翠谷工程有限公司
Green Valley Landfill, Limited

South East New Territories (SENT) Landfill Extension

Annual Environmental Monitoring & Audit Report No.4

September 2023

ERM

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翠谷工程有限公司
Green Valley Landfill, Limited

South East New Territories (SENT) Landfill Extension

Environmental Certification Sheet
EP-308/2008/B and FEP-01/308/2008/B

Reference Document/Plan

Document/Plan to be Certified/Verified:	Annual Environmental Monitoring & Audit Report No. 4 for South East New Territories (SENT) Landfill Extension
Date of Report:	7 September 2023

Reference EM&A Manual Requirement

EM&A Manual: Section 11.5

The Annual EM&A summary report shall be prepared by the ET, certified by the ET Leader and verified by the IEC. The Annual EM&A summary report should contain all information listed under Section 11.5 of the approved EM&A Manual.

ET Certification

I hereby certify that the above referenced document/plan complies with the above referenced EM&A Manual requirement.

Terence Fong,
Environmental Team Leader:
(ERM Hong-Kong, Limited)

Date: 7 September 2023

IEC Verification

I hereby verify that the above referenced document/plan complies with the above referenced EM&A Manual requirement.

Claudine Lee,
Independent Environmental Checker:
(Meinhardt Infrastructure and Environment Limited)

Date: 7 September 2023

South East New Territories (SENT) Landfill Extension

Annual Environmental Monitoring & Audit Report No.4

Environmental Resources Management

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Client:	Project No:
Green Valley Landfill Ltd.	0465169
Summary:	Date: 7 September 2023
This document presents the Annual EM&A Report No.4 for *South East New Territories (SENT) Landfill Extension*	Approved by:  Terence Fong *Partner*

Revision	Description	By	Checked	Approved	Date
0	Annual EM&A Report No.4	AL	TF	TF	7 Sep 23

Distribution

☐ Internal

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☐ Confidential

bsi. ISO 9001 Quality Management ISO 45001 Occupational Health and Safety Management

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ANNEXES

The SENT Landfill Extension (SENTX) forms an integral part in the Strategic Plan in maintaining the continuity of landfill capacity in the Hong Kong for the cost-effective and environmentally satisfactory disposal of waste. ERM-Hong Kong, Limited (ERM) is commissioned to undertake the role of Environmental Team (ET) for the construction, operation/restoration and aftercare of SENTX Project ("the Project") in accordance with the requirements specified in the Environmental Permit (EP), updated Environmental Monitoring and Audit (EM&A) Manual, the approved Environmental Impact Assessment (EIA) Report of the Project taking account of the latest design and other relevant statutory requirements. The construction (not including works related to site clearance and preparation) and operation of the Project commenced on 2 January 2019 and 21 November 2021, respectively.

This Annual EM&A Report presents the EM&A works carried out during the period from 1 January to 31 December 2022 for the Project in accordance with the updated EM&A Manual.

Exceedance of Action and Limit Levels for Air Quality

Two exceedances of the Action and Limit Levels for dust (TSP), two exceedances of the Limit Level for landfill gas flare stack emission (SO_2) and one exceedance of Limit Level for landfill gas flare stack emission (Benzene) were recorded for air quality monitoring in the reporting period.

The TSP exceedance at AM2 on 29 July 2022 was considered Project-related while the exceedance at AM4 on 29 July 2022 was considered non Project-related upon further investigation.

The landfill gas flare stack emission (SO_2) exceedances on 14 October 2022 and 17 November 2022 and landfill gas flare stack emission (Benzene) exceedance on 13 December 2022 were considered Project-related upon further investigation.

Exceedance of Action and Limit Levels for Noise

No exceedance of Action and Limit Levels for operation/ restoration phase noise monitoring was recorded in the reporting period.

Exceedance of Action and Limit Levels for Water Quality

Eight exceedances of the Limit Level for groundwater (Chemical Oxygen Demand (COD)), three exceedances of the Limit Level for surface water (suspended solid (SS)), sixteen exceedances of the Limit Level for leachate level and one exceedance of Limit Level for leachate quality (Chromium) were recorded for water quality impact monitoring in the reporting period.

The SS exceedances at DP4 on 25 May 2022, 30 June 2022 and 8 July 2022 were found deemed to Project-related activities and weekly surface water quality (SS) monitoring has been commenced since June 2022. The additional surface

water monitoring results (SS) at DP4 on 15 July 2022 complied with the Limit Level as stipulated in the updated EM&A Manual and the weekly surface water monitoring (SS) at DP4 was terminated.

The groundwater (COD) exceedances at MWX-4 and MWX-6 on 15 February 2022, at MWX-4 on 15 March 2022, at MWX-4, MWX5 and MWX6 on 11 April 2022 and at MWX-7 on 18 August 2022 and 6 September 2022 were considered non Project-related upon further investigation.

The leachate level exceedances at Pump Station No. 4X from 12 August to 20 August 2022, from 30 September 2022 to 3 October 2022 and from 3 November 2022 to 4 November 2022, and at Pump Station No. 3X on 3 November 2022 were considered Project-related upon further investigation.

The leachate quality (Chromium) exceedance on 6 December 2022 was considered Project-related upon further investigation.

Exceedance of Action and Limit Levels for Landfill Gas

Two exceedances of the Limit Level for methane were recorded for perimeter landfill gas monitoring in the reporting period. The landfill gas (methane) exceedances at LFG6 on 17 May 2022 and at LFG13 on 3 October 2022 were considered non Project-related upon further investigation.

Environmental Complaints, Summons and Prosecutions

There were no complaints, notification of summons or prosecution recorded in the reporting period.

Reporting Change

There was no reporting change in the reporting period.

1 INTRODUCTION

1.1 BACKGROUND

The SENT Landfill Extension (SENTX) forms an integral part in the Strategic Plan in maintaining the continuity of landfill capacity in the Hong Kong for the cost-effective and environmentally satisfactory disposal of waste. The *Environmental Impact Assessment (EIA) Report* and the associated *Environmental Monitoring and Audit (EM&A) Manual* for the construction, operation, restoration and aftercare of the SENTX (hereafter referred to as "the Project") have been approved under the *Environmental Impact Assessment Ordinance (EIAO)* in May 2008 (Register No.: AEIAR-117/2008) (hereafter referred to as the approved EIA Report) and an Environmental Permit (EP-308/2008) (EP) was granted by the Director of Environmental Protection (DEP) on 5 August 2008.

Since then, applications for Variation of an Environmental Permit (No. VEP-531/2017) were submitted to EPD and the Variation of Environmental Permits (EP-308/2008/A and EP-308/2008/B) were granted on 6 January 2012 and 20 January 2017, respectively, as the Hong Kong SAR Government has decided to reduce the scale of the design scheme of SENTX assessed in the approved EIA Report and SENTX will only receive construction waste. In May 2018, a Further Environmental Permit (FEP) (FEP-01/308/2008/B) was granted to the SENTX's contractor, Green Valley Landfill, Limited (GVL).

ERM-Hong Kong, Limited (ERM) and Meinhardt Infrastructure and Environment Limited (Meinhardt) are commissioned to undertake the roles of Environmental Team (ET) and the Independent Environmental Checker (IEC), respectively, to undertake the EM&A activities for the Project in accordance with the requirements specified in the EP, updated EM&A Manual (1), approved EIA Report (2) taking account of the latest design and other relevant statutory requirements.

1.2 PROJECT DESCRIPTION

The SENTX is a piggyback landfill, occupying the southern part of the existing SENT Landfill (including its infrastructure area) and 13 ha of Tseung Kwan O (TKO) Area 137. A layout plan of the SENTX is shown in *Figure 1.1*. Under the latest design, the SENTX has a net void capacity of about 6.5 Mm^3 and provides an additional lifespan of about 6 years, commencing operation upon exhaustion of the SENT Landfill. The SENTX will receive construction waste only.

(1) ERM (2018). South East New Territories (SENT) Landfill Extension: Environmental Monitoring & Audit Manual

(2) ERM (2007). South East New Territories (SENT) Landfill Extension – Feasibility Study: Environmental Impact Assessment Report

