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

Monthly Environmental Monitoring and Audit Report (No. 1) – December 2022

2023-03-01

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Our Ref.: CL/91823/0291-VES
Date: 1 March 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)
Monthly Environmental Monitoring and Audit Report (No.1) – December 2022

I refer to Conditions 3.3 under Environmental Permit No. EP-292/2007 and Further Environmental Permit No. FEP-01/292/2007, regarding the submission of a monthly Environmental Monitoring and Audit report. I hereby verified the captioned "Monthly Environmental Monitoring and Audit Report (No.1) – December 2022" dated 1 March 2023.

Yours faithfully
MEINHARDT INFRASTRUCTURE AND ENVIRONMENT LTD

Claudine Lee
Independent Environmental Checker

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Ref: P521530-0000-REP-NN-0026

By Email

1 March 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
Submission of Monthly Environmental Monitoring and Audit Report (No.1) – December 2022

In accordance with the requirement specified in Condition 3.3 of Environmental Permit No. EP-292/2007 and Further Environmental Permit No. FEP-01/292/2007, we are pleased to submit the certified "Monthly Environmental Monitoring and Audit Report (No.1) – December 2022" dated 1 March 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. Monthly Environmental Monitoring and Audit Report (No.1) – December 2022

cc.
1. IEC - Ms. Claudine Lee (By email: claudinelee@meinhardt.com.hk)
2. IEC Representative - Mr. Jimmy Lui (By email: jimmylui@meinhardt.com.hk)

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Document control						
Report title	Monthly Environmental Monitoring and Audit Report (No. 1) – December 2022					
Document ID		**Project number**				
File path						
Client	Veolia Hong Kong Holding Limited					
Client contact		**Client reference**				
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
0	6 January 2023	Submit to IEC	J Man	K.Chau		FL
1	9 January 2023	Submit to IEC	J Man	K.Chau		FL
2	12 January 2023	Submit to IEC	D Au Yeung	K.Chau		FL
3	1 March 2023	Submit to IEC	Various	K.Chau		FL
Current revision	**3**					

Approval			
Reviewer's signature		Approver's signature	
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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 Monthly EM&A Report presents the EM&A works conducted from 1 December 2022 to 31 December 2022 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:

-	Material loading and unloading, site traffic
-	Site clearance
-	Installation of permanent fencing
-	Site formation
-	Tree felling

Environmental Monitoring and Audit Progress

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

	Items	Times	Date
-	Air Quality Monitoring during normal weekdays at each monitoring station	5 times	5, 10, 16, 22 & 28 December 2022
-	Construction Noise Monitoring during normal weekdays at each monitoring station	4 times	6, 16, 22 & 28 December 2022
-	Surface Water Quality Monitoring during normal weekdays at each monitoring station	1 time	5 December 2022
-	Landfill Gas Monitoring during normal weekdays for Construction Works	24 times	1 to 6, 8 to 10, 12 to 17, 19 to 24, 28 to 31 December 2022
-	Post-translocation Monitoring during normal weekdays at recipient site	1 time	29 December 2022
-	Post-transplantation monitoring and audit during normal weekdays for transplanted plants and receptor sites	2 time	9 & 21 December 2022
-	Joint Environmental Site Inspection	4 times	5, 12, 19 & 28 December 2022

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

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

No non-compliance event and complaint were recorded during the reporting period.

No summons/prosecutions were received in this reporting period.

One complaint on 20 December 2022 was received by the public relations officer of the Contractor the reporting period. There is no direct evidence showing that the complaint is likely related to NENTX project.

Reporting Change

There was no reporting change in the reporting period.

Future Key Issues

Works to be undertaken in the next month include:

- 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

Potential environmental impacts arising from the above construction activities are mainly associated with air quality, construction noise, water quality, waste management, landfill gas monitoring, landscape and visual, cultural heritage and ecology.

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 and Environmental Permit (EP and FEP) condition 3.3, Monthly EM&A report should be submitted to the Director of Environmental Protection (DEP), within 2 weeks after the end of the reporting month. 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 Monthly 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 December 2022.

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 – Future Key Issues

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 and the construction layout plan are summarized in **Appendix L**.

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

Construction Activities Undertaken	
-	Material loading and unloading, site traffic
-	Site clearance
-	Site formation
-	Tree felling

2.2. Project Organization & Management Structure

2.2.1. The Project Organization Chart & Management Structure are shown in **Appendix B**. 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 Holding Ltd.)	Mr. William Wan	2902 5296
Independent Environmental Checker (IEC) (Meinhardt Infrastructure and Environment Ltd.)	Ms. Claudine Lee	2859 5409
Environmental Team Leader (ET) (Aurecon Hong Kong Limited)	Mr. Fredrick Leong	3664 6888

2.3. Status of Submission required under the FEP & EP

2.3.1. The status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the FEP & EP 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 P**.

Table 2-3 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	Submission Date (12 Oct 2022)
2.3	2.5	Submission of EM&A Manual	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	Submission Date (19 Jan 2023) 2nd transplantation monitoring (9 Dec 2022) 3rd transplantation monitoring (21 Dec 2022)
2.8	2.10	Translocation and translocation monitoring	Translocation was carried out in July 2022 Submission Date (27 December 2022) 5th translocation monitoring (29 Dec 2022)
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)

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
Effluent Discharge License under Water Pollution Control Ordinance	WT00042301-2022	31 October 2027	Approved on 18 October 2022

2.5. Environmental Monitoring and Audit Progress

2.5.1. A summary of the monitoring activities in this reporting period is presented in **Table2-5**.

Table 2-5 Summary of the Monitoring Activities in this reporting period

	Items	Times	Date
-	Air Quality Monitoring during normal weekdays at each monitoring station	5 times	5, 10, 16, 22 & 28 December 2022
-	Construction Noise Monitoring during normal weekdays at each monitoring station	4 times	6, 16, 22 & 28 December 2022
-	Surface Water Quality Monitoring during normal weekdays at each monitoring station	1 time	5 December 2022
-	Landfill Gas Monitoring during normal weekdays for Construction Works	24 times	1 to 6, 8 to 10, 12 to 17, 19 to 24, 28 to 31 December 2022
-	Post-translocation Monitoring during normal weekdays at recipient site	1 time	29 December 2022
-	Post-transplantation monitoring and audit during normal weekdays for transplanted plants and receptor sites	2 time	9 & 21 December 2022
-	Joint Environmental Site Inspection	4 times	5, 12, 19 & 28 December 2022

Air Quality

5 sets of 1-hr TSP & 24-hr TSP construction dust measurement were carried out at each monitoring stations during normal weekdays of the reporting period. No exceedance of Action and Limit Levels of construction dust was recorded during the reporting period.

Noise

4 sets of 30-minute construction noise measurement were carried out at each monitoring stations during normal weekdays of the reporting period. No exceedance of Action and Limit Levels of construction noise was recorded during the reporting period.

Groundwater

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.

Surface Water Quality

1 set of surface water quality measurement were carried out at each monitoring stations during normal weekdays of the reporting period. No exceedance of Action and Limit Levels of surface water quality was recorded during the reporting period.

Landfill Gas

24 sets of landfill gas measurement were carried out at a designated monitoring location during normal weekdays of the reporting period. No exceedance of Action and Limit Levels of landfill gas was recorded during the reporting period.

Landscape and Visual

All the specified and affected LCAs, LRs and VSRs have been monitored during the reporting period. No exceedance of Action and Limit Levels of landscape and visual was recorded during the reporting period.

Cultural Heritage

Implementation of the mitigation measures during construction phase of the Project has been monitored through the regular site inspection/audit.

Ecology

1 set of post-translocation monitoring at recipient site and 2 sets of post-transplantation monitoring and audit for transplanted plants and receptor sites during normal weekdays of the reporting period were carried out. Implementation of the mitigation measures during construction phase of the Project has been monitored through the regular site inspection/audit.

Environmental Site Inspection

ET weekly environmental site inspections were carried out on 05, 12, 19 & 28 December 2022. A joint environmental site inspection was carried out by the representatives of the Employer's Representative (ER), the Contractor, IEC and the ET on 19 December 2022. The Contractor has generally implemented the mitigation measures as recommended.

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-hrTotal 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 detailed monitoring schedule is shown in **Appendix C**. 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 existing 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 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).

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 Equipment

3.1.3.1 High volume samplers (HVSs) were used for carrying out 24-hr TSP monitoring. For 1-hr TSP monitoring, direct reading dust meters were used to measure 1-hr TSP levels.

3.1.3.2 **Table 3-3** summarises the equipment that were used in the dust monitoring programme. The calibration certificates are shown in **Appendix D**.

Table 3-3 Dust Monitoring Equipment

Equipment	Model	Monitoring Station
High Volume Sampler (HVS)	TE-5170X (S/N: 1105)	AM1
	TE-5170X (S/N: 1106)	AM2
	TE-5170X (S/N: 1856)	AM3
Direct Reading Dust Meter	Sibata LD-5R (S/N: 0Z4545)	AM1 to AM3
	Sibata LD-5R (S/N: 882106)	
	Sibata LD-5R (S/N: 882110)	
	Sibata LD-5R (S/N: 942532)	
Calibration Kit (for HVS)	TE-5025A (S/N: 3465)	AM1 to AM3

3.1.4 Monitoring Methodology

1-hr TSP Monitoring

3.1.4.1 The 1-hr TSP impact monitoring was conducted using a portable direct reading dust meter.

Measuring Procedures

3.1.4.2 The measuring procedures of the 1-hr dust meter has been undertaken in accordance with the Manufacturer's Instruction Manual as follows:

Procedure of starting monitoring

- Place the 1-hr dust meter at least 1.3m above ground;
- Turn on the "On/Off" button at the side of instrument. Program will be changed to "BG" mode and leave it for 1 minute.
- Pull out the Suction adaptor and turn the button at the side. Cover with hand at the suction adaptor measure the background for 10 seconds.
- Press " UP" and " DOWN" for choosing "SPAM Mode" for SPAM Measurement.
- Press "Up" and "Down" to select "Measurement Mode" with 60 minutes interval and unit in ug/m3.
- Press "Start/Stop" to start monitoring.

Procedure of setting measurement timer

- Press "Up" or "Down" to find "Setting LOG".
- Select "Record Cycle" and change the record time subject to different project requirement. For example, setting the record cycle as 60 minutes for normal operation.
- Press "ESCAPS" back to the main page.
- Press "Up" or "Down" to access "Measurement Timer" and select "Measurement time" to change the time to 3 hours.
- Information such as sampling date, time, count value and site condition will be recorded during the monitoring period.

Calibration & Maintenance

3.1.4.3 The direct reading dust meters will be verified against calibrated high volume samples (HVSs) annually. A 2-day, three 3-hour measurement results per day from direct reading dust meter will be taken to compare with the sampling results from the HVS. The correlation between the direct reading dust meter and the HVS will then be concluded. By accounting for the correlation factor, the direct reading dust meter will be considered to achieve comparable results as that of the HVS.

3.1.4.4 All digital dust indicator will be calibrated with on-site HVS annually. Calibration certificate will be provided after calibration.

Quality Audit

3.1.4.5 Checklist of regular checking for digital dust meter will be conducted bi-weekly by environmental technician to ensure the all-digital dust meter are in good condition and submitted to supervisors. All checklists will be kept by supervisors.

3.1.4.6 Logbook is provided to environmental technician record the transferal of equipment to other colleagues, reporting to supervisors is required.

24-hr TSP Monitoring

3.1.4.7 The 24-hr TSP monitoring has been conducted using a High-Volume Sampler (HVS).

Measuring Procedures

3.1.4.8 The HVS has been set-up at the monitoring location with a fixed power supply for operation. The measuring procedures of the 24-hr TSP measurements has been undertaken in accordance with the specifications listed in the EM&A Manual. Each HVS includes a motor, a filter holder, a flow controller and a sampling inlet in accordance with the performance specification of the USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50), Appendix B. The measuring procedures of the 24-hr dust meter was undertaken in accordance with the Manufacturer's Instruction Manual as follows:

- The power supply will be checked to ensure the HVS works properly;
- The filter holder and the area surrounding the filter will be cleaned;
- The filter holder will be removed by loosening the four bolts and a new filter on a supporting screen will be aligned carefully;
- The filter will be properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- The swing bolts will be fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- The shelter lid will be closed and secured with the aluminium strip;
- The HVS will be warmed-up to establish run-temperature conditions;
- A new flowrate record sheet will be set into the flow recorder;
- The programmable timer will be set for a sampling period of 24 hour, and the starting time, weather condition and the filter number will be recorded;
- The initial elapsed time will be recorded;
- At the end of sampling, the sampled filter will be removed carefully and folded in half-length so that only surfaces with collected particulate matter will be in contact;
- The sample will be placed in a clean plastic envelope and sealed;
- All monitoring information will be recorded on a standard data sheet; and
- The filters will be taken back to HOKLAS accredited laboratory for analysis.

3.1.4.9 In addition, site conditions and dust sources were recorded in a standard form for direct input into a database.

Calibration & Maintenance

3.1.4.10 The high volume motors and their accessories should be properly maintained, including routine motor brushes replacement and electrical wiring checking, to ensure that the equipment and a continuous power supply were in good working condition.

3.1.4.11 Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually.

The detail procedure of calibration of HVS is listed below:

1. Make sure the electrical circuit is connected properly. The motor should be directly connected to the power source.
2. Open the top cover and unlock the screws at the four corners.
3. Install the variable orifice and adapter plate to high volume air sample. Tighten the nut securely. Turn the knob of orifice clock-wise to close the four holes on the bottom open.
4. Hold the water manometer on the cover of mass flow controller vertically. Connect one side of a water manometer to the pressure tap on the side of the orifice with a rubber vacuum tube. Leave opposite side of the manometer open to the atmosphere.
5. Turn on the sampler
6. Turn the knob orifice counter clock-wise to adjust the openings the four holes on the bottom open. Record the manometer reading and the reading from continuous flow recorder. At least 5 sets of data should be recorded.

3.1.5 Monitoring Results

3.1.5.1 The impact dust monitoring results are summarized in **Table 3-4** and **Table 3-5.** The monitoring data together with graphical presentations are presented in **Appendix E** and **Appendix F**.

Table 3-4 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
AM1	54 (44 – 65)	>285	>500
AM2	54 (45 – 61)	>279	>500
AM3	63 (57 – 68)	>285	>500

Table 3-5 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
AM1	114 (88 – 147)	>164	>260
AM2	65 (43 – 92)	>152	>260
AM3	140 (126 – 157)	>163	>260

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

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

3.1.6 Wind Data Monitoring

3.1.6.1 During the monitoring period. wind data from existing weather station in the vicinity of the designated monitoring location, i.e Ta Kwu Ling station operated by Hong Kong Observatory was adopted. It is considered that the wind data obtained from Ta Kwu Ling station are representative of the Project area and could be used for the construction dust monitoring programme for the Project. The results for wind data monitoring are presented in **Appendix H**.

3.1.7 Recommended Mitigation Measures

3.1.7.1 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. Covering with impermeable sheet should be provided for the inactive tipping area.

3.1.8 Event and Action Plan

3.1.8.1 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**.

4.2.3 The detailed monitoring schedule is shown in **Appendix C**. 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 existing 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 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). 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 Equipment

4.3.1 Integrating Sound Level Meters (SLMs) was used for noise impact monitoring. The SLM complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications shall be used for carrying out noise monitoring. The accuracy of the SLM was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements shall be accepted as valid only if the calibration level from prior to and after the noise measurement agrees to within 1.0dB.

4.3.2 A portable wind speed meter was used for measuring wind speeds in m/s.

4.3.3 **Table 4-3** summarises the equipment that have been used in the impact noise monitoring programme. The calibration certificates are shown in **Appendix D**.

Table 4-3 Noise Monitoring Equipment

Equipment	Model
Sound Level Meter	NTi XL2 (S/N: A2A-09696-E0)
Acoustic Calibrator	Rion NC-74 (S/N: 34504770)
Anemometer	RS-90 (S/N: 210722168)

4.4 Monitoring Methodology

4.4.1 The details of noise measurement procedures are described as follows:

- Free-field measurements were made at the monitoring locations.
- For free field, the Sound Level Meter was set at a height of 1.2 m above the ground. The battery condition was checked to ensure the proper functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
- Frequency weighting: A
- Time weighting: Fast
- Measurement time: 5 minutes (Leq (30-min) would be determined for daytime noise by calculating the logarithmic average of six Leq (5min) data.)
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after

measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after recalibration or repair of the equipment.

- Noise measurement should be paused during periods of high intrusive noise if possible and observation shall be recorded when intrusive noise is not avoided.
- At the end of the monitoring period, the Leq, L10 and L90 shall be recorded. In addition, site conditions and noise sources should be recorded on a standard record sheet.
- All noise monitoring will be conducted with the wind speed not exceeding 5m/s and no gusts exceeding 10m/s.

4.5 Monitoring Results

4.5.1 The impact noise monitoring results are summarized in **Table 4-4**. The monitoring data together with graphical presentations are presented in **Appendix E** and **Appendix F**.

Table 4-4 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
NM1a	51.1 (48.2 – 54.0)	When one documented complaint is received	>75dB(A)
NM2a	48.1 (47.6 – 50.0)		

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.

4.5.2 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 G**.

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

4.6 Recommended Mitigation Measures

4.6.1 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.

4.7 Event and Action Plan

4.7.1 Should non-compliance of the criteria occurs, action in accordance with the action plan in **Table 4-5** shall be carried out.

Table 4-5 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

5.1.2 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. The target commencement period of groundwater monitoring will be in 2026.

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 Impact surface water monitoring was carried out on 5 December 2022 at WM1 and WM2. The monitoring locations are indicated in **Table 5-1** and **Figure 2**.

5.2.2.2 The monitoring parameters, frequency and duration of surface water quality baseline monitoring are summarized in **Table 5-2**. Detailed monitoring schedule is presented in **Appendix C**.

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 Equipment

5.2.3.1 The measurements of pH, electrical conductivity (EC), DO, turbidity, water temperature and air temperature were undertaken in situ. In situ monitoring instruments in compliance with the specifications listed under Section 5.5 of the EM&A Manual were used to undertake the surface water quality monitoring for the Project. **Table 5-3** summarises the equipment used in the impact surface water quality monitoring works. Copies of the calibration certificates are attached in **Appendix D**.

Table 5-3 Surface Water Quality Monitoring Equipment

Equipment	Model
Water Quality Meter	Horiba U-53 (S/N: PORBNFNT)
Water Flow Meter	FP111 (S/N: 22K100859)

5.2.4 Summary of Surface Water Quality Monitoring Procedure

Operational/ Analytical Procedures

5.2.4.1 In general, water samples were collected from within 500 mm of the water surface. Water was collected by a small clean open-mouthed bucket with the lip pointing upstream. Usually, water was then transferred to the sample bottles until they were filled to the top with no remaining air space before the lid was securely screwed on. For samples that were preserved with acid or alkalis prior to transport to the laboratory, the samples bottles were filled to the level specified by the analytical laboratory.

5.2.4.2 Analyses shall be carried out in accordance with methods described in ASTM or APHA - AWWA-WEF Standard.

Laboratory Analytical Methods

5.2.4.3 The testing of parameters presented in **Table 5-4** for all stations was conducted by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066). Comprehensive quality assurance and control procedures were in place in order to ensure quality and consistency in results. The detection limits are provided in **Table 5-4**.

Table 5-4 Surface Water Monitoring Detection Limits and Limit of Reporting

Parameters	Detection Limit (in EM&A Manual)	Limit of Reporting	Method Reference
pH	0.1	0.1	APHA 4500 H+ B
Electrical conductivity	1 μS/cm	1 μS/cm	APHA 2510 B
Alkalinity	1 mg/L	1 mg/L	APHA 2320 B
COD	10 mg/L	5 mg/L	APHA 5220 C
BOD_5	3 mg/L	2 mg/L	APHA 5210 B
TOC	1 mg/L	1 mg/L	APHA 5310 B
SS	0.1 mg/L	0.1 mg/L	APHA 2540 D
Ammonia-nitrogen	0.2 mg/L	0.01 mg/L	APHA 4500 NH3 G
TKN	0.4 mg/L	0.1 mg/L	APHA 4500Norg: D
Nitrate	0.5 mg/L	0.01 mg/L	APHA 4500 NO3 I
Sulphate	5 mg/L	1 mg/L	USEPA 375.4
Sulphite	2 mg/L	2 mg/L	APHA 4500 SO3 B
Phosphate	0.01 mg/L	0.01 mg/L	APHA 4500-P B & F
Chloride	0.5 mg/L	0.5 mg/L	USEPA 325.1
Sodium	50 μg/L	50 μg/L	USEPA 6010C
Mg	50 μg/L	50 μg/L	USEPA 6010C
Ca	50 μg/L	50 μg/L	USEPA 6010C
K	50 μg/L	50 μg/L	USEPA 6010C
Fe	50 μg/L	10 μg/L	USEPA 6010C
Ni	1 μg/L	1 μg/L	USEPA 6020A
Zn	10 μg/L	10 μg/L	USEPA 6020A
Mn	1 μg/L	1 μg/L	USEPA 6020A
Cu	1 μg/L	1 μg/L	USEPA 6020A
Pb	1 μg/L	1 μg/L	USEPA 6020A
Cd	0.2 μg/L	0.2 μg/L	USEPA 6020A
Coliform Count	1 cfu/ 100mL	1 cfu/ 100mL	DoE section 7.8, 7.9.4.1 & 3
Oil and Grease	5 mg/L	5 mg/L	APHA 5520 B

QA/ QC Requirements

5.2.4.4 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at the intervals according to manufacturer's requirement throughout all stages of the surface water quality monitoring programme. Responses of sensors and electrodes were checked with certified standard solutions before each use. Calibration for a DO meter was carried out before measurement according to the instruction manual of the equipment model. For the on-site calibration of field equipment, the requirements of the BS 1427:2018, "Guide to on-site test methods for the analysis of waters" was observed.

Decontamination Procedures

5.2.4.5 Water sampling equipment used during the course of the monitoring programme was decontaminated by manual washing and rinsed with clean distilled water after each sampling location.

Sampling Management and Supervision

5.2.4.6 All sampling bottles were labelled with the sample ID (including the indication of sampling station), laboratory number and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory. The laboratory determination works started within 24 hours after collection of water samples.

Quality Control Measures for Sample Testing

5.2.4.7 The samples testing was performed by ALS Technichem (HK) Pty Ltd. The following quality control programme was performed by the laboratory:

- One method blank; and
- One sample duplicate.

5.2.5 Monitoring Results

5.2.5.1 Impact surface water quality monitoring was conducted at WM1 and WM2 on 5 December 2022. No adverse weather was observed during reporting period. The detailed monitoring schedule is shown in **Appendix C**.

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

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

5.2.5.4 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 G**.

Table 5-5 Summary of Impact Surface Water Monitoring Results

Monitoring Parameter(s)	Monitoring Station					
	WM1			WM2		
	Monitoring Results	Action Level	Limit Level	Monitoring Results	Action Level	Limit Level
pH	7.4	>7.7	>7.8	7.5	>7.6	>7.7
Electrical Conductivity in µS/cm	58	---	---	114	---	---
DO in mg/L	10.8	<7.4	<4	6.5	<5	<4
Turbidity in NTU	8.6	>9.2	>9.5	23.3	>108.3	>108.9
SS in mg/L	3.4	>9.7	>11.4	25.6	>94.5	>94.7
Alkalinity	16	---		35	---	
COD	<5			<5		
BOD_5	<2			<2		
TOC	3			3		
Ammonia-nitrogen	0.02			0.18		
TKN	0.2			0.4		
Nitrate	0.01			0.10		
Sulphate	3			8		
Sulphite	<2			<2		
Phosphate	0.01			<0.01		
Chloride	6			6		
Sodium	8540			6710		
Mg	410			1140		
Ca	3180			12100		
K	290			2310		
Fe	660			6040		
Ni	<1			<1		
Zn	<10			21		
Mn	42			2150		
Cu	<1			2		
Pb	<1			2		
Cd	<0.2			<0.2		
Coliform Count	Not detected			320		
Oil and Grease	<5			<5		

5.2.6 Recommended Mitigation Measure

5.2.6.1 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.

5.2.7 Event and Action Plan

5.2.7.1 Should non-compliance of the criteria occurs, action in accordance with the action plan in **Table 5-6** shall be carried out.

Table 5-6 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

6.1.1 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 I**.

6.1.2 A total of 73.28 tonnes of general refuse was generated during the reporting period. The general refuse generated from the Project were disposed of at the NENT Landfill. A total of 300 tonnes of hard rock and large broken concrete was generated from the contract in December 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” during reporting period. A total of 11.49 tonne of yard waste was generated during the reporting period.

6.1.3 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 Landfill Gas (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

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. The monitoring frequency and areas to be monitored should be set down prior to commencement of groundworks by the Safety.

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.

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.

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

7.2.5 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 Location	Type of works
Portion A +55 mpD Platform	Excavation Works

7.3 Monitoring Equipment

7.3.1 Gas Detector was used for carrying out LFG monitoring for Construction Works. **Table 7-2** summarises the equipment that were used in the LFG monitoring programme. The calibration certificates are shown in **Appendix D**.

Table 7-2 LFG Monitoring Equipment

Equipment	Model
Gas Detector	PS200 (S/N: 373075)

7.4 & Event and Action Plan (EAP)

7.4.1 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.

7.5 Monitoring Results

7.5.1 The LFG monitoring was conducted at Portion A+55 mpD Platform in December 2022 (Conducted on working days). The LFG monitoring results are summarized in **Table 7-4.** The details monitoring data are presented in **Appendix E**.

Table 7-4 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 %
		Monitoring Results			
Portion A +55 mpD Platform	1 Dec 2022	0	0	0	20.8
	2 Dec 2022	0	0	0	20.7
	3 Dec 2022	0	0	0	20.7
	5 Dec 2022	0	0	0	20.6
	6 Dec 2022	0	0	0	20.5
	8 Dec 2022	0	0	0	20.4
	9 Dec 2022	0	0	0	20.4
	10 Dec 2022	0	0	0	20.3
	12 Dec 2022	0	0	0	20.4
	13 Dec 2022	0	0	0	20.5
	14 Dec 2022	0	0	0	20.4
	15 Dec 2022	0	0	0	20.2
	16 Dec 2022	0	0	0	20.3
	17 Dec 2022	0	0	0	20.3
	19 Dec 2022	0	0	0	20.3
	20 Dec 2022	0	0	0	20.1
	21 Dec 2022	0	0	0	20.3
	22 Dec 2022	0	0	0	20.2
	23 Dec 2022	0	0	0	20.4
	24 Dec 2022	0	0	0	20.3
	28 Dec 2022	0	0	0	20.3
	29 Dec 2022	0	0	0	20.3
	30 Dec 2022	0	0	0	20.4
	31 Dec 2022	0	0	0	20.2
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.

7.5.2 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 G**.

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

7.6 Recommended Mitigation Measures

7.6.1 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.

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 K**.

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, the checking works by IC on 8 July 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 7 July 2022 and re-visit of the graves together with IC Representatives on 8 July 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 temporary 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 temporary fencing locations are shown in **Appendix M**. 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 based on the requirement of the approved Revised Translocation Proposal for the Endemic Freshwater Crab *Somanniathelphusa zanklon*. The 5th Post-Translocation Monitoring Report (December 2022) presents the details of requirements, monitoring results and site inspection with photos. The site inspection photos are also summarized in **Appendix N**. During the reporting period, no *S. zanklon* individual is identified.

10.1.2 The post-transplantation monitoring was conducted on 9 and 21 December 2022 based on the requirement of the approved Transplantation Proposal for Plant Species of Conservation Importance (Rev.1). The 2nd Post-transplantation Monitoring and Audit Report (9 December 2022) & 3rd Post-transplantation Monitoring and Audit Report (21 December 2022) present the details of requirements, monitoring results and site inspection with photos. The site inspection photos are also summarized in **Appendix N**. 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/.

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
Post-transplantation Monitoring	1st	24 Nov 2022
	2nd	9 Dec 2022
	3rd	21 Dec 2022

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 Weekly ET environmental site inspections were conducted in the reporting period on 05, 12, 19 and 28 December 2022. A joint environmental site inspection was carried out by the representatives of the ER, the Contractor, IEC and the ET on 19 December 2022. The joint environmental site inspection records are shown in **Appendix J**. There was no noncompliance recorded during the site inspections.

11.1.3 Major findings and recommendations are summarized as follows:

05 December 2022

- The accumulated waste shall be disposed regularly. The Contractor was recommended to increase the frequency of waste disposal to avoid accumulate waste.
- 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 December 2022

- The vehicle exit road shall be kept clear of dusty materials. The Contractor was reminded to schedule watering for the vehicle exist road.
- 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.
- The accumulated waste is observed. The Contractor was recommended to increase the frequency of waste disposal to avoid accumulation of waste.

19 December 2022

- Sediments are accumulated in the channel at the vehicle wash bay. The Contractor was reminded to remove the sediments at least on a weekly basis.

28 December 2022

- The vehicle road is covered with dusty materials in Portion A. The vehicle entrance shall be kept clear of dusty materials.
- The work area is dry and fugitive dust is observed from loading and unloading activity in Portion D. The Contractor has been reminded to schedule watering for work area and to spray with water during loading and unloading activities.
- Latex paint drums are observed without drip trays in Portion A. Drip tray shall be provided for latex paint drums

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

12 Environmental Non-conformance

12.1 Summary of Monitoring Exceedance

12.1.1 No exceedance of the Action and Limit Levels was recorded at monitoring station 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. The investigation report is provided in **Appendix O**.

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 implementation status during the reporting period is summarized in **Appendix K**.

14 Future Key Issues

14.1 Key Issues for the Coming Month

14.1.1 Works to be undertaken for the coming monitoring periods are summarized below. Detailed construction activities and locations are summarized in **Appendix L**.

-	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

14.1.2 Potential environmental impacts arising from the above construction activities are mainly associated with air quality, construction noise, water quality, waste management, landfill gas monitoring, landscape and visual, cultural heritage and ecology

14.2 Monitoring Schedule for the Next Month

14.2.1 The tentative schedule of environmental monitoring for the next reporting period is presented in **Appendix C**.

14.3 Construction Programme for the Next Month

14.3.1 The most updated construction programme for the Project is presented in **Appendix A**.

15 Conclusion

15.1.1 1-hr & 24-hr TSP impact monitoring was carried out in the reporting month. No Action / Limit Level exceedance at AM1, AM2 & AM3 was recorded during the period.

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

15.1.3 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.

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

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

15.1.6 In terms of cultural heritage, implementation of the mitigation measures such as temporary 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.

15.1.7 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.

15.1.8 Four 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.

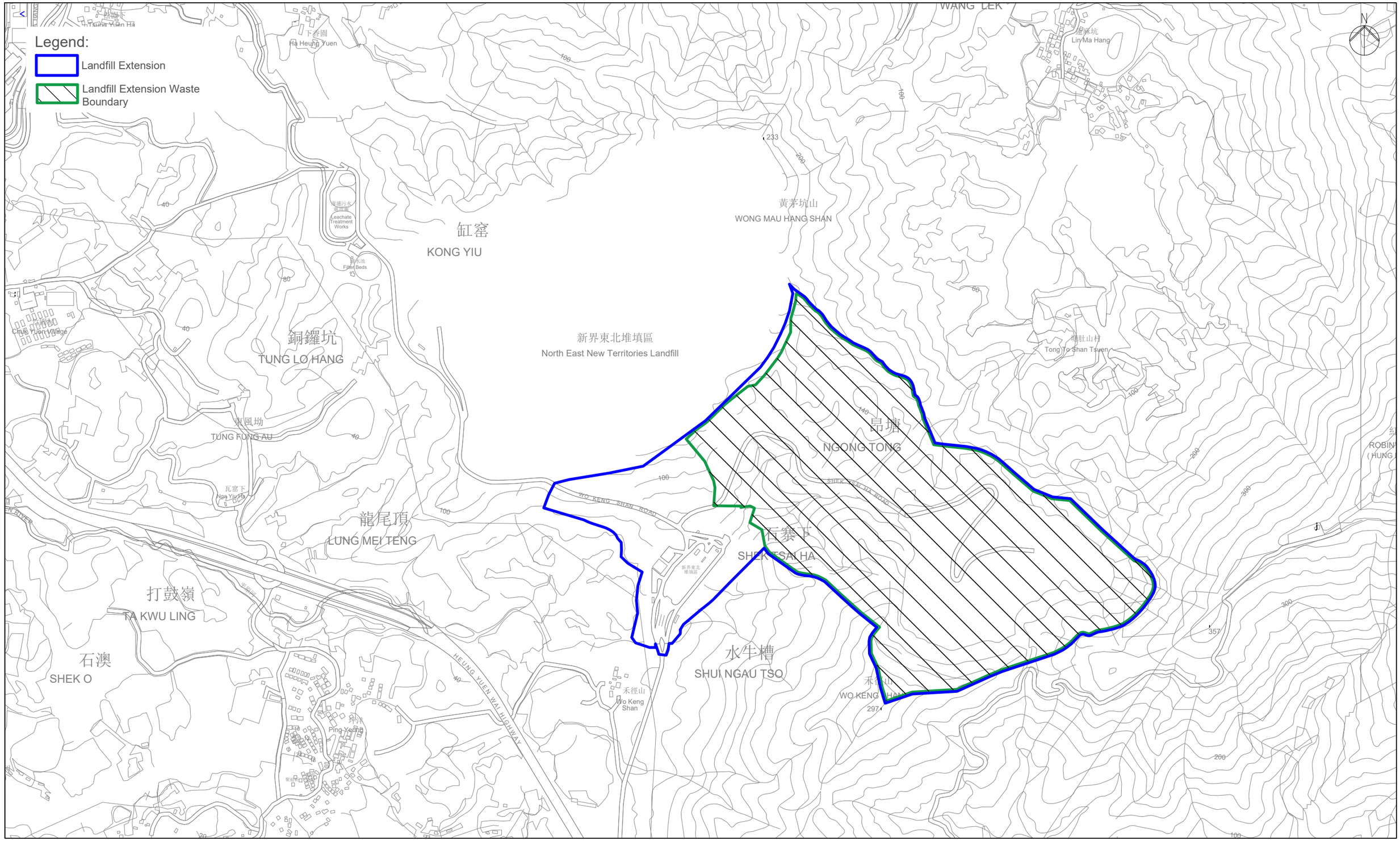
15.1.9 One complaint on 20 December 2022 was received by the public relations officer of the Contractor during the reporting period. There is no direct evidence showing that the complaint is likely related to NENTX.

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

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

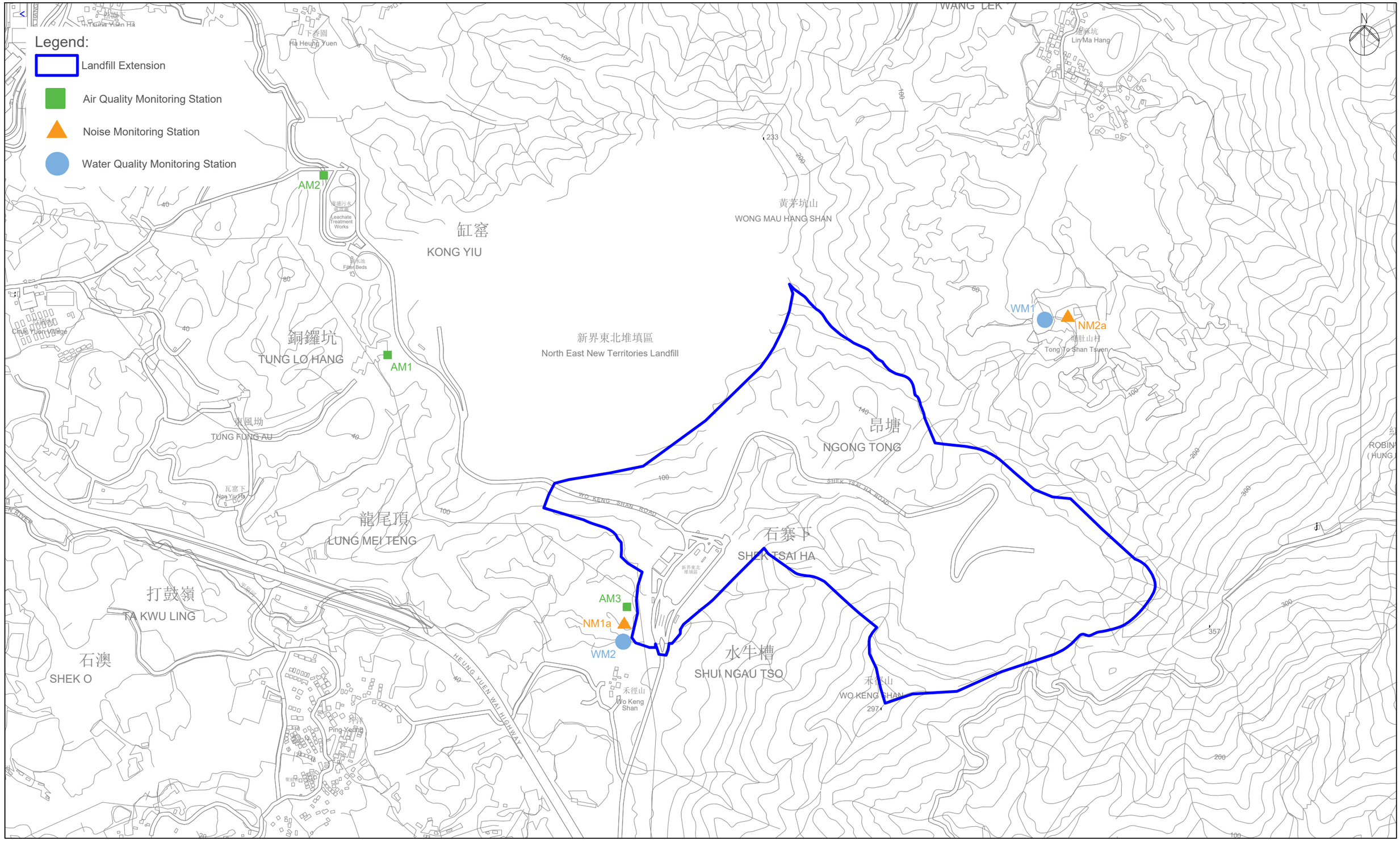
15.1.12 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Figure 1 Location of the Project Site



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

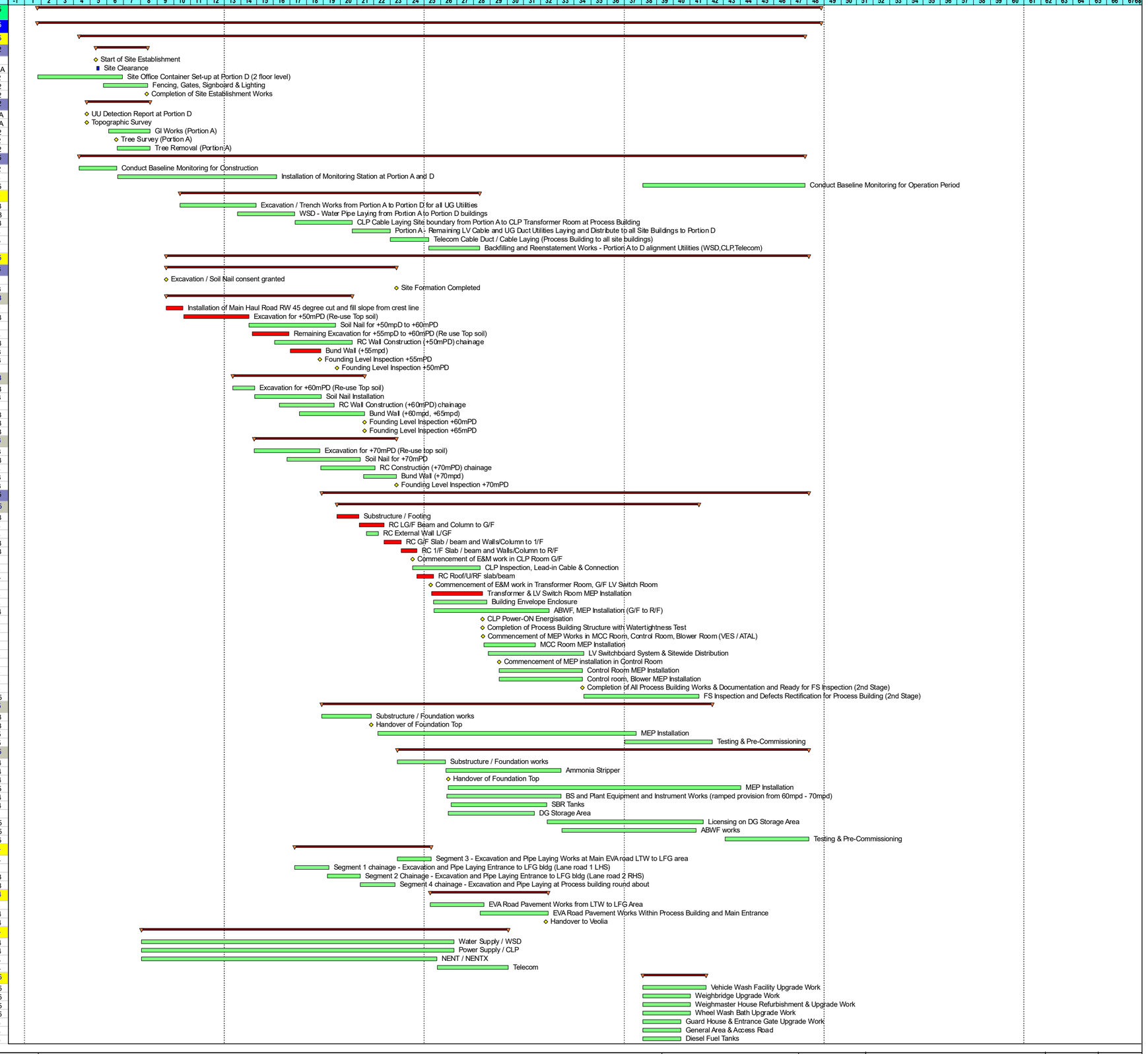
Figure 2 Impact Air, Noise & Surface Water Quality Monitoring Locations



aurecon Aurecon Hong Kong Limited	North-East New Territories (NENT) Landfill Extension Impact Monitoring Locations	Figure 2 Scale: 1:10000

Appendix A Construction Program

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

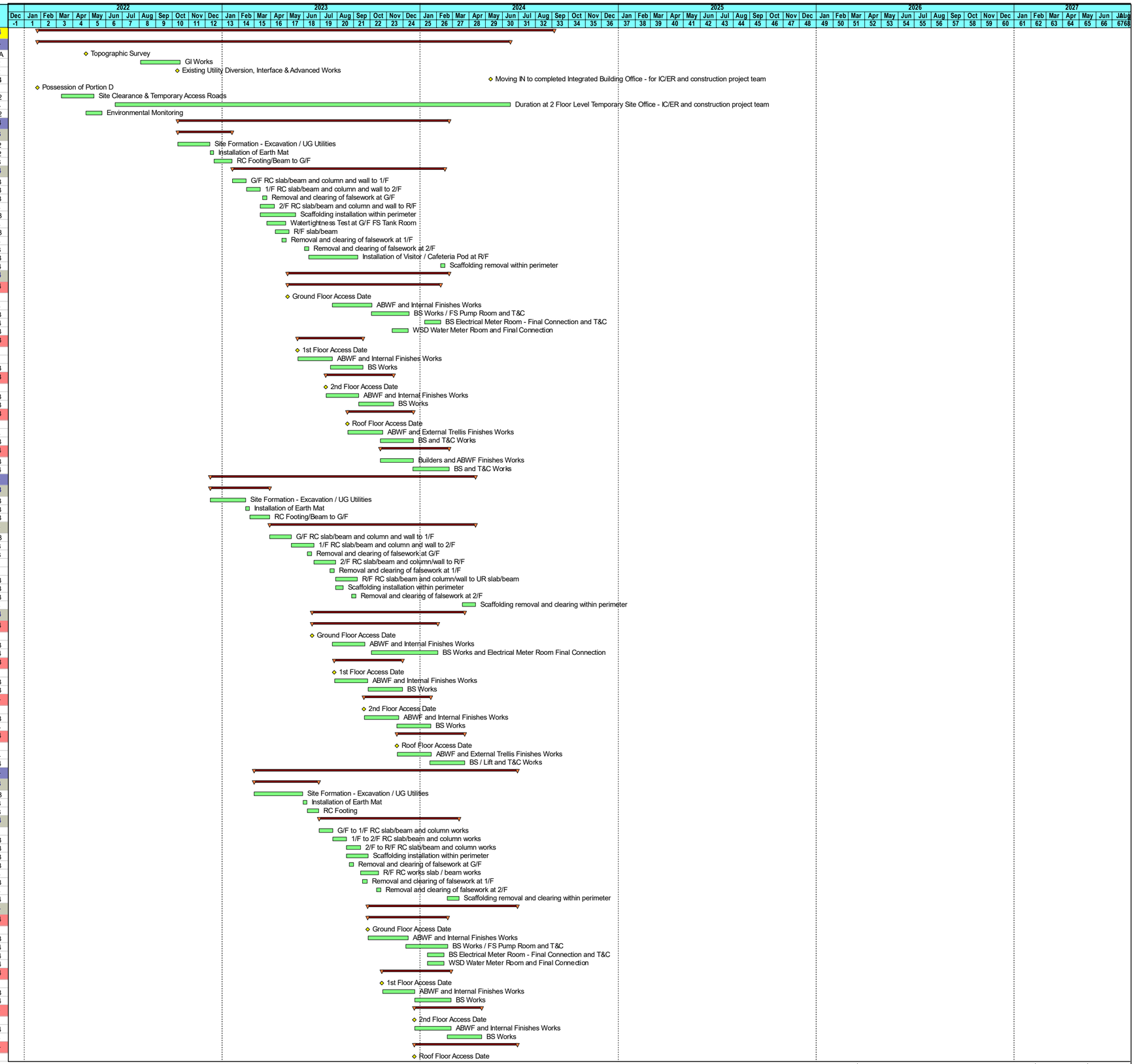
NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION

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	



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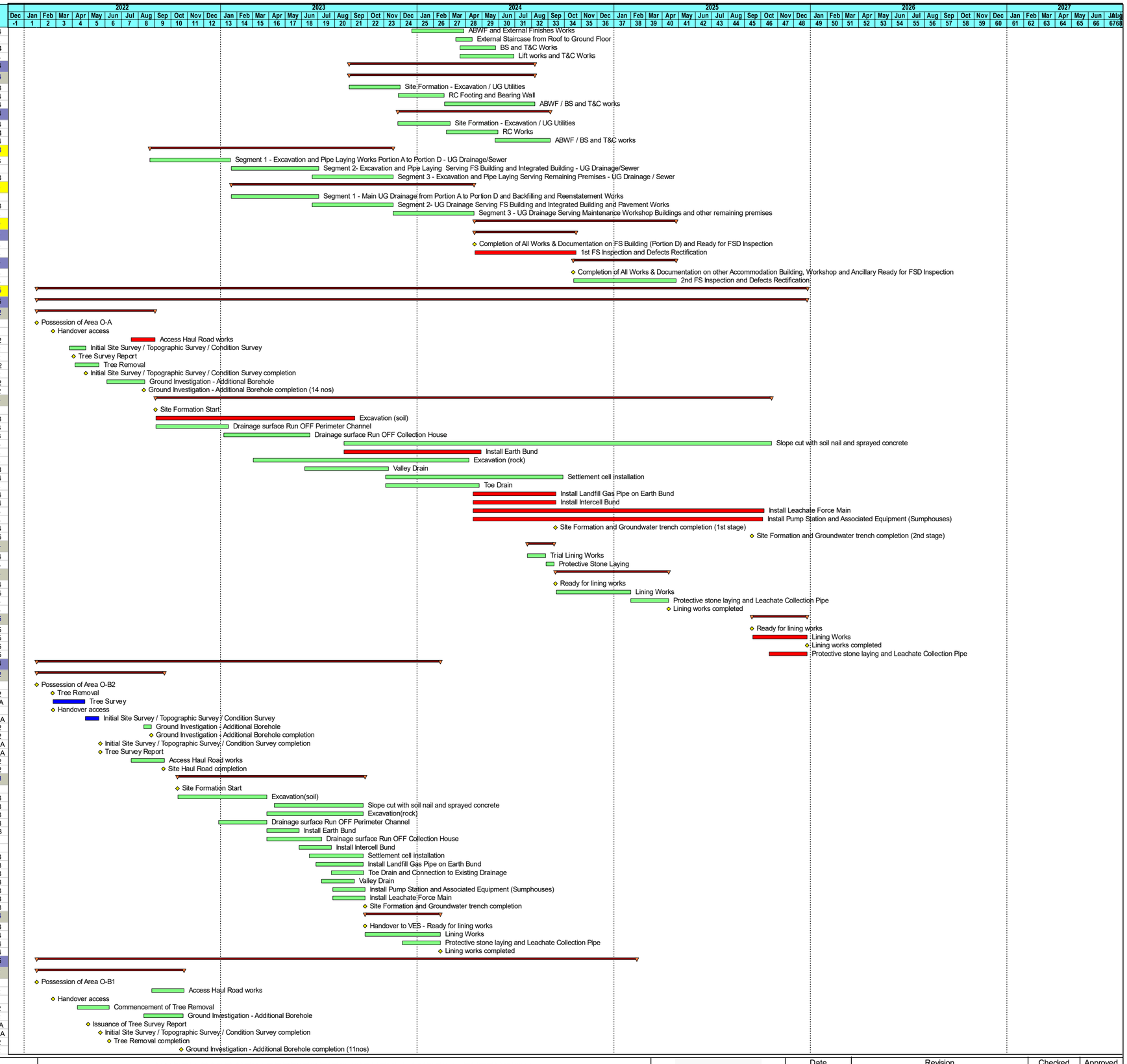
NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION

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
05-00181	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



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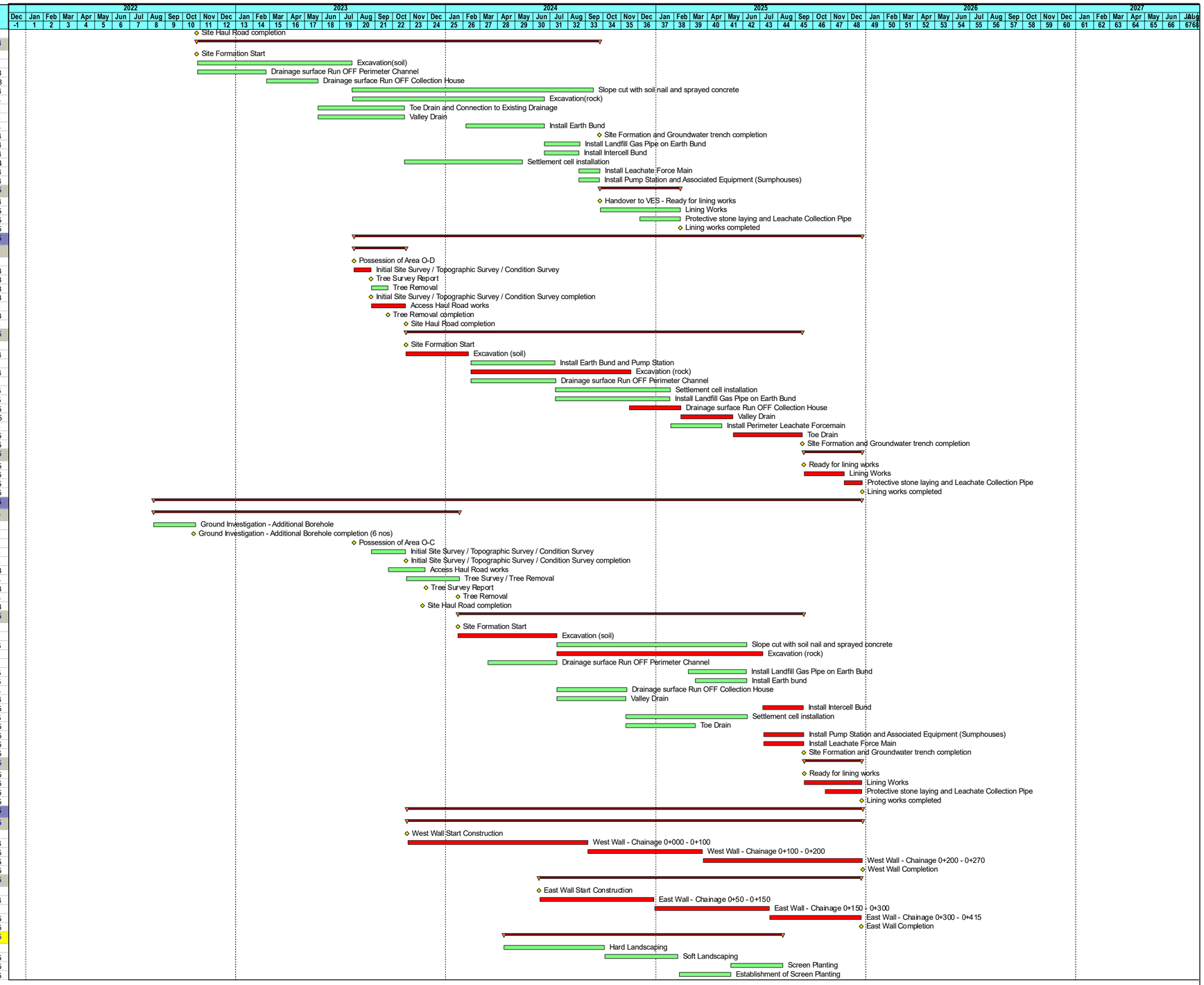
Date	Revision	Checked	Approved
08-Jul-22	EXTRACTED - ISSUED 14JAN2023	DW	AY

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

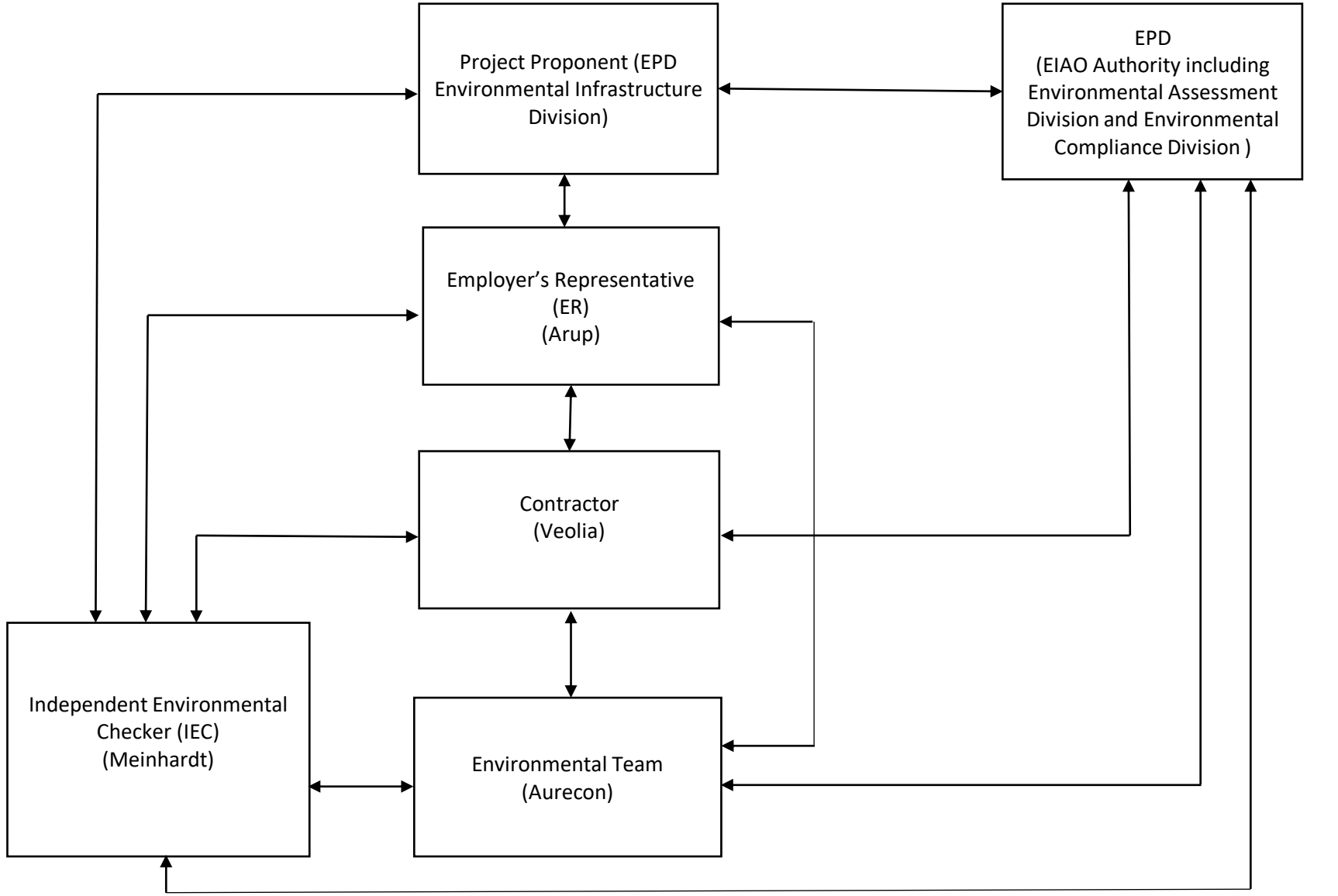
NORTH EAST NEW TERRITORIES (NENTX) LANDFILL EXTENSION

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

VEOLIA

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

Appendix B 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 C Monitoring Schedule for Reporting Month & Next Month

Impact Monitoring Schedule for NENT Landfill Extension (December 2022)

12-2022						
Sun	**Mon**	**Tue**	**Wed**	**Thur**	**Fri**	**Sat**
				1	**2**	**3**
4	**5** Air quality monitoring at AM1, AM2 and AM3 Surface water quality monitoring at WM1 and WM2	**6** Noise monitoring at NM1a and NM2a	**7**	**8**	**9**	**10** Air quality monitoring at AM1, AM2 and AM3
11	**12**	**13**	**14**	**15**	**16** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a	**17**
18	**19**	**20**	**21**	**22** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a	**23**	**24**
25	**26**	**27**	**28** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a	**29**	**30**	**31**

Remark:

1. Air quality monitoring includes 1-hour TSP and 24-hour TSP monitoring at AM1, AM2 and AM3 (Ref.: Table 3.1 of the approved EM&A Manual).
2. Noise monitoring includes 30-minute construction noise monitoring at NM1a and NM2a (Ref.: Table 4.1 of the approved EM&A Manual).
3. Surface water quality monitoring includes in-situ measurement and water sampling for laboratory analysis at WM1 and WM2 (Ref.: Table 5.5 and Section 5.5.6 of the approved EM&A Manual).

