23	04-Dec-25
Process Building (+50mpd)		661	26-Jul-23	17-May-25
05-0042	Substructure / Footing	40	26-Jul-23	04-Sep-23
05-0043	RC LG/F Beam and Column to G/F	42	05-Sep-23	20-Oct-23
05-0044	RC External Wall L/GF	18	18-Sep-23	09-Oct-23
05-0045	RC G/F Slab / beam and Walls/Column to 1/F	30	20-Oct-23	20-Nov-23
05-0046	RC 1/F Slab / beam and Walls/Column to R/F	29	20-Nov-23	19-Dec-23
05-0047	Commencement of E&M work in CLP Room G/F	0	11-Dec-23	
05-0048	CLP Inspection, Lead-in Cable & Connection	107	11-Dec-23	12-Apr-24
05-0050	RC Roof/L/RF slab/beam	27	19-Dec-23	18-Jan-24
05-0051	Commencement of E&M work in Transformer Room, G/F LV Switch Room	0	13-Jan-24	
05-0052	Transformer & LV Switch Room MEP Installation	80	15-Jan-24	17-Apr-24
05-0053	Building Envelope Enclosure	90	18-Jan-24	25-Apr-24
05-0054	ABWF, MEP Installation (G/F to R/F)	180	19-Jan-24	16-Aug-24
05-0055	CLP Power-ON Energisation	0		17-Apr-24
05-0056	Completion of Process Building Structure with Watertightness Test	0		17-Apr-24
05-0057	Commencement of MEP Works in MCC Room, Control Room, Blower Room (VES / ATAL)	0	18-Apr-24	
05-0058	MCC Room MEP Installation	80	19-Apr-24	22-Jul-24
05-0059	LV Switchboard System & Sitewide Distribution	150	27-Apr-24	19-Oct-24
05-0060	Commencement of MEP installation in Control Room	0	17-May-24	
05-0061	Control Room MEP Installation	130	17-May-24	16-Oct-24
05-0062	Control room, Blower MEP Installation	130	17-May-24	16-Oct-24
05-0063	Completion of All Process Building Works & Documentation and Ready for FS Inspection (2nd S	0		16-Oct-24
05-0064	FS Inspection and Defects Rectification for Process Building (2nd Stage)	180	19-Oct-24	17-May-25
LFG Plant (+55mpd)		678	28-Jun-23	10-Jun-25
05-0065	Substructure / Foundation works	90	28-Jun-23	26-Sep-23
05-0066	Handover of Foundation Top	0		26-Sep-23
05-0067	MEP Installation	450	08-Oct-23	22-Jan-25
05-0068	Testing & Pre-Commissioning	150	02-Jan-25	10-Jun-25
LTW Plant (+60mpd, +70mpd)		753	13-Nov-23	04-Dec-25
05-0069	Substructure / Foundation works	86	13-Nov-23	09-Feb-24
05-0070	Ammonia Stripper	180	10-Feb-24	07-Sep-24
05-0071	Handover of Foundation Top	0		14-Feb-24
05-0072	MEP Installation	510	14-Feb-24	01-Aug-25
05-0073	BS and Plant Equipment and Instrument Works (ramped provision from 60mpd - 70mpd)	180	12-Feb-24	07-Sep-24
05-0074	SBR Tanks	150	19-Feb-24	12-Aug-24
05-0075	DG Storage Area	150	14-Feb-24	20-Jul-24
05-0076	Licensing on DG Storage Area	270	13-Aug-24	25-May-25
05-0077	ABWF works	210	09-Sep-24	12-May-25
05-0078	Testing & Pre-Commissioning	150	04-Jul-25	04-Dec-25
PORTION A - Undergound Drainage and Process Pipeworks		240	09-May-23	14-Jan-24
05-0079	Segment 3 - Excavation and Pipe Laying Works at Main EVA road LTW to LFG area	60	13-Nov-23	14-Jan-24
05-0080	Segment 1 chainage - Excavation and Pipe Laying Entrance to LFG bldg (Lane road 1 LHS)	60	09-May-23	11-Jul-23
05-0081	Segment 2 Chainage - Excavation and Pipe Laying Entrance to LFG bldg (Lane road 2 RHS)	60	08-Jul-23	06-Sep-23
05-0082	Segment 4 chainage - Excavation and Pipe Laying at Process building round about	60	06-Sep-23	09-Nov-23
PORTION A - EVA Road Paving Works		203	12-Jan-24	14-Aug-24
05-0067.01	EVA Road Pavement Works from LTW to LFG Area	90	12-Jan-24	19-Apr-24
05-0067.02	EVA Road Pavement Works Within Process Building and Main Entrance	120	12-Apr-24	14-Aug-24
05-0067.03	Handover to Veolia	0		10-Aug-24
SITEWIDE Interfacing and Coordination		633	03-Aug-22	02-Jun-24
05-0083	Water Supply / WSD	540	03-Aug-22	24-Feb-24
05-0084	Power Supply / CLP	540	03-Aug-22	24-Feb-24
05-0085	NENT / NENTX	513	03-Aug-22	24-Jan-24
05-0086	Telecom	120	25-Jan-24	02-Jun-24
PORTION C - Waste Reception Area		100	04-Feb-25	30-May-25
05-0087	Vehicle Wash Facility Upgrade Work	100	04-Feb-25	30-May-25
05-0089	Weighbridge Upgrade Work	75	04-Feb-25	01-May-25
05-0091	Weighmaster House Refurbishment & Upgrade Work	75	04-Feb-25	01-May-25
05-0092	Wheel Wash Bath Upgrade Work	75	04-Feb-25	01-May-25
05-0093	Guard House & Entrance Gate Upgrade Work	60	04-Feb-25	14-Apr-25
05-0094	General Area & Access Road	60	04-Feb-25	14-Apr-25
05-0095	Diesel Fuel Tanks	60	04-Feb-25	14-Apr-25



環境保護署
Environmental Protection Department

- Remaining Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone
- Summary

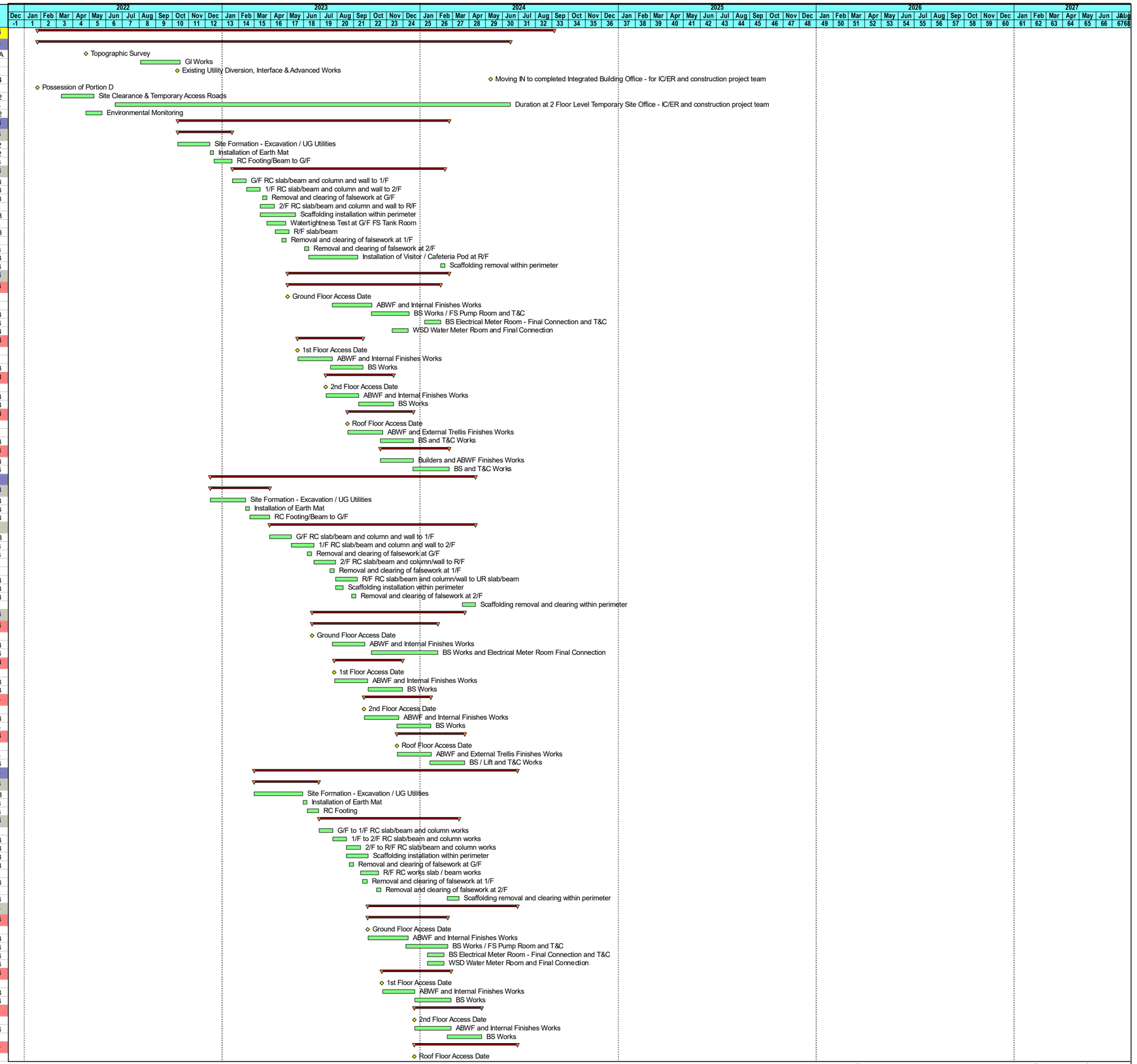
NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION

BASELINE PROGRAMME - EXTRACTED (REV.3)
INITIAL WORKS (PHASE 1)

VEOLIA

Date	Revision	Checked	Approved
08-Jul-22	EXTRACTED - ISSUED 14JAN2023	DW	AY

Activity ID	Activity Name	OD	Start	Finish
PORTION D - Accomodation Buildings		954	25-Jan-22 A	04-Sep-24
Advanced Works		822	25-Jan-22 A	15-Jun-24
05-00100	Topographic Survey	0		25-Apr-22 A
05-00101	GI Works	70	04-Aug-22	15-Oct-22
05-00102	Existing Utility Diversion, Interface & Advanced Works	0		10-Oct-22
05-00104	Moving IN to completed Integrated Building Office - for IC/ER and construction project team	0		10-May-24
05-0096	Possession of Portion D	0	25-Jan-22	
05-0097	Site Clearance & Temporary Access Roads	52	11-Mar-22	09-May-22
05-0098	Duration at 2 Floor Level Temporary Site Office - IC/ER and construction project team	690	18-Jun-22	15-Jun-24
05-0099	Environmental Monitoring	26	25-Apr-22	24-May-22
FIRE SERVICE BUILDING		501	11-Oct-22	24-Feb-24
Substructure		95	11-Oct-22	19-Jan-23
05-00105	Site Formation - Excavation / UG Utilities	60	11-Oct-22	09-Dec-22
05-00106	Installation of Earth Mat	7	10-Dec-22	16-Dec-22
05-00107	RC Footing/Beam to G/F	28	17-Dec-22	19-Jan-23
Superstructure		393	20-Jan-23	16-Feb-24
05-00108	G/F RC slab/beam and column and wall to 1/F	22	20-Jan-23	14-Feb-23
05-00109	1/F RC slab/beam and column and wall to 2/F	25	15-Feb-23	12-Mar-23
05-00110	Removal and clearing of falsework at G/F	8	16-Mar-23	24-Mar-23
05-00111	2/F RC slab/beam and column and wall to R/F	25	12-Mar-23	07-Apr-23
05-00112	Scaffolding installation within perimeter	65	12-Mar-23	16-May-23
05-00113	Watertightness Test at G/F FS Tank Room	35	24-Mar-23	28-Apr-23
05-00114	R/F slab/beam	24	09-Apr-23	04-May-23
05-00115	Removal and clearing of falsework at 1/F	8	21-Apr-23	29-Apr-23
05-00116	Removal and clearing of falsework at 2/F	8	02-Jun-23	10-Jun-23
05-00117	Installation of Visitor / Cafeteria Pod at R/F	90	10-Jun-23	08-Sep-23
05-00118	Scaffolding removal within perimeter	8	08-Feb-24	16-Feb-24
ABWF & E&M		298	01-May-23	24-Feb-24
Ground Floor		283	01-May-23	08-Feb-24
05-00119	Ground Floor Access Date	0	01-May-23	
05-00120	ABWF and Internal Finishes Works	70	23-Jul-23	04-Oct-23
05-00121	BS Works / FS Pump Room and T&C	70	03-Oct-23	12-Dec-23
05-00122	BS Electrical Meter Room - Final Connection and T&C	30	09-Jan-24	08-Feb-24
05-00123	WSD Water Meter Room and Final Connection	30	10-Nov-23	10-Dec-23
1st Floor		121	20-May-23	18-Sep-23
05-00124	1st Floor Access Date	0	20-May-23	
05-00125	ABWF and Internal Finishes Works	60	21-May-23	23-Jul-23
05-00126	BS Works	60	20-Jul-23	18-Sep-23
2nd Floor		125	11-Jul-23	13-Nov-23
05-00127	2nd Floor Access Date	0	11-Jul-23	
05-00128	ABWF and Internal Finishes Works	60	12-Jul-23	10-Sep-23
05-00129	BS Works	60	10-Sep-23	13-Nov-23
Roof Floor		122	20-Aug-23	20-Dec-23
05-00130	Roof Floor Access Date	0	20-Aug-23	
05-00131	ABWF and External Trellis Finishes Works	60	21-Aug-23	24-Oct-23
05-00132	BS and T&C Works	60	20-Oct-23	20-Dec-23
Visitor Cafeteria POD		119	20-Oct-23	24-Feb-24
05-00331	Builders and ABWF Finishes Works	60	20-Oct-23	20-Dec-23
05-00332	BS and T&C Works	60	19-Dec-23	24-Feb-24
INTEGRATED OFFICE BUILDING		489	10-Dec-22	12-Apr-24
Substructure		101	10-Dec-22	29-Mar-23
05-00133	Site Formation - Excavation / UG Utilities	57	10-Dec-22	13-Feb-23
05-00134	Installation of Earth Mat	7	13-Feb-23	20-Feb-23
05-00135	RC Footing/Beam to G/F	37	21-Feb-23	29-Mar-23
Superstructure		379	30-Mar-23	12-Apr-24
05-00136	G/F RC slab/beam and column and wall to 1/F	35	30-Mar-23	08-May-23
05-00137	1/F RC slab/beam and column and wall to 2/F	40	09-May-23	19-Jun-23
05-00138	Removal and clearing of falsework at G/F	8	07-Jun-23	15-Jun-23
05-00139	2/F RC slab/beam and column/wall to R/F	38	19-Jun-23	29-Jul-23
05-00140	Removal and clearing of falsework at 1/F	8	19-Jul-23	27-Jul-23
05-00141	R/F RC slab/beam and column/wall to UR slab/beam	40	29-Jul-23	07-Sep-23
05-00142	Scaffolding installation within perimeter	14	29-Jul-23	12-Aug-23
05-00143	Removal and clearing of falsework at 2/F	8	28-Aug-23	05-Sep-23
05-00144	Scaffolding removal and clearing within perimeter	24	19-Mar-24	12-Apr-24
ABWF & E&M		281	16-Jun-23	23-Mar-24
Ground Floor		232	16-Jun-23	03-Feb-24
05-00145	Ground Floor Access Date	0	16-Jun-23	
05-00146	ABWF and Internal Finishes Works	60	23-Jul-23	21-Sep-23
05-00147	BS Works and Electrical Meter Room Final Connection	120	03-Oct-23	03-Feb-24
1st Floor		126	27-Jul-23	30-Nov-23
05-00148	1st Floor Access Date	0	27-Jul-23	
05-00149	ABWF and Internal Finishes Works	60	28-Jul-23	26-Sep-23
05-00150	BS Works	60	27-Sep-23	30-Nov-23
2nd Floor		124	19-Sep-23	21-Jan-24
05-00151	2nd Floor Access Date	0	19-Sep-23	
05-00152	ABWF and Internal Finishes Works	60	20-Sep-23	23-Nov-23
05-00153	BS Works	60	19-Nov-23	21-Jan-24
Roof Floor		125	19-Nov-23	23-Mar-24
05-00154	Roof Floor Access Date	0	19-Nov-23	
05-00155	ABWF and External Trellis Finishes Works	60	20-Nov-23	22-Jan-24
05-00156	BS / Lift and T&C Works	60	19-Jan-24	23-Mar-24
OPERATION AND MAINTENANCE BUILDING		487	01-Mar-23	29-Jun-24
Substructure		113	01-Mar-23	28-Jun-23
05-00157	Site Formation - Excavation / UG Utilities	84	01-Mar-23	29-May-23
05-00158	Installation of Earth Mat	7	30-May-23	06-Jun-23
05-00159	RC Footing	21	07-Jun-23	28-Jun-23
Superstructure		259	29-Jun-23	13-Mar-24
05-00160	G/F to 1/F RC slab/beam and column works	25	29-Jun-23	24-Jul-23
05-00161	1/F to 2/F RC slab/beam and column works	25	24-Jul-23	18-Aug-23
05-00162	2/F to R/F RC slab/beam and column works	26	18-Aug-23	13-Sep-23
05-00163	Scaffolding installation within perimeter	40	18-Aug-23	27-Sep-23
05-00164	Removal and clearing of falsework at G/F	8	23-Aug-23	31-Aug-23
05-00165	R/F RC works slab / beam works	30	13-Sep-23	16-Oct-23
05-00166	Removal and clearing of falsework at 1/F	8	17-Sep-23	25-Sep-23
05-00167	Removal and clearing of falsework at 2/F	8	13-Oct-23	21-Oct-23
05-00168	Scaffolding removal and clearing within perimeter	22	20-Feb-24	13-Mar-24
ABWF & E&M		277	26-Sep-23	29-Jun-24
Ground Floor		148	26-Sep-23	21-Feb-24
05-00169	Ground Floor Access Date	0	26-Sep-23	
05-00170	ABWF and Internal Finishes Works	70	27-Sep-23	10-Dec-23
05-00171	BS Works / FS Pump Room and T&C	70	06-Dec-23	21-Feb-24
05-00172	BS Electrical Meter Room - Final Connection and T&C	30	15-Jan-24	14-Feb-24
05-00173	WSD Water Meter Room and Final Connection	30	15-Jan-24	14-Feb-24
1st Floor		128	22-Oct-23	27-Feb-24
05-00174	1st Floor Access Date	0	22-Oct-23	
05-00175	ABWF and Internal Finishes Works	60	24-Oct-23	22-Dec-23
05-00176	BS Works	60	22-Dec-23	27-Feb-24
2nd Floor		125	21-Dec-23	24-Apr-24
05-00177	2nd Floor Access Date	0	21-Dec-23	
05-00178	ABWF and Internal Finishes Works	60	22-Dec-23	27-Feb-24
05-00179	BS Works	60	20-Feb-24	24-Apr-24
Roof Floor		191	21-Dec-23	29-Jun-24
05-00180	Roof Floor Access Date	0	21-Dec-23	



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

環境保護署
Environmental Protection Department

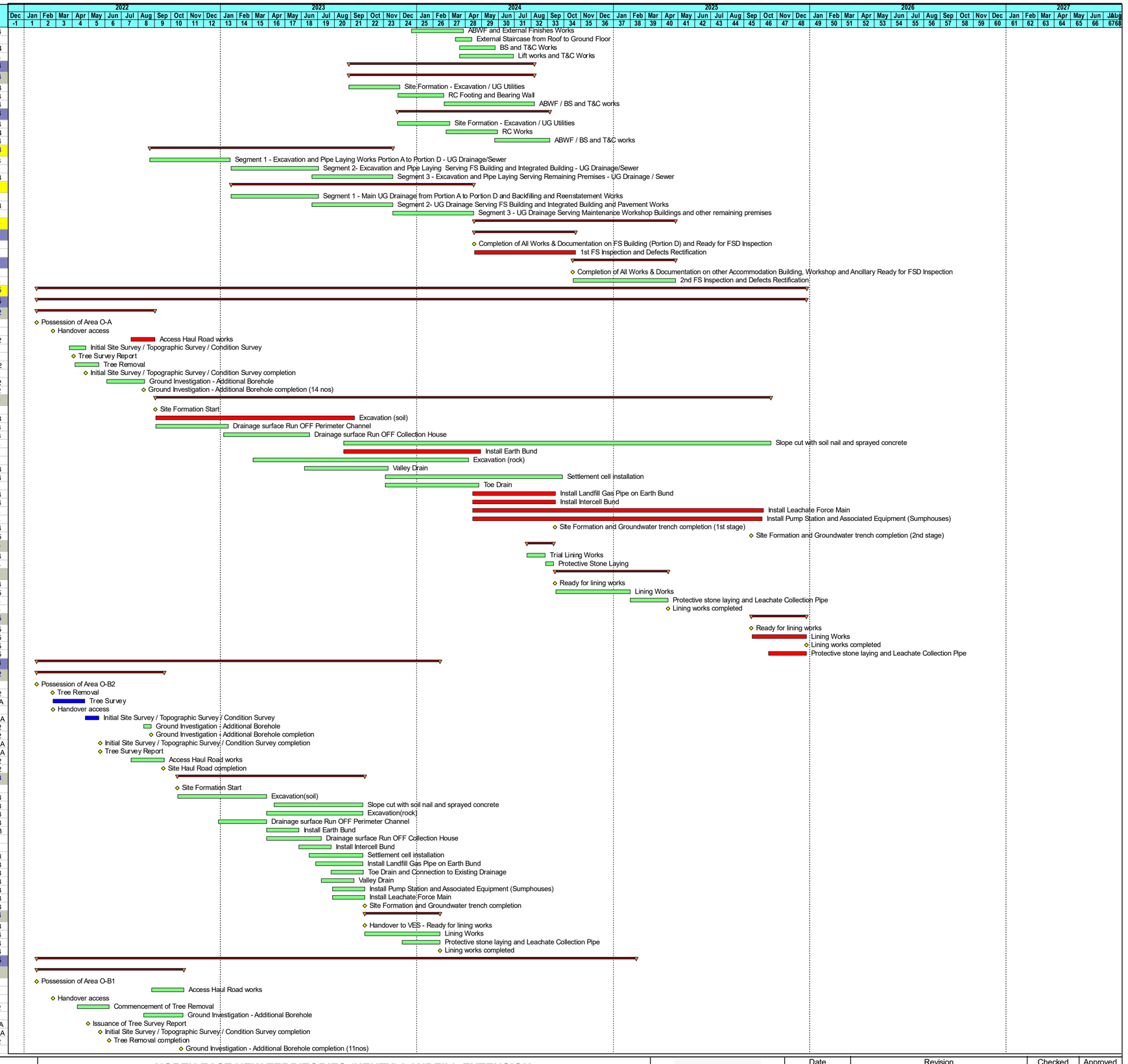
NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION

BASELINE PROGRAMME - EXTRACTED (REV.3)
INITIAL WORKS (PHASE 1)

VEOLIA

Date	Revision	Checked	Approved
08-Jul-22	EXTRACTED - ISSUED 14JAN2023	DW	AY

Activity ID	Activity Name	OD	Start	Finish
05-00181	ABWF and External Finishes Works	90	22-Dec-23	28-Mar-24
05-00182	External Staircase from Roof to Ground Floor	30	13-Mar-24	12-Apr-24
05-00183	BS and T&C Works	60	21-Mar-24	26-May-24
05-00184	Lift works and T&C Works	100	21-Mar-24	29-Jun-24
MAINTENANCE WORKSHOP		326	28-Aug-23	07-Aug-24
Vehicle		326	28-Aug-23	07-Aug-24
05-00185	Site Formation - Excavation / UG Utilities	90	28-Aug-23	30-Nov-23
05-00186	RC Footing and Bearing Wall	79	27-Nov-23	20-Feb-24
05-00187	ABWF / BS and T&C works	160	21-Feb-24	07-Aug-24
ANCILLARY BUILDINGS (PORTION D)		268	26-Nov-23	04-Sep-24
05-00188	Site Formation - Excavation / UG Utilities	90	26-Nov-23	02-Mar-24
05-00189	RC Works	90	24-Feb-24	30-May-24
05-00190	ABWF / BS and T&C works	100	25-May-24	04-Sep-24
PORTION D - Underground Drainage and Pipe Laying Works		428	22-Aug-22	17-Nov-23
05-00191	Segment 1 - Excavation and Pipe Laying Works Portion A to Portion D - UG Drainage/Sewer	142	22-Aug-22	19-Jan-23
05-00192	Segment 2- Excavation and Pipe Laying Serving FS Building and Integrated Building - UG Drai	150	21-Jan-23	02-Jul-23
05-00193	Segment 3 - Excavation and Pipe Laying Serving Remaining Premises - UG Drainage / Sewer	144	20-Jun-23	17-Nov-23
PORTION D - EVA Road Road Pavement Works		424	21-Jan-23	16-Apr-24
05-1818	Segment 1 - Main UG Drainage from Portion A to Portion D and Backfilling and Reenstatement	150	21-Jan-23	02-Jul-23
05-1819	Segment 2- UG Drainage Serving FS Building and Integrated Building and Pavement Works	144	20-Jun-23	17-Nov-23
05-1820	Segment 3 - UG Drainage Serving Maintenance Workshop Buildings and other remaining prem	140	17-Nov-23	16-Apr-24
FS Inspection Stages		357	17-Apr-24	26-Apr-25
Stage 1 FS Inspection		181	17-Apr-24	22-Oct-24
05-00194	Completion of All Works & Documentation on FS Building (Portion D) and Ready for FSD Inspec	0		17-Apr-24
05-00195	1st FS Inspection and Defects Rectification	180	18-Apr-24	22-Oct-24
Stage 2 FS Inspection		180	17-Oct-24	26-Apr-25
05-00196	Completion of All Works & Documentation on other Accommodation Building, Workshop and An	0		17-Oct-24
05-00197	2nd FS Inspection and Defects Rectification	180	18-Oct-24	26-Apr-25
Landfill Area (Portion E3, E4, E1, B1 & B2)		1402	25-Jan-22 A	27-Dec-25
AREA 0-A (E4 & B1)		1371	25-Jan-22 A	25-Dec-25
Advanced Works		150	25-Jan-22 A	01-Sep-22
05-00251	Possession of Area O-A	0	25-Jan-22 A	
05-00252	Handover access	0	24-Feb-22 A	
05-00253	Access Haul Road works	44	19-Jul-22	01-Sep-22
05-00254	Initial Site Survey / Topographic Survey / Condition Survey	27	26-Mar-22	25-Apr-22
05-00255	Tree Survey Report	0		03-Apr-22
05-00256	Tree Removal	38	06-Apr-22	20-May-22
05-00257	Initial Site Survey / Topographic Survey / Condition Survey completion	0		25-Apr-22
05-00258	Ground Investigation - Additional Borehole	70	04-Jun-22	13-Aug-22
05-00259	Ground Investigation - Additional Borehole completion (14 nos)	0		11-Aug-22
Landfill Site Formation and Groundwater Trench		1086	02-Sep-22	20-Oct-25
05-00260	Site Formation Start	0	02-Sep-22	
05-00261	Excavation (soil)	349	03-Sep-22	07-Sep-23
05-00262	Drainage surface Run OFF Perimeter Channel	126	03-Sep-22	15-Jan-23
05-00263	Drainage surface Run OFF Collection House	150	07-Jan-23	16-Jun-23
05-00264	Slope cut with soil nail and sprayed concrete	756	18-Aug-23	20-Oct-25
05-00265	Install Earth Bund	240	18-Aug-23	29-Apr-24
05-00266	Excavation (rock)	378	03-Mar-23	06-Apr-24
05-00267	Valley Drain	150	06-Jun-23	09-Nov-23
05-00267.01	Settlement cell installation	314	03-Nov-23	28-Sep-24
05-00268	Toe Drain	163	03-Nov-23	25-Apr-24
05-00269	Install Landfill Gas Pipe on Earth Bund	150	14-Apr-24	15-Sep-24
05-00270	Install Intercell Bund	150	14-Apr-24	15-Sep-24
05-00271	Install Leachate Force Main	518	14-Apr-24	06-Oct-25
05-00272	Install Pump Station and Associated Equipment (Sumphouses)	516	14-Apr-24	04-Oct-25
05-00273	Site Formation and Groundwater trench completion (1st stage)	0		14-Sep-24
05-00273.01	Site Formation and Groundwater trench completion (2nd stage)	0		14-Sep-25
Landfill Trial Area		50	24-Jul-24	11-Sep-24
05-00223	Trial Lining Works	35	24-Jul-24	27-Aug-24
05-00224	Protective Stone Laying	15	28-Aug-24	11-Sep-24
Landfill Liner Stage 1-3 (Portion E4, & B1) - 1st Stage		210	14-Sep-24	12-Apr-25
05-00274	Ready for lining works	0		14-Sep-24
05-0167	Lining Works	120	16-Sep-24	01-Feb-25
05-0168	Protective stone laying and Leachate Collection Pipe	60	01-Feb-25	12-Apr-25
05-0169	Lining works completed	0		12-Apr-25
Landfill Liner Stage 1-3 (Portion E4, & B1) - 2nd Stage		102	14-Sep-25	25-Dec-25
05-00275	Ready for lining works	0		14-Sep-25
05-1815	Lining Works	87	16-Sep-25	25-Dec-25
05-1816	Lining works completed	0		25-Dec-25
05-1817	Protective stone laying and Leachate Collection Pipe	60	16-Oct-25	25-Dec-25
AREA 0-B2 (Portion E3, B1 & E4)		719	25-Jan-22 A	13-Feb-24
Advanced Works		196	25-Jan-22 A	18-Sep-22
05-00198	Possession of Area O-B2	0	25-Jan-22 A	
05-00199	Tree Removal	0		23-Feb-22
05-00200	Tree Survey	58	24-Feb-22 A	24-Apr-22 A
05-00201	Handover access	0	24-Feb-22 A	
05-00202	Initial Site Survey / Topographic Survey / Condition Survey	29	25-Apr-22 A	20-May-22 A
05-00203	Ground Investigation - Additional Borehole	14	11-Aug-22	25-Aug-22
05-00204	Ground Investigation - Additional Borehole completion	0		25-Aug-22
05-00205	Initial Site Survey / Topographic Survey / Condition Survey completion	0		23-May-22 A
05-00206	Tree Survey Report	0		23-May-22 A
05-00207	Access Haul Road works	60	19-Jul-22	18-Sep-22
05-00208	Site Haul Road completion	0		17-Sep-22
Landfill Site Formation and Groundwater Trench		331	13-Oct-22	26-Sep-23
05-00209	Site Formation Start	0	13-Oct-22	
05-00210	Excavation(soil)	156	14-Oct-22	28-Mar-23
05-00211	Slope cut with soil nail and sprayed concrete	162	11-Apr-23	23-Sep-23
05-00212	Excavation(rock)	172	28-Mar-23	23-Sep-23
05-00213	Drainage surface Run OFF Perimeter Channel	84	28-Dec-22	28-Mar-23
05-00214	Install Earth Bund	54	28-Mar-23	27-May-23
05-00215	Drainage surface Run OFF Collection House	94	28-Mar-23	08-Jul-23
05-00216	Install Intercell Bund	58	27-May-23	26-Jul-23
05-00216.01	Settlement cell installation	98	15-Jun-23	23-Sep-23
05-00217	Install Landfill Gas Pipe on Earth Bund	88	27-Jun-23	23-Sep-23
05-00218	Toe Drain and Connection to Existing Drainage	60	26-Jul-23	24-Sep-23
05-00219	Valley Drain	60	08-Jul-23	06-Sep-23
05-00220	Install Pump Station and Associated Equipment (Sumphouses)	60	28-Jul-23	26-Sep-23
05-00221	Install Leachate Force Main	60	28-Jul-23	26-Sep-23
05-00222	Site Formation and Groundwater trench completion	0		26-Sep-23
Landfill Liner Stages 1&2 (Portion E3, B1 & E4)		140	26-Sep-23	13-Feb-24
05-00225	Handover to VES - Ready for lining works	0		26-Sep-23
05-0191	Lining Works	120	26-Sep-23	13-Feb-24
05-0192	Protective stone laying and Leachate Collection Pipe	60	05-Dec-23	13-Feb-24
05-0193	Lining works completed	0		13-Feb-24
AREA 0-B1 (Portion E3)		1040	25-Jan-22 A	12-Feb-25
Advanced Works		187	25-Jan-22 A	25-Oct-22
05-00226	Possession of Area O-B1	0	25-Jan-22 A	
05-00227	Access Haul Road works	58	26-Aug-22	25-Oct-22
05-00228	Handover access	0	24-Feb-22 A	
05-00229	Commencement of Tree Removal	52	10-Apr-22	08-Jun-22
05-00230	Ground Investigation - Additional Borehole	70	11-Aug-22	23-Oct-22
05-00231	Issuance of Tree Survey Report	0		30-Apr-22 A
05-00232	Initial Site Survey / Topographic Survey / Condition Survey completion	0		23-May-22 A
05-00233	Tree Removal completion	0		08-Jun-22
05-00234	Ground Investigation - Additional Borehole completion (11nos)	0		20-Oct-22



環境保護署
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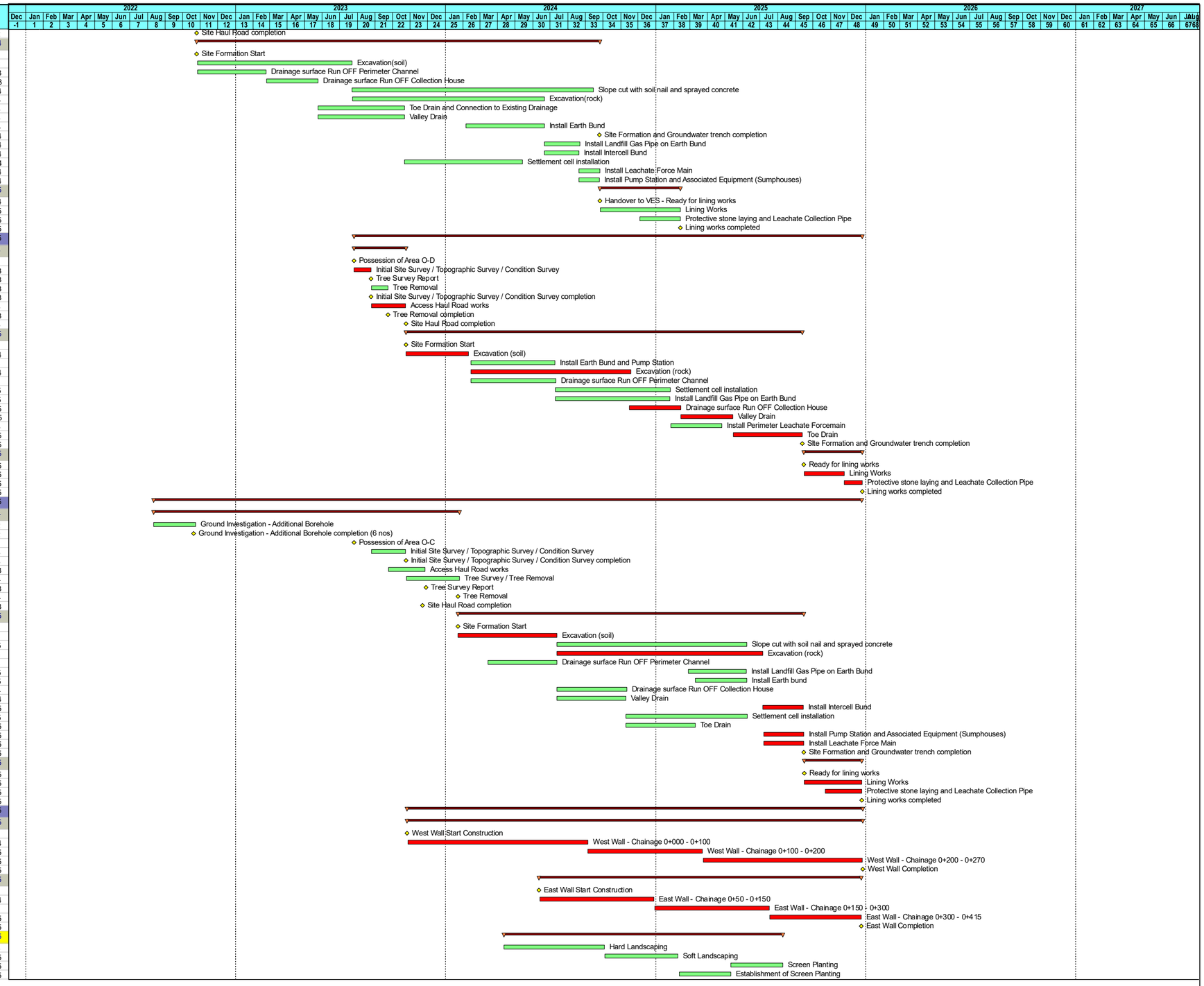
NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION

BASELINE PROGRAMME - EXTRACTED (REV.3)
INITIAL WORKS (PHASE 1)