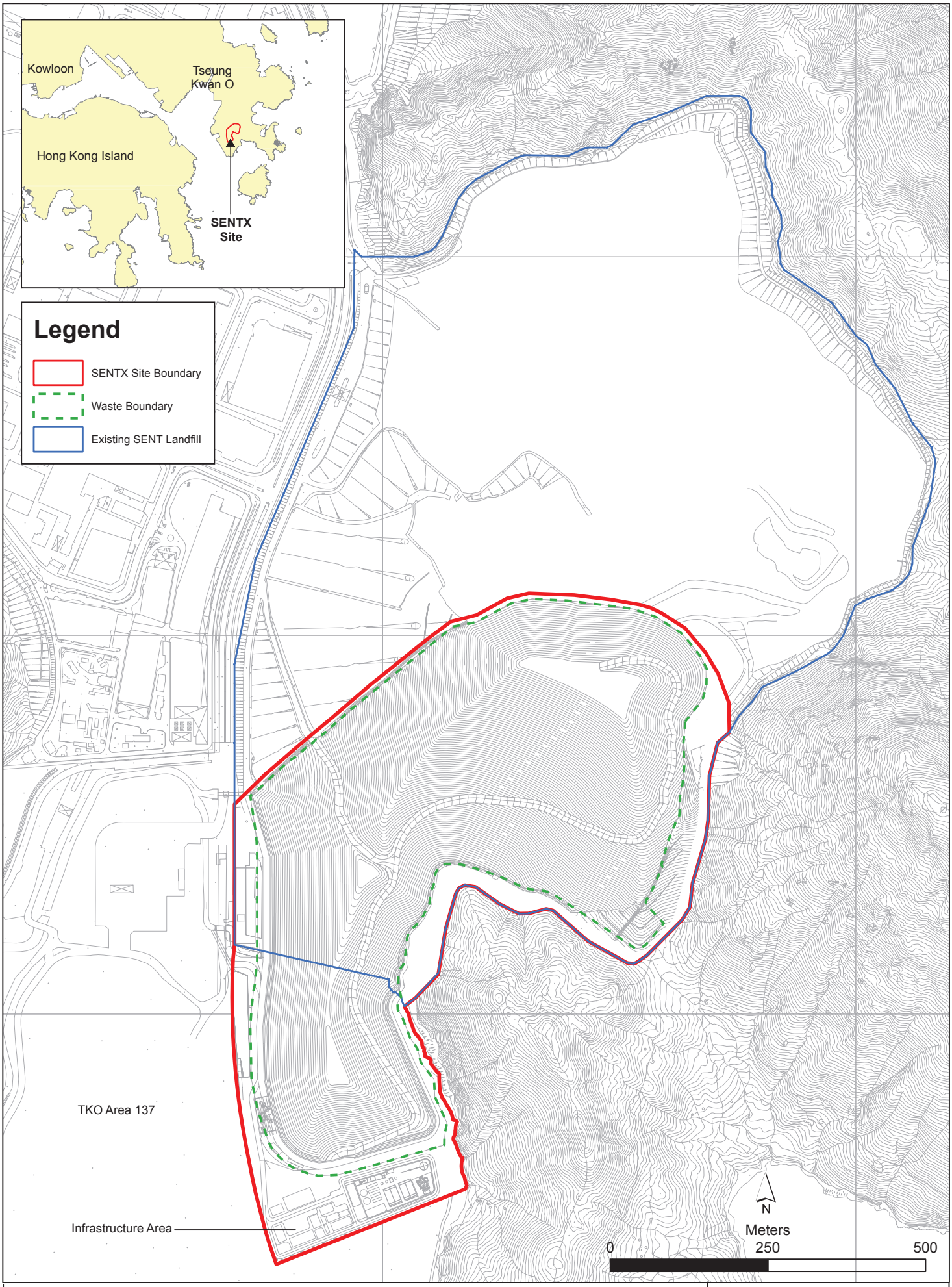

Figure 1.1

Layout Plan of SENTX

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Date: 5/9/2018

Environmental Resources Management

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The key implementation milestones of the Project are indicatively summarised in *Table 1.1*. The construction works and operation of the Project commenced on 2 January 2019 and 21 November 2021, respectively.

Table 1.1 Estimated Key Dates of Implementation Programme

Key Stage of the Project	Indicative Date
Start construction	2 January 2019
Commissioning of new infrastructure facilities	2020
Demolition of existing infrastructure facilities	2021
Start waste intake at SENTX	21 November 2021
Estimated exhaustion date of SENTX	2027
End of aftercare for SENTX	2057

The major construction works of the SENTX includes:

- Site formation at the TKO Area 137 and the existing infrastructure area at SENT Landfill;
- Construction of surface and groundwater drainage systems;
- Construction of the leachate containment and collection systems;
- Construction of new leachate and landfill gas treatment facilities, site offices, maintenance yards at the new infrastructure area;
- Construction of new pipelines to transfer the leachate and landfill gas collected from the existing SENT Landfill to the treatment facilities at the new infrastructure area;
- Construction of the site access and new waste reception facilities; and
- Demolition of the facilities at the existing SENT Landfill infrastructure area.

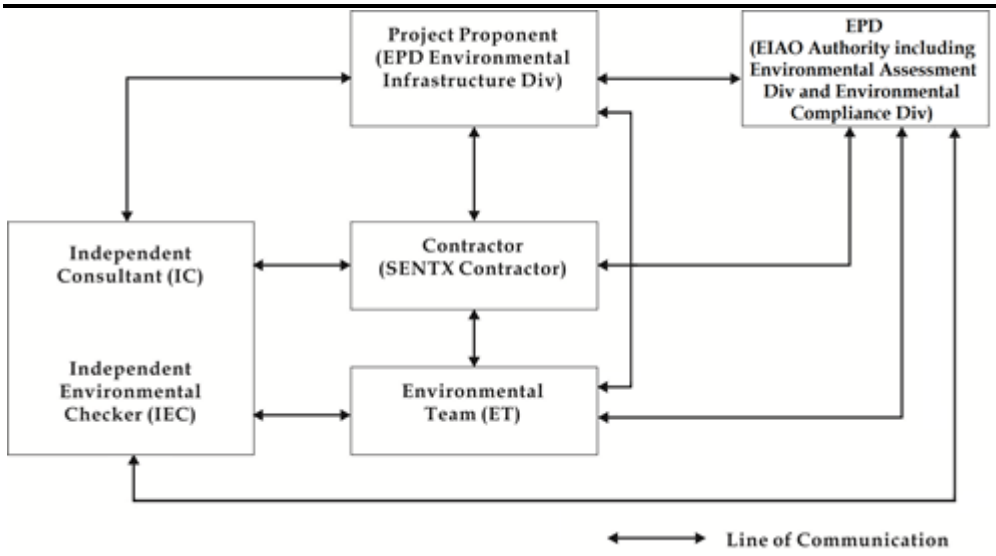
1.3 SCOPE OF THE EM&A REPORT

This is the Annual EM&A Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 January to 31 December 2022 for the operation works.

1.4 PROJECT ORGANISATION

The organisation structure of the Project is presented in *Figure 1.2*.

Figure 1.2 Organisation Chart



Contact details of the key personnel are summarized in *Table 1.2* below.

Table 1.2 Contact Information of Key Personnel

Party	Position	Name	Telephone
Contractor (Green Valley Landfill Limited)	Project Manager	Carl Lai	2706 8829
Environmental Team (ET) (ERM-Hong Kong, Limited)	ET Leader	Terence Fong	2271 3156
Independent Environmental Checker (IEC) (Meinhardt Infrastructure and Environment Limited)	IEC	Claudine Lee	2859 5409

1.5 SUMMARY OF CONSTRUCTION WORKS

The programme of the construction is shown in *Annex A*. As informed by the Contractor, the major works carried out in this reporting period include:

January 2022

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Rectification of defects for underground utilities and pipe;
- Construction of pump house 4X;
- Construction of MSE wall;
- Site formation for Cell 4X;

- Liner works at Cell 4X; and
- Maintenance and improvement of temporary surface water drainage.

February 2022

- Rectification of defects at LFG Plant, LTP, infrastructure area and waste reception area;
- Rectification of defects for underground utilities and pipe;
- Construction of MSE wall;
- Site formation for Cell 4X;
- Liner works at Cell 4X;
- Construction of perimeter channel along Western bund of Cell 4X; and
- Maintenance and improvement of temporary surface water drainage.

March 2022

- Rectification of defects at LFG Plant, LTP, infrastructure area and waste reception area;
- Landscaping works at infrastructure area;
- Rectification of defects for underground utilities and pipe;
- Construction of MSE wall;
- Construction of retaining wall at Western boundary planting;
- Liner works at Cell 4X;
- Construction of perimeter channel X10A and X10C along Western bund of Cell 4X;
- Maintenance and improvement of temporary surface water drainage; and

Utilities installation along Western bund of Cell 4X.

April 2022

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Landscaping works at infrastructure area;
- Rectification of defects for underground utilities and pipe;
- Construction of MSE wall;

- Construction of retaining wall at Western boundary planting;
- Liner works at Cell 4X;
- Construction of perimeter channel X10A and X10C along Western bund of Cell 4X;
- Maintenance and improvement of temporary surface water drainage; and
- Utilities installation along Western bund of Cell 4X.

May 2022

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Landscaping works at infrastructure area;
- Rectification of defects for underground utilities and pipe, road pavement of EVA along Western Bund from main entrance to infrastructure;
- Construction of road pavement on top of the MSE wall;
- Construction of Cell 4X and SENT tie in area;
- Construction of perimeter channel X10A and X10C along Western bund of Cell 4X;
- Maintenance and improvement of temporary surface water drainage;
- Deployment of liner at Buttress Wall area;
- Equipment installation at Sump House 4; and
- Utilities installation along Western bund of Cell 4X.

June 2022

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Landscaping works at infrastructure area;
- Rectification of defects for underground utilities and pipe;
- Construction of road pavement on top of the MSE wall;
- Construction of Cell 4X and SENT tie in area;
- Construction of perimeter channel X10A and X10C along Western bund of Cell 4X;

- Maintenance and improvement of temporary surface water drainage;
- Deployment of liner at Buttress Wall area;
- Equipment installation at Sump House 4; and
- Utilities installation along Western bund of Cell 4X.

July 2022

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Landscaping works at infrastructure area;
- Rectification of defects for underground utilities and pipe;
- Construction of road pavement on top of the MSE wall;
- Construction of Cell 4X and SENT tie in area;
- Construction of perimeter channel X10A and X10C along Western bund of Cell 4X;
- Maintenance and improvement of temporary surface water drainage; and
- Rectification of utilities installation along Western bund of Cell 4X.

August 2022

- Rectification of defects at LFG Plant, LTP, infrastructure area and waste reception area;
- Landscaping works at infrastructure area;
- Rectification of defects for underground utilities and pipe;
- Construction of Cell 4X and SENT tie in area;
- Construction of road pavement at diesel fuel tank and installation of railing;
- Construction of road pavement at Western perimeter bund;
- Maintenance and improvement of temporary surface water drainage; and
- Rectification of utilities installation along Western bund of Cell 4X.