Impact Monitoring Schedule for NENT Landfill Extension (January 2023)

1-2023						
Sun	**Mon**	**Tue**	**Wed**	**Thur**	**Fri**	**Sat**
1	**2**	**3** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a	**4**	**5**	**6**	**7**
8	**9** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a Surface water quality monitoring at WM1 and WM2	**10**	**11**	**12**	**13**	**14** Air quality monitoring at AM1, AM2 and AM3
15	**16**	**17**	**18**	**19**	**20** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a	**21**
22	**23**	**24**	**25**	**26** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a	**27**	**28**
29	**30**	**31**	**1** Air quality monitoring at AM1, AM2 and AM3 Noise monitoring at NM1a and NM2a			

Remark:

1. The schedule is tentative only and would be subject to changes due to unforeseen circumstances.
2. Air quality monitoring includes 1-hour TSP and 24-hour TSP monitoring at AM1, AM2 and AM3 (Ref.: Table 3.1 of the approved EM&A Manual).
3. Noise monitoring includes 30-minute construction noise monitoring at NM1a and NM2a (Ref.: Table 4.1 of the approved EM&A Manual).
4. Surface water quality monitoring includes in-situ measurement and water sampling for laboratory analysis at WM1 and WM2 (Ref.: Table 5.5 and Section 5.5.6 of the approved EM&A Manual).

Date: 30 December 2022

Appendix D Calibration Certificates

Noise

MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	11-Feb-2022	**Certificate Number**	MLCN220284S

Customer Information

Company Name	Acuity Sustainability Consulting Limited
Address	Unit E, 12/F., Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, HK

Equipment-under-Test (EUT)

Description	Sound Level Calibrator
Manufacturer	Rion
Model Number	NC-74
Serial Number	34504770
Equipment Number	--

Calibration Particular

Date of Calibration	11-Feb-2022		
Calibration Equipment	4231(MLTE008) / AV200063 / 23-Jun-23 1357(MLTE190) / MLEC21/05/02 / 26-May-22		
Calibration Procedure	MLCG00, MLCG15		
Calibration Conditions	Laboratory	Temperature	23 °C ± 5 °C
		Relative Humidity	55% ± 25%
	EUT	Stabilizing Time	Over 3 hours
		Warm-up Time	Not applicable
		Power Supply	Internal battery
Calibration Results	Calibration data were detailed in the continuation pages. Calibration result was within EUT specification.		

Approved By & Date

K.O. Lo 11-Feb-2022

Statements

* Calibration equipment used for this calibration are traceable to national / international standards.
* The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the EUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
* MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the EUT.
* The copy of this Certificate is owned by MaxLab Calibration Centre Limited. No part of this Certificate may be reproduced without the prior written approval of MaxLab Calibration Centre Limited.

萬儀校正中心有限公司
MaxLab Calibration Centre Limited
香港新界葵涌華星街16-18號保盈工業大廈9樓B室
Unit B, 9/F., Boldwin Industrial Bldg., 16-18 Wah Sing Street, Kwai Chung, N.T., Hong Kong Tel: (852) 2116 1380 Fax: (852) 2264 6480 Email: info@maxlab.com.hk

MAXLAB

Certificate No. MLCN220284S

Calibration Data

EUT Setting	Standard Reading	EUT Error from Setting	Calibration Uncertainty	EUT Specification
94 dB	94.0 dB	0.0 dB	0.20 dB	± 0.3 dB

- END -

Calibrated By : Dan
Date : 11-Feb-22

Checked By : K.O. Lo
Date : 11-Feb-22

萬儀校正中心有限公司
MaxLab Calibration Centre Limited
香港新界葵涌華星街 16-18 號保盈工業大廈 9 樓 B 室
Unit B, 9/F., Boldwin Industrial Bldg., 16-18 Wah Sing Street, Kwai Chung, N.T., Hong Kong Tel: (852) 2116 1380 Fax: (852) 2264 6480 Email: info@maxlab.com.hk

Certificate of Calibration

for

Description:	*Sound Level Meter*
Manufacturer:	*NTi Audio*
Type No.:	*XL2 (Serial No.: A2A-09696-E0)*
Microphone:	*ACO 7052 (Serial No.:68840)*
Preamplifier:	*NTi Audio M2211 MA220 (Serial No.:5287)*

Submitted by:

Customer:	*Acumen Environmental Engineering and Technologies Co. Ltd.*
Address:	*Unit D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong*

Upon receipt for calibration, the instrument was found to be:

☑ **Within**
☐ **Outside**

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: 24 March 2022

Date of calibration: 26 March 2022

Calibrated by: _____
Calibration Technician

Certified by: _____
Mr. Ng Yan Wa
Laboratory Manager

Date of issue: 26 March 2022

ACOUSTICS AND AIR TESTING LABORATORY CO LTD. (A+A) *L

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

1. *Calibration Precaution:*

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

- The results presented are the mean of 3 measurements at each calibration point.

2. *Calibration Conditions:*

Air Temperature:	22.6 °C
Air Pressure:	1006 hPa
Relative Humidity:	74.5 %

3. *Calibration Equipment:*

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	HOKLAS

4. *Calibration Results*

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	Ref
			104		104.1	±0.3
			114		114.1	±0.3

Time Weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	Ref
		Slow			94.1	±0.3

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dB SPL	Fast	94	31.5	94.0	±2.0
				63	94.1	±1.5
				125	94.1	±1.5
				250	94.0	±1.4
				500	94.1	±1.4
				1000	94.1	Ref
				2000	94.3	±1.6
				4000	94.9	±1.6
				8000	93.6	+2.1; -3.1

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	31.5	54.7	-39.4 ±2.0
				63	67.9	-26.2 ±1.5
				125	78.0	-16.1 ±1.5
				250	85.4	-8.6 ±1.4
				500	90.9	-3.2 ±1.4
				1000	94.1	Ref
				2000	95.5	+1.2 ±1.6
				4000	95.9	+1.0 ±1.6
				8000	92.5	-1.1+2.1; -3.1

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBC SPL	Fast	94	31.5	91.0	-3.0 ±2.0
				63	93.2	-0.8 ±1.5
				125	93.9	-0.2 ±1.5
				250	94.0	-0.0 ±1.4
				500	94.1	-0.0 ±1.4
				1000	94.1	Ref
				2000	94.1	-0.2 ±1.6
				4000	94.1	-0.8 ±1.6
				8000	90.6	−3.0 +2.1: −3.1

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
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5. *Calibration Results Applied*

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.05
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

Note:
The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)*L shall not be liable for any loss or damage resulting from the use of the equipment.

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
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Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C216243
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC21-2101) Date of Receipt / 收件日期 : 12 October 2021

Description / 儀器名稱 : Mini Anemometer
Manufacturer / 製造商 : RS PRO
Model No. / 型號 : RS-90
Serial No. / 編號 : 210722168
Supplied By / 委託者 : Acuity Sustainability Consulting Limited
Room C 11/F, Ford Glory Plaza, No. 37-39 Wing Hong Street,
Cheung Sha Wan, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 25 October 2021

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Testo Industrial Services GmbH, Germany
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : CKLo
C K Lo
Assistant Engineer

Certified By 核證 : H C Chan
Engineer

Date of Issue 簽發日期 : 26 October 2021

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 - 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C216243
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. Test equipment :

Equipment ID	Description	Certificate No.
CL018	Portable Calibrator	C204749
CL041 & CL041B	Digital Thermometer	C212654
CL042 & CL042B	Digital Thermometer	C212655
CL292	Recorder	C214057
CL330	Environmental Chamber	C205909
CL386	Multi-function Measuring Instrument	S16494

3. Test procedure : MA006 & MA130N.

4. Results :

4.1 Air Velocity

Applied Value (m/s)	UUT Reading (m/s)	Measured Correction		
		Value (m/s)	Measurement Uncertainty	
			Expanded Uncertainty (m/s)	Coverage Factor
2.01	1.70	+0.31	0.15	2.0
4.00	3.75	+0.25	0.20	2.0
6.01	5.81	+0.20	0.25	2.0
8.00	7.74	+0.26	0.29	2.0
10.01	9.84	+0.17	0.34	2.0

The results presented are the mean of 10 measurements at each calibration point.

4.2 Temperature

Applied Value (°C)	UUT Reading (°C)	Measured Correction		
		Value (°C)	Measurement Uncertainty	
			Expanded Uncertainty (°C)	Coverage Factor
25.0	24.8	+0.2	0.5	2.0

The results presented are the mean of 3 measurements at each calibration point.

Remarks : - The Measured Corrections are defined as :
Value = Applied Value - UUT Reading

- The expanded uncertainties are for a level of confidence of 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司 - 校正及檢測實驗所
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U.S.A.
www.alliedelec.com

South America
RS Componentes Limitada
Av. Pdte. Eduardo Frei M. 6001-71
Centro Empresas El Cortijo
Conchali, Santiago, Chile
www.rs-components.com

Instruction Manual

RS-90

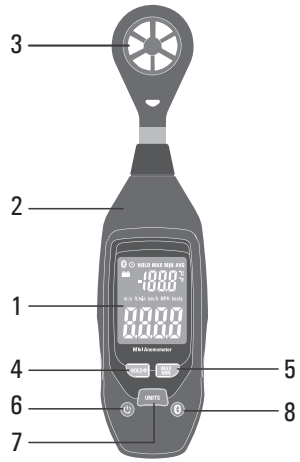
Stock No: 155-8899

Mini Anemometer

EN

1.Introduction

The Thermo-Anemometer measures Air velocity and temperature. Careful use of this meter will provide years of reliable service.



2.Meter Description

1. LCD Display
2. Body of meter
3. Fan
4. HOLD/ ☀ button
5. MAX/ MIN button
6. Power on/ off button
7. UNITS button
8. Bluetooth button

3.Button Description

Power on/ off, Auto-power off:

Power on: Short press button "⏻" to power on, system default auto power off. Long press to power on and disable auto power off function.Long press the button again to enable the auto power off function.

Power off: Short press button "⏻" to power off

Auto-power off: Auto-power off signal "⏲" displays in the left coner of LCD and the instrument will auto-power off in 10 minutes of no button operations.
If press the power on/off button for over 1 minute. It will be recognized as faulty operation and the instrument will auto power off.

UNITS button: Short press to switch air velocity unit; Long press to switch temperature unit.

button: Long press to activate or deactivate Bluetooth.

HOLD/ ☼ button: Short press to hold the current data; Long press to activate or deactivate backlight.
MAX/ MIN button: Short press to record Maximum, Minimum and Average readings of temperature and Air velocity.

Note: MAX/ MIN button is deactivated when hold the current readings.

4.Display Layout

: Bluetooth symbol
: Low battery indicator
: Timing power off symbol
MAX: Maximum reading of temperature air velocity
MIN: Minimum reading of temperature air velocity
AVG: Average reading of temperature air velocity
HOLD: Hold the displayed temperature/ air velocity readings.
°C/ °F: Temperature measurement unit
m/s, ft/min, km/h, MPH, knots: Air velocity measurement unit.
Larger LCD digits at botton of display is Air Velocity readings
Smaller LCD digits at top, right of display is Temperature readings

• Data Hold
Short press hold button to freeze the temperature and velocity readings, meanwhile, hold symbol displayed on LCD when measures. Press hold button again to return normal measurement.

• Temperature and Air velocity measurement
1. Turn on the instrument by pressing power on/off button.
2. Press UNITS button to select unit of measurement. Note: After power on, the meter will display the presetb unit before last power off.
3. Put the instrument in environment that is to be measured.
4. Observe readings on the LCD display, The larger digits displayed on main LCD is Air Velocity reading.
   The smaller digits displayed on upper right LCD is temperature reading.

• MAX/MIN/AVG reading
1. Press MAX/MIN button for the first time, the instrument will enter Max tracking mode. The tracked max reading will display on the LCD.

2. Press MAX/MIN button for the second time, the instrument will enter Min tracking mode. The tracked min reading will display on the LCD.
3. Press MAX/MIN button for the third time, the instrument will enter Avg tracking mode. The tracked average reading will display on the LCD.
4. Press MAX/MIN button for the fourth time, the current reading will display on the LCD.

Note: Avg mode will automatically stop in 2 hours and the instrument will auto power off

• Bluetooth communication
Long press Bluetooth button to activate bluetooth function. The instrument can transmit measured datas and instrument status to software and the software can control the instrument.

The instrument will automatically turn off in order to lengthen the battery working life. When symbol appears on the LCD, please replace the old battery with new ones.

1. Open the battery compartment with a suitable screwdriver.
2. Replace 9 V battery.
3. Mount the battery compartment again.

4. Specifications

Air velocity	Range	Resolution	Accuracy
m/s	1.10 – 25.00 m/s	0.01 m/s	±(3%+0.30 m/s)
km/h	4.0 – 90.0 km/h	0.1 km/h	±(3%+1.0 km/h)
ft./min	220 – 4920 ft./min	1 ft./min	±(3%+40 ft./min)
MPH	2.5 – 56.0 MPH	0.1 MPH	±(3%+0.4 MPH)
knots	2.2 – 48.0 knots	0.1 knots	±(3%+0.4 knots)
Air temperature	-10 – 60°C (14 ~ 140°F)	0.1°C/°F	2.0°C (4.0°F)

Air Quality

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Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date: 3-Dec-22 to 4-Dec-22
Next Verification Test Date: 2-Dec-23
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 0Z4545
Our Report Refrence No. RPT-22-HVS-0026
Calibration Location: AM2, Located near the Leachate Treatment Works within the NENT Landfill

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1106	3465
Last Calibration Date		1-Dec-22	28-Jun-22
Next Calibration Date		31-Jan-23	27-Jun-23

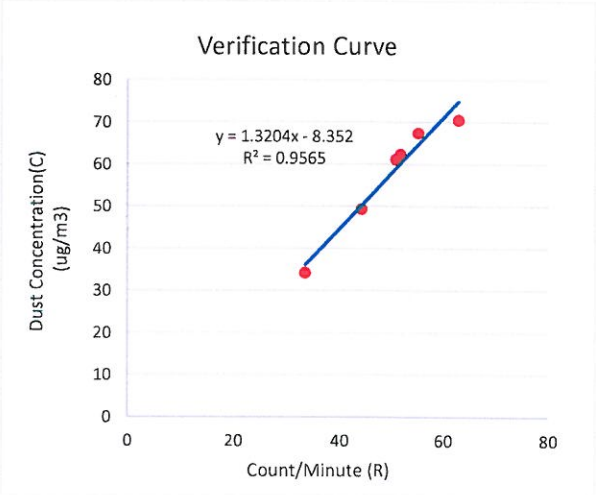
Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	3/12/2022	194.73	198.08	201.00	0.00120	51	10251	R222043/1	61
2	3/12/2022	198.08	201.27	191.40	0.00102	34	6444	R222043/2	34
3	3/12/2022	201.27	204.35	184.80	0.00111	44	8193	R222043/3	49
4	4/12/2022	252.37	255.36	179.40	0.00122	55	9927	R222044/1	67
5	4/12/2022	255.38	258.38	180.00	0.00120	52	9360	R222044/2	62
6	4/12/2022	258.38	261.38	180.00	0.00112	63	11340	R222044/3	70
					0.00114				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.1

By Linear Regression of y on x:

slope, mh= 1.3204
intercept,ch= -8.3520
*Correlation Coefficient,R= 0.9780
Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 05-12-2022
Technical Manager

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Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date: 3-Dec-22 to 4-Dec-22
Next Verification Test Date: 2-Dec-23
Unit-under-Test- Model No.: Sibata LD-5R
Unit-under-Test Serial No.: 882106
Our Report Refrence No.: RPT-22-HVS-0027
Calibration Location: AM2, Located near the Leachate Treatment Works within the NENT Landfill

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1106	3465
Last Calibration Date		1-Dec-22	28-Jun-22
Next Calibration Date		31-Jan-23	27-Jun-23

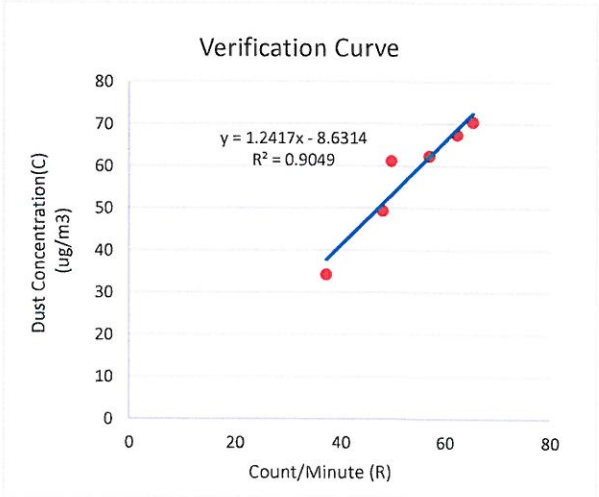
Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	3/12/2022	194.73	198.08	201.00	0.00123	50	9983	R222043/1	61
2	3/12/2022	198.08	201.27	191.40	0.00092	37	7146	R222043/2	34
3	3/12/2022	201.27	204.35	184.80	0.00103	48	8870	R222043/3	49
4	4/12/2022	252.37	255.36	179.40	0.00108	62	11183	R222044/1	67
5	4/12/2022	255.38	258.38	180.00	0.00110	57	10260	R222044/2	62
6	4/12/2022	258.38	261.38	180.00	0.00108	65	11760	R222044/3	70
					0.00107				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.1

By Linear Regression of y on x:

slope, mh= 1.2417
intercept,ch= -8.6314
*Correlation Coefficient,R= 0.9513
Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 05-12-2022
Technical Manager

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Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date: 3-Dec-22 to 4-Dec-22
Next Verification Test Date: 2-Dec-23
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 882110
Our Report Refrence No. RPT-22-HVS-0025
Calibration Location: AM2, Located near the Leachate Treatment Works within the NENT Landfill

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1106	3465
Last Calibration Date		1-Dec-22	28-Jun-22
Next Calibration Date		31-Jan-23	27-Jun-23

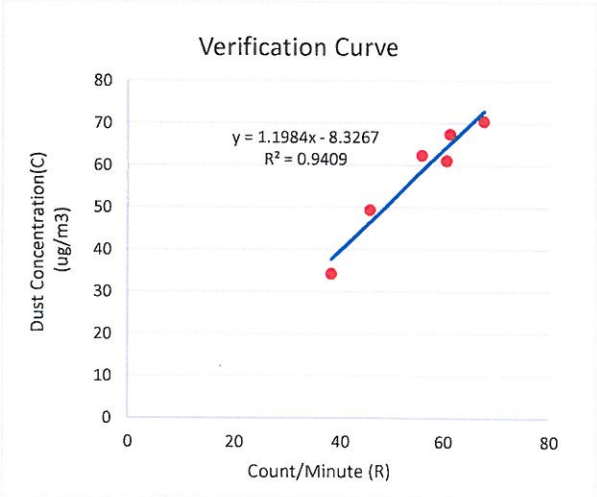
Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	3/12/2022	194.73	198.08	201.00	0.00101	61	12194	R222043/1	61
2	3/12/2022	198.08	201.27	191.40	0.00089	38	7337	R222043/2	34
3	3/12/2022	201.27	204.35	184.80	0.00108	46	8439	R222043/3	49
4	4/12/2022	252.37	255.36	179.40	0.00110	61	11003	R222044/1	67
5	4/12/2022	255.38	258.38	180.00	0.00112	56	10080	R222044/2	62
6	4/12/2022	258.38	261.38	180.00	0.00104	68	12180	R222044/3	70
					0.00104				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.0

By Linear Regression of y on x:

slope, mh= 1.1984
intercept,ch= -8.3267
*Correlation Coefficient,R= 0.9700
Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 05-12-2022
Technical Manager

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Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date:	3-Dec-22	to	4-Dec-22
Next Verification Test Date:	2-Dec-23		
Unit-under-Test- Model No.	Sibata LD-5R		
Unit-under-Test Serial No.	942532		
Our Report Refrence No.	RPT-22-HVS-0024		
Calibration Location:	AM2, Located near the Leachate Treatment Works within the NENT Landfill		

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1106	3465
Last Calibration Date		1-Dec-22	28-Jun-22
Next Calibration Date		31-Jan-23	27-Jun-23

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	3/12/2022	194.73	198.08	201.00	0.00111	55	11122	R222043/1	61
2	3/12/2022	198.08	201.27	191.40	0.00093	37	7082	R222043/2	34
3	3/12/2022	201.27	204.35	184.80	0.00110	45	8316	R222043/3	49
4	4/12/2022	252.37	255.36	179.40	0.00113	60	10704	R222044/1	67
5	4/12/2022	255.38	258.38	180.00	0.00120	52	9360	R222044/2	62
6	4/12/2022	258.38	261.38	180.00	0.00104	68	12180	R222044/3	70
					0.00108				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.1

By Linear Regression of y on x:

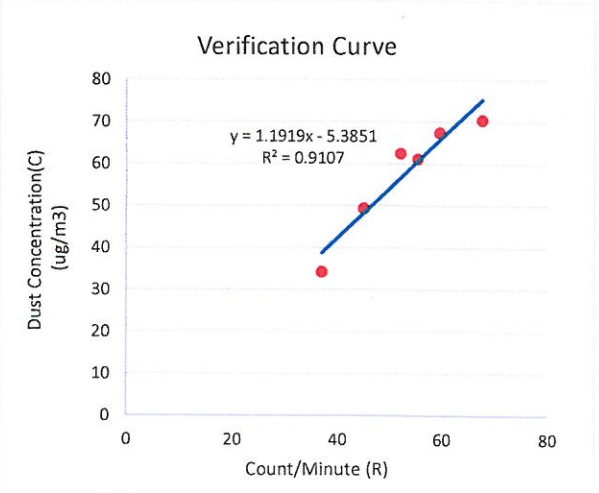
slope, mh= 1.1919

intercept,ch= -5.3851

*Correlation Coefficient,R= 0.9543

Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 05-12-2022

Technical Manager

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HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

Site Information

Location:	NENTX	Site ID:	AM1	Date:	01-Dec-2022
Serial No:	1105	Model:	TE-5170X	Operator:	Andy Li

Ambient Condition

Corrected Pressure (mm Hg):	759.7	Temperature (deg K):	302.1

Calibration Orifice

Model:	TE-5025A	Slope:	1.28946
Serial No.:	3465	Intercept:	-0.01207
Calibration Due Date:	28-Jun-23	Corr. Coeff	0.99998

Calibration Data

Plate or Test #	In,H2O (in)	Qa, X-Axis (m3/min)	I, CFM (chart)	IC, Y-Axis (corrected)
1	0.60	0.388	45.0	28.37
2	1.10	0.522	51.0	32.16
3	1.50	0.608	54.0	34.05
4	1.90	0.683	57.0	35.94
5	2.40	0.767	60.0	37.83

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

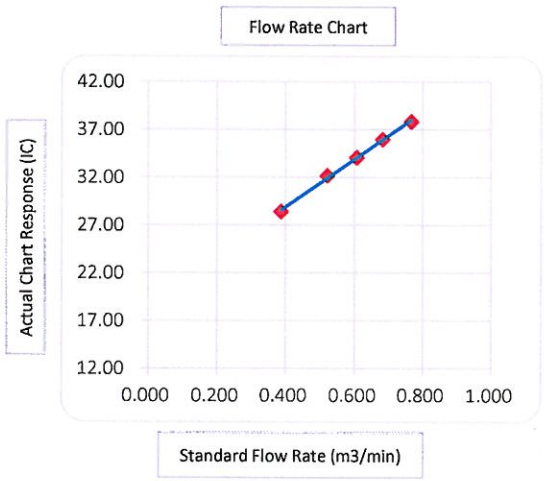
m= 24.8397 b= 18.9217 Corr. Coeff= 0.9988

Sampler set point(SSP) 49 CFM

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
(1.21*m+b)/[Sqrt(298/Tav)(Pav/760)]
m = sampler slope
b = sampler intercept
I = chart response
Tav = average temperature
Pav = average pressure



Checked by: _____ Date: 01-Dec-2022

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HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

Site Information

Location:	NENTX	Site ID:	AM2	Date:	01-Dec-2022
Serial No:	1106	Model:	TE-5170X	Operator:	Andy Li

Ambient Condition

Corrected Pressure (mm Hg):	759.7	Temperature (deg K):	302.1

Calibration Orifice

Model:	TE-5025A	Slope:	1.28946
Serial No.:	3465	Intercept:	-0.01207
Calibration Due Date:	28-Jun-23	Corr. Coeff	0.99998

Calibration Data

Plate or Test #	In,H2O (in)	Qa, X-Axis (m3/min)	I, CFM (chart)	IC, Y-Axis (corrected)
1	0.30	0.277	41.0	25.85
2	1.00	0.498	48.0	30.27
3	1.80	0.665	52.0	32.79
4	2.30	0.751	57.0	35.94
5	2.90	0.842	62.0	39.09

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

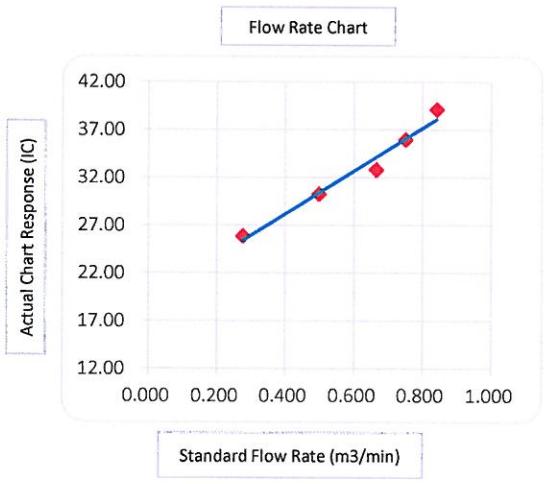
m= 22.4910 b= 19.1407 Corr. Coeff= 0.9855

Sampler set point(SSP) 47 CFM

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
(1.21*m+b)/[Sqrt(298/Tav)(Pav/760)]
m = sampler slope
b = sampler intercept
I = chart response
Tav = average temperature
Pav = average pressure



Checked by: _____ Date: 01-Dec-2022

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HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

Site Information

Location:	NENTX	Site ID:	AM3	Date:	01-Dec-2022
Serial No:	1856	Model:	TE-5170X	Operator:	Andy Li

Ambient Condition

Corrected Pressure (mm Hg):	759.7	Temperature (deg K):	302.1

Calibration Orifice

Model:	TE-5025A	Slope:	1.28946
Serial No.:	3465	Intercept:	-0.01207
Calibration Due Date:	28-Jun-23	Corr. Coeff	0.99998

Calibration Data

Plate or Test #	In,H2O (in)	Qa, X-Axis (m3/min)	I, CFM (chart)	IC, Y-Axis (corrected)
1	0.40	0.319	42.0	26.48
2	0.90	0.473	46.0	29.01
3	1.20	0.545	51.0	32.16
4	1.90	0.683	56.0	35.31
5	2.20	0.735	58.0	36.57

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

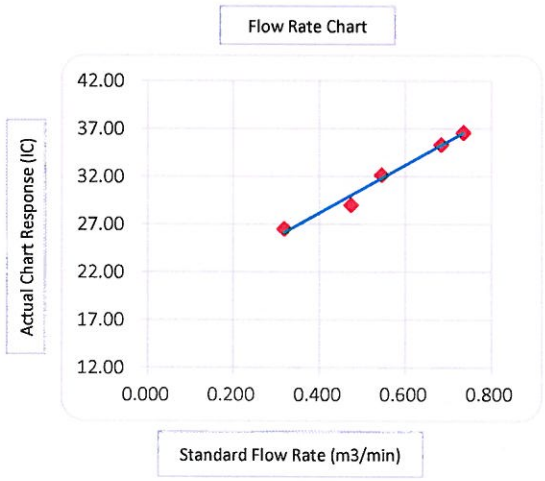
m= 25.0757 b= 18.0890 Corr. Coeff= 0.9913

Sampler set point(SSP) 49 CFM

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
(1.21*m+b)/[Sqrt(298/Tav)(Pav/760)]
m = sampler slope
b = sampler intercept
I = chart response
Tav = average temperature
Pav = average pressure



Checked by: _____ Date: 01-Dec-2022

TISCH Environmental

RECALIBRATION DUE DATE:
June 28, 2023

Certificate of Calibration

Calibration Certification Information					
Cal. Date:	June 28, 2022	**Rootsmeter S/N:** 438320	**Ta:** 296	°K	
Operator:	Jim Tisch		**Pa:** 755.1	mm Hg	
Calibration Model #:	TE-5025A	**Calibrator S/N:** **3465**			

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4290	3.2	2.00
2	3	4	1	1.0130	6.4	4.00
3	5	6	1	0.9050	7.9	5.00
4	7	8	1	0.8590	8.8	5.50
5	9	10	1	0.7110	12.8	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9961	0.6970	1.4144	0.9958	0.6968	0.8854
0.9918	0.9791	2.0003	0.9915	0.9788	1.2522
0.9899	1.0938	2.2364	0.9895	1.0934	1.4000
0.9887	1.1509	2.3456	0.9883	1.1506	1.4683
0.9834	1.3831	2.8289	0.9830	1.3826	1.7708
QSTD	**m=**	**2.05924**	**QA**	**m=**	**1.28946**
	b=	**-0.01929**		**b=**	**-0.01207**
	r=	**0.99998**		**r=**	**0.99998**

Calculations

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

For subsequent flow rate calculations:

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

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

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

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

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

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

PROMAT (HK) LTD
寶時(香港)有限公司
901 New Trend Centre, 704 Prince Edward Road East, San Po Kong, Kowloon, Hong Kong
Tel: (852)2661 2392 Fax: (852)2661 2086 Email: info@promat.hk http://www.promat.hk

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Your Solution To Testing Instrument

Calibration Certificate

Customer Name	**Paul Y Construction Co. Ltd**
Model	**PS200**
Serial	**373075**
Tested On	**16 November, 2022**
Cal Expires	**16 November, 2023**
Audible Alarm	**PASS**
Visual Alarm	**PASS**
Calibrated For	**METHANE**
100% LEL Equivalent	**4.4% by VOL**
Overall Results	**PASS**

Calibration Result

Gas Applied	Range	Reading	Calibrated	Result
Zero Air	% LEL	0	0	PASS
Zero Air	% O2	20.9	20.9	PASS
Zero Air	PPM CO	0	0	PASS
Zero Air	PPM H2S	0	0	PASS

Gas Applied	Range	Reading	Calibrated	Result
50% LEL Methane	% LEL	61	50	PASS
18% VOL Oxygen	% O2	17.8	N/A	PASS
100 PPM Carbon Monoxide	PPM CO	71	100	PASS
25 PPM Hydrogen Sulphide	PPM H2S	22	25	PASS

Calibrated By Ivan Lo : _____

PROMAT (HK) LTD 寶時

Water Quality

YSF Corporation Ltd.
5A, Blk1 Kin Ho Ind. Bldg., 20-24 Au Pui Wan St., Fo Tan, Shatin, N.T., HK.
Tel: (852) 8109 8368 Fax: (852) 3007 4857 E-mail: sales@ysftool.com
www.sokkia.com.hk www.ysf.com.hk
Supply, Repair, Rental, Scanning and Calibration Service of Surveying Instruments and Accessories

CERTIFICATE OF CALIBRATION

Certificate No.	: CS-CC- 220859	Customer	: Paul Y Engineering Group
Manufacturer	: Yamayo	Address	: 11/F., Paul Y. Centre,
Equipment	: Water Level Measure		51 Hung To Road,
Model	: RWL100		Kwun Tong, Kowloon, HK
Serial No.	: 11801	Calibration Interval	: 12 months
Calibration Date	: 4th August, 2022	Reference Document	: CS/ME/ 1(HKST)
Expire Date	: 3rd August, 2023	Report No.	: CS-CR- 220859

The instrument has been checked and calibrated according to document procedures and using standards and instruments which are traceable to international accepted standards. The standards and instruments used in the calibration are calibrated on a schedule which is adjusted to maintain traceability at the required accuracy level, or have been derived from the ratio type of self-calibration techniques. This is established by our Quality Management System, audited to ISO9001 :2015 by an independent national accredited body.

The specified calibration interval is a recommendation. Depending on the type of use ambient conditions or accuracy requirements, other calibration intervals may be applicable. The user shall be responsible that calibration is carried out at adequate intervals.

YSF Corporation Ltd. hereby certifies this instrument meets or exceeds all published specifications of the manufacturer at present inforce. This calibration certificate may only be distruibuted in a complete and unchanged form. Unsigned calibration certificates are invalid.

Calibrated by

Wayne

Wayne Ng, Service Engineer
4th August, 2022

Checked by

Wallace Yu, Service Manager
4th August, 2022

CKL/CSL/220859

YSF Corporation Ltd.

Calibration Report

Certificate No. : CS-CC-220859 Certificate Report No. : CS-CR-220859

Client : Paul Y Engineering Group

Address : 11/F., Paul Y. Centre, 51 Hung To Road, Kwun Tong, Kowloon, HK

Item Calibrated **:Name/Description:** Water Level Measure

Manufacturer: Yamayo

Model: RWL100 **Serial No:** 11801

Reference Standard : 784049
Calibration check according to customer's requirement.

Calibration Method **:** Procedure CS01

Calibration Conditions

Temperature : (26 ± 3℃)

Relative Humidity : 90% RH

Date of Test : 4th August, 2022

Test Results **: PASS** (All calibration points were within the tolerances as shown in the attached calibration results.)

Calibrated by : Wayne
Wayne Ng, Service Engineer
Date: 4th August, 2022

HKCS Approved Signatory: _____
Wallace Yu, Service Manager
Date: 4th August, 2022

Notes: 1, The test equipment used for calibration are traceable to national standards/international system of units(SI)
2, The values given in this calibration certificate only to the values measured at the time of test & any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes,vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. YSF Corporation Ltd. shall not be liable for any loss/damage resulting from the use of the equipment.
3, The test results apply to the above Unit-Under-Test only.
4, This certificate shall not be reproduced, except on full, without approval of YSF Corporation Ltd.

YSF Corporation Ltd.
5A, Blk1 Kin Ho Ind. Bldg., 20-24 Au Pui Wan St., Fo Tan, Shatin, N.T., HK.
Tel: (852) 8109 8368 Fax: (852) 3007 4857 E-mail: sales@ysftool.com
www.sokkia.com.hk www.ysf.com.hk
Supply, Repair, Rental, Scanning and Calibration Service of Surveying Instruments and Accessories

CERTIFICATE OF CALIBRATION

Certificate No.	: CS-CC- 220858	Customer	: Paul Y Engineering Group
Manufacturer	: Yamayo	Address	: 11/F., Paul Y. Centre,
Equipment	: Water Level Measure		51 Hung To Road,
Model	: RWL50		Kwun Tong, Kowloon, HK
Serial No.	: 12711	Calibration Interval	: 12 months
Calibration Date	: 4th August, 2022	Reference Document	: CS/ME/ 1(HKST)
Expire Date	: 3rd August, 2023	Report No.	: CS-CR- 220858

The instrument has been checked and calibrated according to document procedures and using standards and instruments which are traceable to international accepted standards. The standards and instruments used in the calibration are calibrated on a schedule which is adjusted to maintain traceability at the required accuracy level, or have been derived from the ratio type of self-calibration techniques. This is established by our Quality Management System, audited to ISO9001 :2015 by an independent national accredited body.

The specified calibration interval is a recommendation. Depending on the type of use ambient conditions or accuracy requirements, other calibration intervals may be applicable. The user shall be responsible that calibration is carried out at adequate intervals.

YSF Corporation Ltd. hereby certifies this instrument meets or exceeds all published specifications of the manufacturer at present inforce. This calibration certificate may only be distruibuted in a complete and unchanged form. Unsigned calibration certificates are invalid.

Calibrated by

Wayne

Wayne Ng, Service Engineer
4th August, 2022

Checked by

Wallace Yu, Service Manager
4th August, 2022

CKL/CSL/220858

YSF Corporation Ltd.

Calibration Report

Certificate No. : CS-CC-220858 Certificate Report No. : CS-CR-220858

Client : Paul Y Engineering Group

Address : 11/F., Paul Y. Centre, 51 Hung To Road, Kwun Tong, Kowloon, HK

Item Calibrated **:Name/Description:** Water Level Measure

Manufacturer: Yamayo

Model: RWL50 **Serial No.:** 12711

Reference Standard : 784049
Calibration check according to customer's requirement.

Calibration Method **:** Procedure CS01

Calibration Conditions

Temperature : (26 ± 3℃)

Relative Humidity : 90% RH

Date of Test : 4th August, 2022

Test Results **: PASS** (All calibration points were within the tolerances as shown in the attached calibration results.)

Calibrated by : Wayne
Wayne Ng, Service Engineer
Date: 4th August, 2022

HKCS Approved Signatory:
Wallace Yu, Service Manager
Date: 4th August, 2022

Notes: 1, The test equipment used for calibration are traceable to national standards/international system of units(SI)
2, The values given in this calibration certificate only to the values measured at the time of test & any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes,vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. YSF Corporation Ltd. shall not be liable for any loss/damage resulting from the use of the equipment.
3, The test results apply to the above Unit-Under-Test only.
4, This certificate shall not be reproduced, except on full, without approval of YSF Corporation Ltd.

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. **210252**

Customer : Acuity Sustainability Consulting Limited

Address : Unit E, 12/F, Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, H.K.

Order No. : Q24081 **Date of receipt :** 31-Oct-22

Item Tested

Description : Flow Probe
Manufacturer : Global Water
Model : FP111
I.D. : --
Serial No. : 22K100859

Test Conditions

Date of Test : 7-Nov-22
Ambient Temperature : 23°C
Supply Voltage : --
Relative Humidity : 78%

Test Specifications

Calibration check.
Ref. Document/Procedure : V12

Test Results

All results were within the manufacturer's specification.
The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S179	Std. Tape	201868	NIM-PRC
S136A	Stop Watch	201878	SCL-HKSAR

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

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Kin Wong

Approved by : Alan Chu

Date: 7-Nov-22

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Results :

Applied Value (m/s)	UUT Reading (m/s)	Mfr's Spec.
0.96	1.0	± 0.1 m/s

Remarks : 1. UUT : Unit-Under-Test
2. Uncertainty : ± 1 %, for a confidence probability of not less than 95%.

---------- END ----------

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB100037
Date of Issue : 12 October 2022

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan
Kowloon (HK) Hong Kong

PART B - SAMPLE INFORMATION

Name of Equipment :	HORIBA U-53
Manufacturer :	HORIBA
Serial Number :	PORBNFNT
Date of Received :	10 October 2022
Date of Calibration :	12 October 2022
Date of Next Calibration :	11 January 2023
Request No. :	D-BB100037

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500 H^+
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 21e 4500 O
Turbidity	APHA 21e 2130 B

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.12	0.12	Satisfactory
7.42	7.61	0.19	Satisfactory
10.01	10.19	0.18	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
12	12.20	0.20	Satisfactory
26	25.36	-0.64	Satisfactory
37	35.44	-1.56	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	9.98	-0.20	Satisfactory
20	20.23	1.15	Satisfactory
30	31.20	4.00	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

--- CONTINUED ON NEXT PAGE ---

AUTHORIZED SIGNATORY:

LEE Chun-ning
Assistant Manager (Chemical Testing)

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB100037
Date of Issue : 12 October 2022

(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
7.87	7.45	-0.42	Satisfactory
4.09	4.05	-0.04	Satisfactory
1.26	1.00	-0.26	Satisfactory
0.01	0.06	0.05	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)	Result
0	0.00	--	Satisfactory
10	9.34	-6.6	Satisfactory
20	19.3	-3.5	Satisfactory
100	101	1.0	Satisfactory
800	780	-2.5	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

Remark(s)

·The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

·The results relate only to the calibrated equipment as received

·The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

·"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

·The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

--- END OF REPORT ---

acumen laboratory
Member of the Aurecon Group

Standard Operation Procedure

For Digital Dust Indicator

Rev. A, R1

Contents

1.0 Introduction 3
2.0 Sampler Set-Up 4
3.0 Sampler Operations 5
4.0 Regular Instrument Checks 10
5.0 Calibration Procedures 11
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1 Introduction

1.1 The EIA has considered the potential dust impacts during the construction phase of projects. Construction dust arising from various construction activities would be the concern of different air sensitive receivers. A digital dust indicator would be used to measure the construction dust during the construction phase.

1.2 In this Standard Operation Procedure, Sibata LD-5R Digital Dust Indicator would be introduced.

2.0 Sampler Set-Up

2.1 Dust Monitoring Parameter

2.1.1 According to the EM&A manual, the sampling frequency of at least 3 times in every 6 days should be undertaken when the highest dust impact occurs**.**

2.2 Monitoring Location

2.2.1 Direction of the digital dust indicator shall be pointed to the construction site for measuring the dust emitted from the site. Example of set-up is shown as Figure 2.1

Figure 2.1 Digital dust indicator is pointed to construction site

3.0 Sampler Operations

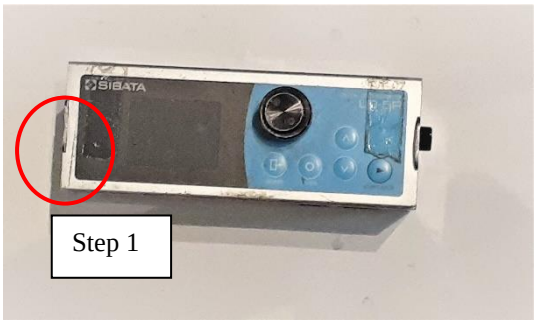
3.1 Sibata LD-5R Digital Dust Indicator

3.1.1 Sibata LD-5R digital dust indicator is a compact handheld dust indicator, which perform real time measurement of suspended particle matter in indoor spaces, public space. Component of Sibata LD-5R digital dust indicator us shown in Figure 3.1 and Figure 3.2

Figure 3.1 Top view of Sibata LD-5R digital dust indicator

Figure 3.2 Side view of Sibata LD-5R digital dust indicator

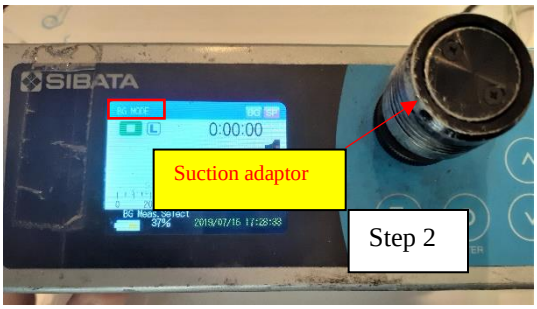
3.1.2 Operation of Sibata LD-5R digital dust indicator



Procedure of starting monitoring

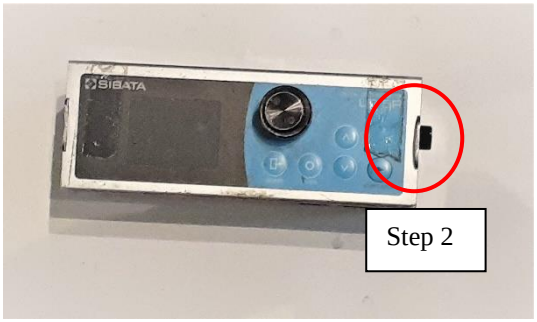
1. Turn on the “On/Off” button at the side of instrument

Program will be changed to “BG” mode and leave it for 1 minute.

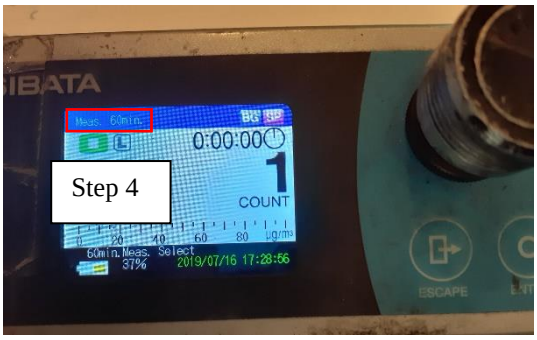


2. Pull out the Suction adaptor and turn the button at the side.

Cover with hand at the suction adaptor measure the background for 10 seconds.



3. Press “ UP” and “ DOWN” for choosing “SPAM Mode” for SPAM Measurement.



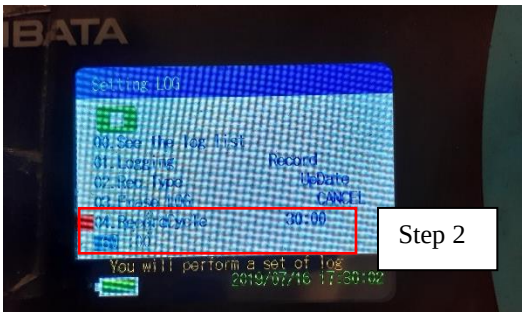
4. Press “Up” and “Down” to select “Measurement Mode” with 60 minutes interval and unit in ug/m^3.
5. Press “Start/Stop” to start monitoring.

Reference:

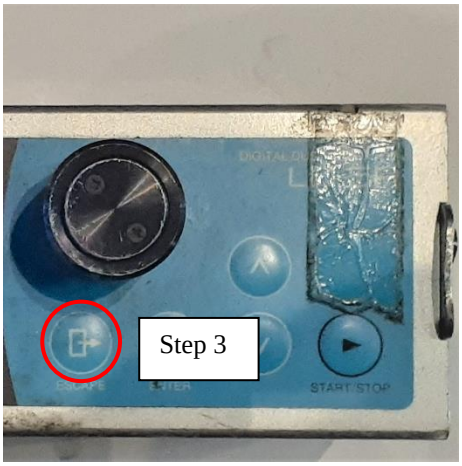
SIBATA Scientific Technology Ltd.. (2017, June 18). Digital Dust indicatores, model LD-5R - SIBATA Scientific Technology Ltd.. YouTube. Retrieved February 10, 2023, from https://www.youtube.com/watch?v=cuU4ptJlSZM

Procedure of setting measurement timer

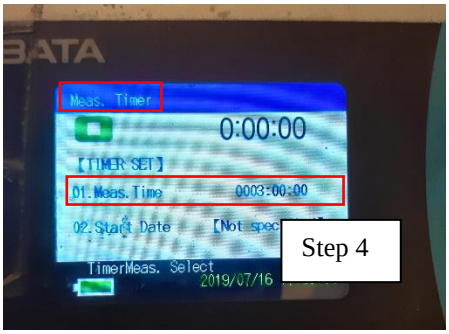
1. Press “Up” or “Down” to find “Setting LOG”.



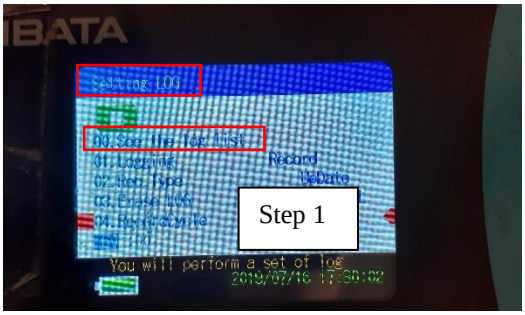
2. Select “Record Cycle” and change the record time subject to different project requirement. For example, setting the record cycle as 60 minutes for normal operation.



3. Press “ESCAPS” back to the main page.

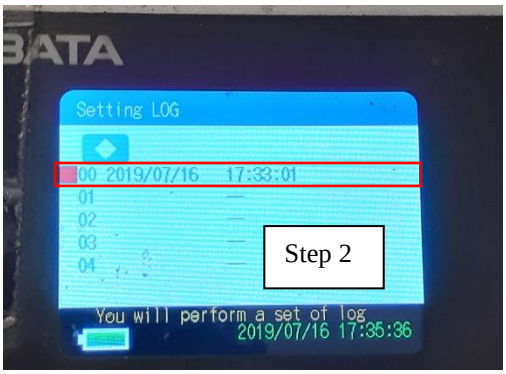


4. Press “Up” or “Down” to access “Measurement Timer” and select “Measurement time” to change the time to 3 hours.



Procedure of accessing the data

1.Press “Up” or “Down” to “Setting LOG” page and select “See the log list”

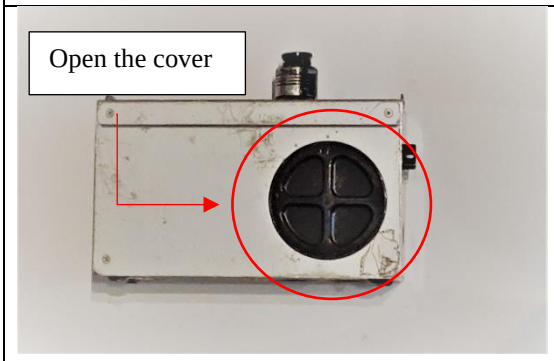


2. Select the file to access the data respectively.

4.0 Regular Instrument Checks

4.1 As there would be constant use of instrument, regular checking would be recommended to check the condition. Items to be checked are stated in Table 4.1.

Table 4.1 Checklist for instrument checking

Example	Description	Y/N	Remarks
	Is there any damage for the digital dust indicator? Could the digital dust indicator be powered?		
	Is the suction adaptor sensitive?		
	Is the battery compartment well maintained? Any damage to the battery compartment?		

5.0 Calibration Procedures

5.1 Direct reading dust meters will be verified against calibrated high volume samples (HVSs) annually. A 2-day, three 3-hour measurement results per day from direct reading dust meter will be taken to compare with the sampling results from the HVS. The correlation between the direct reading dust meter and the HVS will then be concluded. By accounting for the correlation factor, the direct reading dust meter will be considered to achieve comparable results as that of the HVS.

6.0 Audit Schedule

6.1 Checklist of regular checking for digital dust meter which shown in Table 4.1 will be conducted bi-weekly by environmental technician to ensure the all digital dust meter are in good condition and submitted to supervisors. All checklists will be kept by supervisors.

6.2 Log book is provided to environmental technician record the transferal of equipment to other colleagues, reporting to supervisors is required.

6.3 All digital dust indicator will be calibrated annually in HOKLAS accredited laboratory. Calibration certificate will be provided after calibration.

OPERATIONS MANUAL

TE-5170 Total Suspended Particulate
Mass Flow Controlled
High Volume Air Sampler

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

Toll Free: (877) 263 -7610 (TSP AND-PM10)
Direct: (513) 467-9000
FAX: (513) 467-9009

sales@tisch-env.com
www.tisch-env.com

TE-5170 Mass Flow Controlled
Total Suspended Particulate High Volume Air Sampler

Welcome

We are the experts in high volume air sampling, lead sampling, lead samplers, particulate monitoring, particulate emissions, pesticide monitoring, pesticide sampling, total suspended particles, particulate sampler, Federal Reference Method PM-10, Federal Reference Method PM2.5, EPA Method TO-4A, EPA Method TO-9A, EPA Method TO-13A. TEI is a family business located in the Village of Cleves, Ohio. TEI employs skilled personnel who average over 20 years of experience each in the design, manufacture, and support of air pollution monitoring equipment. Our modern well-equipped factory, quality philosophy and experience have made TEI the supplier of choice for air pollution monitoring equipment. Now working on the fourth generation, TEI has state-of-the-art manufacturing capability and is looking into the future needs of today's environmental professionals.

Assistance

If you encounter problems or require detailed explanations, do not hesitate to contact Tisch Environmental offices by e-mail or phone.

Toll Free: (877) 263 -7610 (TSP AND-PM10)
Direct: (513) 467-9000
FAX: (513) 467-9009

sales@tisch-env.com
www.tisch-env.com

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Introduction

EPA Standards

The following manual will instruct you in the unpacking, assembly, operation, calibration, and use of this product. For information on air sampling principles, procedures and requirements and to ensure compliance with government regulations, refer to Title 40 of the Code of Federal Regulations **Appendix B to Part 50**, **Reference Method for Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)** or **Appendix G to Part 50**, **Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air**. For additional information, contact the local Environmental Protection Agency office serving your area.

Safety Precautions

Before using Tisch Environmental products, always review the corresponding operations manuals and take all necessary safety precautions, especially when working with electricity.