VEOLIA

Date	Revision	Checked	Approved
08-Jul-22	EXTRACTED - ISSUED 14JAN2023	DW	AY

Activity ID	Activity Name	OD	Start	Finish
05-00235	Site Haul Road completion	0		25-Oct-22
Landfill Site Formation and Groundwater Trench		664	25-Oct-22	25-Sep-24
05-00236	Site Formation Start	0	25-Oct-22	
05-00237	Excavation(soil)	252	27-Oct-22	22-Jul-23
05-00238	Drainage surface Run OFF Perimeter Channel	111	27-Oct-22	23-Feb-23
05-00239	Drainage surface Run OFF Collection House	85	24-Feb-23	24-May-23
05-00240	Slope cut with soil nail and sprayed concrete	401	22-Jul-23	14-Sep-24
05-00241	Excavation(rock)	317	23-Jul-23	21-Jun-24
05-00242	Toe Drain and Connection to Existing Drainage	144	24-May-23	21-Oct-23
05-00243	Valley Drain	144	24-May-23	21-Oct-23
05-00244	Install Earth Bund	126	05-Feb-24	21-Jun-24
05-00245	Site Formation and Groundwater trench completion	0		24-Sep-24
05-00246	Install Landfill Gas Pipe on Earth Bund	60	21-Jun-24	21-Aug-24
05-00247	Install Intercell Bund	59	21-Jun-24	20-Aug-24
05-00247.01	Settlement cell installation	192	21-Oct-23	13-May-24
05-00248	Install Leachate Force Main	35	20-Aug-24	25-Sep-24
05-00249	Install Pump Station and Associated Equipment (Sumphouses)	34	20-Aug-24	24-Sep-24
Landfill Liner Stage 1-2 (Portion E3)		140	25-Sep-24	12-Feb-25
05-00250	Handover to VES - Ready for lining works	0		25-Sep-24
05-0143	Lining Works	120	26-Sep-24	12-Feb-25
05-0144	Protective stone laying and Leachate Collection Pipe	60	04-Dec-24	12-Feb-25
05-0145	Lining works completed	0		12-Feb-25
Area 0-D (Portion E1 & B2)/ Access Road)		884	26-Jul-23	25-Dec-25
Advanced Works		86	26-Jul-23	24-Oct-23
05-00301	Possession of Area O-D	0	26-Jul-23	
05-00302	Initial Site Survey / Topographic Survey / Condition Survey	30	26-Jul-23	24-Aug-23
05-00303	Tree Survey Report	0		24-Aug-23
05-00304	Tree Removal	30	25-Aug-23	23-Sep-23
05-00305	Initial Site Survey / Topographic Survey / Condition Survey completion	0		24-Aug-23
05-00306	Access Haul Road works	56	25-Aug-23	23-Oct-23
05-00307	Tree Removal completion	0		23-Sep-23
05-00308	Site Haul Road completion	0		24-Oct-23
Landfill Site Formation and Groundwater Trench		690	24-Oct-23	12-Sep-25
05-00309	Site Formation Start	0	24-Oct-23	
05-00310	Excavation (soil)	106	24-Oct-23	10-Feb-24
05-00311	Install Earth Bund and Pump Station	140	14-Feb-24	09-Jul-24
05-00312	Excavation (rock)	268	14-Feb-24	18-Nov-24
05-00313	Drainage surface Run OFF Perimeter Channel	141	14-Feb-24	11-Jul-24
05-00313.01	Settlement cell installation	200	10-Jul-24	26-Jan-25
05-00314	Install Landfill Gas Pipe on Earth Bund	193	10-Jul-24	25-Jan-25
05-00315	Drainage surface Run OFF Collection House	84	16-Nov-24	13-Feb-25
05-00316	Valley Drain	84	13-Feb-25	14-May-25
05-00317	Install Perimeter Leachate Forcemain	82	27-Jan-25	25-Apr-25
05-00318	Toe Drain	118	15-May-25	12-Sep-25
05-00319	Site Formation and Groundwater trench completion	0		12-Sep-25
Landfill Liner Stage 1&2 (Portion E1 & B2)		101	15-Sep-25	25-Dec-25
05-00320	Ready for lining works	0		15-Sep-25
05-0232.04	Lining Works	60	16-Sep-25	24-Nov-25
05-0232.05	Protective stone laying and Leachate Collection Pipe	27	24-Nov-25	25-Dec-25
05-0232.06	Lining works completed	0		25-Dec-25
AREA 0-C (Portion E1,B1 & E4)		1231	11-Aug-22	25-Dec-25
Advanced Works		505	11-Aug-22	25-Jan-24
05-00276	Ground Investigation - Additional Borehole	70	11-Aug-22	23-Oct-22
05-00277	Ground Investigation - Additional Borehole completion (6 nos)	0		20-Oct-22
05-00278	Possession of Area O-C	0	26-Jul-23	
05-00279	Initial Site Survey / Topographic Survey / Condition Survey	56	25-Aug-23	23-Oct-23
05-00280	Initial Site Survey / Topographic Survey / Condition Survey completion	0		24-Oct-23
05-00281	Access Haul Road works	60	24-Sep-23	26-Nov-23
05-00282	Tree Survey / Tree Removal	90	25-Oct-23	25-Jan-24
05-00283	Tree Survey Report	0		28-Nov-23
05-00284	Tree Removal	0		22-Jan-24
05-00285	Site Haul Road completion	0		22-Nov-23
Landfill Site Formation and Groundwater Trench		572	23-Jan-24	15-Sep-25
05-00286	Site Formation Start	0	23-Jan-24	
05-00287	Excavation (soil)	160	23-Jan-24	13-Jul-24
05-00288	Slope cut with soil nail and sprayed concrete	314	13-Jul-24	08-Jun-25
05-00289	Excavation (rock)	341	13-Jul-24	06-Jul-25
05-00290	Drainage surface Run OFF Perimeter Channel	112	15-Mar-24	13-Jul-24
05-00291	Install Landfill Gas Pipe on Earth Bund	95	26-Feb-25	07-Jun-25
05-00292	Install Earth bund	83	10-Mar-25	08-Jun-25
05-00293	Drainage surface Run OFF Collection House	118	13-Jul-24	11-Nov-24
05-00294	Valley Drain	117	13-Jul-24	10-Nov-24
05-00295	Install Intercell Bund	70	06-Jul-25	14-Sep-25
05-00295.01	Settlement cell installation	198	10-Nov-24	09-Jun-25
05-00296	Toe Drain	114	10-Nov-24	10-Mar-25
05-00297	Install Pump Station and Associated Equipment (Sumphouses)	70	07-Jul-25	15-Sep-25
05-00298	Install Leachate Force Main	70	07-Jul-25	15-Sep-25
05-00299	Site Formation and Groundwater trench completion	0		15-Sep-25
Landfill Liner Stage 1&2 (Portion E1, B1 & E4)		100	16-Sep-25	25-Dec-25
05-00300	Ready for lining works	0		16-Sep-25
05-0215	Lining Works	86	16-Sep-25	25-Dec-25
05-0216	Protective stone laying and Leachate Collection Pipe	55	22-Oct-25	25-Dec-25
05-0217	Lining works completed	0		25-Dec-25
Geotechnical Retaining Structure & Access Road		756	26-Oct-23	27-Dec-25
West Wall		756	26-Oct-23	27-Dec-25
05-00321	West Wall Start Construction	0	26-Oct-23	
05-00322	West Wall - Chainage 0+000 - 0+100	298	28-Oct-23	04-Sep-24
05-00323	West Wall - Chainage 0+100 - 0+200	190	05-Sep-24	22-Mar-25
05-00324	West Wall - Chainage 0+200 - 0+270	265	24-Mar-25	25-Dec-25
05-00325	West Wall Completion	0		27-Dec-25
EAST Wall		540	11-Jun-24	24-Dec-25
05-00326	East Wall Start Construction	0	11-Jun-24	
05-00327	East Wall - Chainage 0+50 - 0+150	193	13-Jun-24	28-Dec-24
05-00328	East Wall - Chainage 0+150 - 0+300	188	30-Dec-24	17-Jul-25
05-00329	East Wall - Chainage 0+300 - 0+415	157	18-Jul-25	24-Dec-25
05-00330	East Wall Completion	0		24-Dec-25
Landscape Works		485	12-Apr-24	09-Aug-25
05-0242	Hard Landscaping	150	12-Apr-24	03-Oct-24
05-0243	Soft Landscaping	110	04-Oct-24	08-Feb-25
05-0252	Screen Planting	88	11-May-25	09-Aug-25
05-0262	Establishment of Screen Planting	84	10-Feb-25	11-May-25



環境保護署
Environmental Protection Department

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

NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION

BASELINE PROGRAMME - EXTRACTED (REV.3)
INITIAL WORKS (PHASE 1)

VEOLIA

Date	Revision	Checked	Approved
08-Jul-22	EXTRACTED - ISSUED 14JAN2023	DW	AY

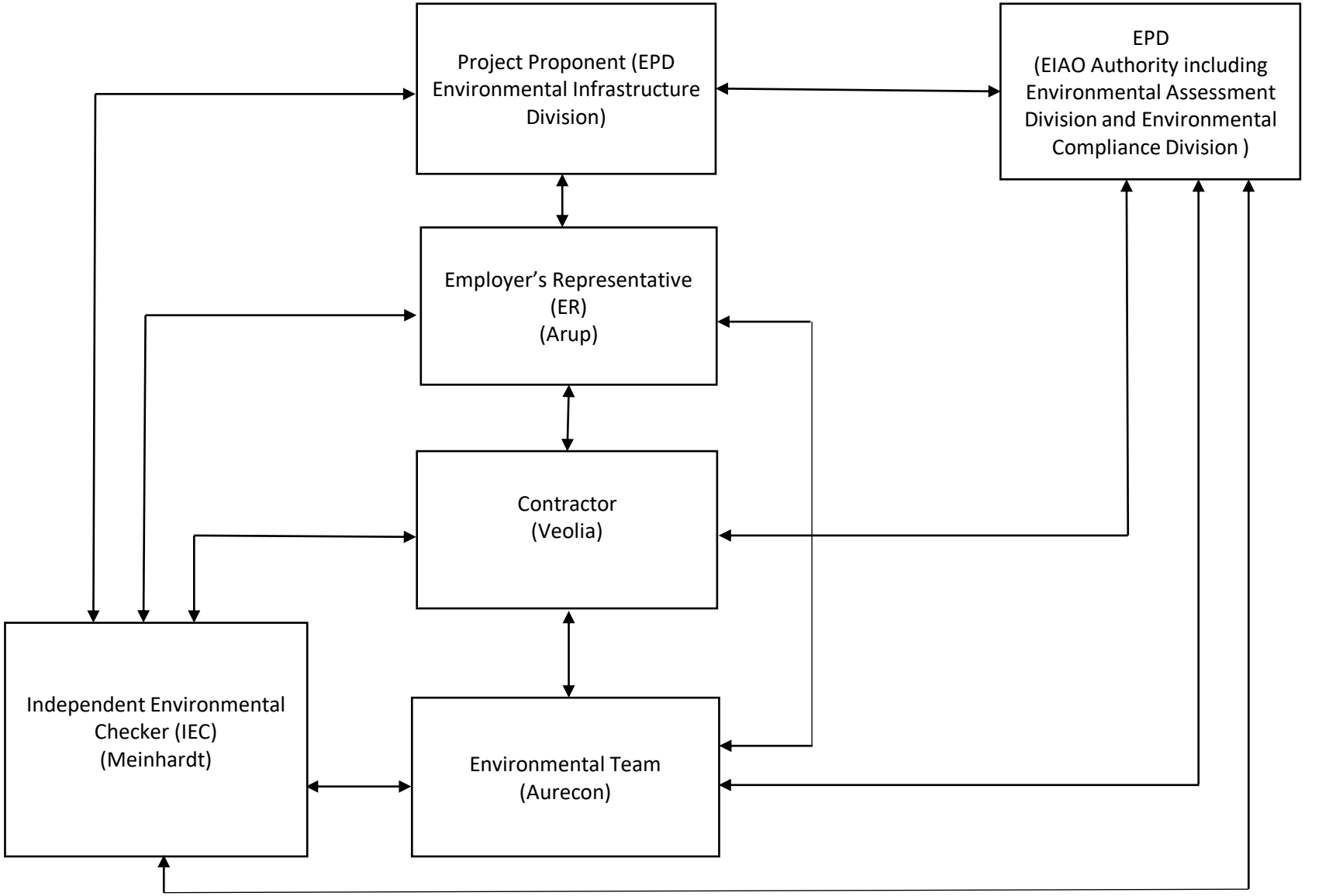
Appendix B Construction Site Activities

Construction Activities	Photos	When	Where	Who	What - ENV Impacts	Mitigation Measures
Material loading and unloading, site traffic		Dec 22 to Dec 23	Portion A to SBA	PYE	Dust	Speed limit, covering of materials and water spraying
Permanent site office foundation works with pouring of concrete		Dec 22 to June 23	Portion D	PYE	Washout flowing to site water discharge point, dust emissions	Avoid the spillage of concrete, lorry washing at designated area, operation and maintenance of water treatment facility at discharge point
Site clearance		Dec 22 to June 23	Portion A, Portion E3-1	PYE	Wash out going to surface water channel and site water discharge point, generation of yard waste	Cover exposed slope by tarpaulin, diversion of surface water, operation and maintenance of water treatment facility at discharge point, implementation of trip ticket system
Installation of permanent fencing		Dec 22 to June 23	Portion A, Portion B1, Portion E4	PYE	Dust	Covering of cement storage area, enclosure of mixing area
Site formation		Dec 22 to Dec 23	Portion A	PYE	Generation of C&D waste	Implementation of trip ticket system, waste recycling, internal waste transfer
Tree Felling		Dec 22 to June 23	Portion A (until Feb 23), Portion E3-1 (until June 23)	PYE	Generation of yard waste	Implementation of trip ticket system, waste recycling, internal waste transfer

Remark:

PYE is the Sub-contractor for this project.

Appendix C Project Organization Chart & Management Structure



Notes:
EPD - Environmental Protection Department
Arup – Ove Arup & Partners Limited
Veolia - Veolia Environmental Services Hong Kong Limited
Meinhardt - Meinhardt Infrastructure And Environment Limited
Aurecon - Aurecon Hong Kong Limited

Line of Communication

Appendix D Detail Status of FEP & EP Submission

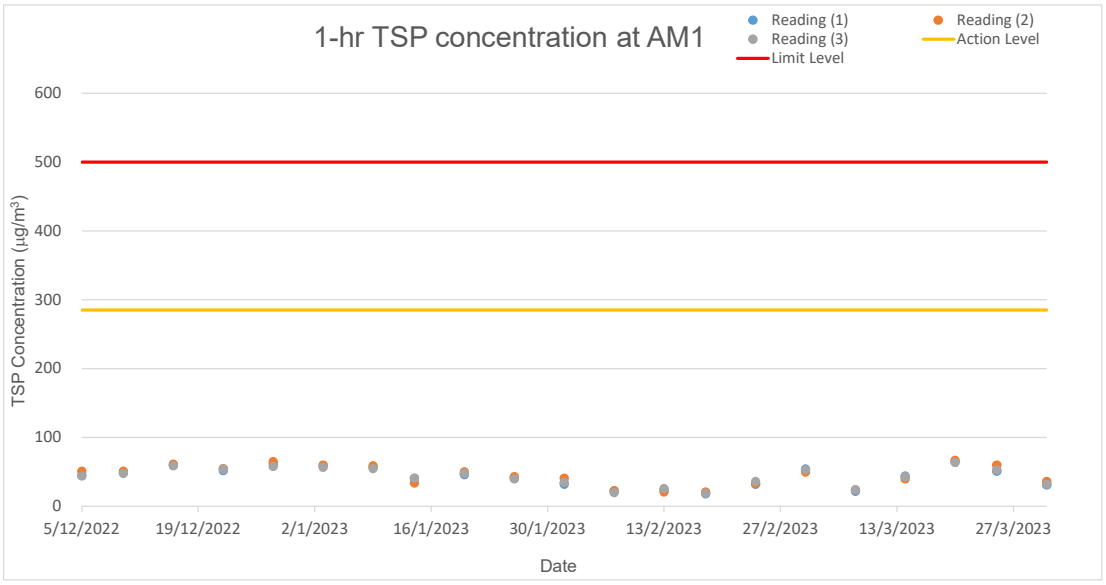
Detail Status of Submissions required under the FEP & EP

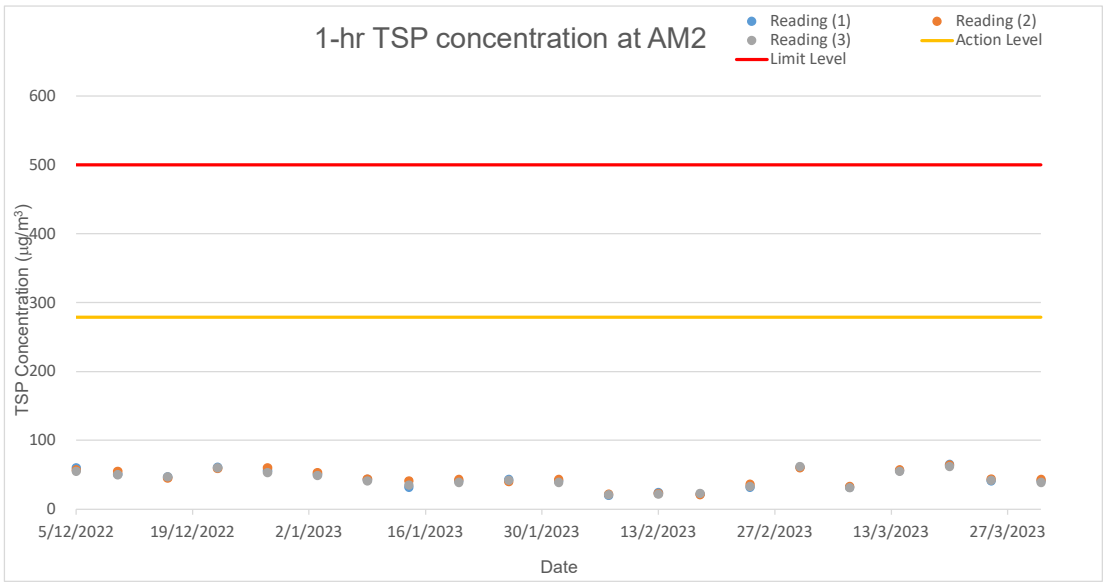
FEP Condition	EP Condition	Submission / Measures	Status
2.1	2.3	Management Organization of Main Construction Companies	Submission Date (12 Oct 2022)
2.2	2.4	Setting up of Community Liaison Group (CLG)	Submission Date (12 Oct 2022) 1st CLG meeting (12 Jan 2023)
2.3	2.5	Submission of EM&A Manual	Submission Date (12 Oct 2022)
2.4	2.6	Submission of Preservation of Cultural Landscape Features	Survey and Preservation of Grave Records: Submission Date (15 Oct 2022) Survey and Preservation of Boulder Paths: Submission Date (12 Oct 2022)
2.5	2.7	Submission of Vegetation Survey (Transplantation Proposal)	Submission Date (2 September 2022)
2.6	2.8	Submission of translocation proposal	Submission Date (8 July 2022)
2.7	2.9	Submission of Transplantation Report and Transplantation Monitoring	Submission Date (19 Jan 2023) 1st monitoring (24 Nov 2022) 2nd monitoring (9 Dec 2022) 3rd monitoring (21 Dec 2022) 4th monitoring (13 Jan 2023) 5th monitoring (26 Jan 2023) 6th monitoring (8 Feb 2023) 7th monitoring (24 Feb 2023) 8th monitoring (20 Mar 2023)
2.8	2.10	Submission of Translocation Report and Translocation Monitoring	Translocation was carried out in July 2022 Submission Date (27 December 2022) 1st monitoring (29 Aug 2022) 2nd monitoring (28 Sep 2022) 3rd monitoring (28 Oct 2022) 4th monitoring (28 Oct 2022) 5th monitoring (29 Dec 2022) 6th monitoring (30 Jan 2023) 7th monitoring (24 Feb 2023) 8th monitoring (20 Mar 2023)

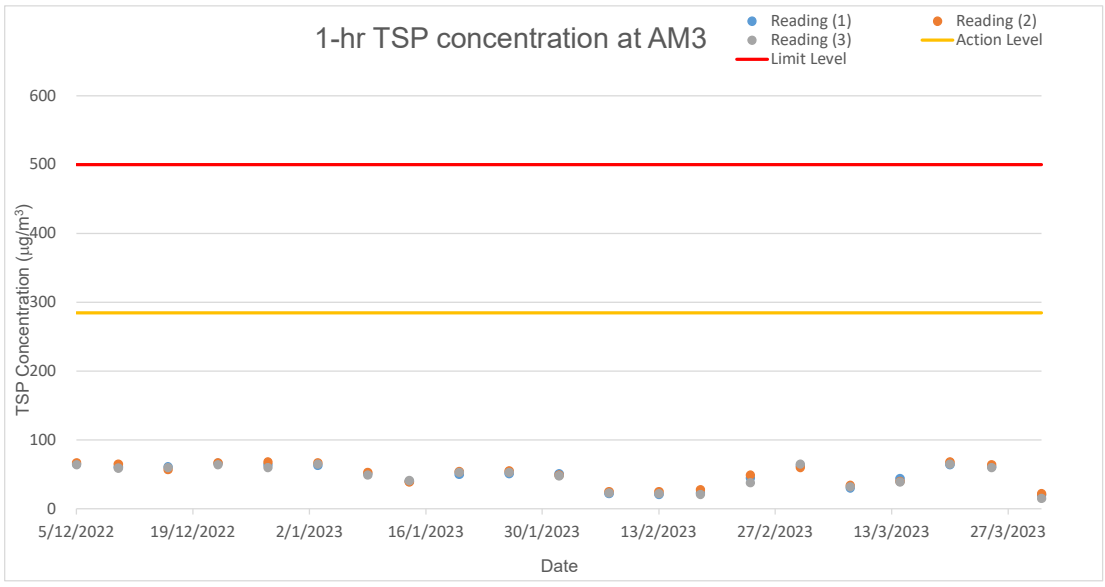
FEP Condition	EP Condition	Submission / Measures	Status
2.9	2.11	Submission of Detailed Landfill Gas Hazard Assessment Report	Submission Date (6 Oct 2022)
2.10	2.12	Submission of Waste Management Plan	Submission Date (30 December 2022)
3.2	3.2	Submission of Baseline Monitoring Report	Submission Date (30 Nov 2022)
3.3	3.3	Submission of Monthly EM&A Report	1st report (Dec 2022) 2nd report (Jan 2023) 3rd report (Feb 2023) 4th report (Mar 2023)

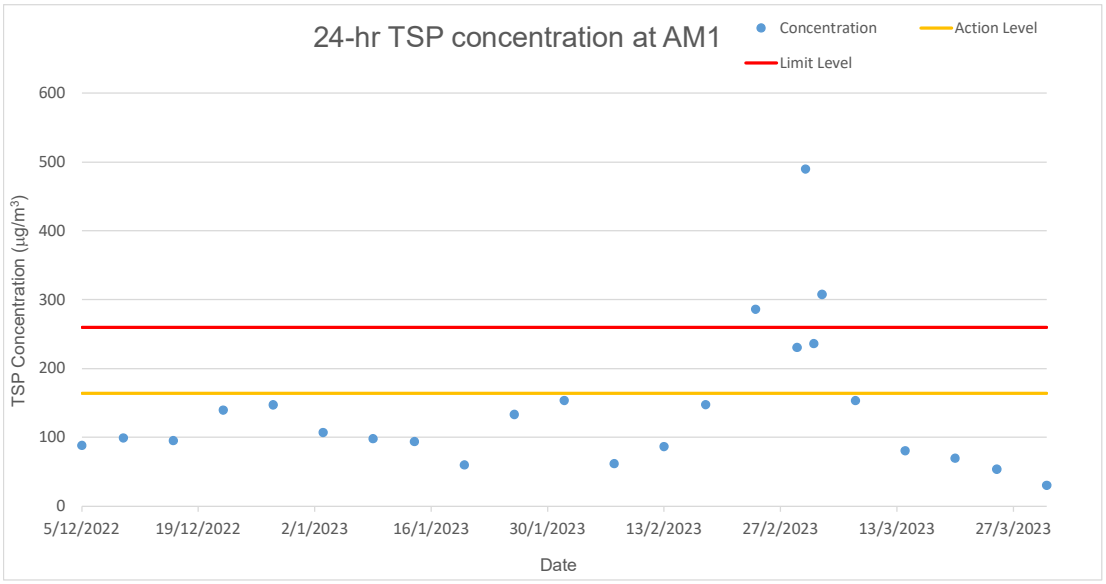
Appendix E Graphical Presentations

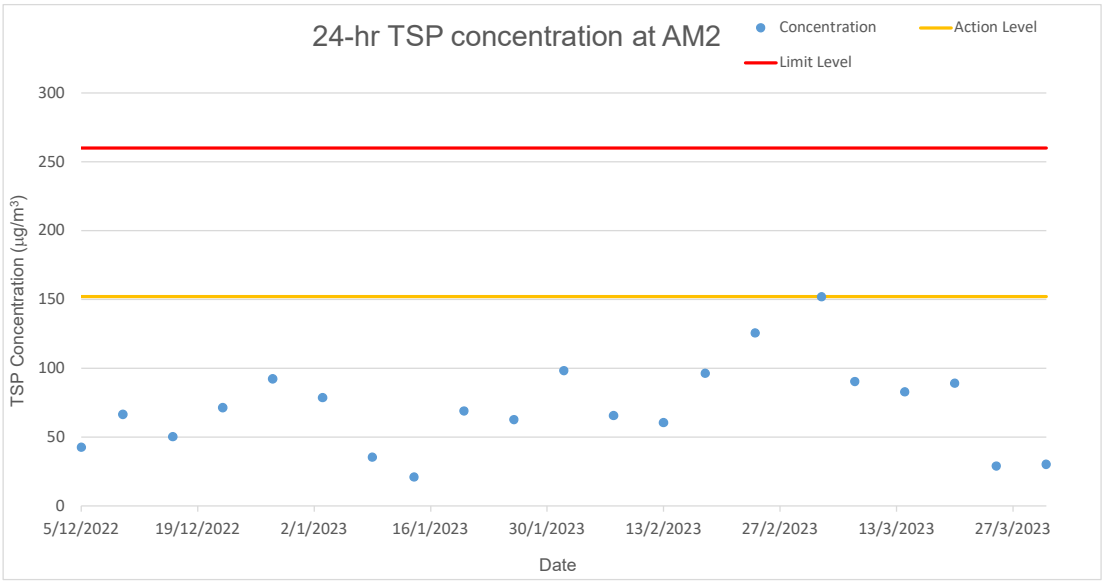
Air Quality

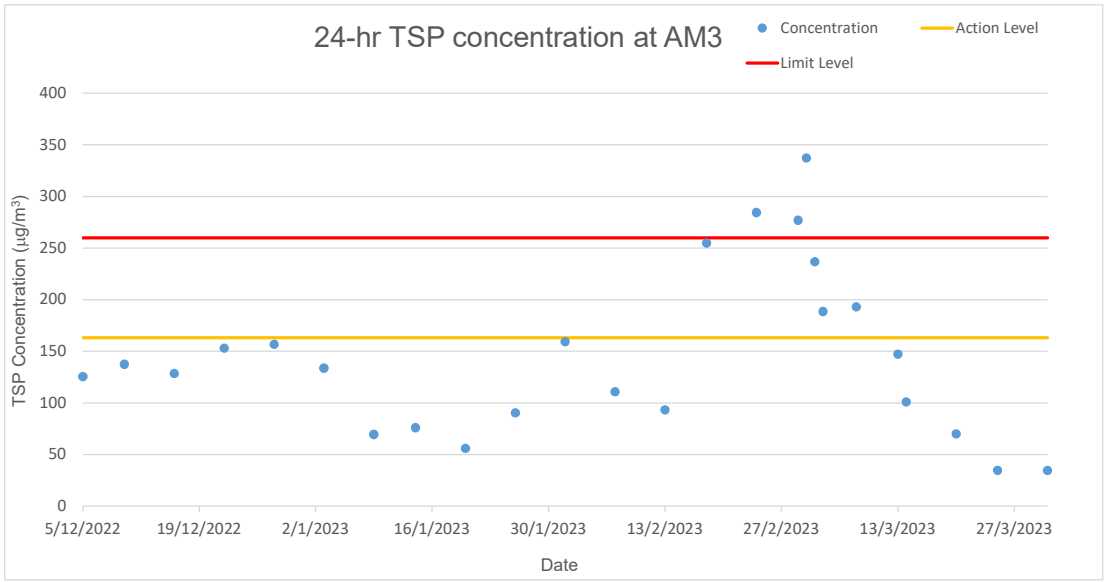

1-hr TSP concentration at AM1
Reading (1)
Reading (2)
Reading (3)
Action Level
Limit Level
600
500
400
300
200
100
0
TSP Concentration (µg/m³)
5/12/2022
19/12/2022
2/1/2023
16/1/2023
30/1/2023
13/2/2023
27/2/2023
13/3/2023
27/3/2023
Date


1-hr TSP concentration at AM2
Reading (1)
Reading (2)
Reading (3)
Action Level
Limit Level
600
500
400
300
200
100
0
TSP Concentration (µg/m³)
5/12/2022
19/12/2022
2/1/2023
16/1/2023
30/1/2023
13/2/2023
27/2/2023
13/3/2023
27/3/2023
Date

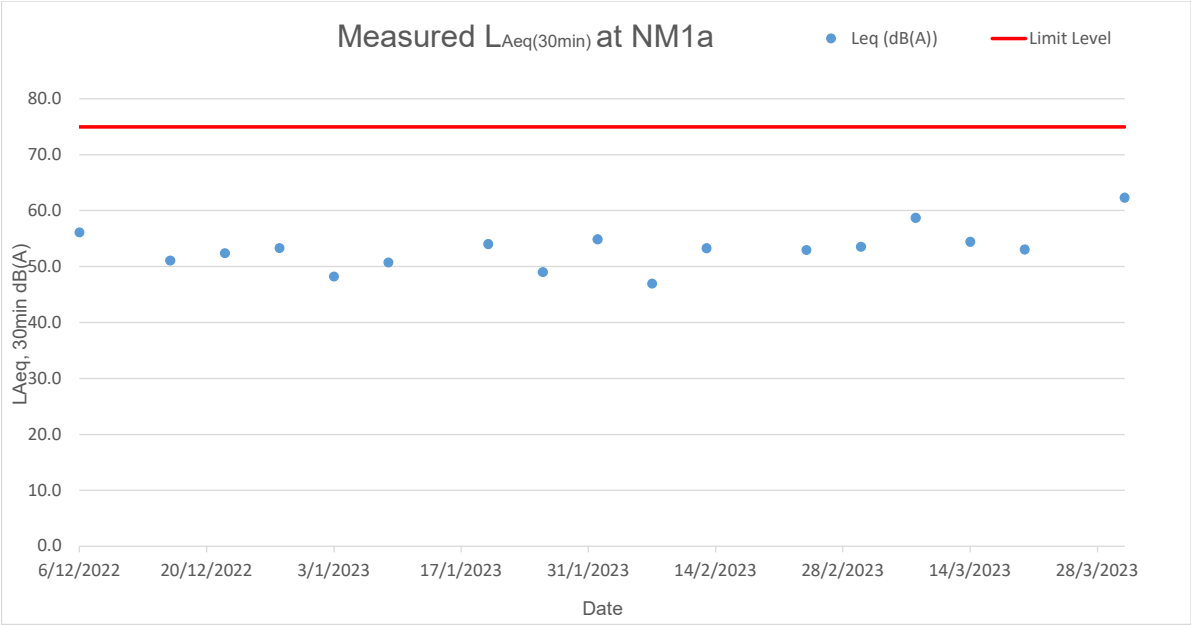

1-hr TSP concentration at AM3
Reading (1)
Reading (2)
Reading (3)
Action Level
Limit Level
600
500
400
300
200
100
0
TSP Concentration (µg/m³)
5/12/2022
19/12/2022
2/1/2023
16/1/2023
30/1/2023
13/2/2023
27/2/2023
13/3/2023
27/3/2023
Date

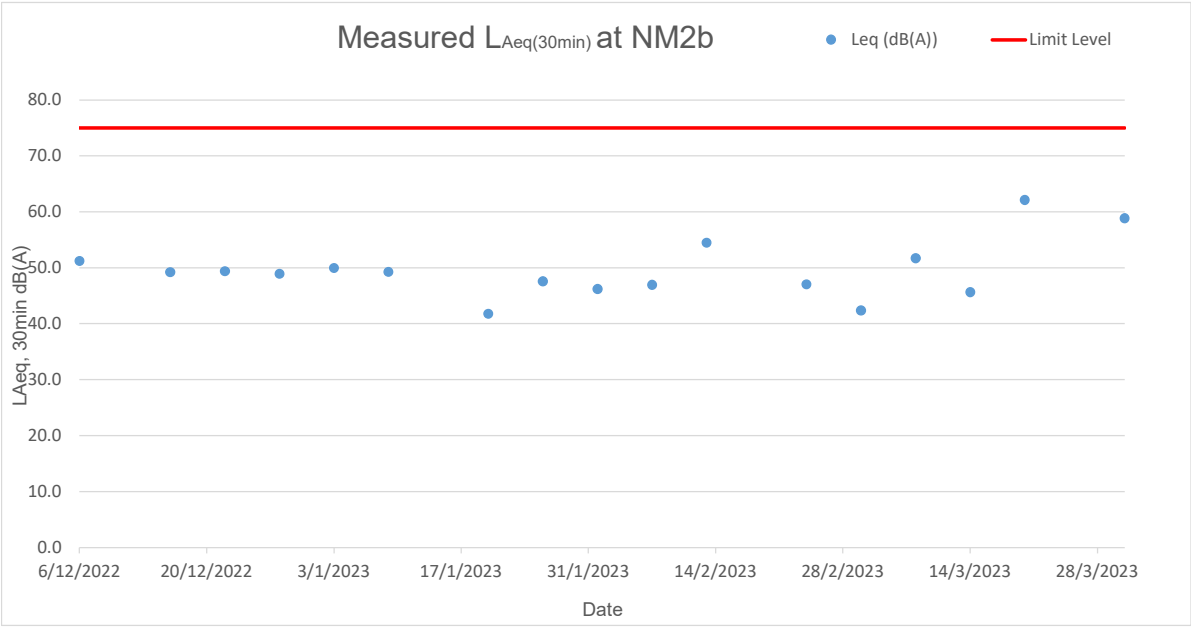

24-hr TSP concentration at AM1
Concentration
Action Level
Limit Level
TSP Concentration (μg/m³)
600
500
400
300
200
100
0
5/12/2022
19/12/2022
2/1/2023
16/1/2023
30/1/2023
13/2/2023
27/2/2023
13/3/2023
27/3/2023
Date


24-hr TSP concentration at AM2
Concentration
Action Level
Limit Level
TSP Concentration (μg/m³)
300
250
200
150
100
50
0
5/12/2022
19/12/2022
2/1/2023
16/1/2023
30/1/2023
13/2/2023
27/2/2023
13/3/2023
27/3/2023
Date


24-hr TSP concentration at AM3
Concentration
Action Level
Limit Level
TSP Concentration (μg/m³)
400
350
300
250
200
150
100
50
0
5/12/2022
19/12/2022
2/1/2023
16/1/2023
30/1/2023
13/2/2023
27/2/2023
13/3/2023
27/3/2023
Date

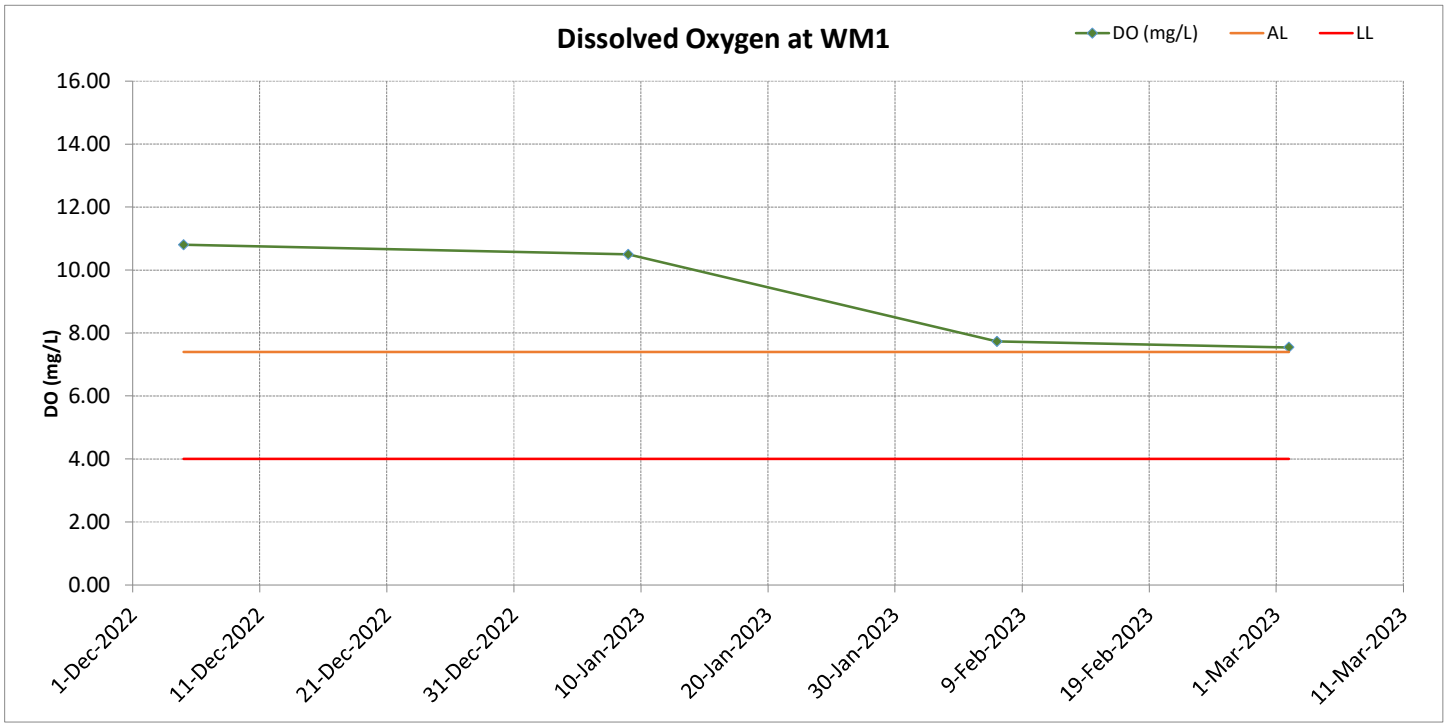
Noise

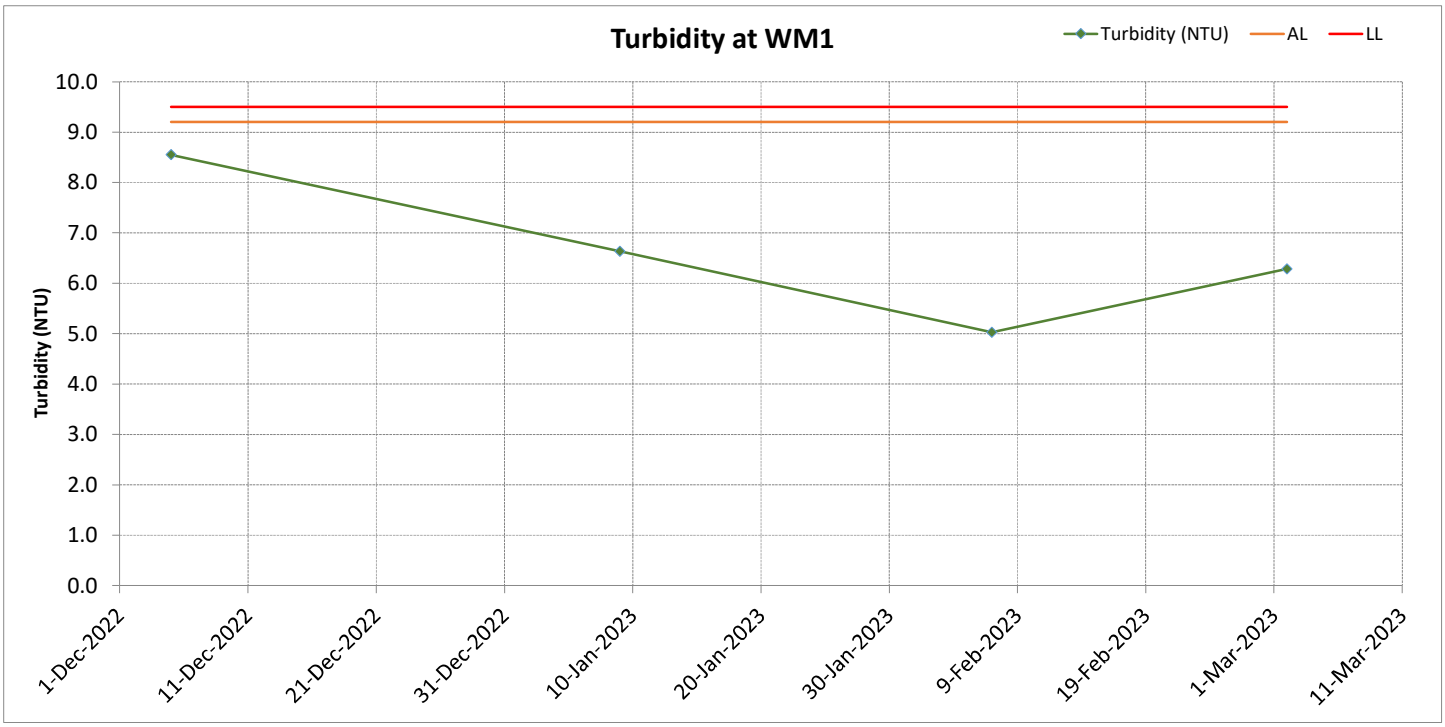

Measured LAeq(30min) at NM1a
Leq (dB(A))
Limit Level
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
LAeq, 30min dB(A)
6/12/2022
20/12/2022
3/1/2023
17/1/2023
31/1/2023
14/2/2023
28/2/2023
14/3/2023
28/3/2023
Date