September 2022

- Rectification of defects at LFG Plant, LTP, infrastructure area and waste reception area;

- Landscaping works at infrastructure area;
- Rectification of defects for underground utilities and pipe;
- Construction of Cell 4X and SENT tie in area and rock wall;
- Deployment of liner at cell 4X and SENT tie in area;
- Installation of GMS frame for roof planter at roof floor of GVL , EPD and lab building;
- Construction of concrete plinth for pump and concrete kerb for inlet box at the top of diesel fuel tank;
- Maintenance and improvement of temporary surface water drainage; and
- Rectification of utilities installation along Western bund of Cell 4X.

<u>October 2022</u>

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Installation of roof planter at infrastructure area;
- Rectification of defects for underground utilities and pipe;
- Construction of Cell 4X and SENT tie in area and rock wall;
- Demolition of existing DP3 channel;
- Tree removal at Cell 4X and SENT tie in area;
- Deployment of liner at Cell 4X and SENT tie in area;
- Maintenance and improvement of temporary surface water drainage; and
- Rectification of utilities installation along Western bund of Cell 4X.

<u>November 2022</u>

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Construction of Cell 4X and SENT tie in area;
- Maintenance and improvement of temporary surface water drainage;
- Rectification of utilities installation along Western bund of Cell 4X;
- Deployment of 1350g/m^2 non-woven geotextile cushion layer at Cell 4X Buttress Wall 1st bench; and

- Deployment of 540g/cm² non-woven geotextile, geocomposite, GCL, 60mil HDPE double-textured geomembrane, 80mil HDPE double-textured geomembrane at Cell 4X (tie-in with SENT landfill) at North side.

December 2022

- Rectification of defects at Landfill Gas (LFG) Plant, Leachate Treatment Plant (LTP), infrastructure area and waste reception area;
- Construction of Cell 4X tie-in to SENT and rockwall;
- Construction of Cell 4X overflow weir;
- Maintenance and improvement of temporary surface water drainage; and
- Construction of DP3 leachate pipe connection.

The implementation schedule of the mitigation measures recommended in the Updated EM&A Manual is presented in *Annex B*.

1.6 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

The status for all environmental aspects are presented in *Table 1.3*. The EM&A requirements remained unchanged during the reporting period.

Table 1.3 Summary of Status for the Environmental Aspects under the Updated EM&A Manual

Parameters	Status
Air Quality	
Baseline Monitoring	The results of baseline air quality monitoring were reported in Baseline Monitoring Report and Pre-operation Baseline Monitoring Report and submitted to EPD under EP Condition 3.3
Impact Monitoring	On-going
Noise	
Baseline Monitoring	The results of baseline noise monitoring were reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.3
Impact Monitoring	On-going
Water Quality	
Baseline Monitoring	The results of baseline water quality monitoring were reported in Baseline Monitoring Report and Pre-operation Baseline Monitoring Report and submitted to EPD under EP Condition 3.3
Impact Monitoring	On-going
Landfill Gas	
Baseline Monitoring	The results of baseline landfill gas monitoring were reported in Pre-operation Baseline Monitoring Report and submitted to EPD under EP Condition 3.3
Impact Monitoring	On-going
Waste Management	
Waste Monitoring	On-going
Landscape and Visual	
Baseline Monitoring	The results of baseline landscape and visual monitoring were reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.3
Construction Phase Audit	On-going
Site Environmental Audit	
Regular Site Inspection	On-going
Complaint Hotline and Email Channel	On-going
Environmental Log Book	On-going

Taking into account the operation works, impact monitoring of air quality, noise, water quality, landfill gas and waste management were carried out in the reporting period. The impact monitoring schedule of air quality, noise, water quality and landfill gas monitoring are provided in *Annex C*.

The EM&A programme also involved environmental site inspections and related auditing conducted by the ET for checking the implementation of the required environmental mitigation measures recommended in the approved EIA Report and relevant EP submissions. To promote the environmental awareness and enhance the environmental performance of the contractors, environmental trainings and regular environmental management meetings were conducted during the reporting period, which are summarised as below:

- Twelve environmental management meetings were held with the

Contractor, ER, ET, IEC and EPD on 20 January, 24 February, 24 March, 21 April, 19 May, 23 June, 21 July, 18 August, 15 September, 20 October, 17 November and 15 December 2022; and

- Environmental toolbox trainings on the following topics were provided by the Contractor to the workers:
    - Site Practice for Waste Reduction in Construction Industry on 4 January 2022;
    - Clean Recycling on 18 January 2022;
    - Quality Powered Mechanical Equipment (QPME) on 9 February 2022;
    - Good Vehicle Maintenance Practices on 23 February 2022;
    - Chemical Waste Handling on 9 March 2022;
    - Green Procurement on 23 March 2022;
    - Persistent Organic Pollutants on 6 April 2022;
    - Mosquito Control on 20 April 2022;
    - Cut Down Construction Dust on 11 May 2022;
    - Indoor Air Quality on 25 May 2022;
    - Trip Ticket System on 8 June 2022;
    - Wastewater Management on 22 June 2022;
    - Illegal Dumping on 6 July 2022;
    - Air Pollution – Dark Smoke on 21 July 2022;
    - Noise Control Ordinance on 11 August 2022;
    - NRMM on 29 August 2022;
    - Waste Reduction on Construction Industry on 7 September 2022;
    - Renewable Energy on 27 September 2022;
    - Good Vehicle Maintenance Practices on 5 October 2022;
    - Mosquito Prevention on 19 October 2022;
    - VOC and Smog on 9 November 2022;
    - QPME on 23 November 2022;
    - Construction Dust on 7 December 2022; and

- Chemical Waste Handling on 21 December 2022.

The status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the EP and implementation status of the recommended mitigation measures are presented in *Table 1.4*.

Table 1.4 Status of Submissions required under the EP and Implementation Status of the recommended Mitigation Measures

EP Condition	Submission / Implementation Status	Status
2.3	Management Organisation of Main Construction Companies	Submitted and accepted by EPD.
2.4	Setting up of Community Liaison Group	Community Liaison Group was set up.
2.5	Submission of Detailed Landfill Gas Hazard Assessment Report	Submitted, and accepted by EPD on 10 January 2019.
2.6	Submission of Restoration and Ecological Enhancement Plan	Submitted to EPD on 28 June 2019.
2.7	Setting up of Trial Nursery	Trial Nursery works was commenced on 28 August 2019.
2.8	Advance Screen Planting	Advance Screen Planting works were completed on 28 June 2019.
2.9	Provision of Multi-layer Composite Liner System	Under implementation.

1.7 STATUS OF OTHER STATUTORY ENVIRONMENTAL REQUIREMENTS

The environmental licenses and permits (including EP, *Water Pollution Control Ordinance* (WPCO) discharge license, registration as a chemical waste producer, and construction noise permit) that are valid in the reporting period are presented in *Table 1.5*. No non-compliance with environmental statutory requirements was identified.

Table 1.5 Status of Statutory Environmental Requirements

Description	Ref No.	Status
Environmental Permit	EP-308/2008	Granted on 5 August 2008
Variation of Environmental Permit	EP-308/2008/A	Granted on 6 January 2012
	EP-308/2008/B	Granted on 20 January 2017
Further Environmental Permit	FEP-01/308/2008/B	Granted on 16 May 2018
Water Discharge License under WPCO (Permit Holder: GVL)	Licence No.: WT00036269-2020	Validity from 21 June 2020 to 30 June 2022
	Licence No.: WT00041447-2022	Validity from 17 June 2022 to 30 June 2024
Billing Account for Disposal of Construction Waste	Chit Account Number: 5001692	Approved on 28 December 2005
Registration as a Chemical Waste Producer (Permit Holder: Chun Wo)	5213-839-C3507-10	Issued on 23 August 2018
Registration as a Chemical Waste Producer (Permit Holder: REC)	5518-839-R2289-06	Issued on 24 October 2019
Registration as a Chemical Waste Producer (Permit Holder: GVL)	5296-839-G2228-01	Issued on 31 December 2015
Construction Noise Permit (Permit Holder: GVL)	GW-RE0990-21	Validity from 6 October 2021 to 5 April 2022

Description	Ref No.	Status
	GW-RE1316-21	Validity from 5 January 2022 to 14 June 2022
	GW-RE0565-22	Validity from 15 June 2022 to 14 December 2022
	GW-RE0956-22	Validity from 23 September 2022 to 14 March 2023
Construction Noise Permit (Permit Holder: Paul Y.)	GW-RE1138-21	Validity from 16 November 2021 to 15 February 2022
	GW-RE0278-22	Validity from 31 March 2022 to 22 September 2022

2 EM&A RESULTS

The EM&A programme for the Project required environmental monitoring for air quality, noise, water quality and landfill gas as well as environmental site inspections for air quality, noise, water quality, landfill gas, waste management, and landscape and visual impacts. The EM&A requirements and related findings for each component are summarised in the following sections.

2.1 AIR QUALITY MONITORING

2.1.1 Dust Monitoring

Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact dust monitoring (in term of Total Suspended Particulates (TSP)) was carried out at the four designated locations along the site boundary (i.e. AM1, AM2, AM3 and AM4) during the operation/restoration phase, at a 6-day interval.

The Action and Limit Levels of the air quality monitoring is provided in *Table 2.1* below.

Table 2.1 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level	Limit Level
AM1 - SENTX Site Boundary (North) AM2 - SENTX Site Boundary (West, near DP3) AM3 - SENTX Site Boundary (West, near RC15) AM4 - SENTX Site Boundary (West, near EPD building)	260 µg m^{-3}	260 µg m^{-3}

High volume air samplers (HVSs) in compliance with the specifications listed under Section 3.2.2 of the updated EM&A Manual were used to measure 24-hour TSP levels at the CEDD dust monitoring stations. The HVSs were calibrated upon installation and thereafter at bi-monthly intervals to check the validity and accuracy of the results.