Important Safety Instructions

Read and understand all instructions. Do not dispose of these instructions. Failure to follow all instruction listed in this manual may result in electric shock, fire, and/or personal injury. When using an electrical device, basic precautions must always be followed, including the precautions listed in the safety section of this manual. Never operate this unit in the presence of flammable materials or vapors are present as electrical devices may produce arcs or sparks that can cause fire or explosions. Always disconnect power supply before attempting to service or remove any components. Never immerse electrical parts in water or any other liquid. Always avoid body contact with grounded surfaces when plugging or unplugging this device is wet or dangerous conditions.

Electrical Installation

Installation must be carried out by specialized personal only, and must adhere to all local safety rules. This unit can be used for different power supply versions; before connecting this unit to the power line, always check if the voltage shown on the serial number tag corresponds to the one on your power supply. This product does use grounded plugs and wires. Grounding provides the path of least resistance for electrical currents, thereby reducing the risk of electric shock to users. This system is equipped with electrical cords with internal ground wires and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided. If plug will not fit outlet, have the proper corresponding outlet installed by a professional, qualified electrician.

Do Not Abuse Cords

In the event that any electrical component of this system needs to be transported, **DO NOT** carry the unit by its power cord or unplug the unit by yanking the cord from the outlet. **Pull the plugs, not the cords**, to reduce risk of damage to unit. Keep all cords away from heat, oil, sharp objects, and moving parts.

Extension Cords

It is always advisable to use the shortest extension cord possible. Grounded units require a three-wire extension cord. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wires results in serious changes in voltage, resulting in a loss of power and possible damage to equipment. It is recommended to only use 10-gauge extension cords for this product. Never use cords that exceed one hundred feet. Outdoor extension cords must be marked with the suffix “W-A” (or “W” in Canada)to indicate that it is suitable for outdoor usage. Always ensure that extension cords are properly wired and in good electrical condition. Always replace damaged extension cords immediately, or seek repair from qualified electricians before further use. Remember to protect extension cords from sharp objects, excessive heat, and damp or wet conditions.

Product Description

Introduction

The High Volume Air Sampler (also known as a **lead sampler**) is the recommended instrument for sampling large volumes of air for the collection of TSP (Total Suspended Particulate). The TE-5170 TSP MFC sampler consists of a TE-5001 Anodized Aluminum Shelter, TE-5005 Aluminum Blower Motor Assembly, TE-5004 8”x10” Stainless Steel Filter Holder with probe hole, TE-5009 Continuous flow/pressure recorder, TE-300-310 Mass Flow Controller, TE-5007 Mechanical Timer, and TE-5012 Elapsed Time Indicator.

Applications

- Ambient air monitoring to determine mass concentration of suspended particulate levels relative to air quality standards. This result is reported in micrograms per cubic meter.

- Impact of a specific source on ambient levels of suspended particulates by incorporating a "wind-direction-activation" modification which permits the sampler to operate only when conditions are such that a source-receptor relationship exists.

Calibration Requirements

TE-5170 TSP MFC High Volume Air Sampler should be calibrated:

- Upon installation.
- After routine maintenance or exchange of vacuum motor or motor brushes.
- Once every quarter (three months).
- After 360 sampling hours.

Calibration Kit

The TE-5028 is the preferred product used to calibrate the TE-5170 MFC TSP High Volume Air Sampler. It simulates change in the resistance by rotating the knob on the top of the calibrator. The infinite resolution lets the technician select the desired flow resistance. The TE-5028 calibration kit includes: carrying case, 30" slack tube water manometer, adapter plate, tubing, and TE-5028A orifice with flow calibration certificate. Optional electronic manometer is available by ordering TE-5028E.

Each TE-5028A Orifice Transfer Standard is individually calibrated on a primary standard positive displacement device which is directly traceable to NIST.

**** It is recommended by the EPA that each calibrator should be re-calibrated annually. (1998 Code of Federal Regulations Parts 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.5 page 29.)**

Parts

1. Shelter Box - 48" x 20" x 20" 74 lbs

TSP MFC SAMPLER
TE-5170 110volts, 60hz
TE-5170X 220volts, 50hz
TE-5170XZ 220volts, 60hz

8” x 10” TSP Stainless Steel Filter Holder with probe hole
TE-5004

7 Day Mechanical Timer
TE-5007, 110volts, 60hz
TE-5007X, 220volts,50hz
TE-5007XZ, 220volts,60hz

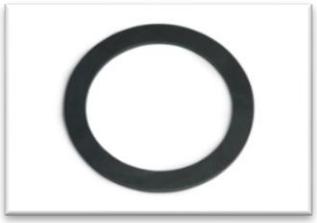
Mass Flow Controller
TE-300-310, 110volts, 60hz
TE-300-310X, 220volts 50/60hz

Elapsed Time Indicator
TE-5012 110volt, 60hz
TE-5012X 220volts, 50hz
TE-5012XZ 220volts, 60hz

Blower Motor Assembly with tubing
TE-5005 110volts, 60hz
TE-5005X, 220volts, 50-60hz

24 Hour Chart Recorder
TE-5009 110volts, 60hz
TE-5009X 220volts,50hz
TE-5009XZ 220volts,60hz

Filter Holder Gasket
TE-5005-9



Envelope box of charts and manual
TE-106

2. Lid Box - 19" x 14" x 14" 9 lbs

Gabled Roof
TE-5001-10

*** Save the shipping containers and packing material for future use.

Assembly

1. Open shelter box and remove Anodized Aluminum Shelter.

2. Enclosed in the 13" x 10" x 9" box on bottom of shelter is the TE-5005 Blower Motor Assembly. Enclosed in the 13” x 10” x 9” box inside of shelter is the TE-5004 Filter Holder with TE-5005-9 gasket. Remove from boxes.

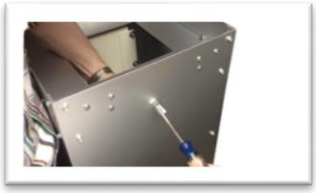
3. Open lid box and remove 5001-10 Roof (for roof assembly see page 13).

4. Screw TE-5004 Filter Holder onto TE-5005 Blower Motor Assembly (tubing, power cord, and hole in filter holder collar to the right) make sure TE-5005-9 gasket is in place.

5. Lower Filter Holder and Blower Motor down through top support pan on shelter. Insert Flow Controller probe into filter holder collar. Before tightening **make sure** probe slot is turned so air coming into filter holder goes through it. Connect tubing from pressure tap of blower motor to TE-5009 Flow Recorder.

Gabled Roof Assembly

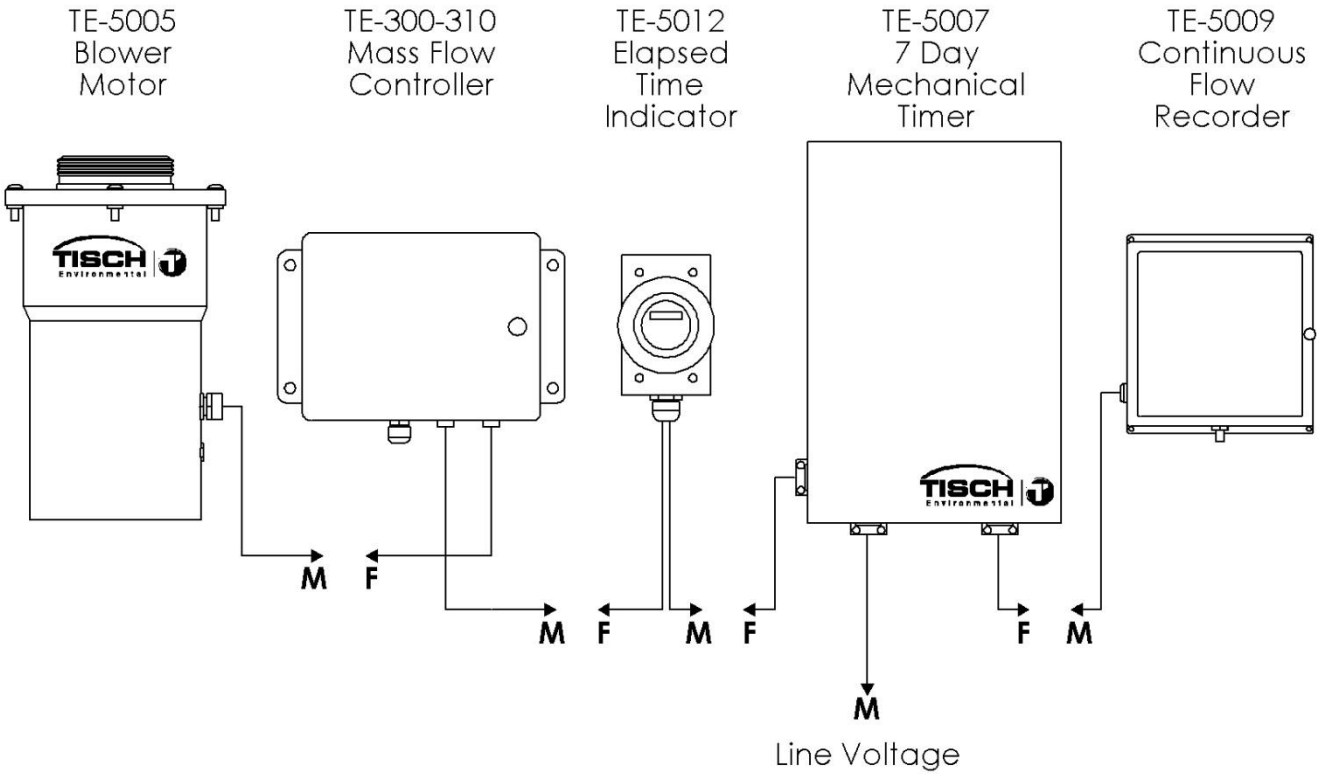
The following steps are accompanied by pictures to aid your understanding of gabled roof assembly. **Please be aware that the pictures are standardized and may not exactly match the equipment that you are using.** The gabled roof is used on several products and the assembly procedure is the same.

Lid Hardware 5 pcs 10-24 x 1/2 pan head screws 5 pcs 10-24 stop nuts 1 pc 6-32 x 3/8 pan head screw 1 pc 6-32 hex nut 1 pc 20" chain with "S" hook 1 pc TE-5001-10-9 roof back catch 1 pc TE-5001-10-10 front catch 1 pc TE-5001-10-11 rear lid hasp	
Step 1 Secure TE-5001-10-10 front catch to the shelter using 2 10-24 pan head screws with stop nuts. **Do not tighten completely, this may need to be adjusted after final assembly**	
Step 2 Secure TE-5001-10-9 roof back catch to the back of shelter using #6-32 pan head screw with stop nut.	
Step 3 Secure TE-5001-10-11 rear lid hasp inside the lid with the slot angled up using (2) #10-24 pan head screws with stop nuts. **Do not tighten completely, this may need to be adjusted after final assembly**	

	Step 4 Remove (4) #10-24 x ½" pan head screws from the rear of the shelter, attach the lid to the shelter by placing the lid hinge plates on the **"OUTSIDE"** of the shelter, line the hinges up with the (4) threaded holes in the back of the shelter. Use the (4) #10-24X ½" pan head screws that were removed preciously to attach the lid hinges to the shelter. **Tighten completely**	
	Step 5 Adjust the front and rears catch to be sure that the lid slots lowers over it when closing. Tighten the roof back hasp and front catch completely.	 
	Step 6 Attach the chain and "S" hook assembly to the side of the shelter with a #6-32 x 3/8" pan head screw.	
	Step 7 The Lid can now be secured in an open or closed position with the "S" hook.	

Electrical Set-Up

TE-5170 Electrical Set-Up



Note: Standard 3-prong plug may require adapter for use in global installations. Please consult your local electrical standards.

1. Connect the TE-5005 Blower Motor plug to the TE-300-310 Mass Flow Controller socket.

2. Connect the Mass Flow Controller plug to the TE-5012 Elapsed Time Indicator socket side.

3. Connect the plug side of the ETI cord set into the TE-5007 7-Day Mechanical Timer timed socket cord on the left side of timer.

4. The other socket cord set on timer (on the right) is hot all the time and is connected to the TE-5009 Continuous Flow Recorder plug.

5. The plug cord set of timer connects to line voltage.

Operations

Visit, www-tisch-env.com/calibration-worksheets, to download calibration worksheets. The calibration worksheets allow the user to input the data and automatically make the calculations. The manual calculation method is described in the following sections for your reference, however, it is highly recommended to download the calibration worksheets.

Calibration Procedure

The following is a step by step process of the calibration of a **TE-5170 Mass Flow Controlled Total Suspended Particulate High Volume Sampling Systems.** Following these steps are example calculations determining the calibration flow rates, and resulting slope and intercept for the sampler. These instructions pertain to the samplers which have air flow controlled by electronic mass flow controllers (MFC) in conjunction with a continuous flow recorder or a manometer. This calibration differs from that of a volumetric flow controlled sampler.

The Total Suspended Particulate samplers (TSP) are also referred to as **lead samplers** as this is another use for these instruments. The instruments are also suitable for capturing large particulate and heavy metal particles. Air monitoring studies that are concerned with smaller respirable particulate will call for the use of PM-10 particulate samplers. The TSP samplers have a wide range of acceptable air flow operating limits, i.e., 1.10 to 1.70 m^3/min (39 to 60 CFM). A mass flow controller will sense a decrease in air flow as particulate is collected in the filer media and increases the voltage to the blower which increases the blower speed in order to maintain the set flow rate.

The attached example calibration worksheets can be used with a **TE-5028 Variable Orifice Calibrator** which uses an adjustable or variable orifice.

One example calibration sheet is attached to this manual. To download the electronic spreadsheet, please visit www.tisch-env.com. **It is highly recommended to download the electronic spreadsheet and use the spreadsheet features to complete calculations, calibration worksheets can be found by visiting www.tisch-env.com.**

Proceed with the following steps to begin the calibration:

1. Disconnect the sampler motor from the mass flow controller and connect the motor to a stable AC power source.

2. Mount the calibrator orifice and top loading adapter plate to the sampler. A sampling filter is generally not used during this procedure. Tighten the top loading adapter hold down nuts securely to ensure that no air leaks are present.

3. Allow the sampler motor to warm up to its normal operating temperature (approximately 10-15 minutes).

4. Conduct a leak test by covering the hole(s) on top of the orifice and pressure tap on the orifice with your hands. Listen for a high-pitched squealing sound made by escaping air. If this sound is heard, a leak is present and the top loading adapter hold-down nuts need to be re-tightened. If the sound is lower, the leak is near one of the other gaskets in the system. **Avoid running the sampler for longer than 30 seconds at a time with the orifice blocked to avoid overheating the motor.** Do not perform this leak test procedure with a manometer connected to the side tap on the calibration orifice or the blower motor. Liquid from the manometer could be drawn into the system and cause motor damage.

5. Connect one side of a water manometer to the pressure tap on the side of the orifice with a rubber vacuum tube. Leave the opposite side of the manometer open to the atmosphere. **Note:** Both valves on the manometer have to be open for the liquid to flow freely. One side of the 'U' tube goes up the other goes down; add together for the "H_2O reading.

6. A manometer must be held vertically to ensure accurate readings. Tapping the backside of the continuous flow recorder will help to center the pen and provide accurate readings. When using a variable orifice (TE-5028A), five flow rates are achieved in this step by adjusting the knob on the variable orifice to five different positions and taking five different readings.

7. Record the ambient air temperature, the ambient barometric pressure, the sampler serial number, the orifice s/n, the orifice slope and intercept with date last certified, todays date, site location and the operators initials on the attached blank calibration sheet.

8. Disconnect the sampler motor from its power source and remove the orifice and top loading adapter plate. Re-connect the sampler motor to the electronic mass flow controller.

An example of a Lead (or TSP) Sampler Calibration Data Sheet has been attached with data filled in from a typical calibration. This includes the transfer standard orifice calibration relationship which was taken from the Orifice Calibration Worksheet that accompanies the calibrator orifice. Since this calibration is for a TSP sampler, the slope and intercept for this orifice uses **standard** flows rather than actual flows and is taken from the Qstandard section of the Orifice Calibration Worksheet. The Qactual flows are only used when calibrating a PM-10 sampler.

The five orifice manometer readings taken during the calibration have been recorded in the column on the data worksheet titled Orifice "H_2O. The five continuous flow recorder readings taken during the calibration have been recorded under the column titled I chart.

The orifice manometer readings need to be converted to the standard air flows they represent using the following equation:

$Qstd = 1/m[Sqrt((H_20)(Pa/760)(298/Ta))-b]$

where:
Qstd = actual flow rate as indicated by the calibrator orifice, m^3/min
H_2O = orifice manometer reading during calibration, "H_2O
Ta = ambient temperature during calibration, K (K = 273 + °C)
298 = standard temperature, a constant that never changes, K
Pa = ambient barometric pressure during calibration, mm Hg
760 = standard barometric pressure, a constant that never changes, mm Hg
m = *Qstandard slope of orifice* calibration relationship
b = *Qstandard intercept of orifice* calibration relationship.

Once these standard flow rates have been determined for each of the five run points, they are recorded in the column titled Qstd, and are represented in cubic meters per minute.

The continuous flow recorder readings taken during the calibration need to be corrected to the current meteorological conditions using the following equation:

$$IC = I[Sqrt((Pa/760)(298/Ta))]$$

where:
IC = continuous flow recorder readings corrected to current Ta and Pa
I = continuous flow recorder readings during calibration
Pa = ambient barometric pressure during calibration, mm Hg.
760 = standard barometric pressure, a constant that never changes, mm Hg
Ta = ambient temperature during calibration, K (K = 273 + °C)
298 = standard temperature, a constant that never changes, K

After each of the continuous flow recorder readings have been corrected, they are recorded in the column titled IC (corrected).

Using Qstd and IC (or FLOW (corrected)) as the x and y axis respectively, a slope, intercept, and correlation coefficient can be calculated using the least squares regression method. The correlation coefficient should never be less than 0.990 after a five point calibration. A coefficient below .990 indicates a calibration that is not linear and the calibration should be performed again. If this occurs, it is most likely the result of an air leak during the calibration or high wind speed during the calibration procedure.

The equations for determining the slope (m) and intercept (b) are as follows:

$$m = \frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sum x^2 - \frac{(\sum x)^2}{n}} \quad ; \quad b = \bar{y} - m\bar{x}$$

The equation for the coefficient of correlation (r) is as follows:

$$r = \frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sqrt{\left[\sum x^2 - \frac{(\sum x)^2}{n}\right]\left[\sum y^2 - \frac{(\sum y)^2}{n}\right]}}$$

where: n = number of observations
$\sum$ = sum of

The acceptable operating flow range of a TSP sampler is 1.1 to 1.7 m^3/min (39 to 60 CFM). Looking at the worksheet column Qstd(see page 38), the flow rates that are within this range can be identified along with the chart reading (I) that represents them. For instance if you wanted to set this sampler at 1.265 m^3/min (44.67 CFM) (Make sure the mass flow controller is plugged in and a filter is in place) you would turn the Flow Adjustment screw until the continuous flow recorder read 37 on the chart. By making sure that the sampler is operating at a chart reading (or manometer reading) that is within the acceptable range, it can be assumed that valid TSP data is being collected.

Example Calculations

The following example problems use data from the attached calibration worksheet.

After all the sampling site information, calibrator information, and meteorological information have been recorded on the worksheet, standard air flows need to be determined from the orifice manometer readings taken during the calibration using the following equation:

1. $Qstd = 1/m[Sqrt((H_20)(Pa/760)(298/Ta))-b]$

where:
Qstd = actual flow rate as indicated by the calibrator orifice, m^3/min
H_2O = orifice manometer reading during calibration, "H_2O
Ta = ambient temperature during calibration, K (K = 273 + °C)
298 = standard temperature, a constant that never changes, K
Pa = ambient barometric pressure during calibration, mm Hg
760 = standard barometric pressure, a constant that never changes, mm Hg
m = *Qstandard slope of orifice* calibration relationship
b = *Qstandard intercept of orifice* calibration relationship.

Note that the ambient temperature is needed in degrees Kelvin to satisfy the Qstd equation. Also, the barometric pressure needs to be reported in millimeters of mercury. In our case the two following conversions may be needed:

2. degrees Kelvin = [5/9 (degrees Fahrenheit - 32)] + 273

3. millimeters of mercury = 25.4(inches of H_2O/13.6)

Inserting the numbers from the calibration worksheet run point number one we get:

4. Qstd = 1/1.47574[Sqrt((7.25)(749/760)(298/293)) - (-.00613)]
5. Qstd = .6776261[Sqrt((7.25)(..9855263)(1.0170648)) + .0.00613]
6. Qstd = .6776261[Sqrt(7.2669947) + .00613]
7. Qstd = .6776261[2.6957363 + .00613]
8. Qstd = .6776261[2.7018663]
9. Qstd = 1.831

Throughout these examples you may find that your results may vary some from those arrived here. This may be due to different calculators carrying numbers to different decimal points. The variations are usually slight and should not be a point of concern.

With the Qstd determined, the corrected chart reading (IC) for this run point needs to be calculated using the following equation:

10. IC = I[Sqrt((Pa/760)(298/Ta))]

where: IC = continuous flow recorder readings corrected to standard
I = continuous flow recorder readings during calibration
Pa = ambient barometric pressure during calibration, mm Hg.
760 = standard barometric pressure, mm Hg
Ta = ambient temperature during calibration, K (K = 273 + °C)
298 = standard temperature, K.

Inserting the data from run point one on the calibration worksheet we get:

11. IC = 52[Sqrt(749/760)(298/293)]
12. IC = 52[Sqrt(1.0023441)]
13. IC = 52[1.0011713]
14. IC = 52.06

This procedure should be completed for all five run points. EPA guidelines state that at least three of the five Qstd flow rates during the calibration be within or nearly within the acceptable operating limits of 1.10 to 1.70 m^3/min (39 to 60 CFM). If this condition is not met, the instrument should be recalibrated. (1998 Code of Federal Regulations Parts 50 to 51 Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17 page 30.)

Using Qstd as our x-axis, and IC as our y-axis, a slope, intercept, and correlation coefficient can be determined using the least squares regression method.

The equations for determining the slope (m) and intercept (b) are as follows:

15.

$$m = \frac{\left[\sum xy - \left(\frac{(\sum x)(\sum y)}{n}\right)\right]}{\sum x^2 - \frac{(\sum x)^2}{n}} \qquad b = \overline{y} - m\overline{x}$$

where: n = number of observations
$\bar{y} = \sum y/n$; $\bar{x} = \sum x/n$
$\sum$ = sum of.

The equation for the coefficient of correlation (r) is as follows:

16. $$r = \frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sqrt{\left[\sum x^2 - \frac{\left(\sum x\right)^2}{n}\right]\left[\sum y^2 - \frac{\left(\sum y\right)^2}{n}\right]}}$$

where: n = number of observations
$\sum$ = sum of.

Before these can be determined, some preliminary algebra is necessary. $\sum x$, $\sum y$, $\sum x^2$, $\sum xy$, $(\sum x)^2$, $(\sum y)^2$, n, $\bar{y}$, and $\bar{x}$ need to be determined.

17. $\Sigma x = 1.831 + 1.631 + 1.452 + 1.265 + 1.119 = 7.298$
18. $\Sigma y = 52.07 + 47.06 + 42.06 + 37.05 + 33.05 = 211.29$
19. $\Sigma x^2 = (1.831)^2 + (1.631)^2 + (1.452)^2 + (1.265)^2 + (1.119)^2 = 10.973412$
20. $\Sigma y^2 = (52.07)^2 + (47.06)^2 + (42.06)^2 + (37.05)^2 + (33.05)^2 = 9159.9771$
21. $\Sigma xy = (1.831)(52.07) + (1.631)(47.06) + (1.452)(42.06) + (1.265)(37.05) + (1.119)(33.05) = 317.01735$
22. $n = 5$
23. $\bar{x} = \Sigma x/n = 1.4596$
24. $\bar{y} = \Sigma y/n = 42.258$
25. $(\Sigma x)^2 = (7.298)^2 = 53.260804$
26. $(\Sigma y)^2 = (211.29)^2 = 44643.464$

Inserting the numbers:

27.
$$slope = \frac{317.01735 - \frac{(7.298)(211.29)}{5}}{10.973412 - \frac{53.260804}{5}}$$

28.

$$slope = \frac{317.01735 - \frac{1541.9944}{5}}{10.973412 - \frac{53.260804}{5}}$$

29.

$$slope = \frac{317.01735 - 308.39888}{10.973412 - 10.65216}$$

30.

$$slope = \frac{8.61847}{0.321252}$$

31. $slope = 26.827755$

32. intercept = 42.258 - (26.827755)(1.4596)
33. intercept = 42.258 – 39.157791
34. intercept = 3.100209

35. correlation coeff. =

$$\frac{317.01735 - \frac{(7.298)(211.29)}{5}}{\sqrt{\left[10.973412 - \frac{53.260804}{5}\right]\left[9159.9771 - \frac{44643.464}{5}\right]}}$$

36. correlation coeff. =

$$\frac{317.01735 - \frac{(1541.9944)}{5}}{\sqrt{[(10.973412 - 10.65216)]\ \ [(9159.977 - 8928.6928)]}}$$

37. correlation coeff. =

$$\frac{(317.01735 - 308.39888)}{\sqrt{[(10.973412 - 10.65216)][(9159.977 - 8928.6928)]}}$$

38. correlation coeff. =

$$\frac{8.61847}{\sqrt{(0.321252)(231.2842)}}$$

39. correlation coeff. = $\dfrac{8.61847}{\sqrt{74.300511}}$

40. correlation coeff. = $\dfrac{8.61847}{8.6197744}$

41. correlation coeff. = .9998

A calibration that has a correlation coefficient of less than .990 is not considered linear and should be re-calibrated. As you can see from both worksheets we have 3 Qstd numbers that are in the TSP range (1.1 - 1.7) and the correlation coefficient. is > .990 , thus a good calibration.

Total Volume

To figure out the total volume of air that flowed through the sampler during your sampling run take a set-up reading (when you set the sampler up manually turn it on and take a continuous flow recorder reading; in our example it should be 38) and a pick-up reading (after the sample has been taken again manually turn sampler on and take a continuous recorder reading; for our example let's say it read 34). Take 38 + 34 = 72 72/2 = 36 so the continuous recorder reading you would use is 36. Put that into the formula (on bottom of worksheet):

1/m((I)[Sqrt(298/Tav)(Pav/760)]- b)

m = sampler slope
b = sampler intercept
I = average chart response
Tav = daily average temperature
Pav = daily average pressure
Sqrt = square root

Example:

m^3/min = 1/26.8212((36)[Sqrt(298/294)(753/760)]-(+3.1112))
m^3/min = .0372839 ((36)[Sqrt(1.0136054)(0.9907894)] -3.1112)
m^3/min = .0372839 ((36)[Sqrt(1.0042694)] -3.1112)
m^3/min = .0372839 ((36)[1.0021324)] -3.1112)
m^3/min = .0372839 ((36.076766) -3.1112)
m^3/min = .0372839 (32.965566)
m^3/min = 1.2290848
ft^3/min = 1.2290848 x 35.31 = 43.398984
Total ft^3 = ft^3/min x 60 x hours that sampler ran

Let's say our sampler ran 24 hours (end ETI reading - start ETI reading)

** Make sure ETI is in hours otherwise convert to hours **

Total ft^3 = 43.398984 x 60 x 24 = 62,494.536 ft^3
Total m^3 = 1.2290848 x 60 x 24 = 1769.8821 m^3

Sampler Operation

1. After performing calibration procedure, remove filter holder frame by loosening the four wing nuts allowing the brass bolts and washers to swing down out of the way. Shift frame to one side and remove.

2. Carefully center a new filter, rougher side up, on the supporting screen. Properly align the filter on the screen so that when the frame is in position the gasket will form an airtight seal on the outer edges of the filter.

3. Secure the filter with the frame, brass bolts, and washers with sufficient pressure to avoid air leakage at the edges (make sure that the plastic washers are on top of the frame).

4. Wipe any dirt accumulation from around the filter holder with a clean cloth.

5. Close shelter lid carefully and secure with the "S" hook.

6. Make sure all cords are plugged into their appropriate receptacle sockets and the rubber tubing between the blower motor pressure tap and the TE-5009 continuous flow recorder is connected (be careful not to pinch tubing when closing door).

7. Prepare TE-5009 continuous flow recorder as follows:

    a. Clean any excess ink and moisture on the inside of recorder by wiping with a clean cloth.

    b. Depress pen arm lifter to raise pen point and carefully insert a fresh chart.

    c. Carefully align the tab of the chart to the drive hub of the recorder and press gently with thumb to lower chart center onto hub. Make sure chart is placed under the chart guide clip and the time index clip so it will rotate freely without binding. Set time by rotating the drive hub clock-wise until the correct time on chart is aligned with time index pointer.

    d. Make sure the TE-160 pen point rests on the chart with sufficient pressure to make a visible trace.

8. Prepare the Timer as instructed below.

9. Manually trip timer switch on to determine if sampler is operating properly and the recorder is inking correctly.

10. Manually trip timer switch off. If the timer is set correctly you are ready to sample.

11. At the end of the sampling period, remove the frame to expose the filter. Carefully remove the exposed filter from the supporting screen by holding it gently at the ends (not at the corners). Fold the filter lengthwise so that sample touches sample.

12. It is always a good idea to contact the lab you are dealing with to see how they may suggest you collect the filter and any other information that they may need.

Timer Preparation

TE-5007 7-Day Mechanical Timer

1. To set the "START" time, attach a (bright) "ON" tripper to the dial face on the desired "START" time. Tighten tripper screw securely.

2. To set the "STOP" time, attach a (dark) "OFF" tripper to the dial face on the desired "STOP" time. Tighten tripper screw securely.

3. To set current time and day, grasp dial and rotate **clockwise only** until correct time and day appear at time pointer.

Troubleshooting

note: this is a general troubleshooting guide, not all problem may apply to every sampler

Problem	Solution
Brush Motor Won't Turn On	-Check Motor brushes(Change every 500 hours) -Check Motor(Should be replaced after 2 brush changes about 1500 hours) -Check power supply -Ensure that all electrical connections are secure -Make sure timer is on -Make sure flow controller(if applicable) is adjusted properly -Check for loose or damaged wires
Brushless Motor Won't Turn On	-Ensure that all electrical connections are secure -Make sure flow controller(if applicable) is adjusted properly -Check power supply -Make sure timer is on -Check for loose or damaged wires
Mechanical timer not working	-Make sure trippers are set properly -Make sure that trippers are not pressed against switch at start up, the timer need to rotate a few degrees before the trippers hit the switch -Check for loose or damages wires -Check power supply -Check electrical hook up diagram to ensure correct installation -Check Motor
Digital timer not working	-Check timer settings -Make sure current date and time are correct -Make sure power cords are properly connected -Check fuse on main PC board (F3) -Check Power Supply -Check Motor
Mass Flow Controller not working	-Make sure timer is on -Check Motor/Motor brushes -Make sure 8 amp breaker is not popped -Make sure flow probe is installed correctly -Check all electrical connections -Check power supply

Elapsed Time Indicator not working	-Check Power Supply -Check electrical connections
Voltage Variator with ETI not working	-Check Power Supply -Check Electrical Connections -Check Motor
Flow Rate Too Low	-Check for leaks -Check filter media placement -Ensure only one piece of filter paper is installed -Check Flow Controller -Check flow valve(TE-1000PUF samplers only) -Ensure proper voltage is being supplied -Check calibration
Chart Recorder not working	-Replace pen point -Make sure pen point is touching chart -Make sure pen point is on “0” -Make sure tubing from motor is in place -Check Power Supply -Check motor
Air Leaks	-Make sure all gaskets are in place -Make sure all connections are secure -Makes sure connections are not over tightened -Check for damaged components: Filter holder screen, gaskets, motor flanges

Maintenance and Care

A regular maintenance schedule will allow a monitoring network to operate for longer periods of time without system failure. Adjustments in routine maintenance frequency may be necessary due to the operational demands on instruments. It is recommended that the following cleaning and maintenance activities be observed until a stable operating history of the sampler has been established.

TE-5170 MFC TSP Sampler:

1. Make sure all gaskets (including TE-5005-4 motor cushion) are in good shape and that they seal properly.

2. The power cords should be checked for good connections and for cracks (replace if necessary).

   CAUTION: Do not allow power cord or outlets to be immersed in water!

3. Inspect the filter screen and remove any foreign deposits.

4. Inspect the filter holder frame gasket each sample period and make sure of airtight seal.

5. Check or replace 110v or 220v motor brushes every 400 to 500 running hours.

6. After replacing motor brushes two times, a new motor must be used.

7. Make sure elapsed time indicator is working properly by applying power and observing.

8. Make sure continuous flow recorder pen is still inking each time, tubing has no crimps or cracks, and that the door is sealed completely.

Motor Brush Replacement

110 volt (Brush part #TE-33384)
220 volt (Brush part #TE-33378)

CAUTION: Unplug the unit from any line voltage sources before performing any service on blower motor assembly or any electrical device on this system.

The following steps are accompanied by pictures to aid your understanding of motor brush replacement procedures. ***Please be aware that the pictures are standardized and may not match the equipment that you are using.*** *Motor brush removal and replacement does not change based on motor or brush type, so do not be confused if your equipment differs from what is pictured.*

1. Remove the blower motor from the filter holder. Place on work bench. Remove the flange by removing the four bolts. This will expose the gasket and the motor.

2. Turn assembly on side, loosen the cord retainer and then push cord into housing and at the same time let motor slide out exposing the brushes.

3. Looking down at motor. There are 2 brushes, one on each side. Carefully pry the brass quick disconnect tabs (the tabs are pushed into end of brush) away from the expended brushes and toward the armature. Try to pry the tabs as far as you can without damaging the armature.

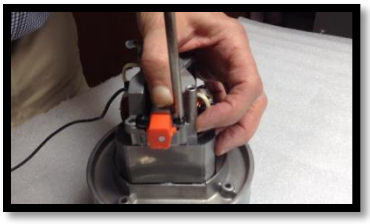
4. With a screwdriver loosen and remove brush holder clamps and release brushes. Carefully, pull quick disconnect tabs from expended brushes.

5. Carefully slide quick disconnect tabs into tab slot of new brush.

6. Push brush carbon against armature until brush housing falls into brush slot on motor.

7. Put brush holder clamps back onto brushes.

8. Make sure quick disconnect tabs are firmly seated into tab slot. Check field wires for good connections.



9. Assemble motor after brush replacement by placing housing over and down on the motor (at same time pull power cord out of housing), being careful not to pinch any motor wires beneath the motor spacer ring.

10. Secure power cord with the cord retainer cap.

11. Replace blower motor flange on top of motor making sure to center gasket. Assemble together with filter holder. Lower filter holder and blower motor down through top support pan on shelter.

****IMPORTANT**** To enhance motor life:

- Change brushes before brush shunt touches armature.
- Seat new brushes by applying 50% voltage for 10 to 15 minutes, the TE-5075 brush break in device allows for the 50% voltage.

TE-116311
110v MFC Motor

TE-33384(green)
110v MFC Motor Brush

TE-116312
220v MFC Motor

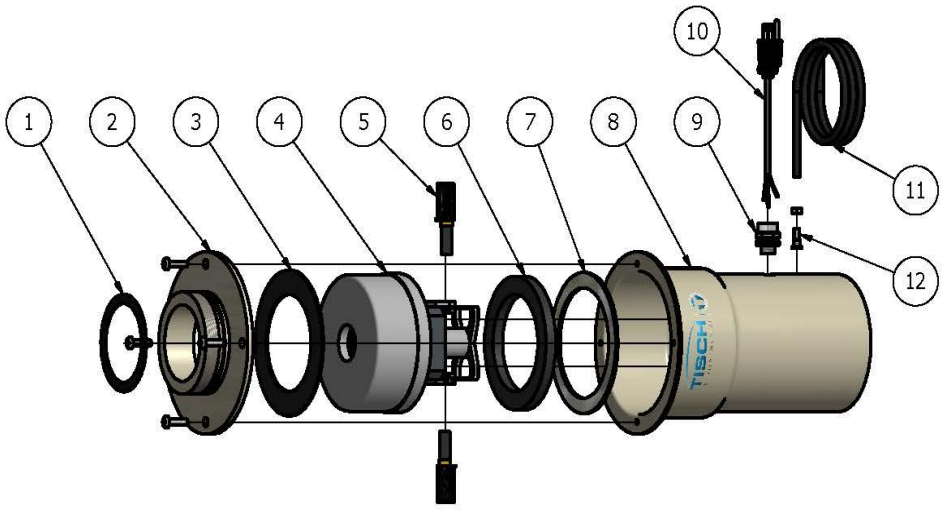
TE-33378(brown)
220v MFC Motor Brush

Warranty

Tisch Environmental, Inc. warrants instruments of its manufacture to be free of defects in material and workmanship for one year from the date of shipment to the purchaser. Its liability is limited to servicing or replacing any defective part of any instrument returned to the factory by the original purchaser. All service traceable to defects in original material or workmanship is considered warranty service and is performed free of charge. The expense of warranty shipping charges to and from our factory will be borne by Tisch Environmental. Service performed to rectify an instrument malfunction caused by abuse, acts of god or neglect, and service performed after the one-year warranty period will be charged to the customer at the current prices for labor, parts, and transportation. Brush-type and brushless type motors will carry a warranty as far as the original manufacture will pass through its warranty to Tisch Environmental, Inc. The right is reserved to make changes in construction, design specifications, and prices without prior notice.

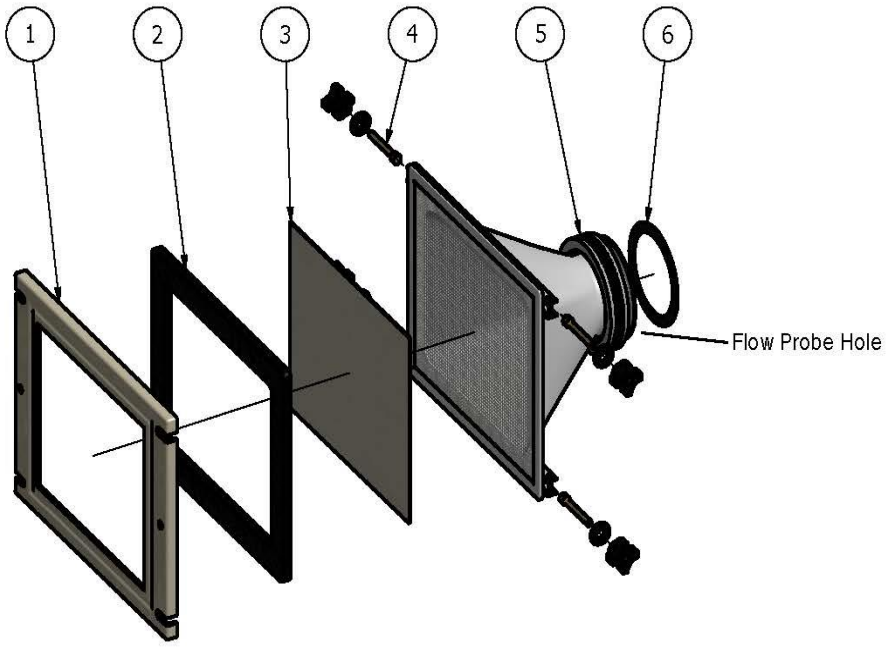
Assembly Drawings

TE-5005 Blower Motor Assembly



TE-5005 Brush Type Aluminum Blower Motor Assembly			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TE-5005-9	Filter Holder Gasket (between Filter Holder and Blower Motor)
2	1	TE-5005-1	Blower Motor Flange
3	1	TE-5005-2	Flange Gasket
4	1	TE-116311 TE-116312	Motor for 110V MFC Blower Motor for 220V MFC Blower
5	2	TE-33384 TE-33378	Motor Brushes for 110V Motor MFC Motor Brushes for 220V Motor MFC
6	1	TE-5005-4	Motor Cushion
7	1	TE-5005-5	Motor Spacer Ring
8	1	TE-5005-3	Aluminum Blower Motor Housing
9	1	TE-5005-7	Cord Retainer w/ Nut
10	1	TE-5010-4	Power Cord
11	1	TE-5005-6	Tubing 3 ft. Piece
12	1	TE-5005-8	Pressure Tap w/ Nut

TE-5004 Filter Holder Assembly



TE-5004 Filter Holder Assembly			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TE-3000-2	Hold Down Frame
2	1	TE-5018	8" x 10" Gasket
3	1	N/A	Filter Paper
4	4	TE-5003-9	Plastic Thumb Nut, Brass Bolt, Washer, and Rivet
5	1	TE-5028-9	Aluminum Threaded Ring
6	1	TE-5005-9	Filter Holder Gasket (Between Filter Holder and Blower Motor)

Calibration Worksheet

TE-5170 Calibration Worksheet

Site Information

Location: Cleves, Ohio	Site ID: 145	Date: 31-Oct-14
Sampler: E-5170 MFC	Serial No: 367	Tech: Jim Tisch

Site Conditions

Barometric Pressure (in Hg):	29.50	Corrected Pressure (mm Hg):	749
Temperature (deg F):	68	Temperature (deg K):	293
Average Press. (in Hg):	29.65	Corrected Average (mm Hg):	753
Average Temp. (deg F):	70	Average Temp. (deg K):	294

Calibration Orifice

Make:	Tisch	Qstd Slope:	1.47574
Model:	TE-5028A	Qstd Intercept:	-0.00613
Serial#:	2978	Date Certified:	24-Oct-14

Calibration Information

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)
1	7.25	1.831	52.0	52.07
2	5.75	1.631	47.0	47.06
3	4.55	1.452	42.0	42.06
4	3.45	1.265	37.0	37.05
5	2.70	1.119	33.0	33.05

Linear Regression

Slope:	26.8212
Intercept:	3.1112
Corr. Coeff:	0.9998
# of Observations:	5

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

Average I (chart):	36.0
Average Flow Calculation m3/min	
1.228929308	
Average Flow Calculation in CFM	
43.39349387	
Sample Time (Hrs):	24.0
Total Flow in m3/min	
1769.658204	
Total Flow in CFM	
62486.63118	

NOTE: Ensure calibration orifice has been certified within 12 months of use

Tisch Environmental 145 South Miami Ave, Cleves OH 45002 ● 877.263.7610 ● sales@tisch-env.com ● www.tisch-env.com

Calibrator Certificate

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

TISCH Environmental

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5028A

Date - Oct 24, 2014 Rootsmeter S/N 9833620 Ta (K) - 296
Operator Tisch Orifice I.D. - 2978 Pa (mm) - 755.65

PLATE OR VDC #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.1880	4.5	1.50
2	NA	NA	1.00	0.9230	7.5	2.50
3	NA	NA	1.00	0.8380	9.0	3.00
4	NA	NA	1.00	0.7790	10.5	3.50
5	NA	NA	1.00	0.5860	18.0	6.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9950	0.8375	1.2254		0.9940	0.8367	0.7665
0.9910	1.0737	1.5819		0.9901	1.0727	0.9896
0.9891	1.1803	1.7329		0.9881	1.1791	1.0840
0.9871	1.2671	1.8718		0.9861	1.2659	1.1709
0.9771	1.6674	2.4507		0.9761	1.6657	1.5331
Qstd slope (m) =		1.47574		Qa slope (m) =		0.92408
intercept (b) =		-0.00613		intercept (b) =		-0.00383
coefficient (r) =		0.99985		coefficient (r) =		0.99985
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

Appendix E Monitoring Results

Air Quality

1-hour TSP Concentration (μg/m^3) at Location AM1

Date	Weather	Sampling Time (1)	Sampling Time (2)	Sampling Time (3)	Reading (1) μg/m^3	Reading (2) μg/m^3	Reading (3) μg/m^3	Average μg/m^3	Action Level μg/m^3	Limit Level μg/m^3
5/12/2022	Fine	14:21	15:21	16:21	45	51	44	47	285	500
10/12/2022	Fine	14:09	15:09	16:09	49	51	48	49		
16/12/2022	Fine	13:17	14:17	15:17	60	61	59	60		
22/12/2022	Fine	13:56	14:56	15:56	52	55	54	54		
28/12/2022	Fine	14:15	15:15	16:15	61	65	58	61		
				Average	**54**					
				Max.	**65**					
				Min.	**44**					

1-hour TSP Concentration (μg/m^3) at Location AM2

Date	Weather	Sampling Time (1)	Sampling Time (2)	Sampling Time (3)	Reading (1) μg/m^3	Reading (2) μg/m^3	Reading (3) μg/m^3	Average μg/m^3	Action Level μg/m^3	Limit Level μg/m^3
5/12/2022	Fine	14:13	15:13	16:13	60	57	55	57	279	500
10/12/2022	Fine	14:30	15:30	16:30	51	55	50	52		
16/12/2022	Fine	13:06	14:06	15:06	47	45	47	46		
22/12/2022	Fine	13:43	14:43	15:43	61	59	60	60		
28/12/2022	Fine	14:00	15:00	16:00	56	60	53	56		
				Average	**54**					
				Max.	**61**					
				Min.	**45**					

1-hour TSP Concentration (μg/m^3) at Location AM3

Date	Weather	Sampling Time (1)	Sampling Time (2)	Sampling Time (3)	Reading (1) μg/m^3	Reading (2) μg/m^3	Reading (3) μg/m^3	Average μg/m^3	Action Level μg/m^3	Limit Level μg/m^3
5/12/2022	Fine	14:37	15:37	16:37	65	67	64	65	285	500
10/12/2022	Fine	14:19	15:19	16:19	61	65	59	62		
16/12/2022	Fine	13:30	14:30	15:30	61	57	60	59		
22/12/2022	Fine	14:27	15:27	16:27	66	67	64	66		
28/12/2022	Fine	14:24	15:24	16:24	64	68	60	64		
				Average	**63**					
				Max.	**68**					
				Min.	**57**					

The Summary of TSP 24-hour Concentration (μg/m^3) at Location AM1

Start Date	Avg Air Temp	Avg Atmospheric Pressure	Weather Condition	Elapse Time		Sampling Time	Averaged Flow Rate	Averaged Flow Rate	Total Flow Volume	Filter Weight (g)		Particulate weight	Concentration	Action Level	Limit Level
	(℃)	(hPa)		Initial	Final	(minutes)	(cfm)	(m^3/min)	(m^3)	Initial	Final	(g)	(μg/m^3)	(μg/m^3)	(μg/m3)
5/12/2022	17.5	1019.8	Fine	229.73	253.71	1439	31	0.88	1266	2.7453	2.8570	0.1117	88	164	260
10/12/2022	17.6	1015.9	Fine	253.71	277.74	1442	34	0.96	1384	2.7511	2.8885	0.1374	99		
16/12/2022	17.8	1019.1	Fine	277.74	301.79	1443	31	0.88	1270	2.7852	2.9063	0.1211	95		
22/12/2022	20.8	1018.2	Fine	301.79	325.80	1441	31	0.87	1253	2.7617	2.9368	0.1751	140		
28/12/2022	18.0	1023.0	Fine	325.80	349.81	1441	37	1.05	1513	2.7762	2.9988	0.2226	147		
												Average	**114**		
												Min	**88**		
												Max	**147**		

The Summary of 24-hour TSP Concentration (μg/m^3) at Location AM2

Start Date	Avg Air Temp	Avg Atmospheric Pressure	Weather Condition	Elapse Time		Sampling Time	Averaged Flow Rate	Flow Rate	Total Flow Volume	Filter Weight (g)		Particulate weight	Concentration	Action Level	Limit Level
	(℃)	(hPa)		Initial	Final	(minutes)	(cfm)	(m^3/min)	(m^3)	Initial	Final	(g)	(μg/m^3)	(μg/m^3)	(μg/m3)
5/12/2022	17.5	1019.8	Fine	122.54	146.61	1444	32	0.92	1329	2.7702	2.8268	0.0566	43	152	260
10/12/2022	17.6	1015.9	Fine	146.61	170.64	1442	38	1.09	1572	2.7577	2.8622	0.1045	66		
16/12/2022	17.8	1019.1	Fine	170.64	194.61	1438	37	1.05	1510	2.7905	2.8664	0.0759	50		
22/12/2022	20.8	1018.0	Fine	204.35	228.37	1441	39	1.11	1600	2.7558	2.8701	0.1143	71		
28/12/2022	18.0	1023.0	Fine	228.37	252.37	1440	40	1.12	1613	2.7763	2.9252	0.1489	92		
												Average	**65**		
												Min	**43**		
												Max	**92**		

The Summary of 24-hour TSP Concentration (μg/m^3) at Location AM3

Start Date	Avg Air Temp	Avg Atmospheric Pressure	Weather Condition	Elapse Time		Sampling Time	Averaged Flow Rate	Flow Rate	Total Flow Volume	Filter Weight (g)		Particulate weight	Concentration	Action Level	Limit Level
	(℃)	(hPa)		Initial	Final	(minutes)	(cfm)	(m^3/min)	(m^3)	Initial	Final	(g)	(μg/m^3)	(μg/m^3)	(μg/m3)
5/12/2022	17.5	1019.8	Fine	981.90	1005.92	1441	36	1.03	1484	2.7577	2.9441	0.1864	126	163	260
10/12/2022	17.6	1015.9	Fine	1005.92	1029.97	1443	39	1.10	1587	2.7592	2.9773	0.2181	137		
16/12/2022	17.8	1019.1	Fine	1029.97	1054.00	1442	41	1.15	1658	2.7965	3.0095	0.2130	128		
22/12/2022	20.8	1018.2	Fine	1054.00	1078.00	1440	44	1.24	1786	2.7949	3.0681	0.2732	153		
28/12/2022	18.0	1023.0	Fine	1078.00	1102.04	1442	42	1.19	1716	2.7796	3.0485	0.2689	157		
												Average	**140**		
												Min	**126**		
												Max	**157**		

Noise

Impact Phase Construction Noise Monitoring Data at Location NM1

Date	Weather	Wind Speed	Start Time	End Time	L_{eq}	L_{10}	L_{90}
		m/s			dB(A)	dB(A)	dB(A)
6/12/2022	Fine	1.7	9:47	10:17	56.1	57.8	53.2
16/12/2022	Fine	1.2	15:30	16:00	51.1	53.4	46.1
22/12/2022	Fine	1.1	13:00	13:30	52.4	56.5	36.9
28/12/2022	Fine	2.1	16:00	16:30	53.3	55	49.9
				Average	**53.6**		
				Baseline Level	**55.4**		
				Action Level	**When one valid documented complaint is received**		
				Limit Level	**75**		

Impact Phase Construction Noise Monitoring Data at Location NM2

Date	Weather	Wind Speed	Start Time	End Time	L_{eq}	L_{10}	L_{90}
		m/s			dB(A)	dB(A)	dB(A)
6/12/2022	Fine	1.1	13:19	13:49	51.2	53.2	49.1
16/12/2022	Fine	1.6	10:41	11:11	49.2	53.3	44.3
22/12/2022	Fine	1.4	11:20	11:50	49.4	52.6	34.2
28/12/2022	Fine	1.7	9:30	10:00	48.9	49.2	47.8
				Average	**49.8**		
				Baseline Level	**54.5**		
				Action Level	**When one valid documented complaint is received**		
				Limit Level	**75**		

Water Quality

Monitoring Location: WM1

Date	Time	Weather	Water Depth (m)	Water Flow (L/s)	Water Temperature (°C)	DO (mg/L)			pH			Turbidity (NTU)			SS (mg/L)		
						Value	Action Level	Limit Level	Value	Action Level	Limit Level	Value	Action Level	Limit Level	Value	Action Level	Limit Level
5-Dec-22	12:37	Fine	0.02	-	14.9	10.8	7.4	4.0	7.4	7.7	7.8	8.6	9.2	9.5	3.4	9.7	11.4

Monitoring Location: WM2

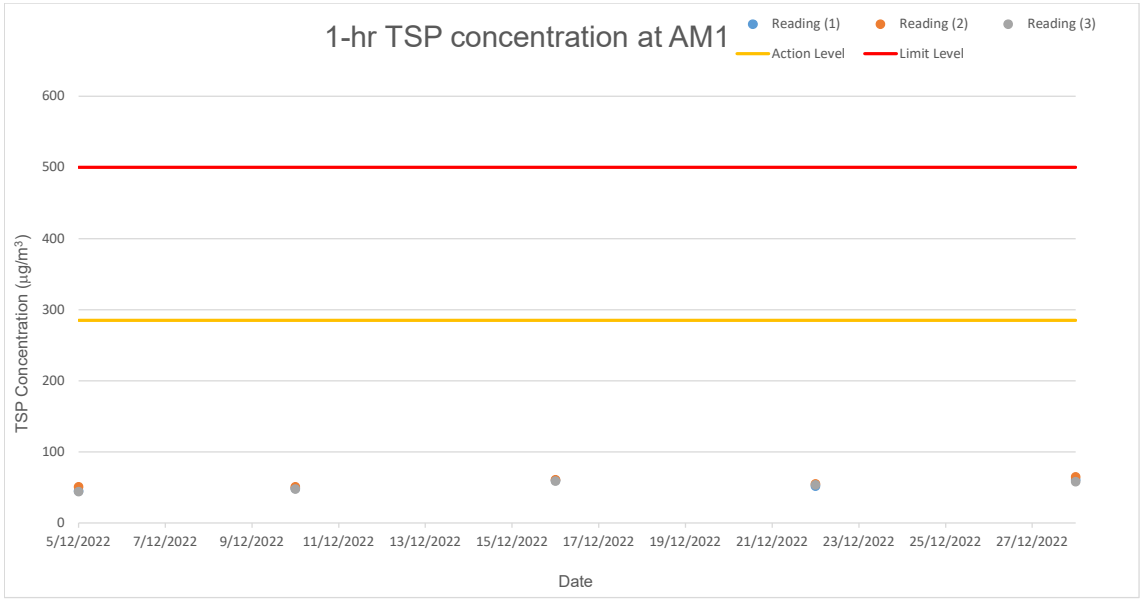
Date	Time	Weather	Water Depth (m)	Water Flow (L/s)	Water Temperature (°C)	DO (mg/L)			pH			Turbidity (NTU)			SS (mg/L)		
						Value	Action Level	Limit Level	Value	Action Level	Limit Level	Value	Action Level	Limit Level	Value	Action Level	Limit Level
5-Dec-22	11:11	Fine	0.13	9.9	19.4	6.5	5.0	4.0	7.5	7.6	7.7	23.3	108.3	108.9	25.6	94.5	94.7

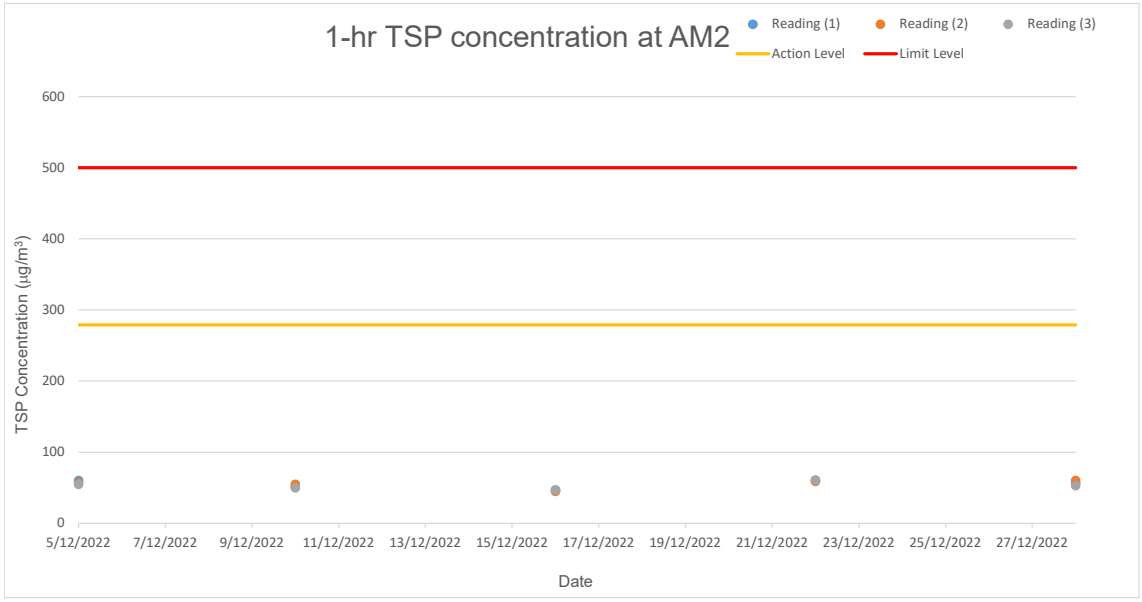
Remarks

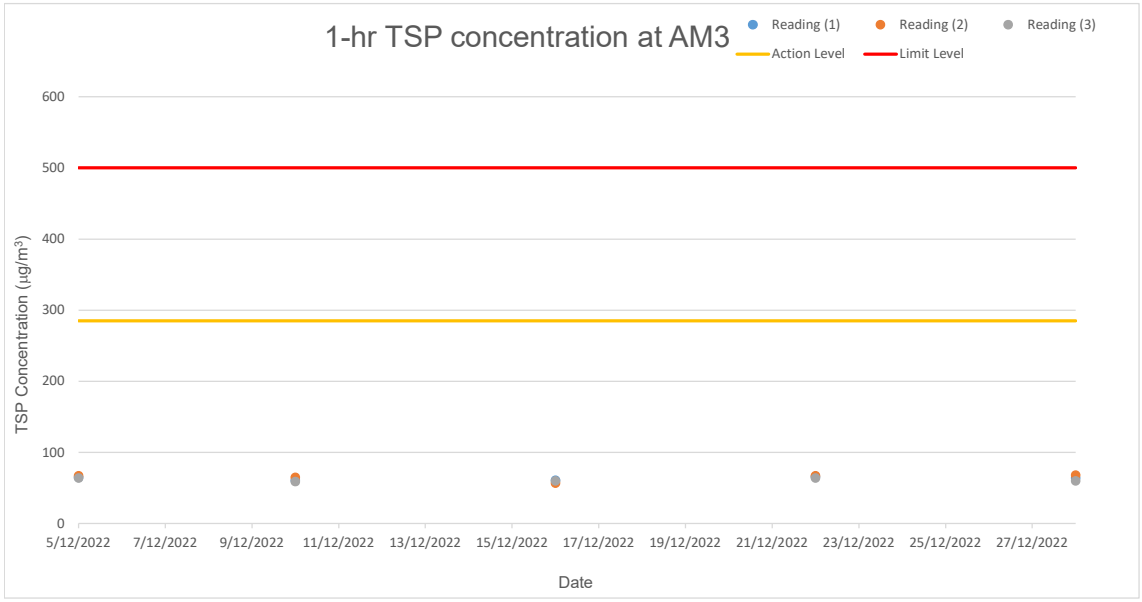
1. Sample will be grabbed on surface when the water depth is less than 1m.