Measured LAeq(30min) at NM2b
Leq (dB(A))
Limit Level
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
LAeq, 30min dB(A)
6/12/2022
20/12/2022
3/1/2023
17/1/2023
31/1/2023
14/2/2023
28/2/2023
14/3/2023
28/3/2023
Date

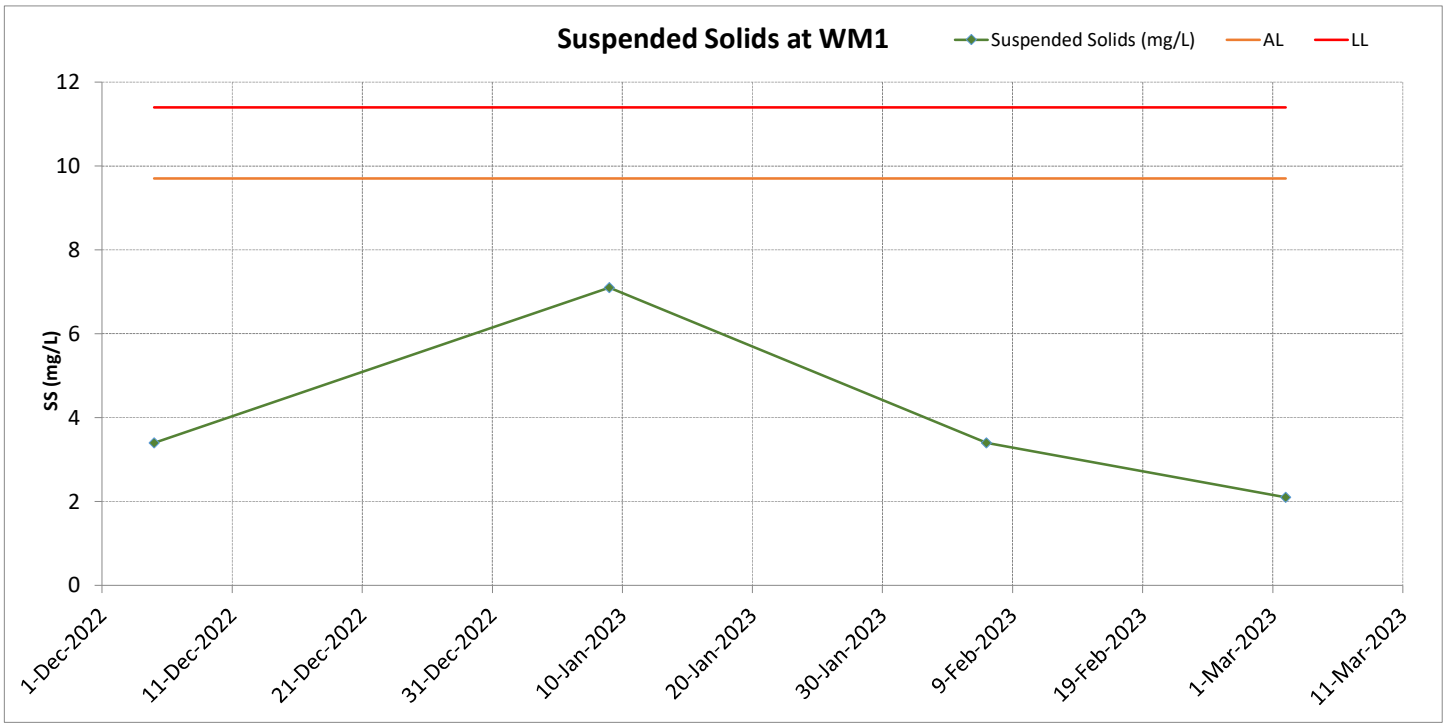
Water Quality

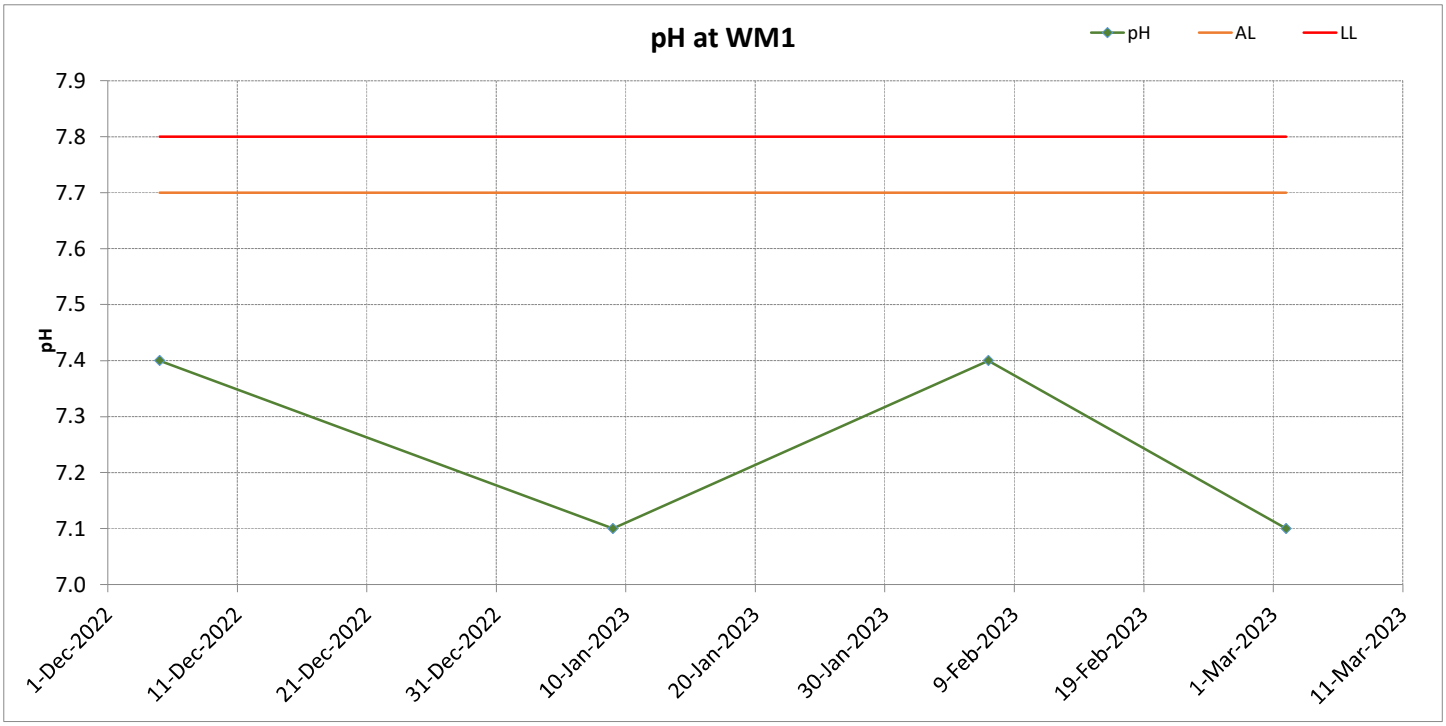
Surface Water Monitoring Results at WM1



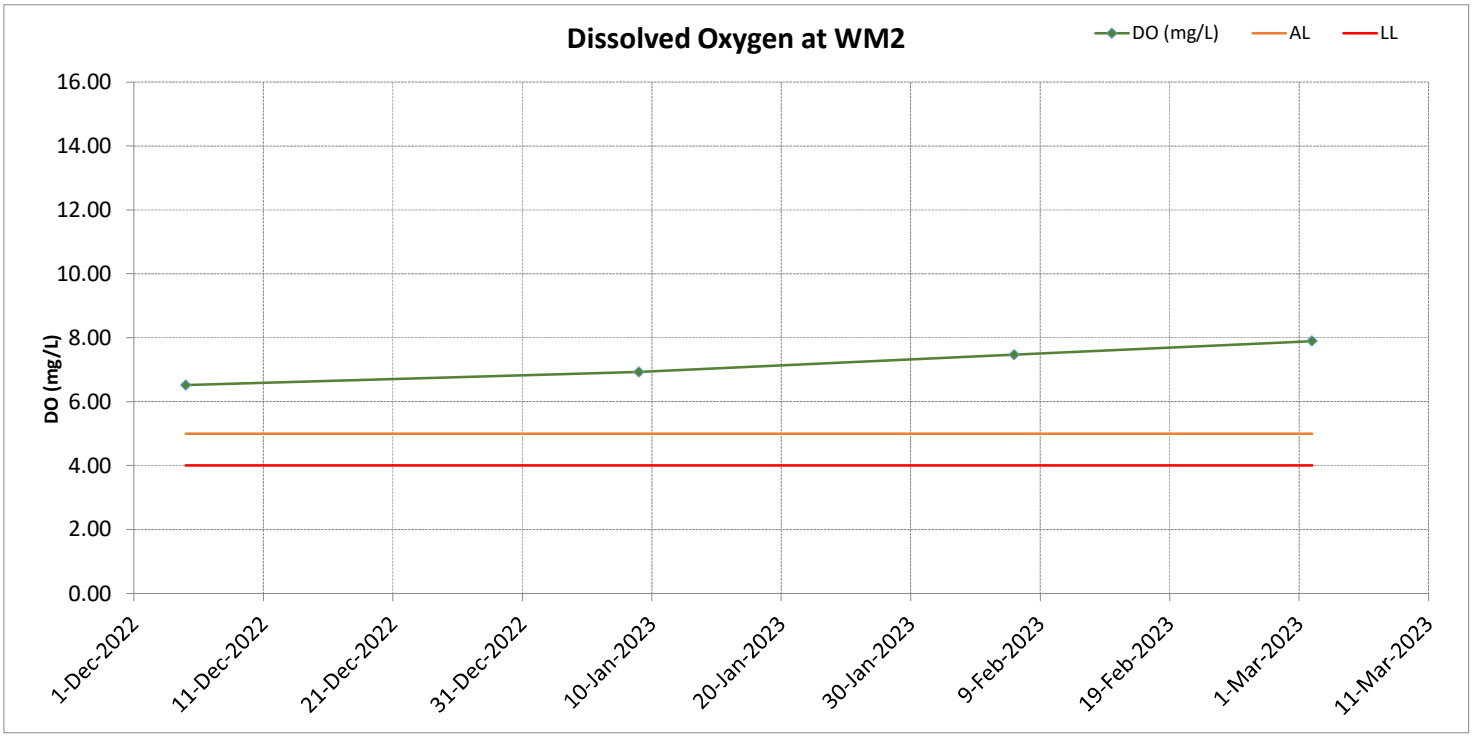


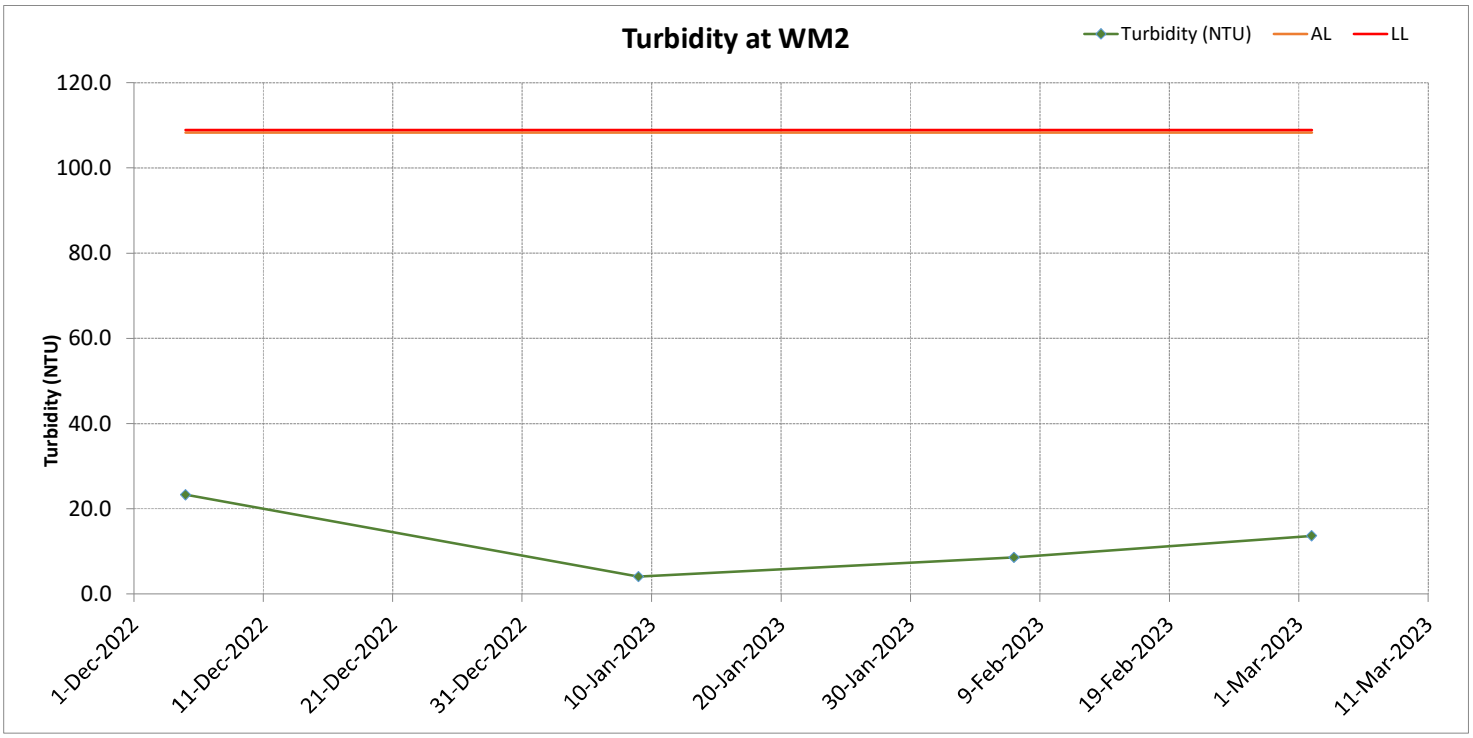
Surface Water Monitoring Results at WM1



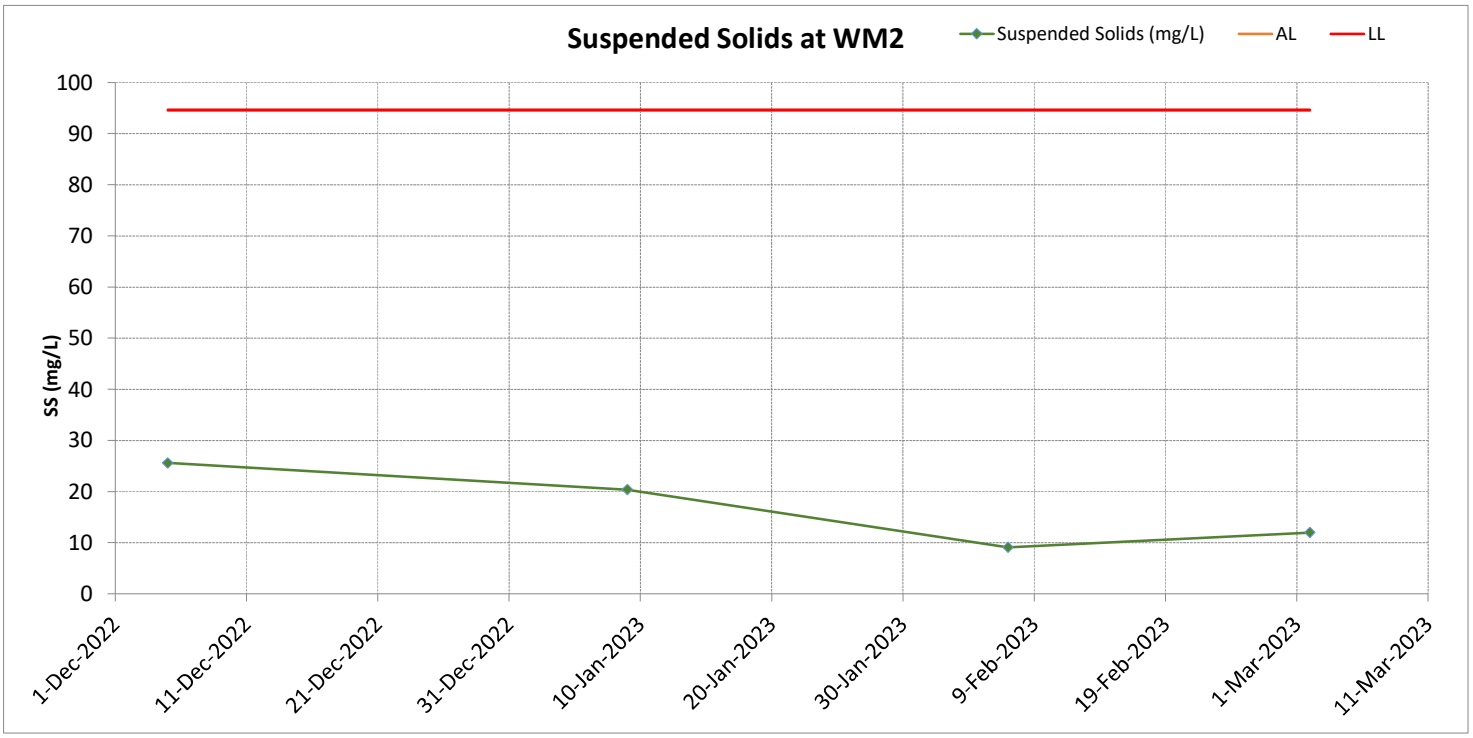


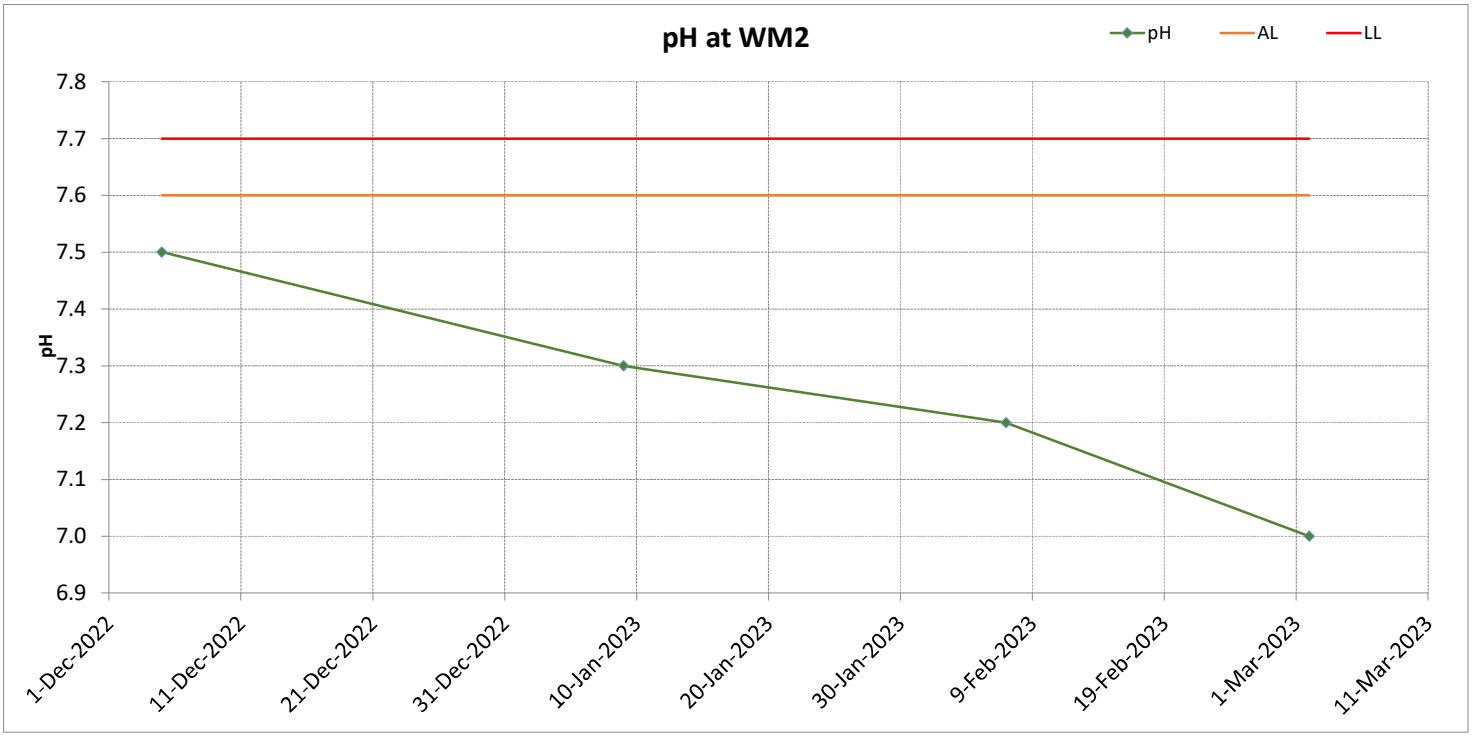
Surface Water Monitoring Results at WM2





Surface Water Monitoring Results at WM2





Appendix F Notification of Environmental Quality Limits Exceedance

Notification of Environmental Quality Limits Exceedance

Construction Dust

Dust Monitoring Station	Parameter Level Exceedance	1-hr TSP	24-hr TSP	Exceedance Count
AM1	Action	-	1 Mar 2023* 3 Mar 2023*	2
	Limit	-	24 Feb 2023* 2 Mar 2023* 4 Mar 2023*	3
AM2	Action	-	-	0
	Limit	-	-	0
AM3	Action	-	18 Feb 2023* 3 Mar 2023* 4 Mar 2023* 8 Mar 2023*	4
	Limit	-	24 Feb 2023* 1 Mar 2023* 2 Mar 2023*	3

Remarks: * equal to non-project related

Noise Monitoring

Monitoring Station	Monitoring Parameter(s)	No. of Exceedance	
		Action Level	Limit Level
NM1a	LAeq (30mins)	0	0
NM2a		0	0

Notification of Environmental Quality Limits Exceedance

Surface Water Monitoring

Monitoring Station	Monitoring Parameter(s)	No. of Exceedance	
		Action Level	Limit Level
WM1	Dissolved Oxygen	0	0
	pH	0	0
	Turbidity	0	0
	Suspended Solids	0	0
WM2	Dissolved Oxygen	0	0
	pH	0	0
	Turbidity	0	0
	Suspended Solids	0	0

Landfill Gas (LFG) Monitoring

LFG Monitoring Station	Monitoring Parameter(s)	No. of Exceedance
		Limit Level
Portion A +58 mpD,+55 mpD Platform	CH_4	0
	CO_2	0
	O_2	0
Portion A +55 mpD to 70 mpD Platform	CH_4	0
	CO_2	0
	O_2	0

Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension
Notification of Environmental Quality Limits Exceedances

Notification No.: 001_20230218
Date: 28 February 2023

Monitoring Data Received date: 23 February 2023

Date of Notification: 23 February 2023 (by email)

Works Inspected: Project Site Area & Monitoring Station AM3

Monitoring Location: AM3 –Wo Keng Shan Tsuen

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	18 Feb 2023 10:32 to 19 Feb 2023 10:32
24 hours	> 163	>260	Concentration ($\mu g/m^3$)	255
			Repeat Measured Level	
			Monitoring Period:	24 Feb 2023 10:53 to 25 Feb 2023 10:53
			Concentration ($\mu g/m^3$)	284

Possible reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level of 24-hr TSP air quality was recorded during impact monitoring at AM3 from 18 to 19 February 2023. Based on contractor's record, construction activities and mitigation measures conducted by contractor from 18 February 2023 [Photo 1 to Photo 6] were listed below:

Construction Activities (18 Feb 2023)	**Mitigation Measures**
Site Formation Work at Portion A (PM)	Wheel washing facilities with high-pressure water jets
	Frequent watering of the unpaved area and work area
Fire service building (FSB) foundation rebar fixing at Portion D	Non high dust emission construction works with the properly implemented dust mitigation measures (Frequent watering of the unpaved area and work area)
Fire services building (FSB) formwork erection at Portion D	
Integrated building office (IOB) conducting the plate load test at Portion D	
	Water spraying by water hose & water tanker at SBA

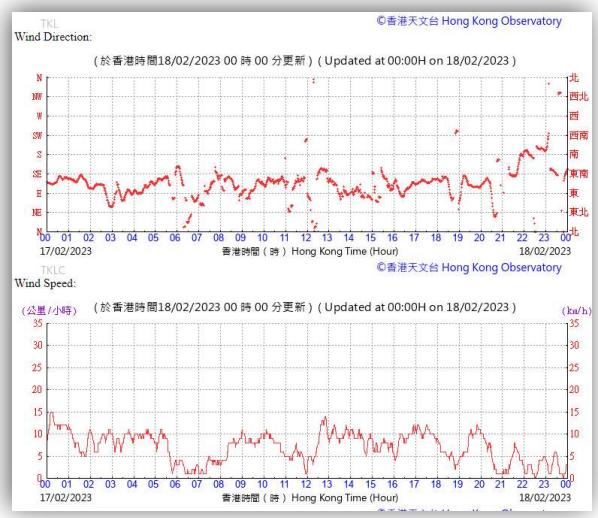
The path of water sprayed by water tanker and water spraying by water hose & water tanker schedule are presented in **Appendix A**.

No construction work from the project was conducted on 19 February 2023 (Sunday).

During the regular weekly site inspection on 13 & 20 February 2023, it was observed that the dust mitigation measures were implemented such as wheel washing facilities with high-pressure water jets have been provided at all site exits of the project and cleaning all vehicles before allowing them to leave the construction site to ensure that no mud or debris would be brought to the public area [Photos 5 to 6]. And the frequent watering of the unpaved area and work area were implemented in the construction site.

According to the observations record during the monitoring period on 18 February 2023, no dusty construction works of the project was found by monitoring staff. The dust emission from vehicular was observed on the public road, Wo Keng Shan Road [Photo 7].

Based on the HKO's record (Hong Kong Observatory Automatic Weather Station – Tai Kwu Ling), The prevailing wind direction is from southeast to east during the monitoring period. AM3 is at upwind direction at Portion A and Portion D. Therefore, the construction activities of the project may not cause the high level of concentration at AM3. Impact monitoring location and site area from the project are shown in **Figure 1**.



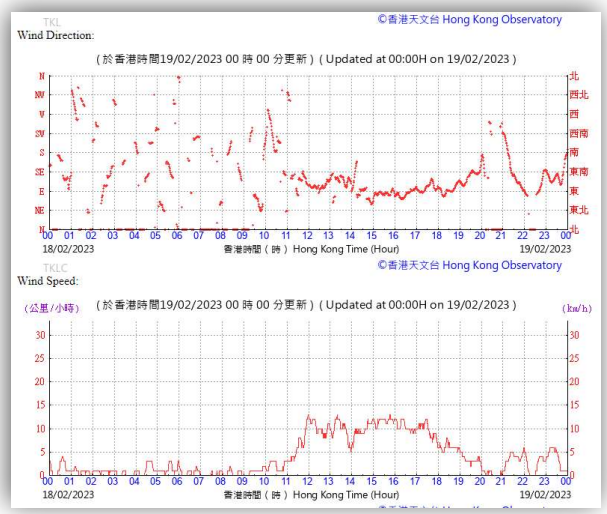


Photo 1 Traffic accident happened outside Portion A	Photo 2 Fire Services Building (FSB) formwork erection at Portion D
	
Photo 3 FSB Rebar Fixing at Portion D	Photo 4 Integrated Building Office (IOB) conducting the plate load test at Portion D
	

Photo 5 Vehicle Wheel Washing Bay	Photo 6 Frequently watering of the unpaved area and work area
	
Photo 7 Dust emission from vehicular	
	

Follow Up

Following the Event and Action Plan, a repeat monitoring was undertaken on 24 February 2023 to confirm findings which showed that the limit level exceedance occurred at AM3.

Actions taken/ to be taken:

Due to the measurement from 18 to 19 February 2023 exceeded the Action Level, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings

Due to the repeat measurement from 24 to 25 February 2023 exceeded the Limit Level, the below actions will be taken by ET in accordance with the Event/ Action Plan for dust impact:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Increase monitoring frequency to daily
- ✓ Assess effectiveness of Contractor's remedial actions and keep EPD and IEC/IC informed of the results

The monitoring frequency will be increased to daily starting from 1 March 2023. The Construction Dust Control

Mitigation Measures by the Environmental Mitigation Measure Implementation Schedule (EMIS) will continue to be implemented by the contractor.

Based on no construction works of the Project causing high dust emission with the properly implemented dust mitigation measures as above mention. Therefore, the exceedance was considered unlikely to be related to the Project.

Reviewed by:  Title: Deputy ET Leader

Keith Chau Date: 28 Feb 2023

Approved by:  Title: ET Leader

Fredrick Leong Date: 28 Feb 2023

Figure 1

Impact Monitoring Location

Legend

- NENTX Project Site
- Air Monitoring Location

AM1
AM2
AM3

N

0m 200m 400m 600m 800m 1000m

aurecon Aurecon Hong Kong Limited	North East New Territories (NENT) Landfill Extension Impact Monitoring Location	Figure 1

Appendix A

Path of water spraying by water tanker & Water spraying by water hose & water tanker schedule

Legend

Gate

Water Path of water sprayed by water tanker

昌塘
Ngong Tong

塘肚山村
Tong To Shan Tsuen

C

A

A

B

D

E

F

SBA

Stockpile Soil

WO KENG SHAN ROAD

SHEK TSAI HA ROAD

石寨下
Shek Tsai Ha

新界東北堆填區
NORTH EAST NEW TERRITORIES LANDFILL

水牛槽
SHUI NGAU TSO

平原河
PING YUEN RIVER

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
1	900	D		✓			峰
1	930	E	SBA			✓	傳
1	930	A		✓			Alex
1	1100	D		✓			峰
1	1115	E	SBA	✓		✓	傳
1	1115	A		✓			Alex
1	1400	D		✓			峰
1	1430	E	SBA			✓	傳
1	1430	A		✓			Alex
1	1600	D		✓			峰
1	1630	E	SBA			✓	傳
1	1630	A		✓			Alex
2	900	D		✓			峰
2	930	E	SBA			✓	傳
2	930	A		✓			Alex
2	1100	D		✓			峰
2	1115	E	SBA			✓	傳
2	1115	A		✓			Alex
2	1400	D		✓			峰
2	1430	E	SBA			✓	傳
2	1430	A		✓			Alex
2	1600	D		✓			峰
2	1630	E	SBA			✓	傳
2	1630	A		✓			Alex
3	900	D		✓			峰
3	930	E	SBA			✓	傳
3	930	A		✓			Alex
3	1100	D		✓			峰
3	1115	E	SBA			✓	傳
3	1115	A		✓			Alex
3	1400	D		✓			峰
3	1430	E	SBA			✓	傳
3	1430	A		✓			Alex
3	1600	D		✓			峰
3	1630	E	SBA			✓	傳
3	1630	A		✓			Alex

Reviewed by: Konsten Lam CA

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
4	900	D		✓			峰
4	930	E	SBA			✓	傳
4	930	A		✓			Alex
4	1100	D		✓			峰
4	1115	E	SBA			✓	傳
4	1115	A		✓			Alex
4	1400	D		✓			峰
4	1430	E	SBA			✓	傳
4	1430	A		✓			Alex
4	1600	D		✓			峰
4	1630	E	SBA			✓	傳
4	1630	A		✓			Alex
6	900	D		✓			峰
6	930	E	SBA			✓	傳
6	930	A		✓			Alex
6	1100	D		✓			峰
6	1115	E	SBA			✓	傳
6	1115	A		✓			Alex
6	1400	D		✓			峰
6	1430	E	SBA			✓	傳
6	1430	A		✓			Alex
6	1600	D		✓			峰
6	1630	E	SBA			✓	傳
6	1630	A		✓			Alex
7	900	D		✓			峰
7	930	E	SBA			✓	傳
7	930	A		✓			Alex
7	1100	D		✓			峰
7	1115	E	SBA			✓	傳
7	1115	A		✓			Alex
7	1400	D		✓			峰
7	1430	E	SBA			✓	傳
7	1430	A		✓			Alex
7	1600	D		✓			峰
7	1630	E	SBA			✓	傳
7	1630	A		✓			Alex

Reviewed by: _____

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
8	900	D		✓			峰
8	930	E	SBA			✓	傳
8	930	A		✓			Alex
8	1100	D		✓			峰
8	1115	E	SBA			✓	傳
8	1115	A		✓			Alex
8	1400	D		✓			峰
8	1430	E	SBA			✓	傳
8	1430	A		✓			Alex
8	1600	D		✓			峰
8	1630	E	SBA			✓	傳
8	1630	A		✓			Alex
9	900	D		✓			峰
9	930	E	SBA			✓	傳
9	930	A		✓			Alex
9	1100	D		✓			峰
9	1115	E	SBA			✓	傳
9	1115	A		✓			Alex
9	1400	D		✓			峰
9	1430	E	SBA			✓	傳
9	1430	A		✓			Alex
9	1600	D		✓			峰
9	1630	E	SBA			✓	傳
9	1630	A		✓			Alex
10	900	D		✓			峰
10	930	E	SBA			✓	傳
10	930	A		✓			Alex
10	1100	D		✓			峰
10	1115	E	SBA			✓	傳
10	1115	A		✓			Alex
10	1400	D		✓			峰
10	1430	E	SBA			✓	傳
10	1430	A		✓			Alex
10	1600	D		✓			峰
10	1630	E	SBA			✓	傳
10	1630	A		✓			Alex

Reviewed by: Carsten Lowry LA
PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
11	900	D		✓			峰
11	930	E	SBA			✓	傳
11	930	A		✓			Alex
11	1100	D		✓			峰
11	1115	E	SBA			✓	傳
11	1115	A		✓			Alex
11	1400	D		✓		✓	峰
11	1430	E	SBA				傳
11	1430	A		✓			Alex
11	1600	D		✓		✓	峰
11	1630	E	SBA				傳
11	1630	A		✓			Alex
13	900	D		✓			峰
13	930	E	SBA			✓	傳
13	930	A		✓			Alex
13	1100	D		✓			峰
13	1115	E	SBA			✓	傳
13	1115	A		✓			Alex
13	1400	D		✓			峰
13	1430	E	SBA			✓	傳
13	1430	A		✓			Alex
13	1600	D		✓			峰
13	1630	E	SBA			✓	傳
13	1630	A		✓			Alex
14	900	D		✓			峰
14	930	E	SBA			✓	傳
14	930	A		✓			Alex
14	1100	D		✓			峰
14	1115	E	SBA			✓	傳
14	1115	A		✓			Alex
14	1400	D		✓			峰
14	1430	E	SBA			✓	傳
14	1430	A		✓			Alex
14	1600	D		✓			峰
14	1630	E	SBA			✓	傳
14	1630	A		✓			Alex