The equipment used in the impact air quality monitoring programme and monitoring locations are summarised in *Table 2.2* and illustrated in *Figure 2.1* respectively.

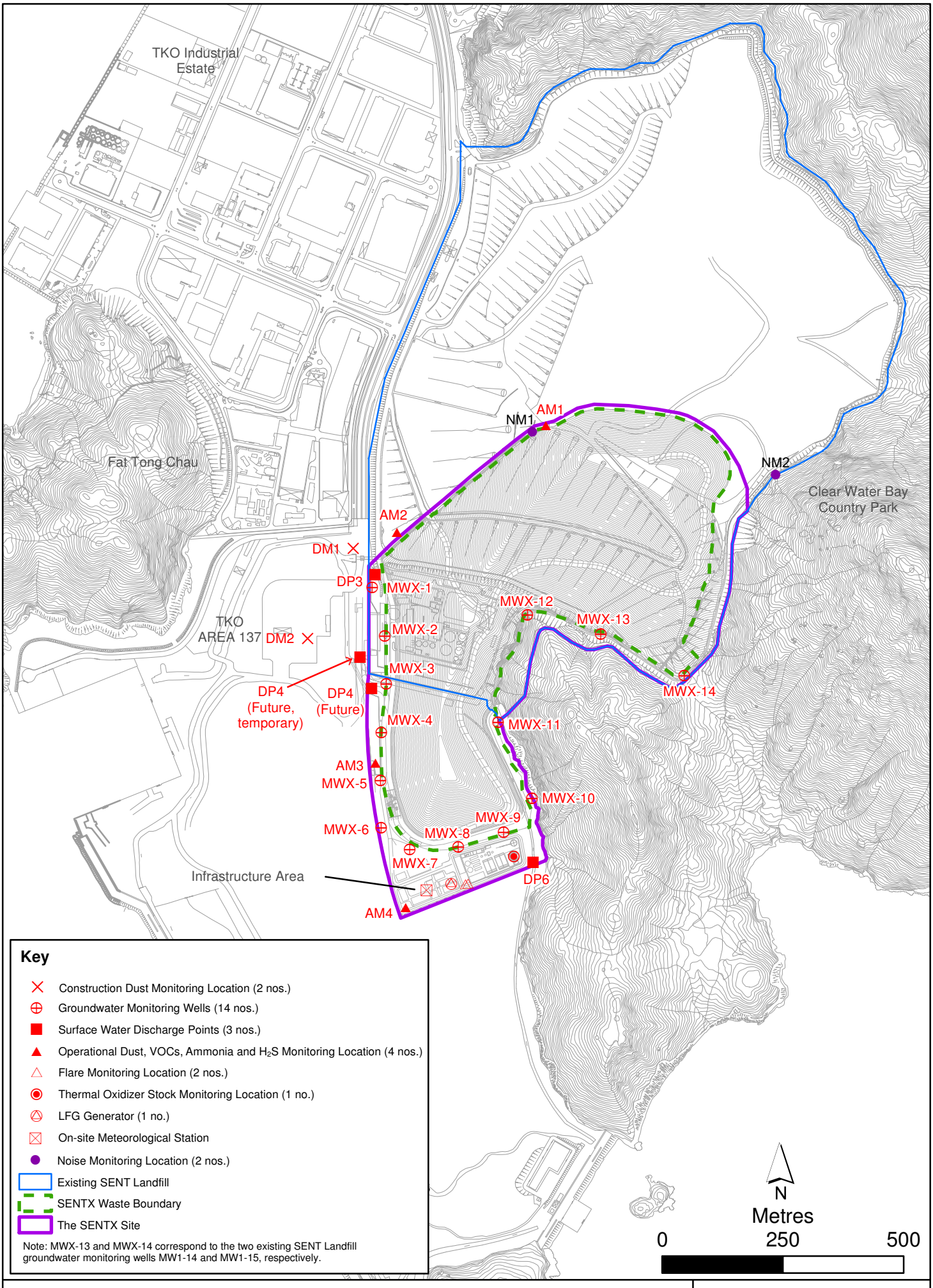


Figure 2.1

Environmental Monitoring Locations

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Date: 19/11/2019

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Table 2.2 Dust Monitoring Details

Monitoring Station	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
AM1	SENTX Site Boundary (North)	24-hour TSP	Once every 6 days	6, 12, 18, 24, 30 Jan 2022	Tisch TE-5170 (S/N: 1190)
AM2	SENTX Site Boundary (West, near DP3)			5, 11, 17, 23 Feb 2022 1, 7, 13, 19, 25, 31 Mar 2022	Tisch TE-5170 (S/N: 1047)
AM3	SENTX Site Boundary (West, near RC15)			6, 12, 18, 24, 30 Apr 2022	Tisch TE-5170 (S/N: 1258)
AM4	SENTX Site Boundary (West, near EPD building)			6, 12, 18, 24, 30 May 2022 5, 11, 15, 17, 23, 29 Jun 2022 5, 11, 17, 23, 29 Jul 2022 4, 10, 16, 22, 28 Aug 2022 3, 9, 15, 21, 27 Sep 2022 3, 9, 15, 21, 27 Oct 2022 2, 8, 14, 20, 26 Nov 2022 2, 8, 14, 20, 21, 26 Dec 2022	Tisch TE-5170 (S/N: 1101)

Monitoring Schedule for the Reporting Period

The schedule for air quality monitoring during the reporting period is provided in *Annex C*.

Results and Observations

The 24-hour TSP monitoring results are summarised in *Table 2.3*. The detailed monitoring results and the graphical presentation of the 24-hour TSP monitoring results at each monitoring location are provided in *Annex D1*.

Table 2.3 Summary of 24-hour TSP Monitoring Results in the Reporting Period

Month	Monitoring Station	24-hr TSP Concentration (μg m^{-3})		Action Level (μg/m^3)	Limit Level (μg/m^3)
		Average	Range		
January 2022	AM1	133	55 – 210	260	260
	AM2	66	32 – 102	260	260
	AM3	150	100 – 218	260	260
	AM4	105	53 – 132	260	260
February 2022	AM1	73	42 – 132	260	260
	AM2	56	32 – 85	260	260
	AM3	100	57 – 140	260	260
	AM4	75	47 – 107	260	260
March 2022	AM1	96	62 – 133	260	260
	AM2	70	39 – 106	260	260
	AM3	163	35 – 224	260	260
	AM4	81	33 – 107	260	260
April 2022	AM1	61	45 – 84	260	260
	AM2	57	46 – 78	260	260
	AM3	133	69 – 169	260	260
	AM4	92	58 – 142	260	260
May 2022	AM1	54	39 – 68	260	260
	AM2	49	24 – 69	260	260
	AM3	83	43 – 127	260	260
	AM4	54	34 – 72	260	260
June 2022	AM1	45	26 – 80	260	260
	AM2	90	56 – 123	260	260
	AM3	113	42 – 198	260	260
	AM4	92	41 – 218	260	260
July 2022	AM1	69	39 – 156	260	260
	AM2	127	43 – 312	260	260
	AM3	119	56 – 241	260	260
	AM4	144	42 – 364	260	260
August 2022	AM1	61	26 – 94	260	260
	AM2	67	36 – 111	260	260
	AM3	95	43 – 150	260	260
	AM4	67	35 – 134	260	260
September 2022	AM1	135	58 – 174	260	260
	AM2	133	69 – 190	260	260
	AM3	195	118 – 252	260	260
	AM4	149	102 – 207	260	260
October 2022	AM1	93	64 - 136	260	260
	AM2	87	71 - 126	260	260
	AM3	134	111 - 194	260	260
	AM4	118	66 - 243	260	260
November 2022	AM1	111	45 - 228	260	260
	AM2	59	33 - 95	260	260
	AM3	83	45 - 126	260	260
	AM4	55	37 - 67	260	260

Month	Monitoring Station	24-hr TSP Concentration (μg m^{-3})		Action Level (μg/m^3)	Limit Level (μg/m^3)
		Average	Range		
December 2022	AM1	107	29 - 225	260	260
	AM2	89	34 - 121	260	260
	AM3	124	66 - 180	260	260
	AM4	100	55 - 136	260	260

The major dust sources in the reporting period included fugitive dust emission from exposed area in SENTX, as well as nearby operations of the SENT landfill and the TKO Area 137 Fill Bank.

Action and Limit Levels exceedances were recorded for TSP monitoring in the reporting period and actions in accordance with the Event and Action Plan presented in *Annex D2* were undertaken. Investigation of the Action and Limit Levels exceedances were conducted and the investigation reports are presented in *Annex D7*.

Based on the investigation conducted for the monitoring event with potential Action and Limit Levels exceedance with the Contractor and the IEC, the TSP exceedance at AM2 on 29 July 2022 was considered Project-related while the exceedance at AM4 on 29 July 2022 was considered non-Project-related.

The Contractor was reminded to implement all relevant mitigation measures for the construction and operation works and maintain good site practice. The ET will keep track on the monitoring data and ensure Contractor's compliance of the environmental requirements.

Meteorological Data

Meteorological data obtained from the SENTX on-site meteorological monitoring station was used for the dust monitoring and is shown in *Annex D3*. It is considered that meteorological data obtained at the on-site meteorological monitoring station is representative of the Project area and could be used for the operation/restoration phase dust monitoring programme for the Project.

2.1.2 Odour Monitoring

Monitoring Requirements

According to the updated EM&A Manual of the Project, odour patrol was carried out along the site boundary during the operation/ restoration phase.

During the first month of operation, daily odour patrol (3 times per day) was conducted jointly by the ET and the IEC. The odour intensity detected was based on that determined by the IEC. In addition, an independent party (ALS Technichem (HK) Pty Ltd.) was appointed to undertake odour patrol together with the ET and IEC three times per week. During these patrols, the odour intensity detected was based on that determined by the independent third party.