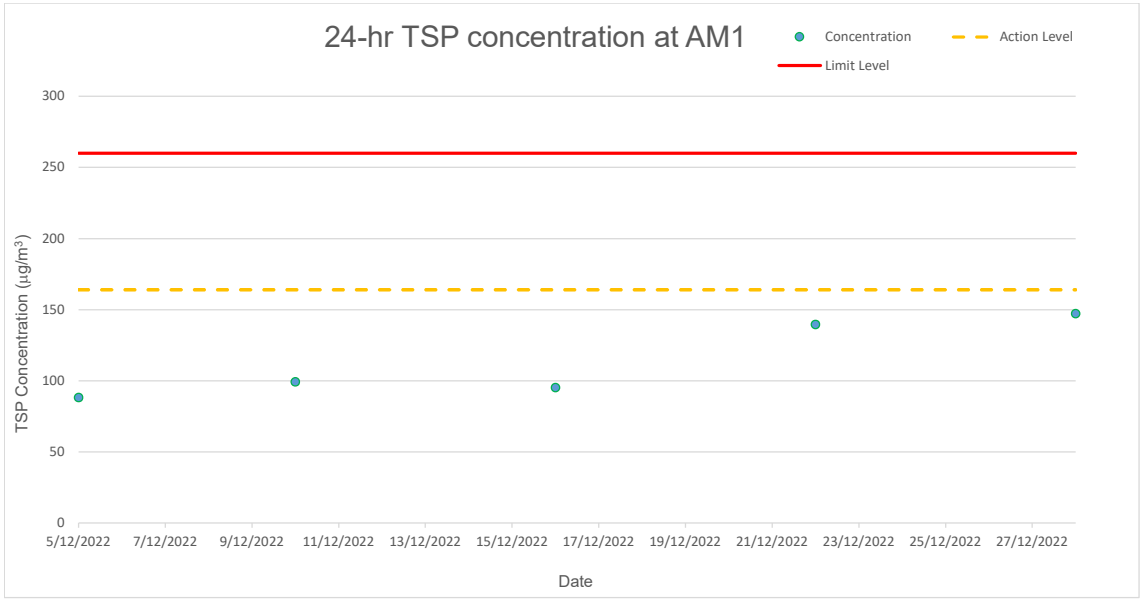
Appendix F Graphical Presentations

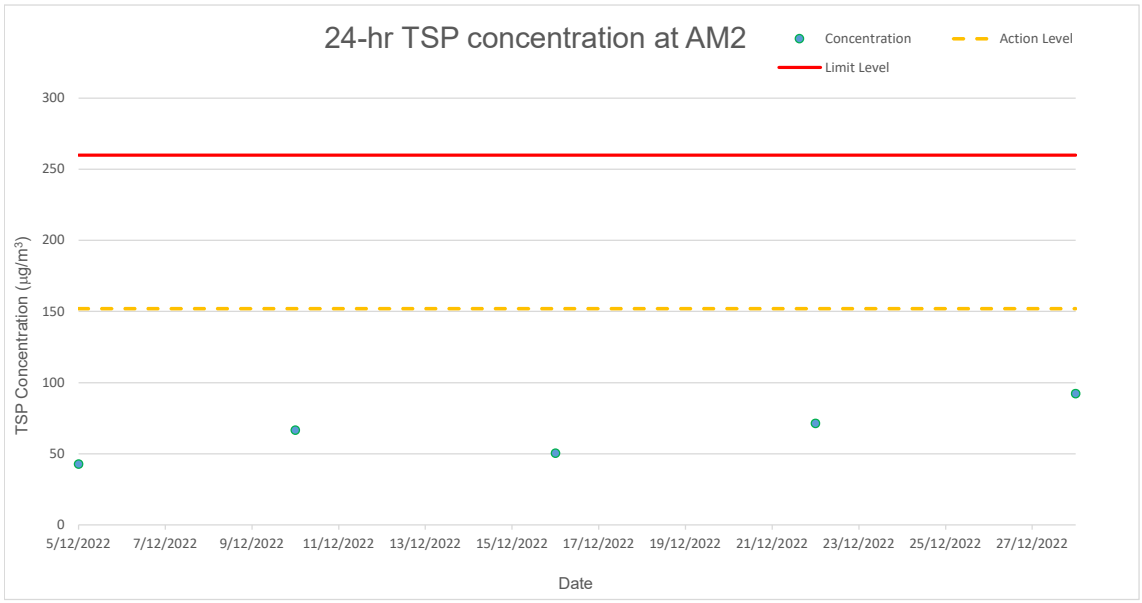
Air Quality

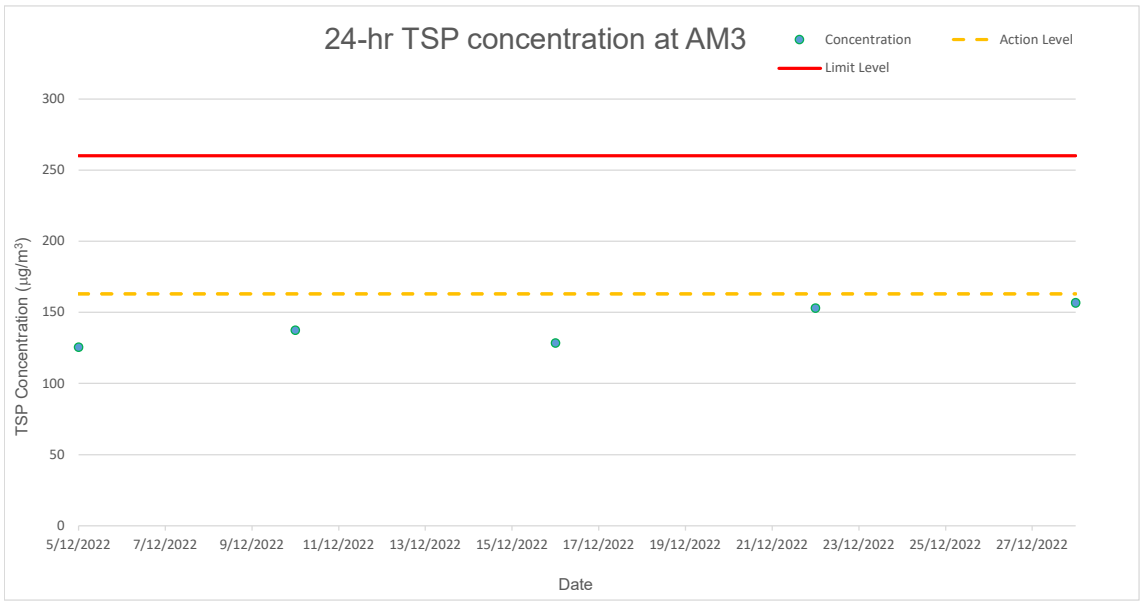

1-hr TSP concentration at AM1
Reading (1)
Reading (2)
Reading (3)
Action Level
Limit Level
TSP Concentration (μg/m³)
600
500
400
300
200
100
0
5/12/2022
7/12/2022
9/12/2022
11/12/2022
13/12/2022
15/12/2022
17/12/2022
19/12/2022
21/12/2022
23/12/2022
25/12/2022
27/12/2022
Date


1-hr TSP concentration at AM2
Reading (1)
Reading (2)
Reading (3)
Action Level
Limit Level
TSP Concentration (μg/m³)
600
500
400
300
200
100
0
5/12/2022
7/12/2022
9/12/2022
11/12/2022
13/12/2022
15/12/2022
17/12/2022
19/12/2022
21/12/2022
23/12/2022
25/12/2022
27/12/2022
Date

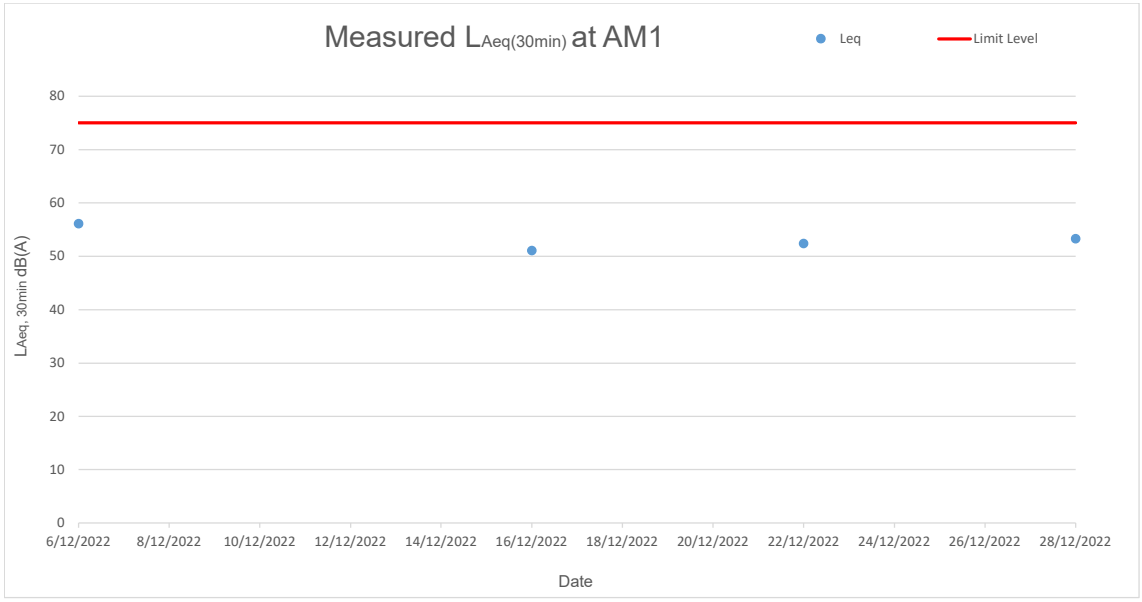

1-hr TSP concentration at AM3
Reading (1)
Reading (2)
Reading (3)
Action Level
Limit Level
TSP Concentration (μg/m³)
600
500
400
300
200
100
0
5/12/2022
7/12/2022
9/12/2022
11/12/2022
13/12/2022
15/12/2022
17/12/2022
19/12/2022
21/12/2022
23/12/2022
25/12/2022
27/12/2022
Date

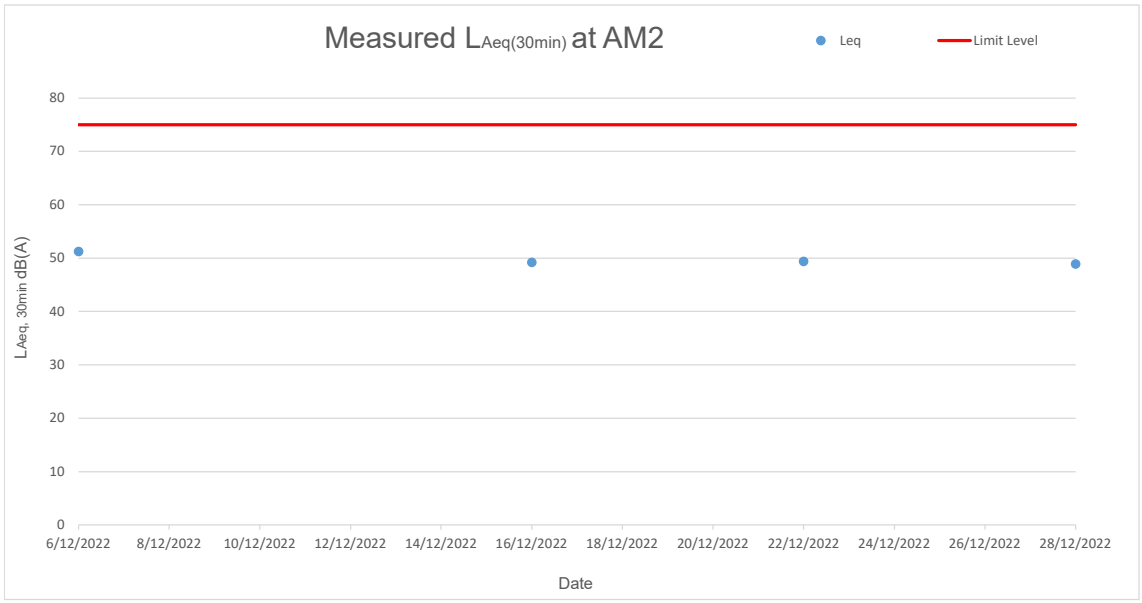

24-hr TSP concentration at AM1
Concentration
Action Level
Limit Level
TSP Concentration (µg/m³)
300
250
200
150
100
50
0
5/12/2022
7/12/2022
9/12/2022
11/12/2022
13/12/2022
15/12/2022
17/12/2022
19/12/2022
21/12/2022
23/12/2022
25/12/2022
27/12/2022
Date


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
7/12/2022
9/12/2022
11/12/2022
13/12/2022
15/12/2022
17/12/2022
19/12/2022
21/12/2022
23/12/2022
25/12/2022
27/12/2022
Date


24-hr TSP concentration at AM3
Concentration
Action Level
Limit Level
TSP Concentration (µg/m³)
300
250
200
150
100
50
0
5/12/2022
7/12/2022
9/12/2022
11/12/2022
13/12/2022
15/12/2022
17/12/2022
19/12/2022
21/12/2022
23/12/2022
25/12/2022
27/12/2022
Date

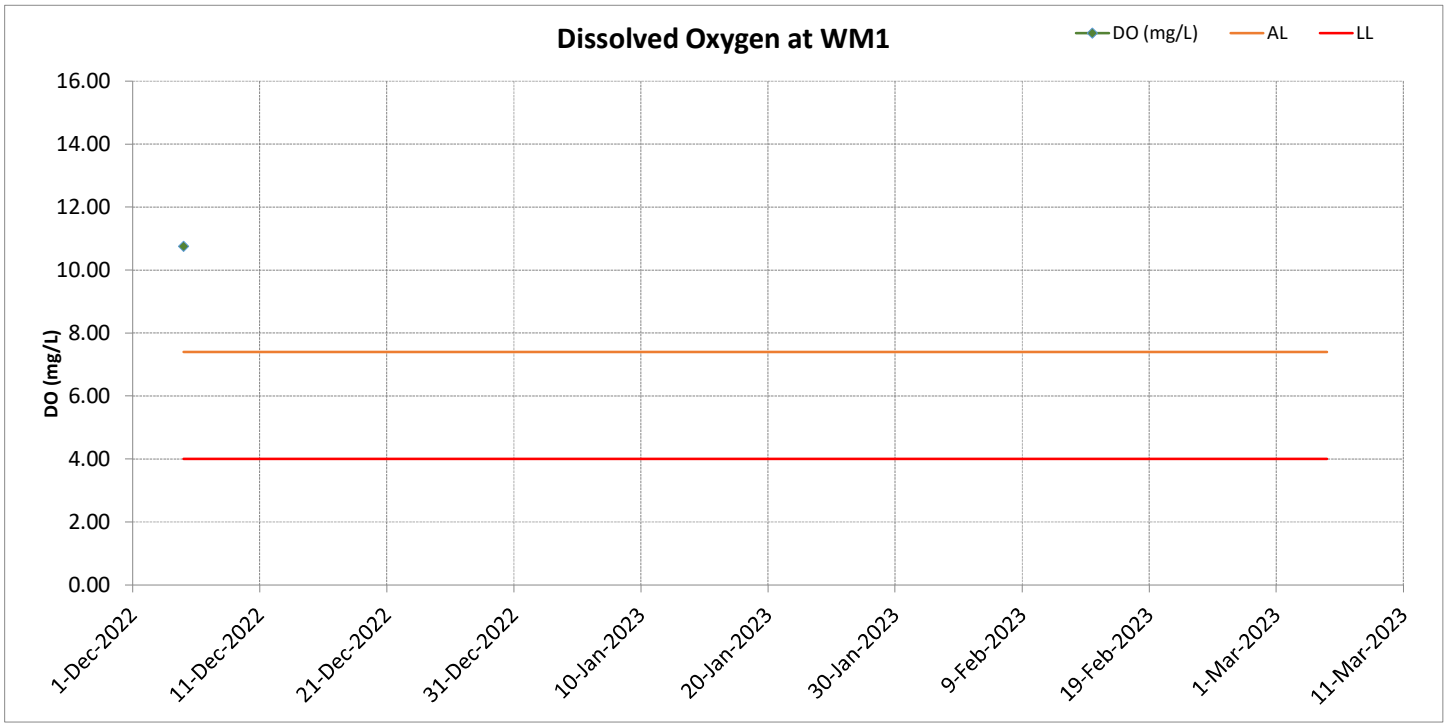
Noise

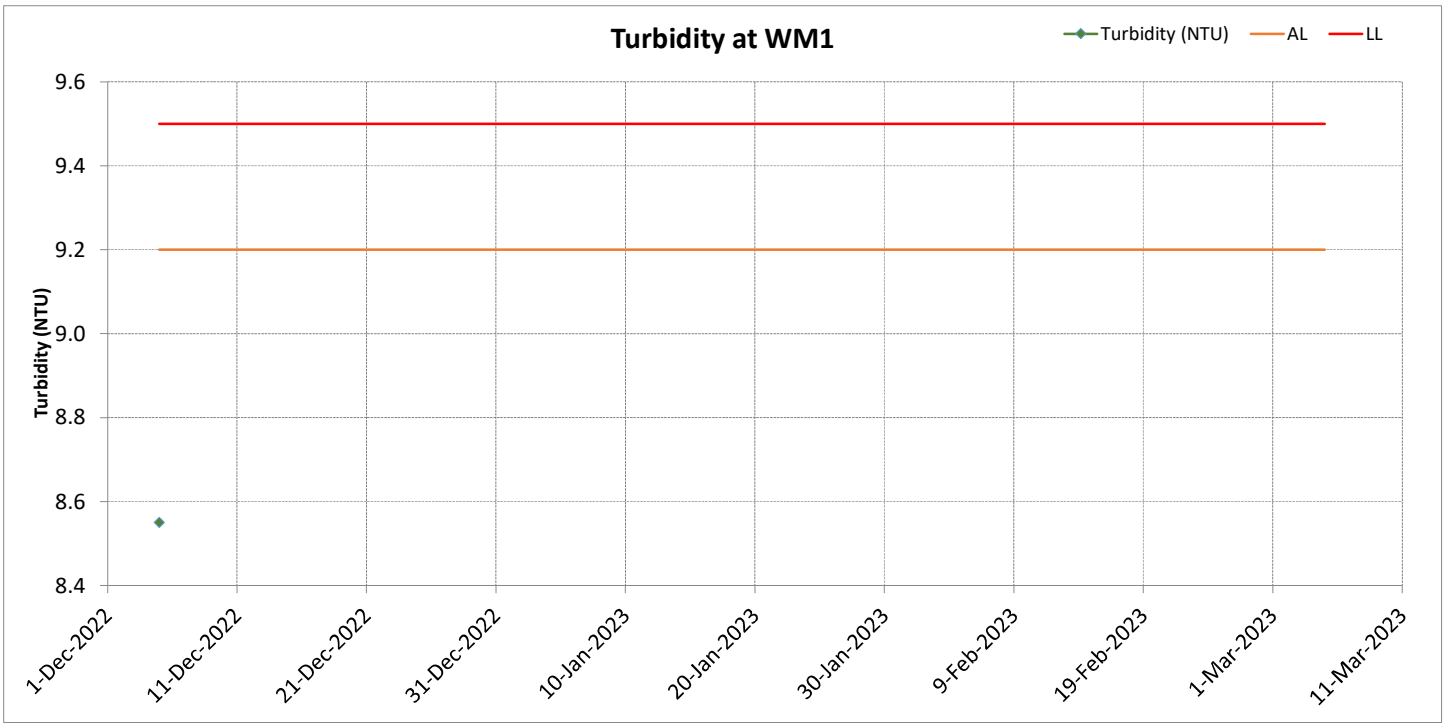

Measured LAeq(30min) at AM1
Leq
Limit Level
80
70
60
50
40
30
20
10
0
LAeq, 30min dB(A)
6/12/2022
8/12/2022
10/12/2022
12/12/2022
14/12/2022
16/12/2022
18/12/2022
20/12/2022
22/12/2022
24/12/2022
26/12/2022
28/12/2022
Date


Measured LAeq(30min) at AM2
Leq
Limit Level
80
70
60
50
40
30
20
10
0
LAeq, 30min dB(A)
6/12/2022
8/12/2022
10/12/2022
12/12/2022
14/12/2022
16/12/2022
18/12/2022
20/12/2022
22/12/2022
24/12/2022
26/12/2022
28/12/2022
Date

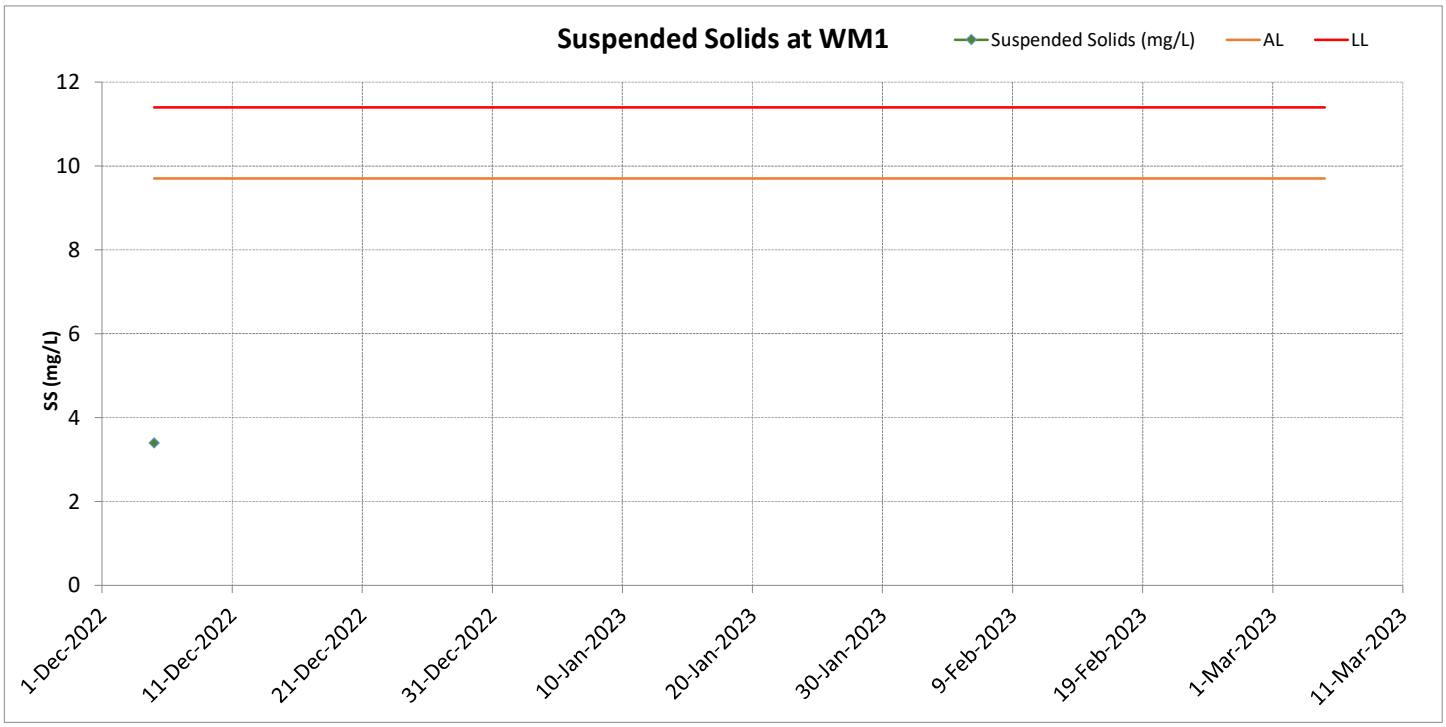
Water Quality

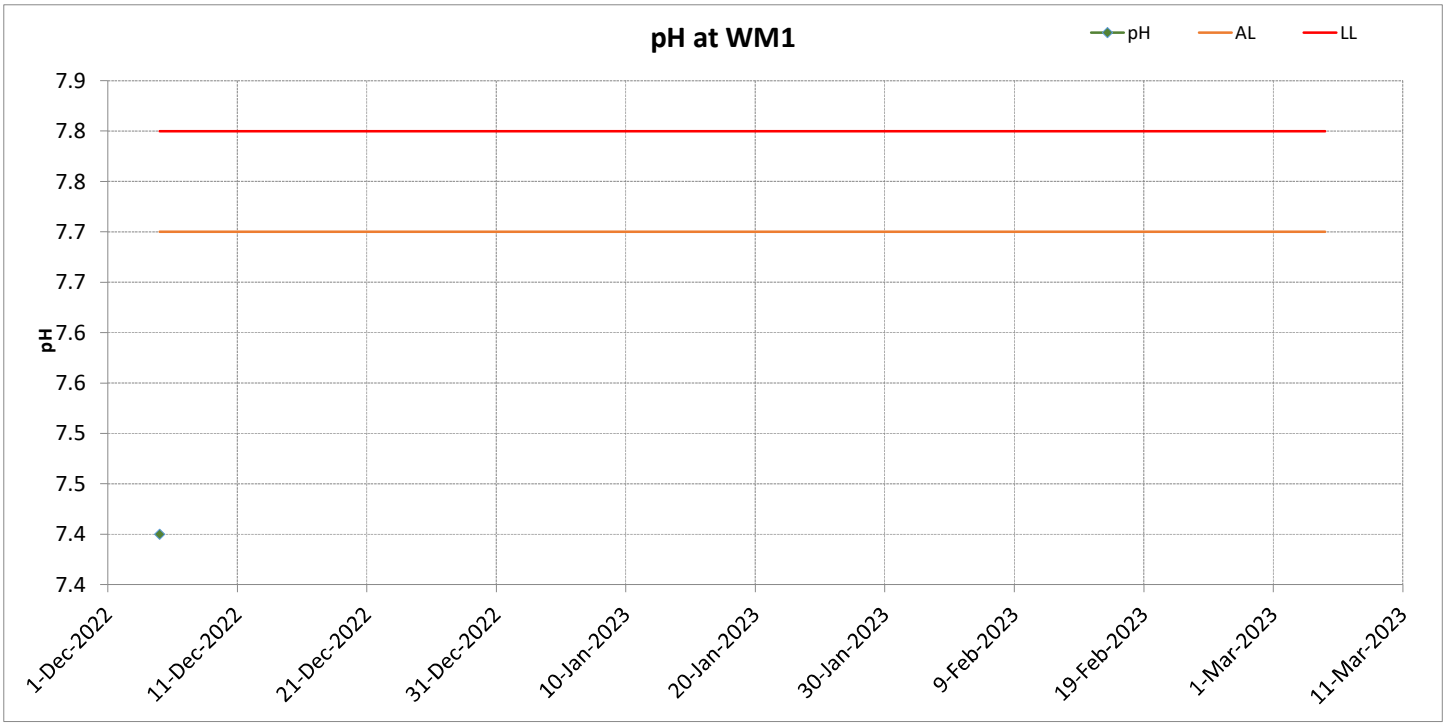
Surface Water Monitoring Results at WM1



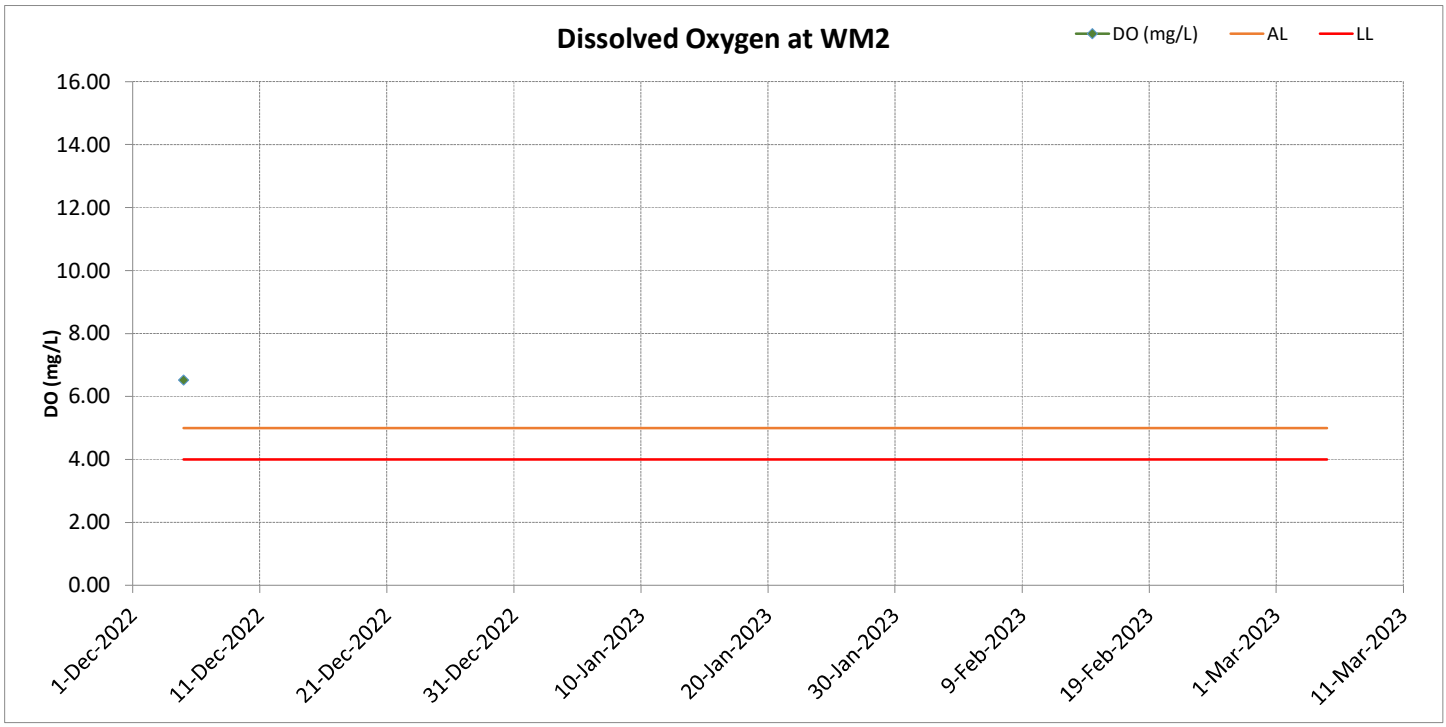


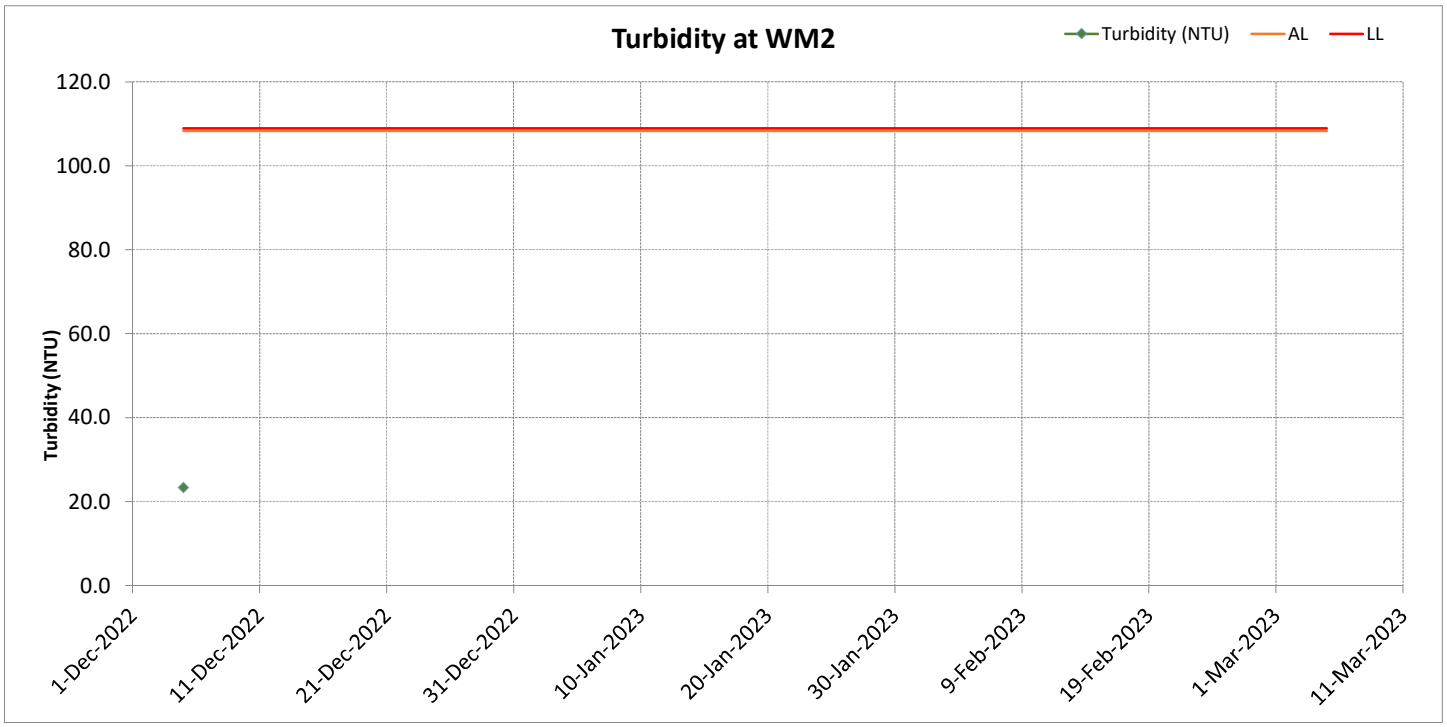
Surface Water Monitoring Results at WM1



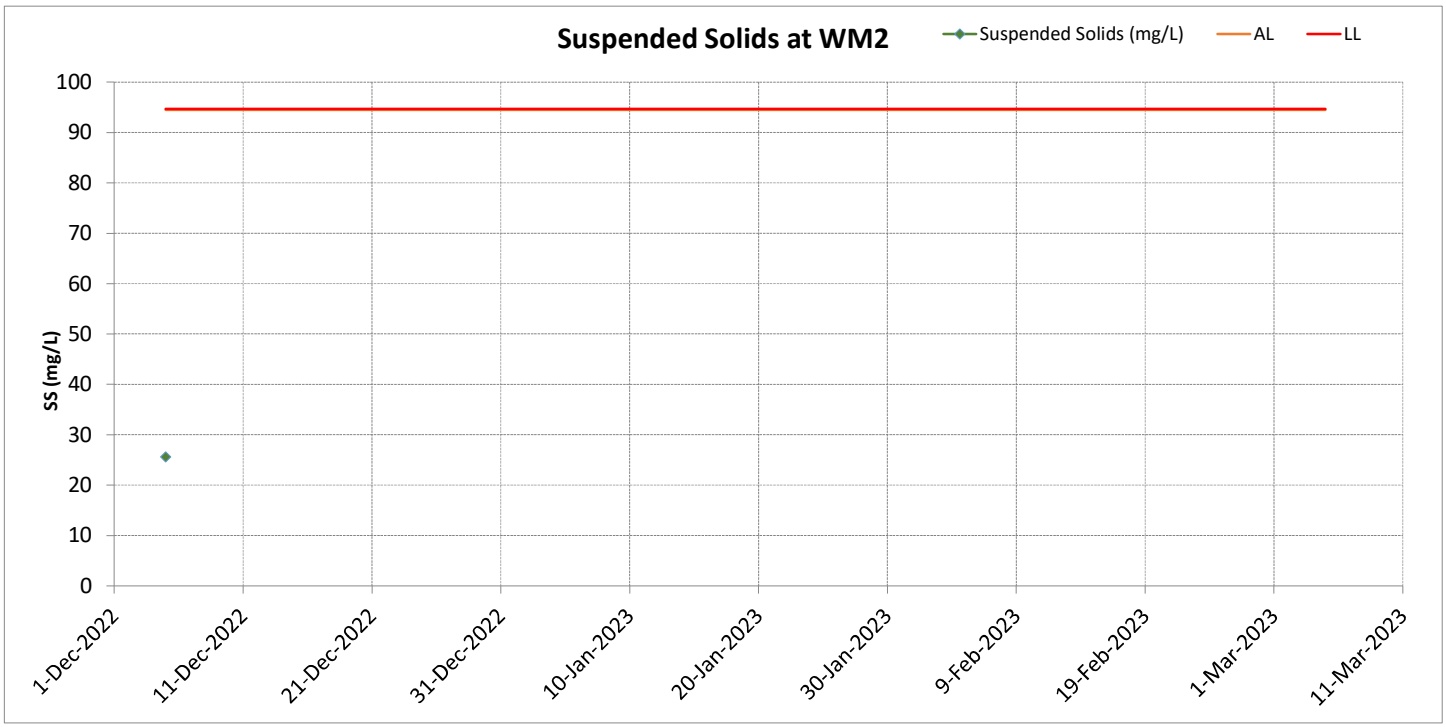


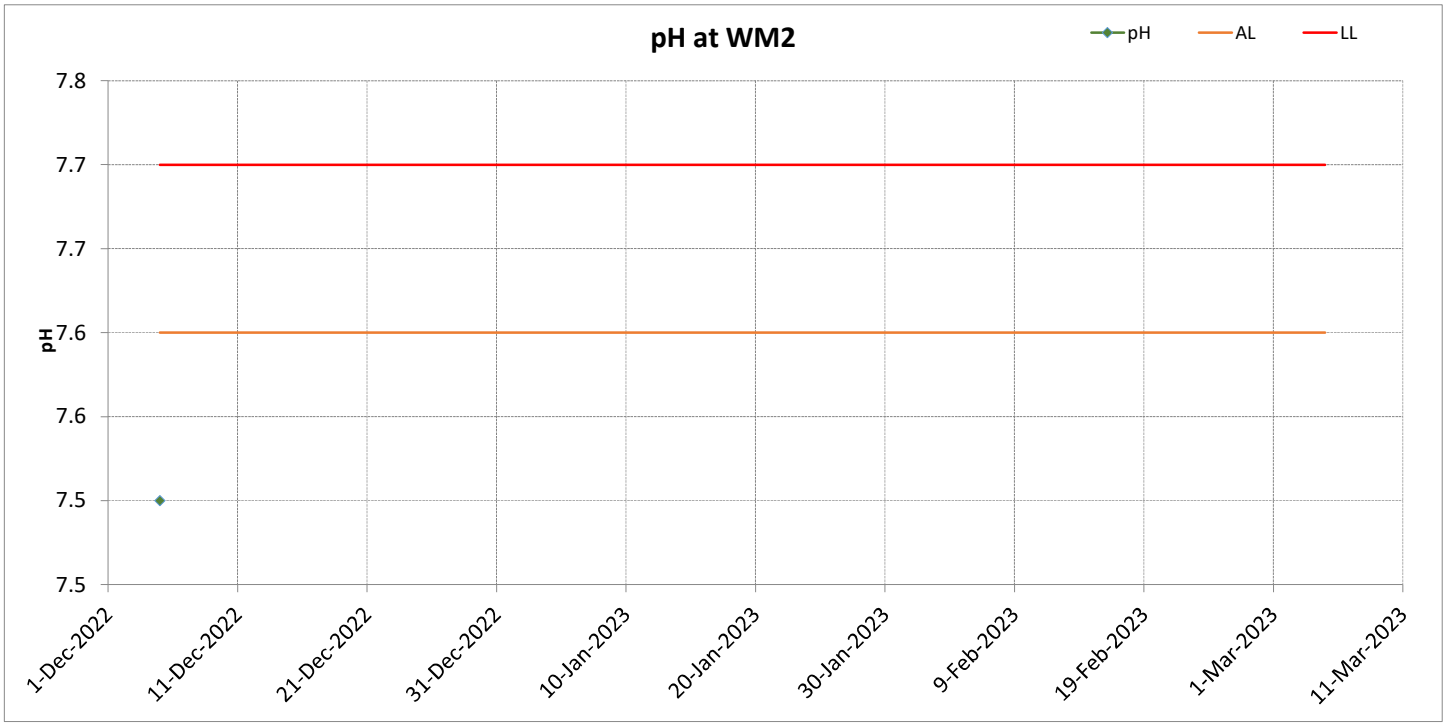
Surface Water Monitoring Results at WM2





Surface Water Monitoring Results at WM2





Appendix G Notification of Environmental Quality Limits Exceedance

Notification of Environmental Quality Limits Exceedance

Construction Dust

Monitoring Station	Monitoring Parameter(s)	No. of Exceedance	
		Action Level	Limit Level
WM1	1-hr TSP	0	0
	24-hr TSP	0	0
WM2	1-hr TSP	0	0
	24-hr TSP	0	0

Noise Monitoring

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

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

Notification of Environmental Quality Limits Exceedance

Landfill Gas (LFG) Monitoring

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

Appendix H Wind Data

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221201_0000	3.9	N
20221201_0010	4.2	N
20221201_0020	4.7	N
20221201_0020	4.7	N
20221201_0030	5	NNE
20221201_0040	4.4	N
20221201_0050	4.7	N
20221201_0100	4.7	NNE
20221201_0110	4.7	NNE
20221201_0120	5.3	N
20221201_0130	5.8	N
20221201_0140	5.3	N
20221201_0150	4.7	N
20221201_0200	4.2	NNE
20221201_0210	5	NNE
20221201_0220	4.4	N
20221201_0230	5	N
20221201_0240	4.4	N
20221201_0250	4.2	N
20221201_0300	4.2	N
20221201_0310	3.9	N
20221201_0320	4.2	N
20221201_0330	5	NNE
20221201_0340	4.4	N
20221201_0350	5.3	N
20221201_0400	5	N
20221201_0410	5.3	NNE
20221201_0420	5	N
20221201_0430	4.7	N
20221201_0440	4.7	N
20221201_0450	4.7	N
20221201_0500	5.3	N
20221201_0510	5.6	N
20221201_0520	5.3	N
20221201_0530	4.2	NNE
20221201_0540	4.4	N
20221201_0550	4.4	N
20221201_0600	5.8	N
20221201_0610	3.9	N
20221201_0620	3.3	N
20221201_0630	4.2	N
20221201_0640	3.9	N
20221201_0650	4.2	N
20221201_0700	4.4	NNE
20221201_0710	4.2	N
20221201_0720	3.9	N
20221201_0730	3.9	N
20221201_0740	4.4	N
20221201_0750	4.4	NNE
20221201_0800	4.2	N
20221201_0810	3.9	N
20221201_0820	4.2	N
20221201_0830	3.3	N
20221201_0840	3.6	N
20221201_0850	4.2	N
20221201_0900	3.3	N
20221201_0910	4.2	N
20221201_0920	3.3	N
20221201_0930	3.3	NNE
20221201_0940	3.1	N
20221201_0950	3.3	N
20221201_1000	3.3	N
20221201_1010	4.2	N
20221201_1020	3.6	N
20221201_1030	3.9	N
20221201_1040	4.4	N
20221201_1050	3.3	N
20221201_1100	4.2	N
20221201_1110	4.7	NNE
20221201_1120	4.7	NNE
20221201_1130	4.7	N
20221201_1140	4.7	NNE
20221201_1150	5	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221201_1200	4.7	N
20221201_1210	5.3	N
20221201_1220	4.7	N
20221201_1230	3.9	N
20221201_1240	4.7	N
20221201_1250	4.4	N
20221201_1300	3.9	N
20221201_1310	4.2	N
20221201_1320	4.2	N
20221201_1330	3.3	N
20221201_1340	4.7	NNE
20221201_1350	4.2	N
20221201_1400	4.7	N
20221201_1410	5	N
20221201_1420	4.7	N
20221201_1430	4.4	N
20221201_1440	5	N
20221201_1450	5	N
20221201_1500	5.3	N
20221201_1510	4.7	N
20221201_1520	4.2	N
20221201_1530	4.2	N
20221201_1540	5.3	N
20221201_1550	5.3	N
20221201_1600	5	N
20221201_1610	3.9	N
20221201_1620	4.2	N
20221201_1630	4.7	N
20221201_1640	4.4	N
20221201_1650	4.2	N
20221201_1700	5.3	N
20221201_1710	4.4	N
20221201_1720	3.9	N
20221201_1730	3.9	N
20221201_1740	5	N
20221201_1750	5	N
20221201_1800	3.9	N
20221201_1810	3.9	N
20221201_1820	4.2	N
20221201_1830	3.9	N
20221201_1840	3.9	N
20221201_1850	4.7	N
20221201_1900	4.7	N
20221201_1910	3.9	N
20221201_1920	4.4	N
20221201_1930	4.7	N
20221201_1940	5.3	N
20221201_1950	4.4	N
20221201_2000	3.9	N
20221201_2010	4.2	N
20221201_2020	4.4	N
20221201_2030	4.4	N
20221201_2040	4.4	N
20221201_2050	3.9	N
20221201_2100	3.6	N
20221201_2110	3.9	N
20221201_2120	4.2	N
20221201_2130	3.1	N
20221201_2140	3.3	N
20221201_2150	3.3	N
20221201_2200	3.3	N
20221201_2210	4.2	N
20221201_2220	5	N
20221201_2230	4.7	N
20221201_2240	5	N
20221201_2250	5	N
20221201_2300	5	N
20221201_2310	4.7	N
20221201_2320	3.9	N
20221201_2330	3.6	N
20221201_2340	3.9	N
20221201_2350	3.3	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221202_0000	3.9	N
20221202_0010	3.1	N
20221202_0020	4.2	N
20221202_0020	4.2	N
20221202_0030	4.7	N
20221202_0040	3.9	N
20221202_0050	4.2	N
20221202_0100	3.9	N
20221202_0110	3.3	N
20221202_0120	3.9	N
20221202_0130	3.1	N
20221202_0140	3.3	N
20221202_0150	4.2	N
20221202_0200	4.2	N
20221202_0210	4.7	NNE
20221202_0220	5.3	NNE
20221202_0230	4.7	N
20221202_0240	4.7	N
20221202_0250	4.4	N
20221202_0300	4.7	N
20221202_0310	4.7	NNE
20221202_0320	4.2	N
20221202_0330	4.2	N
20221202_0340	4.7	N
20221202_0350	4.4	N
20221202_0400	5	N
20221202_0410	4.4	N
20221202_0420	5	N
20221202_0430	4.7	N
20221202_0440	5	N
20221202_0450	4.4	N
20221202_0500	4.7	N
20221202_0510	5	N
20221202_0520	5.3	N
20221202_0530	5.3	N
20221202_0540	5	N
20221202_0550	5.3	N
20221202_0600	5	N
20221202_0610	4.7	N
20221202_0620	5.3	N
20221202_0630	4.7	N
20221202_0640	5	N
20221202_0650	4.7	N
20221202_0700	4.2	N
20221202_0710	4.2	N
20221202_0720	5	N
20221202_0730	4.7	N
20221202_0740	4.2	N
20221202_0750	4.7	N
20221202_0800	4.4	N
20221202_0810	4.2	N
20221202_0820	3.9	N
20221202_0830	4.4	N
20221202_0840	5	N
20221202_0850	4.7	N
20221202_0900	5.8	N
20221202_0910	5	N
20221202_0920	4.4	N
20221202_0930	5	N
20221202_0940	4.7	N
20221202_0950	5	N
20221202_1000	5.3	N
20221202_1010	5	N
20221202_1020	5	N
20221202_1030	4.7	N
20221202_1040	5.3	N
20221202_1050	4.7	N
20221202_1100	4.7	N
20221202_1110	4.4	N
20221202_1120	3.9	N
20221202_1130	3.9	N
20221202_1140	3.6	N
20221202_1150	3.3	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221202_1200	4.2	N
20221202_1210	3.6	N
20221202_1220	3.1	N
20221202_1230	2.8	N
20221202_1240	2.8	NNW
20221202_1250	2.8	NNW
20221202_1300	2.2	NNW
20221202_1310	2.2	NNW
20221202_1320	2.2	NNW
20221202_1330	2.5	NNW
20221202_1340	2.2	NNW
20221202_1350	1.7	NNW
20221202_1400	1.9	-
20221202_1410	1.7	NNW
20221202_1420	2.8	N
20221202_1430	1.7	N
20221202_1440	2.5	N
20221202_1450	2.5	NNW
20221202_1500	2.2	NW
20221202_1510	1.9	NNW
20221202_1520	2.8	N
20221202_1530	2.5	NNW
20221202_1540	2.5	N
20221202_1550	2.8	N
20221202_1600	1.7	NNW
20221202_1610	2.2	N
20221202_1620	1.7	N
20221202_1630	1.7	NNW
20221202_1640	2.2	NNW
20221202_1650	2.8	N
20221202_1700	2.5	N
20221202_1710	2.2	N
20221202_1720	1.9	N
20221202_1730	1.4	NNW
20221202_1740	1.9	NNW
20221202_1750	2.2	NNW
20221202_1800	1.7	N
20221202_1810	2.2	NNW
20221202_1820	1.7	N
20221202_1830	1.9	NNW
20221202_1840	2.2	N
20221202_1850	1.7	NNW
20221202_1900	1.7	NNW
20221202_1910	1.7	NNW
20221202_1920	2.2	NNW
20221202_1930	1.7	N
20221202_1940	2.2	N
20221202_1950	1.7	NNW
20221202_2000	1.7	N
20221202_2010	1.1	NNW
20221202_2020	1.7	N
20221202_2030	2.2	N
20221202_2040	1.7	N
20221202_2050	1.9	NNW
20221202_2100	1.7	NNW
20221202_2110	1.7	NNW
20221202_2120	1.7	NNW
20221202_2130	1.7	N
20221202_2140	1.9	N
20221202_2150	1.7	N
20221202_2200	1.7	N
20221202_2210	1.4	N
20221202_2220	1.4	N
20221202_2230	1.4	NNW
20221202_2240	1.4	NNW
20221202_2250	1.7	NNW
20221202_2300	2.2	N
20221202_2310	1.7	N
20221202_2320	1.7	NNW
20221202_2330	1.7	NNW
20221202_2340	1.4	NNW
20221202_2350	1.4	NNW

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221203_0000	1.4	NNW
20221203_0010	1.4	N
20221203_0020	1.1	N
20221203_0030	1.1	NNW
20221203_0040	1.4	NW
20221203_0050	1.7	NNW
20221203_0100	1.4	NNW
20221203_0110	1.7	NNW
20221203_0120	1.7	NNW
20221203_0130	2.5	NNW
20221203_0140	2.5	NNW
20221203_0150	2.2	NNW
20221203_0200	2.2	N
20221203_0210	2.5	N
20221203_0220	2.8	N
20221203_0230	2.5	N
20221203_0240	1.7	NNW
20221203_0250	2.2	NNW
20221203_0300	1.4	NNW
20221203_0310	2.5	NNW
20221203_0320	2.2	N
20221203_0330	1.7	N
20221203_0340	1.9	NNW
20221203_0350	2.2	NNW
20221203_0400	2.2	NNW
20221203_0410	2.2	NNW
20221203_0420	2.2	NNW
20221203_0430	2.2	NNW
20221203_0440	2.5	NNW
20221203_0450	2.5	NNW
20221203_0500	2.8	NNW
20221203_0510	2.8	NNW
20221203_0520	2.8	NNW
20221203_0530	2.5	NW
20221203_0540	2.5	NW
20221203_0550	2.2	NW
20221203_0600	2.5	NW
20221203_0610	2.5	NNW
20221203_0620	2.2	NW
20221203_0630	2.2	NW
20221203_0640	2.2	NNW
20221203_0650	2.2	NNW
20221203_0700	1.7	NNW
20221203_0710	2.5	NNW
20221203_0720	2.8	NNW
20221203_0730	2.8	NNW
20221203_0740	2.8	NW
20221203_0750	2.8	NW
20221203_0800	2.8	NW
20221203_0810	2.2	NW
20221203_0820	2.5	NNW
20221203_0830	3.1	NNW
20221203_0840	2.5	NNW
20221203_0850	2.5	NNW
20221203_0900	2.8	NW
20221203_0910	2.5	NNW
20221203_0920	2.5	NNW
20221203_0930	2.8	NNW
20221203_0940	2.8	N
20221203_0950	2.5	NNW
20221203_1000	2.5	NNW
20221203_1010	2.5	NNW
20221203_1020	2.2	NNW
20221203_1030	2.5	NNW
20221203_1040	2.5	NNW
20221203_1050	2.8	NNW
20221203_1100	3.1	NW
20221203_1110	3.1	NNW
20221203_1120	2.8	NNW
20221203_1130	2.5	NNW
20221203_1140	2.2	-
20221203_1150	2.8	NW