Reviewed by: Icarus GA

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
15	900	D		✓			峰
15	930	E	SBA			✓	傳
15	930	A		✓			Alex
15	1100	D		✓			峰
15	1115	E	SBA			✓	傳
15	1115	A		✓			Alex
15	1400	D		✓			峰
15	1430	E	SBA			✓	傳
15	1430	A		✓			Alex
15	1600	D		✓			峰
15	1630	E	SBA			✓	傳
15	1630	A		✓			Alex
16	900	D		✓			峰
16	930	E	SBA			✓	傳
16	930	A		✓			Alex
16	1100	D		✓			峰
16	1115	E	SBA			✓	傳
16	1115	A		✓			Alex
16	1400	D		✓			峰
16	1430	E	SBA			✓	傳
16	1430	A		✓			Alex
16	1600	D		✓			峰
16	1630	E	SBA			✓	傳
16	1630	A		✓			Alex
17	900	D		✓			峰
17	930	E	SBA			✓	傳
17	930	A		✓			Alex
17	1100	D		✓			峰
17	1115	E	SBA			✓	傳
17	1115	A		✓			Alex
17	1400	D		✓			峰
17	1430	E	SBA			✓	傳
17	1430	A		✓			Alex
17	1600	D		✓			峰
17	1630	E	SBA			✓	傳
17	1630	A		✓			Alex

Reviewed by: Icarus

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
18	900	D		✓			峰
18	930	E	SBA			✓	傳
18	930	A		✓			Alex
18	1100	D		✓			峰
18	1115	E	SBA			✓	傳
18	1115	A		✓			Alex
18	1400	D		✓			峰
18	1430	E	SBA			✓	傳
18	1430	A		✓			Alex
18	1600	D		✓			峰
18	1630	E	SBA			✓	傳
18	1630	A		✓			Alex
20	900	D		✓			峰
20	930	E	SBA			✓	傳
20	930	A		✓			Alex
20	1100	D		✓			峰
20	1115	E	SBA			✓	傳
20	1115	A		✓			Alex
20	1400	D		✓			峰
20	1430	E	SBA			✓	傳
20	1430	A		✓			Alex
20	1600	D		✓			峰
20	1630	E	SBA			✓	傳
20	1630	A		✓			Alex
21	900	D		✓			峰
21	930	E	SBA			✓	傳
21	930	A		✓			Alex
21	1100	D		✓			峰
21	1115	E	SBA			✓	傳
21	1115	A		✓			Alex
21	1400	D		✓			峰
21	1430	E	SBA			✓	傳
21	1430	A		✓			Alex
21	1600	D		✓			峰
21	1630	E	SBA			✓	傳
21	1630	A		✓			Alex

Reviewed by: _____
PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
22	900	D		✓			峰
22	930	E	SBA			✓	傳
22	930	A		✓			Alex
22	1100	D		✓			峰
22	1115	E	SBA			✓	傳
22	1115	A		✓			Alex
22	1400	D		✓			峰
22	1430	E	SBA			✓	傳
22	1430	A		✓			Alex
22	1600	D		✓			峰
22	1630	E	SBA			✓	傳
22	1630	A		✓			Alex
23	900	D		✓			峰
23	930	E	SBA			✓	傳
23	930	A		✓			Alex
23	1100	D		✓			峰
23	1115	E	SBA			✓	傳
23	1115	A		✓			Alex
23	1400	D		✓			峰
23	1430	E	SBA			✓	傳
23	1430	A		✓			Alex
23	1600	D		✓			峰
23	1630	E	SBA			✓	傳
23	1630	A		✓			Alex
24	900	D		✓		✓	峰
24	930	E	SBA			✓	傳
24	930	A		✓			Alex
24	1100	D		✓			峰
24	1115	E	SBA			✓	傳
24	1115	A		✓			Alex
24	1400	D		✓			峰
24	1430	E	SBA			✓	傳
24	1430	A		✓			Alex
24	1600	D		✓			峰
24	1630	E	SBA			✓	傳
24	1630	A		✓			Alex

Reviewed by: _____
PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
25	900	D		✓			峰
25	930	E	SBA			✓	傳
25	930	A		✓			Alex
25	1100	D		✓			峰
25	1115	E	SBA			✓	傳
25	1115	A		✓			Alex
25	1400	D		✓			峰
25	1430	E	SBA			✓	傳
25	1430	A		✓			Alex
25	1600	D		✓			峰
25	1630	E	SBA			✓	傳
25	1630	A		✓			Alex
27	900	D		✓			峰
27	930	E	SBA			✓	傳
27	930	A		✓			Alex
27	1100	D		✓			峰
27	1115	E	SBA			✓	傳
27	1115	A		✓			Alex
27	1400	D		✓			峰
27	1430	E	SBA			✓	傳
27	1430	A		✓			Alex
27	1600	D		✓			峰
27	1630	E	SBA			✓	傳
27	1630	A		✓			Alex
28	900	D		✓			峰
28	930	E	SBA			✓	傳
28	930	A		✓			Alex
28	1100	D		✓			峰
28	1115	E	SBA			✓	傳
28	1115	A		✓			Alex
28	1400	D		✓			峰
28	1430	E	SBA			✓	傳
28	1430	A		✓			Alex
28	1600	D		✓			峰
28	1630	E	SBA			✓	傳
28	1630	A		✓			Alex

Reviewed by: Carmen Leung LA

PYE EO

Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension
Notification of Environmental Quality Limits Exceedances

Notification No.: 002_20230224
Date: 7 March 2023

Monitoring Data Received date: 28 February 2023

Date of Notification: 28 February 2023 (by email)

Works Inspected: Project Site Area & Monitoring Station AM1 & AM3

Monitoring Location: AM1 –Tung Lo Hang

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	24 Feb 2023 11:34 to 25 Feb 2023 11:34	Monitoring Period:	1 Mar 2023 11:49 to 2 Mar 2023 11:49
24 hours	> 164	> 260	Concentration ($\mu g/m^3$)	286	Concentration ($\mu g/m^3$)	231

Monitoring Location: AM3 –Wo Keng Shan Tsuen

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	24 Feb 2023 10:53 to 25 Feb 2023 10:53	Monitoring Period:	1 Mar 2023 11:20 to 2 Mar 2023 11:20
24 hours	> 163	> 260	Concentration ($\mu g/m^3$)	284	Concentration ($\mu g/m^3$)	277

Possible reason for Action or Limit Level Non-compliance:

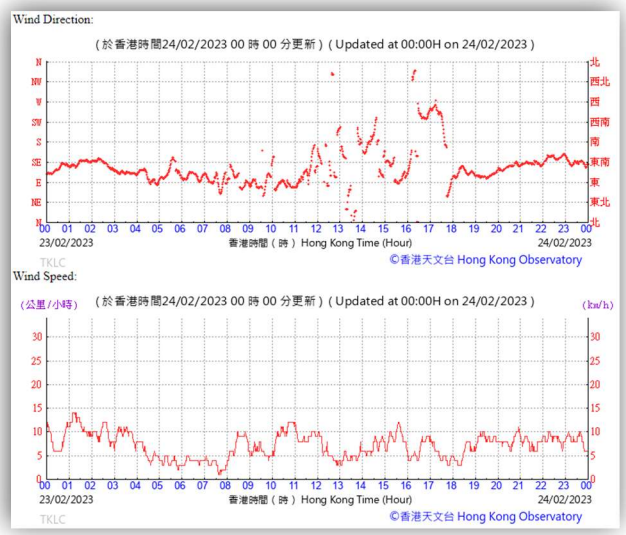
An exceedance in Limit Level of 24-hr TSP air quality was recorded during impact monitoring at AM1 & AM3 from 24 to 25 February 2023. Based on contractor's record, construction activities and mitigation measures conducted by contractor from 24 to 25 February 2023 [Photo 1 to Photo 12] were listed below:

Construction Activities	Mitigation Measures
Site formation at Portion A	Water spraying by water hose at Portion A
Internal transportation of soil from Portion A to the SBA	Vehicle wash at the exit of Portion A and the SBA
	Water spraying by water tanker along the haul road between Portion A and the SBA (The route of water spraying by water tanker is shown in **Figure 2**)
Preparation works for permanent building foundation concrete pouring at Portion D	Water spraying by water hose at Portion D
	Covering of dusty materials at Portion D
Site Clearance at Portion E3-1	
Stockpiling at the SBA	

The path of water spraying by water tanker & the water spraying by water hose & water tanker schedule are presented in Appendix A.

No dusty construction works of the project were found by monitoring staff. The dust emission from vehicular was observed on the public road, Wo Keng Shan Road [Photo 13]. On the other hand, there was a fire incident on 24 February 2023 near the Project site according to the contractor's onsite record. [Photo 14]

Based on the HKO's record (Hong Kong Observatory Automatic Weather Station – Tai Kwu Ling), the prevailing wind direction is from southeast during the monitoring period. AM1 and AM3 are located at upwind direction at Portion A and Portion D. Therefore, the construction activities of the project may not cause the high level of concentration at AM1 & AM3. The monitoring location & site area are presented in **Figure 1**.



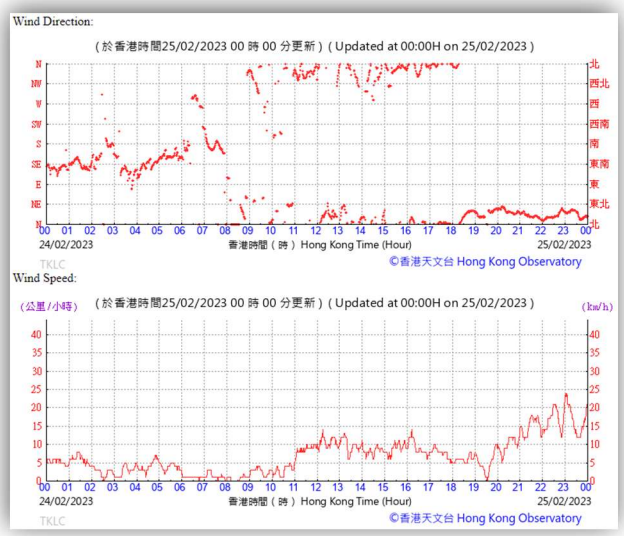


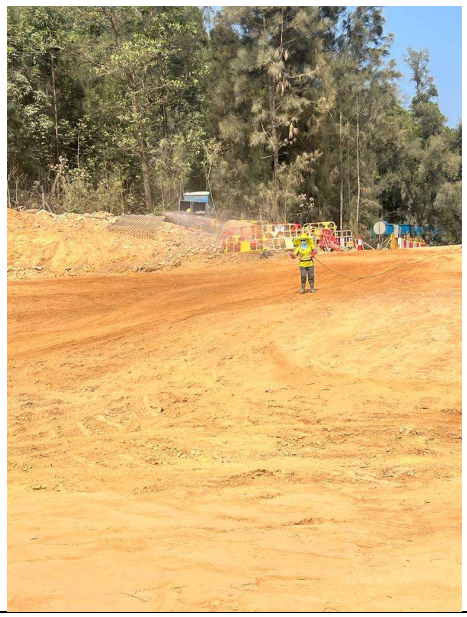
Photo 1 Frequently watering of the site exit at Portion A	Photo 2 Frequently watering of the unpaved area and work area at Portion A
	
Photo 3 Frequently watering of the unpaved area and work area at Portion A	Photo 4 Frequently watering of the unpaved area and work area at Portion A
	

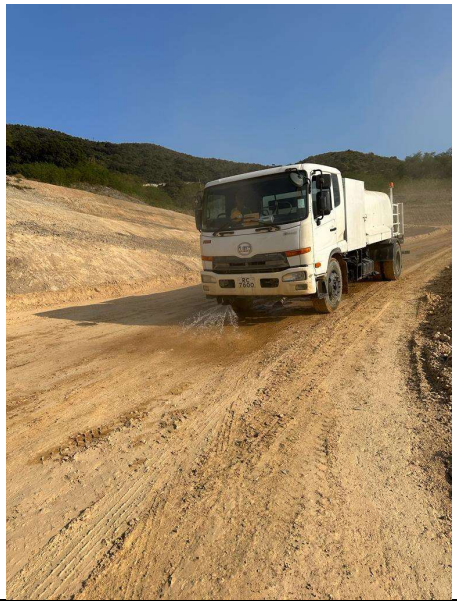
Photo 5 Frequently watering of the unpaved area and work area at Portion A	Photo 6 Vehicle wash at the exit of Portion A
	
Photo 7 Vehicle wash at the exit of Portion A	Photo 8 Vehicle wash at the exit of the SBA
	
Photo 9 Water spraying by water tanker along the haul road between Portion A and the SBA	Photo 10 Water spraying by water tanker along the haul road between Portion A and the SBA
	

Photo 11 Water spraying by water hose at Portion D	Photo 12 Dusty Materials covered by impervious sheeting at Portion D
	
Photo 13 Dust emission from vehicular at Wo Keng Shan Road	Photo 14 Fire incident near the project site
	

Follow Up

Based on contractor's record, construction activities were observed within the site area which included site formation at Portion A, internal transportation of soil from Portion A to the SBA, preparation works for permanent building foundation concrete pouring at Portion D, site clearance at Portion E3-1 & stockpiling at the SBA from 24 to 25 February 2023. No construction works causing high dust emission was found during the monitoring period. Following the Event and Action Plan, a repeat monitoring was undertaken on 1 March 2023 to confirm findings which showed that the action level exceedance occurred at AM1 & the limit level exceedance occurred at AM3.

Actions taken/ to be taken:

Due to the measurement from 24 to 25 February 2023 exceeded the Limit Level at AM1 & AM3, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Assess effectiveness of Contractor's remedial actions and keep EPD and IEC/IC informed of the results

Due to the repeat measurement from 1 to 2 March 2023 exceeded the Action Level at AM1, the below actions will be taken by ET in accordance with the Event/ Action Plan for dust impact:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Increase monitoring frequency to daily

Due to the repeat measurement from 1 to 2 March 2023 exceeded the Limit Level at AM3, the below actions will be taken by ET in accordance with the Event/ Action Plan for dust impact:

- ✓ Identify source
- ✓ Inform IEC, IC and EPD the causes and actions taken for the exceedances
- ✓ Increase monitoring frequency to confirm findings
- ✓ Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented
- ✓ Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and IC informed of the results
- ✓ If exceedance stops, cease additional monitoring.

The monitoring frequency will be increased to daily starting from 1 March 2023. The Construction Dust Control Mitigation Measures by the Environmental Mitigation Measure Implementation Schedule (EMIS) will continue to be implemented by the contractor. The additional mitigation measures [Photo 15 to 21] are implemented by contractor. Details are shown below:

Additional Mitigation Measures	Start Date
Application of cement slurry at Portion A	10 March 2023
Water spraying by sprinklers at Portion A	1 March 2023
Hydroseeding at bare slope at Portion E3-2	26 February 2023 & 3 March 2023

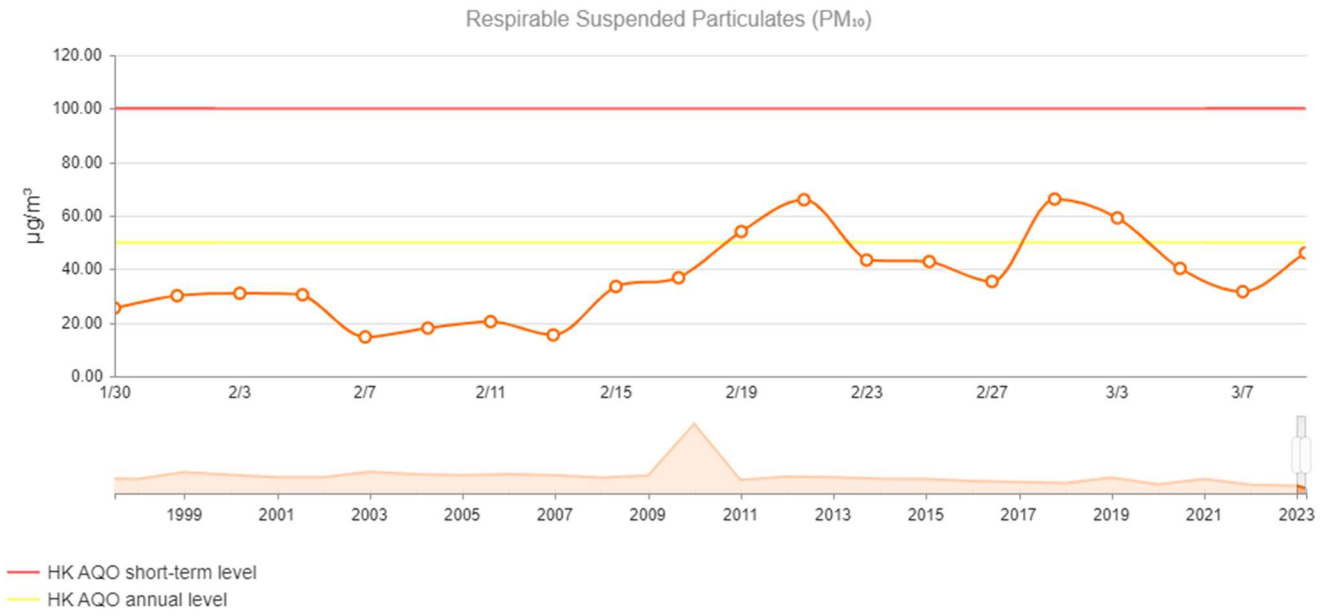
Photo 15 Application of cement slurry at Portion A

Photo 16 Application of cement slurry at Portion A

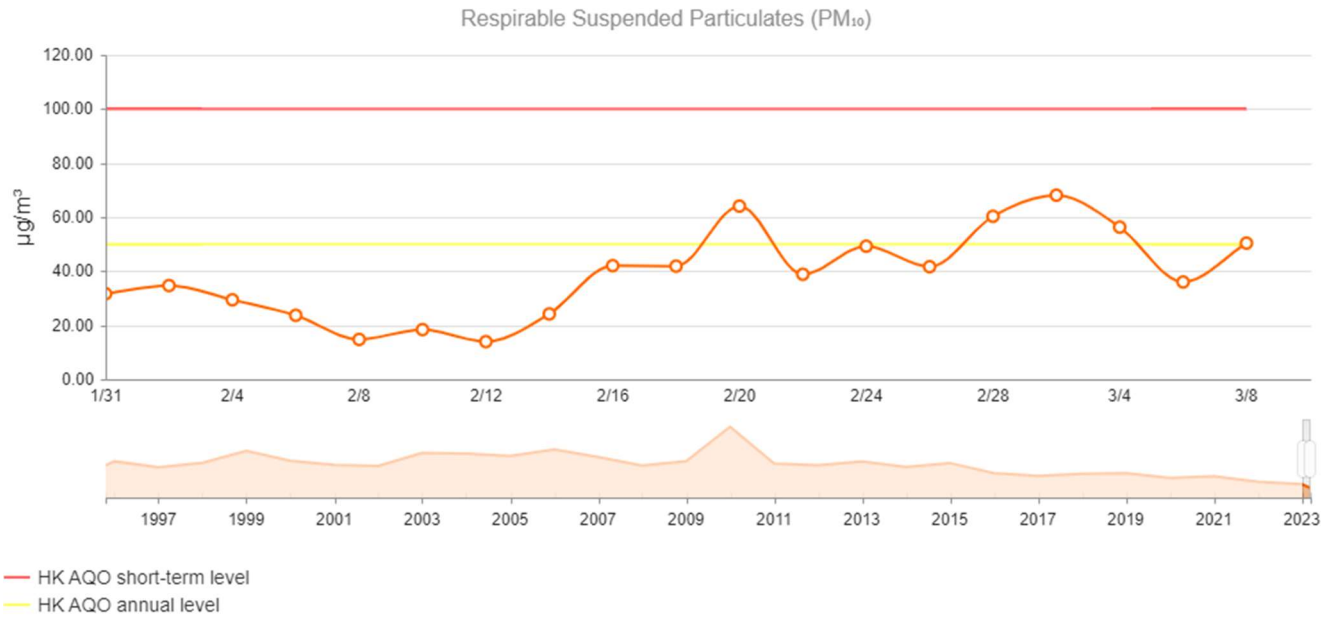
Photo 17 Application of cement slurry at Portion A	Photo 18 Water spraying by water sprinklers at Portion A
	
Photo 19 Hydroseeding at bare slope at Portion E3-2 (26 February 2023)	Photo 20 Hydroseeding at bare slope at Portion E3-2 (3 March 2023)
	
Photo 21 Hydroseeding at bare slope at Portion E3-2 (3 March 2023)	
	

In view of the press releases from the government on 1 March 2023, the health risk category for Air Quality Health Index (AQHIs) may reach the "Serious" level on 1 March 2023 (https://www.info.gov.hk/gia/general/202303/01/P2023030100565.htm?fontSize=1). Respirable Suspended Particulates (RSP)(PM_{10}) is one of monitoring parameter from AQHIs. The RSP concentration at EPD Tai Po & Yuen Long monitoring station are shown in below:

Tai Po Station



Yuen Long Station



Based on no construction works of the Project causing high dust emission with the properly implemented dust mitigation measures as above mention. And the fire influence of high concentrations of regional background particulates was identified during the monitoring period. Therefore, the exceedances at AM1 & AM3 were considered to be attributed to external factors and mostly unlikely to be related to the Project.

Reviewed by: _____ Title: Deputy ET Leader

Keith Chau Date: 10 Mar 2023

Approved by: _____ Title: ET Leader

Fredrick Leong Date: 10 Mar 2023

Figure 1

Impact Monitoring Location

Legend

- NENTX Project Site
- Air Monitoring Location

AM1
AM2
AM3

N

0m 200m 400m 600m 800m 1000m

aurecon Aurecon Hong Kong Limited	North East New Territories (NENT) Landfill Extension Impact Monitoring Location	Figure 1

Appendix A

Path of water spraying by water tanker & Water spraying by water hose & water tanker schedule

Legend

Gate

Water Path of water sprayed by water tanker

昌塘
Ngong Tong

塘肚山村
Tong To Shan Tsuen

C

A

A

B

D

E

F

SBA

Stockpile Soil

WO KENG SHAN ROAD

SHEK TSAI HA ROAD

石寨下
Shek Tsai Ha

新界東北堆填區
NORTH EAST NEW TERRITORIES LANDFILL

水牛槽
SHUI NGAU TSO

平原河
PING YUEN RIVER

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
1	900	D		✓			峰
1	930	E	SBA			✓	傳
1	930	A		✓			Alex
1	1100	D		✓			峰
1	1115	E	SBA	✓		✓	傳
1	1115	A		✓			Alex
1	1400	D		✓			峰
1	1430	E	SBA			✓	傳
1	1430	A		✓			Alex
1	1600	D		✓			峰
1	1630	E	SBA			✓	傳
1	1630	A		✓			Alex
2	900	D		✓			峰
2	930	E	SBA			✓	傳
2	930	A		✓			Alex
2	1100	D		✓			峰
2	1115	E	SBA			✓	傳
2	1115	A		✓			Alex
2	1400	D		✓			峰
2	1430	E	SBA			✓	傳
2	1430	A		✓			Alex
2	1600	D		✓			峰
2	1630	E	SBA			✓	傳
2	1630	A		✓			Alex
3	900	D		✓			峰
3	930	E	SBA			✓	傳
3	930	A		✓			Alex
3	1100	D		✓			峰
3	1115	E	SBA			✓	傳
3	1115	A		✓			Alex
3	1400	D		✓			峰
3	1430	E	SBA			✓	傳
3	1430	A		✓			Alex
3	1600	D		✓			峰
3	1630	E	SBA			✓	傳
3	1630	A		✓			Alex

Reviewed by: Konsten Lam CA

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
4	900	D		✓			峰
4	930	E	SBA			✓	傳
4	930	A		✓			Alex
4	1100	D		✓			峰
4	1115	E	SBA			✓	傳
4	1115	A		✓			Alex
4	1400	D		✓			峰
4	1430	E	SBA			✓	傳
4	1430	A		✓			Alex
4	1600	D		✓			峰
4	1630	E	SBA			✓	傳
4	1630	A		✓			Alex
6	900	D		✓			峰
6	930	E	SBA			✓	傳
6	930	A		✓			Alex
6	1100	D		✓			峰
6	1115	E	SBA			✓	傳
6	1115	A		✓			Alex
6	1400	D		✓			峰
6	1430	E	SBA			✓	傳
6	1430	A		✓			Alex
6	1600	D		✓			峰
6	1630	E	SBA			✓	傳
6	1630	A		✓			Alex
7	900	D		✓			峰
7	930	E	SBA			✓	傳
7	930	A		✓			Alex
7	1100	D		✓			峰
7	1115	E	SBA			✓	傳
7	1115	A		✓			Alex
7	1400	D		✓			峰
7	1430	E	SBA			✓	傳
7	1430	A		✓			Alex
7	1600	D		✓			峰
7	1630	E	SBA			✓	傳
7	1630	A		✓			Alex

Reviewed by: _____

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
8	900	D		✓			峰
8	930	E	SBA			✓	傳
8	930	A		✓			Alex
8	1100	D		✓			峰
8	1115	E	SBA			✓	傳
8	1115	A		✓			Alex
8	1400	D		✓			峰
8	1430	E	SBA			✓	傳
8	1430	A		✓			Alex
8	1600	D		✓			峰
8	1630	E	SBA			✓	傳
8	1630	A		✓			Alex
9	900	D		✓			峰
9	930	E	SBA			✓	傳
9	930	A		✓			Alex
9	1100	D		✓			峰
9	1115	E	SBA			✓	傳
9	1115	A		✓			Alex
9	1400	D		✓			峰
9	1430	E	SBA			✓	傳
9	1430	A		✓			Alex
9	1600	D		✓			峰
9	1630	E	SBA			✓	傳
9	1630	A		✓			Alex
10	900	D		✓			峰
10	930	E	SBA			✓	傳
10	930	A		✓			Alex
10	1100	D		✓			峰
10	1115	E	SBA			✓	傳
10	1115	A		✓			Alex
10	1400	D		✓			峰
10	1430	E	SBA			✓	傳
10	1430	A		✓			Alex
10	1600	D		✓			峰
10	1630	E	SBA			✓	傳
10	1630	A		✓			Alex

Reviewed by: Carsten Lowry LA
PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
11	900	D		✓			峰
11	930	E	SBA			✓	傳
11	930	A		✓			Alex
11	1100	D		✓			峰
11	1115	E	SBA			✓	傳
11	1115	A		✓			Alex
11	1400	D		✓		✓	峰
11	1430	E	SBA				傳
11	1430	A		✓			Alex
11	1600	D		✓		✓	峰
11	1630	E	SBA				傳
11	1630	A		✓			Alex
13	900	D		✓			峰
13	930	E	SBA			✓	傳
13	930	A		✓			Alex
13	1100	D		✓			峰
13	1115	E	SBA			✓	傳
13	1115	A		✓			Alex
13	1400	D		✓			峰
13	1430	E	SBA			✓	傳
13	1430	A		✓			Alex
13	1600	D		✓			峰
13	1630	E	SBA			✓	傳
13	1630	A		✓			Alex
14	900	D		✓			峰
14	930	E	SBA			✓	傳
14	930	A		✓			Alex
14	1100	D		✓			峰
14	1115	E	SBA			✓	傳
14	1115	A		✓			Alex
14	1400	D		✓			峰
14	1430	E	SBA			✓	傳
14	1430	A		✓			Alex
14	1600	D		✓			峰
14	1630	E	SBA			✓	傳
14	1630	A		✓			Alex

Reviewed by: Icarus GA

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
15	900	D		✓			峰
15	930	E	SBA			✓	傳
15	930	A		✓			Alex
15	1100	D		✓			峰
15	1115	E	SBA			✓	傳
15	1115	A		✓			Alex
15	1400	D		✓			峰
15	1430	E	SBA			✓	傳
15	1430	A		✓			Alex
15	1600	D		✓			峰
15	1630	E	SBA			✓	傳
15	1630	A		✓			Alex
16	900	D		✓			峰
16	930	E	SBA			✓	傳
16	930	A		✓			Alex
16	1100	D		✓			峰
16	1115	E	SBA			✓	傳
16	1115	A		✓			Alex
16	1400	D		✓			峰
16	1430	E	SBA			✓	傳
16	1430	A		✓			Alex
16	1600	D		✓			峰
16	1630	E	SBA			✓	傳
16	1630	A		✓			Alex
17	900	D		✓			峰
17	930	E	SBA			✓	傳
17	930	A		✓			Alex
17	1100	D		✓			峰
17	1115	E	SBA			✓	傳
17	1115	A		✓			Alex
17	1400	D		✓			峰
17	1430	E	SBA			✓	傳
17	1430	A		✓			Alex
17	1600	D		✓			峰
17	1630	E	SBA			✓	傳
17	1630	A		✓			Alex

Reviewed by: Icarus

PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
18	900	D		✓			峰
18	930	E	SBA			✓	傳
18	930	A		✓			Alex
18	1100	D		✓			峰
18	1115	E	SBA			✓	傳
18	1115	A		✓			Alex
18	1400	D		✓			峰
18	1430	E	SBA			✓	傳
18	1430	A		✓			Alex
18	1600	D		✓			峰
18	1630	E	SBA			✓	傳
18	1630	A		✓			Alex
20	900	D		✓			峰
20	930	E	SBA			✓	傳
20	930	A		✓			Alex
20	1100	D		✓			峰
20	1115	E	SBA			✓	傳
20	1115	A		✓			Alex
20	1400	D		✓			峰
20	1430	E	SBA			✓	傳
20	1430	A		✓			Alex
20	1600	D		✓			峰
20	1630	E	SBA			✓	傳
20	1630	A		✓			Alex
21	900	D		✓			峰
21	930	E	SBA			✓	傳
21	930	A		✓			Alex
21	1100	D		✓			峰
21	1115	E	SBA			✓	傳
21	1115	A		✓			Alex
21	1400	D		✓			峰
21	1430	E	SBA			✓	傳
21	1430	A		✓			Alex
21	1600	D		✓			峰
21	1630	E	SBA			✓	傳
21	1630	A		✓			Alex

Reviewed by: _____
PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
22	900	D		✓			峰
22	930	E	SBA			✓	傳
22	930	A		✓			Alex
22	1100	D		✓			峰
22	1115	E	SBA			✓	傳
22	1115	A		✓			Alex
22	1400	D		✓			峰
22	1430	E	SBA			✓	傳
22	1430	A		✓			Alex
22	1600	D		✓			峰
22	1630	E	SBA			✓	傳
22	1630	A		✓			Alex
23	900	D		✓			峰
23	930	E	SBA			✓	傳
23	930	A		✓			Alex
23	1100	D		✓			峰
23	1115	E	SBA			✓	傳
23	1115	A		✓			Alex
23	1400	D		✓			峰
23	1430	E	SBA			✓	傳
23	1430	A		✓			Alex
23	1600	D		✓			峰
23	1630	E	SBA			✓	傳
23	1630	A		✓			Alex
24	900	D		✓		✓	峰
24	930	E	SBA			✓	傳
24	930	A		✓			Alex
24	1100	D		✓			峰
24	1115	E	SBA			✓	傳
24	1115	A		✓			Alex
24	1400	D		✓			峰
24	1430	E	SBA			✓	傳
24	1430	A		✓			Alex
24	1600	D		✓			峰
24	1630	E	SBA			✓	傳
24	1630	A		✓			Alex

Reviewed by: _____
PYE EO

NENTX Watering Schedule

Month Feb-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
25	900	D		✓			峰
25	930	E	SBA			✓	傳
25	930	A		✓			Alex
25	1100	D		✓			峰
25	1115	E	SBA			✓	傳
25	1115	A		✓			Alex
25	1400	D		✓			峰
25	1430	E	SBA			✓	傳
25	1430	A		✓			Alex
25	1600	D		✓			峰
25	1630	E	SBA			✓	傳
25	1630	A		✓			Alex
27	900	D		✓			峰
27	930	E	SBA			✓	傳
27	930	A		✓			Alex
27	1100	D		✓			峰
27	1115	E	SBA			✓	傳
27	1115	A		✓			Alex
27	1400	D		✓			峰
27	1430	E	SBA			✓	傳
27	1430	A		✓			Alex
27	1600	D		✓			峰
27	1630	E	SBA			✓	傳
27	1630	A		✓			Alex
28	900	D		✓			峰
28	930	E	SBA			✓	傳
28	930	A		✓			Alex
28	1100	D		✓			峰
28	1115	E	SBA			✓	傳
28	1115	A		✓			Alex
28	1400	D		✓			峰
28	1430	E	SBA			✓	傳
28	1430	A		✓			Alex
28	1600	D		✓			峰
28	1630	E	SBA			✓	傳
28	1630	A		✓			Alex

Reviewed by: Carmen Leung LA

PYE EO

Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension
Notification of Environmental Quality Limits Exceedances - IR

Notification No.: 003_20230301
Date: 17 March 2023

Monitoring Data Received date: 10 March 2023

Date of Notification: 11 March 2023 (by email)

Works Inspected: Project Site Area & Monitoring Station AM1 & AM3

Monitoring Location: AM1 –Tung Lo Hang

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	1 Mar 2023 11:49 to 2 Mar 2023 11:49	Monitoring Period:	2 Mar 2023 12:00 to 3 Mar 2023 12:00
24 hours	> 164	> 260	Concentration ($\mu g/m^3$)	231	Concentration ($\mu g/m^3$)	490

Monitoring Location: AM3 –Wo Keng Shan Tsuen

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	1 Mar 2023 11:20 to 2 Mar 2023 11:20	Monitoring Period:	2 Mar 2023 11:32 to 3 Mar 2023 11:32
24 hours	> 163	> 260	Concentration ($\mu g/m^3$)	277	Concentration ($\mu g/m^3$)	337

Possible reason for Action or Limit Level Non-compliance:

An exceedance in Action Level of 24-hr TSP air quality was recorded during impact monitoring at AM1 from 1 to 2 March 2023. An exceedance in Limit Level of 24-hr TSP air quality was recorded during impact monitoring at AM3 from 1 to 2 March 2023. Based on the contractor's record, construction activities and mitigation measures conducted by contractor from 1 to 2 March 2023 [Photo 1 to Photo 11] were listed below:

Construction Activities from 1 to 2 March 2023	Mitigation Measures from 1 to 2 March 2023
Site Formation at Portion E3	Water spraying by water tanker along the haul road between Portion A and the SBA
Site formation at Portion A	Water spraying by water sprinklers & hose at Portion A
Permanent Building Foundation at Portion D	Water spraying by water hose at Portion D
Hydroseeding at Portion E3	Hydroseeding at bare slope at Portion E3-2

The path of water spraying by water tanker, the water spraying by water hose and the water tanker schedule are presented in **Appendix A**.

No high dusty construction works of the project were found by monitoring staff. The dust emission from vehicles was observed on the public road, Wo Keng Shan Road. The monitoring location & site area are presented in **Figure 1**. The NENTX portions layout plan is presented in **Figure 2**.

Based on the HKO's record (Hong Kong Observatory Automatic Weather Station – Ta Kwu Ling), the prevailing wind direction was from east-southeast wind during the monitoring period.

AM1
Although AM1 is located at downwind direction at Portion B1(including SBA) & Portion E2 to E4 (around 600 m of Portion A, 800 m of Portion B1, 900 m of Portion D & E4, 1000 km of Portion E3, 1700 m of SBA and Portion E2), the two natural barriers, where are the around 100 m height hill near Lung Mei Teng , and the around 150 m height hill between North East New Territories Landfill and Shek Tsai Ha Road, block part of the wind flow to the monitoring station. In addition, the appropriate dust control mitigation measures were implemented in construction area during the monitoring period. Therefore, the construction activities of the project may not cause the high level of concentration at AM1.

AM3

Although AM3 is located at downwind direction at Portion C, the Portion C was not the construction area from the project from commencement of construction to now. Therefore, the construction activities of the project may not cause the high level of concentration at AM3.

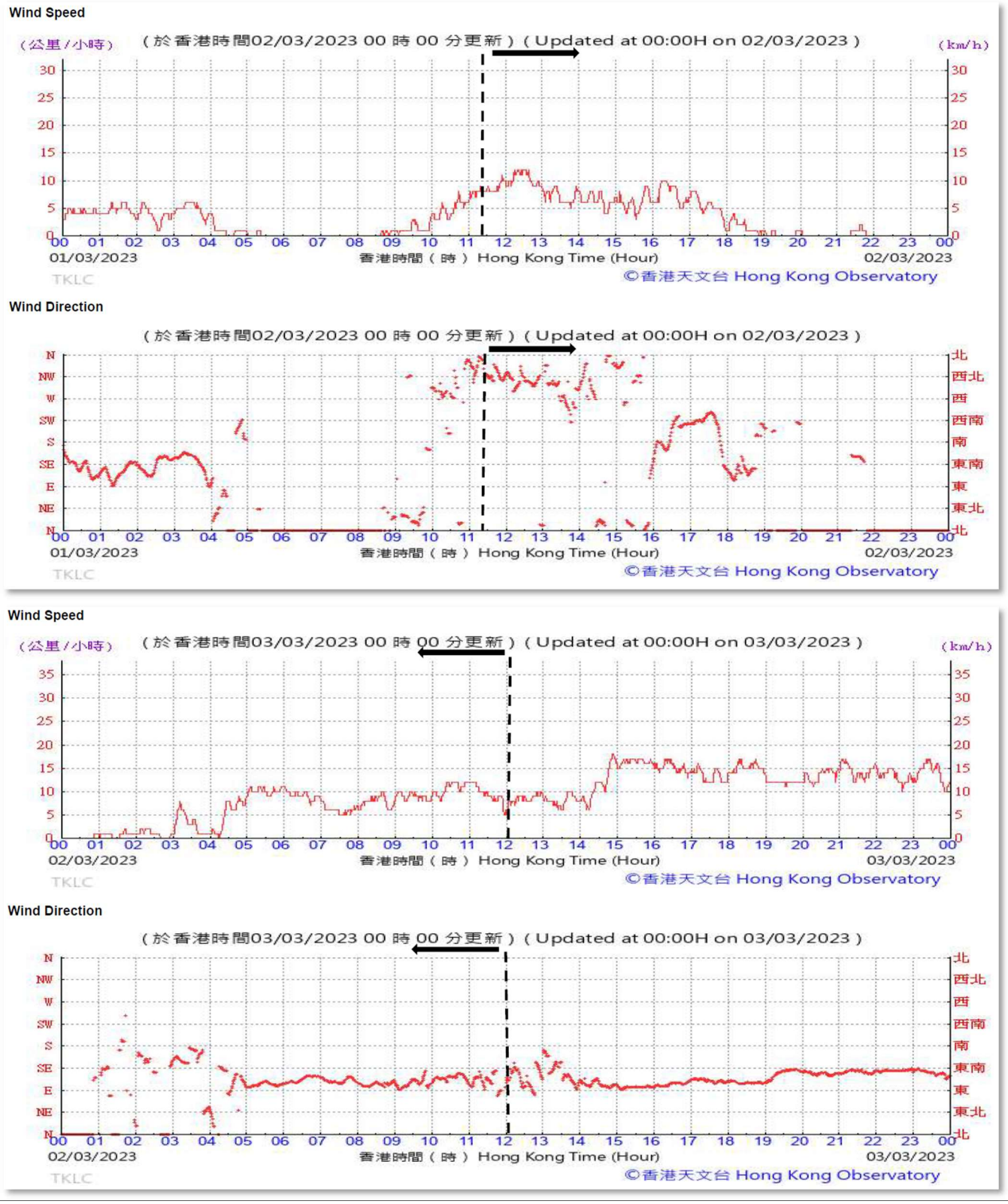


Photo 1 Site Formation at Portion E3	Photo 2 Site formation at Portion A
	
Photo 3 Permanent Building Foundation at Portion D	**Photo 4 Hydroseeding at Portion E3**
	
Photo 5 Water spraying by water tanker along the haul road between Portion A and the SBA	**Photo 6 Water spraying by water tanker along the haul road between Portion A and the SBA**
	

Photo 7 Water spraying by water sprinklers at Portion A	Photo 8 Water spraying by water sprinklers at Portion A
	
Photo 9 Water spraying by water hose at Portion A	Photo 10 Water spraying by water hose at Portion D
	
Photo 11 Hydroseeding at bare slope at Portion E3-2 (Implemented start on 26 February 2023)	
	

Follow Up

Based on the contractor's record, construction activities were observed within the site area which included site formation at Portion E3, site formation at Portion A, permanent building foundation at Portion D & hydroseeding at Portion E3 from 1 to 2 March 2023. Appropriate dust control mitigation measures were implemented at construction area during the monitoring period. No construction works causing high dust emission were found during the monitoring period. Following the Event and Action Plan, a repeat monitoring was undertaken from 2 to 3 March 2023 to confirm findings which showed that the limit level exceedance occurred at AM1 & AM3.