Reduction of odour monitoring frequency from Period 1 (daily, three times per day) to Period 2 (weekly)) was approved by EPD on 4 February 2022. Weekly odour patrol was conducted jointly by the ET and the IEC from 4 February 2022. In addition, an independent party (ALS Technichem (HK) Pty Ltd.) was appointed to undertake odour patrol together with the ET and IEC once every two weeks.

Reduction of odour monitoring frequency from Period 2 (weekly) to Period 3 (monthly) was approved by EPD on 2 June 2022. Monthly odour patrol was conducted jointly by the ET and the IEC from 28 June 2022. In addition, an independent party (ALS Technichem (HK) Pty Ltd.) was appointed to undertake odour patrol together with the ET and IEC quarterly.

The Action and Limit Levels for odour patrol is provided in *Table 2.4* below.

Table 2.4 Action and Limit Levels for Odour Patrol

Parameter	Action Level	Limit Level
Perceived odour intensity and odour complaints	• Odour intensity ≥ Class 2 recorded; or • One documented complaint received	• Odour intensity ≥ Class 3 recorded on 2 consecutive patrol [(a) (b)]

Notes:
(a) i.e. either Class 3-strong or Class 4-extreme odour intensity.
(b) The exceedances of the odour intensity do not need to be recorded at the same location.

Odour patrol was conducted by trained personnel / competent persons with a specific sensitivity to a reference odour (i.e. on reference materials n-butanol with the concentration of 50ppm in nitrogen (v/v)) in compliance with Section 3.7.2 of the updated EM&A Manual patrolling and sniffing along the SENTX Site boundary to detect any odour.

The odour monitoring programme and patrol route are summarised in *Table 2.5* and illustrated in *Figure 2.2* respectively.

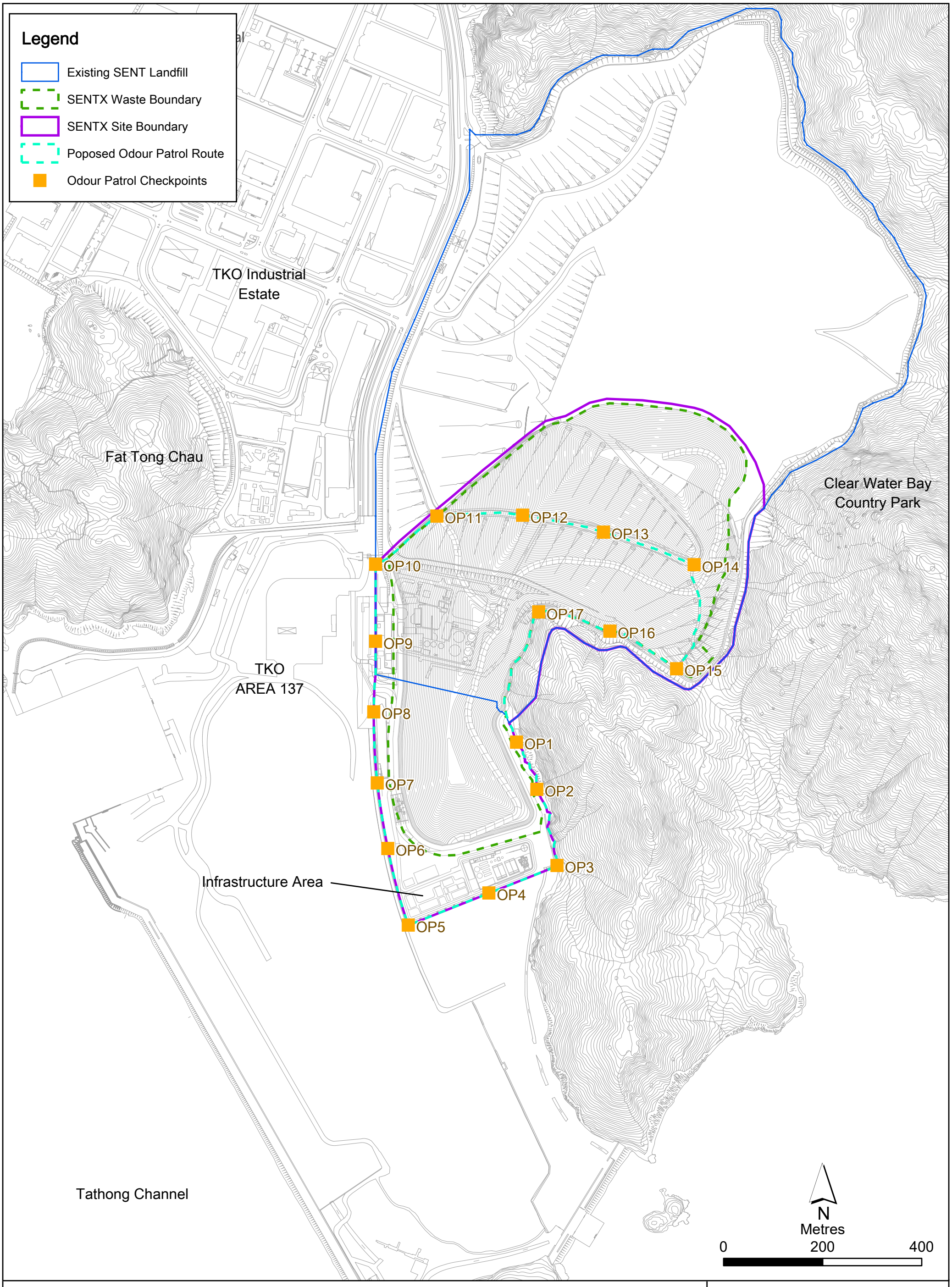

Figure 2.2

Odour Patrol Route for
Operation/ Restoration Phase Odour Monitoring

File: T:\GIS\CONTRACT\0465169\mxd\0465169_Proposed_Odour_Patrol_Route.mxd
Date: 18/8/2022

Environmental Resources Management

ERM

Table 2.5 Odour Monitoring Details

Patrol Locations	Parameters	Patrol Frequency [a]	Monitoring Dates and Time
Patrol along the SENTX Site Boundary (Checkpoints OP1 – OP17)	Odour Intensity (see *Table 2.6*)	Period 1 - First month of operation Daily, three times a day in the morning, afternoon and evening/night (between 18:00 and 22:00 hrs) conducted by the ET and the IEC Three times per week on different days conducted by an independent third party together with the ET and IEC [b] Period 2 - Three months following period 1 [c] Weekly conducted by the ET and the IEC Once every two weeks conducted by an independent third party together with the ET and IEC [b] Period 3 - Throughout operation following period 2 [c] Monthly conducted by the ET and the IEC Quarterly conducted by an independent third party together with the ET and IEC [b]	Conducted by ET & IEC: 1 – 31 Jan 2022 1 – 4, 18, 28 Feb 2022 7, 16, 21, 29 Mar 2022 12, 25 Apr 2022 10, 23 May 2022 22 Jul 2022 22 Aug 2022 13 Oct 2022 24 Nov 2022 Conducted by an independent third party, ET & IEC: 1, 7, 10, 12, 14, 17, 18, 19, 24, 25, 27, 31 Jan 2022 4, 11, 21 Feb 2022 7, 21 Mar 2022 7, 22 Apr 2022 4, 17, 30 May 2022 28 Jun 2022 15 Sep 2022 13 Dec 2022

Notes:

(a) Reduction of monitoring frequency will be subject to the monitoring results to demonstrate environmentally acceptable performance.

(b) Patrol shall be scheduled so that they are carried out together with the patrols to be carried out jointly by the ET and the IEC.

(c) Commencement of each period will be justified by the ET Leader and verified by the IEC and will be subject to agreement with the EPD (EIAO Authority) and Project Proponent.

Table 2.6 Odour Intensity Level

Class	Odour Intensity	Description
0	Not Detected	No odour perceived or an odour so weak that it cannot be easily characterised or described.
1	Slight	Identified odour, slight
2	Moderate	Identified odour, moderate
3	Strong	Identified odour, strong
4	Extreme	Severe odour

Monitoring Schedule for the Reporting Month

The schedule for odour patrol during the reporting period is provided in *Annex C*.

Results and Observations

The odour monitoring results are summarised and provided in *Table 2.7* and *Annex D4*, respectively.

Table 2.7 Summary of Odour Monitoring Results in the Reporting Period

Odour Checkpoints	Odour Intensity Class (Range)	Action Level	Limit Level
OP1	0 – 1	Odour intensity ≥ Class 2 recorded	Odour intensity ≥ Class 3 recorded on 2 consecutive patrol
OP2	0 – 1		
OP3	0 – 1		
OP4	0 – 1		
OP5	0 – 1		
OP6	0 – 1		
OP7	0 – 1		
OP8	0 – 1		
OP9	0 – 1		
OP10	0 – 1		
OP11	0 – 1		
OP12	0		
OP13	0		
OP14	0		
OP15	0		
OP16	0		
OP17	0		

Notes:

(a) Reduction of monitoring frequency will be subject to the monitoring results to demonstrate environmentally acceptable performance.

The potential odour sources in the reporting period included the construction works, generator, slurry truck, excavator, dead body of wild animal, site vehicles, waste from tripping area and vegetation at SENTX, as well as nearby operations of the Leachate Treatment Plant and Town Gas Plant.

All the odour monitoring results were below the Action and Limit Levels in the reporting period. No action is thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex D2*.