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221203_1200	2.2	NNW
20221203_1210	1.7	NNW
20221203_1220	1.7	N
20221203_1230	1.9	NNW
20221203_1240	2.2	NNW
20221203_1250	2.2	NW
20221203_1300	2.5	NNW
20221203_1310	2.2	NNW
20221203_1320	1.7	NNW
20221203_1330	1.7	NNW
20221203_1340	2.5	N
20221203_1350	1.9	NW
20221203_1400	1.9	NNW
20221203_1410	1.7	NNW
20221203_1420	1.7	NNW
20221203_1430	2.2	NW
20221203_1440	1.9	NNW
20221203_1450	2.2	NNW
20221203_1500	1.9	NNW
20221203_1510	2.2	NNW
20221203_1520	2.2	NW
20221203_1530	2.5	NW
20221203_1540	1.7	NNW
20221203_1550	2.2	NNW
20221203_1600	1.9	N
20221203_1610	1.7	NNW
20221203_1620	1.4	NNW
20221203_1630	1.7	NNW
20221203_1640	1.7	NNW
20221203_1650	1.4	N
20221203_1700	1.4	NW
20221203_1710	1.7	NW
20221203_1720	2.2	NW
20221203_1730	1.9	NW
20221203_1740	1.7	NW
20221203_1750	1.4	NW
20221203_1800	1.4	NW
20221203_1810	1.7	NW
20221203_1820	1.4	NNW
20221203_1830	1.4	NNW
20221203_1840	1.1	NW
20221203_1850	1.4	NW
20221203_1900	1.1	NNW
20221203_1910	1.1	N
20221203_1920	1.4	N
20221203_1930	0.6	NNW
20221203_1940	0.8	NNW
20221203_1950	1.1	N
20221203_2000	1.4	N
20221203_2010	0.3	N
20221203_2020	0	N
20221203_2030	0	N
20221203_2040	0.3	-
20221203_2050	0.6	NNW
20221203_2100	1.1	NNE
20221203_2110	1.4	NNE
20221203_2120	0.8	N
20221203_2130	0.3	N
20221203_2140	0	N
20221203_2150	0.3	NNW
20221203_2200	0.8	NNW
20221203_2210	0.6	NW
20221203_2220	0.3	NNW
20221203_2230	0.8	N
20221203_2240	0.8	N
20221203_2250	1.1	NNW
20221203_2300	1.1	N
20221203_2310	0.8	NNW
20221203_2320	0.8	NNW
20221203_2330	0.3	-
20221203_2340	0.3	-
20221203_2350	0	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221204_0000	0.3	NNW
20221204_0010	0	N
20221204_0020	0	N
20221204_0030	0	N
20221204_0020	0	N
20221204_0030	0	N
20221204_0040	0	N
20221204_0050	0.3	NNW
20221204_0100	0	N
20221204_0110	0	N
20221204_0120	0.3	WNW
20221204_0130	0	N
20221204_0140	0	N
20221204_0150	0.3	NW
20221204_0200	0.3	NW
20221204_0210	0.8	WNW
20221204_0220	1.4	NW
20221204_0230	0.3	WSW
20221204_0240	0.8	NW
20221204_0250	0.3	WNW
20221204_0300	0.8	WNW
20221204_0310	0.8	NW
20221204_0320	0.3	NNW
20221204_0330	0.3	NNW
20221204_0340	0.3	NNW
20221204_0350	0.3	NNW
20221204_0400	0.8	NW
20221204_0410	1.1	NNW
20221204_0420	0.6	NW
20221204_0430	0.3	NW
20221204_0440	0.8	NW
20221204_0450	1.1	NNW
20221204_0500	0.6	N
20221204_0510	1.1	NNW
20221204_0520	0.8	N
20221204_0530	1.4	NNW
20221204_0540	1.1	NNW
20221204_0550	0.8	NNW
20221204_0600	0.3	-
20221204_0610	0.3	NW
20221204_0620	0.6	NNW
20221204_0630	1.4	N
20221204_0640	1.4	N
20221204_0650	1.7	NNE
20221204_0700	1.1	N
20221204_0710	1.1	NW
20221204_0720	1.4	NNW
20221204_0730	1.4	N
20221204_0740	0.8	NNE
20221204_0750	0.8	SSE
20221204_0800	1.1	N
20221204_0810	0.8	ENE
20221204_0820	0.3	NE
20221204_0830	0.8	N
20221204_0840	1.7	N
20221204_0850	1.7	N
20221204_0900	1.4	N
20221204_0910	1.7	N
20221204_0920	1.7	N
20221204_0930	2.2	N
20221204_0940	2.2	NNE
20221204_0950	1.7	NNW
20221204_1000	2.2	N
20221204_1010	1.4	NNW
20221204_1020	1.7	N
20221204_1030	1.4	NNW
20221204_1040	1.4	NNW
20221204_1050	2.2	N
20221204_1100	3.3	N
20221204_1110	3.3	N
20221204_1120	2.8	N
20221204_1130	2.8	N
20221204_1140	2.8	N
20221204_1150	2.8	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221204_1200	2.8	N
20221204_1210	2.5	N
20221204_1220	3.6	N
20221204_1230	3.1	N
20221204_1240	3.1	N
20221204_1250	3.3	N
20221204_1300	3.1	N
20221204_1310	3.1	N
20221204_1320	2.8	NNW
20221204_1330	3.3	N
20221204_1340	3.3	N
20221204_1350	3.9	N
20221204_1400	3.3	N
20221204_1410	3.3	N
20221204_1420	3.3	N
20221204_1430	2.8	N
20221204_1440	3.3	N
20221204_1450	3.3	N
20221204_1500	4.2	NNE
20221204_1510	3.1	N
20221204_1520	4.4	NNE
20221204_1530	4.4	NNE
20221204_1540	4.7	NNE
20221204_1550	4.4	N
20221204_1600	3.9	N
20221204_1610	4.2	NNE
20221204_1620	3.6	N
20221204_1630	2.8	N
20221204_1640	2.8	N
20221204_1650	3.3	N
20221204_1700	3.3	N
20221204_1710	2.5	N
20221204_1720	2.8	N
20221204_1730	2.8	N
20221204_1740	3.3	N
20221204_1750	3.3	N
20221204_1800	2.8	N
20221204_1810	2.2	NNW
20221204_1820	2.5	N
20221204_1830	3.3	N
20221204_1840	3.3	N
20221204_1850	2.8	N
20221204_1900	2.8	NNW
20221204_1910	2.5	N
20221204_1920	2.8	N
20221204_1930	2.8	N
20221204_1940	2.5	N
20221204_1950	1.9	NNE
20221204_2000	1.7	N
20221204_2010	1.7	N
20221204_2020	2.2	N
20221204_2030	1.9	N
20221204_2040	1.4	N
20221204_2050	1.1	N
20221204_2100	1.4	NNW
20221204_2110	1.4	NNW
20221204_2120	1.7	N
20221204_2130	1.1	NNW
20221204_2140	1.9	N
20221204_2150	1.7	N
20221204_2200	1.9	N
20221204_2210	1.1	N
20221204_2220	1.7	N
20221204_2230	1.7	N
20221204_2240	2.2	N
20221204_2250	2.5	N
20221204_2300	1.9	N
20221204_2310	1.7	NNW
20221204_2320	2.5	N
20221204_2330	2.2	N
20221204_2340	2.5	N
20221204_2350	2.2	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221205_0000	2.2	N
20221205_0010	2.2	N
20221205_0020	1.9	N
20221205_0020	1.9	N
20221205_0030	2.5	N
20221205_0040	2.2	-
20221205_0050	2.5	NNW
20221205_0100	3.3	N
20221205_0110	3.1	N
20221205_0120	3.3	N
20221205_0130	3.6	N
20221205_0140	4.2	N
20221205_0150	4.2	N
20221205_0200	3.9	N
20221205_0210	3.9	N
20221205_0220	3.3	N
20221205_0230	3.9	N
20221205_0240	3.3	N
20221205_0250	4.2	N
20221205_0300	3.1	N
20221205_0310	3.3	N
20221205_0320	3.1	N
20221205_0330	3.6	N
20221205_0340	3.3	N
20221205_0350	3.9	N
20221205_0400	3.9	N
20221205_0410	4.2	N
20221205_0420	4.2	N
20221205_0430	4.7	N
20221205_0440	5	N
20221205_0450	4.4	N
20221205_0500	5	N
20221205_0510	5	N
20221205_0520	4.7	NNE
20221205_0530	5.3	N
20221205_0540	5	N
20221205_0550	4.7	N
20221205_0600	5	N
20221205_0610	4.7	N
20221205_0620	5	N
20221205_0630	4.4	N
20221205_0640	4.4	N
20221205_0650	3.9	N
20221205_0700	5.3	N
20221205_0710	4.7	N
20221205_0720	4.4	N
20221205_0730	4.4	N
20221205_0740	4.2	N
20221205_0750	3.9	N
20221205_0800	5	N
20221205_0810	5	N
20221205_0820	6.4	N
20221205_0830	5	N
20221205_0840	5	N
20221205_0850	4.7	N
20221205_0900	6.1	N
20221205_0910	5.8	N
20221205_0920	6.1	N
20221205_0930	5.6	N
20221205_0940	5.8	N
20221205_0950	5.3	N
20221205_1000	5.3	N
20221205_1010	4.7	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221205_1420	5	N
20221205_1430	5.8	N
20221205_1440	5.6	NNE
20221205_1450	4.7	NNE
20221205_1500	5.6	NNE
20221205_1510	5	NNE
20221205_1520	5.3	NNE
20221205_1530	5.3	NNE
20221205_1540	5.6	NNE
20221205_1550	4.4	NNE
20221205_1600	4.4	N
20221205_1610	4.2	NNE
20221205_1620	4.7	NNE
20221205_1630	4.7	NNE
20221205_1640	5	N
20221205_1650	4.7	N
20221205_1700	4.2	N
20221205_1710	4.2	N
20221205_1720	4.7	NNE
20221205_1730	4.2	NNE
20221205_1740	4.2	N
20221205_1750	5	N
20221205_1800	3.9	N
20221205_1810	4.4	N
20221205_1820	4.7	N
20221205_1830	4.2	N
20221205_1840	4.2	N
20221205_1850	4.7	N
20221205_1900	4.2	N
20221205_1910	4.4	N
20221205_1920	3.9	N
20221205_1930	4.7	N
20221205_1940	4.2	N
20221205_1950	4.7	N
20221205_2000	4.7	NNE
20221205_2010	4.7	NNE
20221205_2020	4.4	N
20221205_2030	4.2	N
20221205_2040	4.4	NNE
20221205_2050	4.4	N
20221205_2100	5.3	N
20221205_2110	5	NNE
20221205_2120	3.9	N
20221205_2130	4.4	N
20221205_2140	4.2	NNE
20221205_2150	4.2	N
20221205_2200	4.4	N
20221205_2210	4.7	N
20221205_2220	3.9	N
20221205_2230	3.3	N
20221205_2240	3.9	NNE
20221205_2250	4.2	NNE
20221205_2300	3.9	N
20221205_2310	4.2	NNE
20221205_2320	3.9	N
20221205_2330	3.3	N
20221205_2340	3.9	N
20221205_2350	3.9	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221206_0000	3.9	N
20221206_0010	3.3	N
20221206_0020	3.6	N
20221206_0020	3.6	N
20221206_0030	4.7	N
20221206_0040	3.6	N
20221206_0050	3.9	N
20221206_0100	4.4	N
20221206_0110	4.7	N
20221206_0120	3.9	N
20221206_0130	3.3	N
20221206_0140	3.9	N
20221206_0150	4.2	N
20221206_0200	4.2	N
20221206_0210	3.3	N
20221206_0220	4.2	N
20221206_0230	3.6	N
20221206_0240	4.2	N
20221206_0250	4.2	N
20221206_0300	3.9	N
20221206_0310	4.2	N
20221206_0320	3.9	N
20221206_0330	4.7	N
20221206_0340	4.4	NNE
20221206_0350	4.7	N
20221206_0400	5.3	N
20221206_0410	5	N
20221206_0420	5	NNE
20221206_0430	5.3	NNE
20221206_0440	4.4	NNE
20221206_0450	5.3	NNE
20221206_0500	4.7	NNE
20221206_0510	5.3	NNE
20221206_0520	4.2	N
20221206_0530	4.4	NNE
20221206_0540	4.2	N
20221206_0550	4.2	N
20221206_0600	4.2	N
20221206_0610	3.9	N
20221206_0620	3.9	N
20221206_0630	3.9	NNE
20221206_0640	3.3	N
20221206_0650	3.6	NNE
20221206_0700	3.3	N
20221206_0710	3.1	N
20221206_0720	3.3	N
20221206_0730	3.1	N
20221206_0740	2.8	N
20221206_0750	2.8	N
20221206_0800	3.3	N
20221206_0810	3.3	N
20221206_0820	3.9	N
20221206_0830	3.6	N
20221206_0840	3.6	NNE
20221206_0850	3.1	NNE
20221206_0900	3.1	N
20221206_0910	3.3	N
20221206_0920	3.3	N
20221206_0930	3.3	NNE
20221206_0940	3.9	NNE
20221206_0950	2.5	N
20221206_1000	3.3	NNE
20221206_1010	3.9	NNE
20221206_1020	4.7	NNE
20221206_1030	4.2	N
20221206_1040	4.4	NNE
20221206_1050	3.1	N
20221206_1100	3.3	N
20221206_1110	2.5	N
20221206_1120	3.1	NNW
20221206_1130	3.9	N
20221206_1140	2.8	NNW
20221206_1150	3.1	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221206_1200	3.3	N
20221206_1210	2.8	N
20221206_1220	3.9	N
20221206_1230	2.8	N
20221206_1240	3.3	N
20221206_1250	3.3	N
20221206_1300	2.8	N
20221206_1310	3.3	N
20221206_1320	3.3	N
20221206_1330	3.3	N
20221206_1340	4.2	N
20221206_1350	3.1	N
20221206_1400	2.2	N
20221206_1410	3.1	N
20221206_1420	3.9	N
20221206_1430	4.4	NNE
20221206_1440	3.9	NNE
20221206_1450	4.4	NNE
20221206_1500	4.4	N
20221206_1510	3.9	N
20221206_1520	3.3	N
20221206_1530	3.3	N
20221206_1540	3.6	NNE
20221206_1550	3.1	N
20221206_1600	2.5	N
20221206_1610	3.1	N
20221206_1620	3.3	N
20221206_1630	2.8	N
20221206_1640	2.8	N
20221206_1650	2.5	N
20221206_1700	2.5	N
20221206_1710	2.2	N
20221206_1720	1.7	N
20221206_1730	1.4	N
20221206_1740	1.1	N
20221206_1750	0.8	NNE
20221206_1800	0.3	NNW
20221206_1810	1.1	N
20221206_1820	0.8	NNW
20221206_1830	1.1	N
20221206_1840	1.1	N
20221206_1850	1.1	N
20221206_1900	0.8	N
20221206_1910	1.1	N
20221206_1920	0.8	N
20221206_1930	0.8	NNW
20221206_1940	0.8	N
20221206_1950	0.8	N
20221206_2000	0.3	NNW
20221206_2010	0	N
20221206_2020	0	N
20221206_2030	0	N
20221206_2040	0	N
20221206_2050	0	N
20221206_2100	0.3	NW
20221206_2110	0.3	NNW
20221206_2120	0	N
20221206_2130	0.3	N
20221206_2140	0.3	NNW
20221206_2150	0	N
20221206_2200	0	N
20221206_2210	0	N
20221206_2220	0.3	N
20221206_2230	0.3	N
20221206_2240	0.3	ENE
20221206_2250	0.3	NE
20221206_2300	0.8	NE
20221206_2310	0.3	ENE
20221206_2320	0	N
20221206_2330	0	N
20221206_2340	0.3	-
20221206_2350	0.3	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221207_0000	0.3	N
20221207_0010	0.8	NNW
20221207_0020	1.1	NNW
20221207_0020	1.1	NNW
20221207_0030	0.8	NNE
20221207_0040	0.3	NNE
20221207_0050	0.3	NNE
20221207_0100	0.3	NNE
20221207_0110	0	N
20221207_0120	0	N
20221207_0130	0	N
20221207_0140	0	N
20221207_0150	0	N
20221207_0200	0.8	NNW
20221207_0210	2.2	NNE
20221207_0220	1.4	N
20221207_0230	1.1	N
20221207_0240	0.8	N
20221207_0250	1.4	N
20221207_0300	0.8	N
20221207_0310	0.6	NNE
20221207_0320	1.1	NNE
20221207_0330	0.6	NNE
20221207_0340	0.3	NNW
20221207_0350	0.3	NNW
20221207_0400	0	N
20221207_0410	0	N
20221207_0420	0	N
20221207_0430	0	N
20221207_0440	0.3	WSW
20221207_0450	0.3	NW
20221207_0500	0.3	NW
20221207_0510	0.6	NW
20221207_0520	0.3	NW
20221207_0530	0.3	NNW
20221207_0540	0.3	-
20221207_0550	0.3	NW
20221207_0600	0.8	NNW
20221207_0610	1.1	NNW
20221207_0620	0.6	NNE
20221207_0630	0.3	-
20221207_0640	0.8	NW
20221207_0650	1.1	NNW
20221207_0700	0.8	N
20221207_0710	2.2	NNW
20221207_0720	2.5	NW
20221207_0730	2.5	NNW
20221207_0740	3.1	NNW
20221207_0750	2.2	NNW
20221207_0800	1.7	NNW
20221207_0810	1.9	NNW
20221207_0820	2.2	N
20221207_0830	0.8	ENE
20221207_0930	1.4	N
20221207_0940	1.1	N
20221207_0950	1.1	NNE
20221207_1000	1.7	N
20221207_1010	1.4	N
20221207_1020	1.7	N
20221207_1030	1.7	NNE
20221207_1040	2.2	N
20221207_1050	2.5	N
20221207_1100	3.1	N
20221207_1110	3.3	N
20221207_1120	2.5	N
20221207_1130	3.3	N
20221207_1140	3.1	N
20221207_1150	3.1	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221207_1200	3.3	N
20221207_1210	3.3	N
20221207_1220	4.2	NNE
20221207_1230	3.3	N
20221207_1240	3.3	N
20221207_1250	2.8	N
20221207_1300	2.2	NNW
20221207_1310	2.2	N
20221207_1320	2.8	N
20221207_1330	3.3	NNE
20221207_1340	1.7	ENE
20221207_1350	1.4	E
20221207_1400	1.7	E
20221207_1410	1.7	ESE
20221207_1420	1.4	NE
20221207_1430	1.9	NE
20221207_1440	2.2	N
20221207_1450	2.2	N
20221207_1500	2.2	N
20221207_1510	1.9	N
20221207_1520	2.5	NNE
20221207_1530	2.5	N
20221207_1540	1.7	NNE
20221207_1550	2.2	NNE
20221207_1600	1.4	NNE
20221207_1610	2.2	NE
20221207_1620	1.4	NNE
20221207_1630	1.7	E
20221207_1640	0.8	E
20221207_1650	1.7	ENE
20221207_1700	1.9	NE
20221207_1710	1.4	NNE
20221207_1720	1.4	NNE
20221207_1730	1.4	NNE
20221207_1740	1.4	NNE
20221207_1750	0.8	NNE
20221207_1800	0.8	N
20221207_1810	0.3	SE
20221207_1820	0.3	NW
20221207_1830	0.3	-
20221207_1840	0	N
20221207_1850	0	N
20221207_1900	0	N
20221207_1910	0	N
20221207_1920	0.3	NW
20221207_1930	0	N
20221207_1940	0.3	NW
20221207_1950	0	N
20221207_2000	0.3	S
20221207_2010	0	N
20221207_2020	0	N
20221207_2030	0	N
20221207_2040	0.3	SSE
20221207_2050	0	N
20221207_2100	0	N
20221207_2110	0.3	NNE
20221207_2120	0	N
20221207_2130	0	N
20221207_2140	0	N
20221207_2150	0	N
20221207_2200	0	N
20221207_2210	0	N
20221207_2220	0.3	S
20221207_2230	0	N
20221207_2240	0.3	-
20221207_2250	0	N
20221207_2300	0	N
20221207_2310	0	N
20221207_2320	0	N
20221207_2330	0.3	S
20221207_2340	0	N
20221207_2350	0.3	WNW

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221208_0000	0	N
20221208_0010	0	N
20221208_0020	0	N
20221208_0020	0	N
20221208_0030	0	N
20221208_0040	0	N
20221208_0050	0	N
20221208_0100	0	N
20221208_0110	0	N
20221208_0120	0	N
20221208_0130	0	N
20221208_0140	0	N
20221208_0150	0	N
20221208_0200	0	N
20221208_0210	0	N
20221208_0220	0	N
20221208_0230	0	N
20221208_0240	0.3	SSE
20221208_0250	0.8	SE
20221208_0300	0.3	SE
20221208_0310	0.3	ESE
20221208_0320	0	N
20221208_0330	0	N
20221208_0340	0	N
20221208_0350	0	N
20221208_0400	0.3	SSW
20221208_0410	0.3	SSW
20221208_0420	0	N
20221208_0430	0	N
20221208_0440	0	N
20221208_0450	0	N
20221208_0500	0	N
20221208_0510	0.3	S
20221208_0520	0.3	S
20221208_0530	0	N
20221208_0540	0	N
20221208_0550	0	N
20221208_0600	0	N
20221208_0610	0	N
20221208_0620	0.3	SSE
20221208_0630	0	N
20221208_0640	0	N
20221208_0650	0	N
20221208_0700	0	N
20221208_0710	0	N
20221208_0720	0	N
20221208_0730	0	N
20221208_0740	0	N
20221208_0750	0	N
20221208_0800	0	N
20221208_0810	0.3	E
20221208_0820	0.3	-
20221208_0830	0.3	NE
20221208_0840	0.3	NNE
20221208_0850	1.4	N
20221208_0900	1.9	N
20221208_0910	2.2	N
20221208_0920	2.5	N
20221208_0930	2.2	N
20221208_0940	2.8	N
20221208_0950	2.8	N
20221208_1000	3.1	N
20221208_1010	3.1	N
20221208_1020	2.8	NNE
20221208_1030	2.5	N
20221208_1040	2.8	N
20221208_1050	2.2	N
20221208_1100	1.7	NNW
20221208_1110	1.7	N
20221208_1120	2.2	NNW
20221208_1130	2.5	NW
20221208_1140	1.7	NW
20221208_1150	1.7	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221208_1200	1.7	NNW
20221208_1210	1.4	NW
20221208_1220	1.7	WNW
20221208_1230	1.7	NW
20221208_1240	2.2	NNW
20221208_1250	1.7	N
20221208_1300	1.4	-
20221208_1310	1.9	WNW
20221208_1320	1.7	N
20221208_1330	2.2	N
20221208_1340	1.4	N
20221208_1350	2.2	N
20221208_1400	1.4	-
20221208_1410	2.2	N
20221208_1420	1.7	NNW
20221208_1430	1.7	N
20221208_1440	1.7	N
20221208_1450	1.7	N
20221208_1500	2.5	N
20221208_1510	1.9	NW
20221208_1520	1.4	NNW
20221208_1530	1.7	N
20221208_1540	0.8	NNE
20221208_1550	1.1	-
20221208_1600	1.4	NNW
20221208_1610	1.7	N
20221208_1620	1.7	NNW
20221208_1630	1.1	N
20221208_1640	1.4	N
20221208_1650	1.1	N
20221208_1700	1.1	N
20221208_1710	1.4	N
20221208_1720	1.1	NNW
20221208_1730	0.8	NNW
20221208_1740	1.1	N
20221208_1750	1.1	NNE
20221208_1800	0.3	NNE
20221208_1810	0	N
20221208_1820	0.3	N
20221208_1830	0	N
20221208_1840	0.3	N
20221208_1850	0	N
20221208_1900	0	N
20221208_1910	0.3	S
20221208_1920	0.3	S
20221208_1930	0.3	S
20221208_1940	0	N
20221208_1950	0	N
20221208_2000	0	N
20221208_2010	0	N
20221208_2020	0	N
20221208_2030	0	N
20221208_2040	0	N
20221208_2050	0	N
20221208_2100	0	N
20221208_2110	0.3	-
20221208_2120	0	N
20221208_2130	0	N
20221208_2140	0	N
20221208_2150	0.3	S
20221208_2200	0.3	SSE
20221208_2210	0	N
20221208_2220	0	N
20221208_2230	0	N
20221208_2240	0	N
20221208_2250	0	N
20221208_2300	0	N
20221208_2310	0	N
20221208_2320	0	N
20221208_2330	0	N
20221208_2340	0	N
20221208_2350	0	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221209_0000	0	N
20221209_0010	0	N
20221209_0020	0	N
20221209_0020	0	N
20221209_0030	0	N
20221209_0040	0	N
20221209_0050	0.3	SE
20221209_0100	0.3	SE
20221209_0110	0	N
20221209_0120	0.3	-
20221209_0130	0	N
20221209_0140	0.3	-
20221209_0150	0.3	-
20221209_0200	1.7	NNW
20221209_0210	1.7	-
20221209_0220	2.2	NNW
20221209_0230	2.2	N
20221209_0240	1.7	ESE
20221209_0250	0.8	SSE
20221209_0300	0.8	SSE
20221209_0310	0.6	SSE
20221209_0320	0	N
20221209_0330	0.3	SE
20221209_0340	0.3	SSE
20221209_0350	0	N
20221209_0400	0.3	SSE
20221209_0410	0.3	SE
20221209_0420	0.3	ESE
20221209_0430	0.3	SE
20221209_0440	0	N
20221209_0450	0	N
20221209_0500	0	N
20221209_0510	0	N
20221209_0520	0	N
20221209_0530	0.3	S
20221209_0540	0	N
20221209_0550	0.3	SE
20221209_0600	0.3	-
20221209_0610	0	N
20221209_0620	0	N
20221209_0630	0	N
20221209_0640	0	N
20221209_0650	0.3	S
20221209_0700	0.3	-
20221209_0710	0.3	SSE
20221209_0720	0.3	S
20221209_0730	0.3	SW
20221209_0740	0	N
20221209_0750	0	N
20221209_0800	0.3	WNW
20221209_0810	0	N
20221209_0820	0.3	N
20221209_0830	1.1	N
20221209_0840	2.2	N
20221209_0850	1.7	N
20221209_0900	2.8	N
20221209_0910	2.2	N
20221209_0920	2.2	N
20221209_0930	1.7	N
20221209_0940	1.4	NNE
20221209_0950	2.2	NNE
20221209_1000	3.3	N
20221209_1010	3.6	N
20221209_1020	4.2	N
20221209_1030	5	N
20221209_1040	4.4	N
20221209_1050	2.8	N
20221209_1100	3.9	N
20221209_1110	3.3	N
20221209_1120	3.1	N
20221209_1130	3.3	NNW
20221209_1140	3.1	N
20221209_1150	3.3	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221209_1200	3.3	N
20221209_1210	4.2	N
20221209_1220	3.1	N
20221209_1230	3.3	N
20221209_1240	3.3	NNW
20221209_1250	3.9	N
20221209_1300	4.2	N
20221209_1310	3.3	N
20221209_1320	3.9	N
20221209_1330	3.9	N
20221209_1340	3.9	N
20221209_1350	2.8	N
20221209_1400	2.8	NNW
20221209_1410	2.8	NNE
20221209_1420	2.8	N
20221209_1430	3.1	N
20221209_1440	3.1	N
20221209_1450	2.8	N
20221209_1500	3.3	NNE
20221209_1510	2.8	N
20221209_1520	2.8	NNE
20221209_1530	2.5	NNE
20221209_1540	2.5	NNE
20221209_1550	2.2	NNE
20221209_1600	2.2	N
20221209_1610	2.2	N
20221209_1620	1.9	N
20221209_1630	2.2	N
20221209_1640	2.2	N
20221209_1650	2.2	N
20221209_1700	1.7	N
20221209_1710	1.4	N
20221209_1720	1.7	N
20221209_1730	1.7	N
20221209_1740	1.7	NNE
20221209_1750	1.7	NNE
20221209_1800	1.4	N
20221209_1810	1.4	N
20221209_1820	0.8	NNW
20221209_1830	1.7	N
20221209_1840	1.4	N
20221209_1850	0.8	NNE
20221209_1900	0	N
20221209_1910	0	N
20221209_1920	0	N
20221209_1930	0	N
20221209_1940	0	N
20221209_1950	0	N
20221209_2000	0	N
20221209_2010	0	N
20221209_2020	0	N
20221209_2030	0	N
20221209_2040	0	N
20221209_2050	0	N
20221209_2100	0.6	-
20221209_2110	1.1	N
20221209_2120	2.2	NNE
20221209_2130	2.2	N
20221209_2140	1.1	N
20221209_2150	1.7	N
20221209_2200	3.3	NNE
20221209_2210	1.4	NNW
20221209_2220	1.7	N
20221209_2230	1.7	N
20221209_2240	1.9	NNW
20221209_2250	2.5	N
20221209_2300	2.5	N
20221209_2310	2.2	N
20221209_2320	2.2	N
20221209_2330	3.1	N
20221209_2340	4.7	N
20221209_2350	4.4	N

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221210_0000	3.3	N
20221210_0010	4.2	N
20221210_0020	3.9	NNE
20221210_0020	3.9	NNE
20221210_0030	4.2	N
20221210_0040	3.9	NNE
20221210_0050	3.1	N
20221210_0100	3.9	N
20221210_0110	3.3	N
20221210_0120	3.3	N
20221210_0130	3.3	N
20221210_0140	3.3	N
20221210_0150	2.8	N
20221210_0200	2.8	N
20221210_0210	3.1	N
20221210_0220	3.1	N
20221210_0230	3.1	N
20221210_0240	3.1	N
20221210_0250	3.3	N
20221210_0300	2.8	N
20221210_0310	2.8	N
20221210_0320	1.7	NNE
20221210_0330	0.8	NNE
20221210_0340	0.3	SE
20221210_0350	0.3	-
20221210_0400	0.3	ESE
20221210_0410	0.8	NNW
20221210_0420	1.7	NNE
20221210_0430	0.8	NNE
20221210_0440	1.7	NE
20221210_0450	2.5	NNE
20221210_0500	4.2	NNE
20221210_0510	3.3	N
20221210_0520	3.3	N
20221210_0530	3.3	N
20221210_0540	3.1	N
20221210_0550	3.3	N
20221210_0600	3.9	N
20221210_0610	3.3	NNE
20221210_0620	1.7	NE
20221210_0630	3.3	NNE
20221210_0640	1.7	NE
20221210_0650	2.8	N
20221210_0700	2.2	NNE
20221210_0710	1.7	NNE
20221210_0720	1.1	ENE
20221210_0730	0.3	ENE
20221210_0740	0.3	SSE
20221210_0750	0.3	SSE
20221210_0800	0	N
20221210_0810	0	N
20221210_0820	0	N
20221210_0830	0	N
20221210_0840	0.3	WNW
20221210_0850	0.6	WNW
20221210_0900	0.8	NNW
20221210_0910	1.9	N
20221210_0920	1.7	N
20221210_0930	1.7	N
20221210_0940	2.5	N
20221210_0950	3.1	NNE
20221210_1000	4.2	NNE
20221210_1010	4.4	NNE
20221210_1020	4.2	N
20221210_1030	4.2	N
20221210_1040	4.2	NNE
20221210_1050	3.3	N
20221210_1100	3.3	N
20221210_1110	3.3	NNW
20221210_1120	3.3	N
20221210_1130	3.1	N
20221210_1140	3.9	N
20221210_1150	3.9	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221210_1200	4.7	NNE
20221210_1210	4.4	NNE
20221210_1220	3.9	NNE
20221210_1230	3.3	N
20221210_1240	3.1	N
20221210_1250	4.2	NNE
20221210_1300	3.6	NNE
20221210_1310	2.5	N
20221210_1320	1.7	NNW
20221210_1330	2.5	NNW
20221210_1340	2.2	NNW
20221210_1350	2.5	N
20221210_1400	3.1	N
20221210_1410	1.9	NNW
20221210_1420	1.7	N
20221210_1430	2.8	N
20221210_1440	1.7	N
20221210_1450	1.9	NNW
20221210_1500	2.2	N
20221210_1510	2.2	NNW
20221210_1520	2.2	NNW
20221210_1530	2.5	NNE
20221210_1540	2.5	N
20221210_1550	1.7	N
20221210_1600	1.9	N
20221210_1610	2.5	N
20221210_1620	2.8	N
20221210_1630	3.3	N
20221210_1640	3.9	N
20221210_1650	3.3	N
20221210_1700	3.3	N
20221210_1710	3.1	N
20221210_1720	2.8	N
20221210_1730	2.5	N
20221210_1740	2.8	NNE
20221210_1750	1.7	NNE
20221210_1800	1.4	N
20221210_1810	1.1	NNE
20221210_1820	1.4	NNE
20221210_1830	1.1	N
20221210_1840	0.6	NNE
20221210_1850	1.4	NNE
20221210_1900	1.7	NNE
20221210_1910	1.7	NNE
20221210_1920	1.1	NNE
20221210_1930	2.2	NNE
20221210_1940	2.5	NNE
20221210_1950	1.4	NNE
20221210_2000	2.2	NNE
20221210_2010	1.4	NE
20221210_2020	2.2	NNE
20221210_2030	2.2	NNE
20221210_2040	1.1	NNE
20221210_2050	2.2	NNE
20221210_2100	2.2	NNE
20221210_2110	3.1	N
20221210_2120	3.3	N
20221210_2130	2.8	N
20221210_2140	2.8	N
20221210_2150	3.1	N
20221210_2200	3.6	N
20221210_2210	3.6	N
20221210_2220	3.3	N
20221210_2230	2.5	N
20221210_2240	2.8	NNE
20221210_2250	1.1	SE
20221210_2300	0.8	-
20221210_2310	0.6	-
20221210_2320	1.7	NNW
20221210_2330	1.9	NNW
20221210_2340	2.2	NNW
20221210_2350	2.2	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221211_0000	2.5	N
20221211_0010	3.1	N
20221211_0020	2.5	N
20221211_0020	2.5	N
20221211_0030	2.8	N
20221211_0040	2.5	N
20221211_0050	2.5	NNE
20221211_0100	3.9	NNE
20221211_0110	3.9	NNE
20221211_0120	4.2	NNE
20221211_0130	4.4	NNE
20221211_0140	5	NNE
20221211_0150	4.4	NNE
20221211_0200	3.1	NNE
20221211_0210	2.8	N
20221211_0220	3.1	N
20221211_0230	3.3	N
20221211_0240	3.9	NNE
20221211_0250	5.3	NNE
20221211_0300	4.4	NNE
20221211_0310	4.2	NNE
20221211_0320	4.4	NNE
20221211_0330	3.9	NNE
20221211_0340	3.9	NNE
20221211_0350	4.2	NNE
20221211_0400	3.6	NNE
20221211_0410	3.1	N
20221211_0420	3.3	N
20221211_0430	3.3	NNE
20221211_0440	3.9	NNE
20221211_0450	4.2	N
20221211_0500	3.3	NNE
20221211_0510	3.6	N
20221211_0520	3.9	NNE
20221211_0530	3.9	NNE
20221211_0540	4.2	NNE
20221211_0550	4.2	NNE
20221211_0600	5	NNE
20221211_0610	4.2	NNE
20221211_0620	3.9	NNE
20221211_0630	3.1	N
20221211_0640	3.1	N
20221211_0650	2.8	N
20221211_0700	3.6	N
20221211_0710	3.3	N
20221211_0720	3.9	N
20221211_0730	3.9	NNE
20221211_0740	4.2	N
20221211_0750	3.3	N
20221211_0800	4.2	N
20221211_0810	4.4	NNE
20221211_0820	4.7	NNE
20221211_0830	5	NNE
20221211_0840	4.4	NNE
20221211_0850	3.9	NNE
20221211_0900	5.3	NNE
20221211_0910	4.7	NNE
20221211_0920	5	NNE
20221211_0930	5	NNE
20221211_0940	5	NNE
20221211_0950	5.3	NNE
20221211_1000	5	NNE
20221211_1010	4.7	NNE
20221211_1020	3.9	NNE
20221211_1030	4.7	NNE
20221211_1040	6.1	NNE
20221211_1050	6.1	NNE
20221211_1100	6.4	NNE
20221211_1110	5.3	NNE
20221211_1120	5.8	NNE
20221211_1130	5.3	NNE
20221211_1140	4.7	NNE
20221211_1150	5	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221211_1200	5	NNE
20221211_1210	5.3	NNE
20221211_1220	5.8	NNE
20221211_1230	4.7	N
20221211_1240	6.4	NNE
20221211_1250	5.3	NNE
20221211_1300	5.3	NNE
20221211_1310	5	NNE
20221211_1320	5.3	NNE
20221211_1330	5.3	NNE
20221211_1340	4.7	NNE
20221211_1350	4.7	NNE
20221211_1400	4.2	NNE
20221211_1410	3.3	NNE
20221211_1420	3.6	N
20221211_1430	3.9	NNE
20221211_1440	3.9	NNE
20221211_1450	3.9	NNE
20221211_1500	3.3	NNE
20221211_1510	3.3	N
20221211_1520	3.9	NNE
20221211_1530	3.3	NNE
20221211_1540	4.2	NNE
20221211_1550	3.6	NNE
20221211_1600	3.6	NNE
20221211_1610	3.3	NNE
20221211_1620	4.2	NNE
20221211_1630	4.2	NNE
20221211_1640	3.1	NNE
20221211_1650	4.7	NNE
20221211_1700	4.7	NNE
20221211_1710	3.3	NNE
20221211_1720	3.6	NNE
20221211_1730	3.3	NNE
20221211_1740	2.8	NNE
20221211_1750	3.3	NNE
20221211_1800	3.9	NNE
20221211_1810	4.2	NNE
20221211_1820	4.4	NNE
20221211_1830	5	NNE
20221211_1840	5	NNE
20221211_1850	4.7	NNE
20221211_1900	5.8	NNE
20221211_1910	4.7	NNE
20221211_1920	5.3	NNE
20221211_1930	5	NNE
20221211_1940	5.8	NNE
20221211_1950	5	NNE
20221211_2000	5	NNE
20221211_2010	5	NNE
20221211_2020	5.3	NNE
20221211_2030	5	NNE
20221211_2040	4.7	NNE
20221211_2050	3.9	N
20221211_2100	4.2	NNE
20221211_2110	5	N
20221211_2120	4.4	NNE
20221211_2130	5.3	N
20221211_2140	4.4	N
20221211_2150	5	NNE
20221211_2200	5	NNE
20221211_2210	4.7	NNE
20221211_2220	4.7	NNE
20221211_2230	4.4	NNE
20221211_2240	5.3	NNE
20221211_2250	4.4	NNE
20221211_2300	5.3	NNE
20221211_2310	5	NNE
20221211_2320	4.4	NNE
20221211_2330	5.3	NNE
20221211_2340	5	NNE
20221211_2350	5	NNE

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221212_0000	4.4	NNE
20221212_0010	4.7	N
20221212_0020	3.9	N
20221212_0030	4.4	N
20221212_0040	4.7	N
20221212_0050	4.4	N
20221212_0100	3.9	N
20221212_0110	4.7	NNE
20221212_0120	5	NNE
20221212_0130	5	NNE
20221212_0140	5	NNE
20221212_0150	4.2	N
20221212_0200	4.2	N
20221212_0210	3.9	NNE
20221212_0220	4.7	NNE
20221212_0230	3.9	NNE
20221212_0240	4.2	NNE
20221212_0250	3.9	NNE
20221212_0300	4.2	NNE
20221212_0310	3.9	N
20221212_0320	3.9	N
20221212_0330	4.2	NNE
20221212_0340	3.9	NNE
20221212_0350	5	NNE
20221212_0400	4.4	NNE
20221212_0410	4.7	NNE
20221212_0420	5	NNE
20221212_0430	3.9	N
20221212_0440	3.3	N
20221212_0450	3.3	NNE
20221212_0500	3.9	NNE
20221212_0510	4.2	NNE
20221212_0520	4.7	NNE
20221212_0530	3.3	NNE
20221212_0540	3.9	NNE
20221212_0550	4.4	NNE
20221212_0600	3.9	NNE
20221212_0610	4.2	N
20221212_0620	3.3	NNE
20221212_0630	3.1	N
20221212_0640	3.9	N
20221212_0650	3.9	N
20221212_0700	4.4	N
20221212_0710	4.4	NNE
20221212_0720	4.7	N
20221212_0730	3.3	NNE
20221212_0740	3.9	NNE
20221212_0750	3.3	NNE
20221212_0800	4.2	NNE
20221212_0810	3.3	NNE
20221212_0820	4.4	NNE
20221212_0830	4.4	NNE
20221212_0840	4.2	NNE
20221212_0850	4.7	NNE
20221212_0900	6.4	NNE
20221212_0910	4.7	N
20221212_0920	5	NNE
20221212_0930	5	N
20221212_0940	5.8	NNE
20221212_0950	6.1	NNE
20221212_1000	5.8	NNE
20221212_1010	5	NNE
20221212_1020	4.4	NNE
20221212_1030	5.6	NNE
20221212_1040	4.7	NNE
20221212_1050	5.8	NNE
20221212_1100	5.3	NNE
20221212_1110	6.4	NNE
20221212_1120	6.1	NNE
20221212_1130	5.3	NNE
20221212_1140	6.4	NNE
20221212_1150	5.8	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221212_1200	5.8	NNE
20221212_1210	5.8	NNE
20221212_1220	5.8	NNE
20221212_1230	5	NNE
20221212_1240	4.4	NNE
20221212_1250	5	NNE
20221212_1300	5.3	NNE
20221212_1310	4.7	NNE
20221212_1320	4.4	NNE
20221212_1330	5.8	NNE
20221212_1340	5.6	NE
20221212_1350	4.7	NNE
20221212_1400	4.2	NNE
20221212_1410	5	NNE
20221212_1420	3.9	NNE
20221212_1430	4.2	NNE
20221212_1440	5	NE
20221212_1450	5.3	NE
20221212_1500	4.4	NNE
20221212_1510	3.9	NNE
20221212_1520	4.2	NE
20221212_1530	5	NNE
20221212_1540	6.4	NNE
20221212_1550	5.3	NNE
20221212_1600	5	NNE
20221212_1610	5.3	NNE
20221212_1620	5.8	NNE
20221212_1630	5.6	NNE
20221212_1640	3.9	NNE
20221212_1650	4.4	NNE
20221212_1700	5.3	NNE
20221212_1710	6.1	NNE
20221212_1720	5.8	NNE
20221212_1730	5	NNE
20221212_1740	3.9	NNE
20221212_1750	5.3	NNE
20221212_1800	5	NNE
20221212_1810	5	NNE
20221212_1820	4.2	NNE
20221212_1830	3.9	NNE
20221212_1840	4.2	NNE
20221212_1850	3.3	NNE
20221212_1900	3.9	NNE
20221212_1910	4.7	NNE
20221212_1920	5	NNE
20221212_1930	4.7	NNE
20221212_1940	4.2	NNE
20221212_1950	4.4	NNE
20221212_2000	4.7	NNE
20221212_2010	5.8	NNE
20221212_2020	4.2	NNE
20221212_2030	4.4	NNE
20221212_2040	5	NNE
20221212_2050	4.4	NNE
20221212_2100	3.9	NNE
20221212_2110	4.2	NNE
20221212_2120	4.7	NNE
20221212_2130	3.9	NNE
20221212_2140	4.7	NNE
20221212_2150	5	NNE
20221212_2200	5.3	NNE
20221212_2210	5	NNE
20221212_2220	5	NNE
20221212_2230	5.3	NNE
20221212_2240	4.7	NNE
20221212_2250	5.3	NNE
20221212_2300	5	NNE
20221212_2310	5	NNE
20221212_2320	5.3	NNE
20221212_2330	5.3	NNE
20221212_2340	4.4	NNE
20221212_2350	3.9	NNE

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221213_0000	4.7	NNE
20221213_0010	5	NNE
20221213_0020	5.3	NNE
20221213_0030	5	NNE
20221213_0030	5	NNE
20221213_0040	5	NNE
20221213_0050	4.7	NNE
20221213_0100	5.3	NNE
20221213_0110	5	NNE
20221213_0120	5	NNE
20221213_0130	5	NNE
20221213_0140	5.3	NNE
20221213_0150	6.4	NNE
20221213_0200	5.3	NNE
20221213_0210	5	NNE
20221213_0220	4.7	N
20221213_0230	4.7	N
20221213_0240	4.4	N
20221213_0250	5.3	NNE
20221213_0300	4.2	NNE
20221213_0310	4.7	N
20221213_0320	4.7	NNE
20221213_0330	4.7	NNE
20221213_0340	4.7	NNE
20221213_0350	5	N
20221213_0400	5	NNE
20221213_0410	5	NNE
20221213_0420	5.3	NNE
20221213_0430	4.7	NNE
20221213_0440	4.2	N
20221213_0450	4.7	N
20221213_0500	4.7	NNE
20221213_0510	4.7	N
20221213_0520	5.3	NNE
20221213_0530	5.3	NNE
20221213_0540	4.4	NNE
20221213_0550	5	N
20221213_0600	4.7	NNE
20221213_0610	3.3	N
20221213_0620	3.9	N
20221213_0630	3.3	N
20221213_0640	3.1	N
20221213_0650	3.3	N
20221213_0700	3.6	N
20221213_0710	3.1	N
20221213_0720	3.6	N
20221213_0730	4.4	N
20221213_0740	4.4	NNE
20221213_0750	4.2	N
20221213_0800	4.2	N
20221213_0810	5.3	N
20221213_0820	5.3	N
20221213_0830	5.3	N
20221213_0840	5	N
20221213_0850	4.7	N
20221213_0900	4.2	N
20221213_0910	4.7	N
20221213_0920	4.4	N
20221213_0930	4.7	N
20221213_0940	4.4	N
20221213_0950	4.7	N
20221213_1000	5.6	N
20221213_1010	4.7	N
20221213_1020	3.9	N
20221213_1030	4.7	NNE
20221213_1040	4.2	N
20221213_1050	4.2	N
20221213_1100	3.9	N
20221213_1110	4.7	N
20221213_1120	4.4	N
20221213_1130	4.7	N
20221213_1140	3.9	N
20221213_1150	3.9	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221213_1200	5	N
20221213_1210	3.3	N
20221213_1220	2.8	N
20221213_1230	3.9	N
20221213_1240	4.4	N
20221213_1250	4.2	N
20221213_1300	3.3	N
20221213_1310	3.9	N
20221213_1320	3.3	N
20221213_1330	3.6	N
20221213_1340	4.2	N
20221213_1350	3.9	N
20221213_1400	4.7	N
20221213_1410	4.7	NNE
20221213_1420	5	NNE
20221213_1430	4.2	NNE
20221213_1440	4.2	NNE
20221213_1450	4.2	NNE
20221213_1500	4.7	NNE
20221213_1510	4.2	N
20221213_1520	4.7	NNE
20221213_1530	4.7	NNE
20221213_1540	3.9	NNE
20221213_1550	3.1	NNE
20221213_1600	3.3	NNE
20221213_1610	3.3	NNE
20221213_1620	3.3	N
20221213_1630	2.5	N
20221213_1640	2.8	N
20221213_1650	3.3	N
20221213_1700	3.1	N
20221213_1710	2.5	N
20221213_1720	2.8	N
20221213_1730	2.5	N
20221213_1740	3.1	N
20221213_1750	2.2	N
20221213_1800	2.8	NNE
20221213_1810	2.5	NNE
20221213_1820	3.3	NNE
20221213_1830	3.1	NNE
20221213_1840	3.1	N
20221213_1850	3.3	N
20221213_1900	3.3	N
20221213_1910	3.9	NNE
20221213_1920	3.3	NNE
20221213_1930	2.8	NNE
20221213_1940	3.3	N
20221213_1950	3.3	N
20221213_2000	3.3	N
20221213_2010	2.2	NNE
20221213_2020	2.2	N
20221213_2030	2.2	N
20221213_2040	1.7	N
20221213_2050	2.5	NNE
20221213_2100	2.2	N
20221213_2110	1.9	NNE
20221213_2120	1.7	N
20221213_2130	1.7	NNE
20221213_2140	1.7	N
20221213_2150	2.2	N
20221213_2200	2.2	NNE
20221213_2210	1.7	NNE
20221213_2220	1.9	NNE
20221213_2230	2.5	NNE
20221213_2240	1.7	N
20221213_2250	2.5	N
20221213_2300	3.3	N
20221213_2310	3.1	N
20221213_2320	3.3	N
20221213_2330	3.9	NNE
20221213_2340	3.9	NNE
20221213_2350	3.3	N

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221214_0000	3.3	N
20221214_0010	3.6	N
20221214_0020	2.8	N
20221214_0030	2.8	N
20221214_0020	2.8	N
20221214_0030	2.8	N
20221214_0040	3.9	N
20221214_0050	4.2	N
20221214_0100	4.2	N
20221214_0110	3.9	N
20221214_0120	4.2	N
20221214_0130	3.9	N
20221214_0140	4.2	N
20221214_0150	3.9	N
20221214_0200	3.9	N
20221214_0210	4.7	N
20221214_0220	4.7	N
20221214_0230	4.2	N
20221214_0240	4.2	N
20221214_0250	5	N
20221214_0300	4.2	N
20221214_0310	4.7	N
20221214_0320	5	N
20221214_0330	4.2	N
20221214_0340	4.7	N
20221214_0350	4.2	N
20221214_0400	3.6	N
20221214_0410	3.9	NNE
20221214_0420	4.2	NNE
20221214_0430	4.2	N
20221214_0440	3.3	N
20221214_0450	4.2	N
20221214_0500	4.2	N
20221214_0510	4.7	NNE
20221214_0520	5.3	NNE
20221214_0530	5.3	NNE
20221214_0540	5.3	NNE
20221214_0550	5	NNE
20221214_0600	5.3	NNE
20221214_0610	4.4	NNE
20221214_0620	3.9	NNE
20221214_0630	2.8	NNE
20221214_0640	3.3	NNE
20221214_0650	3.3	NNE
20221214_0700	3.3	NNE
20221214_0710	3.6	NNE
20221214_0720	3.3	NNE
20221214_0730	4.2	NNE
20221214_0740	4.2	NNE
20221214_0750	4.7	NNE
20221214_0800	5	N
20221214_0810	5.3	NNE
20221214_0820	5.3	NNE
20221214_0830	4.7	N
20221214_0840	4.4	NNE
20221214_0850	4.2	NNE
20221214_0900	4.2	NNE
20221214_0910	3.9	NNE
20221214_0920	4.2	NNE
20221214_0930	3.1	NNE
20221214_0940	3.3	NNE
20221214_0950	3.3	N
20221214_1000	3.1	NNE
20221214_1010	3.3	N
20221214_1020	4.2	N
20221214_1030	3.9	N
20221214_1040	4.2	N
20221214_1050	4.2	N
20221214_1100	3.9	N
20221214_1110	3.9	N
20221214_1120	4.7	NNE
20221214_1130	3.9	NNE
20221214_1140	4.4	NNE
20221214_1150	3.9	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221214_1200	3.3	N
20221214_1210	3.3	N
20221214_1220	4.2	NNE
20221214_1230	3.9	NNE
20221214_1240	3.9	NNE
20221214_1250	2.8	NNE
20221214_1300	2.5	N
20221214_1310	2.8	NNE
20221214_1320	3.3	N
20221214_1330	3.3	N
20221214_1340	3.6	N
20221214_1350	3.3	NNE
20221214_1400	2.8	N
20221214_1410	3.1	N
20221214_1420	3.1	N
20221214_1430	3.1	NNE
20221214_1440	2.5	NNE
20221214_1450	2.2	NNE
20221214_1500	1.7	NNE
20221214_1510	1.7	N
20221214_1520	2.5	N
20221214_1530	2.5	NNE
20221214_1540	2.2	N
20221214_1550	2.2	N
20221214_1600	3.3	N
20221214_1610	3.3	NNE
20221214_1620	4.4	NNE
20221214_1630	4.2	NNE
20221214_1640	4.7	NNE
20221214_1650	3.3	N
20221214_1700	3.3	N
20221214_1710	3.1	NNE
20221214_1720	2.2	NNE
20221214_1730	1.7	NNE
20221214_1740	1.1	NNE
20221214_1750	0.8	NE
20221214_1800	0.3	SSW
20221214_1810	0.3	-
20221214_1820	0.8	N
20221214_1830	0.3	-
20221214_1840	0.3	-
20221214_1850	0	N
20221214_1900	0.3	-
20221214_1910	1.1	NE
20221214_1920	0.3	-
20221214_1930	0.8	N
20221214_1940	2.2	N
20221214_1950	3.1	NNE
20221214_2000	2.5	NNE
20221214_2010	2.8	NNE
20221214_2020	2.2	N
20221214_2030	2.8	NNE
20221214_2040	3.1	NNE
20221214_2050	2.5	NNE
20221214_2100	1.9	NNE
20221214_2110	0.6	NE
20221214_2120	0.8	NE
20221214_2130	1.1	NNE
20221214_2140	1.7	N
20221214_2150	1.1	N
20221214_2200	1.1	NNW
20221214_2210	1.1	N
20221214_2220	1.4	N
20221214_2230	2.5	N
20221214_2240	2.5	N
20221214_2250	2.2	NNE
20221214_2300	2.5	N
20221214_2310	2.8	NNE
20221214_2320	3.1	NNE
20221214_2330	2.2	N
20221214_2340	1.9	N
20221214_2350	2.2	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221215_0000	2.2	NNE
20221215_0010	2.5	NNE
20221215_0020	2.2	NNE
20221215_0020	2.2	NNE
20221215_0030	1.7	NNE
20221215_0040	1.4	N
20221215_0050	0.8	N
20221215_0100	1.1	N
20221215_0110	0.8	N
20221215_0120	0.8	N
20221215_0130	1.1	N
20221215_0140	0.8	NNE
20221215_0150	0.8	N
20221215_0200	1.1	N
20221215_0210	1.1	NNE
20221215_0220	1.1	N
20221215_0230	0.8	N
20221215_0240	0.8	N
20221215_0250	1.1	NNE
20221215_0300	1.7	NNE
20221215_0310	1.4	N
20221215_0320	1.7	N
20221215_0330	1.1	N
20221215_0340	1.7	N
20221215_0350	1.7	N
20221215_0400	1.4	N
20221215_0410	1.7	N
20221215_0420	1.7	N
20221215_0430	1.7	NNE
20221215_0440	1.4	N
20221215_0450	1.1	N
20221215_0500	1.1	N
20221215_0510	0.8	N
20221215_0520	1.1	N
20221215_0530	1.1	N
20221215_0540	0.8	-
20221215_0550	0.8	N
20221215_0600	0.6	N
20221215_0610	0.8	N
20221215_0620	1.1	N
20221215_0630	0.8	NNE
20221215_0640	1.1	NNE
20221215_0650	0.3	NW
20221215_0700	0.6	NW
20221215_0710	0.8	NNW
20221215_0720	0.8	NNE
20221215_0730	0.3	N
20221215_0740	1.1	N
20221215_0750	0.8	N
20221215_0800	0.8	N
20221215_0810	0.6	NW
20221215_0820	0.8	NNW
20221215_0830	0.8	N
20221215_0840	0.8	N
20221215_0850	0.8	N
20221215_0900	0.3	NNW
20221215_0910	0.3	N
20221215_0920	0.8	NNE
20221215_0930	0.3	N
20221215_0940	0.8	N
20221215_0950	1.1	N
20221215_1000	0.3	N
20221215_1010	0.8	NW
20221215_1020	1.1	NNE
20221215_1030	1.4	NNE
20221215_1040	0.6	N
20221215_1050	0.8	N
20221215_1100	0.8	NNE
20221215_1110	0.8	N
20221215_1120	0.8	N
20221215_1130	0.6	N
20221215_1140	0.8	NNW
20221215_1150	1.4	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221215_1200	1.1	N
20221215_1210	1.4	NNE
20221215_1220	1.1	N
20221215_1230	1.4	N
20221215_1240	1.4	N
20221215_1250	1.7	N
20221215_1300	1.4	NNW
20221215_1310	1.1	NNW
20221215_1320	1.4	N
20221215_1330	1.1	N
20221215_1340	1.1	NNW
20221215_1350	0.8	NNW
20221215_1400	0.8	NNW
20221215_1410	0.3	-
20221215_1420	1.1	NNW
20221215_1430	1.7	N
20221215_1440	1.4	N
20221215_1450	0.8	NNW
20221215_1500	0.8	NNW
20221215_1510	0.8	NNW
20221215_1520	1.4	N
20221215_1530	1.1	NNW
20221215_1540	0.6	NW
20221215_1550	0.3	NNW
20221215_1600	0.3	NNW
20221215_1610	0.8	NNW
20221215_1620	1.1	NNE
20221215_1630	1.1	NNE
20221215_1640	1.1	N
20221215_1650	0.8	NNW
20221215_1700	1.1	NNW
20221215_1710	1.1	NNW
20221215_1720	1.7	N
20221215_1730	0.8	NNE
20221215_1740	1.1	NNE
20221215_1750	1.1	NNE
20221215_1800	0.3	ENE
20221215_1810	0.3	ESE
20221215_1820	0	N
20221215_1830	0	N
20221215_1840	0	N
20221215_1850	0.3	SW
20221215_1900	0.8	SW
20221215_1910	0	N
20221215_1920	0	N
20221215_1930	0.3	NNW
20221215_1940	0.3	N
20221215_1950	0.3	NNE
20221215_2000	0	N
20221215_2010	0.3	N
20221215_2020	0.3	NNE
20221215_2030	0.3	NE
20221215_2040	0.3	N
20221215_2050	0	N
20221215_2100	0	N
20221215_2110	0	N
20221215_2120	0	N
20221215_2130	0	N
20221215_2140	0	N
20221215_2150	0	N
20221215_2200	0	N
20221215_2210	0	N
20221215_2220	0	N
20221215_2230	0.3	N
20221215_2240	0.3	NNE
20221215_2250	0.3	NNE
20221215_2300	0.6	N
20221215_2310	0.3	N
20221215_2320	0.3	NNE
20221215_2330	0.3	NE
20221215_2340	0.3	N
20221215_2350	0.3	NNE