Actions taken/ to be taken:

Due to the measurement from 1 to 2 March 2023 exceeded the Action Level at AM1, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Increase monitoring frequency to daily
- ✓ Discuss with IEC/IC for remedial actions required
- ✓ If exceedance continues, arrange meeting with IEC

Due to the measurement from 1 to 2 March 2023 exceeded the Limit Level at AM3, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Increase monitoring frequency to daily
- ✓ Inform IEC, IC and EPD the causes and actions taken for the exceedances
- ✓ Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented
- ✓ Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and IC informed of the results

Due to the repeat measurement from 2 to 3 March 2023 exceeded the Limit Level at AM1 & AM3, the below actions will be taken by ET in accordance with the Event/ Action Plan for dust impact:

- ✓ Identify source
- ✓ Increase monitoring frequency to daily
- ✓ If exceedance stops, cease additional monitoring
- ✓ Inform IEC, IC and EPD the causes and actions taken for the exceedances
- ✓ Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented
- ✓ Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and IC informed of the results

The monitoring frequency was increased to daily starting from 1 March 2023. The Construction Dust Control Mitigation Measures by the Environmental Mitigation Measure Implementation Schedule (EMIS) will continue to be implemented by the contractor. The additional mitigation measures [Photo 12 to 15] are implemented by contractor. Details are shown below:

Additional Mitigation Measures	Start Date
Application of cement slurry at Portion A	10 March 2023
Hydroseeding at bare slope at Portion E3-2	3 March 2023

Photo 12 Application of cement slurry at Portion A

Photo 13 Application of cement slurry at Portion A

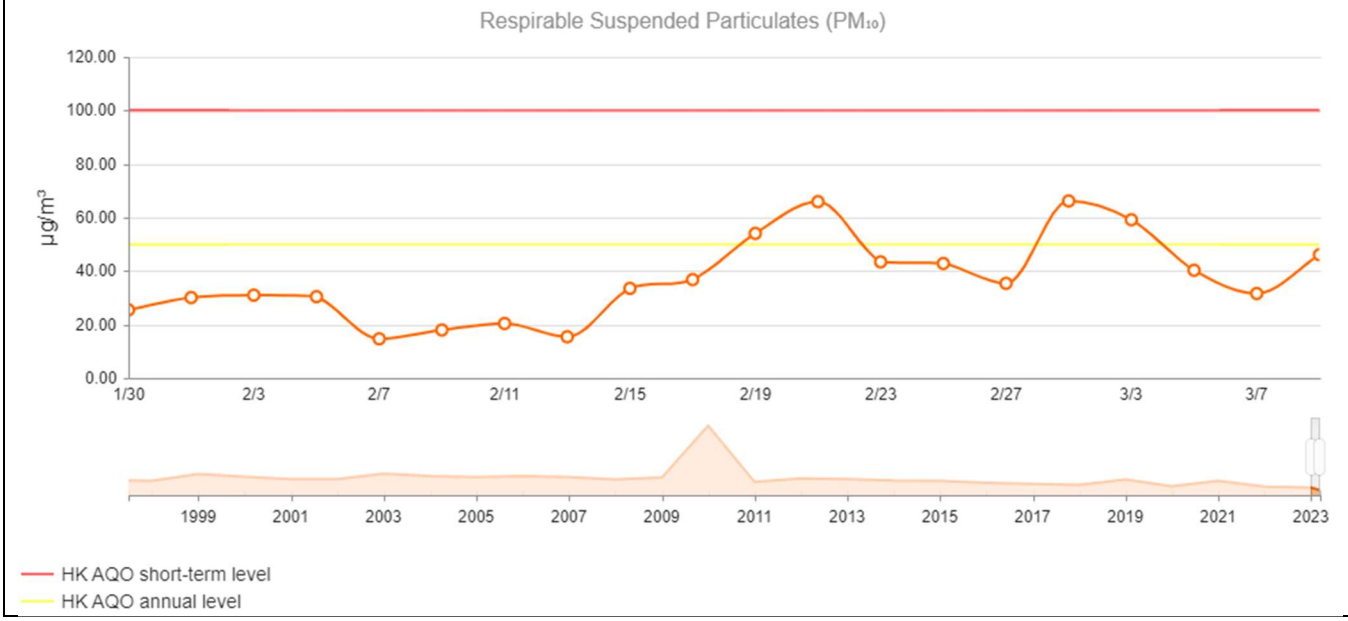
Photo 14 Application of cement slurry at Portion A	Photo 15 Hydroseeding at bare slope at Portion E3-2 (3 March 2023)
	

The planning additional mitigation measures will be implemented by contractor. Details are shown below:

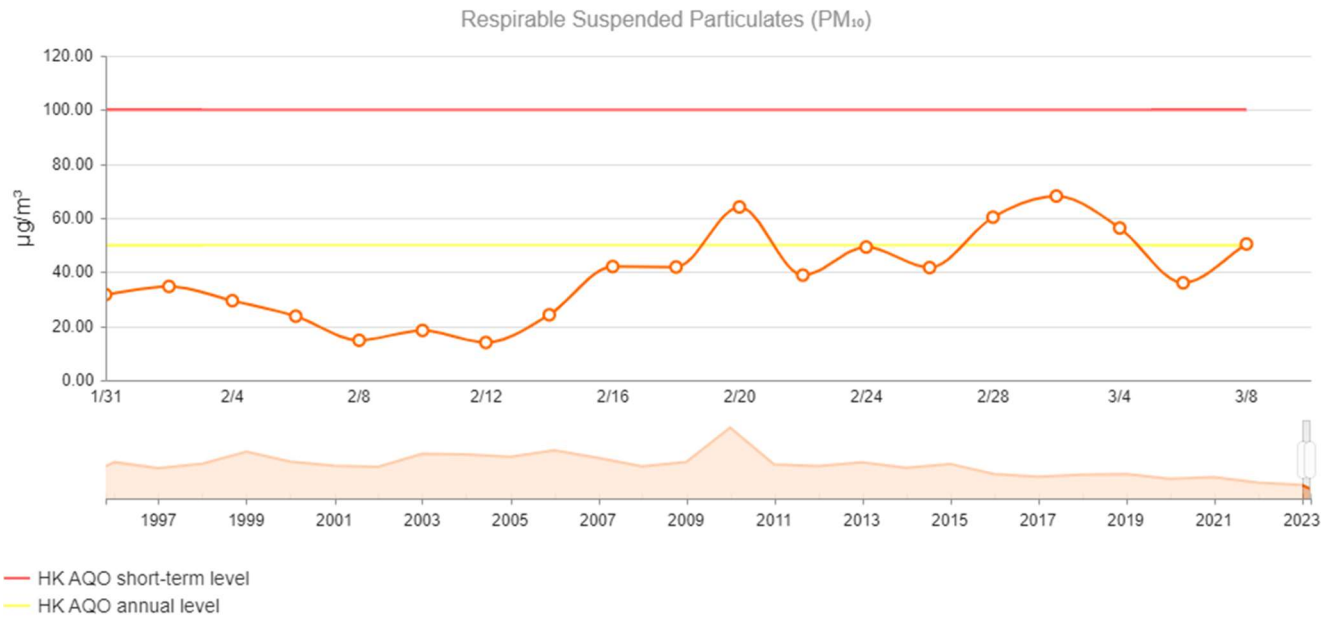
Planning Additional Mitigation Measures	Estimated Implementation Date
Installation of more sprinklers at Portion A	17 March 2023
Application of cement slurry on the slopes of Portion A	24 March 2023
Hard Paving of a 300 m section of haul road near the SBA	30 March 2023

In view of the press releases from the government on 1 March 2023, the health risk category for Air Quality Health Index (AQHIs) may reach the "Serious" level on 1 March 2023 (https://www.info.gov.hk/gia/general/202303/01/P2023030100565.htm?fontSize=1). Respirable Suspended Particulates (RSP)(PM_{10}) is one of monitoring parameter from AQHIs. The RSP concentration at EPD Tai Po & Yuen Long monitoring station are shown in below:

Tai Po Station



Yuen Long Station



Both the TSP and RSP are suspended particles but refer to different diameters. TSP refers to the total amount of suspended particulate matter (PM30) in the air, including both larger and smaller particles, while RSP refers explicitly to the smaller particles (PM10). As such, RSP concentration can be considered a component of TSP concentration since it represents a subset of the total suspended particulate matter in the air. Therefore, the high RSP concentration recorded will affect the monitoring results

Based on no construction works of the Project causing high dust emission with the properly implemented dust mitigation measures as above mention. And the influence of high concentrations of regional background particulates was identified at EPD air quality monitoring stations during the monitoring period. Therefore, the exceedances at AM1 & AM3 were considered to be attributed to external factors and mostly unlikely to be related to the Project.

Reviewed by:		Title:	Deputy ET Leader
	Keith Chau	Date:	17 Mar 2023
Approved by:		Title:	ET Leader
	Fredrick Leong	Date:	17 Mar 2023

Figure 1

Impact Monitoring Location

Legend

- NENTX Project Site
- Air Monitoring Location

AM1
AM2
AM3

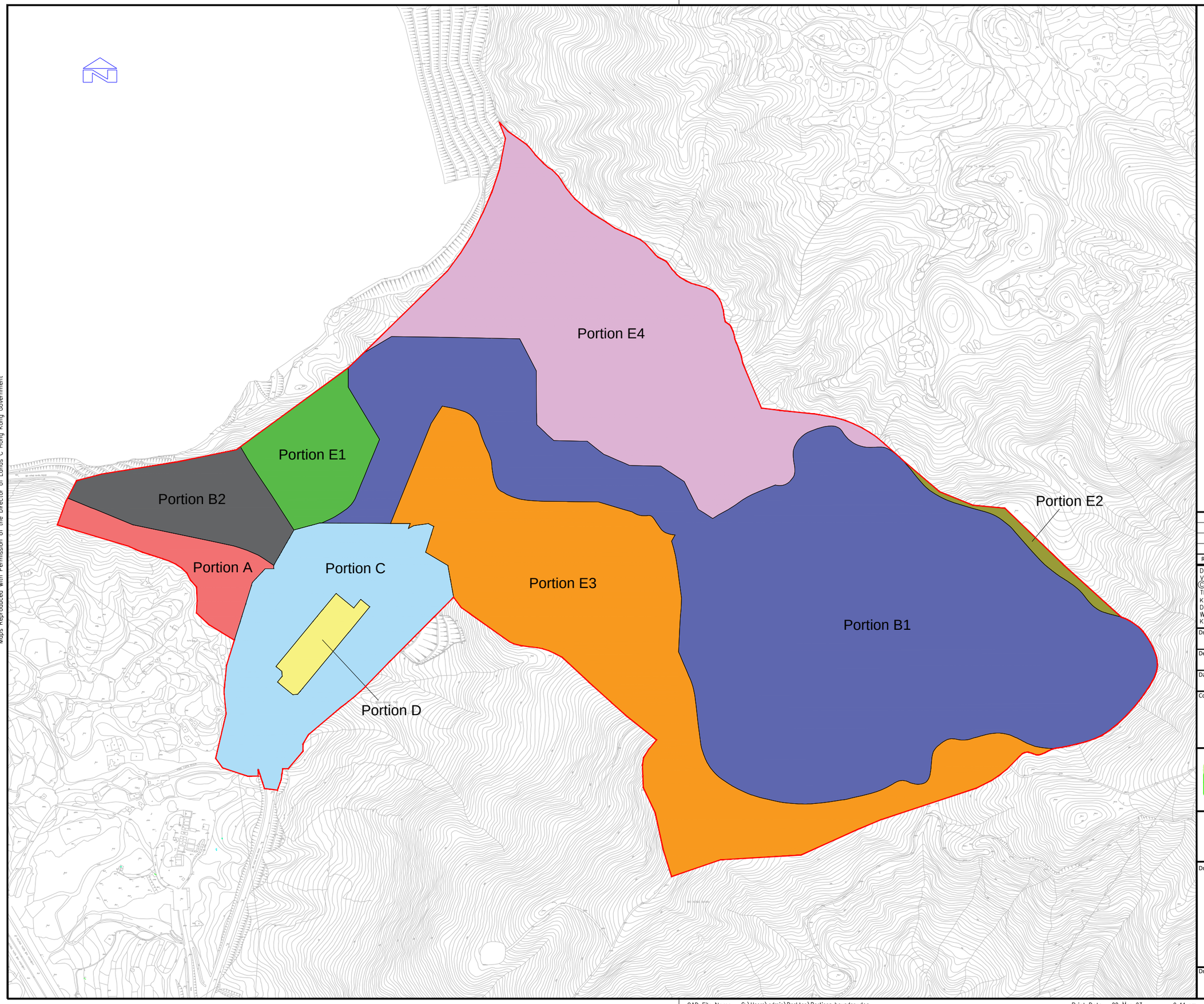
N

0m 200m 400m 600m 800m 1000m

aurecon Aurecon Hong Kong Limited	North East New Territories (NENT) Landfill Extension Impact Monitoring Location	Figure 1

Figure 2

NENTX Portions Layout Plan



LEGEND :

- SITE BOUNDARY
- PORTION BOUNDARY
- PORTION A
- PORTION B1
- PORTION B2
- PORTION C
- PORTION D
- PORTION E1
- PORTION E2
- PORTION E3
- PORTION E4

Rev.	Description	By	Date	Approved
1	FIRST ISSUE	JN	22/3/23	WW

Drawn	Check
JN	WW
Design	Approved
JN	WW
Date	Scale
22/3/2023	N.T.S.

Contract

CONTRACT EP/SP/75/15
DEVELOPMENT AND MANAGEMENT
OF NORTH EAST NEW TERRITORIES
LANDFILL EXTENSION (NENTX)

Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

VEOLIA

Drawing Title

PORTIONS LAYOUT PLAN

Drawing No.	Rev.
NENTX-VES-DW-E-ZZ-000	1

CAD File Name : C:\Users\admin\Desktop\Portions boundary.dwg Print Date : 22-Mar-23 9:44 am Print by : Admin

Appendix A

Path of water spraying by water tanker & Water spraying by water hose & water tanker schedule

Legend

Gate

Water Path of water sprayed by water tanker

C

A

A

B

D

E

F

SBA

Stockpile Soil

昌塘
Ngong Tong

塘肚山村
Tong To Shan Tsuen

石寨下
Shek Tsai Ha

新界東北堆填區
NORTH EAST NEW TERRITORIES LANDFILL

水牛槽
SHUI NGAU TSO

平原河
PING YUEN RIVER

SHEK TSAI HA ROAD

WO KENG SHAN ROAD

NENTX Watering Schedule

Month Mar-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
1/3/2023	900	A			✓		Cheong
1/3/2023	900	D		✓			Fung
1/3/2023	900	E	SBA			✓	Chuen
1/3/2023	1030	A			✓		Cheong
1/3/2023	1030	D		✓			Fung
1/3/2023	1030	E	SBA			✓	Chuen
1/3/2023	1330	A			✓		Cheong
1/3/2023	1330	D		✓			Fung
1/3/2023	1330	E	SBA			✓	Chuen
1/3/2023	1530	A			✓		Cheong
1/3/2023	1530	D		✓			Fung
1/3/2023	1530	E	SBA			✓	Chuen
2/3/2023	900	A			✓		Cheong
2/3/2023	900	D		✓			Fung
2/3/2023	900	E	SBA			✓	Chuen
2/3/2023	1030	A			✓		Cheong
2/3/2023	1030	D		✓			Fung
2/3/2023	1030	E	SBA			✓	Chuen
2/3/2023	1330	A			✓		Cheong
2/3/2023	1330	D		✓			Fung
2/3/2023	1330	E	SBA			✓	Chuen
2/3/2023	1530	A			✓		Cheong
2/3/2023	1530	D		✓			Fung
2/3/2023	1530	E	SBA			✓	Chuen
3/3/2023	900	A			✓		Cheong
3/3/2023	900	D		✓			Fung
3/3/2023	900	E	SBA			✓	Chuen
3/3/2023	1030	A			✓		Cheong
3/3/2023	1030	D		✓			Fung
3/3/2023	1030	E	SBA			✓	Chuen
3/3/2023	1330	A			✓		Cheong
3/3/2023	1330	D		✓			Fung
3/3/2023	1330	E	SBA			✓	Chuen
3/3/2023	1530	A			✓		Cheong
3/3/2023	1530	D		✓			Fung
3/3/2023	1530	E	SBA			✓	Chuen
4/3/2023	900	A			✓		Cheong
4/3/2023	900	D		✓			Fung
4/3/2023	900	E	SBA			✓	Chuen
4/3/2023	1030	A			✓		Cheong
4/3/2023	1030	D		✓			Fung
4/3/2023	1030	E	SBA			✓	Chuen
4/3/2023	1330	A			✓		Cheong
4/3/2023	1330	D		✓			Fung
4/3/2023	1330	E	SBA			✓	Chuen
4/3/2023	1530	A			✓		Cheong
4/3/2023	1530	D		✓			Fung
4/3/2023	1530	E	SBA			✓	Chuen

Reviewed by: _____

PYE EO

Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension
Notification of Environmental Quality Limits Exceedances - IR

Notification No.: 004_20230302
Date: 17 March 2023

Monitoring Data Received date: 10 March 2023

Date of Notification: 11 March 2023 (by email)

Works Inspected: Project Site Area & Monitoring Station AM1 & AM3

Monitoring Location: AM1 –Tung Lo Hang

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	2 Mar 2023 12:00 to 3 Mar 2023 12:00	Monitoring Period:	3 Mar 2023 15:03 to 4 Mar 2023 15:03
24 hours	> 164	> 260	Concentration ($\mu g/m^3$)	490	Concentration ($\mu g/m^3$)	236

Monitoring Location: AM3 –Wo Keng Shan Tsuen

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	2 Mar 2023 11:32 to 3 Mar 2023 11:32	Monitoring Period:	3 Mar 2023 14:36 to 4 Mar 2023 14:36
24 hours	> 163	> 260	Concentration ($\mu g/m^3$)	337	Concentration ($\mu g/m^3$)	237

Possible reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level of 24-hr TSP air quality was recorded during impact monitoring at AM1 & AM3 from 2 to 3 March 2023. Based on the contractor's record, construction activities and mitigation measures conducted by contractor from 2 to 3 March 2023 [Photo 1 to Photo 14] were listed below:

Construction Activities from 2 to 3 March 2023	**Mitigation Measures from 2 to 3 March 2023**
Site formation at Portion A	Water spraying by sprinklers at Portion A
Permanent Building Foundation at Portion D	Water spraying by water hose at Portion D
Hydroseeding at Portion E3	Water spraying by water tanker along the haul road between Portion A and the SBA
Permanent Fencing Installation	Hydroseeding at bare slope at Portion E3-2

The path of water spraying by water tanker, the water spraying by water hose and the water tanker schedule are presented in **Appendix A**.

No high dusty construction works of the project were found by monitoring staff. The dust emission from vehicles was observed on the public road, Wo Keng Shan Road [Photo 15 to 16]. The monitoring location & site area are presented in **Figure 1**. The NENTX portions layout plan is presented in **Figure 2**.

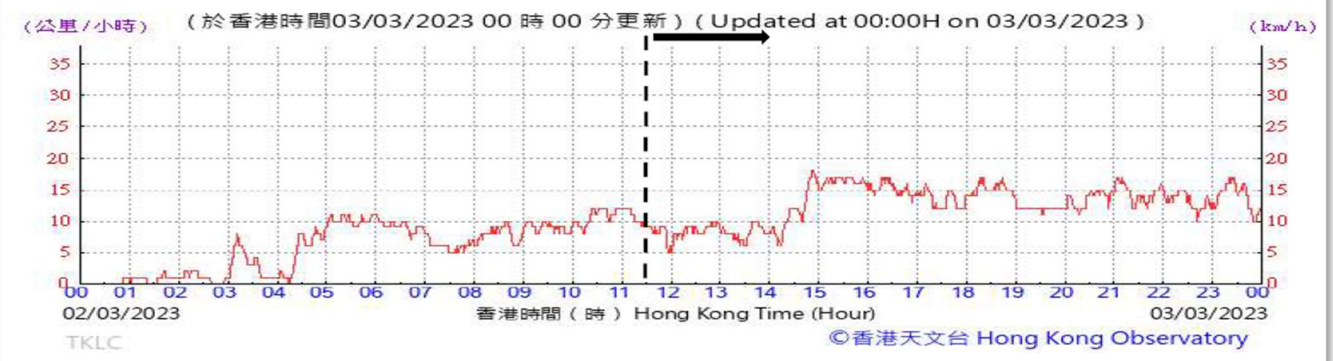
Based on the HKO's record (Hong Kong Observatory Automatic Weather Station – Ta Kwu Ling), the prevailing wind direction was from east-southeast wind during the monitoring period.

AM1
Although AM1 is located at downwind direction at Portion B1(including SBA) & Portion E2 to E4 (around 600 m of Portion A, 800 m of Portion B1, 900 m of Portion D & E4, 1000 km of Portion E3, 1700 m of SBA and Portion E2), the two natural barriers, where are the around 100 m height hill near Lung Mei Teng , and the around 150 m height hill between North East New Territories Landfill and Shek Tsai Ha Road, block part of the wind flow to the monitoring station. In addition, the appropriate dust control mitigation measures were implemented in construction area during the monitoring period. Therefore, the construction activities of the project may not cause the high level of concentration at AM1.

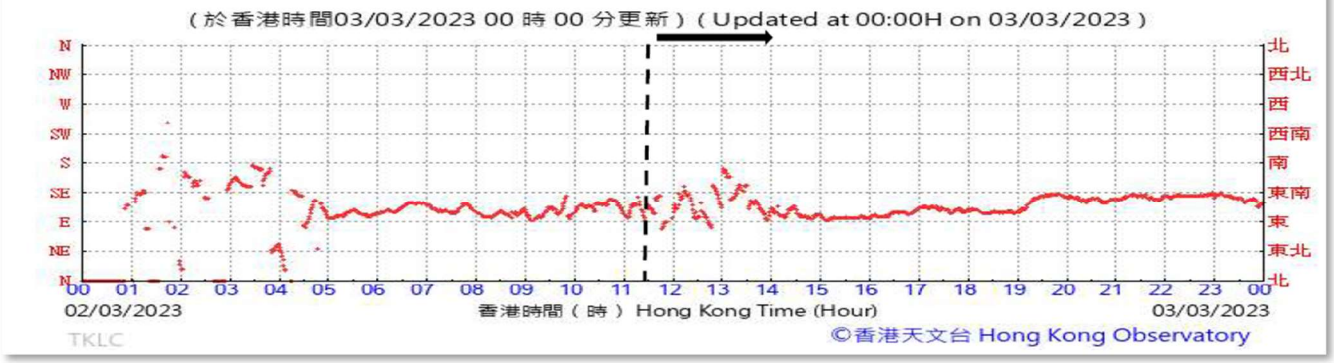
AM3

Although AM3 is located at downwind direction at Portion C, the Portion C was not the construction area from the project from commencement of construction to now. Therefore, the construction activities of the project may not cause the high level of concentration at AM3.

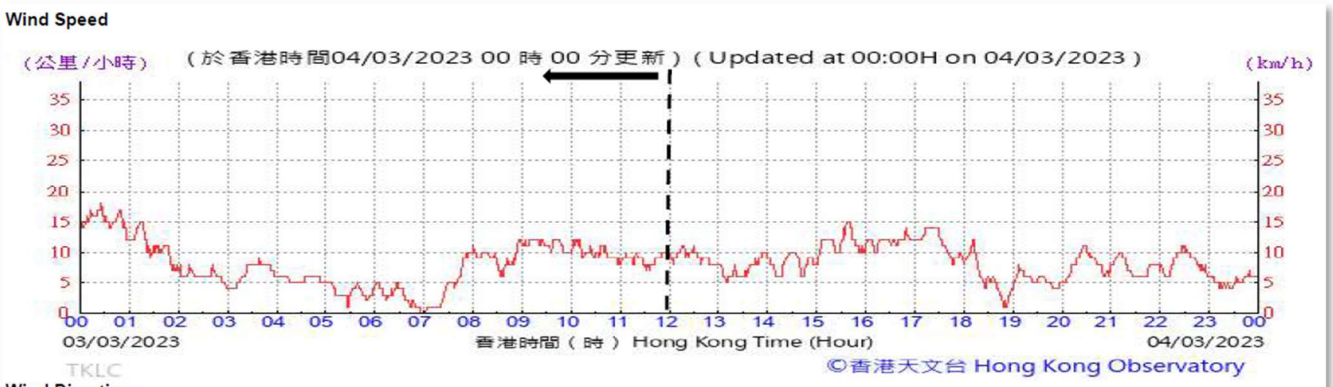
Wind Speed



Wind Direction



Wind Speed



Wind Direction

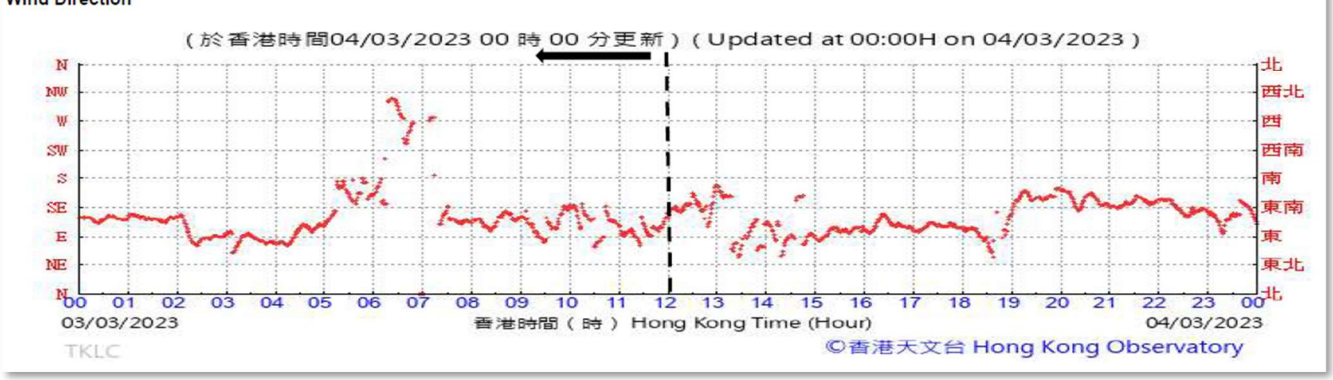


Photo 1 Site formation at Portion A	Photo 2 Permanent Building Foundation at Portion D
	
Photo 3 Hydroseeding at Portion E3	Photo 4 Permanent Fencing Installation
	
Photo 5 Water spraying by sprinklers at Portion A	Photo 6 Water spraying by sprinklers at Portion A
	

Photo 7 Water spraying by water hose at Portion D	Photo 8 Water spraying by water tanker along the haul road between Portion A and the SBA
	
Photo 9 Water spraying by water tanker along the haul road between Portion A and the SBA	Photo 10 Water spraying by water tanker along the haul road between Portion A and the SBA
	
Photo 11 Water spraying by water tanker along the haul road between Portion A and the SBA	Photo 12 Hydroseeding at bare slope at Portion E3-2 (Implemented start on 26 February 2023)
	

Photo 13 Hydroseeding at bare slope at Portion E3-2	Photo 14 Hydroseeding at bare slope at Portion E3-2
	
Photo 13 Dust emission from vehicles at Wo Keng Shan Road	Photo 14 Dust emission from vehicles at Wo Keng Shan Road
	

Follow Up

Based on contractor's record, construction activities were observed within the site area which included site formation at Portion A, permanent building foundation at Portion D, hydroseeding at Portion E3 & permanent fencing installation from 2 to 3 March 2023. Appropriate dust control mitigation measures were implemented at construction area during the monitoring period. No construction works causing high dust emission were found during the monitoring period. Following the Event and Action Plan, a repeat monitoring was undertaken from 3 to 4 March 2023 to confirm findings which showed that the action level exceedance occurred at AM1 & AM3.

Actions taken/ to be taken:

Due to the measurement from 2 to 3 March 2023 exceeded the Limit Level at AM1 & AM3, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Increase monitoring frequency to daily
- ✓ Inform IEC, IC and EPD the causes and actions taken for the exceedances
- ✓ Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented
- ✓ Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and IC informed of the results

Due to the repeat measurement from 3 to 4 March 2023 exceeded the Action Level at AM1 & AM3, the below actions will be taken by ET in accordance with the Event/ Action Plan for dust impact:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Increase monitoring frequency to daily
- ✓ Discuss with IEC/IC for remedial actions required

✓ If exceedance continues, arrange meeting with IEC

✓ If exceedance stops, cease additional monitoring

The monitoring frequency was increased to daily starting from 1 March 2023. The Construction Dust Control Mitigation Measures by the Environmental Mitigation Measure Implementation Schedule (EMIS) will continue to be implemented by the contractor. The additional mitigation measures [Photo 17 to 19] are implemented by contractor. Details are shown below:

Additional Mitigation Measures	Start Date
Application of cement slurry at Portion A	10 March 2023

Photo 17 Application of cement slurry at Portion A

Photo 18 Application of cement slurry at Portion A

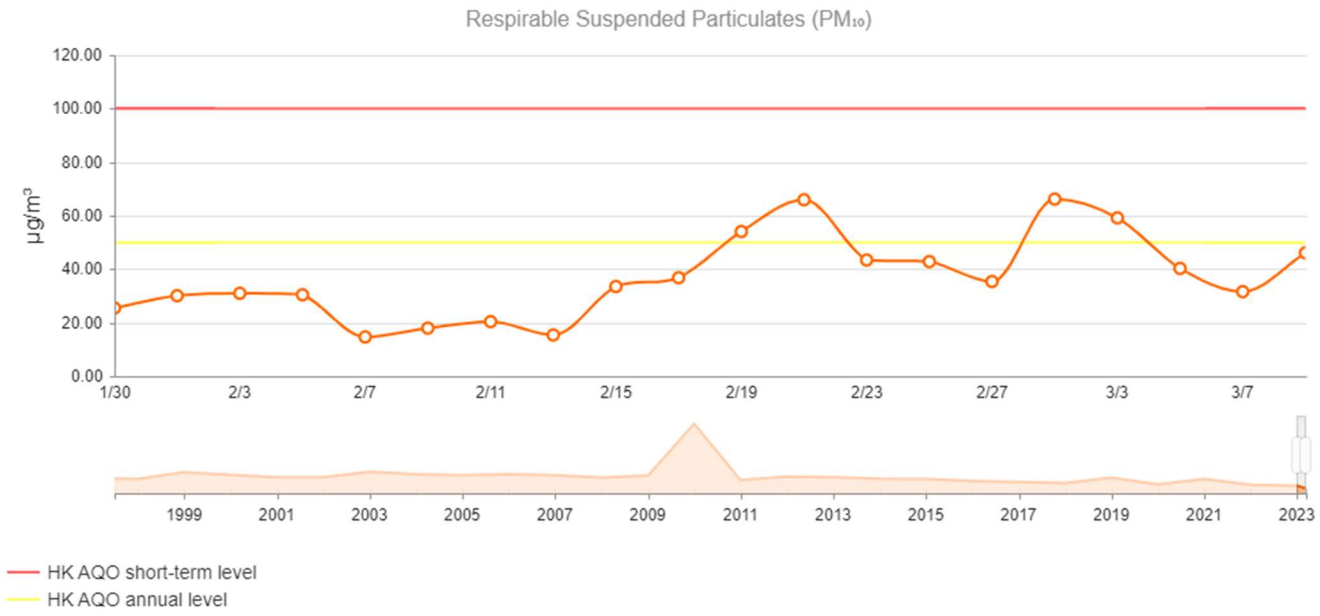
Photo 19 Application of cement slurry at Portion A

The planning additional mitigation measures will be implemented by contractor. Details are shown below:

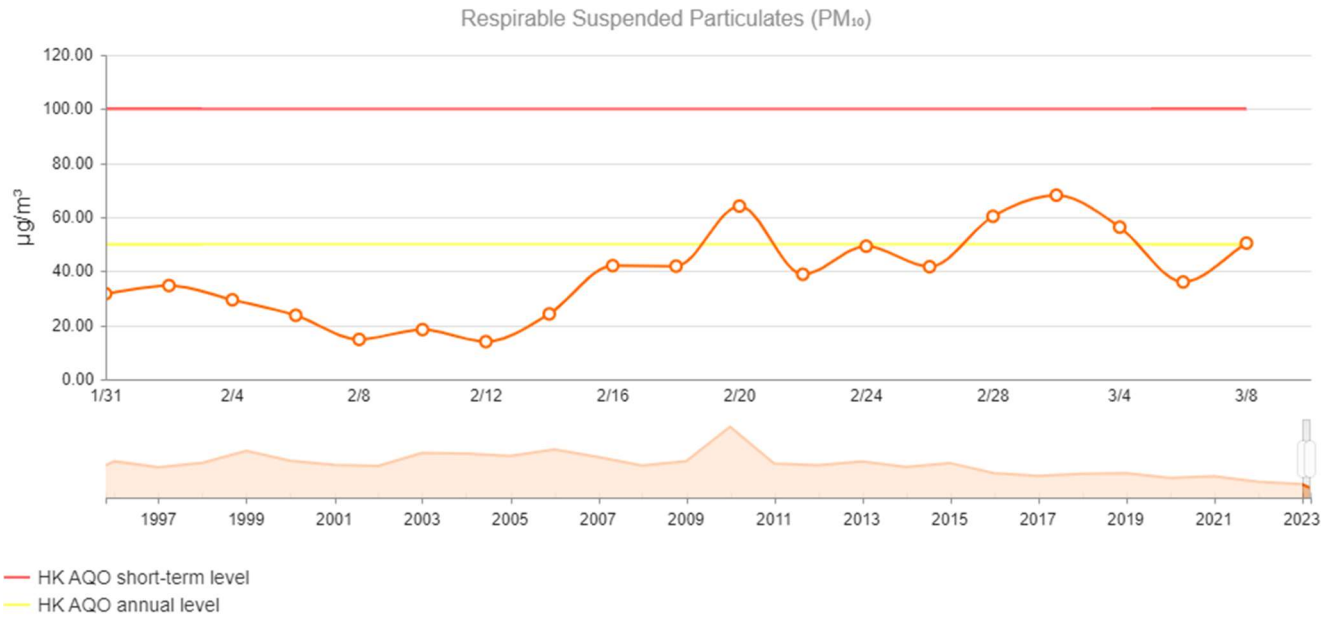
Planning Additional Mitigation Measures	Estimated Implementation Date
Installation of more sprinklers at Portion A	17 March 2023
Application of cement slurry on the slopes of Portion A	24 March 2023
Hard Paving of a 300 m section of haul road near the SBA	30 March 2023

In view of the press releases from the government on 1 March 2023, the health risk category for Air Quality Health Index (AQHIs) may reach the "Serious" level on 1 March 2023 (https://www.info.gov.hk/gia/general/202303/01/P2023030100565.htm?fontSize=1). Respirable Suspended Particulates (RSP)(PM_{10}) is one of monitoring parameter from AQHIs. The RSP concentration at EPD Tai Po & Yuen Long monitoring station are shown in below:

Tai Po Station



Yuen Long Station



Both the TSP and RSP are suspended particles but refer to different diameters. TSP refers to the total amount of suspended particulate matter (PM30) in the air, including both larger and smaller particles, while RSP refers explicitly to the smaller particles (PM10). As such, RSP concentration can be considered a component of TSP concentration since it represents a subset of the total suspended particulate matter in the air. Therefore, the high RSP concentration recorded will affect the monitoring results.

Based on no construction works of the Project causing high dust emission with the properly implemented dust mitigation measures as above mention. And the influence of high concentrations of regional background particulates was identified at EPD air quality monitoring stations during the monitoring period. Therefore, the exceedances at AM1 & AM3 were considered to be attributed to external factors and mostly unlikely to be related to the Project.