2.1.3 *Thermal Oxidiser, Landfill Gas Flare and Landfill Gas Generator Stack Emission Monitoring*

Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, the performance of the thermal oxidiser, landfill gas flare and landfill gas generator was monitored when they are in operation. Gas samples were collected from the stack of the thermal oxidizer, landfill gas flare and landfill gas generator for laboratory analysis for NO_2, CO, SO_2, Benzene and Vinyl chloride and in-situ analysis for exhaust gas velocity at monthly interval. The operating conditions of the thermal oxidiser, landfill gas flare and landfill gas generator were also monitored continuously.

The Limit Levels for stack emission of the thermal oxidiser, landfill gas flare and landfill gas generator are provided in *Tables 2.8 – 2.10* below.

Table 2.8 Limit Levels for Stack Emission of the Thermal Oxidiser

Parameters	Limit Level
NO_2	1.58 gs^{-1}
CO	0.53 gs^{-1}
SO_2	0.07 gs^{-1}
Benzene	3.01×10^{-2} gs^{-1}
Vinyl chloride	2.23×10^{-3} gs^{-1}
Gas combustion temperature	850°C (minimum)
Exhaust gas exit temperature	443K (minimum) (a)
Exhaust gas velocity	7.5 ms^{-1} (minimum) (a)

Note:
(a) Level under full load condition.

Table 2.9 Limit Levels for Stack Emission of the Landfill Gas Flare

Parameters	Limit Level
NO_2	0.97 gs^{-1}
CO	2.43 gs^{-1}
SO_2	0.22 gs^{-1}
Benzene	4.14×10^{-4} gs^{-1}
Vinyl Chloride	2.60×10^{-4} gs^{-1}
Gas combustion temperature	815°C (minimum)
Exhaust gas exit temperature	923 K (minimum) (a)
Exhaust gas velocity	9.0 m s^{-1} (minimum) (a)

Note:
(a) Level under full load condition.

Table 2.10 Limit Levels for Stack Emission of the Landfill Gas Generator

Parameters	Limit Level
NO_2	1.91 gs^{-1}
CO	2.48 gs^{-1}
SO_2	0.528 gs^{-1}
Benzene	2.47×10^{-4} gs^{-1}
Vinyl chloride	1.88×10^{-5} gs^{-1}
Gas combustion temperature	450°C (minimum)
Exhaust gas exit temperature	723K (minimum) (a)
Exhaust gas velocity	30.0 ms^{-1} (minimum) (a)

Note:
(a) Level under full load condition.

Gas samples were collected from the centroid of the stack with stainless steel sampling probe, into inert sample containers (i.e. Canister and Tedlar Bag) and transferred to ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066) laboratory within 24 hours of collection for direct analysis on a gas chromatography within 48 hours after collection. The flue gas velocity of the gas stream at the exhaust of thermal oxidize was determined by S-Pitot tube during the emission sampling.

The stack emission monitoring programme and monitoring locations are summarised in *Table 2.11* and illustrated in *Figure 2.1,* respectively.

Table 2.11 Thermal Oxidiser, Landfill Gas Flare and Landfill Gas Generator Stack Emission Monitoring Details

Monitoring Location	Parameter	Frequency	Monitoring Date
Stack of Thermal Oxidiser	Laboratory analysis for • NO_2 • CO • SO_2 • Benzene • Vinyl chloride In-situ analysis for • Exhaust gas velocity	Monthly for the first 12 months of operation and thereafter at quarterly intervals	12 Jan 2022, 11 Feb 2022, 7 Mar 2022, 11 Apr 2022, 16 May 2022, 16 Jun 2022, 18 Jul 2022, 8 Aug 2022, 15 Sep 2022, 17 Oct 2022, 17 Nov 2022, 13 Dec 2022
	Laboratory analysis for • Non-methane organic compounds	Quarterly for the 1st year of operation (b)	11 Feb 2022, 16 May 2022, 8 Aug 2022, 17 Nov 2022
	Laboratory analysis for • Ammonia	Quarterly	11 Feb 2022, 16 May 2022, 8, 15 Aug 2022 17 Nov 2022
	• Gas combustion temperature • Exhaust temperature • Exhaust gas velocity (a)	Continuously	1 Jan – 31 Dec 2022

Monitoring Location	Parameter	Frequency	Monitoring Date
Stack of Landfill Gas Flare	Laboratory analysis for • NO_2 • CO • SO_2 • Benzene • Vinyl chloride In-situ analysis for • Exhaust gas velocity	Monthly for the first 12 months of operation and thereafter at quarterly intervals	12 Jan 2022, 11 Feb 2022, 8 Mar 2022, 11 Apr 2022, 17 May 2022, 17 Jun 2022, 12 Jul 2022, 9 Aug 2022, 16 Sep 2022, 14 Oct 2022, 17 Nov 2022, 13 Dec 2022
	Laboratory analysis for • Non-methane organic compounds	Quarterly for the 1st year of operation (b)	11 Feb 2022, 17 May 2022, 9 Aug 2022, 17 Nov 2022
	• Gas combustion temperature • Exhaust temperature • Exhaust gas velocity (a)	Continuously	1 Oct – 31 Dec 2022
Stack of Landfill Gas Generator	Laboratory analysis for • NO_2 • CO • SO_2 • Benzene • Vinyl chloride In-situ analysis for • Exhaust gas velocity	Monthly for the first 12 months of operation and thereafter at quarterly intervals	12 Jan 2022, 11 Feb 2022, 8 Mar 2022, 12 Apr 2022, 16 May 2022, 16 Jun 2022, 12 Jul 2022, 9 Aug 2022, 15 Sep 2022, 14 Oct 2022, 18 Nov 2022 (c)
	Laboratory analysis for • Non-methane organic compounds	Quarterly for the 1st year of operation (b)	11 Feb 2022, 16 May 2022, 9 Aug 2022, 18 Nov 2022
	• Exhaust temperature • Exhaust gas velocity (a)	Continuously	1 Oct – 31 Dec 2022

Note:

(a) The exhaust gas velocity will be calculated based on the cross-section area of the stack and continuous monitored gas flow and combustion temperature data.

(b) The monitoring results will be reviewed towards the end of the first year of operation to determine if monitoring of this parameter can be terminated upon agreement by the EIAO Authority, IEC and Project Proponent.

(c) The Landfill Gas Generator was under maintenance in December 2022.

Monitoring Schedule for the Reporting Month

The schedule for thermal oxidizer, landfill gas flare and landfill gas generator stack emission monitoring during the reporting period is provided in *Annex C*. The stack emission monitoring for landfill gas generator was attempted on 14 December 2022 and 28 December 2022. However, sampling of the landfill gas generator stack emission was unable to be carried out in December 2022 as the landfill gas generator was under maintenance.

The thermal oxidizer, landfill gas flare and landfill gas generator stack emission monitoring results and detailed continuous monitoring results are summarised in *Tables 2.12 - 2.14* and provided in *Annex D5,* respectively.

Table 2.12 Summary of Thermal Oxidiser Stack Emission Monitoring in the Reporting Period

Parameters	Monitoring Results (Range in Bracket)	Limit Level
	January 2022	
NO_2	0.38 gs^{-1}	1.58 gs^{-1}
CO	0.047 gs^{-1}	0.53 gs^{-1}
SO_2	<0.015 gs^{-1}	0.07 gs^{-1}
Benzene	$<4 \times 10^{-5}$ gs^{-1}	3.01×10^{-2} gs^{-1}
Vinyl chloride	$<3 \times 10^{-5}$ gs^{-1}	2.23×10^{-3} gs^{-1}
Gas combustion temperature	972°C (952°C - 994°C)	850°C (minimum)
Exhaust gas exit temperature	1,237K (1,218K – 1,265K)	443K (minimum) (a)
Exhaust gas velocity	9.9 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	February 2022	
NO_2	1.17 gs^{-1}	1.58 gs^{-1}
CO	0.06 gs^{-1}	0.53 gs^{-1}
SO_2	0.02 gs^{-1}	0.07 gs^{-1}
Benzene	$<3 \times 10^{-5}$ gs^{-1}	3.01×10^{-2} gs^{-1}
Vinyl chloride	$<3 \times 10^{-5}$ gs^{-1}	2.23×10^{-3} gs^{-1}
Non-methane Organic Carbons	3.6×10^{-3} gs^{-1}	-
Ammonia	6.52×10^{-2} gs^{-1}	- (c)
Gas combustion temperature	973°C (958°C – 1,013°C)	850°C (minimum)
Exhaust gas exit temperature	1,230K (1,219K – 1,241K)	443K (minimum) (a)
Exhaust gas velocity	9.9 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	March 2022	
NO_2	1.54 gs^{-1}	1.58 gs^{-1}
CO	0.04 gs^{-1}	0.53 gs^{-1}
SO_2	<0.01 gs^{-1}	0.07 gs^{-1}
Benzene	$<3 \times 10^{-5}$ gs^{-1}	3.01×10^{-2} gs^{-1}
Vinyl chloride	$<3 \times 10^{-5}$ gs^{-1}	2.23×10^{-3} gs^{-1}
Gas combustion temperature	979°C (959°C – 1,035°C)	850°C (minimum)
Exhaust gas exit temperature	957K (941K – 1,003K)	443K (minimum) (a)
Exhaust gas velocity	9.1 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	April 2022	
NO_2	0.63 gs^{-1}	1.58 gs^{-1}
CO	<0.01 gs^{-1}	0.53 gs^{-1}
SO_2	<0.01 gs^{-1}	0.07 gs^{-1}
Benzene	$<6 \times 10^{-4}$ gs^{-1}	3.01×10^{-2} gs^{-1}
Vinyl chloride	$<2 \times 10^{-5}$ gs^{-1}	2.23×10^{-3} gs^{-1}
Gas combustion temperature	954°C (920°C – 980°C)	850°C (minimum)
Exhaust gas exit temperature	1,232K (1,200K – 1,325K)	443K (minimum) (a)