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221216_0000	0.3	N
20221216_0010	0	N
20221216_0020	0.3	NW
20221216_0020	0.3	NW
20221216_0030	0	N
20221216_0040	0	N
20221216_0050	0	N
20221216_0100	0	N
20221216_0110	0.3	NE
20221216_0120	0.3	N
20221216_0130	0.3	N
20221216_0140	0	N
20221216_0150	0.3	-
20221216_0200	0	N
20221216_0210	0	N
20221216_0220	0.3	NW
20221216_0230	0.3	NW
20221216_0240	0.3	NNW
20221216_0250	0.3	NW
20221216_0300	0	N
20221216_0310	0.3	NW
20221216_0320	0.3	NW
20221216_0330	0.8	NW
20221216_0340	0.3	NW
20221216_0350	0.3	WNW
20221216_0400	0.3	NW
20221216_0410	0.3	N
20221216_0420	0.3	NNW
20221216_0430	0.3	NNE
20221216_0440	0	N
20221216_0450	0.3	NW
20221216_0500	0.6	NE
20221216_0510	0.3	-
20221216_0520	0	N
20221216_0530	0	N
20221216_0540	0	N
20221216_0550	0	N
20221216_0600	0	N
20221216_0610	0	N
20221216_0620	0	N
20221216_0630	0	N
20221216_0640	0	N
20221216_0650	0.3	NNW
20221216_0700	0.3	NNW
20221216_0710	0.6	-
20221216_0720	0.3	WSW
20221216_0730	0	N
20221216_0740	0.3	W
20221216_0750	0.3	NE
20221216_0800	0	N
20221216_0810	0.3	-
20221216_0820	0	N
20221216_0830	0	N
20221216_0840	0	N
20221216_0850	0.3	-
20221216_0900	0	N
20221216_0910	0	N
20221216_0920	0	N
20221216_0930	0.8	WNW
20221216_0940	0.3	N
20221216_0950	1.4	N
20221216_1000	1.4	NNW
20221216_1010	1.4	NNW
20221216_1020	1.4	NNW
20221216_1030	1.4	NNW
20221216_1040	1.7	N
20221216_1050	1.4	NNW
20221216_1100	1.4	NNW
20221216_1110	1.4	NNW
20221216_1120	2.2	NNW
20221216_1130	2.5	NNW
20221216_1140	1.7	NNW
20221216_1150	2.2	NNW

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221216_1200	2.5	NNW
20221216_1210	2.5	NNW
20221216_1220	2.2	N
20221216_1230	2.2	N
20221216_1240	2.2	NNW
20221216_1250	2.8	N
20221216_1300	3.1	N
20221216_1310	2.5	N
20221216_1320	2.2	N
20221216_1330	2.2	NNW
20221216_1340	2.2	N
20221216_1350	1.4	N
20221216_1400	1.4	N
20221216_1410	2.2	N
20221216_1420	1.7	NNW
20221216_1430	1.9	N
20221216_1440	2.5	N
20221216_1450	3.3	N
20221216_1500	3.1	N
20221216_1510	3.3	N
20221216_1520	3.3	N
20221216_1530	3.3	N
20221216_1540	3.6	N
20221216_1550	4.4	N
20221216_1600	3.3	NNE
20221216_1610	3.6	N
20221216_1620	4.7	N
20221216_1630	3.9	N
20221216_1640	3.3	N
20221216_1650	3.3	N
20221216_1700	3.3	N
20221216_1710	3.3	N
20221216_1720	4.2	N
20221216_1730	3.9	N
20221216_1740	3.3	N
20221216_1750	2.8	N
20221216_1800	2.8	N
20221216_1810	2.5	N
20221216_1820	2.2	N
20221216_1830	1.7	N
20221216_1840	2.2	NNE
20221216_1850	3.1	NNE
20221216_1900	1.7	NNE
20221216_1910	1.7	NNE
20221216_1920	3.1	N
20221216_1930	3.6	N
20221216_1940	3.6	N
20221216_1950	4.4	N
20221216_2000	4.2	N
20221216_2010	4.2	N
20221216_2020	3.3	N
20221216_2030	4.7	N
20221216_2040	4.2	N
20221216_2050	4.7	N
20221216_2100	5	N
20221216_2110	4.2	N
20221216_2120	4.2	N
20221216_2130	5.8	N
20221216_2140	4.2	N
20221216_2150	4.4	N
20221216_2200	4.7	N
20221216_2210	4.2	N
20221216_2220	3.3	NNE
20221216_2230	4.7	N
20221216_2240	3.3	N
20221216_2250	3.3	N
20221216_2300	3.9	N
20221216_2310	3.3	N
20221216_2320	4.7	NNE
20221216_2330	3.6	NNE
20221216_2340	4.2	NNE
20221216_2350	4.7	N

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221217_0000	6.1	N
20221217_0010	3.9	N
20221217_0020	5.3	NNE
20221217_0020	5.3	NNE
20221217_0030	3.6	N
20221217_0040	3.3	N
20221217_0050	3.3	N
20221217_0100	2.8	N
20221217_0110	2.5	N
20221217_0120	2.2	N
20221217_0130	2.2	NNW
20221217_0140	2.5	N
20221217_0150	2.2	N
20221217_0200	2.5	N
20221217_0210	2.2	NNW
20221217_0220	1.7	N
20221217_0230	2.2	N
20221217_0240	2.2	NNE
20221217_0250	2.2	N
20221217_0300	2.8	NNE
20221217_0310	1.9	NE
20221217_0320	1.4	NNE
20221217_0330	2.5	NW
20221217_0340	1.9	NNW
20221217_0350	2.2	N
20221217_0400	2.8	N
20221217_0410	1.7	N
20221217_0420	1.4	NNE
20221217_0430	1.9	-
20221217_0440	2.5	N
20221217_0450	1.7	NNW
20221217_0500	2.2	NNW
20221217_0510	1.7	NNW
20221217_0520	2.8	NNW
20221217_0530	2.5	NNW
20221217_0540	3.3	NNE
20221217_0550	2.8	NNE
20221217_0600	2.5	NNW
20221217_0610	1.7	-
20221217_0620	1.7	NNW
20221217_0630	1.7	NW
20221217_0640	2.5	NNW
20221217_0650	2.2	NNW
20221217_0700	1.7	-
20221217_0710	1.1	SW
20221217_0720	2.2	-
20221217_0730	1.7	SE
20221217_0740	1.7	-
20221217_0750	3.3	NNE
20221217_0800	1.7	-
20221217_0810	3.1	N
20221217_0820	1.7	-
20221217_0830	3.3	NNE
20221217_0840	2.5	N
20221217_0850	3.3	-
20221217_0900	2.5	NNE
20221217_0910	3.1	NE
20221217_0920	4.2	NNE
20221217_0930	4.7	NNE
20221217_0940	3.6	NNE
20221217_0950	2.8	NNE
20221217_1000	3.3	NNE
20221217_1010	4.4	NNE
20221217_1020	4.4	NNE
20221217_1030	4.2	NE
20221217_1040	5.8	NNE
20221217_1050	5	NNE
20221217_1100	5.3	NNE
20221217_1110	5.3	NE
20221217_1120	5.3	NE
20221217_1130	5.8	NNE
20221217_1140	5.8	NE
20221217_1150	4.2	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221217_1200	4.7	NNE
20221217_1210	6.4	NNE
20221217_1220	6.4	NNE
20221217_1230	3.3	NNE
20221217_1240	4.2	NNE
20221217_1250	4.7	N
20221217_1300	4.2	NNE
20221217_1310	3.3	N
20221217_1320	3.3	NNE
20221217_1330	3.3	NNE
20221217_1340	3.3	NNE
20221217_1350	4.2	NNE
20221217_1400	3.3	N
20221217_1410	3.9	N
20221217_1420	2.8	N
20221217_1430	5	NNE
20221217_1440	3.3	N
20221217_1450	3.9	NNE
20221217_1500	4.4	NNE
20221217_1510	3.3	NE
20221217_1520	2.5	NE
20221217_1530	3.3	NE
20221217_1540	2.5	NNE
20221217_1550	1.7	NNE
20221217_1600	1.7	NNE
20221217_1610	1.7	NNE
20221217_1620	1.4	-
20221217_1630	3.3	NNE
20221217_1640	3.1	NE
20221217_1650	4.7	NE
20221217_1700	6.7	NNE
20221217_1710	6.4	NE
20221217_1720	6.4	NE
20221217_1730	6.9	NE
20221217_1740	4.7	NE
20221217_1750	5.8	NE
20221217_1800	6.4	NE
20221217_1810	6.1	NE
20221217_1820	5.8	NE
20221217_1830	5	NE
20221217_1840	6.4	NE
20221217_1850	4.7	NE
20221217_1900	5	NE
20221217_1910	6.7	NE
20221217_1920	6.4	NE
20221217_1930	6.1	NE
20221217_1940	5.3	NE
20221217_1950	5.3	ENE
20221217_2000	6.4	NE
20221217_2010	6.9	NE
20221217_2020	5.8	NE
20221217_2030	6.7	NE
20221217_2040	5.8	NE
20221217_2050	7.8	NE
20221217_2100	5	NE
20221217_2110	6.4	NE
20221217_2120	6.7	NE
20221217_2130	6.7	NE
20221217_2140	6.7	NE
20221217_2150	7.2	NE
20221217_2200	6.1	NE
20221217_2210	4.4	NNE
20221217_2220	6.4	NE
20221217_2230	7.5	NNE
20221217_2240	6.7	NE
20221217_2250	7.5	NE
20221217_2300	7.5	NE
20221217_2310	6.7	NE
20221217_2320	6.1	NNE
20221217_2330	7.8	NE
20221217_2340	7.8	NE
20221217_2350	6.4	NNE

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221218_0000	6.4	NE
20221218_0010	7.2	NNE
20221218_0020	6.7	NE
20221218_0020	6.7	NE
20221218_0030	8.9	NE
20221218_0040	8.3	NE
20221218_0050	7.2	NE
20221218_0100	6.7	NE
20221218_0110	5.6	NE
20221218_0120	8.3	NE
20221218_0130	9.2	NE
20221218_0140	8.1	NE
20221218_0150	7.8	NE
20221218_0200	7.2	NE
20221218_0210	8.9	NE
20221218_0220	7.5	NE
20221218_0230	7.5	NE
20221218_0240	7.2	NE
20221218_0250	7.2	NE
20221218_0300	8.3	NE
20221218_0310	7.8	NE
20221218_0320	9.4	NE
20221218_0330	8.9	NE
20221218_0340	6.7	NE
20221218_0350	6.1	NE
20221218_0400	7.2	NE
20221218_0410	6.9	NE
20221218_0420	7.8	NE
20221218_0430	7.2	NE
20221218_0440	6.7	NE
20221218_0450	6.7	NE
20221218_0500	6.4	NE
20221218_0510	5.8	NE
20221218_0520	6.4	NE
20221218_0530	4.4	NE
20221218_0540	5.6	NE
20221218_0550	4.2	ENE
20221218_0600	3.3	ENE
20221218_0610	4.4	NE
20221218_0620	3.6	NE
20221218_0630	5	NNE
20221218_0640	6.1	NE
20221218_0650	6.1	NNE
20221218_0700	7.5	NNE
20221218_0710	5	NNE
20221218_0720	5.3	NNE
20221218_0730	5.8	NNE
20221218_0740	7.8	NNE
20221218_0750	6.7	NNE
20221218_0800	6.4	NNE
20221218_0810	6.9	NNE
20221218_0820	6.1	NNE
20221218_0830	5.6	NNE
20221218_0840	7.5	NNE
20221218_0850	7.8	NNE
20221218_0900	7.8	NNE
20221218_0910	9.4	NNE
20221218_0920	9.2	NNE
20221218_0930	8.1	NNE
20221218_0940	8.1	NNE
20221218_0950	6.9	NNE
20221218_1000	7.5	NNE
20221218_1010	6.4	NNE
20221218_1020	6.7	NNE
20221218_1030	6.4	NNE
20221218_1040	5.3	NNE
20221218_1050	5.8	NNE
20221218_1100	6.4	NNE
20221218_1110	5.8	N
20221218_1120	6.9	NNE
20221218_1130	5.8	NNE
20221218_1140	6.1	NNE
20221218_1150	6.4	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221218_1200	6.4	NNE
20221218_1210	6.7	NNE
20221218_1220	6.7	NNE
20221218_1230	6.4	NNE
20221218_1240	6.1	NNE
20221218_1250	5.8	NNE
20221218_1300	5.8	NNE
20221218_1310	5.3	NNE
20221218_1320	6.1	NNE
20221218_1330	6.1	NE
20221218_1340	5.3	NE
20221218_1350	5.8	NNE
20221218_1400	4.7	NNE
20221218_1410	5.3	NNE
20221218_1420	5.8	NE
20221218_1430	5	NNE
20221218_1440	5.8	NNE
20221218_1450	4.4	NE
20221218_1500	4.4	NNE
20221218_1510	3.9	NNE
20221218_1520	4.2	NE
20221218_1530	4.4	NNE
20221218_1540	4.2	NE
20221218_1550	4.2	NE
20221218_1600	4.2	NNE
20221218_1610	3.9	NNE
20221218_1620	3.6	NE
20221218_1630	3.3	NNE
20221218_1640	4.2	NNE
20221218_1650	3.3	NNE
20221218_1700	4.2	NNE
20221218_1710	3.9	NNE
20221218_1720	3.3	NNE
20221218_1730	5	NNE
20221218_1740	3.1	NE
20221218_1750	2.8	NE
20221218_1800	2.2	NE
20221218_1810	2.2	NE
20221218_1820	1.7	NNE
20221218_1830	1.4	NE
20221218_1840	1.4	NE
20221218_1850	0.8	NE
20221218_1900	1.1	NNE
20221218_1910	0.3	-
20221218_1920	0.3	-
20221218_1930	0.3	-
20221218_1940	2.2	NNE
20221218_1950	3.9	NNE
20221218_2000	2.2	NE
20221218_2010	2.8	NE
20221218_2020	2.2	NE
20221218_2030	2.2	NE
20221218_2040	2.2	NE
20221218_2050	1.1	SE
20221218_2100	0.3	SSE
20221218_2110	0.3	S
20221218_2120	0	N
20221218_2130	0	N
20221218_2140	0.6	-
20221218_2150	0.3	-
20221218_2200	0	N
20221218_2210	0	N
20221218_2220	0	N
20221218_2230	0.3	NW
20221218_2240	0.3	ENE
20221218_2250	0.3	-
20221218_2300	0.3	NE
20221218_2310	0.3	-
20221218_2320	0	N
20221218_2330	0.3	NNE
20221218_2340	1.4	N
20221218_2350	2.2	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221219_0000	2.2	NNE
20221219_0010	1.4	NNE
20221219_0020	0.3	S
20221219_0020	0.3	S
20221219_0030	0	N
20221219_0040	0	N
20221219_0050	0	N
20221219_0100	0.8	NNE
20221219_0110	1.1	NNE
20221219_0120	0.3	E
20221219_0130	0	N
20221219_0140	0	N
20221219_0150	0.3	NNE
20221219_0200	1.1	NE
20221219_0210	0.8	NE
20221219_0220	0.3	NE
20221219_0230	0.3	NE
20221219_0240	0.3	NE
20221219_0250	1.1	NE
20221219_0300	0.8	SE
20221219_0310	0.3	-
20221219_0320	0.3	SSE
20221219_0330	0.3	ESE
20221219_0340	0.8	SSE
20221219_0350	0.3	SSE
20221219_0400	0.3	SSE
20221219_0410	0.3	SE
20221219_0420	0.3	SE
20221219_0430	0	N
20221219_0440	0	N
20221219_0450	0	N
20221219_0500	0	N
20221219_0510	0	N
20221219_0520	0.3	S
20221219_0530	0	N
20221219_0540	0	N
20221219_0550	0	N
20221219_0600	0	N
20221219_0610	0.3	S
20221219_0620	0.3	-
20221219_0630	1.1	SSE
20221219_0640	1.1	SSE
20221219_0650	0	N
20221219_0700	0.6	SSE
20221219_0710	0.8	SE
20221219_0720	0	N
20221219_0730	0	N
20221219_0740	0	N
20221219_0750	0.3	SSE
20221219_0800	0.3	SSE
20221219_0810	0.6	S
20221219_0820	0.3	S
20221219_0830	0.3	-
20221219_0840	0.3	-
20221219_0850	1.1	NE
20221219_0900	1.1	NE
20221219_0910	2.2	E
20221219_0920	1.1	ENE
20221219_0930	1.7	NNE
20221219_0940	3.3	NNE
20221219_0950	3.3	NNE
20221219_1000	3.3	NNE
20221219_1010	2.2	N
20221219_1020	2.8	NNE
20221219_1030	2.2	N
20221219_1040	2.2	N
20221219_1050	2.8	N
20221219_1100	3.3	N
20221219_1110	3.1	N
20221219_1120	3.3	N
20221219_1130	2.5	N
20221219_1140	3.3	NNE
20221219_1150	2.2	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221219_1200	1.4	NE
20221219_1210	1.4	NE
20221219_1220	1.7	ESE
20221219_1230	2.2	SE
20221219_1240	1.1	N
20221219_1250	2.8	NNE
20221219_1300	2.5	NNE
20221219_1310	1.4	-
20221219_1320	1.4	ENE
20221219_1330	1.1	-
20221219_1340	1.7	-
20221219_1350	1.7	-
20221219_1400	2.8	NE
20221219_1410	1.7	NNE
20221219_1420	2.2	ENE
20221219_1430	1.7	NNE
20221219_1440	1.7	SSW
20221219_1450	1.7	NNE
20221219_1500	2.2	NE
20221219_1510	1.9	NNE
20221219_1520	1.4	NE
20221219_1530	1.7	E
20221219_1540	2.5	ESE
20221219_1550	1.7	ESE
20221219_1600	2.2	E
20221219_1610	1.7	ESE
20221219_1620	1.7	ESE
20221219_1630	1.4	E
20221219_1640	2.2	E
20221219_1650	1.7	E
20221219_1700	1.4	ESE
20221219_1710	1.4	ESE
20221219_1720	1.1	ESE
20221219_1730	0.6	SE
20221219_1740	1.1	SE
20221219_1750	0.8	SSE
20221219_1800	0.8	SSE
20221219_1810	1.4	S
20221219_1820	0.8	S
20221219_1830	0.8	SSW
20221219_1840	1.4	S
20221219_1850	0.8	S
20221219_1900	1.1	SSW
20221219_1910	0.3	SSW
20221219_1920	0.3	SSW
20221219_1930	0.3	-
20221219_1940	0	N
20221219_1950	0.3	SSE
20221219_2000	0.8	SSE
20221219_2010	1.1	SSE
20221219_2020	1.1	SSE
20221219_2030	1.1	SSE
20221219_2040	0.8	SE
20221219_2050	0.3	SE
20221219_2100	0.8	SSE
20221219_2110	0.3	SSE
20221219_2120	0.3	SE
20221219_2130	0	N
20221219_2140	0	N
20221219_2150	0	N
20221219_2200	0.3	SSE
20221219_2210	0.8	SSE
20221219_2220	0	N
20221219_2230	0	N
20221219_2240	0	N
20221219_2250	0	N
20221219_2300	0	N
20221219_2310	0	N
20221219_2320	0.3	SSE
20221219_2330	0.8	ESE
20221219_2340	1.7	SE
20221219_2350	1.4	SE

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221220_0000	0.6	ESE
20221220_0010	1.4	SE
20221220_0020	2.2	SE
20221220_0020	2.2	SE
20221220_0030	1.7	SE
20221220_0040	1.7	SE
20221220_0050	1.7	SE
20221220_0100	2.5	SE
20221220_0110	2.2	SE
20221220_0120	2.2	SE
20221220_0130	1.7	SE
20221220_0140	1.7	SE
20221220_0150	1.1	SE
20221220_0200	0.3	SSE
20221220_0210	0.3	SSE
20221220_0220	0.3	SSE
20221220_0230	0.3	SE
20221220_0240	0.3	ENE
20221220_0250	0.3	NNE
20221220_0300	0	N
20221220_0310	0.3	SSE
20221220_0320	0	N
20221220_0330	0.6	SE
20221220_0340	0.8	SE
20221220_0350	1.1	SE
20221220_0400	1.1	ESE
20221220_0410	0.8	SE
20221220_0420	1.1	ESE
20221220_0430	1.1	SE
20221220_0440	1.1	SE
20221220_0450	0.8	ESE
20221220_0500	0.3	SE
20221220_0510	0.3	E
20221220_0520	0.8	ESE
20221220_0530	1.4	SE
20221220_0540	1.7	SE
20221220_0550	1.4	SE
20221220_0600	1.4	SSE
20221220_0610	1.4	SE
20221220_0620	1.7	SE
20221220_0630	1.7	SE
20221220_0640	1.4	SSE
20221220_0650	1.4	SE
20221220_0700	1.4	SE
20221220_0710	1.4	SE
20221220_0720	1.1	SE
20221220_0730	1.7	SE
20221220_0740	1.4	SE
20221220_0750	1.4	SSE
20221220_0800	2.2	SSE
20221220_0810	1.7	SSE
20221220_0820	2.5	SE
20221220_0830	2.5	SE
20221220_0840	2.8	SE
20221220_0850	2.2	ESE
20221220_0900	2.2	ESE
20221220_0910	2.2	ESE
20221220_0920	3.3	E
20221220_0930	3.3	ESE
20221220_0940	3.1	ESE
20221220_0950	3.3	ESE
20221220_1000	3.9	E
20221220_1010	2.2	E
20221220_1020	3.1	ESE
20221220_1030	3.9	ESE
20221220_1040	3.9	ESE
20221220_1050	4.2	ESE
20221220_1100	3.1	ESE
20221220_1110	3.3	E
20221220_1120	2.8	ESE
20221220_1130	3.3	ESE
20221220_1140	3.3	ESE
20221220_1150	3.1	E

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221220_1200	2.8	ESE
20221220_1210	3.1	ESE
20221220_1220	2.8	E
20221220_1230	3.1	ESE
20221220_1240	3.6	E
20221220_1250	3.1	ENE
20221220_1300	3.9	E
20221220_1310	3.3	E
20221220_1320	2.8	E
20221220_1330	2.2	ENE
20221220_1340	2.2	NE
20221220_1350	1.7	NNE
20221220_1400	1.1	-
20221220_1410	0.8	-
20221220_1420	2.8	ENE
20221220_1430	2.2	E
20221220_1440	2.8	E
20221220_1450	1.9	E
20221220_1500	2.2	E
20221220_1510	2.5	E
20221220_1520	2.5	ESE
20221220_1530	3.1	SE
20221220_1540	2.5	ESE
20221220_1550	1.7	E
20221220_1600	2.2	ESE
20221220_1610	2.2	ESE
20221220_1620	1.9	ESE
20221220_1630	1.7	ESE
20221220_1640	2.2	E
20221220_1650	1.9	ESE
20221220_1700	1.9	ESE
20221220_1710	1.7	SE
20221220_1720	1.7	ESE
20221220_1730	0.8	E
20221220_1740	0.8	E
20221220_1750	1.4	ESE
20221220_1800	0.3	E
20221220_1810	0.3	E
20221220_1820	0.3	E
20221220_1830	0.3	ESE
20221220_1840	0.3	ESE
20221220_1850	0	N
20221220_1900	0.8	WNW
20221220_1910	0	N
20221220_1920	0	N
20221220_1930	0	N
20221220_1940	0	N
20221220_1950	0	N
20221220_2000	0.3	ESE
20221220_2010	0.3	-
20221220_2020	0	N
20221220_2030	0.3	SSE
20221220_2040	0	N
20221220_2050	0	N
20221220_2100	0	N
20221220_2110	0	N
20221220_2120	0	N
20221220_2130	0	N
20221220_2140	0.3	SE
20221220_2150	0.8	ESE
20221220_2200	0	N
20221220_2210	0.3	SE
20221220_2220	0	N
20221220_2230	0.3	SSE
20221220_2240	0	N
20221220_2250	0.3	NW
20221220_2300	0	N
20221220_2310	0	N
20221220_2320	0	N
20221220_2330	0.6	S
20221220_2340	0	N
20221220_2350	0.3	NNE

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221221_0000	0	N
20221221_0010	0.3	W
20221221_0020	0.3	NE
20221221_0030	0	N
20221221_0040	0.3	SW
20221221_0050	0	N
20221221_0100	0.3	W
20221221_0110	0	N
20221221_0120	0.6	SE
20221221_0130	0.3	ESE
20221221_0140	0.3	WSW
20221221_0150	0.3	NNE
20221221_0200	0	N
20221221_0210	0	N
20221221_0220	0.6	WSW
20221221_0230	0.6	SW
20221221_0240	0.3	SE
20221221_0250	0.3	ESE
20221221_0300	0	N
20221221_0310	0	N
20221221_0320	0.3	E
20221221_0330	0	N
20221221_0340	0	N
20221221_0350	0.3	WNW
20221221_0400	0.8	WNW
20221221_0410	0.3	ESE
20221221_0420	0.3	-
20221221_0430	0.3	WNW
20221221_0440	0.3	SSE
20221221_0450	0.3	SSE
20221221_0500	0.3	NW
20221221_0510	0.3	WSW
20221221_0520	0.3	SSW
20221221_0530	0	N
20221221_0540	0.3	-
20221221_0550	0.3	NW
20221221_0600	0.3	NW
20221221_0610	1.4	NNE
20221221_0620	0.3	S
20221221_0630	0.3	WSW
20221221_0640	0.8	SW
20221221_0650	1.4	NW
20221221_0700	1.7	N
20221221_0710	1.1	N
20221221_0720	1.7	NNW
20221221_0730	1.7	NNW
20221221_0740	1.1	NNW
20221221_0750	0.3	E
20221221_0800	0.3	N
20221221_0810	2.5	N
20221221_0820	3.3	NNE
20221221_0830	2.5	NNE
20221221_0840	2.2	NNE
20221221_0850	2.5	NNE
20221221_0900	2.5	NNE
20221221_0910	2.5	NNE
20221221_0920	2.5	NNE
20221221_0930	2.8	NNE
20221221_0940	2.8	NNE
20221221_0950	2.5	NNE
20221221_1000	3.3	NNE
20221221_1010	4.2	NNE
20221221_1020	3.9	NNE
20221221_1030	3.6	NE
20221221_1040	3.6	NE
20221221_1050	3.3	NNE
20221221_1100	2.5	N
20221221_1110	2.8	NNW
20221221_1120	2.5	N
20221221_1130	2.5	N
20221221_1140	2.8	N
20221221_1150	2.8	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221221_1200	4.2	NNE
20221221_1210	3.3	N
20221221_1220	2.8	N
20221221_1230	3.1	N
20221221_1240	3.3	NNW
20221221_1250	4.2	NNE
20221221_1300	3.3	NNE
20221221_1310	2.5	N
20221221_1320	3.3	N
20221221_1330	3.1	N
20221221_1340	3.3	N
20221221_1350	3.1	NNW
20221221_1400	3.1	NW
20221221_1410	3.1	N
20221221_1420	2.8	NNW
20221221_1430	3.3	N
20221221_1440	2.8	N
20221221_1450	3.1	N
20221221_1500	2.5	N
20221221_1510	2.5	NNW
20221221_1520	3.3	N
20221221_1530	2.5	N
20221221_1540	3.1	N
20221221_1550	2.5	N
20221221_1600	2.8	NNW
20221221_1610	2.5	N
20221221_1620	2.5	N
20221221_1630	2.5	N
20221221_1640	2.2	N
20221221_1650	1.7	N
20221221_1700	1.7	N
20221221_1710	1.4	N
20221221_1720	1.7	N
20221221_1730	1.1	N
20221221_1740	0.8	N
20221221_1750	0	N
20221221_1800	0	N
20221221_1810	0	N
20221221_1820	0.3	-
20221221_1830	0	N
20221221_1840	0	N
20221221_1850	0.3	SSW
20221221_1900	0.8	SSE
20221221_1910	0.3	SW
20221221_1920	0	N
20221221_1930	0.3	ENE
20221221_1940	0	N
20221221_1950	0	N
20221221_2000	0	N
20221221_2010	0.3	NW
20221221_2020	0	N
20221221_2030	0	N
20221221_2040	0	N
20221221_2050	0	N
20221221_2100	0	N
20221221_2110	0	N
20221221_2120	0.3	SW
20221221_2130	0.6	N
20221221_2140	1.7	N
20221221_2150	1.7	N
20221221_2200	0.8	N
20221221_2210	0.3	NNE
20221221_2220	2.5	NNE
20221221_2230	3.3	NE
20221221_2240	2.5	NE
20221221_2250	2.5	NE
20221221_2300	3.3	NE
20221221_2310	5.3	NE
20221221_2320	4.7	NE
20221221_2330	3.9	NNE
20221221_2340	3.3	NNE
20221221_2350	3.9	NNE

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221222_0000	4.7	NNE
20221222_0010	5.3	NNE
20221222_0020	5.3	NNE
20221222_0030	6.4	NNE
20221222_0020	5.3	NNE
20221222_0030	6.4	NNE
20221222_0040	5.3	NNE
20221222_0050	6.9	NNE
20221222_0100	5.8	NNE
20221222_0110	3.9	NNE
20221222_0120	3.1	NE
20221222_0130	1.9	NNE
20221222_0140	3.3	NNE
20221222_0150	2.2	NNE
20221222_0200	1.4	-
20221222_0210	1.4	SSE
20221222_0220	0.8	S
20221222_0230	1.4	SSW
20221222_0240	1.1	NNE
20221222_0250	0.3	-
20221222_0300	1.1	NNE
20221222_0310	0.3	E
20221222_0320	1.1	NE
20221222_0330	0.3	-
20221222_0340	0.3	SSW
20221222_0350	0.3	SE
20221222_0400	0.3	WNW
20221222_0410	0.6	SSW
20221222_0420	0.8	SSW
20221222_0430	0.3	NW
20221222_0440	0.3	ESE
20221222_0450	0	N
20221222_0500	0.6	NNE
20221222_0510	0.3	-
20221222_0520	0.6	NNE
20221222_0530	0.6	-
20221222_0540	0.8	SSE
20221222_0550	0.8	NE
20221222_0600	1.1	NE
20221222_0610	0.3	-
20221222_0620	0.6	-
20221222_0630	1.4	-
20221222_0640	1.1	WNW
20221222_0650	1.1	-
20221222_0700	0.8	ENE
20221222_0710	1.4	SE
20221222_0720	1.1	ESE
20221222_0730	0.8	-
20221222_0740	0.3	-
20221222_0750	0.6	ENE
20221222_0800	0.3	SE
20221222_0810	0.6	SSE
20221222_0820	0.8	SE
20221222_0830	0.8	SE
20221222_0840	0.8	SSE
20221222_0850	0.3	SSE
20221222_0900	0.3	SE
20221222_0910	0	N
20221222_0920	0.8	NNE
20221222_0930	2.8	NNE
20221222_0940	3.9	N
20221222_0950	4.2	NNE
20221222_1000	5.8	NNE
20221222_1010	4.7	N
20221222_1020	4.2	NNE
20221222_1030	4.4	NNE
20221222_1040	4.7	N
20221222_1050	3.9	NNE
20221222_1100	4.4	NNE
20221222_1110	3.9	N
20221222_1120	3.3	NNE
20221222_1130	2.2	N
20221222_1140	3.1	N
20221222_1150	3.6	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221222_1200	2.8	N
20221222_1210	3.3	N
20221222_1220	3.6	N
20221222_1230	3.3	N
20221222_1240	3.6	N
20221222_1250	3.1	NNE
20221222_1300	2.8	NNE
20221222_1310	1.4	-
20221222_1320	1.4	ENE
20221222_1330	1.7	E
20221222_1340	1.4	-
20221222_1350	3.3	N
20221222_1400	2.2	N
20221222_1410	3.3	NNE
20221222_1420	3.3	NNE
20221222_1430	4.4	NNE
20221222_1440	4.4	NNE
20221222_1450	4.4	NNE
20221222_1500	4.2	NNE
20221222_1510	3.6	NNE
20221222_1520	2.2	NNE
20221222_1530	3.1	NNE
20221222_1540	3.1	NNE
20221222_1550	3.3	NNE
20221222_1600	3.3	NNE
20221222_1610	2.8	N
20221222_1620	3.3	NNE
20221222_1630	3.1	NNE
20221222_1640	3.1	NNE
20221222_1650	3.3	NNE
20221222_1700	3.3	NNE
20221222_1710	2.2	NNE
20221222_1720	2.8	NNE
20221222_1730	1.7	NNE
20221222_1740	1.4	NNE
20221222_1750	0.8	NNE
20221222_1800	0.3	SW
20221222_1810	0.3	SW
20221222_1820	0.3	SE
20221222_1830	0	N
20221222_1840	0	N
20221222_1850	0	N
20221222_1900	0	N
20221222_1910	0.6	S
20221222_1920	0.8	W
20221222_1930	0.3	WSW
20221222_1940	0.3	WSW
20221222_1950	0.3	E
20221222_2000	0.3	SSE
20221222_2010	0.8	SW
20221222_2020	0.8	-
20221222_2030	0.6	-
20221222_2040	0.3	-
20221222_2050	0.3	-
20221222_2100	0.3	-
20221222_2110	0.3	-
20221222_2120	0.3	-
20221222_2130	1.1	SSE
20221222_2140	1.1	NNE
20221222_2150	1.4	N
20221222_2200	0.3	-
20221222_2210	0.3	ESE
20221222_2220	1.1	SSE
20221222_2230	1.1	S
20221222_2240	0.3	SE
20221222_2250	0.3	-
20221222_2300	0.8	S
20221222_2310	0.8	S
20221222_2320	0.8	SSW
20221222_2330	1.1	ESE
20221222_2340	0.3	S
20221222_2350	0.3	-

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221223_0000	0.6	S
20221223_0010	0.6	SSW
20221223_0020	0.6	SE
20221223_0020	0.6	SE
20221223_0030	0.3	S
20221223_0040	0.6	-
20221223_0050	0.6	N
20221223_0100	0.6	SE
20221223_0110	0.3	SE
20221223_0120	0.6	S
20221223_0130	0.8	S
20221223_0140	0.8	SSW
20221223_0150	0.8	S
20221223_0200	0.3	S
20221223_0210	0.3	SSE
20221223_0220	0	N
20221223_0230	0.3	ESE
20221223_0240	0.6	E
20221223_0250	0.3	-
20221223_0300	0.3	SE
20221223_0310	0.3	SSE
20221223_0320	0.8	SSE
20221223_0330	0.6	SE
20221223_0340	0.8	-
20221223_0350	0.6	-
20221223_0400	0.3	-
20221223_0410	0.8	-
20221223_0420	0.3	SE
20221223_0430	0.3	SE
20221223_0440	0.3	SE
20221223_0450	0.3	-
20221223_0500	0.3	SE
20221223_0510	0	N
20221223_0520	0.3	SE
20221223_0530	0.6	SE
20221223_0540	0.3	SSE
20221223_0550	0.3	SE
20221223_0600	0	N
20221223_0610	0.3	S
20221223_0620	0.3	SSE
20221223_0630	0.3	ESE
20221223_0640	0.3	-
20221223_0650	0	N
20221223_0700	0.3	S
20221223_0710	0.3	ENE
20221223_0720	0.3	SE
20221223_0730	0.6	SSE
20221223_0740	0.8	SSE
20221223_0750	0.8	E
20221223_0800	0	N
20221223_0810	0	N
20221223_0820	0.3	SE
20221223_0830	0.3	SSE
20221223_0840	0	N
20221223_0850	0	N
20221223_0900	0.3	S
20221223_0910	0.3	WNW
20221223_0920	0.3	E
20221223_0930	0.6	N
20221223_0940	1.4	N
20221223_0950	1.7	N
20221223_1000	2.2	NNE
20221223_1010	3.1	NNE
20221223_1020	2.2	NNE
20221223_1030	2.5	NNE
20221223_1040	2.5	NNE
20221223_1050	3.3	N
20221223_1100	3.9	NNE
20221223_1110	2.8	NNE
20221223_1120	2.8	NNE
20221223_1130	3.3	NNE
20221223_1140	4.4	NNE
20221223_1150	3.6	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221223_1200	3.9	NNE
20221223_1210	2.8	NNE
20221223_1220	2.2	NNE
20221223_1230	2.8	N
20221223_1240	2.5	NNE
20221223_1250	2.2	N
20221223_1300	1.7	N
20221223_1310	1.7	NNW
20221223_1320	2.5	N
20221223_1330	2.2	N
20221223_1340	2.8	NNE
20221223_1350	2.2	NNE
20221223_1400	1.9	NNE
20221223_1410	2.5	N
20221223_1420	2.2	N
20221223_1430	2.5	N
20221223_1440	2.2	NNE
20221223_1450	1.9	NNW
20221223_1500	1.7	N
20221223_1510	1.7	NNW
20221223_1520	1.9	NNW
20221223_1530	1.7	N
20221223_1540	1.1	NNW
20221223_1550	2.5	NNE
20221223_1600	2.5	NNE
20221223_1610	2.2	NNE
20221223_1620	2.2	NNE
20221223_1630	1.7	NNE
20221223_1640	1.4	NE
20221223_1650	0.6	ENE
20221223_1700	1.1	NE
20221223_1710	1.1	NNE
20221223_1720	0.8	N
20221223_1730	0.8	NE
20221223_1740	0	N
20221223_1750	0.3	S
20221223_1800	0.3	SSE
20221223_1810	0.8	SSE
20221223_1820	0.6	SSE
20221223_1830	1.1	SSE
20221223_1840	0.8	S
20221223_1850	0.3	S
20221223_1900	0.6	S
20221223_1910	0.6	S
20221223_1920	0.3	S
20221223_1930	0.3	-
20221223_1940	0.3	S
20221223_1950	0	N
20221223_2000	0.3	-
20221223_2010	0.3	S
20221223_2020	0.3	SSW
20221223_2030	0.8	SSE
20221223_2040	0.3	SSE
20221223_2050	0.3	SSE
20221223_2100	0	N
20221223_2110	0.3	S
20221223_2120	0.3	S
20221223_2130	0.8	SSE
20221223_2140	0.8	-
20221223_2150	0.3	-
20221223_2200	0.3	-
20221223_2210	0.3	-
20221223_2220	1.1	SSE
20221223_2230	0.8	SSE
20221223_2240	0.8	SSE
20221223_2250	0.3	SE
20221223_2300	0.6	SSE
20221223_2310	0	N
20221223_2320	0	N
20221223_2330	0	N
20221223_2340	0	N
20221223_2350	0	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221224_0000	0	N
20221224_0010	0	N
20221224_0020	0	N
20221224_0020	0	N
20221224_0030	0	N
20221224_0040	0.3	SW
20221224_0050	0	N
20221224_0100	0	N
20221224_0110	0	N
20221224_0120	0	N
20221224_0130	0	N
20221224_0140	0	N
20221224_0150	0	N
20221224_0200	0	N
20221224_0210	0	N
20221224_0220	0.3	NE
20221224_0230	0	N
20221224_0240	0	N
20221224_0250	0	N
20221224_0300	0	N
20221224_0310	0	N
20221224_0320	0	N
20221224_0330	0.3	-
20221224_0340	0	N
20221224_0350	0	N
20221224_0400	0	N
20221224_0410	0	N
20221224_0420	0.8	SSE
20221224_0430	0.8	SSE
20221224_0440	0	N
20221224_0450	0.3	SE
20221224_0500	0.3	SE
20221224_0510	0.3	S
20221224_0520	0	N
20221224_0530	0.3	SE
20221224_0540	0.3	-
20221224_0550	0.3	ENE
20221224_0600	1.1	SSE
20221224_0610	0.3	SSE
20221224_0620	0.3	-
20221224_0630	0.3	SSE
20221224_0640	0.8	SSE
20221224_0650	0.3	S
20221224_0700	0.3	SSE
20221224_0710	0.3	S
20221224_0720	0.3	SW
20221224_0730	0.3	SSE
20221224_0740	0.3	ESE
20221224_0750	0.3	ENE
20221224_0800	0.3	SE
20221224_0810	0.8	S
20221224_0820	0.8	SE
20221224_0830	0.3	-
20221224_0840	0.8	SSE
20221224_0850	0.8	SSE
20221224_0900	0.8	SSE
20221224_0910	0.3	SSE
20221224_0920	0	N
20221224_0930	0.8	NE
20221224_0940	1.1	NE
20221224_0950	0.6	NNE
20221224_1000	1.9	NNE
20221224_1010	1.7	N
20221224_1020	2.8	N
20221224_1030	2.5	N
20221224_1040	1.9	N
20221224_1050	3.1	N
20221224_1100	3.3	NNE
20221224_1110	4.2	N
20221224_1120	2.5	N
20221224_1130	1.9	N
20221224_1140	2.5	N
20221224_1150	3.1	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221224_1200	3.1	N
20221224_1210	2.8	N
20221224_1220	3.1	NNE
20221224_1230	3.3	N
20221224_1240	3.3	N
20221224_1250	3.3	NNE
20221224_1300	3.3	N
20221224_1310	3.6	N
20221224_1320	3.3	N
20221224_1330	3.3	N
20221224_1340	2.8	N
20221224_1350	3.3	N
20221224_1400	3.3	N
20221224_1410	3.3	N
20221224_1420	3.6	NNE
20221224_1430	4.4	NNE
20221224_1440	3.1	N
20221224_1450	3.3	N
20221224_1500	3.6	N
20221224_1510	3.3	NNE
20221224_1520	2.8	N
20221224_1530	3.9	NNE
20221224_1540	3.9	N
20221224_1550	3.3	NNE
20221224_1600	3.6	NNE
20221224_1610	3.1	NNE
20221224_1620	3.1	NNE
20221224_1630	2.8	NNE
20221224_1640	2.2	NNE
20221224_1650	2.2	NNE
20221224_1700	1.7	NE
20221224_1710	1.4	NE
20221224_1720	1.1	E
20221224_1730	0.3	ESE
20221224_1740	0.8	ESE
20221224_1750	0.3	-
20221224_1800	0.3	ESE
20221224_1810	0	N
20221224_1820	0	N
20221224_1830	0	N
20221224_1840	0	N
20221224_1850	0	N
20221224_1900	0	N
20221224_1910	0	N
20221224_1920	0.3	S
20221224_1930	0.3	-
20221224_1940	0.3	SW
20221224_1950	0.3	SSE
20221224_2000	0	N
20221224_2010	0.3	-
20221224_2020	0	N
20221224_2030	0	N
20221224_2040	0	N
20221224_2050	0	N
20221224_2100	0.3	S
20221224_2110	0	N
20221224_2120	0.3	-
20221224_2130	0	N
20221224_2140	0	N
20221224_2150	0	N
20221224_2200	0	N
20221224_2210	0	N
20221224_2220	0	N
20221224_2230	0	N
20221224_2240	0	N
20221224_2250	0	N
20221224_2300	0	N
20221224_2310	0	N
20221224_2320	0	N
20221224_2330	0	N
20221224_2340	0	N
20221224_2350	0	N

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221225_0000	0	N
20221225_0010	0	N
20221225_0020	0	N
20221225_0020	0	N
20221225_0030	0	N
20221225_0040	0	N
20221225_0050	0	N
20221225_0100	0	N
20221225_0110	0	N
20221225_0120	0	N
20221225_0130	0	N
20221225_0140	0	N
20221225_0150	0.3	S
20221225_0200	0.3	-
20221225_0210	0	N
20221225_0220	0	N
20221225_0230	0	N
20221225_0240	0	N
20221225_0250	0	N
20221225_0300	0	N
20221225_0310	0	N
20221225_0320	0	N
20221225_0330	0	N
20221225_0340	0	N
20221225_0350	0	N
20221225_0400	0	N
20221225_0410	0	N
20221225_0420	0	N
20221225_0430	0	N
20221225_0440	0	N
20221225_0450	0	N
20221225_0500	0	N
20221225_0510	0	N
20221225_0520	0	N
20221225_0530	0	N
20221225_0540	0	N
20221225_0550	0	N
20221225_0600	0	N
20221225_0610	0	N
20221225_0620	0	N
20221225_0630	0	N
20221225_0640	0	N
20221225_0650	0	N
20221225_0700	0	N
20221225_0710	0	N
20221225_0720	0	N
20221225_0730	0	N
20221225_0740	0	N
20221225_0750	0	N
20221225_0800	0	N
20221225_0810	0	N
20221225_0820	0	N
20221225_0830	0	N
20221225_0840	0	N
20221225_0850	0	N
20221225_0900	0	N
20221225_0910	0	N
20221225_0920	0.8	NNE
20221225_0930	0.8	ENE
20221225_0940	1.1	-
20221225_0950	0.8	W
20221225_1000	0.8	NNW
20221225_1010	0.8	NNE
20221225_1020	0.8	N
20221225_1030	1.4	ENE
20221225_1040	1.4	NNW
20221225_1050	1.1	NNW
20221225_1100	1.4	-
20221225_1110	1.7	NNE
20221225_1120	1.7	E
20221225_1130	2.5	ESE
20221225_1140	2.5	ESE
20221225_1150	2.8	ESE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221225_1200	3.9	E
20221225_1210	3.3	ESE
20221225_1220	3.3	E
20221225_1230	2.8	SE
20221225_1240	2.8	E
20221225_1250	2.8	E
20221225_1300	2.8	ESE
20221225_1310	2.5	E
20221225_1320	2.2	E
20221225_1330	1.7	E
20221225_1340	2.2	SE
20221225_1350	2.5	E
20221225_1400	2.2	ESE
20221225_1410	2.8	SE
20221225_1420	3.3	SE
20221225_1430	2.5	ESE
20221225_1440	2.5	E
20221225_1450	3.3	SE
20221225_1500	3.1	E
20221225_1510	3.1	ESE
20221225_1520	3.3	E
20221225_1530	3.3	E
20221225_1540	3.1	E
20221225_1550	2.8	E
20221225_1600	3.3	E
20221225_1610	3.1	E
20221225_1620	2.5	E
20221225_1630	2.8	ESE
20221225_1640	2.5	E
20221225_1650	2.5	ESE
20221225_1700	2.5	ESE
20221225_1710	2.2	ESE
20221225_1720	1.9	SE
20221225_1730	2.2	SE
20221225_1740	1.7	SE
20221225_1750	1.4	SE
20221225_1800	1.4	SE
20221225_1810	0.8	SE
20221225_1820	1.1	SE
20221225_1830	1.9	SE
20221225_1840	2.2	SE
20221225_1850	2.2	SE
20221225_1900	2.2	SSE
20221225_1910	2.2	SSE
20221225_1920	2.5	SSE
20221225_1930	2.2	SSE
20221225_1940	2.2	SSE
20221225_1950	1.4	S
20221225_2000	1.1	SSE
20221225_2010	0.3	W
20221225_2020	0.3	-
20221225_2030	0.8	SE
20221225_2040	1.4	ESE
20221225_2050	1.7	ESE
20221225_2100	1.7	ESE
20221225_2110	2.2	ESE
20221225_2120	2.2	SE
20221225_2130	1.7	SE
20221225_2140	1.4	ESE
20221225_2150	1.7	ESE
20221225_2200	1.9	SE
20221225_2210	2.2	SE
20221225_2220	2.5	SE
20221225_2230	2.2	SE
20221225_2240	2.5	SE
20221225_2250	2.2	SE
20221225_2300	2.2	SE
20221225_2310	2.2	SE
20221225_2320	2.5	SE
20221225_2330	2.5	SE
20221225_2340	1.7	SE
20221225_2350	2.5	SE

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221226_0000	1.7	SE
20221226_0010	2.2	SE
20221226_0020	2.2	SE
20221226_0020	2.2	SE
20221226_0030	1.7	SE
20221226_0040	1.7	ESE
20221226_0050	1.4	ESE
20221226_0100	1.1	E
20221226_0110	1.1	E
20221226_0120	1.1	E
20221226_0130	0.3	ESE
20221226_0140	0.8	E
20221226_0150	0.8	E
20221226_0200	0.3	ESE
20221226_0210	0.6	ESE
20221226_0220	0.3	ESE
20221226_0230	0.3	WNW
20221226_0240	0	N
20221226_0250	0	N
20221226_0300	0.3	SW
20221226_0310	0.3	-
20221226_0320	0	N
20221226_0330	0.3	SSW
20221226_0340	0.6	SW
20221226_0350	0.3	SW
20221226_0400	0.3	WSW
20221226_0410	0.8	WSW
20221226_0420	0.3	WSW
20221226_0430	0.3	-
20221226_0440	0.8	ESE
20221226_0450	1.9	E
20221226_0500	1.9	ESE
20221226_0510	1.4	SE
20221226_0520	0.6	SE
20221226_0530	0.3	-
20221226_0540	0.3	-
20221226_0550	1.4	ESE
20221226_0600	1.4	ESE
20221226_0610	1.7	SE
20221226_0620	1.1	SE
20221226_0630	1.1	SE
20221226_0640	0.8	ESE
20221226_0650	1.1	ESE
20221226_0700	0.8	ESE
20221226_0710	0.8	SE
20221226_0720	0.6	SSE
20221226_0730	0.3	NW
20221226_0740	0	N
20221226_0750	0.8	SE
20221226_0800	1.1	SE
20221226_0810	1.1	SE
20221226_0820	0.8	SE
20221226_0830	1.4	ESE
20221226_0840	2.2	ESE
20221226_0850	2.5	ESE
20221226_0900	1.7	E
20221226_0910	3.1	E
20221226_0920	2.8	E
20221226_0930	3.1	ESE
20221226_0940	3.3	ESE
20221226_0950	2.5	ESE
20221226_1000	2.8	E
20221226_1010	2.8	E
20221226_1020	2.8	E
20221226_1030	2.5	E
20221226_1040	2.5	E
20221226_1050	2.2	ENE
20221226_1100	2.5	E
20221226_1110	2.8	ESE
20221226_1120	2.8	E
20221226_1130	3.1	E
20221226_1140	2.5	E
20221226_1150	2.5	E

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221226_1200	1.4	ESE
20221226_1210	2.5	SE
20221226_1220	1.4	SE
20221226_1230	2.2	E
20221226_1240	2.5	ESE
20221226_1250	2.5	ESE
20221226_1300	2.5	E
20221226_1310	2.8	ESE
20221226_1320	2.5	SE
20221226_1330	2.8	ESE
20221226_1340	2.8	ESE
20221226_1350	2.5	E
20221226_1400	1.7	E
20221226_1410	0.8	S
20221226_1420	1.1	E
20221226_1430	1.4	N
20221226_1440	1.7	-
20221226_1450	2.2	N
20221226_1500	1.7	NNW
20221226_1510	1.7	NNE
20221226_1520	0.6	ENE
20221226_1530	1.1	ENE
20221226_1540	1.4	ESE
20221226_1550	2.2	E
20221226_1600	2.8	E
20221226_1610	2.8	ESE
20221226_1620	2.5	ESE
20221226_1630	2.5	ESE
20221226_1640	3.1	ESE
20221226_1650	2.5	ESE
20221226_1700	2.2	ESE
20221226_1710	2.8	ESE
20221226_1720	2.2	ESE
20221226_1730	1.7	ESE
20221226_1740	2.2	ESE
20221226_1750	2.2	ESE
20221226_1800	1.7	ESE
20221226_1810	1.7	ESE
20221226_1820	1.9	ESE
20221226_1830	1.7	ESE
20221226_1840	0.8	-
20221226_1850	1.1	SSE
20221226_1900	0.8	SE
20221226_1910	0.3	SSE
20221226_1920	0.8	S
20221226_1930	1.1	SSE
20221226_1940	0.8	SSE
20221226_1950	1.4	SSE
20221226_2000	1.7	SSE
20221226_2010	2.2	SSE
20221226_2020	1.1	SSE
20221226_2030	1.1	S
20221226_2040	1.7	S
20221226_2050	1.9	S
20221226_2100	1.7	S
20221226_2110	1.4	S
20221226_2120	1.7	S
20221226_2130	1.7	SSW
20221226_2140	1.1	SSW
20221226_2150	1.1	S
20221226_2200	1.9	S
20221226_2210	0.8	-
20221226_2220	0.3	S
20221226_2230	0.6	SSE
20221226_2240	0.8	SSE
20221226_2250	0.3	ENE
20221226_2300	0.6	SE
20221226_2310	0.8	SE
20221226_2320	1.4	S
20221226_2330	1.4	S
20221226_2340	1.4	S
20221226_2350	1.4	S