Reviewed by:		Title:	Deputy ET Leader
	Keith Chau	Date:	17 Mar 2023
Approved by:		Title:	ET Leader
	Fredrick Leong	Date:	17 Mar 2023

Figure 1

Impact Monitoring Location

Legend

- NENTX Project Site
- Air Monitoring Location

AM1
AM2
AM3

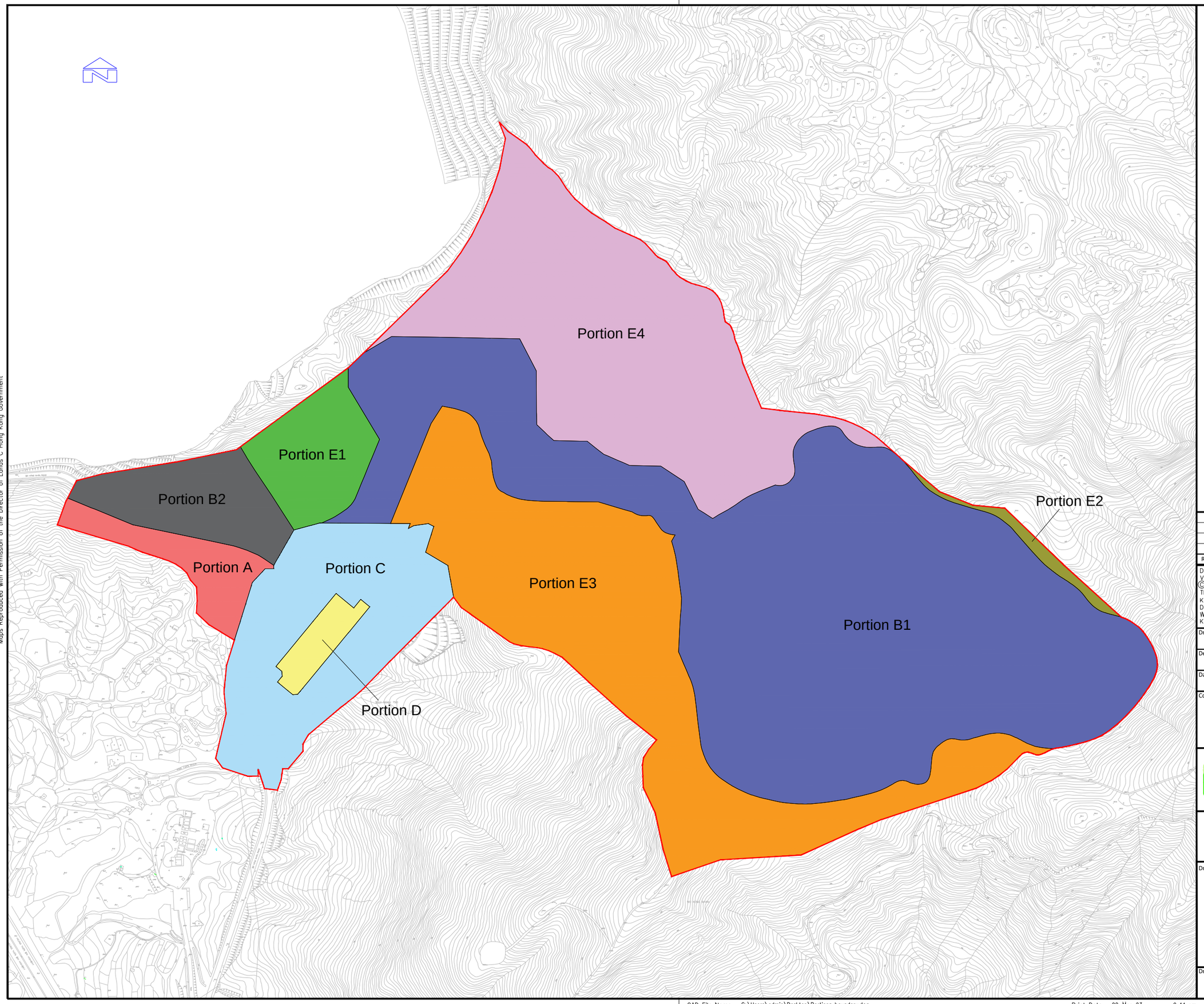
N

0m 200m 400m 600m 800m 1000m

aurecon Aurecon Hong Kong Limited	North East New Territories (NENT) Landfill Extension Impact Monitoring Location	Figure 1

Figure 2

NENTX Portions Layout Plan



LEGEND :

- SITE BOUNDARY
- PORTION BOUNDARY
- PORTION A
- PORTION B1
- PORTION B2
- PORTION C
- PORTION D
- PORTION E1
- PORTION E2
- PORTION E3
- PORTION E4

Rev.	Description	By	Date	Approved
1	FIRST ISSUE	JN	22/3/23	WW

Drawn	Check
JN	WW
Design	Approved
JN	WW
Date	Scale
22/3/2023	N.T.S.

Contract

CONTRACT EP/SP/75/15
DEVELOPMENT AND MANAGEMENT
OF NORTH EAST NEW TERRITORIES
LANDFILL EXTENSION (NENTX)

Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

VEOLIA

Drawing Title

PORTIONS LAYOUT PLAN

Drawing No.	Rev.
NENTX-VES-DW-E-ZZ-000	1

CAD File Name : C:\Users\admin\Desktop\Portions boundary.dwg Print Date : 22-Mar-23 9:44 am Print by : Admin

Appendix A

Path of water spraying by water tanker & Water spraying by water hose & water tanker schedule

Legend

Gate

Water Path of water sprayed by water tanker

C

A

A

B

D

E

F

SBA

Stockpile Soil

昌塘
Ngong Tong

塘肚山村
Tong To Shan Tsuen

石寨下
Shek Tsai Ha

新界東北堆填區
NORTH EAST NEW TERRITORIES LANDFILL

水牛槽
SHUI NGAU TSO

平原河
PING YUEN RIVER

SHEK TSAI HA ROAD

WO KENG SHAN ROAD

NENTX Watering Schedule

Month Mar-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
1/3/2023	900	A			✓		Cheong
1/3/2023	900	D		✓			Fung
1/3/2023	900	E	SBA			✓	Chuen
1/3/2023	1030	A			✓		Cheong
1/3/2023	1030	D		✓			Fung
1/3/2023	1030	E	SBA			✓	Chuen
1/3/2023	1330	A			✓		Cheong
1/3/2023	1330	D		✓			Fung
1/3/2023	1330	E	SBA			✓	Chuen
1/3/2023	1530	A			✓		Cheong
1/3/2023	1530	D		✓			Fung
1/3/2023	1530	E	SBA			✓	Chuen
2/3/2023	900	A			✓		Cheong
2/3/2023	900	D		✓			Fung
2/3/2023	900	E	SBA			✓	Chuen
2/3/2023	1030	A			✓		Cheong
2/3/2023	1030	D		✓			Fung
2/3/2023	1030	E	SBA			✓	Chuen
2/3/2023	1330	A			✓		Cheong
2/3/2023	1330	D		✓			Fung
2/3/2023	1330	E	SBA			✓	Chuen
2/3/2023	1530	A			✓		Cheong
2/3/2023	1530	D		✓			Fung
2/3/2023	1530	E	SBA			✓	Chuen
3/3/2023	900	A			✓		Cheong
3/3/2023	900	D		✓			Fung
3/3/2023	900	E	SBA			✓	Chuen
3/3/2023	1030	A			✓		Cheong
3/3/2023	1030	D		✓			Fung
3/3/2023	1030	E	SBA			✓	Chuen
3/3/2023	1330	A			✓		Cheong
3/3/2023	1330	D		✓			Fung
3/3/2023	1330	E	SBA			✓	Chuen
3/3/2023	1530	A			✓		Cheong
3/3/2023	1530	D		✓			Fung
3/3/2023	1530	E	SBA			✓	Chuen
4/3/2023	900	A			✓		Cheong
4/3/2023	900	D		✓			Fung
4/3/2023	900	E	SBA			✓	Chuen
4/3/2023	1030	A			✓		Cheong
4/3/2023	1030	D		✓			Fung
4/3/2023	1030	E	SBA			✓	Chuen
4/3/2023	1330	A			✓		Cheong
4/3/2023	1330	D		✓			Fung
4/3/2023	1330	E	SBA			✓	Chuen
4/3/2023	1530	A			✓		Cheong
4/3/2023	1530	D		✓			Fung
4/3/2023	1530	E	SBA			✓	Chuen

Reviewed by: _____

PYE EO

Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension
Notification of Environmental Quality Limits Exceedances - IR

Notification No.: 005_20230303
Date: 17 March 2023

Monitoring Data Received date: 10 March 2023

Date of Notification: 11 March 2023 (by email)

Works Inspected: Project Site Area & Monitoring Station AM1 & AM3

Monitoring Location: AM1 –Tung Lo Hang

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	3 Mar 2023 15:03 to 4 Mar 2023 15:03	Monitoring Period:	4 Mar 2023 15:03 to 5 Mar 2023 16:16
24 hours	> 164	> 260	Concentration ($\mu g/m^3$)	236	Concentration ($\mu g/m^3$)	308

Monitoring Location: AM3 –Wo Keng Shan Tsuen

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	3 Mar 2023 14:36 to 4 Mar 2023 14:36	Monitoring Period:	4 Mar 2023 14:36 to 5 Mar 2023 16:16
24 hours	> 163	> 260	Concentration ($\mu g/m^3$)	237	Concentration ($\mu g/m^3$)	189

Possible reason for Action or Limit Level Non-compliance:

An exceedance in Action Level of 24-hr TSP air quality was recorded during impact monitoring at AM1 & AM3 from 3 to 4 March 2023. Based on the contractor's record, construction activities and mitigation measures conducted by contractor from 3 to 4 March 2023 [Photo 1 to Photo 16] were listed below:

Construction Activities from 3 to 4 March 2023	Mitigation Measures from 3 to 4 March 2023
Permanent Fencing Installation	Water spraying by sprinklers & hose at Portion A
Site formation at Portion A	Water spraying by water hose at Portion D
Permanent Building Foundation at Portion D	Hydroseeding at bare slope at Portion E3-2
	Water spraying by water tanker along the haul road between Portion A and the SBA

The path of water spraying by water tanker, the water spraying by water hose and the water tanker schedule are presented in **Appendix A**.

No high dusty construction works of the project were found by monitoring staff. The dust emission from vehicles was observed on the public road, Wo Keng Shan Road. The monitoring location & site area are presented in **Figure 1**. The NENTX portions layout plan is presented in **Figure 2**.

Based on the HKO's record (Hong Kong Observatory Automatic Weather Station – Ta Kwu Ling), the prevailing wind direction was from east-southeast to southeast wind during the monitoring period.

AM1
Although AM1 is located at downwind direction at Portion B1(including SBA) & Portion E2 to E4 (around 600 m of Portion A, 800 m of Portion B1, 900 m of Portion D & E4, 1000 km of Portion E3, 1700 m of SBA and Portion E2), the two natural barriers, where are the around 100 m height hill near Lung Mei Teng , and the around 150 m height hill between North East New Territories Landfill and Shek Tsai Ha Road, block part of the wind flow to the monitoring station. In addition, the appropriate dust control mitigation measures were implemented in construction area during the monitoring period. Therefore, the construction activities of the project may not cause the high level of concentration at AM1.

AM3

Although AM3 is located at downwind direction at Portion C, the Portion C was not the construction area from the project from commencement of construction to now. Therefore, the construction activities of the project may not cause the high level of concentration at AM3.

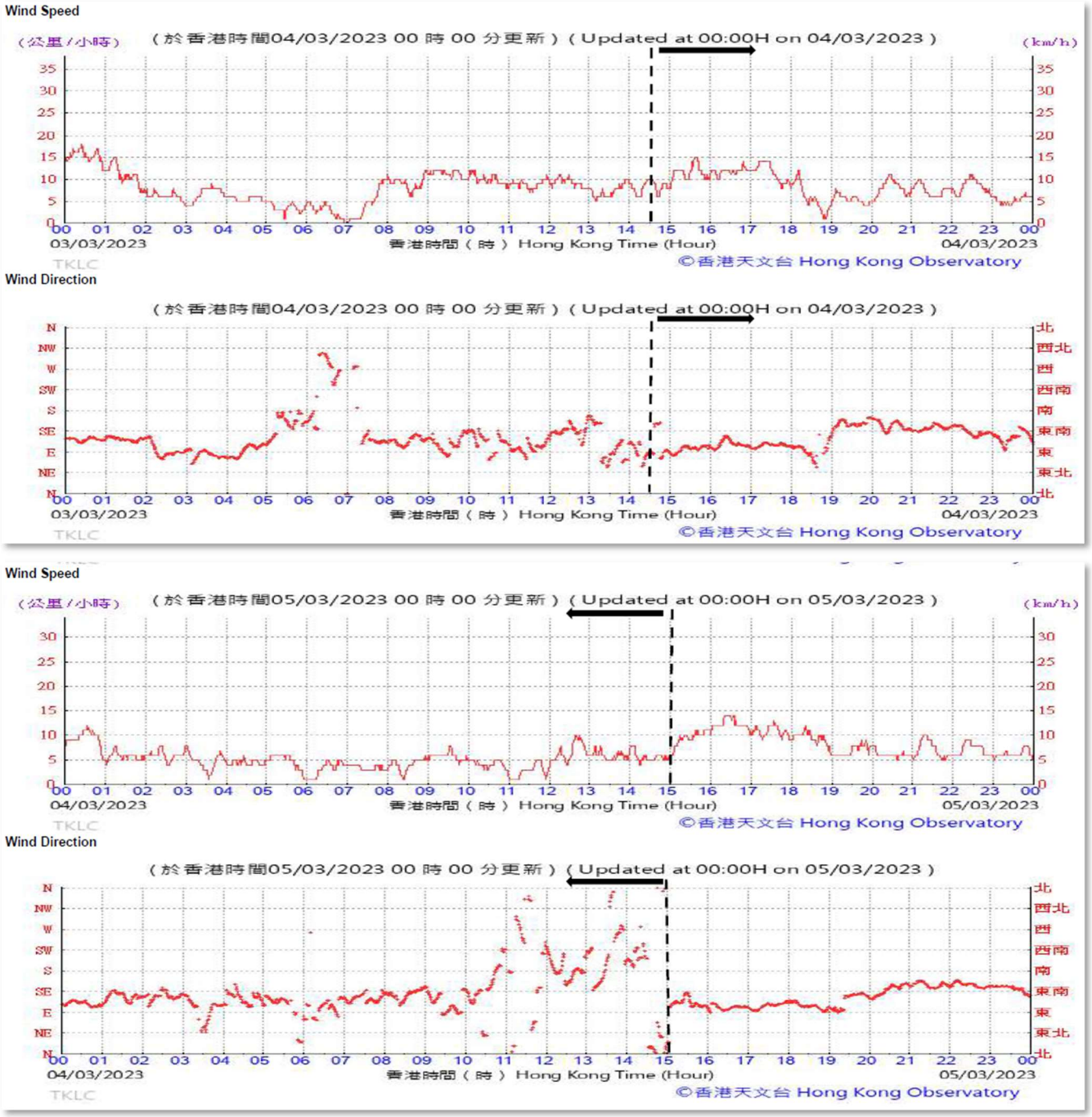


Photo 1 Permanent Fencing Installation	Photo 2 Site formation at Portion A
	

Photo 3 Permanent Building Foundation at Portion D	Photo 4 Water spraying by water sprinklers at Portion A
	
Photo 5 Water spraying by water sprinklers at Portion A	**Photo 6 Water spraying by water sprinklers at Portion A**
	
Photo 7 Water spraying by water sprinklers at Portion A	**Photo 8 Water spraying by water hose at Portion A**
	

Photo 9 Water spraying by water hose at Portion D	Photo 10 Water spraying by water hose at Portion D

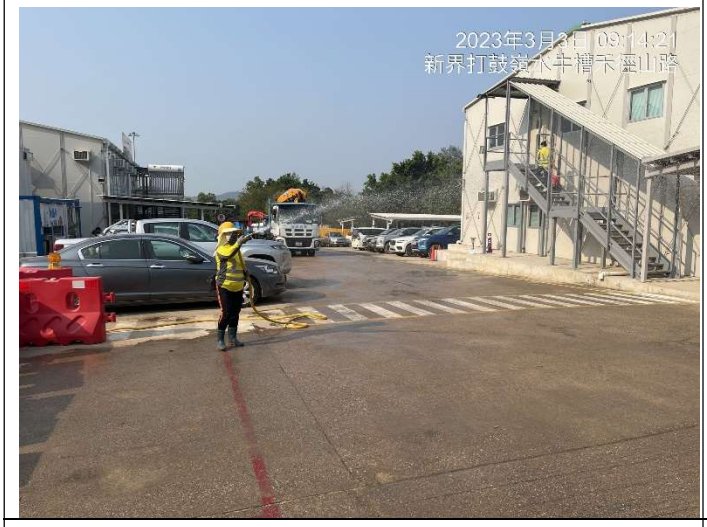



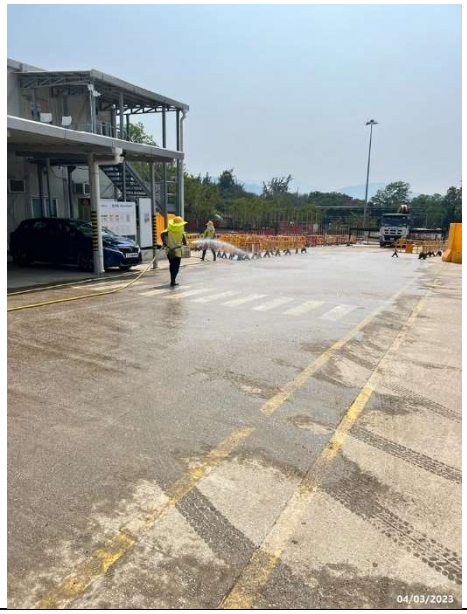
Photo 11 Water spraying by water hose at Portion D	Photo 12 Water spraying by water hose at Portion D
	
Photo 13 Water spraying by water hose at Portion D	Photo 14 Water spraying by water hose at Portion D
	

Photo 15 Hydroseeding at bare slope at Portion E3-2	Photo 16 Water spraying by water tanker along the haul road between Portion A and the SBA
	

Follow Up

Based on the contractor's record, construction activities were observed within the site area which included permanent fencing installation, site formation at Portion A & permanent building foundation at Portion D from 3 to 4 March 2023. Appropriate dust control mitigation measures were implemented at construction area during the monitoring period. No construction works causing high dust emission were found during the monitoring period. Following the Event and Action Plan, a repeat monitoring was undertaken from 4 to 5 March 2023 to confirm findings which showed that the limit level exceedance occurred at AM1 & the action level exceedance occurred at AM3.

Actions taken/ to be taken:

Due to the measurement from 3 to 4 March 2023 exceeded the Action Level at AM1 & AM3, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Increase monitoring frequency to daily
- ✓ If exceedance continues, arrange meeting with IEC

The monitoring frequency was increased to daily starting from 1 March 2023. The Construction Dust Control Mitigation Measures by the Environmental Mitigation Measure Implementation Schedule (EMIS) will continue to be implemented by the contractor. The additional mitigation measures [Photo 17 to 19] are implemented by contractor. Details are shown below:

Additional Mitigation Measures	Start Date
Application of cement slurry at Portion A	10 March 2023

Photo 17 Application of cement slurry at Portion A	Photo 18 Application of cement slurry at Portion A
	

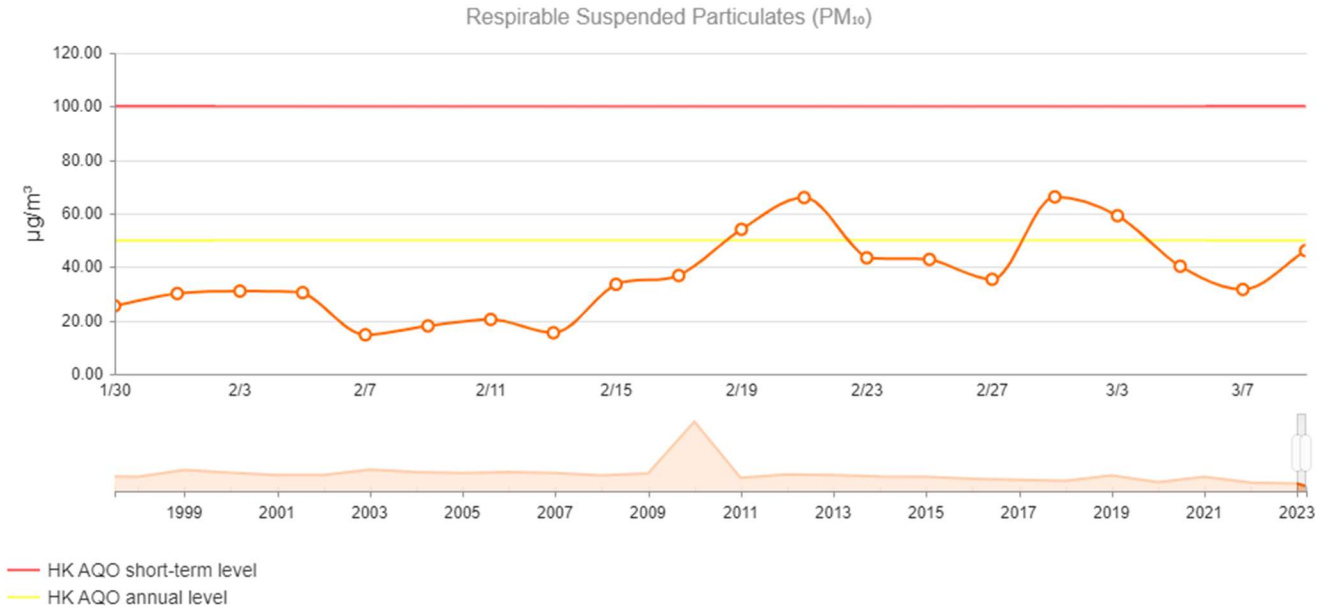
Photo 19 Application of cement slurry at Portion A	
	

The planning additional mitigation measures will be implemented by contractor. Details are shown below:

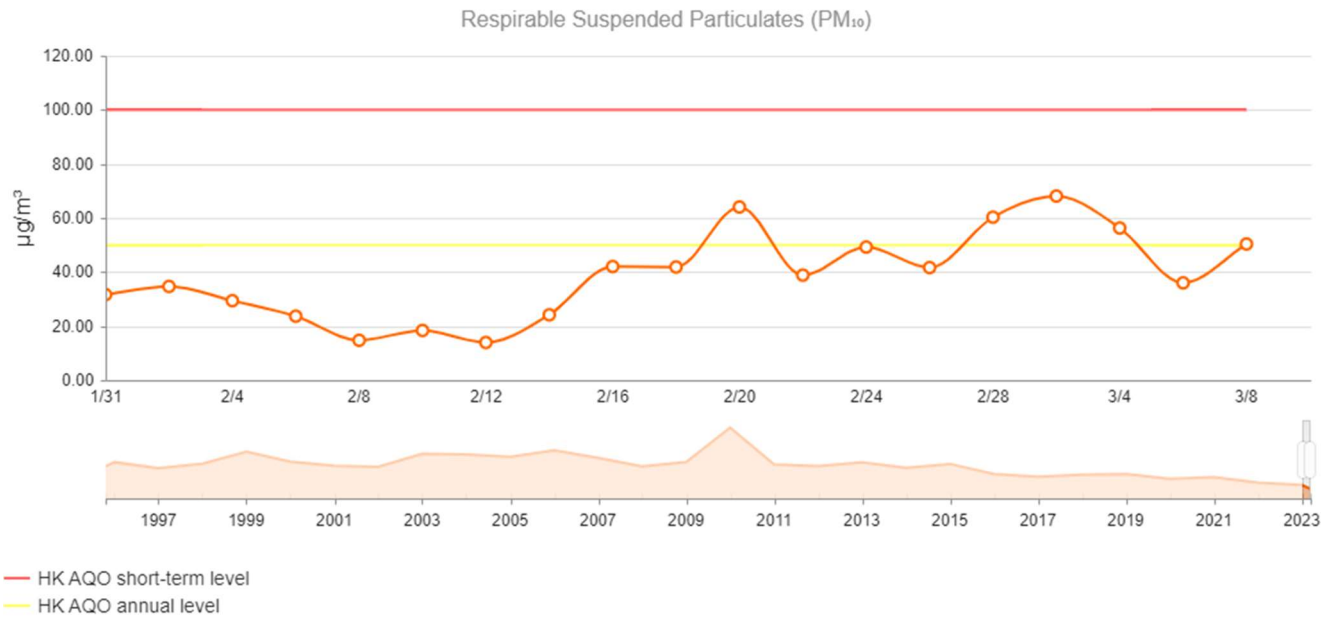
Planning Additional Mitigation Measures	Estimated Implementation Date
Installation of more sprinklers at Portion A	17 March 2023
Application of cement slurry on the slopes of Portion A	24 March 2023
Hard Paving of a 300 m section of haul road near the SBA	30 March 2023

In view of the press releases from the government on 1 March 2023, the health risk category for Air Quality Health Index (AQHIs) may reach the "Serious" level on 1 March 2023 (https://www.info.gov.hk/gia/general/202303/01/P2023030100565.htm?fontSize=1). Respirable Suspended Particulates (RSP)(PM_{10}) is one of monitoring parameter from AQHIs. The RSP concentration at EPD Tai Po & Yuen Long monitoring station are shown in below:

Tai Po Station



Yuen Long Station



Both the TSP and RSP are suspended particles but refer to different diameters. TSP refers to the total amount of suspended particulate matter (PM30) in the air, including both larger and smaller particles, while RSP refers explicitly to the smaller particles (PM10). As such, RSP concentration can be considered a component of TSP concentration since it represents a subset of the total suspended particulate matter in the air. Therefore, the high RSP concentration recorded will affect the monitoring results

Based on no construction works of the Project causing high dust emission with the properly implemented dust mitigation measures as above mention. And the influence of high concentrations of regional background particulates was identified at EPD air quality monitoring stations during the monitoring period. Therefore, the exceedances at AM1 & AM3 were considered to be attributed to external factors and mostly unlikely to be related to the Project.

In conclusion, the 24hr-TSP Monitoring results at AM1 and AM3 exceeded the Action and Limit Levels continuously during the additional monitoring from 1 to 5 March 2023. The monitoring results at AM1 and AM3 remained at high concentration levels despite the contractor's continuous implementation enhance dust control measures. After the investigation, the monitoring results at AM1 & AM3 of the 24-hr TSP monitoring on 24 Mar 2023 and 24-hr TSP additional monitoring from 1 to 5 March 2023 are likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related. Hence, the additional monitoring at AM1 & AM3 ceased on 5 March 2023.

Reviewed by: _____ Title: Deputy ET Leader

Keith Chau Date: 17 Mar 2023

Approved by: _____ Title: ET Leader

Fredrick Leong Date: 17 Mar 2023

Figure 1

Impact Monitoring Location

Legend

- NENTX Project Site
- Air Monitoring Location

AM1
AM2
AM3

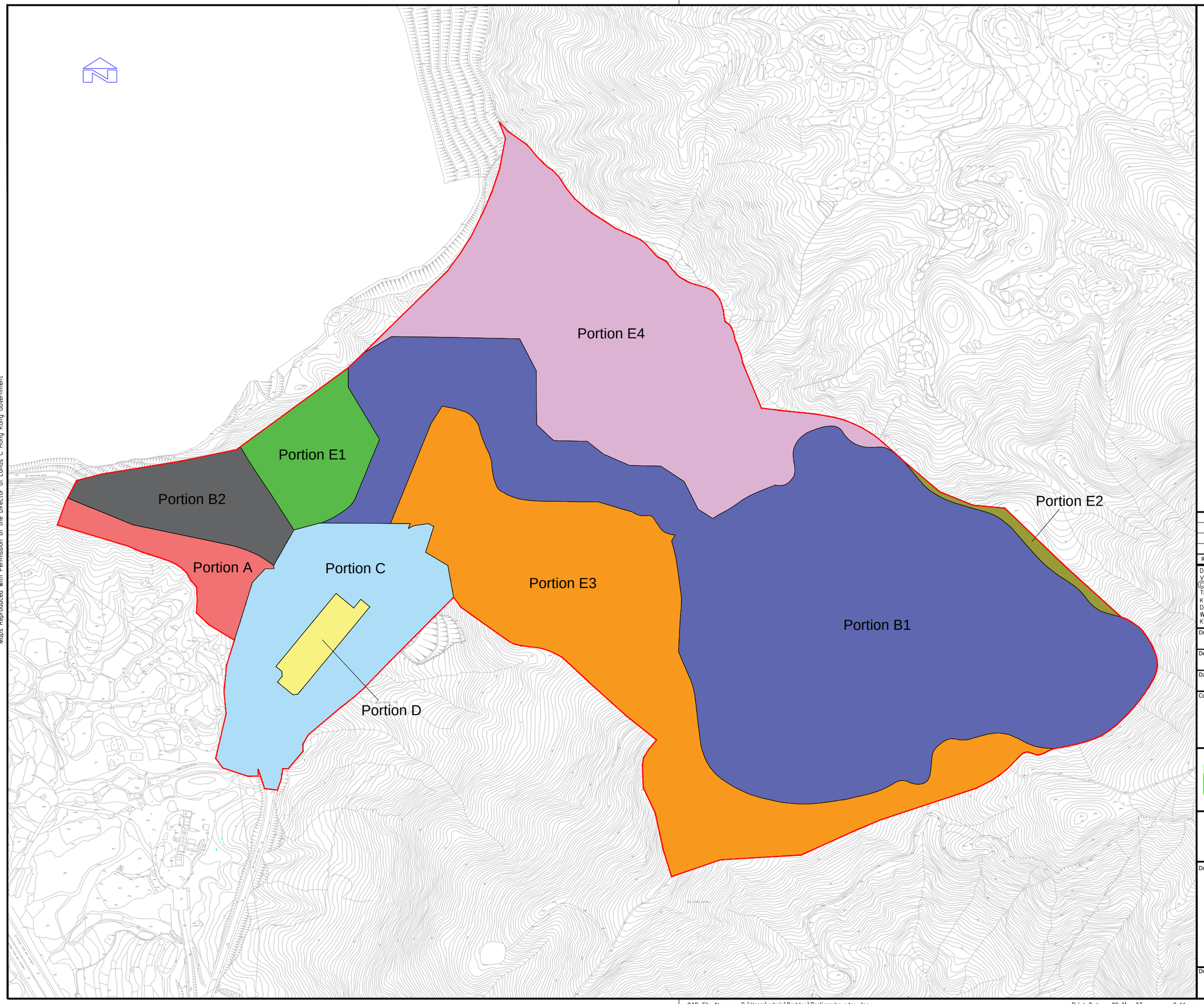
N

0m 200m 400m 600m 800m 1000m

aurecon Aurecon Hong Kong Limited	North East New Territories (NENT) Landfill Extension Impact Monitoring Location	Figure 1

Figure 2

NENTX Portions Layout Plan



LEGEND :

- SITE BOUNDARY
- PORTION BOUNDARY
- PORTION A
- PORTION B1
- PORTION B2
- PORTION C
- PORTION D
- PORTION E1
- PORTION E2
- PORTION E3
- PORTION E4

Rev.	Description	By	Date	Approved
1	FIRST ISSUE	JN	22/3/23	WW

Drawn	Check
JN	WW
Design	Approved
JN	WW
Date	Scale
22/3/2023	N.T.S.

Contract

CONTRACT EP/SP/75/15
DEVELOPMENT AND MANAGEMENT
OF NORTH EAST NEW TERRITORIES
LANDFILL EXTENSION (NENTX)

Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

VEOLIA

Drawing Title

PORTIONS LAYOUT PLAN

Drawing No.	Rev.
NENTX-VES-DW-E-ZZ-000	1

CAD File Name : C:\Users\admin\Desktop\Portions boundary.dwg Print Date : 22-Mar-23 9:44 am Print by : Admin

Appendix A

Path of water spraying by water tanker & Water spraying by water hose & water tanker schedule

Legend

Gate

Water Path of water sprayed by water tanker

C

A

A

B

D

E

F

SBA

Stockpile Soil

昌塘
Ngong Tong

塘肚山村
Tong To Shan Tsuen

石寨下
Shek Tsai Ha

新界東北堆填區
NORTH EAST NEW TERRITORIES LANDFILL

水牛槽
SHUI NGAU TSO

平原河
PING YUEN RIVER

SHEK TSAI HA ROAD

WO KENG SHAN ROAD

NENTX Watering Schedule

Month Mar-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
1/3/2023	900	A			✓		Cheong
1/3/2023	900	D		✓			Fung
1/3/2023	900	E	SBA			✓	Chuen
1/3/2023	1030	A			✓		Cheong
1/3/2023	1030	D		✓			Fung
1/3/2023	1030	E	SBA			✓	Chuen
1/3/2023	1330	A			✓		Cheong
1/3/2023	1330	D		✓			Fung
1/3/2023	1330	E	SBA			✓	Chuen
1/3/2023	1530	A			✓		Cheong
1/3/2023	1530	D		✓			Fung
1/3/2023	1530	E	SBA			✓	Chuen
2/3/2023	900	A			✓		Cheong
2/3/2023	900	D		✓			Fung
2/3/2023	900	E	SBA			✓	Chuen
2/3/2023	1030	A			✓		Cheong
2/3/2023	1030	D		✓			Fung
2/3/2023	1030	E	SBA			✓	Chuen
2/3/2023	1330	A			✓		Cheong
2/3/2023	1330	D		✓			Fung
2/3/2023	1330	E	SBA			✓	Chuen
2/3/2023	1530	A			✓		Cheong
2/3/2023	1530	D		✓			Fung
2/3/2023	1530	E	SBA			✓	Chuen
3/3/2023	900	A			✓		Cheong
3/3/2023	900	D		✓			Fung
3/3/2023	900	E	SBA			✓	Chuen
3/3/2023	1030	A			✓		Cheong
3/3/2023	1030	D		✓			Fung
3/3/2023	1030	E	SBA			✓	Chuen
3/3/2023	1330	A			✓		Cheong
3/3/2023	1330	D		✓			Fung
3/3/2023	1330	E	SBA			✓	Chuen
3/3/2023	1530	A			✓		Cheong
3/3/2023	1530	D		✓			Fung
3/3/2023	1530	E	SBA			✓	Chuen
4/3/2023	900	A			✓		Cheong
4/3/2023	900	D		✓			Fung
4/3/2023	900	E	SBA			✓	Chuen
4/3/2023	1030	A			✓		Cheong
4/3/2023	1030	D		✓			Fung
4/3/2023	1030	E	SBA			✓	Chuen
4/3/2023	1330	A			✓		Cheong
4/3/2023	1330	D		✓			Fung
4/3/2023	1330	E	SBA			✓	Chuen
4/3/2023	1530	A			✓		Cheong
4/3/2023	1530	D		✓			Fung
4/3/2023	1530	E	SBA			✓	Chuen

Reviewed by: _____

PYE EO

—Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension
Notification of Environmental Quality Limits Exceedances - IR

Notification No.: 006_20230304
Date: 17 March 2023

Monitoring Data Received date: 10 March 2023

Date of Notification: 10 March 2023 (by email)

Works Inspected: Project Site Area & Monitoring Station AM1 & AM3

Monitoring Location: AM1 –Tung Lo Hang

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	4 Mar 2023 15:03 to 5 Mar 2023 16:16
24 hours	> 164	> 260	Concentration (μg/m^3)	308

Monitoring Location: AM3 –Wo Keng Shan Tsuen

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	4 Mar 2023 14:36 to 5 Mar 2023 16:16
24 hours	> 163	> 260	Concentration (μg/m^3)	189

Possible reason for Action or Limit Level Non-compliance:

An exceedance in Action Level of 24-hr TSP air quality was recorded during impact monitoring at AM1 & AM3 from 4 to 5 March 2023. Based on the contractor's record, construction activities and mitigation measures conducted by contractor on 4 March 2023 [Photo 1 to Photo 10] were listed below:

Construction Activities on 4 March 2023	**Mitigation Measures on 4 March 2023**
Site formation at Portion A	Water spraying by water hose and sprinklers at Portion A
Permanent Building Foundation at Portion D	Water spraying by water hose at Portion D
	Water spraying by water tanker along the haul road between Portion A and the SBA
	Hydroseeding at bare slope at Portion E3-2

No construction activities of the project conducted on 5 March 2023 (Sunday). The path of water spraying by water tanker, the water spraying by water hose and the water tanker schedule are presented in **Appendix A**.

No high dusty construction works of the project were found by monitoring staff. The dust emission from vehicles was observed on the public road, Wo Keng Shan Road. The monitoring location & site area are presented in **Figure 1**. The NENTX portions layout plan is presented in **Figure 2**.

Based on the HKO's record (Hong Kong Observatory Automatic Weather Station – Ta Kwu Ling), the prevailing wind direction was from east to southeast wind during the monitoring period.

AM1
Although AM1 is located at downwind direction at Portion B1(including SBA) & Portion E2 to E4 (around 600 m of Portion A, 800 m of Portion B1, 900 m of Portion D & E4, 1000 km of Portion E3, 1700 m of SBA and Portion E2), the two natural barriers, where are the around 100 m height hill near Lung Mei Teng , and the around 150 m height hill between North East New Territories Landfill and Shek Tsai Ha Road, block part of the wind flow to the monitoring station. In addition, the appropriate dust control mitigation measures were implemented in construction area during the monitoring period. Therefore, the construction activities of the project may not cause the high level of concentration at AM1.

AM3
Although AM3 is located at downwind direction at Portion C, the Portion C was not the construction area from the project from commencement of construction to now. Therefore, the construction activities of the project may not cause the high level of concentration at AM3.