Exhaust gas velocity	6.6 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	May 2022	
NO_2	0.11 gs^{-1}	1.58 gs^{-1}
CO	<0.02 gs^{-1}	0.53 gs^{-1}
SO_2	0.06 gs^{-1}	0.07 gs^{-1}
Benzene	<3 x 10^{-5} gs^{-1}	3.01 x 10^{-2} gs^{-1}
Vinyl chloride	<4 x 10^{-5} gs^{-1}	2.23 x 10^{-3} gs^{-1}
Non-Methane Organic Carbons	0.0048 gs^{-1}	-
Ammonia (NH_3)	0.01 gs^{-1}	-(c)
Gas combustion temperature	934°C (901°C – 949°C)	850°C (minimum)
Exhaust gas exit temperature	1,201K (1,182K – 1,216K)	443K (minimum) (a)
Exhaust gas velocity	11 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	June 2022	
NO_2	0.39 gs^{-1}	1.58 gs^{-1}
CO	<0.01 gs^{-1}	0.53 gs^{-1}
SO_2	<0.01 gs^{-1}	0.07 gs^{-1}
Benzene	<2 x 10^{-5} gs^{-1}	3.01 x 10^{-2} gs^{-1}
Vinyl chloride	<2 x 10^{-5} gs^{-1}	2.23 x 10^{-3} gs^{-1}
Gas combustion temperature	926°C (915°C – 936°C)	850°C (minimum)
Exhaust gas exit temperature	1,176K (1,148K – 1,206K)	443K (minimum) (a)
Exhaust gas velocity	9.0 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	July 2022	
NO_2	0.89 gs-1	1.58 gs^{-1}
CO	<0.01 gs-1	0.53 gs^{-1}
SO_2	<0.01 gs-1	0.07 gs^{-1}
Benzene	<2.1 x 10-4 gs-1	3.01 x 10^{-2} gs^{-1}
Vinyl chloride	<2 x 10-5 gs-1	2.23 x 10^{-3} gs^{-1}
Gas combustion temperature	925°C (918°C – 934°C)	850°C (minimum)
Exhaust gas exit temperature	1,112K (1,162K – 1,175K)	443K (minimum) (a)
Exhaust gas velocity	9.7 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	August 2022	
NO_2	0.86 gs-1	1.58 gs^{-1}
CO	<0.01 gs-1	0.53 gs^{-1}
SO_2	<0.02 gs-1	0.07 gs^{-1}
Non-Methane Organic Carbons	0.0055 gs-1	-
Benzene	<3 x 10-5 gs-1	3.01 x 10^{-2} gs^{-1}
Vinyl chloride	<2 x 10-5 gs-1	2.23 x 10^{-3} gs^{-1}
0.232 gs-1Ammonia	0.86 gs-1	-(c)
Gas combustion temperature	923°C (880°C – 933°C)	850°C (minimum)
Exhaust gas exit temperature	1,231K (1,181K – 1,241K)	443K (minimum) (a)
Exhaust gas velocity	9.3 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
	September 2022	
NO_2	0.38 gs^{-1}	1.58 gs^{-1}
CO	<0.01 gs^{-1}	0.53 gs^{-1}
SO_2	<0.01 gs^{-1}	0.07 gs^{-1}
Benzene	<2 x 10^{-4} gs^{-1}	3.01 x 10^{-2} gs^{-1}

Vinyl chloride	<1.3 x 10^{-4} gs^{-1}	2.23 x 10^{-3} gs^{-1}
Ammonia	0.0414 gs^{-1}	-(c)
Gas combustion temperature	924°C (912°C – 932°C)	850°C (minimum)
Exhaust gas exit temperature	1,238K (1,225K – 1,248K)	443K (minimum) (a)
Exhaust gas velocity	11.2 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
October 2022		
NO_2	0.39 gs^{-1}	1.58 gs^{-1}
CO	<0.01 gs^{-1}	0.53 gs^{-1}
SO_2	0.04 gs^{-1}	0.07 gs^{-1}
Benzene	<2 x 10^{-4} gs^{-1}	3.01 x 10^{-2} gs^{-1}
Vinyl chloride	<1.3 x 10^{-4} gs^{-1}	2.23 x 10^{-3} gs^{-1}
Gas combustion temperature	926°C (901°C – 937°C)	850°C (minimum)
Exhaust gas exit temperature	1,248K (1,147K – 1,593K)	443K (minimum) (a)
Exhaust gas velocity	11.9 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
November 2022		
NO_2	0.28 gs^{-1}	1.58 gs^{-1}
CO	<0.01 gs^{-1}	0.53 gs^{-1}
SO_2	0.07 gs^{-1}	0.07 gs^{-1}
Non-Methane Organic Carbons	<1.0 x 10^{-4} gs^{-1}	-
Benzene	<1.0 x 10^{-4} gs^{-1}	3.01 x 10^{-2} gs^{-1}
Vinyl chloride	<0.002 gs^{-1}	2.23 x 10^{-3} gs^{-1}
Ammonia	0.0423 gs^{-1}	-(c)
Gas combustion temperature	946°C (906°C – 977°C)	850°C (minimum)
Exhaust gas exit temperature	1,224K (1,125K – 1,270K)	443K (minimum) (a)
Exhaust gas velocity	6.8 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)
December 2022		
NO_2	1.06 gs^{-1}	1.58 gs^{-1}
CO	<0.01 gs^{-1}	0.53 gs^{-1}
SO_2	0.03 gs^{-1}	0.07 gs^{-1}
Benzene	<1.0 x 10^{-4} gs^{-1}	3.01 x 10^{-2} gs^{-1}
Vinyl chloride	<1.0 x 10^{-4} gs^{-1}	2.23 x 10^{-3} gs^{-1}
923°C (909°C – 934°C)Gas combustion temperature	923°C (909°C – 934°C)	850°C (minimum)
Exhaust gas exit temperature	1,196K (1,145K – 1,283K)	443K (minimum) (a)
Exhaust gas velocity	7.9 ms^{-1} (b)	7.5 ms^{-1} (minimum) (a)

Note:

(a) Level under full load condition.

(b) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring. The limit level was not applicable as the stack was not operated under full load condition.

(c) The emission limit for ammonia is under review and will be supplemented in subsequent revision.

Table 2.13 Summary of Landfill Gas Flare Stack Emission Monitoring in the Reporting Period

Parameters	Monitoring Results (Range in Bracket)	Limit Level
	January 2022	
NO_2	Flare 1: <0.01 gs^{-1}	0.97 gs^{-1}
	Flare 2: <0.01 gs^{-1}	
CO	Flare 1: 0.032 gs^{-1}	2.43 gs^{-1}
	Flare 2: 0.04 gs^{-1}	
SO_2	Flare 1: 0.09 gs^{-1}	0.22 gs^{-1}
	Flare 2: 0.10 gs^{-1}	
Benzene	Flare 1: 1.3 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
	Flare 2: 1.6 x 10^{-5} gs^{-1}	
Vinyl chloride	Flare 1: <1.1 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
	Flare 2: <1.3 x 10^{-5} gs^{-1}	
Gas combustion temperature	Flare 1: 1,010°C (854°C – 1,171°C)	815°C (minimum)
	Flare 2: 916°C (820°C – 1,171°C)	
Exhaust gas exit temperature	Flare 1: 1,144K (1,023K – 1,223K)	923 K (minimum) [a]
	Flare 2: 1,116K (1,045K – 1,283K)	
Exhaust gas velocity	Flare 1: 4.3 ms^{-1} [b]	9.0 m s^{-1} (minimum) [a]
	Flare 2: 2.0 ms^{-1} [b]	
	February 2022	
NO_2	<0.01 gs^{-1}	0.97 gs^{-1}
CO	0.027 gs^{-1}	2.43 gs^{-1}
SO_2	0.110 gs^{-1}	0.22 gs^{-1}
Benzene	5.1 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<1.1 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Non-methane Organic Carbons	4.1 x 10^{-3} gs^{-1}	-
Gas combustion temperature	Flare 1: 893°C (816°C – 995°C)	815°C (minimum)
	Flare 2: 857°C (830°C – 924°C)	
Exhaust gas exit temperature	Flare 1: 1,143K (1,083K – 1,213K)	923 K (minimum) [a]
	Flare 2: 1,072K (1,015K – 1,123K)	
Exhaust gas velocity	4.4 ms^{-1} [b]	9.0 m s^{-1} (minimum) [a]
	March 2022	
NO_2	0.02 gs^{-1}	0.97 gs^{-1}
CO	0.056 gs^{-1}	2.43 gs^{-1}
SO_2	0.007 gs^{-1}	0.22 gs^{-1}
Benzene	<1.2 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<1.0 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Gas combustion temperature	Flare 1: 911°C (830°C – 990°C)	815°C (minimum)
	Flare 2: 854°C (820°C – 890°C)	