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221227_0000	1.1	S
20221227_0010	0.3	SSW
20221227_0020	0.3	SW
20221227_0020	0.3	SW
20221227_0030	0	N
20221227_0040	0.3	WSW
20221227_0050	0	N
20221227_0100	0	N
20221227_0110	0.3	E
20221227_0120	0	N
20221227_0130	0.6	SW
20221227_0140	1.1	SW
20221227_0150	0.8	SSW
20221227_0200	0.8	ESE
20221227_0210	1.7	E
20221227_0220	1.7	E
20221227_0230	2.2	ESE
20221227_0240	1.7	ESE
20221227_0250	1.7	ESE
20221227_0300	0.8	ESE
20221227_0310	0.3	N
20221227_0320	0	N
20221227_0330	0.3	NNE
20221227_0340	0.8	NNE
20221227_0350	1.1	NNE
20221227_0400	0.8	NNE
20221227_0410	0.3	NNE
20221227_0420	0	N
20221227_0430	0	N
20221227_0440	0.3	-
20221227_0450	0.3	SW
20221227_0500	0.3	SSW
20221227_0510	0	N
20221227_0520	0.3	WNW
20221227_0530	0	N
20221227_0540	0.3	SSE
20221227_0550	0	N
20221227_0600	0	N
20221227_0610	0	N
20221227_0620	0	N
20221227_0630	0	N
20221227_0640	0	N
20221227_0650	0	N
20221227_0700	0	N
20221227_0710	0	N
20221227_0720	0	N
20221227_0730	0	N
20221227_0740	0	N
20221227_0750	0	N
20221227_0800	0	N
20221227_0810	0	N
20221227_0820	0	N
20221227_0830	0.3	NE
20221227_0840	0	N
20221227_0850	0	N
20221227_0900	0.3	-
20221227_0910	1.4	ENE
20221227_0920	1.7	ENE
20221227_0930	1.1	-
20221227_0940	1.9	N
20221227_0950	1.4	N
20221227_1000	0.8	N
20221227_1010	0.8	N
20221227_1020	1.7	ESE
20221227_1030	2.5	ESE
20221227_1040	3.3	ESE
20221227_1050	3.1	E
20221227_1100	3.1	ESE
20221227_1110	3.1	ESE
20221227_1120	2.8	E
20221227_1130	3.3	E
20221227_1140	3.1	E
20221227_1150	3.9	E

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221227_1200	3.1	E
20221227_1210	3.3	ENE
20221227_1220	2.8	ESE
20221227_1230	3.3	ESE
20221227_1240	3.3	ESE
20221227_1250	3.1	ESE
20221227_1300	3.3	ESE
20221227_1310	2.5	ESE
20221227_1320	2.8	ESE
20221227_1330	2.2	SE
20221227_1340	2.2	ESE
20221227_1350	3.1	ESE
20221227_1400	2.5	ESE
20221227_1410	1.7	ESE
20221227_1420	2.8	E
20221227_1430	1.7	E
20221227_1440	2.2	ESE
20221227_1450	2.5	-
20221227_1500	3.1	E
20221227_1510	2.2	ESE
20221227_1520	2.8	SE
20221227_1530	3.1	SSE
20221227_1540	3.6	SSE
20221227_1550	3.3	SSE
20221227_1600	3.1	SSE
20221227_1610	2.8	SSE
20221227_1620	1.7	SE
20221227_1630	1.7	E
20221227_1640	1.9	ESE
20221227_1650	1.7	SE
20221227_1700	1.9	ESE
20221227_1710	1.7	ESE
20221227_1720	1.4	ESE
20221227_1730	1.4	ESE
20221227_1740	2.2	ESE
20221227_1750	1.7	ESE
20221227_1800	1.7	ESE
20221227_1810	2.5	ESE
20221227_1820	2.5	ESE
20221227_1830	2.5	ESE
20221227_1840	2.2	ESE
20221227_1850	2.5	ESE
20221227_1900	2.8	ESE
20221227_1910	2.5	SE
20221227_1920	1.7	ESE
20221227_1930	1.7	ESE
20221227_1940	1.7	SE
20221227_1950	1.4	SE
20221227_2000	0.8	SE
20221227_2010	0.6	NNW
20221227_2020	0.8	WSW
20221227_2030	0.6	WNW
20221227_2040	0.3	-
20221227_2050	1.4	ESE
20221227_2100	1.7	ESE
20221227_2110	1.4	ESE
20221227_2120	1.7	ESE
20221227_2130	1.7	ESE
20221227_2140	1.7	ESE
20221227_2150	1.7	SE
20221227_2200	1.7	SE
20221227_2210	1.7	SE
20221227_2220	1.7	SE
20221227_2230	1.7	ESE
20221227_2240	1.7	ESE
20221227_2250	1.7	ESE
20221227_2300	1.4	ESE
20221227_2310	1.4	ESE
20221227_2320	1.1	ESE
20221227_2330	1.7	E
20221227_2340	1.7	ESE
20221227_2350	1.7	ESE

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221228_0000	1.7	ESE
20221228_0010	1.7	ESE
20221228_0020	1.4	ESE
20221228_0020	1.4	ESE
20221228_0030	1.9	ESE
20221228_0040	2.2	E
20221228_0050	2.2	E
20221228_0100	2.8	ESE
20221228_0110	2.5	E
20221228_0120	2.2	E
20221228_0130	2.8	E
20221228_0140	2.8	ESE
20221228_0150	2.5	ESE
20221228_0200	1.7	E
20221228_0210	1.7	ESE
20221228_0220	1.7	ESE
20221228_0230	1.7	ESE
20221228_0240	1.7	ESE
20221228_0250	1.7	ESE
20221228_0300	1.7	SE
20221228_0310	1.4	ESE
20221228_0320	0.3	-
20221228_0330	0.8	ESE
20221228_0340	0.6	ENE
20221228_0350	0.3	ENE
20221228_0400	0.3	-
20221228_0410	0	N
20221228_0420	0	N
20221228_0430	0	N
20221228_0440	0	N
20221228_0450	0.3	SW
20221228_0500	0	N
20221228_0510	0	N
20221228_0520	0	N
20221228_0530	0.3	-
20221228_0540	0	N
20221228_0550	0	N
20221228_0600	0	N
20221228_0610	0	N
20221228_0620	0	N
20221228_0630	0	N
20221228_0640	0	N
20221228_0650	0	N
20221228_0700	0.3	NW
20221228_0710	0	N
20221228_0720	0	N
20221228_0730	0	N
20221228_0740	0	N
20221228_0750	0	N
20221228_0800	0	N
20221228_0810	0	N
20221228_0820	0.3	SSE
20221228_0830	0.3	SE
20221228_0840	0	N
20221228_0850	0	N
20221228_0900	0	N
20221228_0910	0.3	NE
20221228_0920	1.1	N
20221228_0930	0.6	NNE
20221228_0940	0.6	NW
20221228_0950	0.8	-
20221228_1000	1.4	NNW
20221228_1010	1.1	NW
20221228_1020	1.4	N
20221228_1030	1.7	NNW
20221228_1040	1.4	NNW
20221228_1050	2.2	NNE
20221228_1100	2.5	N
20221228_1110	2.8	N
20221228_1120	3.3	N
20221228_1130	3.9	NNE
20221228_1140	3.1	N
20221228_1150	4.4	NNE

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221228_1200	3.3	NNE
20221228_1210	3.9	N
20221228_1220	3.3	NNE
20221228_1230	3.1	N
20221228_1240	3.1	N
20221228_1250	3.6	N
20221228_1300	3.6	N
20221228_1310	4.2	NNE
20221228_1320	3.9	NNE
20221228_1330	4.7	NNE
20221228_1340	4.4	NNE
20221228_1350	3.9	NNE
20221228_1400	3.3	N
20221228_1410	4.4	NNE
20221228_1420	4.2	NNE
20221228_1430	3.9	NNE
20221228_1440	3.6	NNE
20221228_1450	3.3	NNE
20221228_1500	2.8	N
20221228_1510	3.9	NNE
20221228_1520	3.3	N
20221228_1530	3.3	NNE
20221228_1540	3.3	NNE
20221228_1550	3.1	N
20221228_1600	3.3	NNE
20221228_1610	3.3	NNE
20221228_1620	2.5	NNE
20221228_1630	2.2	NNE
20221228_1640	2.2	N
20221228_1650	2.2	N
20221228_1700	2.2	N
20221228_1710	1.7	N
20221228_1720	1.1	N
20221228_1730	0.8	NNE
20221228_1740	0.6	N
20221228_1750	0.3	SE
20221228_1800	0	N
20221228_1810	0	N
20221228_1820	0.3	SE
20221228_1830	0	N
20221228_1840	0.3	SW
20221228_1850	0.3	SSE
20221228_1900	0	N
20221228_1910	0.3	-
20221228_1920	0.3	SW
20221228_1930	0.3	SW
20221228_1940	0.3	SSW
20221228_1950	0	N
20221228_2000	0.3	-
20221228_2010	0.3	SSW
20221228_2020	0.3	SSE
20221228_2030	0.3	SSE
20221228_2040	0.3	S
20221228_2050	0.3	SSE
20221228_2100	0	N
20221228_2110	0.3	W
20221228_2120	0.3	NW
20221228_2130	0.3	SE
20221228_2140	0.3	-
20221228_2150	0	N
20221228_2200	0.3	NW
20221228_2210	0.3	-
20221228_2220	0.3	SSW
20221228_2230	0.3	SSE
20221228_2240	0	N
20221228_2250	0	N
20221228_2300	0	N
20221228_2310	0	N
20221228_2320	0	N
20221228_2330	0	N
20221228_2340	0	N
20221228_2350	0	N

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Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221229_0000	0	N
20221229_0010	0.3	NNW
20221229_0020	1.1	NNW
20221229_0020	1.1	NNW
20221229_0030	1.7	N
20221229_0040	1.4	NNE
20221229_0050	0.8	N
20221229_0100	0.3	NNW
20221229_0110	0.8	N
20221229_0120	0.8	N
20221229_0130	1.1	N
20221229_0140	1.7	N
20221229_0150	1.7	N
20221229_0200	1.4	N
20221229_0210	2.2	N
20221229_0220	1.7	N
20221229_0230	2.2	NNE
20221229_0240	1.7	NNE
20221229_0250	0.8	E
20221229_0300	0.3	ESE
20221229_0310	0	N
20221229_0320	0.3	S
20221229_0330	0.3	SSW
20221229_0340	0.3	WSW
20221229_0350	1.4	WNW
20221229_0400	1.4	N
20221229_0410	2.2	N
20221229_0420	2.5	N
20221229_0430	2.5	N
20221229_0440	2.8	NNE
20221229_0450	0.8	NE
20221229_0500	2.2	N
20221229_0510	3.3	N
20221229_0520	3.9	N
20221229_0530	3.1	N
20221229_0540	3.3	N
20221229_0550	3.3	N
20221229_0600	4.7	N
20221229_0610	4.7	N
20221229_0620	3.9	N
20221229_0630	3.3	N
20221229_0640	4.2	N
20221229_0650	3.3	N
20221229_0700	1.4	N
20221229_0710	1.1	NNW
20221229_0720	2.8	NNE
20221229_0730	2.5	N
20221229_0740	3.1	N
20221229_0750	2.2	N
20221229_0800	2.2	N
20221229_0810	2.8	N
20221229_0820	3.1	N
20221229_0830	3.9	N
20221229_0840	3.3	NNE
20221229_0850	2.2	N
20221229_0900	2.2	NNE
20221229_0910	1.1	E
20221229_0920	1.4	SE
20221229_0930	0.6	SSE
20221229_0940	1.1	S
20221229_0950	0.3	NW
20221229_1000	1.1	NNW
20221229_1010	1.4	NNW
20221229_1020	1.7	NNW
20221229_1030	2.2	NNW
20221229_1040	2.8	N
20221229_1050	3.1	N
20221229_1100	3.3	N
20221229_1110	3.3	N
20221229_1120	2.5	N
20221229_1130	3.9	N
20221229_1140	3.9	N
20221229_1150	4.2	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221229_1200	3.3	N
20221229_1210	3.3	N
20221229_1220	4.2	N
20221229_1230	2.8	N
20221229_1240	4.7	N
20221229_1250	4.7	N
20221229_1300	5	N
20221229_1310	3.9	N
20221229_1320	4.4	N
20221229_1330	4.2	N
20221229_1340	3.6	N
20221229_1350	5	N
20221229_1400	4.7	NNE
20221229_1410	3.9	N
20221229_1420	3.3	N
20221229_1430	2.5	N
20221229_1440	2.5	N
20221229_1450	3.3	N
20221229_1500	2.8	N
20221229_1510	3.1	N
20221229_1520	2.8	N
20221229_1530	3.3	N
20221229_1540	3.3	N
20221229_1550	2.8	N
20221229_1600	2.8	N
20221229_1610	3.3	N
20221229_1620	2.8	N
20221229_1630	1.7	N
20221229_1640	2.2	N
20221229_1650	1.9	N
20221229_1700	2.2	N
20221229_1710	2.5	N
20221229_1720	2.2	N
20221229_1730	2.2	N
20221229_1740	1.9	N
20221229_1750	2.2	N
20221229_1800	1.7	N
20221229_1810	1.9	N
20221229_1820	1.7	NNW
20221229_1830	1.7	NNW
20221229_1840	1.4	NNW
20221229_1850	1.4	NNW
20221229_1900	1.4	NNW
20221229_1910	1.4	NNW
20221229_1920	0.8	NNW
20221229_1930	0.3	N
20221229_1940	0.3	NW
20221229_1950	0	N
20221229_2000	0.8	WNW
20221229_2010	0.8	WNW
20221229_2020	0.3	-
20221229_2030	0.3	NW
20221229_2040	0.8	N
20221229_2050	0.3	-
20221229_2100	0.3	S
20221229_2110	0.6	SSE
20221229_2120	1.4	NNE
20221229_2130	2.5	N
20221229_2140	1.4	ESE
20221229_2150	0.6	SSE
20221229_2200	0.3	-
20221229_2210	0	N
20221229_2220	0.8	NNE
20221229_2230	2.2	NNE
20221229_2240	2.2	NNE
20221229_2250	1.1	NE
20221229_2300	1.1	NE
20221229_2310	1.4	NNE
20221229_2320	2.5	N
20221229_2330	3.3	N
20221229_2340	3.6	N
20221229_2350	3.9	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221230_0000	3.3	NNE
20221230_0010	1.7	NNE
20221230_0020	3.3	NNE
20221230_0020	3.3	NNE
20221230_0030	3.6	N
20221230_0040	4.2	N
20221230_0050	3.3	N
20221230_0100	2.8	N
20221230_0110	2.5	NNW
20221230_0120	2.8	NNW
20221230_0130	3.1	NNW
20221230_0140	3.3	N
20221230_0150	5	N
20221230_0200	3.3	N
20221230_0210	3.3	N
20221230_0220	3.6	N
20221230_0230	2.5	N
20221230_0240	0.6	NNW
20221230_0250	1.1	N
20221230_0300	2.5	N
20221230_0310	3.3	N
20221230_0320	3.3	N
20221230_0330	3.3	N
20221230_0340	3.3	N
20221230_0350	2.5	N
20221230_0400	2.8	N
20221230_0410	3.1	NNE
20221230_0420	3.9	N
20221230_0430	3.9	N
20221230_0440	4.4	N
20221230_0450	4.4	N
20221230_0500	4.2	N
20221230_0510	3.9	N
20221230_0520	3.6	N
20221230_0530	3.3	N
20221230_0540	3.3	NNE
20221230_0550	2.5	NNE
20221230_0600	2.2	NNE
20221230_0610	2.8	NNE
20221230_0620	0.8	NNE
20221230_0630	0.6	NNW
20221230_0640	0.8	ESE
20221230_0650	1.1	ENE
20221230_0700	1.9	NNE
20221230_0710	3.9	NNE
20221230_0720	3.3	NNE
20221230_0730	3.3	NNE
20221230_0740	3.9	N
20221230_0750	3.9	N
20221230_0800	4.2	N
20221230_0810	4.2	N
20221230_0820	4.4	N
20221230_0830	4.2	N
20221230_0840	4.2	NNE
20221230_0850	1.7	NNE
20221230_0900	3.9	NNE
20221230_0910	3.9	NNE
20221230_0920	3.1	N
20221230_0930	3.3	N
20221230_0940	3.3	N
20221230_0950	3.9	N
20221230_1000	3.3	N
20221230_1010	3.9	N
20221230_1020	3.9	N
20221230_1030	4.7	N
20221230_1040	4.7	N
20221230_1050	5.3	N
20221230_1100	3.3	N
20221230_1110	4.7	N
20221230_1120	6.1	N
20221230_1130	5.8	N
20221230_1140	5.8	NNE
20221230_1150	4.2	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221230_1200	5.8	NNE
20221230_1210	5.3	NNE
20221230_1220	5.3	NNE
20221230_1230	5.3	NNE
20221230_1240	6.4	NNE
20221230_1250	5	N
20221230_1300	5.3	N
20221230_1310	5	N
20221230_1320	3.9	N
20221230_1330	4.4	N
20221230_1340	4.2	NNE
20221230_1350	3.3	NNE
20221230_1400	4.2	NNE
20221230_1410	4.7	NNE
20221230_1420	4.7	N
20221230_1430	5	NNE
20221230_1440	3.9	NNE
20221230_1450	4.4	NNE
20221230_1500	4.4	NNE
20221230_1510	4.2	NNE
20221230_1520	3.9	NNE
20221230_1530	3.6	NE
20221230_1540	4.2	NNE
20221230_1550	4.2	NNE
20221230_1600	4.2	NNE
20221230_1610	3.3	NNE
20221230_1620	3.9	NNE
20221230_1630	3.1	NNE
20221230_1640	3.9	NNE
20221230_1650	3.6	NNE
20221230_1700	3.3	NNE
20221230_1710	3.1	N
20221230_1720	2.5	NNE
20221230_1730	2.5	N
20221230_1740	2.5	N
20221230_1750	2.2	NNE
20221230_1800	2.5	NNE
20221230_1810	1.9	NNE
20221230_1820	2.2	N
20221230_1830	3.1	N
20221230_1840	2.8	NNE
20221230_1850	2.2	NNE
20221230_1900	1.9	NNE
20221230_1910	2.8	N
20221230_1920	2.5	NNE
20221230_1930	2.8	NNE
20221230_1940	3.3	NNE
20221230_1950	2.8	N
20221230_2000	2.8	N
20221230_2010	3.3	N
20221230_2020	3.6	NNE
20221230_2030	2.8	NNE
20221230_2040	3.1	NNE
20221230_2050	1.7	NE
20221230_2100	1.4	NE
20221230_2110	0.8	NNE
20221230_2120	0.3	SE
20221230_2130	1.1	SE
20221230_2140	0.3	SE
20221230_2150	0.3	S
20221230_2200	0.3	SSW
20221230_2210	0.3	-
20221230_2220	0.6	-
20221230_2230	0.3	SW
20221230_2240	0.3	-
20221230_2250	0.3	ESE
20221230_2300	0.3	N
20221230_2310	1.4	NNW
20221230_2320	2.2	N
20221230_2330	3.1	N
20221230_2340	3.3	N
20221230_2350	3.3	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221231_0000	3.3	N
20221231_0010	3.3	NNE
20221231_0020	2.5	N
20221231_0020	2.5	N
20221231_0030	2.2	N
20221231_0040	1.7	N
20221231_0050	1.1	N
20221231_0100	1.1	NNE
20221231_0110	1.7	NNE
20221231_0120	2.2	NNE
20221231_0130	2.2	N
20221231_0140	2.2	N
20221231_0150	1.9	N
20221231_0200	2.2	N
20221231_0210	1.9	N
20221231_0220	2.8	N
20221231_0230	2.5	N
20221231_0240	2.5	N
20221231_0250	2.8	N
20221231_0300	2.5	N
20221231_0310	2.5	N
20221231_0320	2.5	N
20221231_0330	3.3	N
20221231_0340	2.2	N
20221231_0350	2.5	NNE
20221231_0400	0.3	NE
20221231_0410	0.3	ENE
20221231_0420	1.1	NE
20221231_0430	0.6	NE
20221231_0440	0.3	-
20221231_0450	0.8	SSE
20221231_0500	0.3	ENE
20221231_0510	0.3	SSE
20221231_0520	0.3	-
20221231_0530	0.3	ESE
20221231_0540	0.3	ENE
20221231_0550	0.3	SE
20221231_0600	0.8	SE
20221231_0610	0.3	-
20221231_0620	0	N
20221231_0630	0.8	SSE
20221231_0640	0.8	SSE
20221231_0650	0.3	-
20221231_0700	0	N
20221231_0710	0.3	SE
20221231_0720	0.3	-
20221231_0730	0.3	-
20221231_0740	0.3	SSE
20221231_0750	0.8	SE
20221231_0800	0.3	ESE
20221231_0810	0	N
20221231_0820	0.8	S
20221231_0830	0	N
20221231_0840	0.3	SE
20221231_0850	0.3	ESE
20221231_0900	0.3	SE
20221231_0910	0.3	E
20221231_0920	0.3	-
20221231_0930	0.3	ENE
20221231_0940	1.7	N
20221231_0950	3.1	N
20221231_1000	3.3	N
20221231_1010	3.1	N
20221231_1020	3.3	NNE
20221231_1030	3.9	NNE
20221231_1040	4.7	NNE
20221231_1050	4.2	NNE
20221231_1100	3.9	NNE
20221231_1110	4.2	NNE
20221231_1120	4.2	N
20221231_1130	3.9	N
20221231_1140	3.9	N
20221231_1150	3.9	N

Date & Time (YYYYMMBB_HHMM)	Wind Speed (m/s)	Wind Direction (From)
20221231_1200	3.9	N
20221231_1210	3.9	N
20221231_1220	2.8	N
20221231_1230	3.3	N
20221231_1240	3.3	N
20221231_1250	2.8	N
20221231_1300	2.8	NNW
20221231_1310	3.3	N
20221231_1320	3.1	N
20221231_1330	3.1	N
20221231_1340	3.3	N
20221231_1350	3.3	NNE
20221231_1400	3.3	N
20221231_1410	3.3	N
20221231_1420	3.1	N
20221231_1430	3.3	NNW
20221231_1440	3.3	N
20221231_1450	3.3	N
20221231_1500	3.3	NNE
20221231_1510	2.8	N
20221231_1520	3.1	N
20221231_1530	3.3	N
20221231_1540	3.6	NNE
20221231_1550	3.9	NNE
20221231_1600	3.3	NNE
20221231_1610	2.8	N
20221231_1620	2.8	NNE
20221231_1630	2.2	NNE
20221231_1640	2.5	NNE
20221231_1650	2.2	NNE
20221231_1700	2.2	NNE
20221231_1710	1.7	NNE
20221231_1720	1.4	NNE
20221231_1730	1.7	NNE
20221231_1740	1.7	N
20221231_1750	1.4	NNE
20221231_1800	1.7	N
20221231_1810	1.7	NNE
20221231_1820	1.4	N
20221231_1830	0.8	NNE
20221231_1840	1.1	N
20221231_1850	1.1	N
20221231_1900	1.7	N
20221231_1910	0.8	N
20221231_1920	0.8	NNW
20221231_1930	0.8	NW
20221231_1940	0.3	SE
20221231_1950	0.3	-
20221231_2000	0.3	S
20221231_2010	0.3	SSE
20221231_2020	0	N
20221231_2030	0	N
20221231_2040	0.3	-
20221231_2050	0	N
20221231_2100	0	N
20221231_2110	0	N
20221231_2120	0	N
20221231_2130	0.3	SSE
20221231_2140	0	N
20221231_2150	0.3	-
20221231_2200	0	N
20221231_2210	0	N
20221231_2220	0	N
20221231_2230	0.3	SSE
20221231_2240	1.1	SSE
20221231_2250	0.3	NE
20221231_2300	0	N
20221231_2310	0.3	SSE
20221231_2320	0	N
20221231_2330	0	N
20221231_2340	0	N
20221231_2350	0	N

The relevant wind data of Ta Kwu Ling weather station is extracted from the Hong Kong Observatory website (https://www.hko.gov.hk/en/wxinfo/awsgis/regional_weather_gis.html)

Appendix I 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	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
Total	384.77	300	0	0	0	0	0	0	0	11.49	0	73.28

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" during reporting period.
3. Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

Appendix J Joint Environmental Site Inspection Records

Inspection Date:	5 December 2022	Inspected By:	Andy Ng
Time:	14:00	Weather Condition:	Sunny
Participants:	Kim Tang (ER), William Wan (Contractor), Andy Ng (ET)		

A	Permits/Licenses	N/A or Not Observed	Yes	No	Remarks / Photo
A1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	☐	☒	☐	EP No.: EP-292/2007 FEP No.: FEP-01/292/2007
A2	Are Construction Noise Permits/ Environmental license/ other permit available for inspection/posted at site entrance.	☐	☒	☐	CNP No: GW-RN0993-22 GW-RN0824-22
A3	Is wastewater discharge licence available for inspection?	☐	☒	☐	
A4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	☐	☒	☐	
A5	Are relevant licence/permit for disposal of construction waste or excavated materials available for inspection?	☐	☒	☐	

B	Air Quality	N/A or Not Observed	Yes	No	Remarks / Photo
B1	Is open burning avoided?	☐	☒	☐	
B2	Are completed earthworks sealed as soon as practicable?	☒	☐	☐	N/A
B3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	☐	☒	☐	
B4	Any remedial action undertaken?	☒	☐	☐	N/A
B5	Observed dust source(s)				
		☒ Wind erosion			
		☐ Vehicle/ Equipment Movements			
		☐ Loading/ unloading of materials			
		☐ Others: _____			
B6	Are unpaved areas/ designated roads watered regularly to avoid dust generation?	☒	☐	☐	N/A
B7	Are dusty materials covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading?	☒	☐	☐	N/A
B8	After removal of stockpile, are the remained dusty materials wetted with water and cleared from surface of roads?	☒	☐	☐	N/A
B9	Is the stockpile of dusty materials avoid to be extend beyond the pedestrian barriers, fencing or traffic cones?	☐	☒	☐	

B10	Are loaded dump trucks covered by impervious sheeting appropriately before leaving the site?	☒	☐	☐	Not Observed
B11	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	☐	☒	☐	
B12	Are all vehicles and plant cleaned before they leave the construction site?	☐	☒	☐	
B13	Are hoarding ≥ 2.4m tall provided beside roads or area with public access?	☒	☐	☐	N/A
B14	Is the portion of any road leading only to construction site (within 30m of a vehicle entrance or exit) kept clear of dusty materials?	☐	☒	☐	
B15	Are surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operations takes place sprayed with water or a dust suppression chemical continuously?	☒	☐	☐	N/A
B16	Is the area involved demolition activities sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet?	☒	☐	☐	N/A
B17	Is scaffolding erected around the perimeter of a building under construction?	☒	☐	☐	N/A
B18	Are effective dust screens, sheeting or netting provided to enclose the scaffolding from the ground floor level of the building, or a canopy provided from the first floor level up to the highest level of the scaffolding?	☒	☐	☐	N/A
B19	Is the skip for materials transport enclosed by impervious sheeting?	☒	☐	☐	N/A
B20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	☒	☐	☐	N/A
B21	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	☐	☒	☐	
B22	Are the activities of loading, unloading, transfer, handing or storage of bulk cement or dry PFA carried out in a totally enclosed system or facility?	☒	☐	☐	N/A
B23	Is any vent or exhaust fitted with an effective fabric filter or equipment air pollution control system?	☒	☐	☐	N/A
B24	Is the exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after last construction activity on the construction site or part of the construction site where the exposed earth lies?	☒	☐	☐	N/A
B25	Are the worksites wetted with water regularly?	☒	☐	☐	N/A
B26	Is generation of dust avoided during loading or unloading?	☒	☐	☐	Not Observed
B27	Are all trucks loaded to a level within the side and tail boards?	☒	☐	☐	Not Observed
B28	Are appropriate speed limit sign displayed?	☐	☒	☐	

B29	Are designated roads paved?	☐	☒	☐	
B30	Are site vehicle movements confined to designated roads?	☐	☒	☐	
B31	Are NRMM labels properly affixed on the PMEs?	☐	☒	☐	

C	Noise	N/A or Not Observed	Yes	No	Remarks / Photo
C1	Is well-maintained plant operated on-site and plant served regularly?	☐	☒	☐	
C2	Are vehicles and equipment switched off or throttled down while not in use?	☐	☒	☐	
C3	Is the noise directed away from nearby NSRs?	☐	☒	☐	
C4	Are the silencers or mufflers properly fitted on construction equipment and maintained regularly?	☒	☐	☐	N/A
C5	Are mobile and/or noisy plant sited as far away from NSRs as possible and practicable and orientated so that the noise is directed away from nearby NSRs?	☐	☒	☐	
C6	Are material stockpiles, mobile container officer and other structures utilised to screen noisy activates?	☒	☐	☐	N/A
C7	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	☒	☐	☐	N/A
C8	Are noise barriers (typically density @14kg/m^2) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	☒	☐	☐	N/A
C9	Is the sequencing operation of construction plants where practicable?	☒	☐	☐	N/A
C10	Is the hoarding maintained properly?	☒	☐	☐	N/A
C11	Air compressors (500 kPa or above) and hand held percussive breaker (mass of above 10 kg) with valid noise labels?	☒	☐	☐	N/A
C12	Are compressor operated with doors closed?	☒	☐	☐	N/A
C13	QPME used with valid noise labels?	☐	☒	☐	
C14	Major noise source(s)				
		☐ Traffic			
		☐ Construction activities inside of site			
		☐ Construction activities outside of site			
		☒ Others: Not Observed			

D	Water Quality	N/A or Not Observed	Yes	No	Remarks / Photo
Construction Activities					
D1	At the start of site establishment, are perimeter cut-off drains constructed to direct off-site water around the site with internal drainage works and erosion and sedimentation control facilities implemented?	☐	☒	☐	
D2	Are channels, earth bunds or sandbag barriers provided on site to properly direct stormwater to such silt removal facilities?	☐	☒	☐	
D3	Have dikes or embankments for flood protection implemented around the boundaries of earthwork areas?	☒	☐	☐	N/A
D4	Have temporary ditches provided to facilitate the runoff discharge into an appropriate watercourse, through a site/ sediment trap?	☐	☒	☐	
D5	Are the sediment/ silt traps incorporated in the permanent drainage channels to enhance deposition rate?	☐	☒	☐	
D6	Are the retention time for silt/s and traps of the silt removal facilities be 5 minutes under maximum flow conditions?	☐	☒	☐	
D7	Is surface excavation works minimised during rainy seasons (April to September), as possible?	☒	☐	☐	N/A
D8	Are all exposed earth areas completed or vegetated as soon as possible after earthworks completed, or alternatively, within 14 days of the cessation of earthworks where practicable?	☒	☐	☐	N/A
D9	Are exposed slope surfaces covered by tarpaulin sheets?	☐	☐	☒	Refer to Reminder 1
D10	Have the overall slope of the site should be kept a minimum?	☒	☐	☐	N/A
D11	Are all trafficked areas and access roads protected by coarse stone ballast?	☐	☒	☐	
D12	Is wastewater from temporary site facilities controlled to prevent direct discharge to surface?	☐	☒	☐	
D13	Are the silt removal facilities, channels and manholes maintained regularly?	☐	☒	☐	
D14	Is the deposited silt and grit removed regularly?	☐	☒	☐	
D15	Have the excavation of trenches in wet periods be dug and backfilled in short sections?	☒	☐	☐	N/A
D16	Is rainwater pumped out from trenches discharged into storm drains via silt system?	☐	☒	☐	
D17	Are open stockpiles of construction materials e.g. aggregates and sand of more than $50m^3$ on site covered with tarpaulin or similar fabric during rainstorms?	☒	☐	☐	N/A
D18	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage?	☐	☒	☐	
D19	Are the discharges of surface run-off into foul sewer always prevented?	☐	☒	☐	
D20	Is a wheel washing bay provided at every site exit?	☐	☒	☐	

D21	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	☐	☒	☐	
D22	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	☐	☒	☐	
D23	Are the vehicle wash-water have sand and silt settled out and removed at least on a weekly basis?	☐	☒	☐	
D24	Are site drainage systems provided over the entire project site with sediment control facilities?	☐	☒	☐	
D25	Are sedimentation tanks provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	☐	☒	☐	
D26	Is the treated wastewater reused for vehicle washing, dust suppression and general cleaning?	☐	☒	☐	
D27	Are portable chemical toilets and sewage holding tanks provided?	☐	☒	☐	
D28	Is the sewage generated from toilets collected by licensed contractor and responsible for disposal and maintenance?	☐	☒	☐	
D29	Is there any sediment plume observed in nearby watercourses?	☒	☐	☐	Not Observed
D30	Are oil interceptors provided in the site drainage system downstream of any oil/ fuel pollution sources? And the oil interceptors are emptied and cleaned regularly? Has a bypass provided to prevent flushing during heavy rain?	☒	☐	☐	Not Observed
D31	Is chemical leakage or spillages contained and cleaned up immediately?	☒	☐	☐	Not Observed
D32	Service workshop and maintenance facilities located within a bunded area, and sumps and oil interceptors be provided?	☒	☐	☐	Not Observed

E	**Waste / Chemical Management**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
General Waste					
E1	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	☐	☒	☐	
E2	Is the general waste collected properly by using the waste separation facilities for paper, aluminium cans, plastic bottles etc.?	☐	☒	☐	
E3	Does accumulation of waste avoid?	☐	☐	☒	Refer to Reminder 2
E4	Is waste disposed regularly?	☐	☒	☐	
E5	Regular waste collection by approved waste collector in purpose-built vehicles?	☐	☒	☐	
E6	Burning of refuse on construction site prohibited?	☐	☒	☐	
Construction Waste					

E7	Are the temporary stockpiles maintained regularly?	☐	☒	☐	
E8	Is the excavated fill material reused for backfilling and reinstatement?	☒	☐	☐	N/A
E9	Are the C&D materials sorted and recycled on-site?	☒	☐	☐	Not Observed
E10	Is there any contract documents provided to allow and promote the use of recycled aggregates where appropriate?	☒	☐	☐	N/A
E11	Is the disposal of C&D materials avoided onto any sensitive locations e.g. agricultural lands etc.?	☐	☒	☐	
E12	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	☒	☐	☐	N/A
E13	Is the durable formwork or plastic facing for construction works used?	☒	☐	☐	N/A
E14	Do the wooden hoardings avoid to be used?	☒	☐	☐	N/A
E15	Is metal hoarding used to enhance the possibility of recycling?	☒	☐	☐	N/A
E16	Is the segregation and storage of C&D wastes undertaken in designated area?	☒	☐	☐	Not Observed
E17	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	☒	☐	☐	Not Observed
E18	Do the excavated materials appear contaminated?	☒	☐	☐	N/A
E19	If suspected contaminated, appropriate procedures followed?	☒	☐	☐	N/A
E20	Is hydroseeding of the topsoil on the stockpile implemented to improve visual appearance and prevent soil erosion?	☒	☐	☐	N/A
Chemical / Fuel Storage Area					
E21	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	☒	☐	☐	Not Observed
E22	Are the storage area enclosed 3 sides by walls/ fence of ≥2m tall and bounded with adequate bund capacity (>110% of largest container) or do the storage area allow storage of 20% of total volume of waste?	☒	☐	☐	Not Observed
E23	Are the storage areas labelled and separated (if needed)?	☒	☐	☐	Not Observed
E24	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	☒	☐	☐	Not Observed
E25	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	☒	☐	☐	Not Observed
E26	If no specification has been approved by EPD, are container with <450L capacity provided for storage of chemicals waste?	☒	☐	☐	Not Observed
Chemical Waste / Waste Oil					
E27	Is chemical waste or waste oil stored and labelled in English and Chinese properly in designated area?	☒	☐	☐	Not Observed

E28	Are chemicals and waste oil recycled or disposed properly?	☒	☐	☐	Not Observed
E29	Is chemical waste collected by licensed waste collectors and disposed of at licensed facility eg. Chemical Waste Treatment Centre?	☐	☒	☐	
Records					
E30	Is a licensed waste hauler used for waste collection?	☐	☒	☐	
E31	Are the records of quantities of wastes generated, recycled and disposed properly kept?	☐	☒	☐	
E32	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	☒	☐	☐	N/A

F	**Landscape and Visual Impacts**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
F1	Is the work site confined within site boundaries?	☐	☒	☐	
F2	Is damage to surrounding areas avoided?	☐	☒	☐	
F3	Are the protective fencing erected along or beyond the perimeter of the tree protection zone of each individual tree?	☒	☐	☐	Not Observed
F4	Is early planting using fast growing plants at strategic locations within site implemented?	☒	☐	☐	N/A
F5	Is boundary green belt planting implemented around the site perimeter and the construction of temporary soil bunds?	☒	☐	☐	N/A
F6	Is temporary landscape treatment as green surface cover implemented?	☒	☐	☐	N/A
F7	Are existing and affected tree which identified as ecological significant preserved whenever possible?	☒	☐	☐	Not Observed

G	**Ecology**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
G1	Is transplantation of the important plant species implemented? Is post-transplantation maintained and monitored regularly?	☒	☐	☐	N/A

H	**Environmental Complaint**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
H1	Environmental Complaint received during this week?	☐	☐	☒	

I	**General Housekeeping / Others**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
I1	Are the defined boundaries of working areas identified to prevent loss of vegetation	☐	☒	☐	
I2	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	☐	☒	☐	

Follow up action for previous Site Inspection:

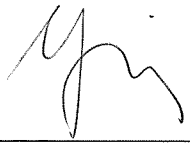
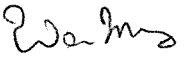
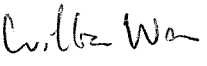
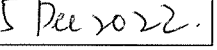
Nil

Note:

Reminder 1: The accumulated waste shall be disposed regularly.
Reminder 2: Open cut slope shall be covered with impervious sheeting.

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

1. The Contractor has been recommended to increase the frequency of waste disposal to avoid accumulate waste.
2. The Contractor has been reminded to cover the exposed slopes with impervious sheet to minimize dust dispersion.

	Environmental Team Representative:	IEC's Representative:	Contractor's Representative:	Engineer's Representative
Signature:		/		
Name:	Andy Ng	/		
Date:	5 December 2022	/		

PART I Follow-up status of the previous site inspection

Observation and Recommendation	Follow-up status
Nil	

PART II Observation and recommendation identified during the environmental site inspection

Observation and Recommendation	Follow-up status
 Reminder 1.The accumlated waste shall be disposed regularly.	
 Reminder 2. The open cut slope shall be covered with impervious sheeting.	

Inspection Date:	12 December 2022	Inspected By:	Andy Ng
Time:	14:00	Weather Condition:	Sunny
Participants:	Kim Tang (ER), Kristy Wong (Contractor), Andy Ng (ET)		

A	Permits/Licenses	N/A or Not Observed	Yes	No	Remarks / Photo
A1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	☐	☒	☐	EP No.: EP-292/2007 FEP No.: FEP-01/292/2007
A2	Are Construction Noise Permits/ Environmental license/ other permit available for inspection/posted at site entrance.	☐	☒	☐	CNP No: GW-RN0993-22 GW-RN0824-22
A3	Is wastewater discharge licence available for inspection?	☐	☒	☐	
A4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	☐	☒	☐	
A5	Are relevant licence/permit for disposal of construction waste or excavated materials available for inspection?	☐	☒	☐	

B	Air Quality	N/A or Not Observed	Yes	No	Remarks / Photo
B1	Is open burning avoided?	☐	☒	☐	
B2	Are completed earthworks sealed as soon as practicable?	☒	☐	☐	N/A
B3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	☐	☒	☐	
B4	Any remedial action undertaken?	☒	☐	☐	
B5	Observed dust source(s)				
		☐ Wind erosion			
		☐ Vehicle/ Equipment Movements			
		☐ Loading/ unloading of materials			
		☒ Others: Not Observed			
B6	Are unpaved areas/ designated roads watered regularly to avoid dust generation?	☒	☐	☐	N/A
B7	Are dusty materials covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading?	☒	☐	☐	N/A
B8	After removal of stockpile, are the remained dusty materials wetted with water and cleared from surface of roads?	☒	☐	☐	N/A
B9	Is the stockpile of dusty materials avoid to be extend beyond the pedestrian barriers, fencing or traffic cones?	☐	☒	☐	

B10	Are loaded dump trucks covered by impervious sheeting appropriately before leaving the site?	☒	☐	☐	Not Observed
B11	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	☐	☒	☐	
B12	Are all vehicles and plant cleaned before they leave the construction site?	☐	☒	☐	
B13	Are hoarding ≥ 2.4m tall provided beside roads or area with public access?	☒	☐	☐	N/A
B14	Is the portion of any road leading only to construction site (within 30m of a vehicle entrance or exit) kept clear of dusty materials?	☐	☐	☒	Refer to Reminder 1
B15	Are surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operations takes place sprayed with water or a dust suppression chemical continuously?	☒	☐	☐	N/A
B16	Is the area involved demolition activities sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet?	☒	☐	☐	N/A
B17	Is scaffolding erected around the perimeter of a building under construction?	☒	☐	☐	N/A
B18	Are effective dust screens, sheeting or netting provided to enclose the scaffolding from the ground floor level of the building, or a canopy provided from the first floor level up to the highest level of the scaffolding?	☒	☐	☐	N/A
B19	Is the skip for materials transport enclosed by impervious sheeting?	☒	☐	☐	N/A
B20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	☒	☐	☐	Not Observed
B21	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	☐	☒	☐	
B22	Are the activities of loading, unloading, transfer, handing or storage of bulk cement or dry PFA carried out in a totally enclosed system or facility?	☒	☐	☐	N/A
B23	Is any vent or exhaust fitted with an effective fabric filter or equipment air pollution control system?	☒	☐	☐	N/A
B24	Is the exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after last construction activity on the construction site or part of the construction site where the exposed earth lies?	☒	☐	☐	N/A
B25	Are the worksites wetted with water regularly?	☒	☐	☐	N/A
B26	Is generation of dust avoided during loading or unloading?	☒	☐	☐	Not Observed
B27	Are all trucks loaded to a level within the side and tail boards?	☒	☐	☐	Not Observed
B28	Are appropriate speed limit sign displayed?	☐	☒	☐	

B29	Are designated roads paved?	☐	☒	☐	
B30	Are site vehicle movements confined to designated roads?	☐	☒	☐	
B31	Are NRMM labels properly affixed on the PMEs?	☐	☒	☐	

C	Noise	N/A or Not Observed	Yes	No	Remarks / Photo
C1	Is well-maintained plant operated on-site and plant served regularly?	☐	☒	☐	
C2	Are vehicles and equipment switched off or throttled down while not in use?	☐	☒	☐	
C3	Is the noise directed away from nearby NSRs?	☐	☒	☐	
C4	Are the silencers or mufflers properly fitted on construction equipment and maintained regularly?	☒	☐	☐	N/A
C5	Are mobile and/or noisy plant sited as far away from NSRs as possible and practicable and orientated so that the noise is directed away from nearby NSRs?	☐	☒	☐	
C6	Are material stockpiles, mobile container officer and other structures utilised to screen noisy activates?	☒	☐	☐	N/A
C7	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	☒	☐	☐	N/A
C8	Are noise barriers (typically density @14kg/m^2) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	☒	☐	☐	N/A
C9	Is the sequencing operation of construction plants where practicable?	☒	☐	☐	N/A
C10	Is the hoarding maintained properly?	☒	☐	☐	N/A
C11	Air compressors (500 kPa or above) and hand held percussive breaker (mass of above 10 kg) with valid noise labels?	☒	☐	☐	N/A
C12	Are compressor operated with doors closed?	☒	☐	☐	N/A
C13	QPME used with valid noise labels?	☐	☒	☐	
C14	Major noise source(s)				
		☐ Traffic			
		☐ Construction activities inside of site			
		☐ Construction activities outside of site			
		☒ Others: Not Observed			

D	Water Quality	N/A or Not Observed	Yes	No	Remarks / Photo
Construction Activities					
D1	At the start of site establishment, are perimeter cut-off drains constructed to direct off-site water around the site with internal drainage works and erosion and sedimentation control facilities implemented?	☐	☒	☐	
D2	Are channels, earth bunds or sandbag barriers provided on site to properly direct stormwater to such silt removal facilities?	☐	☒	☐	
D3	Have dikes or embankments for flood protection implemented around the boundaries of earthwork areas?	☒	☐	☐	N/A
D4	Have temporary ditches provided to facilitate the runoff discharge into an appropriate watercourse, through a site/ sediment trap?	☐	☒	☐	
D5	Are the sediment/ silt traps incorporated in the permanent drainage channels to enhance deposition rate?	☐	☒	☐	
D6	Are the retention time for silt/s and traps of the silt removal facilities be 5 minutes under maximum flow conditions?	☐	☒	☐	
D7	Is surface excavation works minimised during rainy seasons (April to September), as possible?	☒	☐	☐	N/A
D8	Are all exposed earth areas completed or vegetated as soon as possible after earthworks completed, or alternatively, within 14 days of the cessation of earthworks where practicable?	☒	☐	☐	N/A
D9	Are exposed slope surfaces covered by tarpaulin sheets?	☐	☐	☒	Refer to Reminder 2
D10	Have the overall slope of the site should be kept a minimum?	☒	☐	☐	N/A
D11	Are all trafficked areas and access roads protected by coarse stone ballast?	☐	☒	☐	
D12	Is wastewater from temporary site facilities controlled to prevent direct discharge to surface	☐	☒	☐	
D13	Are the silt removal facilities, channels and manholes maintained regularly?	☐	☒	☐	
D14	Is the deposited silt and grit removed regularly?	☐	☒	☐	
D15	Have the excavation of trenches in wet periods be dug and backfilled in short sections?	☒	☐	☐	N/A
D16	Is rainwater pumped out from trenches discharged into storm drains via silt system?	☐	☒	☐	
D17	Are open stockpiles of construction materials e.g. aggregates and sand of more than $50m^3$ on site covered with tarpaulin or similar fabric during rainstorms?	☒	☐	☐	N.A
D18	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage?	☐	☒	☐	
D19	Are the discharges of surface run-off into foul sewer always prevented?	☐	☒	☐	
D20	Is a wheel washing bay provided at every site exit?	☐	☒	☐	

D21	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	☐	☒	☐	
D22	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	☐	☒	☐	
D23	Are the vehicle wash-water have sand and silt settled out and removed at least on a weekly basis?	☐	☒	☐	
D24	Are site drainage systems provided over the entire project site with sediment control facilities?	☐	☒	☐	
D25	Are sedimentation tanks provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	☐	☒	☐	
D26	Is the treated wastewater reused for vehicle washing, dust suppression and general cleaning?	☐	☒	☐	
D27	Are portable chemical toilets and sewage holding tanks provided?	☐	☒	☐	
D28	Is the sewage generated from toilets collected by licensed contractor and responsible for disposal and maintenance?	☐	☒	☐	
D29	Is there any sediment plume observed in nearby watercourses?	☒	☐	☐	Not Observed
D30	Are oil interceptors provided in the site drainage system downstream of any oil/ fuel pollution sources? And the oil interceptors are emptied and cleaned regularly? Has a bypass provided to prevent flushing during heavy rain?	☒	☐	☐	Not Observed
D31	Is chemical leakage or spillages contained and cleaned up immediately?	☒	☐	☐	Not Observed
D32	Service workshop and maintenance facilities located within a bunded area, and sumps and oil interceptors be provided?	☒	☐	☐	Not Observed

E	**Waste / Chemical Management**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
General Waste					
E1	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	☐	☒	☐	
E2	Is the general waste collected properly by using the waste separation facilities for paper, aluminium cans, plastic bottles etc.?	☐	☒	☐	
E3	Does accumulation of waste avoid?	☐	☐	☒	Refer to Reminder 3
E4	Is waste disposed regularly?	☐	☒	☐	
E5	Regular waste collection by approved waste collector in purpose-built vehicles?	☐	☒	☐	
E6	Burning of refuse on construction site prohibited?	☐	☒	☐	
Construction Waste					

E7	Are the temporary stockpiles maintained regularly?	☐	☒	☐	
E8	Is the excavated fill material reused for backfilling and reinstatement?	☒	☐	☐	N/A
E9	Are the C&D materials sorted and recycled on-site?	☒	☐	☐	Not Observed
E10	Is there any contract documents provided to allow and promote the use of recycled aggregates where appropriate?	☒	☐	☐	N/A
E11	Is the disposal of C&D materials avoided onto any sensitive locations e.g. agricultural lands etc.?	☐	☒	☐	
E12	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	☒	☐	☐	N/A
E13	Is the durable formwork or plastic facing for construction works used?	☒	☐	☐	N/A
E14	Do the wooden hoardings avoid to be used?	☒	☐	☐	N/A
E15	Is metal hoarding used to enhance the possibility of recycling?	☒	☐	☐	N/A
E16	Is the segregation and storage of C&D wastes undertaken in designated area?	☒	☐	☐	Not Observed
E17	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	☒	☐	☐	Not Observed
E18	Do the excavated materials appear contaminated?	☒	☐	☐	N/A
E19	If suspected contaminated, appropriate procedures followed?	☒	☐	☐	N/A
E20	Is hydroseeding of the topsoil on the stockpile implemented to improve visual appearance and prevent soil erosion?	☒	☐	☐	N/A
Chemical / Fuel Storage Area					
E21	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	☒	☐	☐	Not Observed
E22	Are the storage area enclosed 3 sides by walls/ fence of ≥2m tall and bounded with adequate bund capacity (>110% of largest container) or do the storage area allow storage of 20% of total volume of waste?	☒	☐	☐	Not Observed
E23	Are the storage areas labelled and separated (if needed)?	☒	☐	☐	Not Observed
E24	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	☒	☐	☐	Not Observed
E25	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	☒	☐	☐	Not Observed
E26	If no specification has been approved by EPD, are container with <450L capacity provided for storage of chemicals waste?	☒	☐	☐	Not Observed
Chemical Waste / Waste Oil					
E27	Is chemical waste or waste oil stored and labelled in English and Chinese properly in designated area?	☒	☐	☐	Not Observed

E28	Are chemicals and waste oil recycled or disposed properly?	☒	☐	☐	Not Observed
E29	Is chemical waste collected by licensed waste collectors and disposed of at licensed facility eg. Chemical Waste Treatment Centre?	☐	☒	☐	
Records					
E30	Is a licensed waste hauler used for waste collection?	☐	☒	☐	
E31	Are the records of quantities of wastes generated, recycled and disposed properly kept?	☐	☒	☐	
E32	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	☒	☐	☐	N/A

F	**Landscape and Visual Impacts**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
F1	Is the work site confined within site boundaries?	☐	☒	☐	
F2	Is damage to surrounding areas avoided?	☐	☒	☐	
F3	Are the protective fencing erected along or beyond the perimeter of the tree protection zone of each individual tree?	☒	☐	☐	Not Observed
F4	Is early planting using fast growing plants at strategic locations within site implemented?	☒	☐	☐	N/A
F5	Is boundary green belt planting implemented around the site perimeter and the construction of temporary soil bunds?	☒	☐	☐	N/A
F6	Is temporary landscape treatment as green surface cover implemented?	☒	☐	☐	N/A
F7	Are existing and affected tree which identified as ecological significant preserved whenever possible?	☒	☐	☐	Not Observed

G	**Ecology**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
G1	Is transplantation of the important plant species implemented? Is post-transplantation maintained and monitored regularly?	☒	☐	☐	N/A

H	**Environmental Complaint**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
H1	Environmental Complaint received during this week?	☐	☐	☒	

I	**General Housekeeping / Others**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
I1	Are the defined boundaries of working areas identified to prevent loss of vegetation	☐	☒	☐	
I2	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	☐	☒	☐	

Follow up action for previous Site Inspection:

1.The open cute slope has been covered with impervious sheet.

Observation(s):

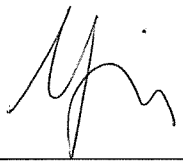
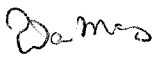
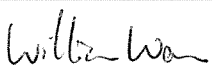
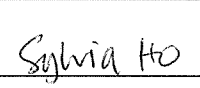
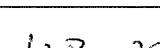
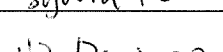
Nil

Reminder(s):

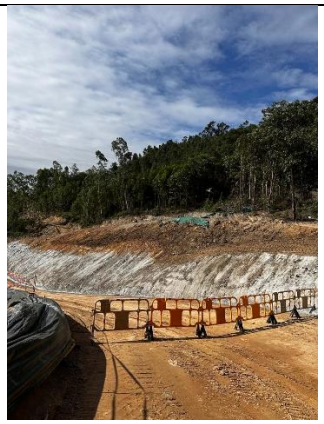
1. The vehicle exit road shall be kept clear of dusty materials.
2. The Contactor has been reminded to cover the exposed slope with impervious sheet for upcoming rainfall in this week.
3. The accumulated waste is observed.

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

1. The Contractor has been reminded to schedule watering for the vehicle exist road.
2. All exposed slopes shall be covered with impervious sheets during rainfall.
3. The Contractor has been recommended to increase the frequency of waste disposal to avoid accumulation of waste.

	Environmental Team Representative:	IEC's Representative:	Contractor's Representative:	Engineer's Representative
Signature:		/		
Name:	Andy Ng	/		
Date:	12 December 2022	/		

PART I Follow-up status of the previous site inspection

Observation and Recommendation	Follow-up status
 1.The accumlated waste shall be disposed regularly.	Waiting for Contractor's input
 2.The open cut slop shall be covered with impervious sheet.	 The exposed slope has been covered with impervious sheets.

PART II Observation and recommendation identified during the environmental site inspection

Observation and Recommendation	Follow-up status
 Reminder 1.The vehicle exit road shall be kept clear of dusty materials.	

Observation and Recommendation	**Follow-up status**
 Reminder 2. The Contactor has been reminded to cover the exposed slope with impervious sheet for upcoming rainfall in this week.	
 Reminder 3.. The Contactor has been recommended to increase the frequency of waste disposal to aviod accumulation of waste.	