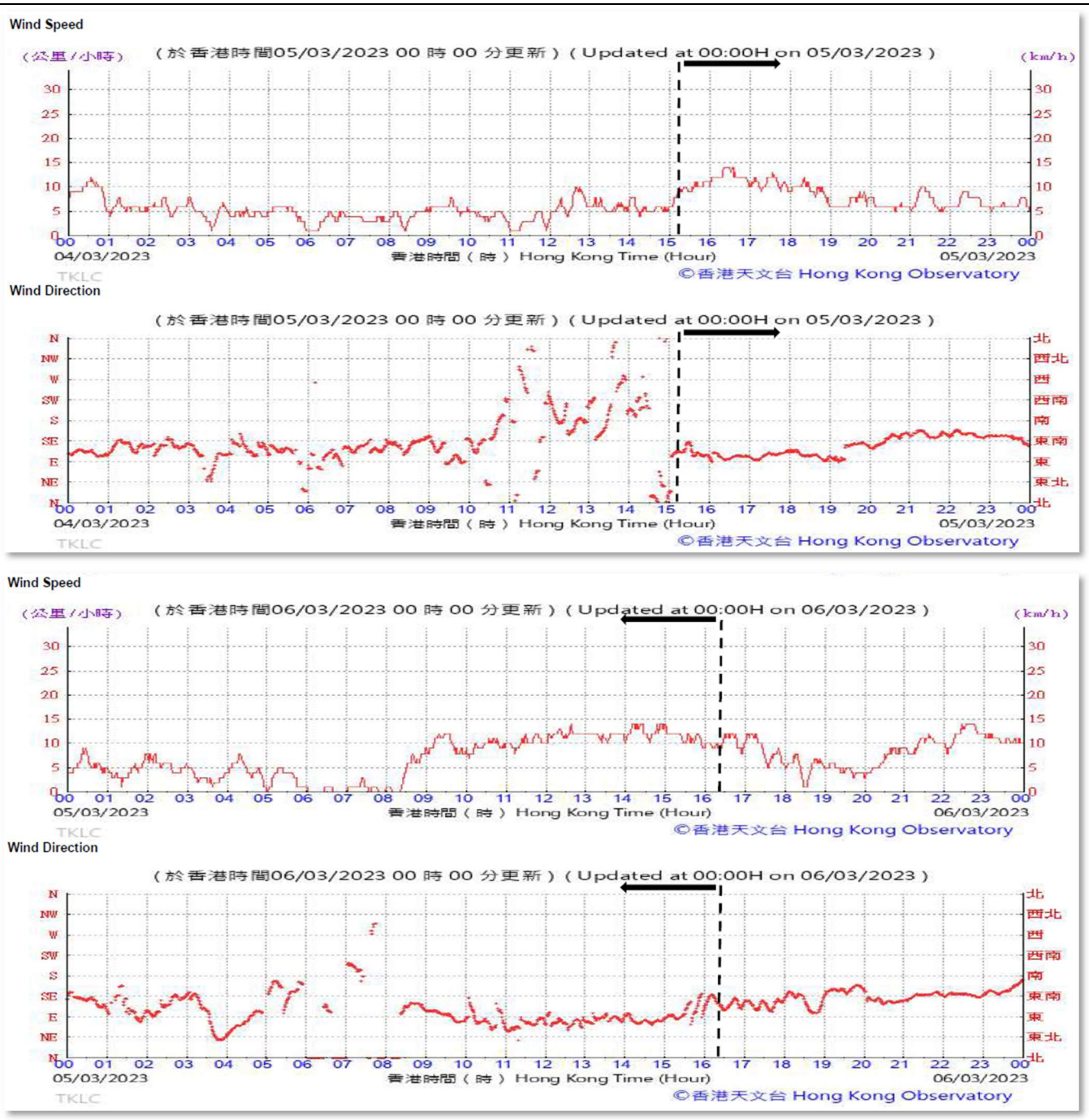


Photo 1 Site Formation at Portion A	Photo 2 Permanent Building Foundation at Portion D
	

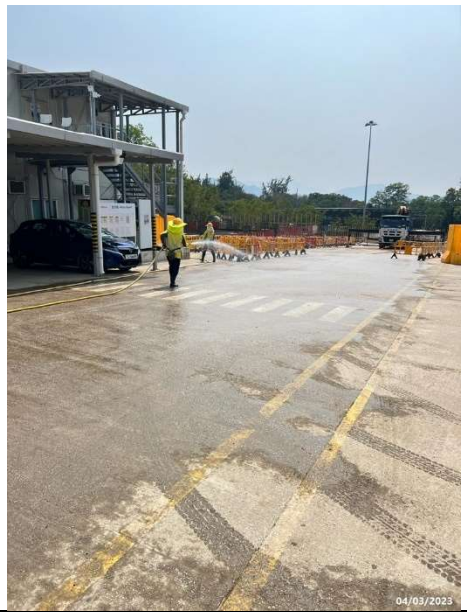
Photo 3 Water sprinklers at Portion A	Photo 4 Water spraying by water hose at Portion A
	
Photo 5 Water spraying by water hose at Portion D	**Photo 6 Water spraying by water hose at Portion D**
	
Photo 7 Water spraying by water hose at Portion D	**Photo 8 Water spraying by water tanker along the haul road between Portion A and the SBA**
	

Photo 9 Hydroseeding at bare slope at Portion E3-2	Photo 10 Hydroseeding at bare slope at Portion E3-2
	

Follow Up

Based on the contractor's record, construction activities were observed within the site area which included site formation at Portion A & permanent building foundation at Portion D on 4 March 2023. No construction activities of the project on 5 March 2023. Appropriate dust control mitigation measures were implemented at construction area during the monitoring period. No construction works causing high dust emission was found during the monitoring period.

Actions taken/ to be taken:

Due to the measurement from 3 to 4 March 2023 exceeded the Limit Level at AM1, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Inform IEC and IC the causes and actions taken for the exceedances
- ✓ Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented
- ✓ Assess effectiveness of Contractor's remedial actions and keep IEC and IC informed of the results

Due to the measurement from 3 to 4 March 2023 exceeded the Action Level at AM3, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Increase monitoring frequency to daily
- ✓ Discuss with IEC/IC for remedial actions required
- ✓ If exceedance continues, arrange meeting with IEC

The monitoring frequency was increased to daily starting from 1 March 2023. The Construction Dust Control Mitigation Measures by the Environmental Mitigation Measure Implementation Schedule (EMIS) will continue to be implemented by the contractor. The additional mitigation measures [Photo 11 to 13] are implemented by contractor. Details are shown below:

Additional Mitigation Measures	Start Date
Application of cement slurry at Portion A	10 March 2023

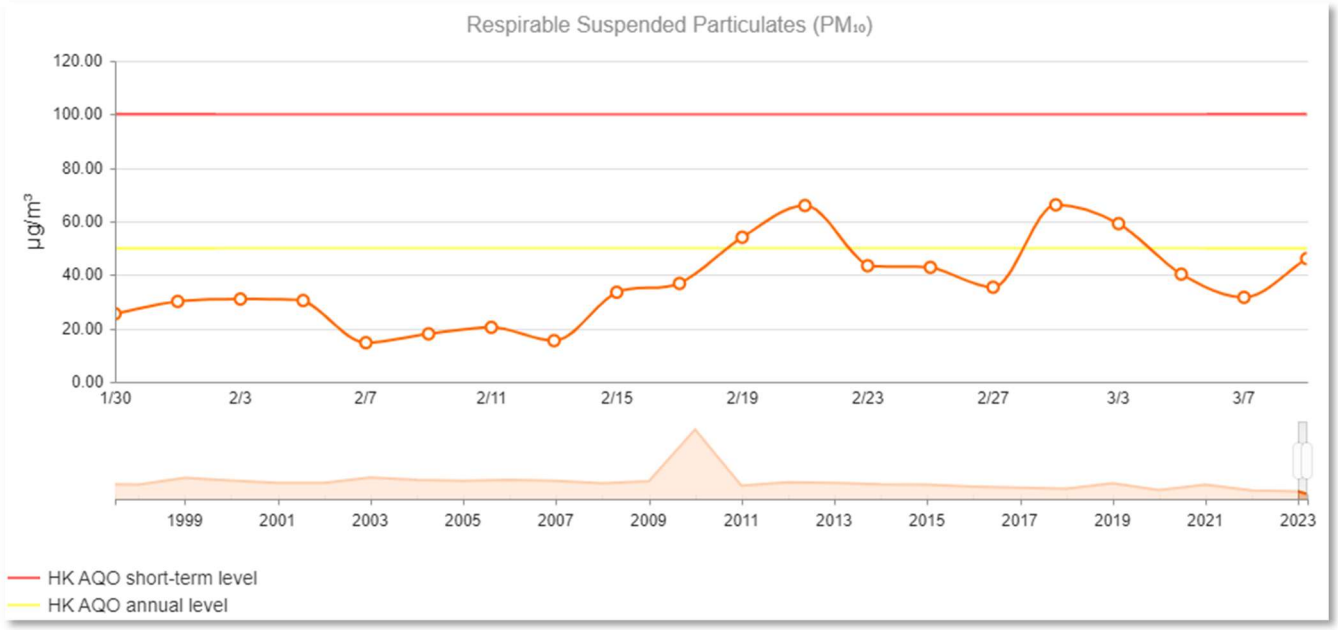
Photo 11 Application of cement slurry at Portion A	Photo 12 Application of cement slurry at Portion A
	
Photo 13 Application of cement slurry at Portion A	
	

The planning additional mitigation measures will be implemented by contractor. Details are shown below:

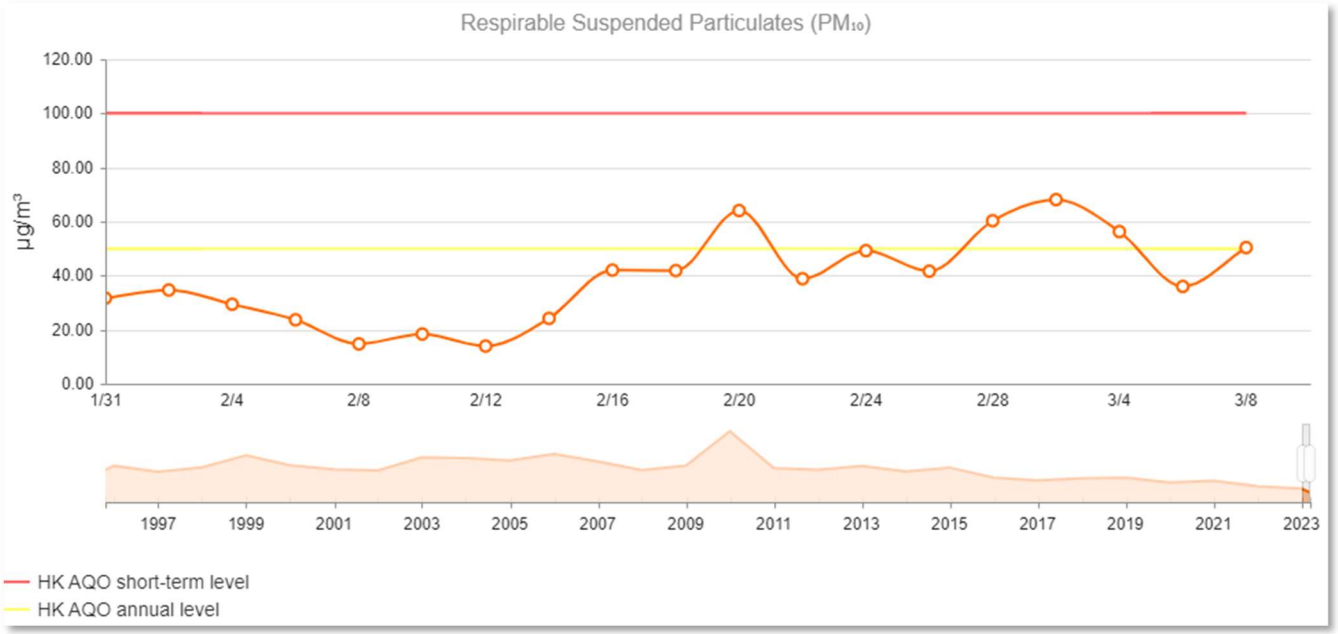
Planning Additional Mitigation Measures	Estimated Implementation Date
Installation of more sprinklers at Portion A	17 March 2023
Application of cement slurry on the slopes of Portion A	24 March 2023
Hard Paving of a 300 m section of haul road near the SBA	30 March 2023

In view of the press releases from the government on 1 March 2023, the health risk category for Air Quality Health Index (AQHIs) may reach the "Serious" level on 1 March 2023 (https://www.info.gov.hk/gia/general/202303/01/P2023030100565.htm?fontSize=1). Respirable Suspended Particulates (RSP)(PM_{10}) is one of monitoring parameter from AQHIs. The RSP concentration at EPD Tai Po & Yuen Long monitoring station are shown in below:

Tai Po Station



Yuen Long Station



Both the TSP and RSP are suspended particles but refer to different diameters. TSP refers to the total amount of suspended particulate matter (PM30) in the air, including both larger and smaller particles, while RSP refers explicitly to the smaller particles (PM10). As such, RSP concentration can be considered a component of TSP concentration since it represents a subset of the total suspended particulate matter in the air. Therefore, the high RSP concentration recorded will affect the monitoring results

Based on no construction works of the Project causing high dust emission with the properly implemented dust mitigation measures as above mention. And the influence of high concentrations of regional background particulates was identified at EPD air quality monitoring stations during the monitoring period. Therefore, the exceedances at AM1 & AM3 were considered to be attributed to external factors and mostly unlikely to be related to the Project.

In conclusion, the 24hr-TSP Monitoring results at AM1 and AM3 exceeded the Action and Limit Levels continuously during the additional monitoring from 1 to 5 March 2023. The monitoring results at AM1 and AM3 remained at high concentration levels despite the contractor's continuous implementation of enhanced dust control measures. After the investigation, the monitoring results at AM1 & AM3 of the 24-hr TSP monitoring on 24 Feb 2023 and 24-hr TSP additional monitoring from 1 to 5 March 2023 are likely caused by external sources such as the high level of background air quality in Hong Kong during the monitoring period etc and not project related. Hence, the additional monitoring at AM1 & AM3 ceased on 5 March 2023.

Reviewed by:		Title:	Deputy ET Leader
	Keith Chau	Date:	17 Mar 2023
Approved by:		Title:	ET Leader
	Fredrick Leong	Date:	17 Mar 2023

Figure 1

Impact Monitoring Location

Legend

- NENTX Project Site
- Air Monitoring Location

AM1
AM2
AM3

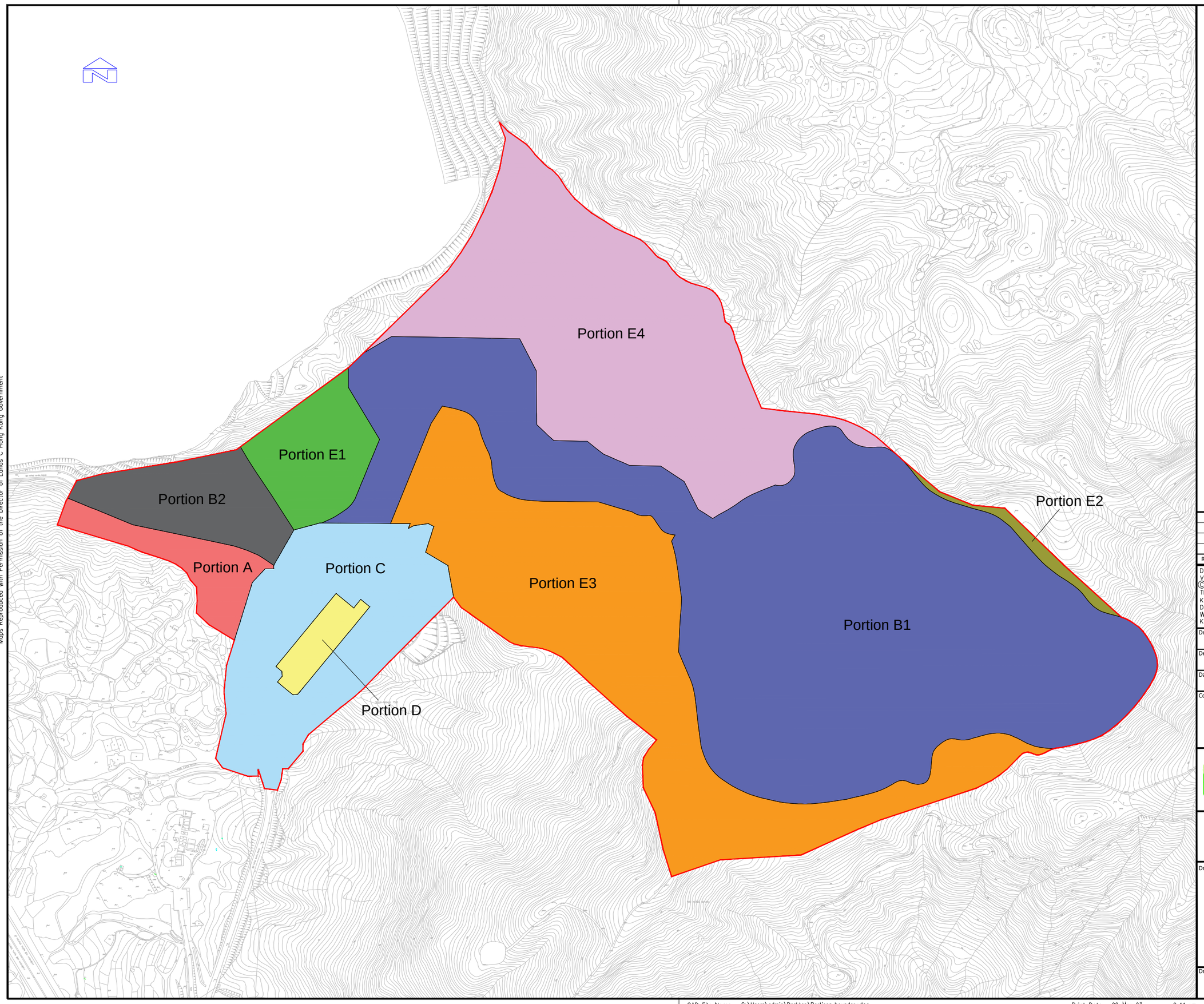
N

0m 200m 400m 600m 800m 1000m

aurecon Aurecon Hong Kong Limited	North East New Territories (NENT) Landfill Extension Impact Monitoring Location	Figure 1

Figure 2

NENTX Portions Layout Plan



LEGEND :

- SITE BOUNDARY
- PORTION BOUNDARY
- PORTION A
- PORTION B1
- PORTION B2
- PORTION C
- PORTION D
- PORTION E1
- PORTION E2
- PORTION E3
- PORTION E4

Rev.	Description	By	Date	Approved
1	FIRST ISSUE	JN	22/3/23	WW

Drawn	Check
JN	WW
Design	Approved
JN	WW
Date	Scale
22/3/2023	N.T.S.

Contract

CONTRACT EP/SP/75/15
DEVELOPMENT AND MANAGEMENT
OF NORTH EAST NEW TERRITORIES
LANDFILL EXTENSION (NENTX)

Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

VEOLIA

Drawing Title

PORTIONS LAYOUT PLAN

Drawing No.	Rev.
NENTX-VES-DW-E-ZZ-000	1

CAD File Name : C:\Users\admin\Desktop\Portions boundary.dwg Print Date : 22-Mar-23 9:44 am Print by : Admin

Appendix A

Path of water spraying by water tanker & Water spraying by water hose & water tanker schedule

Legend

Gate

Water Path of water sprayed by water tanker

C

A

A

B

D

E

F

SBA

Stockpile Soil

昌塘
Ngong Tong

塘肚山村
Tong To Shan Tsuen

石寨下
Shek Tsai Ha

新界東北堆填區
NORTH EAST NEW TERRITORIES LANDFILL

水牛槽
SHUI NGAU TSO

平原河
PING YUEN RIVER

SHEK TSAI HA ROAD

WO KENG SHAN ROAD

NENTX Watering Schedule

Month Mar-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
1/3/2023	900	A			✓		Cheong
1/3/2023	900	D		✓			Fung
1/3/2023	900	E	SBA			✓	Chuen
1/3/2023	1030	A			✓		Cheong
1/3/2023	1030	D		✓			Fung
1/3/2023	1030	E	SBA			✓	Chuen
1/3/2023	1330	A			✓		Cheong
1/3/2023	1330	D		✓			Fung
1/3/2023	1330	E	SBA			✓	Chuen
1/3/2023	1530	A			✓		Cheong
1/3/2023	1530	D		✓			Fung
1/3/2023	1530	E	SBA			✓	Chuen
2/3/2023	900	A			✓		Cheong
2/3/2023	900	D		✓			Fung
2/3/2023	900	E	SBA			✓	Chuen
2/3/2023	1030	A			✓		Cheong
2/3/2023	1030	D		✓			Fung
2/3/2023	1030	E	SBA			✓	Chuen
2/3/2023	1330	A			✓		Cheong
2/3/2023	1330	D		✓			Fung
2/3/2023	1330	E	SBA			✓	Chuen
2/3/2023	1530	A			✓		Cheong
2/3/2023	1530	D		✓			Fung
2/3/2023	1530	E	SBA			✓	Chuen
3/3/2023	900	A			✓		Cheong
3/3/2023	900	D		✓			Fung
3/3/2023	900	E	SBA			✓	Chuen
3/3/2023	1030	A			✓		Cheong
3/3/2023	1030	D		✓			Fung
3/3/2023	1030	E	SBA			✓	Chuen
3/3/2023	1330	A			✓		Cheong
3/3/2023	1330	D		✓			Fung
3/3/2023	1330	E	SBA			✓	Chuen
3/3/2023	1530	A			✓		Cheong
3/3/2023	1530	D		✓			Fung
3/3/2023	1530	E	SBA			✓	Chuen
4/3/2023	900	A			✓		Cheong
4/3/2023	900	D		✓			Fung
4/3/2023	900	E	SBA			✓	Chuen
4/3/2023	1030	A			✓		Cheong
4/3/2023	1030	D		✓			Fung
4/3/2023	1030	E	SBA			✓	Chuen
4/3/2023	1330	A			✓		Cheong
4/3/2023	1330	D		✓			Fung
4/3/2023	1330	E	SBA			✓	Chuen
4/3/2023	1530	A			✓		Cheong
4/3/2023	1530	D		✓			Fung
4/3/2023	1530	E	SBA			✓	Chuen

Reviewed by: _____

PYE EO

Agreement No. CE 20/2004(EP) North East New Territories (NENT) Landfill Extension
Notification of Environmental Quality Limits Exceedances - IR

Notification No.: 007_20230308
Date: 21 March 2023

Monitoring Data Received date: 13 March 2023

Date of Notification: 17 March 2023 (by email)

Works Inspected: Project Site Area & Monitoring Station AM1 & AM3

Monitoring Location: AM3 –Wo Keng Shan Tsuen

Parameter: Air Quality (Construction Dust) – 24-hr TSP

Action & Limit Levels			**Measured Level**		**Repeat Measured Level**	
Time Period	Action Level	Limit Level	Monitoring Period:	8 Mar 2023 18:26 to 9 Mar 2023 18:26	Monitoring Period:	13 Mar 2023 10:00 to 14 Mar 2023 10:00
24 hours	> 163	> 260	Concentration ($\mu g/m^3$)	193	Concentration ($\mu g/m^3$)	147

Possible reason for Action or Limit Level Non-compliance:

An exceedance in Action Level of 24-hr TSP air quality was recorded during impact monitoring at AM3 from 8 to 9 March 2023. Based on the contractor's record, construction activities and mitigation measures conducted by contractor from 8 to 9 March 2023 [Photo 1 to Photo 10] were listed below:

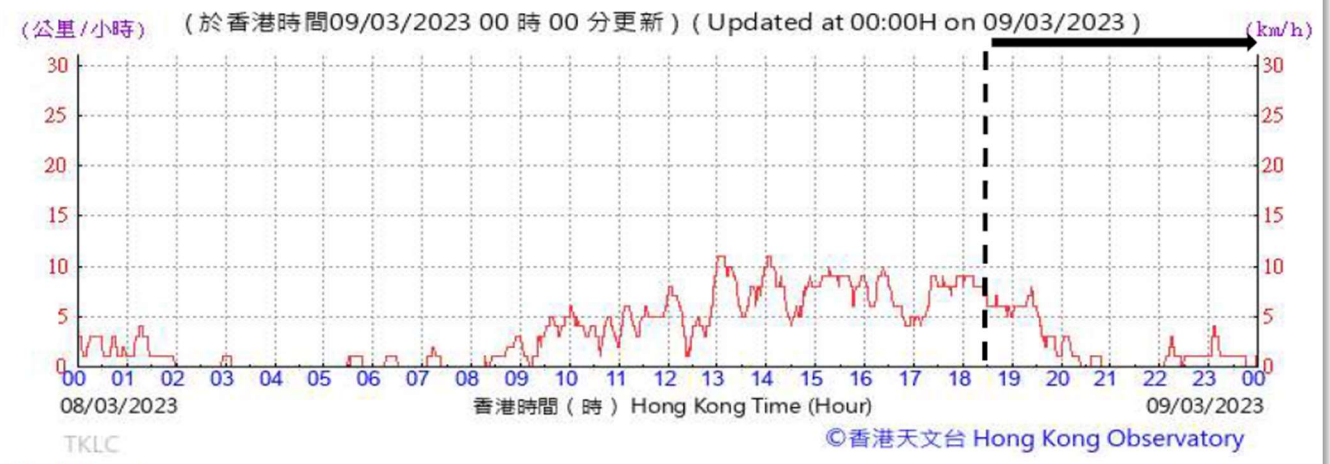
Construction Activities from 8 to 9 March 2023	**Mitigation Measures from 8 to 9 March 2023**
Site formation at Portion A	Water spraying by sprinklers & hose at Portion A
Permanent building foundation at Portion D	Water spraying by water hose at Portion D
Site formation at Portion E3	Water spraying by water tanker along the haul road between Portion A and the SBA
Site fencing at Portion E3	Hydroseeding at bare slope at Portion E3-2

The path of water spraying by water tanker, the water spraying by water hose and the water tanker schedule are presented in **Appendix A**.

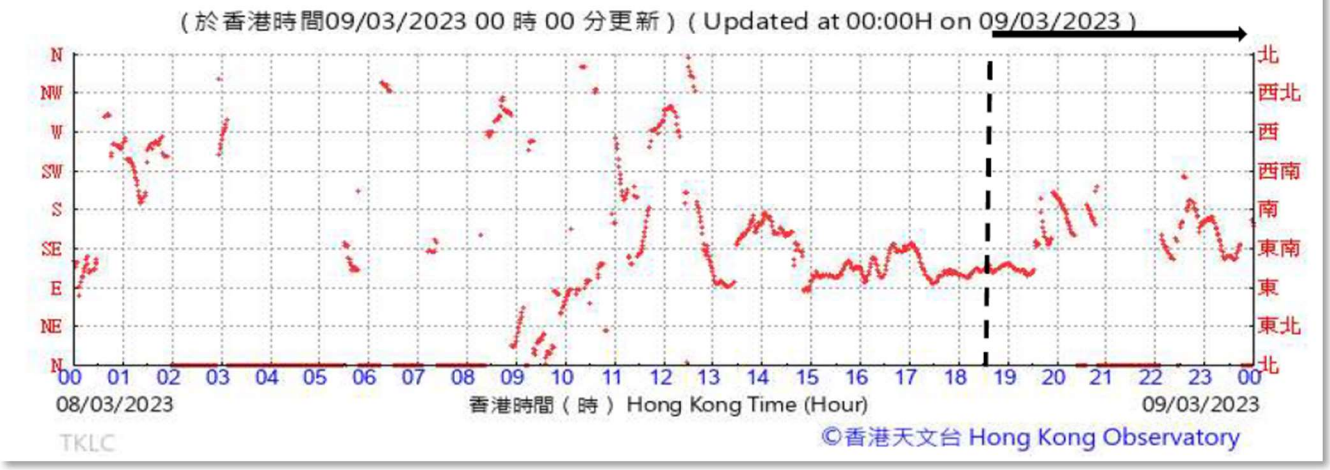
No high dusty construction works of the project were found by monitoring staff. The dust emission from vehicular was observed on the public road, Wo Keng Shan Road. The monitoring location & site area are presented in **Figure 1**. The NENTX portions layout plan is presented in **Figure 2**.

Based on the HKO's record (Hong Kong Observatory Automatic Weather Station – Ta Kwu Ling), the prevailing wind direction is from east-southeast wind during the monitoring period.

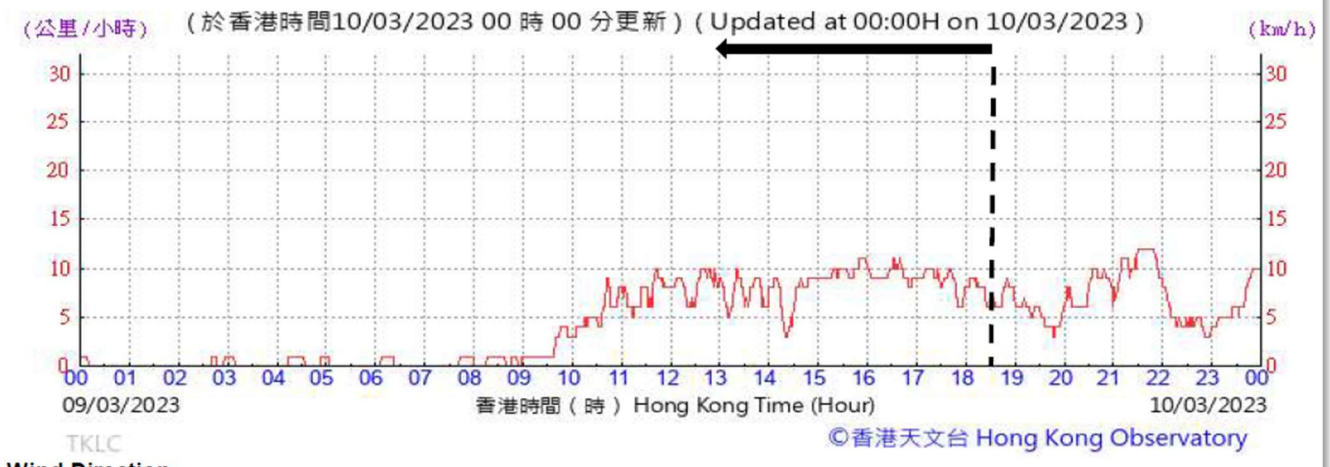
Wind Speed



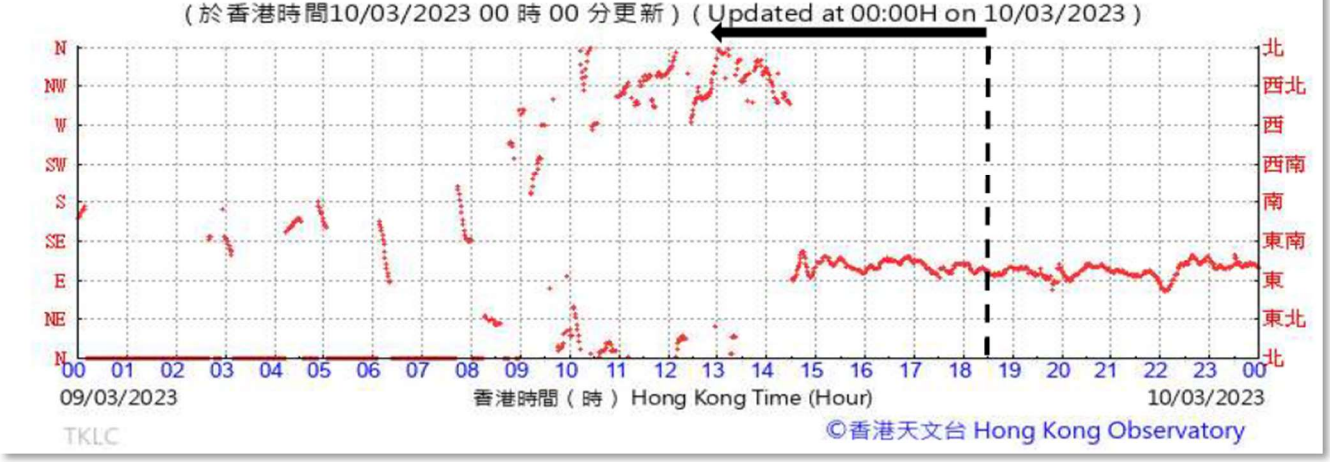
Wind Direction



Wind Speed



Wind Direction



AM3

Although AM3 is located at downwind direction at Portion C, the Portion C was not the construction area from the project from commencement of construction to now. Therefore, the construction activities of the project may not cause the high level of concentration at AM3.

Photo 1 Site formation at Portion A

Photo 2 Permanent building foundation at Portion D

Photo 3 Site Formation at Portion E3

Photo 4 Site Fencing at Portion E3

Photo 5 Water spraying by water sprinklers at Portion A

Photo 6 Water spraying by water hose at Portion D

Photo 7 Water spraying by water hose at Portion D	Photo 8 Water spraying by water tanker along the haul road between Portion A and the SBA
	
Photo 9 Hydroseeding at bare slope at Portion E3-2	Photo 10 Hydroseeding at bare slope at Portion E3-2
	

Follow Up

Based on the contractor's record, construction activities were observed within the site area which included site formation at Portion A, permanent building foundation at Portion D, site formation & site fencing at Portion E3 from 8 to 9 March 2023. Appropriate dust control mitigation measures were implemented at construction area during the monitoring period. No construction works causing high dust emission was found during the monitoring period. Following the Event and Action Plan, a repeat monitoring was undertaken from 13 to 14 March 2023 to confirm findings which showed that the no exceedance occurred at AM3.

Actions taken/ to be taken:

Due to the measurement from 8 to 9 March 2023 exceeded the Action Level at AM3, the actions taken by ET in accordance with the Event/ Action Plan for dust impact were listed below:

- ✓ Identify source
- ✓ Inform IEC and Contractor
- ✓ Repeat measurement to confirm findings
- ✓ Increase monitoring frequency to daily

The repeat measurement & monitoring frequency was increased to daily starting from 13 March 2023. Due to the monitoring result of the repeat measurement from 13 to 14 March 2023 was not exceeded the Action Level. Hence, the additional monitoring ceased from 14 March 2023 in accordance with the Event and Action Plan. The Construction Dust Control Mitigation Measures by the Environmental Mitigation Measure Implementation Schedule (EMIS) will continue to be implemented by the contractor. The additional mitigation measures [Photo 11 to 13] are implemented by contractor. Details are shown below:

Additional Mitigation Measures	Start Date
Application of cement slurry at Portion A	10 March 2023

Photo 11 Application of cement slurry at Portion A

Photo 12 Application of cement slurry at Portion A

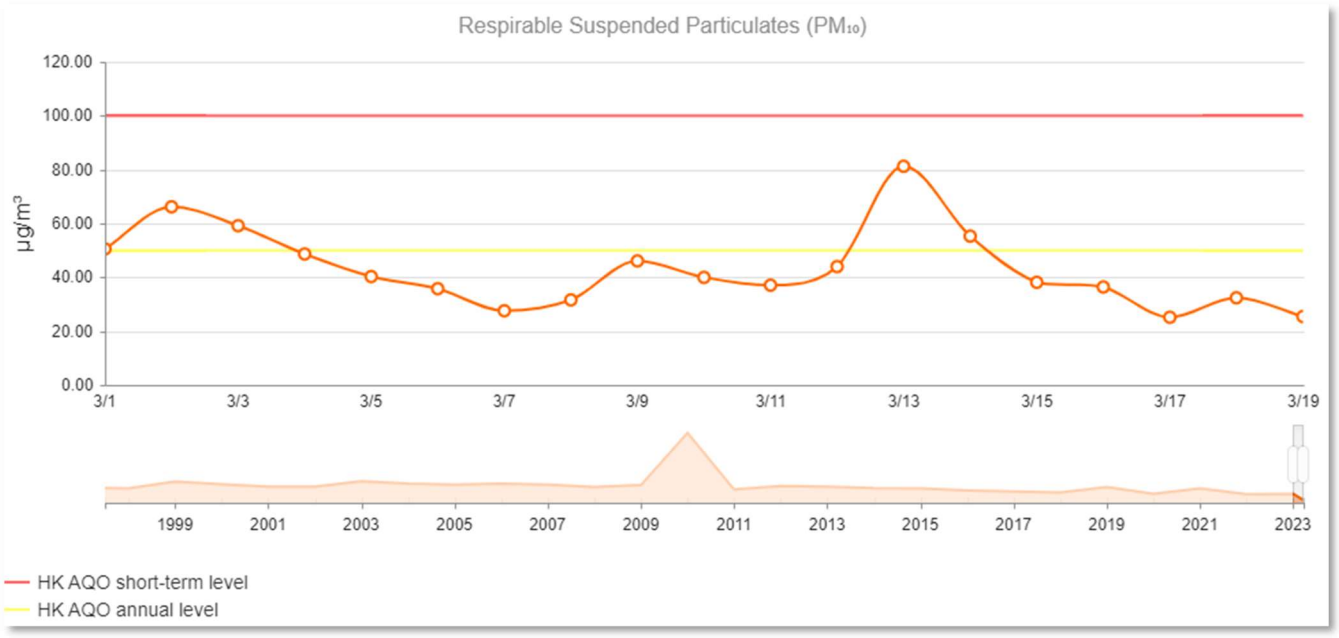
Photo 13 Application of cement slurry at Portion A

The planning additional mitigation measures will be implemented by contractor. Details are shown below:

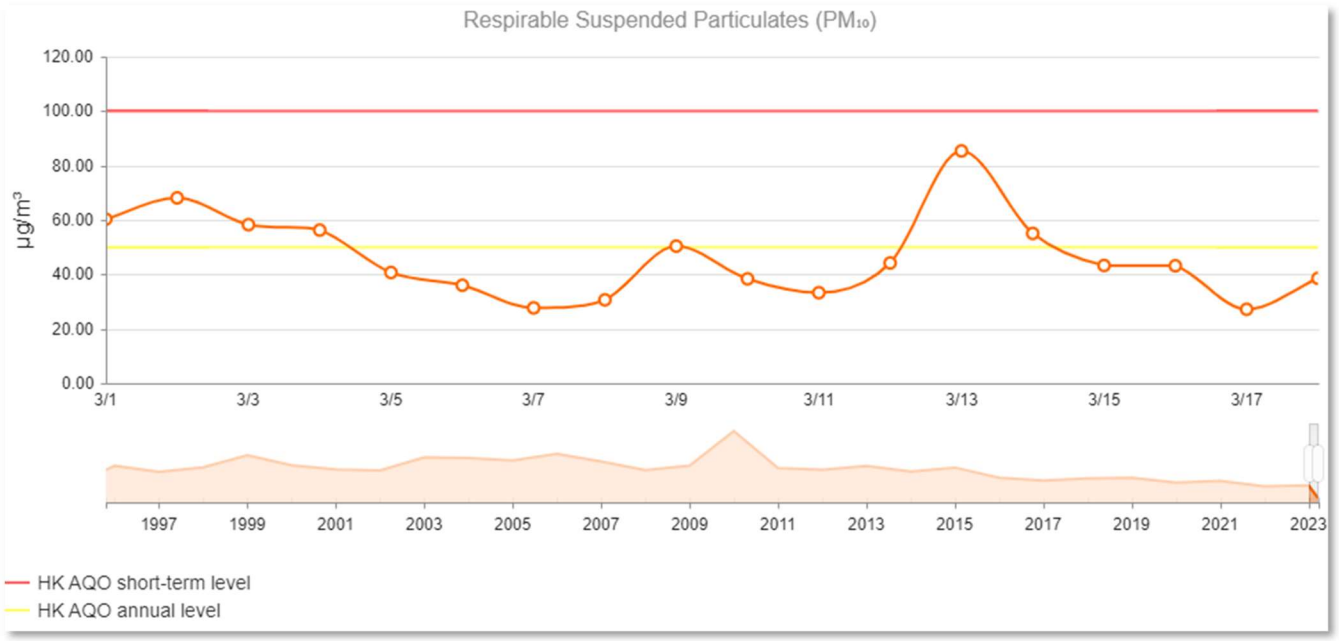
Planning Additional Mitigation Measures	Estimated Implementation Date
Installation of more sprinklers at Portion A	17 March 2023
Application of cement slurry on the slopes of Portion A	24 March 2023
Hard Paving of a 300 m section of haul road near the SBA	30 March 2023

The EPD Tai Po & Yuen Long monitoring stations were conducting during the same monitoring period. The monitoring results at EPD Tai Po & Yuen Long monitoring stations reflect the background RSP concentration during the monitoring period. Details RSP results are shown in below:

Tai Po Station



Yuen Long Station



Both the TSP and RSP are suspended particles but refer to different diameters. TSP refers to the total amount of suspended particulate matter (PM30) in the air, including both larger and smaller particles, while RSP refers explicitly to the smaller particles (PM10). As such, RSP concentration can be considered a component of TSP concentration since it represents a subset of the total suspended particulate matter in the air. Therefore, the high RSP concentration recorded will affect the monitoring results

Based on no construction works of the Project causing high dust emission with the properly implemented dust mitigation measures as above mention. Therefore, the exceedance at AM3 was not project related.