Inspection Date:	19 December 2022	Inspected By:	Andy Ng,Jason Man
Time:	14:00	Weather Condition:	Sunny
Participants:	Sylvia Ho (ER), William Wan (Contractor), Jimmy Lui (IEC), Andy Ng (ET), Jason Man (ET)		

A	Permits/Licenses	N/A or Not Observed	Yes	No	Remarks / Photo
A1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	☐	☒	☐	EP No.: EP-292/2007 FEP No.: FEP-01/292/2007
A2	Are Construction Noise Permits/ Environmental license/ other permit available for inspection/posted at site entrance.	☐	☒	☐	CNP No: GW-RN0993-22 GW-RN0824-22
A3	Is wastewater discharge licence available for inspection?	☐	☒	☐	
A4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	☐	☒	☐	
A5	Are relevant licence/permit for disposal of construction waste or excavated materials available for inspection?	☐	☒	☐	

B	Air Quality	N/A or Not Observed	Yes	No	Remarks / Photo
B1	Is open burning avoided?	☐	☒	☐	
B2	Are completed earthworks sealed as soon as practicable?	☒	☐	☐	N/A
B3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	☐	☒	☐	
B4	Any remedial action undertaken?	☒	☐	☐	N/A
B5	Observed dust source(s)				
		☐ Wind erosion			
		☐ Vehicle/ Equipment Movements			
		☐ Loading/ unloading of materials			
		☒ Others: Not Observed			
B6	Are unpaved areas/ designated roads watered regularly to avoid dust generation?	☒	☐	☐	N/A
B7	Are dusty materials covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading?	☐	☒	☐	
B8	After removal of stockpile, are the remained dusty materials wetted with water and cleared from surface of roads?	☒	☐	☐	N/A
B9	Is the stockpile of dusty materials avoid to be extend beyond the pedestrian barriers, fencing or traffic cones?	☐	☒	☐	

B10	Are loaded dump trucks covered by impervious sheeting appropriately before leaving the site?	☒	☐	☐	Not Observed
B11	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	☐	☒	☐	
B12	Are all vehicles and plant cleaned before they leave the construction site?	☐	☒	☐	
B13	Are hoarding ≥ 2.4m tall provided beside roads or area with public access?	☒	☐	☐	N/A
B14	Is the portion of any road leading only to construction site (within 30m of a vehicle entrance or exit) kept clear of dusty materials?	☐	☒	☐	
B15	Are surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operations takes place sprayed with water or a dust suppression chemical continuously?	☐	☒	☐	
B16	Is the area involved demolition activities sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet?	☒	☐	☐	N/A
B17	Is scaffolding erected around the perimeter of a building under construction?	☒	☐	☐	N/A .
B18	Are effective dust screens, sheeting or netting provided to enclose the scaffolding from the ground floor level of the building, or a canopy provided from the first floor level up to the highest level of the scaffolding?	☒	☐	☐	N/A
B19	Is the skip for materials transport enclosed by impervious sheeting?	☒	☐	☐	Not Observed
B20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	☒	☐	☐	Not Observed
B21	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	☐	☒	☐	
B22	Are the activities of loading, unloading, transfer, handing or storage of bulk cement or dry PFA carried out in a totally enclosed system or facility?	☒	☐	☐	Not Observed
B23	Is any vent or exhaust fitted with an effective fabric filter or equipment air pollution control system?	☒	☐	☐	N/A
B24	Is the exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after last construction activity on the construction site or part of the construction site where the exposed earth lies?	☐	☒	☐	
B25	Are the worksites wetted with water regularly?	☒	☐	☐	N/A
B26	Is generation of dust avoided during loading or unloading?	☒	☐	☐	Not Observed
B27	Are all trucks loaded to a level within the side and tail boards?	☒	☐	☐	Not Observed
B28	Are appropriate speed limit sign displayed?	☐	☒	☐	

B29	Are designated roads paved?	☐	☒	☐	
B30	Are site vehicle movements confined to designated roads?	☐	☒	☐	
B31	Are NRMM labels properly affixed on the PMEs?	☐	☒	☐	

C	Noise	N/A or Not Observed	Yes	No	Remarks / Photo
C1	Is well-maintained plant operated on-site and plant served regularly?	☐	☒	☐	
C2	Are vehicles and equipment switched off or throttled down while not in use?	☐	☒	☐	
C3	Is the noise directed away from nearby NSRs?	☐	☒	☐	
C4	Are the silencers or mufflers properly fitted on construction equipment and maintained regularly?	☒	☐	☐	N/A
C5	Are mobile and/or noisy plant sited as far away from NSRs as possible and practicable and orientated so that the noise is directed away from nearby NSRs?	☐	☒	☐	
C6	Are material stockpiles, mobile container officer and other structures utilised to screen noisy activates?	☒	☐	☐	N/A
C7	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	☒	☐	☐	N/A
C8	Are noise barriers (typically density @14kg/m^2) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	☒	☐	☐	N/A
C9	Is the sequencing operation of construction plants where practicable?	☒	☐	☐	N/A
C10	Is the hoarding maintained properly?	☒	☐	☐	N/A
C11	Air compressors (500 kPa or above) and hand held percussive breaker (mass of above 10 kg) with valid noise labels?	☒	☐	☐	N/A
C12	Are compressor operated with doors closed?	☒	☐	☐	N/A
C13	QPME used with valid noise labels?	☐	☒	☐	
C14	Major noise source(s)				
		☐ Traffic			
		☐ Construction activities inside of site			
		☐ Construction activities outside of site			
		☒ Others: Not Observed			

D	Water Quality	N/A or Not Observed	Yes	No	Remarks / Photo
Construction Activities					
D1	At the start of site establishment, are perimeter cut-off drains constructed to direct off-site water around the site with internal drainage works and erosion and sedimentation control facilities implemented?	☐	☒	☐	
D2	Are channels, earth bunds or sandbag barriers provided on site to properly direct stormwater to such silt removal facilities?	☐	☒	☐	
D3	Have dikes or embankments for flood protection implemented around the boundaries of earthwork areas?	☒	☐	☐	Not Observed
D4	Have temporary ditches provided to facilitate the runoff discharge into an appropriate watercourse, through a site/ sediment trap?	☐	☒	☐	
D5	Are the sediment/ silt traps incorporated in the permanent drainage channels to enhance deposition rate?	☐	☒	☐	
D6	Are the retention time for silt/s and traps of the silt removal facilities be 5 minutes under maximum flow conditions?	☐	☒	☐	
D7	Is surface excavation works minimised during rainy seasons (April to September), as possible?	☒	☐	☐	N/A
D8	Are all exposed earth areas completed or vegetated as soon as possible after earthworks completed, or alternatively, within 14 days of the cessation of earthworks where practicable?	☒	☐	☐	N/A
D9	Are exposed slope surfaces covered by tarpaulin sheets?	☐	☒	☐	
D10	Have the overall slope of the site should be kept a minimum?	☐	☒	☐	
D11	Are all trafficked areas and access roads protected by coarse stone ballast?	☐	☒	☐	
D12	Is wastewater from temporary site facilities controlled to prevent direct discharge to surface	☐	☒	☐	
D13	Are the silt removal facilities, channels and manholes maintained regularly?	☐	☒	☐	
D14	Is the deposited silt and grit removed regularly?	☐	☒	☐	
D15	Have the excavation of trenches in wet periods be dug and backfilled in short sections?	☒	☐	☐	N/A
D16	Is rainwater pumped out from trenches discharged into storm drains via silt system?	☐	☒	☐	
D17	Are open stockpiles of construction materials e.g. aggregates and sand of more than $50m^3$ on site covered with tarpaulin or similar fabric during rainstorms?	☒	☐	☐	N/A
D18	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage?	☐	☒	☐	
D19	Are the discharges of surface run-off into foul sewer always prevented?	☐	☒	☐	
D20	Is a wheel washing bay provided at every site exit?	☐	☒	☐	

D21	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	☐	☒	☐	
D22	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	☐	☒	☐	
D23	Are the vehicle wash-water have sand and silt settled out and removed at least on a weekly basis?	☐	☐	☒	Refer to Reminder 1
D24	Are site drainage systems provided over the entire project site with sediment control facilities?	☐	☒	☐	
D25	Are sedimentation tanks provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	☐	☒	☐	
D26	Is the treated wastewater reused for vehicle washing, dust suppression and general cleaning?	☐	☒	☐	
D27	Are portable chemical toilets and sewage holding tanks provided?	☐	☒	☐	
D28	Is the sewage generated from toilets collected by licensed contractor and responsible for disposal and maintenance?	☐	☒	☐	
D29	Is there any sediment plume observed in nearby watercourses?	☒	☐	☐	Not Observed
D30	Are oil interceptors provided in the site drainage system downstream of any oil/ fuel pollution sources? And the oil interceptors are emptied and cleaned regularly? Has a bypass provided to prevent flushing during heavy rain?	☒	☐	☐	Not Observed
D31	Is chemical leakage or spillages contained and cleaned up immediately?	☒	☐	☐	Not Observed
D32	Service workshop and maintenance facilities located within a bunded area, and sumps and oil interceptors be provided?	☒	☐	☐	Not Observed

E	**Waste / Chemical Management**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
General Waste					
E1	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	☐	☒	☐	
E2	Is the general waste collected properly by using the waste separation facilities for paper, aluminium cans, plastic bottles etc.?	☐	☒	☐	
E3	Does accumulation of waste avoid?	☐	☒	☐	
E4	Is waste disposed regularly?	☐	☒	☐	
E5	Regular waste collection by approved waste collector in purpose-built vehicles?	☐	☒	☐	
E6	Burning of refuse on construction site prohibited?	☐	☒	☐	
Construction Waste					

E7	Are the temporary stockpiles maintained regularly?	☒	☐	☐	N/A
E8	Is the excavated fill material reused for backfilling and reinstatement?	☒	☐	☐	N/A
E9	Are the C&D materials sorted and recycled on-site?	☒	☐	☐	Not Observed
E10	Is there any contract documents provided to allow and promote the use of recycled aggregates where appropriate?	☒	☐	☐	Not Observed
E11	Is the disposal of C&D materials avoided onto any sensitive locations e.g. agricultural lands etc.?	☐	☒	☐	
E12	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	☐	☒	☐	
E13	Is the durable formwork or plastic facing for construction works used?	☒	☐	☐	N/A
E14	Do the wooden hoardings avoid to be used?	☒	☐	☐	N/A
E15	Is metal hoarding used to enhance the possibility of recycling?	☒	☐	☐	N/A
E16	Is the segregation and storage of C&D wastes undertaken in designated area?	☐	☒	☐	
E17	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	☐	☒	☐	
E18	Do the excavated materials appear contaminated?	☒	☐	☐	N/A
E19	If suspected contaminated, appropriate procedures followed?	☒	☐	☐	N/A
E20	Is hydroseeding of the topsoil on the stockpile implemented to improve visual appearance and prevent soil erosion?	☒	☐	☐	N/A
Chemical / Fuel Storage Area					
E21	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	☒	☐	☐	Not Observed
E22	Are the storage area enclosed 3 sides by walls/ fence of ≥2m tall and bounded with adequate bund capacity (>110% of largest container) or do the storage area allow storage of 20% of total volume of waste?	☒	☐	☐	Not Observed
E23	Are the storage areas labelled and separated (if needed)?	☒	☐	☐	Not Observed
E24	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	☒	☐	☐	Not Observed
E25	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	☒	☐	☐	Not Observed
E26	If no specification has been approved by EPD, are container with <450L capacity provided for storage of chemicals waste?	☒	☐	☐	Not Observed
Chemical Waste / Waste Oil					
E27	Is chemical waste or waste oil stored and labelled in English and Chinese properly in designated area?	☒	☐	☐	Not Observed

E28	Are chemicals and waste oil recycled or disposed properly?	☒	☐	☐	N/A
E29	Is chemical waste collected by licensed waste collectors and disposed of at licensed facility eg. Chemical Waste Treatment Centre?	☐	☒	☐	
Records					
E30	Is a licensed waste hauler used for waste collection?	☐	☒	☐	
E31	Are the records of quantities of wastes generated, recycled and disposed properly kept?	☐	☒	☐	
E32	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	☒	☐	☐	N/A

F	**Landscape and Visual Impacts**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
F1	Is the work site confined within site boundaries?	☐	☒	☐	
F2	Is damage to surrounding areas avoided?	☐	☒	☐	
F3	Are the protective fencing erected along or beyond the perimeter of the tree protection zone of each individual tree?	☒	☐	☐	N/A
F4	Is early planting using fast growing plants at strategic locations within site implemented?	☒	☐	☐	N/A
F5	Is boundary green belt planting implemented around the site perimeter and the construction of temporary soil bunds?	☒	☐	☐	N/A
F6	Is temporary landscape treatment as green surface cover implemented?	☒	☐	☐	N/A
F7	Are existing and affected tree which identified as ecological significant preserved whenever possible?	☒	☐	☐	Not Observed

G	**Ecology**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
G1	Is transplantation of the important plant species implemented? Is post-transplantation maintained and monitored regularly?	☒	☐	☐	Not Observed

H	**Environmental Complaint**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
H1	Environmental Complaint received during this week?	☐	☐	☒	

I	**General Housekeeping / Others**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
I1	Are the defined boundaries of working areas identified to prevent loss of vegetation	☐	☒	☐	
I2	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	☐	☒	☐	

Follow up action for previous Site Inspection:

1. The vehicle exit road was cleaned.

Observation(s):

Nil

Reminder(s):

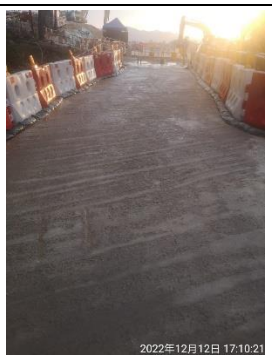
1. Sediments are accumulated in the channel at the vehicle wash bay.

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

1. The Contractor has been reminded to remove the sediments at least on a weekly basis.

	Environmental Team Representative:	IEC's Representative:	Contractor's Representative:	Engineer's Representative
Signature:				
Name:	Andy Ng	Jimmy Lui		Sylvia Ho
Date:	19 December 2022	19 December 2022	19 Dec 22	19 Dec 2022

PART I Follow-up status of the previous site inspection

Observation and Recommendation	**Follow-up status**
 1.The vehicle exit road shall be kept clear of dusty materials.	 The vehicle exit road was cleaned
 2.The Contactor has been reminded to cover the exposed slope with impervious sheet for upcoming rainfall in this week.	Waiting for Contractor's input
 3.The Contactor has been recommended to increase the frequency of waste disposal to aviod accumulation of waste.	Waiting for Contractor's input

PART II Observation and recommendation identified during the environmental site inspection

Observation and Recommendation	Follow-up status
 1.Sediments are accumulated in the channel at the vehicle wash bay.	

Inspection Date:	28 December 2022	Inspected By:	Andy Ng
Time:	14:00	Weather Condition:	Sunny
Participants:	Sylvia Ho (ER), William Wan (Contractor), Andy Ng (ET)		

A	Permits/Licenses	N/A or Not Observed	Yes	No	Remarks / Photo
A1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	☐	☒	☐	EP No.: EP-292/2007 FEP No.: FEP-01/292/2007
A2	Are Construction Noise Permits/ Environmental license/ other permit available for inspection/posted at site entrance.	☐	☒	☐	CNP No: GW-RN0993-22 GW-RN0824-22
A3	Is wastewater discharge licence available for inspection?	☐	☒	☐	
A4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	☐	☒	☐	
A5	Are relevant licence/permit for disposal of construction waste or excavated materials available for inspection?	☐	☒	☐	

B	Air Quality	N/A or Not Observed	Yes	No	Remarks / Photo
B1	Is open burning avoided?	☐	☒	☐	
B2	Are completed earthworks sealed as soon as practicable?	☒	☐	☐	N/A
B3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	☐	☒	☐	
B4	Any remedial action undertaken?	☒	☐	☐	N/A
B5	Observed dust source(s)				
		☒ Wind erosion			
		☐ Vehicle/ Equipment Movements			
		☒ Loading/ unloading of materials			
		☐ Others: _____			
B6	Are unpaved areas/ designated roads watered regularly to avoid dust generation?	☒	☐	☐	
B7	Are dusty materials covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading?	☐	☐	☒	Refer to Reminder1
B8	After removal of stockpile, are the remained dusty materials wetted with water and cleared from surface of roads?	☒	☐	☐	N/A
B9	Is the stockpile of dusty materials avoid to be extend beyond the pedestrian barriers, fencing or traffic cones?	☐	☒	☐	

B10	Are loaded dump trucks covered by impervious sheeting appropriately before leaving the site?	☐	☒	☐	
B11	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	☐	☒	☐	
B12	Are all vehicles and plant cleaned before they leave the construction site?	☐	☒	☐	
B13	Are hoarding ≥ 2.4m tall provided beside roads or area with public access?	☒	☐	☐	N/A
B14	Is the portion of any road leading only to construction site (within 30m of a vehicle entrance or exit) kept clear of dusty materials?	☐	☐	☒	Refer to Observation 1
B15	Are surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operations takes place sprayed with water or a dust suppression chemical continuously?	☒	☐	☐	N/A
B16	Is the area involved demolition activities sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet?	☒	☐	☐	N/A
B17	Is scaffolding erected around the perimeter of a building under construction?	☒	☐	☐	N/A
B18	Are effective dust screens, sheeting or netting provided to enclose the scaffolding from the ground floor level of the building, or a canopy provided from the first floor level up to the highest level of the scaffolding?	☒	☐	☐	N/A
B19	Is the skip for materials transport enclosed by impervious sheeting?	☒	☐	☐	N/A
B20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	☒	☐	☐	Not Observed
B21	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	☐	☒	☐	
B22	Are the activities of loading, unloading, transfer, handing or storage of bulk cement or dry PFA carried out in a totally enclosed system or facility?	☒	☐	☐	N/A
B23	Is any vent or exhaust fitted with an effective fabric filter or equipment air pollution control system?	☒	☐	☐	N/A
B24	Is the exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after last construction activity on the construction site or part of the construction site where the exposed earth lies?	☒	☐	☐	N/A
B25	Are the worksites wetted with water regularly?	☐	☐	☒	Refer to Reminder 1
B26	Is generation of dust avoided during loading or unloading?	☐	☐	☒	Refer to Reminder 1
B27	Are all trucks loaded to a level within the side and tail boards?	☐	☒	☐	

B28	Are appropriate speed limit sign displayed?	☐	☒	☐	
B29	Are designated roads paved?	☐	☒	☐	
B30	Are site vehicle movements confined to designated roads?	☐	☒	☐	
B31	Are NRMM labels properly affixed on the PMEs?	☐	☒	☐	

C	Noise	N/A or Not Observed	Yes	No	Remarks / Photo
C1	Is well-maintained plant operated on-site and plant served regularly?	☐	☒	☐	
C2	Are vehicles and equipment switched off or throttled down while not in use?	☐	☒	☐	
C3	Is the noise directed away from nearby NSRs?	☐	☒	☐	
C4	Are the silencers or mufflers properly fitted on construction equipment and maintained regularly?	☒	☐	☐	N/A
C5	Are mobile and/or noisy plant sited as far away from NSRs as possible and practicable and orientated so that the noise is directed away from nearby NSRs?	☐	☒	☐	
C6	Are material stockpiles, mobile container officer and other structures utilised to screen noisy activates?	☒	☐	☐	N/A
C7	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	☒	☐	☐	N/A
C8	Are noise barriers (typically density @14kg/m^2) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	☒	☐	☐	N/A
C9	Is the sequencing operation of construction plants where practicable?	☐	☒	☐	
C10	Is the hoarding maintained properly?	☒	☐	☐	N/A
C11	Air compressors (500 kPa or above) and hand held percussive breaker (mass of above 10 kg) with valid noise labels?	☒	☐	☐	N/A
C12	Are compressor operated with doors closed?	☒	☐	☐	N/A
C13	QPME used with valid noise labels?	☐	☒	☐	
C14	Major noise source(s)				
		☐ Traffic			
		☒ Construction activities inside of site			
		☐ Construction activities outside of site			
		☐ Others: _____			

D	Water Quality	N/A or Not Observed	Yes	No	Remarks / Photo
Construction Activities					
D1	At the start of site establishment, are perimeter cut-off drains constructed to direct off-site water around the site with internal drainage works and erosion and sedimentation control facilities implemented?	☐	☒	☐	
D2	Are channels, earth bunds or sandbag barriers provided on site to properly direct stormwater to such silt removal facilities?	☐	☒	☐	
D3	Have dikes or embankments for flood protection implemented around the boundaries of earthwork areas?	☒	☐	☐	Not Observed
D4	Have temporary ditches provided to facilitate the runoff discharge into an appropriate watercourse, through a site/ sediment trap?	☐	☒	☐	
D5	Are the sediment/ silt traps incorporated in the permanent drainage channels to enhance deposition rate?	☐	☒	☐	
D6	Are the retention time for silt/s and traps of the silt removal facilities be 5 minutes under maximum flow conditions?	☐	☒	☐	
D7	Is surface excavation works minimised during rainy seasons (April to September), as possible?	☒	☐	☐	N/A
D8	Are all exposed earth areas completed or vegetated as soon as possible after earthworks completed, or alternatively, within 14 days of the cessation of earthworks where practicable?	☒	☐	☐	N/A
D9	Are exposed slope surfaces covered by tarpaulin sheets?	☐	☒	☐	
D10	Have the overall slope of the site should be kept a minimum?	☐	☒	☐	
D11	Are all trafficked areas and access roads protected by coarse stone ballast?	☐	☐	☐	
D12	Is wastewater from temporary site facilities controlled to prevent direct discharge to surface	☐	☒	☐	
D13	Are the silt removal facilities, channels and manholes maintained regularly?	☐	☒	☐	
D14	Is the deposited silt and grit removed regularly?	☐	☒	☐	
D15	Have the excavation of trenches in wet periods be dug and backfilled in short sections?	☒	☐	☐	N/A
D16	Is rainwater pumped out from trenches discharged into storm drains via silt system?	☒	☐	☐	N/A
D17	Are open stockpiles of construction materials e.g. aggregates and sand of more than $50m^3$ on site covered with tarpaulin or similar fabric during rainstorms?	☒	☐	☐	N/A
D18	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage?	☐	☒	☐	
D19	Are the discharges of surface run-off into foul sewer always prevented?	☐	☒	☐	
D20	Is a wheel washing bay provided at every site exit?	☐	☒	☐	

D21	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	☐	☒	☐	
D22	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	☐	☒	☐	
D23	Are the vehicle wash-water have sand and silt settled out and removed at least on a weekly basis?	☐	☒	☐	
D24	Are site drainage systems provided over the entire project site with sediment control facilities?	☐	☒	☐	
D25	Are sedimentation tanks provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	☐	☒	☐	
D26	Is the treated wastewater reused for vehicle washing, dust suppression and general cleaning?	☐	☒	☐	
D27	Are portable chemical toilets and sewage holding tanks provided?	☐	☒	☐	
D28	Is the sewage generated from toilets collected by licensed contractor and responsible for disposal and maintenance?	☐	☒	☐	
D29	Is there any sediment plume observed in nearby watercourses?	☒	☐	☐	N/A
D30	Are oil interceptors provided in the site drainage system downstream of any oil/ fuel pollution sources? And the oil interceptors are emptied and cleaned regularly? Has a bypass provided to prevent flushing during heavy rain?	☒	☐	☐	Not Observed
D31	Is chemical leakage or spillages contained and cleaned up immediately?	☒	☐	☐	N/A
D32	Service workshop and maintenance facilities located within a bunded area, and sumps and oil interceptors be provided?	☒	☐	☐	N/A

E	**Waste / Chemical Management**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
General Waste					
E1	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	☐	☒	☐	
E2	Is the general waste collected properly by using the waste separation facilities for paper, aluminium cans, plastic bottles etc.?	☐	☒	☐	
E3	Does accumulation of waste avoid?	☐	☒	☐	
E4	Is waste disposed regularly?	☐	☒	☐	
E5	Regular waste collection by approved waste collector in purpose-built vehicles?	☐	☒	☐	
E6	Burning of refuse on construction site prohibited?	☐	☒	☐	
Construction Waste					

E7	Are the temporary stockpiles maintained regularly?	☐	☒	☐	
E8	Is the excavated fill material reused for backfilling and reinstatement?	☒	☐	☐	N/A
E9	Are the C&D materials sorted and recycled on-site?	☒	☐	☐	N/A
E10	Is there any contract documents provided to allow and promote the use of recycled aggregates where appropriate?	☒	☐	☐	Not Observed
E11	Is the disposal of C&D materials avoided onto any sensitive locations e.g. agricultural lands etc.?	☐	☒	☐	
E12	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	☐	☒	☐	
E13	Is the durable formwork or plastic facing for construction works used?	☒	☐	☐	N/A
E14	Do the wooden hoardings avoid to be used?	☒	☐	☐	N/A
E15	Is metal hoarding used to enhance the possibility of recycling?	☒	☐	☐	N/A
E16	Is the segregation and storage of C&D wastes undertaken in designated area?	☐	☒	☐	
E17	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	☐	☒	☐	
E18	Do the excavated materials appear contaminated?	☐	☐	☒	
E19	If suspected contaminated, appropriate procedures followed?	☒	☐	☐	N/A
E20	Is hydroseeding of the topsoil on the stockpile implemented to improve visual appearance and prevent soil erosion?	☒	☐	☐	N/A
Chemical / Fuel Storage Area					
E21	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	☒	☐	☐	Not Observed
E22	Are the storage area enclosed 3 sides by walls/ fence of ≥2m tall and bounded with adequate bund capacity (>110% of largest container) or do the storage area allow storage of 20% of total volume of waste?	☒	☐	☐	Not Observed
E23	Are the storage areas labelled and separated (if needed)?	☒	☐	☐	Not Observed
E24	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	☒	☐	☐	Not Observed
E25	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	☒	☐	☐	Not Observed
E26	If no specification has been approved by EPD, are container with <450L capacity provided for storage of chemicals waste?	☒	☐	☐	Not Observed
Chemical Waste / Waste Oil					
E27	Is chemical waste or waste oil stored and labelled in English and Chinese properly in designated area?	☐	☒	☒	Refer to Reminder 2

E28	Are chemicals and waste oil recycled or disposed properly?	☒	☐	☐	Not Observed
E29	Is chemical waste collected by licensed waste collectors and disposed of at licensed facility eg. Chemical Waste Treatment Centre?	☐	☒	☐	
Records					
E30	Is a licensed waste hauler used for waste collection?	☐	☒	☐	
E31	Are the records of quantities of wastes generated, recycled and disposed properly kept?	☐	☒	☐	
E32	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	☒	☐	☐	N/A

F	**Landscape and Visual Impacts**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
F1	Is the work site confined within site boundaries?	☐	☒	☐	
F2	Is damage to surrounding areas avoided?	☐	☒	☐	
F3	Are the protective fencing erected along or beyond the perimeter of the tree protection zone of each individual tree?	☒	☐	☐	Not Observed
F4	Is early planting using fast growing plants at strategic locations within site implemented?	☒	☐	☐	N/A
F5	Is boundary green belt planting implemented around the site perimeter and the construction of temporary soil bunds?	☒	☐	☐	N/A
F6	Is temporary landscape treatment as green surface cover implemented?	☒	☐	☐	N/A
F7	Are existing and affected tree which identified as ecological significant preserved whenever possible?	☒	☐	☐	Not Observed

G	**Ecology**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
G1	Is transplantation of the important plant species implemented? Is post-transplantation maintained and monitored regularly?	☒	☐	☐	Not Observed

H	**Environmental Complaint**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
H1	Environmental Complaint received during this week?	☐	☒	☐	Received a complaint on 20/12

I	**General Housekeeping / Others**	**N/A or Not Observed**	**Yes**	**No**	**Remarks / Photo**
I1	Are the defined boundaries of working areas identified to prevent loss of vegetation	☐	☒	☐	
I2	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	☐	☒	☐	

Follow up action for previous Site Inspection:

1. The waste has been disposed.
2. The Contractor has cleaned up the channel at the vehicle wash bay in Portion A.

Observation(s):

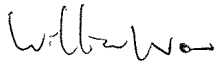
1. The vehicle road is covered with dusty materials in Portion A.

Reminder(s):

1. The work area is dry and fugitive dust is observed from loading and unloading activity in Portion D.
2. Latex paint drums are observed without drip trays in Portion A.

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

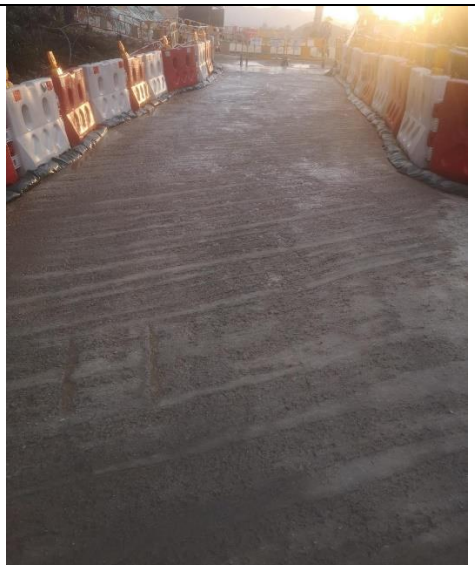
1. The vehicle entrance shall be kept clear of dusty materials.
2. The Contractor has been reminded to schedule watering for work area and to spray with water during loading and unloading activities.
3. Drip tray shall be provided for latex paint drums.

	Environmental Team Representative:	IEC's Representative:	Contractor's Representative:	Engineer's Representative
Signature:		/		
Name:	Andy Ng	/		Sylvia Ho
Date:	28 December 2022	/	28 December 2022	28 December 2022

PART I Follow-up status of the previous site inspection

Observation and Recommendation	Follow-up status
 1.The Contactor had been reminded to cover the exposed slope with impervious sheet for upcoming rainfall in this week.	Waiting for Contractor's input
 2.The Contactor had been recommended to increase the frequency of waste disposal to aviod accumulation of waste.	 The waste has been disposed.
 3.Sediments were accumulated in the channel at the vehicle wash bay in Portion A.	 The Contractor has cleaned up the channel at the vehicle wash bay in Portion A.

PART II Observation and recommendation identified during the environmental site inspection

Observation and Recommendation	**Follow-up status**
 Observation 1 : The vehicle road is covered with dusty materials in Portion A.	 The entrance has been cleaned up in Portion A after site inspection.
 Reminder 1 : The work area is dry and fugitive dust is observed from loading and unloading activity in Portion D.	 The Conrtactor has scheduled watering for work area and for loading and unloading activity in Portion D after site inspection.

Observation and Recommendation	Follow-up status
 Reminder 2 : Latex paint drums are observed without drip trays in Portion A.	

Appendix K Environmental Mitigation Implementation Schedule (EMIS)

North East New Territories (NENT) Landfill Extension
Environmental Mitigation Implementation Schedule (EMIS) Construction Phase

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. Covering with impermeable sheet should be provided for the inactive tipping area.	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
Groundwater Regime							
S5.8.2	GW1	1) Adopt precautionary / mitigation measures: • Provision of adequate water supply for irrigation purposes for the operational lifetime of the landfill extension, i.e. 10 to 12 years; • Installation of a network of monitoring stations to keep track of the stream flow volumes. Should monitoring of stream flow indicate insufficient quantities to provide sufficient water for irrigation downstream, a contractual requirement for the landfill operator to "tank in" water from an external source could be imposed. This is the system currently in place for the existing NENT Landfill; • Diversion of flow from other catchments. The surface runoff generated in the catchments with abandoned agricultural lands could be collected and conveyed to the active agricultural lands: • Formation of new extraction wells that extend deeper down within the aquifers • Provision of Piped Water Supply; and • Artificial recharge by surface spreading, spray irrigation or pumping water directly into the ground via vertical shafts.	Control and maintain ground water yield	Contractor	Entire construction site and villages around the site	TM-EIAO, Annex 6 and 14 HKPSG	To be implemented during operation, restoration and aftercare phases.

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	✓

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	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	✓

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
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.					✓

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
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.					✓

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
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.					✓

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
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	✓
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 within the coming 2 months.
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.					✓

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
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.					✓
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.					✓

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
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					✓

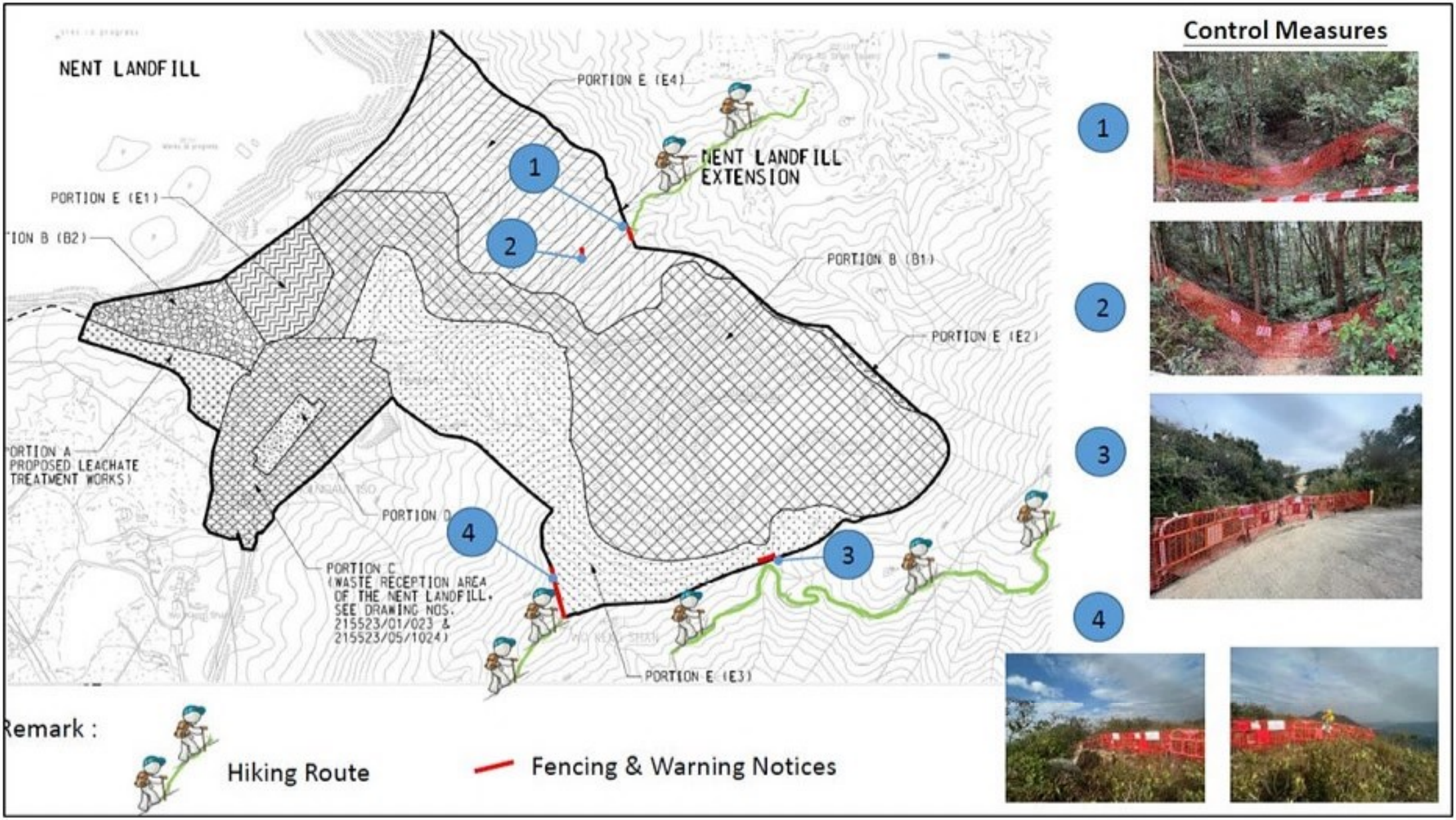
Appendix L Construction Site Activities

Construction Site Acitivities for Dec 2022

Construction Activities	Photos	Construction Period	Where	Contractor/ Sub-contractor	Potential Environmental Impacts	Mitigation Measures
GI Works		Dec 22, Jan 23	Portion A, Portion D, Landfill Area	Sub-contractor	Washout flowing to site water discharge point	Recycling of water, operation and maintenance of water treatment facility at Discharge Points (DPs)
Material loading and unloading, site traffic		Dec 22 to Dec 23	Portion A to SBA, Portion D to SBA	Sub-contractor	Dust	Speed limit, covers and water spraying
Permanent site office foundation works with pouring of concrete		Dec 22 to June 23	Portion D	Sub-contractor	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 DPs
Site clearance		Dec 22 to June 23	Portion A, Portion E3-1	Sub-contractor	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 DPs, implementation of trip ticket system
Installation of permanent fencing		Dec 22 to June 23	Portion A, Portion E3-2, Portion E4	Sub-contractor	Dust	Covering of cement storage area, enclosure of mixing area
Site formation		Dec 22 to Dec 23	Portion A	Sub-contractor	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)	Sub-contractor	Generation of yard waste	Implementation of trip ticket system, waste recycling, internal waste transfer

Appendix M Mitigation Measures of Cultural Landscape Features

Site boundary control to prevent from trespassing



Appendix N Ecological Monitoring Record

Post-translocation monitoring photo record extracted from post-translocation report (December 2022)

Cleared riparian vegetation in the monitoring area

Hand netting at a potential habitat (vegetation) along the watercourse

Kick-netting to search for *S. zanklon*

B.1 Incense Tree *Aquilaria sinensis*

Photo B.1.1. : General view of the transplanted individual AS-03.

Photo B.1.2. : Leaf condition of the transplanted individual AS-03.

Photo B.1.3. : General view of the transplanted individual AS-02.

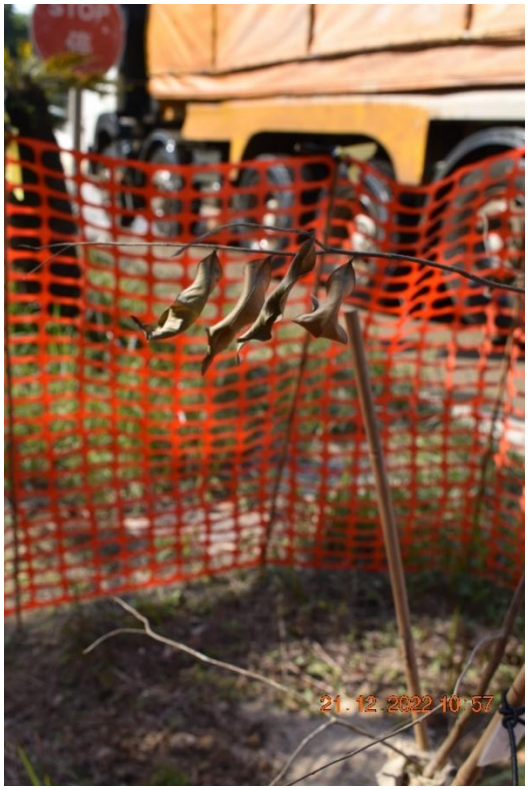


Photo B.1.4. : Leaf condition of the transplanted individual AS-02.

B.2 Lamb of Tartary *Cibotium barometz*

Photo B.2.1. : General view of the transplanted individual CB-01.

Photo B.2.2. : Leaf condition of the transplanted individual CB-01.

Photo B.2.3. : Stem condition of the transplanted individual CB-01.

Photo B.2.4. : Leaf condition of the transplanted individual CB-01.

B.3 Bottlebrush Orchid *Goodyera procera*

Photo B.3.1: Individual GP-01. Partially wilted leaf.

Photo B.3.2: Individual GP-01. Partially wilted leaf.

Photo B.3.3: Individual GP-02. Wilted leaf.

Photo B.3.4: Individual GP-03. Perforated leaves.

Photo B.3.5: Individual GP-03. Perforated leaves.

Photo B.3.6: Individual GP-04. Wilted leaf.

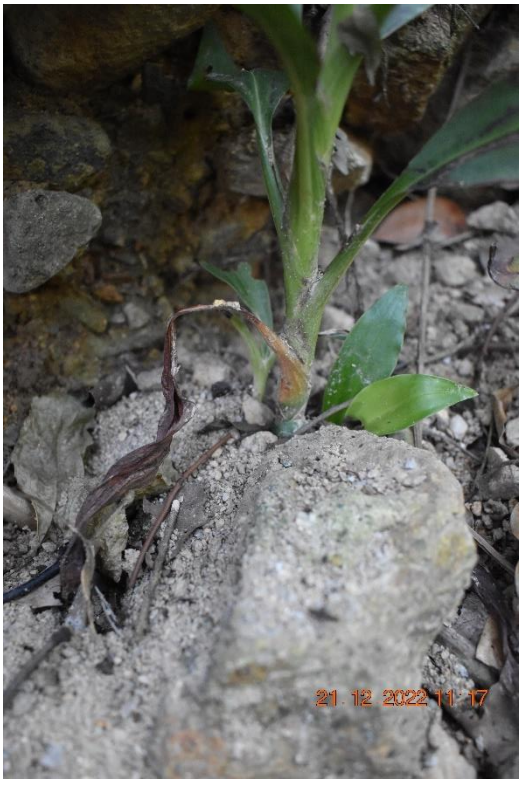


Photo B.3.7: Individual GP-04. Wilted leaf.

Photo B.3.8: Individual GP-05. Partially wilted leaf.

Photo B.3.9: Individual GP-06. Partially wilted leaf.

Photo B.3.10: Individual GP-06. Partially chlorotic and wilted leaf.

Photo B.3.11: Individual GP-07.

Photo B.3.12: Individual GP-07. Single chlorotic leaf.

Photo B.3.13: Individual GP-08. Minor chlorotic leaves.

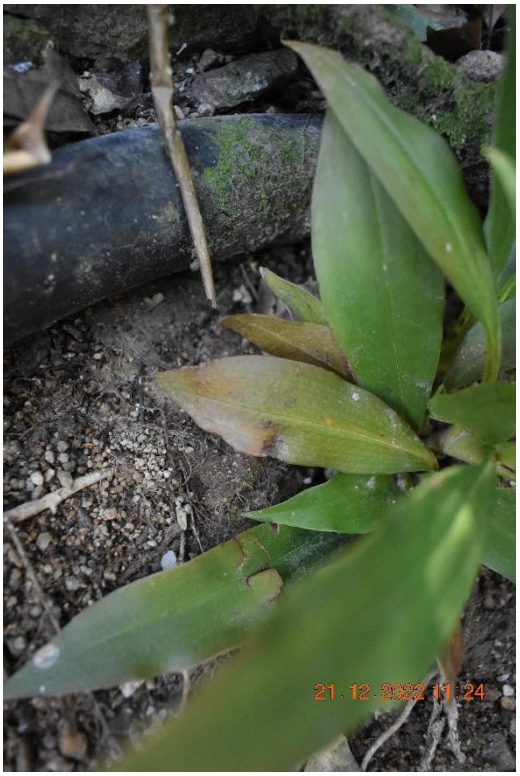


Photo B.3.14: Individual GP-08. Minor chlorotic leaves.

Photo B.3.15: Individual GP-09.

Photo B.3.16: Individual GP-10. Holes in leaves.

Photo B.3.17: Individual GP-11. Partially wilted leaves.

Photo B.3.18: Individual GP-12. Perforated leaves.

Photo B.3.19: Individual GP-13.

Photo B.3.20: Individual GP-14. Chlorotic leaves.

Photo B.3.21: Individual GP-15. Partially chlorotic leaves.

Photo B.3.22: Individual GP-16.

Photo B.3.23: Individual GP-17. Partially wilted leaf.

Photo B.3.24: Individual GP-18. Partially wilted leaves.

Photo B.3.25: Individual GP-19.

Photo B.3.26: Individual GP-19. Holes in leaves.

B.1 Incense Tree *Aquilaria sinensis*

Photo B.1.1. : General view of the transplanted individual AS-03.

Photo B.1.2. : Leaf condition of the transplanted individual AS-03.

Photo B.2.3. : General view of the transplanted individual AS-02.

Photo B.1.4. : Leaf condition of the transplanted individual AS-02.

B.2 Lamb of Tartary *Cibotium barometz*

Photo B.2.1: General view of the transplanted individual CB-01.

Photo B.2.2: Figure 2.2: Wilted leaves of the transplanted individual CB-01.

Photo B.2.3: Wilted leaves of the transplanted individual CB-01.

B.3 Bottlebrush Orchid *Goodyera procera*

Photo B.3.1: Individual GP-01. Partially wilted leaf.

Photo B.3.2: Individual GP-02. Chlorotic leaf.

Photo B.3.3: Individual GP-03.

Photo B.3.4: Individual GP-03. Perforated leaves.

Photo B.3.5: Individual GP-04. Wilted leaf.

Photo B.3.6: Individual GP-04. Wilted leaf.

Photo B.3.7: Individual GP-05. Partially wilted leaf.

Photo B.3.8: Individual GP-05. Partially wilted leaf.

Photo B.3.9: Individual GP-06. Partially wilted leaf.

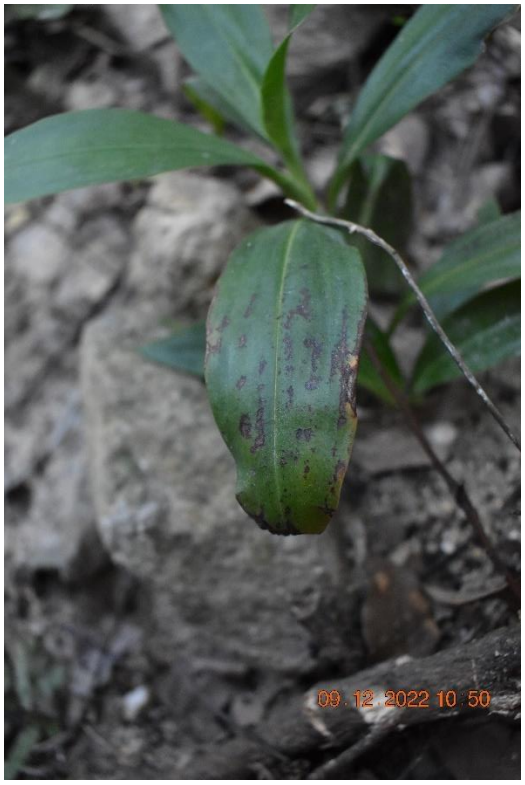


Photo B.3.10: Individual GP-06. Partially wilted leaf.

Photo B.3.11: Individual GP-07.

Photo B.3.12: Individual GP-07. Single chlorotic leaf.

Photo B.3.13: Individual GP-08. Holes in leaves.

Photo B.3.14: Individual GP-09. Holes in leaves.

Photo B.3.15: Individual GP-10. Holes in leaves.

Photo B.3.16: Individual GP-11. Partially wilted leaves.

Photo B.3.17: Individual GP-12. Perforated leaves.

Photo B.3.18: Individual GP-12. Perforated leaves.

Photo B.3.19: Individual GP-13.

Photo B.3.20: Individual GP-14. Chlorotic leaves.

Photo B.3.21: Individual GP-15.

Photo B.3.22: Individual GP-16.

Photo B.3.23: Individual GP-17.

Photo B.3.24: Individual GP-18.

Photo B.3.25: Individual GP-19.

Photo B.3.26: Individual GP-19. Partially wilted leaves.

Appendix O Investigation Report

Environmental Complaint/ Enquiry Form

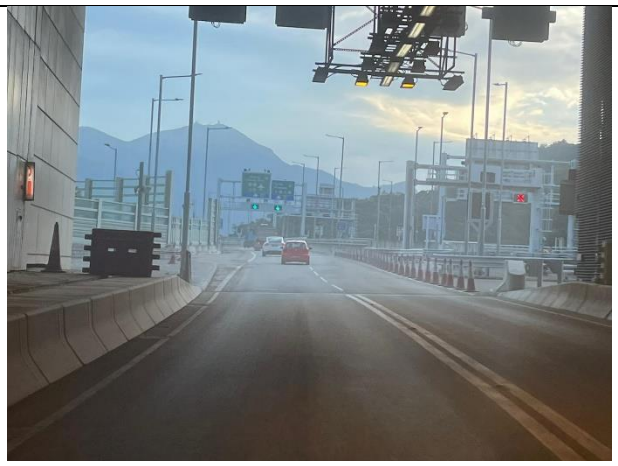
Complaint/ ~~Enquiry~~ Received	
Date:	21 December 2022
Time:	14:28
From	Veolia (Environmental Manager referred the email from Complainant to ET)
Via:	Email
Complainant/ ~~Enquirer~~*:	
Name:	Undisclosed
Tel.:	Undisclosed
Address:	Undisclosed
E-mail:	Undisclosed
Complaint/ ~~Enquiry~~*:	
Date of complaint/ enquiry:	20 December 2022
Time of complaint/ enquiry:	15:06
Aspect:	Dust / ~~Noise / Water / Other*:~~

Description:

It was noted from Veolia's email to the Environmental Team on 20 December 2022 that Veolia received 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. The content of the complainant email is appended below.

"你好！多次想以電話興你溝通關於下禾經迴旋處路面很多沙石的問題。事因本處大量居民反映迴旋處路面很多泥及沙石，是由堆填區的車帶出來的。此外，入到龍山隧道往九龍方向的時候，由於堆填區出嚟的泥頭車轆依然有泥，令到隧道沙塵滾滾阻礙其他司機的行車視線。議員希望貴公司做好車輛出入推填區的清潔。"

Photo 1	Photo 2
	

Photo 3	
	

Investigation Results & Response:

IEC notified on: 21 December 2022

Results of investigation:

According to the construction record, no dusty materials and wastes were transported out from the NENTX site during the complaint period. The site activities in December 2022 included the site formation works at Portion A, site clearance works at Portion D & site clearance and GI works at Portion B & E.

During the regular weekly site inspection on 5, 12 & 19 December 2022, it was observed that the wheel washing facilities with high-pressure water jets have been provided at all site exits of NENTX (i.e. Portion A and Portion D) and cleaned all vehicles 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.

No mud generated from vehicles under the NENTX project after exiting the site entrance was observed.

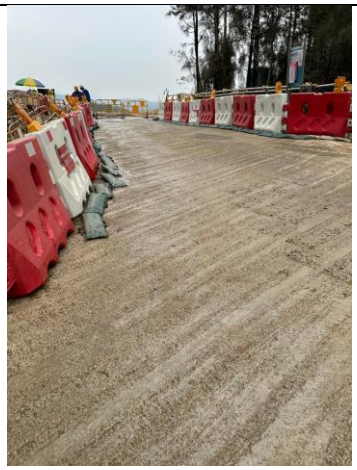
Photo 4	Photo 5
	
Site Entrance/Exit at Portion A of NENTX project.	Wheel washing facilities with high pressure water jet provided at Site Entrance/Exit of Portion A

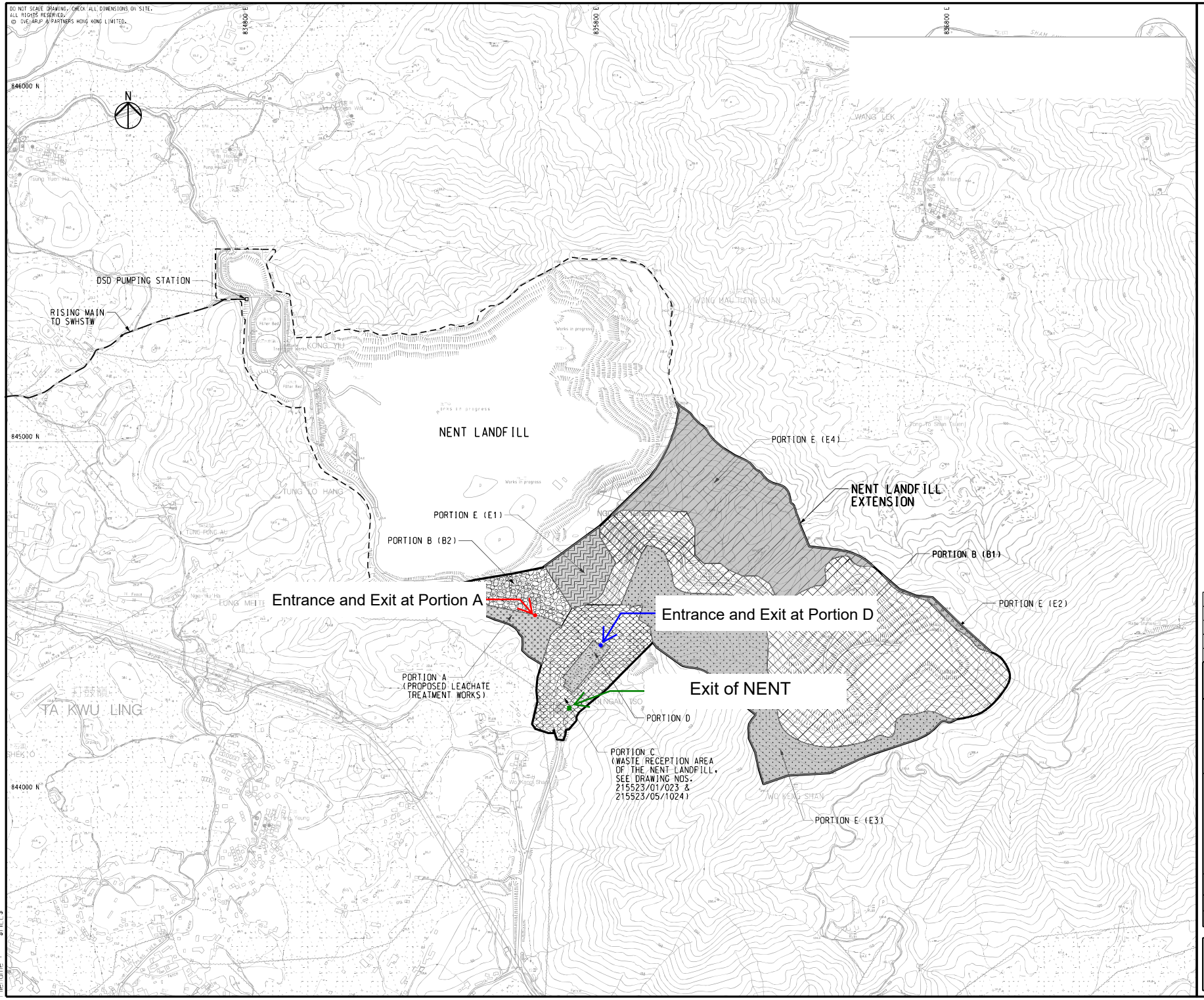
Photo 6	Photo 7
	
Site Exit at Portion D of NENTX project	Site Exit of NENT

Recommendations/ Mitigation Measures/ Actions if necessary:

Based on the investigation result, there is no direct evidence showing that the complaint is likely related to the NENTX project. The Contractor has been reminded to implement the mitigation measures such as the provision of the concrete paved wheel washing area and other measures specified and required in the EIA Report, the EM&A Manual and the EP/FEP to minimize dust impact/ improve cleanliness.

Prepared by : Jason Man Date : 30 December 2022

Reviewed by : Keith Chau Date : 30 December 2022



LEGEND

- NENT LANDFILL
- NENT LANDFILL EXTENSION
- PORTION A – NEW LAND
- PORTION B (B1) – HAUL ROUTE, STOCKPILE & BORROW AREA OF THE NENT LANDFILL
- PORTION B (B2) – A PIECE OF LAND OF THE NENT LANDFILL
- PORTION C – WASTE RECEPTION AREA OF THE NENT LANDFILL
- PORTION D – AREA FOR WASTE RECEPTION FACILITIES OF NENT LANDFILL EXTENSION
- PORTION E (E1) – NEW LAND
- PORTION E (E2) – NEW LAND
- PORTION E (E3) – NEW LAND
- PORTION E (E4) – NEW LAND
- PORTION OF SITE HANDED OVER ON 25 FEB 2022

Rev	Description	By	Date
0	ISSUE FOR TENDER	SS	12/20

Consultant
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project title
Contract No. EP/SP/77/15
North East New Territories
Landfill Extension

Drawing title
PORTIONS OF THE SITE

Drawing no.	Rev.
215523/01/015	0

Drawn	Date	Checked	Approved
RY	11/19	PM	FW

Scale 1:5000 @A1
Status TENDER

環境保護署 Environmental Protection Department

Printed by : $USER$
File name : $FILE$ $DATE$

Appendix P Detail Status of Submissions required under the FEP & EP

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	Submission Date (12 Oct 2022)
2.3	2.5	Submission of EM&A Manual	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	Submission Date (19 Jan 2023) 1st transplantation monitoring (24 Nov 2022) 2nd transplantation monitoring (9 Dec 2022) 3rd transplantation monitoring (21 Dec 2022)
2.8	2.10	Translocation and translocation monitoring	Translocation was carried out in July 2022 Submission Date (27 December 2022) 1st translocation monitoring (29 Aug 2022) 2nd translocation monitoring (28 Sep 2022) 3rd translocation monitoring (28 Oct 2022) 4th translocation monitoring (28 Oct 2022) 5th translocation monitoring (29 Dec 2022)
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)

Prepared by:

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