Reviewed by: _____ Title: Deputy ET Leader

Keith Chau Date: 21 Mar 2023

Approved by: _____ Title: ET Leader

Fredrick Leong Date: 21 Mar 2023

Figure 1

Impact Monitoring Location

Legend

- NENTX Project Site
- Air Monitoring Location

AM1
AM2
AM3

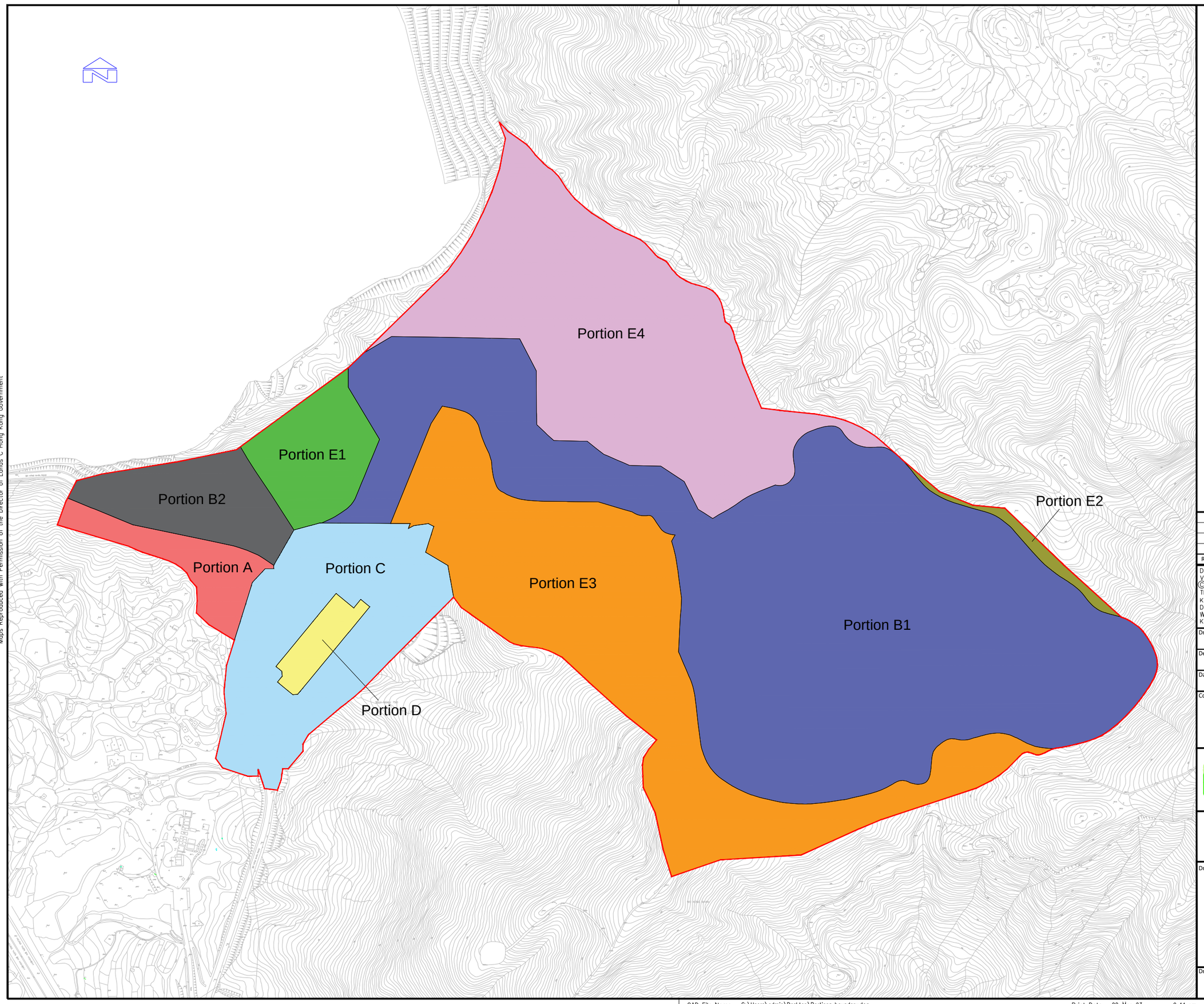
N

0m 200m 400m 600m 800m 1000m

aurecon Aurecon Hong Kong Limited	North East New Territories (NENT) Landfill Extension Impact Monitoring Location	Figure 1

Figure 2

NENTX Portions Layout Plan



LEGEND :

- SITE BOUNDARY
- PORTION BOUNDARY
- PORTION A
- PORTION B1
- PORTION B2
- PORTION C
- PORTION D
- PORTION E1
- PORTION E2
- PORTION E3
- PORTION E4

Rev.	Description	By	Date	Approved
1	FIRST ISSUE	JN	22/3/23	WW

Drawn	Check
JN	WW
Design	Approved
JN	WW
Date	Scale
22/3/2023	N.T.S.

Contract

CONTRACT EP/SP/75/15
DEVELOPMENT AND MANAGEMENT
OF NORTH EAST NEW TERRITORIES
LANDFILL EXTENSION (NENTX)

Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

VEOLIA

Drawing Title

PORTIONS LAYOUT PLAN

Drawing No.	Rev.
NENTX-VES-DW-E-ZZ-000	1

CAD File Name : C:\Users\admin\Desktop\Portions boundary.dwg Print Date : 22-Mar-23 9:44 am Print by : Admin

Appendix A

Path of water spraying by water tanker & Water spraying by water hose & water tanker schedule

Legend

Gate

Water Path of water sprayed by water tanker

C

A

A

B

D

E

F

SBA

Stockpile Soil

昌塘
Ngong Tong

塘肚山村
Tong To Shan Tsuen

石寨下
Shek Tsai Ha

新界東北堆填區
NORTH EAST NEW TERRITORIES LANDFILL

水牛槽
SHUI NGAU TSO

平原河
PING YUEN RIVER

SHEK TSAI HA ROAD

WO KENG SHAN ROAD

NENTX Watering Schedule

Month Mar-23

Date	Time	Portion	Area	Watering			Arranged by
				Water Hose	Sprinkler	Tanker	
6/3/2023	900	A			✓		Cheong
6/3/2023	900	D		✓			Fung
6/3/2023	900	E	SBA			✓	Chuen
6/3/2023	1030	A			✓		Cheong
6/3/2023	1030	D		✓			Fung
6/3/2023	1030	E	SBA			✓	Chuen
6/3/2023	1330	A			✓		Cheong
6/3/2023	1330	D		✓			Fung
6/3/2023	1330	E	SBA			✓	Chuen
6/3/2023	1530	A			✓		Cheong
6/3/2023	1530	D		✓			Fung
6/3/2023	1530	E	SBA			✓	Chuen
7/3/2023	900	A			✓		Cheong
7/3/2023	900	D		✓			Fung
7/3/2023	900	E	SBA			✓	Chuen
7/3/2023	1030	A			✓		Cheong
7/3/2023	1030	D		✓			Fung
7/3/2023	1030	E	SBA			✓	Chuen
7/3/2023	1330	A			✓		Cheong
7/3/2023	1330	D		✓			Fung
7/3/2023	1330	E	SBA			✓	Chuen
7/3/2023	1530	A			✓		Cheong
7/3/2023	1530	D		✓			Fung
7/3/2023	1530	E	SBA			✓	Chuen
8/3/2023	900	A			✓		Cheong
8/3/2023	900	D		✓			Fung
8/3/2023	900	E	SBA			✓	Chuen
8/3/2023	1030	A			✓		Cheong
8/3/2023	1030	D		✓			Fung
8/3/2023	1030	E	SBA			✓	Chuen
8/3/2023	1330	A			✓		Cheong
8/3/2023	1330	D		✓			Fung
8/3/2023	1330	E	SBA			✓	Chuen
8/3/2023	1530	A			✓		Cheong
8/3/2023	1530	D		✓			Fung
8/3/2023	1530	E	SBA			✓	Chuen
9/3/2023	900	A			✓		Cheong
9/3/2023	900	D		✓			Fung
9/3/2023	900	E	SBA			✓	Chuen
9/3/2023	1030	A			✓		Cheong
9/3/2023	1030	D		✓			Fung
9/3/2023	1030	E	SBA			✓	Chuen
9/3/2023	1330	A			✓		Cheong
9/3/2023	1330	D		✓			Fung
9/3/2023	1330	E	SBA			✓	Chuen
9/3/2023	1530	A			✓		Cheong
9/3/2023	1530	D		✓			Fung
9/3/2023	1530	E	SBA			✓	Chuen

Reviewed by: _____

PYE EO

Appendix G Waste Flow Table

Waste Flow Table

Month	Total Quantity Generated	Total Quantities of Inert C&D Materials to be Generated from the Contract					Total Quantities of Recyclables Generation				Total Quantities of C&D Materials to be Generated from the Contract	
		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	Yard Waste (to Y-Park)	Chemical Waste	Others, e.g. general refuse, non-recyclable yard waste
	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in '000L)	(in tonne)
Dec-22	384.77	300	0	0	0	0	0	0	0	11.49	0	73.28
Jan-23	24.51	0	0	0	0	0	0	0	0	0	0	24.51
Feb-23	506.45	0	0	0	0	0	0	0	0	3.16	0	503.29
Mar-23	9,581	0	0	9,187	0	0	0	0	0	3.69	0	390.46
Total	10,497	300	0	9,187	0	0	0	0	0	18.34	0	991.54

Note:

1. The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
2. A total of 300 tonnes of hard rock and large broken concrete was generated from the contract in Dec 2022. Due to the hard rock and large broken concrete was stored in the project site, the contractor had not yet reused in the contract during reporting period. Therefore, the quantities do not count in "Reused in the Contract" between Dec-22 & Jan-23.
3. Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
4. N/A equal to not applicable

Appendix H Environmental Mitigation Implementation Schedule (EMIS)

EIA Ref.	EM&A Log Ref.	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Air Quality							
S3.8.1	S3.1.8	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation. • Dust emission from construction vehicle movement is confined within the worksites area. • Watering facilities will be provided at every designated vehicular exit point. • Good site practice is recommended during construction phase.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	Entire NENT Landfill Extension site	To control the dust impact to within the HKAQO and TM - EIA criteria (Ref. 1-hr and 24hr TSP levels are 500 $\mu g/m^{-3}$ and 260 $\mu g/m^{-3}$, respectively)	✓
Construction Noise							
S4	S4.9	1) Use of good site practices to limit noise emissions by considering the following: • 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 officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise by means of good site practices	Contractor	Entire construction site	Noise Control Ordinance	✓
S4	S4.9	2) Select “Quiet plants” which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	Entire construction site	Noise Control Ordinance & its TM Annex 5, TM-EIA	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Construction Runoff							
S5.8.1	S5.2.1	Construction on Site Runoff • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silts and sediment traps should be 5 minutes under maximum flow conditions. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.	Control construction runoff and erosion from site surface, drainage channel, stockpiles, wheel washing facilities, etc to minimize water quality during construction stage	Contractor	Entire construction site	ProPECC PN 1/94 Water Pollution Control Ordinance	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Construction Runoff (Cont'd)							
S5.8.1	S5.2.1	• Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50 m^3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silly surface runoff during storm events, especially for areas located near steep slopes. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing bay should be provided at every construction site exit. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silly water to public roads and drains. • Oil interceptors should be provided in the site drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.	Control construction runoff and erosion from site surface, drainage channel, stockpiles, wheel washing facilities, etc to minimize water quality during construction stage	Contractor	Entire Construction site	ProPECC PN 1/94 Water Pollution Control Ordinance	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Construction Runoff							
S5.8.1	S5.2.1	• Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. Requirements for solid waste management are detailed in Section 6 of this Report. • All fuel tanks and storage areas should be provided with docks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • To prevent pollution risks arising from works area (waste reception area) and haul roads, intercepting bund or barrier along the roadside should be constructed.	Control construction runoff and erosion from site surface, drainage channel, stockpiles, wheel washing facilities, etc to minimize water quality during construction stage	Contractor	Entire construction site	ProPECC PN 1/94 Water Pollution Control Ordinance	✓
S5.8.1	S5.2.1	<u>Sewage Effluent from Workforce</u> • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. • Notices will be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. • Regular environmental audit on the construction site can provide an effective control of any malpractices and can achieve continual improvement of environmental performance on site.	Control sewage effluent arising from the sanitary facilities provided for the on- site construction workforce	Contractor	On-site sanitary facilities	ProPECC PN 1/94 Water Pollution Control Ordinance Waste Disposal Ordinance	✓
S5.8.1	S5.2.1	<u>Accidental Spillage of Chemical</u> Any service workshop and maintenance facilities shall be located within a bunded area, and sumps and oil interceptors shall be provided. Maintenance of equipment involving activities with potential for leakage and spillage will only be undertaken within the areas.	Control of chemical leakage	Contractor	Service workshop and maintenance facilities	ProPECC PN 1/94 Water Pollution Control Ordinance Waste Disposal Ordinance	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Erosion Control Measures							
S5.8.2	S5.2.2	<u>Erosion Control /Measures</u> a. Preserve Natural Vegetation This Best Management Practices will involve preserving natural vegetation to the greatest extent possible during the construction process. and after construction where appropriate. Maintaining natural vegetation is the most effective and inexpensive form of erosion prevention control. b. Provision of Buffer Zone A buffer zone consists of an undisturbed area or strip of natural vegetation or an established suitable planting adjacent to a disturbed area that reduces erosion and runoff. The rooted vegetation holds soils acts as a wind break and filters runoff that may leave the site. c. Seeding (Temporary/Permanent) A well-established vegetative cover is one of the most effective methods of reducing erosion. Vegetation should be established on construction sites as the slopes are finished, rather than waiting until all the grading is complete. Besides, Hydroseeding will be applied on the surface of stockpiled soil and on temporary soil covers for inactive tipping areas to prevent soil erosion during rainy season. d. Ground Cover Ground Cover is a protective layer of straw or other suitable material applied to the soil surface. Straw mulch and/or hydromulch are also used in conjunction with seeding of critical areas for the establishment of temporary or permanent vegetation. Ground cover provides immediate temporary protection from erosion. Mulch also enhances plant establishment by conserving moisture, holding fertilizer, seed, and topsoil in place, and moderating soil temperatures.	Erosion control	Contractor	Drainage system	ProPECC PN 1/94 Water Pollution Control Ordinance	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Erosion Control Measures							
S5.8.2	S5.2.2	e. Hydraulic Application Hydraulic application is a mechanical method of applying erosion control materials to bare soil in order to establish erosion-resistant vegetation on disturbed areas and critical slopes. By using hydraulic equipment, soil amendments, mulch, tackifying agents, Bonded Fiber Matrix (BFM) and liquid co-polymers can be uniformly broadcast, as homogenous slurry, onto the soil. These erosion and dust control materials can often be applied in one operation. f. Sod Establishes permanent turf for immediate erosion protection and stabilizes rainageways. g. Matting There are numerous erosion control products available that can be described in various ways, such as matting, blankets, fabric and nets. These products are referred as matting. A wide range of materials and combination of materials are used to produce matting including, but not limited to: straw, jute, wood fiber, coir (coconut fiber), plastic netting, and Bonded Fiber Matrix. The selection of matting materials for a site can make a significant difference in the effectiveness of the Best Management Practices. h. Plastic Sheeting Plastic Sheeting will provide immediate protection to slopes and stockpiles. However, it has been known to transfer erosion problems because water will sheet flow off the plastic at high velocity. This is usually attributable to poor application, installation and maintenance. i. Dust Control Dust Control is one preventative measure to minimize the wind transport of soil, prevent traffic hazards and reduce sediment transported by wind and deposited in water resources.	Erosion control	Contractor	Drainage system	ProPECC PN 1/94 Water Pollution Control Ordinance	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Surface Water Drainage System							
S5.8.2	S5.2.2	Temporary surface water drainage system will be provided to manage runoff during construction and operation. This system will consist of channels as constructed around the perimeter of the site area. This system will collect surface water from the areas of higher elevations to those of lower elevations and ultimately to the point of discharge. Erosion will therefore be minimised. The temporary surface water drainage system will include the use of a silt fence around the soil stockpile areas to prevent sediment from entering the system. Regular cleaning will be carried out to prevent blockage of the passage of water flow in silt fence. Intermediate drainage system will be installed for filled cell/phase. The major purpose of the intermediate drainage system is to prevent the clean surface water run-off from the filled phases coming into contact with the waste mass in active cell and to prevent excessive surface water infiltration through the intermediate cover, thus contribute to increasing volume of leachate. The intermediate drainage system will collect the clean surface water run-off and divert it to the permanent discharge channels connected to the public drainage system. In addition, surface flow from the haul road (especially near the wheel washing facility) will be collected to a dry weather flow interceptor and conveyed to the on-site leachate treatment plant for further treatment.	Surface Water Management/ Control run off	Contractor	Surface water system Construction	Water Pollution Control Ordinance TM-water	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
Waste Management							
S6	WM1	<u>C&D Materials</u> Implement proper waste management measures during construction phase as stipulated in the Environmental Management Plan (EMP) in accordance with the ETWB TC(W) No. 19/2005 Environmental Management in Construction Sites. Implement a trip-ticket system to ensure that the movement of C&D materials are properly documented and verified in accordance with DEVB TC(W) No. 6/2010. Copies/counterfoils from trip-tickets (with quantities of C&D Materials off-site) should be kept for record purposes. Appropriate waste management should be implemented in accordance with the ETWB TC(W) No. 19/2005. Make provisions in Contract documents to allow and promote the use of recycled aggregates where appropriate. Ensure material balance in terms of excavated C&D materials in the design of NENT landfill extension project. The contract specifications should specify no excavated materials should be removed from the landfill extension site, but should be fully reused. Careful design, planning and good site management to minimise over-ordering and waste materials such as concrete, mortars and cement grouts. The design of formwork should maximise the use of standard wooden panels so that high reuse levels can be achieved. Alternatives such as steel formwork or plastic fencing should be considered to increase the potential for reuse. The Contractor should recycle as much as possible the C&D waste on-site through proper waste segregation on-site. Concrete and masonry should be used as general fill and steel reinforcement bars can be used by scrap steel mills. Proper areas should be designated for waste segregation and storage wherever site conditions permit. Maximise the use of reusable steel formwork to reduce the amount of C&D material. Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement. On-site sorting and segregation facility of all type of wastes is considered as one of the best practice in waste management and hence, should be implemented in all projects generating construction waste. The sorted public fill and C&D waste should be properly reused.	Good site practice to minimise C&D waste generation and reuse/recycle all C&D on-site as far as possible	Contractor	Entire construction site	Waste Disposal Ordinance ETWB TC(W) No. 19/2005 DEVB TC(W) No. 6/2010	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	Status
S6	WM1	<u>C&D Materials (Cont'd)</u> Excavated slope, stockpiled material and bund walls should be covered by tarpaulin until used in order to prevent wind-blown dust during dry weather, and to reduce muddy runoff during wet weather. Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. If any topsoil-like materials need to be stockpiled for any length of time, consideration should be given to hydroseeding of the topsoil on the stockpile to improve its visual appearance and prevent soil erosion. Nomination of approved personnel to be responsible for good site practices and making arrangements for collection of all wastes generated on-site and effective disposal. Training of site personnel for cleanliness, proper waste management procedures including chemical waste handling, and waste reduction, reuse and recycling concepts. Regular cleaning and maintenance programme systems, sumps and oil interceptors. Prior to disposal of C&D waste, wood, steel and other metals should be separated for re-use and/or recycling to minimise the quantity of waste to be disposed of to landfill. Proper storage and site practices should be implemented to minimise the potential for damage or contamination of construction materials. Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. Minimise excessive ordering of concrete, mortars and cement grout by doing careful check before ordering.	Good site practice to minimise C&D waste generation and reuse/recycle all C&D on-site as far as possible	Contractor	Entire construction site	Waste Disposal Ordinance ETWB TC(W) No. 19/2005 DEVB TC(W) No. 6/2010	✓
S6	WM2	<u>Chemical Waste</u> Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Plant/equipment maintenance schedule should be designed to optimise maintenance effectiveness and to minimise the generation of chemical wastes. Where possible, chemical wastes (e.g. waste lube oil) should be recycled by licensed treatment facilities	Ensure proper disposal of chemical waste generated on-site to minimise the associated hazards on human health and environment	Contractor	Entire construction site	Waste Disposal (Chemical Waste) General Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	✓

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S6	WM2	<u>Chemical Waste (Cont'd)</u> Containers used for storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD. Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulation. The storage area for chemical wastes should be clearly labelled and used solely for storage of chemical waste, enclosed with at least 3 sides, having an impermeable floor and bund of sufficient capacity to accommodate 110% of volume of the largest container or 20 % of total volume of waste stored in that area, whichever is the greatest, having adequate ventilation, being covered to prevent rainfall entering, and being arranged so that incompatible materials are adequately separated. Chemical waste should be collected by licensed waste collectors and disposed of at licensed facility, e.g. Chemical Waste Treatment Centre.	Ensure proper disposal of chemical waste generated on-site to minimise the associated hazards on human health and environment.	Contractor	Entire construction site	Waste Disposal (Chemical Waste) General Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	✓
S6	WM3	<u>General Refuse</u> General refuse generated on-site should be properly stored in enclosed bins or compaction units separately from construction and chemical wastes. All recyclable materials (separated from the general waste) should be stored on-site in appropriate containers with cover prior to collection by a local recycler for subsequent reuse and recycling. Residual, non-recyclable, general waste should be stored in appropriate containers to avoid odour. Regular collection should be arranged by an approved waste collector in purpose-built vehicles that minimise environmental impacts during transportation Reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. Aluminium cans should be separated from general waste stream and collected by recyclers. Proper collection bins should be provided on- site to facilitate the waste sorting.	Minimise generation of general refuse to avoid odour, pest and visual nuisance	Contractor	Entire construction site	Waste Disposal Ordinance	✓

EIA Ref.	EM&A Log Ref	Recommended Precautionary/Mitigation Measures (to be implemented when the trigger level is exceeded, where necessary)	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	What requirement or standards for the measures to achieve?	
S6	WM3	<u>General Refuse (Cont'd)</u> Office waste paper should recycled if the volume warrant collection by recyclers. Participation in community waste paper recycling programme should be considered by the Contractor, including waste paper, aluminium cans, plastic bottles, waste batteries, etc.	Minimise generation of general refuse to avoid odour, pest and visual nuisance	Contractor	Entire construction site	Waste Disposal Ordinance	✓

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LFG							
Within NENT Landfill Extension							
S7	LFG1	Special LFG precautions should be taken due to close proximity of NENT landfill extension site to existing landfill to avoid potential hazards of LFG exposure (ignition, explosion, asphyxiation, toxicity).	To minimise the risk of LFG hazards to personnel in construction site	Contractor	Entire construction site	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97) F&IU (Confined Spaces) Regulations Code of Practice on Safety and Health at Work in Confined Spaces	✓
S7	LFG2	Prominent safety warning signs should be erected on-site to alert all personnel and visitors of LFG hazards during excavation works.					✓
S7	LFG3	No smoking or burning should be permitted on-site.					✓
S7	LFG4	Prominent 'No smoking' and 'No Naked Flames' signs should be erected on-site.					✓
S7	LFG5	No worker should be allowed to work alone at any time in excavated trenches or confined areas on-site.					✓
S7	LFG6	Adequate fire fighting equipment should be provided on-site.					✓
S7	LFG7	Construction equipment should be equipped with vertical exhaust at least 0.6m above ground installed with spark arrestors.					✓
S7	LFG8	Electrical motors and extension cords should be explosion-proof and intrinsically safe for use on-site.					✓
S7	LFG9	'Permit to Work' system should be implemented.					✓
S7	LFG10	Welding, flame-cutting or other hot works should be conducted only under 'Permit to Work' system following clear safety requirements, gas monitoring procedures and presence of qualified persons to supervise the works.					✓
S7	LFG11	For piping assembly or conduit construction, all valves and seals should be closed immediately after installation to avoid accumulation and migration of LFG. If installation of large diameter pipes (diameter >600mm) is required, the pipe ends should be sealed on one side during installation. Forced ventilation is required prior to operation of installed pipeline. Forced ventilation should also be required for works inside trenches deeper than 1m.	To minimise the risk of LFG hazards to personnel in construction site	Contractor	Entire construction site	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97) F&IU (Confined Spaces) Regulations Code of Practice on Safety and Health at Work in Confined Spaces	✓
S7	LFG12	Frequency and location of LFG monitoring within excavation area should be determined prior to commencement of works. LFG monitoring in excavations should be conducted at no more than 10mm from exposed ground surface.					✓

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LFG							
Within NENT Landfill Extension							
S7	LFG13	For excavation works, LFG monitoring should be conducted (1) at ground surface prior to excavation, (2) immediately before workers entering excavations, (3) at the beginning of each half-day work, and (4) periodically throughout the working day when workers are in the excavation.	To minimise the risk of LFG hazards to personnel in construction site	Contractor	Entire construction site	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97) F&IU (Confined Spaces) Regulations Code of Practice on Safety and Health at Work in Confined Spaces	✓
S7	LFG14	Any cracks on ground level encountered on-site should be monitored for LFG periodically. Appropriate action should be taken in accordance with the action plan in Table 7.6 of EIA Report.					✓
S7	LFG15	LFG precautionary measures involved in excavation and piping works should be provided in accordance with LFG Guidance Note and included in Safety Plan of construction phase. Temporary offices or buildings should be located where free LFG has been proven or raised clear of ground at a separation distance of at least 500mm.					✓
S7	LFG16	For large development such as NENT landfill extension, a Safety Officer trained in the use of gas detection equipment and LFG-related hazards should be present on-site throughout the groundwork phase. The Safety Officer should be provided with an intrinsically safe portable instrument appropriately calibrated and capable of measuring the following gases: •CH_4: 0-100% and LEL: 0-100%/v •CO_2: 0-100% •O_2: 0-21%					✓
S7	LFG17	Periodically during groundwork construction, the works area should be monitored for CH_4 CO_2 and O_2 using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas should be established prior to commencement of groundwork either by Safety Officer or appropriately qualified person. Routine monitoring should be carried out in all excavations, manholes, created by temporary storage of building materials on-site. All measurements in excavations should be made with monitoring tube located not more than 10mm from exposed ground surface.					✓

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Within NENT Landfill Extension (Cont'd)							
S7	LFG18	For excavations deeper than 1m, measurements should be conducted: • At ground surface before excavation commences; • Immediately before any worker enters the excavation; • At the beginning of each working day for entire period the excavation remains open; and • Periodically throughout the working day whilst workers are in excavation.	To minimise the risk of LFG hazards to personnel in construction site	Contractor	Entire construction site	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97) F&IU (Confined Spaces) Regulations Code of Practice on Safety and Health at Work in Confined Spaces	✓
S7	LFG19	For excavations between 300mm and 1m, measurements should be conducted: • Directly after excavation has been completed; and • Periodic all whilst excavation remains open.					✓
S7	LFG20	For excavations less than 300mm, monitoring may be omitted at the discretion of Safety Officer or appropriately qualified person.					✓

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Landscape and Visual Phases							
S8	LV1	<u>Advanced screening tree planting</u> • Early planting using fast growing trees and tall shrubs at strategic locations within site to block major view corridors to the site from the VSRs, and to locally screen haul roads, excavation works and site preparation works. • Roadside planter and shrub planting design in front of Cheung Shan Temple.	To minimise the impact on existing vegetation retained by personnel in construction To provide initiation on permanent landscape and visual mitigation measures	Contractor	Entire construction site	DEVB TC(W) No. 4/2020 - Tree Preservation DEVB TC(W)) No. 6/2015 - Maintenance of Vegetation and Hard Landscape Features DEVB TC(W) No. 6/2011 - Maintenance of Man-made Slopes and Emergency Repair on Stability of Land	Advanced screen tree planting is under planning.
S8	LV2	<u>Boundary Green Belt planting</u> • Considerable planting belts proposed around the site perimeter and the construction of temporary soil bunds will screen the landfill operations to a certain degree. Fast growing and fire resistant plant species will be used.					To be implemented during operation phase
S8	LV3	<u>Temporary landscape treatment as green surface cover</u> • For certain areas where landfilling operations would have to be suspended temporarily for periods of years, simple temporary landscape treatment such as hydroseeding should be considered. During construction and operational phases, grass hydroseeding or synthetic covering material of green colour should also be used as a temporary slope cover if applicable.					Grass hydroseeding will be applied at Portion E3-2.
S8	LV4	<u>Existing tree preservation</u> • Transplant existing trees and vegetation, which are identified as ecologically significant in Ecological Impact Assessment and as rare tree species recorded in the tree survey, under circumstances where technically feasible. For all affected trees, the principle of avoidance of tree felling and tree transplanting of tree before felling should apply whenever possible. A tree felling application should be submitted to DEVB-GLTMS and be approved before any trees are felled or transplanted.					✓

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Ecology							
General Protection Measures:							
S10	E1	Restriction of construction activities to the work areas that would be clearly demarcated.	To minimise environmental impacts and therefore potential ecological impacts within and near the construction site	Contractor	Entire construction site	Practice Note for Professional Persons (ProPECC), Construction Site Drainage (PN1/94) Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, EPD (1992) ETWB TC(W)) No. 33/2002 Management of Construction and Demolition Material Including Rock DEVB TC(W) No. 6/2010 Trip Ticket System for Disposal of Construction and Demolition Materials ETWB TC(W)No.19/2005 Environmental Management on Construction Sites	✓
S10	E2	Reinstatement of the work areas immediately after completion of the works.					✓
S10	E3	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.					✓
S10	E4	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.					✓
S10	E5	Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs.					✓
S10	E6	Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works.					To be implemented
S10	E7	Mobile plant should be sited as far away from NSRs as possible and practicable.					✓
S10	E8	Material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.					✓
S10	E9	Use of “quiet” plant and working methods.					✓
S10	E10	Construction phase mitigation measures in the Practice Note for Professional Persons on Construction Site Drainage.					✓

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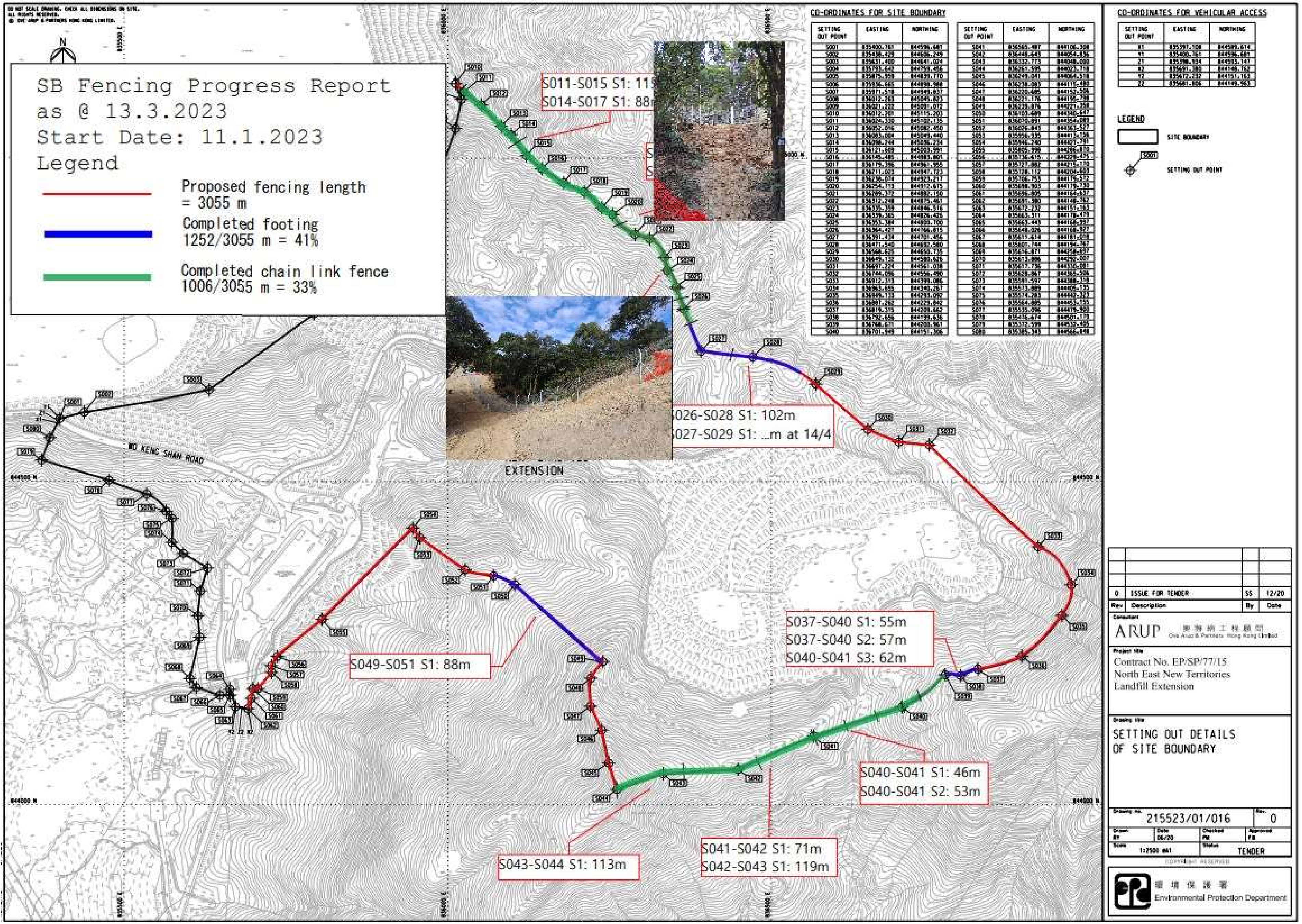
Ecology							
General Protection Measures:							
S10	E11	Design and set up of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.	To minimise environmental impacts and therefore potential ecological impacts within and near the construction site	Contractor	Entire construction	WBTC No. 12/2002, Specifications Facilitating the Use of Recycled Aggregates WBTC Nos. 25/99,25/99A and 25/99C. Incorporation of Information on Construction and Demolition Material Management in Public Works Subcommittee Papers	✓
S10	E12	Design and incorporation of silt/sediment traps in the permanent drainage channels to enhance deposition rates and regular removal of reposited silt and grit.					✓
S10	E13	Minimization of surface excavation works during the rainy seasons (April to September), and in particular,control of silty surface runoff during storm events, especially for areas located near steep slopes.					To be implemented during rainy seasons
S10	E14	Regular inspection and maintenance of all drainage facilities and erosion and sediment control structures to ensure proper and efficient operation at all times and particularly following rainstorms.					✓
S10	E15	Provision of oil interceptors in the drainage system downstream of any oil/fuel pollution sources					✓

Appendix I Mitigation Measures of Cultural Landscape Features



SB Fencing Progress Report
as @ 13.3.2023
Start Date: 11.1.2023
Legend
Proposed fencing length = 3055 m
Completed footing 1252/3055 m = 41%
Completed chain link fence 1006/3055 m = 33%
S011-S015 S1: 11
S014-S017 S1: 88
026-S028 S1: 102m
027-S029 S1: ...m at 14/4
EXTENSION
WO KENG SHAN ROAD
S049-S051 S1: 88m
S037-S040 S1: 55m
S037-S040 S2: 57m
S040-S041 S3: 62m
S040-S041 S1: 46m
S040-S041 S2: 53m
S041-S042 S1: 71m
S042-S043 S1: 119m
S043-S044 S1: 113m
CO-ORDINATES FOR SITE BOUNDARY
CO-ORDINATES FOR VEHICULAR ACCESS
LEGEND
SITE BOUNDARY
SETTING OUT POINT
0 ISSUE FOR TENDER SS 12/20
Rev Description By Date
ARUP
Contract No. EP/SP/77/15
North East New Territories
Landfill Extension
SETTING OUT DETAILS
OF SITE BOUNDARY
215523/01/016
0
1:2500 @A1
TENDER
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環境保護署
Environmental Protection Department

Prepared by:

Aurecon Hong Kong Limited

Unit 1608, 16/F, Tower B, Manulife Financial Centre,

223 – 231 Wai Yip Street, Kwun Tong,

Kowloon Hong Kong S. A. R.

T: +852 3664 6888

F: +852 3664 6999

E: hongkong@aurecongroup.com

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