Exhaust gas exit temperature	Flare 1: 1,141K (1,073K – 1,223K) Flare 2: 1,077K (1,033K – 1,123K)	923 K (minimum) [a]
Exhaust gas velocity	3.9 ms^{-1} [b]	9.0 m s^{1} (minimum) [a]
	April 2022	
NO_2	0.01 gs^{-1}	0.97 gs^{-1}
CO	0.04 gs^{-1}	2.43 gs^{-1}
SO_2	0.06 gs^{-1}	0.22 gs^{-1}
Benzene	<1.8 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<1.5 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Non-Methane Organic Carbons	<0.0014 gs^{-1}	-
Gas combustion temperature	Flare 1: 890°C (820°C – 990°C) Flare 2: 860°C (820°C – 890°C)	815°C (minimum)
Exhaust gas exit temperature	Flare 1: 999K (943K – 1,073K) Flare 2: 1,094K (1,043K – 1,133K)	923 K (minimum) [a]
	May 2022	
NO_2	0.01 gs^{-1}	0.97 gs^{-1}
CO	0.04 gs^{-1}	2.43 gs^{-1}
SO_2	0.06 gs^{-1}	0.22 gs^{-1}
Benzene	<1.8 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<1.5 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Non-Methane Organic Carbons	<0.0014 gs^{-1}	-
Gas combustion temperature	Flare 1: 890°C (820°C – 990°C) Flare 2: 860°C (820°C – 890°C)	815°C (minimum)
Exhaust gas exit temperature	Flare 1: 999K (943K – 1,073K) Flare 2: 1,094K (1,043K – 1,133K)	923 K (minimum) [a]
Exhaust gas velocity	2.7 ms^{-1} [b]	9.0 m s^{-1} (minimum) [a]
	June 2022	
NO_2	0.03 gs^{-1}	0.97 gs^{-1}
CO	0.098 gs^{-1}	2.43 gs^{-1}
SO_2	0.11 gs^{-1}	0.22 gs^{-1}
Benzene	<3.6 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<1.6 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Gas combustion temperature	Flare 1: 887°C (822°C – 970°C) Flare 2: 867°C (830°C – 930°C)	815°C (minimum)
Exhaust gas exit temperature	Flare 1: 1,043K (983K – 1,143K) Flare 2: 1,093K (1,043K – 1,183K)	923 K (minimum) [a]
Exhaust gas velocity	8.3 ms^{-1} [b]	9.0 m s^{-1} (minimum) [a]
	July 2022	
NO_2	<0.01 gs^{-1}	0.97 gs^{-1}
CO	0.53 gs^{-1}	2.43 gs^{-1}
SO_2	0.01 gs^{-1}	0.22 gs^{-1}
Benzene	<1.8 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<1.4 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}

Gas combustion temperature	Flare 1: 901°C (822°C – 955°C)	815°C (minimum)
	Flare 2: 858°C (824°C – 930°C)	
Exhaust gas exit temperature	Flare 1: 1,035K (963K – 1,083K)	923 K (minimum) (a)
	Flare 2: 1,093K (1,061K – 1,163K)	
Exhaust gas velocity	6.5 ms^{-1} (b)	9.0 m s^{-1} (minimum) (a)
	August 2022	
NO_2	<0.02 gs^{-1}	0.97 gs^{-1}
CO	0.83 gs^{-1}	2.43 gs^{-1}
SO_2	0.12 gs^{-1}	0.22 gs^{-1}
Non-Methane Organic Carbons	<0.002 gs^{-1}	-
Benzene	<2.5 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<2.0 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Gas combustion temperature	Flare 1: 890°C (826°C – 966°C)	815°C (minimum)
	Flare 2: 846°C (820°C – 890°C)	
Exhaust gas exit temperature	Flare 1: 1,110K (993K – 1,248K)	923 K (minimum) (a)
	Flare 2: 1,061K (1,023K – 1,103K)	
Exhaust gas velocity	8.9 ms^{-1} (b)	9.0 m s^{-1} (minimum) (a)
	September 2022	
NO_2	<0.02 gs^{-1}	0.97 gs^{-1}
CO	<0.01 gs^{-1}	2.43 gs^{-1}
SO_2	<0.01 gs^{-1}	0.22 gs^{-1}
Benzene	<1.23 x 10^{-4} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<9.8 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Gas combustion temperature	Flare 1: 866°C (820°C – 944°C)	815°C (minimum)
	Flare 2: 861°C (821°C – 948°C)	
Exhaust gas exit temperature	Flare 1: 1,046K (987K – 1,127K)	923 K (minimum) (a)
	Flare 2: 1,080K (1,046K – 1,127K)	
Exhaust gas velocity	8.9 ms^{-1} (b)	9.0 m s^{-1} (minimum) (a)
	October 2022	
NO_2	0.013 gs^{-1}	0.97 gs^{-1}
CO	<0.01 gs^{-1}	2.43 gs^{-1}
SO_2	0.26 gs^{-1}	0.22 gs^{-1}
Benzene	<1.22 x 10^{-4} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<9.8 x 10^{-5} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Gas combustion temperature	Flare 1: 908°C (820°C – 990°C)	815°C (minimum)
	Flare 2: 872°C (820°C – 910°C)	
Exhaust gas exit temperature	Flare 1: 1,060K (988K – 1,183K)	923 K (minimum) (a)
	Flare 2: 1,076K (993K – 1,133K)	
Exhaust gas velocity	6.5 ms^{-1} (b)	9.0 m s^{-1} (minimum) (a)
	November 2022	
NO_2	<0.02 gs^{-1}	0.97 gs^{-1}
CO	<0.01 gs^{-1}	2.43 gs^{-1}
SO_2	1.27 gs^{-1}	0.22 gs^{-1}
Non-Methane Organic Carbons	<1.22 x 10^{-4} gs^{-1}	-
Benzene	<9.8 x 10^{-5} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<0.002 gs^{-1}	2.60 x 10^{-4} gs^{-1}

Gas combustion temperature	Flare 1: 856°C (820°C – 890°C)	815°C (minimum)
	Flare 2: 854°C (820°C – 890°C)	
Exhaust gas exit temperature	Flare 1: 1,064K (1,030K – 1,093K)	923 K (minimum) (a)
	Flare 2: 1,077K (1,033K – 1,123K)	
Exhaust gas velocity	8.9 ms^{-1} (b)	9.0 m s^{-1} (minimum) (a)
	December 2022	
NO_2	0.03 gs^{-1}	0.97 gs^{-1}
CO	0.783 gs^{-1}	2.43 gs^{-1}
SO_2	0.16 gs^{-1}	0.22 gs^{-1}
Benzene	6.61 x 10^{-4} gs^{-1}	4.14 x 10^{-4} gs^{-1}
Vinyl chloride	<1.35 x 10^{-4} gs^{-1}	2.60 x 10^{-4} gs^{-1}
Gas combustion temperature	Flare 1: 854°C (850°C – 910°C)	815°C (minimum)
	Flare 2: 860°C (830°C – 890°C)	
Exhaust gas exit temperature	Flare 1: 1,075K (1,033K – 1,153K)	923 K (minimum) (a)
	Flare 2: 1,085K (1,033K – 1,123K)	
Exhaust gas velocity	12.8 ms^{-1} (b)	9.0 m s^{-1} (minimum) (a)

Note:

(a) Level under full load condition.

(b) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring. The limit level was not applicable as the stack was not operated under full load condition.

Table 2.14 ***Summary of Landfill Gas Generator Stack Emission Monitoring in the Reporting Period***

Parameters	**Monitoring Results (Range in Bracket)**	**Limit Level**
	January 2022	
NO_2	0.008 gs^{-1}	1.91 gs^{-1}
CO	0.050 gs^{-1}	2.48 gs^{-1}
SO_2	0.009 gs^{-1}	0.528 gs^{-1}
Benzene	2 x 10^{-6} gs^{-1}	2.47 x 10^{-4} gs^{-1}
Vinyl chloride	<1.3 x 10^{-6} gs^{-1}	1.88 x 10^{-5} gs^{-1}
Exhaust gas exit temperature	843K (835K – 853K)	723K (minimum) (a)
Exhaust gas velocity	7.8 ms^{-1} (b)	30.0 ms^{-1} (minimum) (a)
	February 2022	
NO_2	0.016 gs^{-1}	1.91 gs^{-1}
CO	0.056 gs^{-1}	2.48 gs^{-1}
SO_2	0.002 gs^{-1}	0.528 gs^{-1}
Benzene	<3 x 10^{-6} gs^{-1}	2.47 x 10^{-4} gs^{-1}
Vinyl chloride	<2 x 10^{-6} gs^{-1}	1.88 x 10^{-5} gs^{-1}
Non-methane Organic Carbons	2 x 10^{-4} gs^{-1}	-
Exhaust gas exit temperature	843K (836K – 847K)	723K (minimum) (a)
Exhaust gas velocity	11.9 ms^{-1} (b)	30.0 ms^{-1} (minimum) (a)
	March 2022	
NO_2	0.022 gs^{-1}	1.91 gs^{-1}
CO	0.06 gs^{-1}	2.48 gs^{-1}
SO_2	<0.001 gs^{-1}	0.528 gs^{-1}

Benzene	$<2 \times 10^{-6}$ gs^{-1}	2.47×10^{-4} gs^{-1}
Vinyl chloride	$<1.9 \times 10^{-6}$ gs^{-1}	1.88×10^{-5} gs^{-1}
Exhaust gas exit temperature	845K (840K – 850K)	723K (minimum) [a]
Exhaust gas velocity	7.8 ms^{-1} [b]	30.0 ms^{-1} (minimum) [a]
April 2022		
NO_2	0.25 gs^{-1}	1.91 gs^{-1}
CO	0.094 gs^{-1}	2.48 gs^{-1}
SO_2	<0.001 gs^{-1}	0.528 gs^{-1}
Benzene	$<3 \times 10^{-6}$ gs^{-1}	2.47×10^{-4} gs^{-1}
Vinyl chloride	$<2.3 \times 10^{-6}$ gs^{-1}	1.88×10^{-5} gs^{-1}
Exhaust gas exit temperature	849K (841K – 870K)	723K (minimum) [a]
Exhaust gas velocity	13.3 ms^{-1} [b]	30.0 ms^{-1} (minimum) [a]
May 2022		
NO_2	0.01 gs^{-1}	1.91 gs^{-1}
CO	0.099 gs^{-1}	2.48 gs^{-1}
SO_2	0.004 gs^{-1}	0.528 gs^{-1}
Benzene	$<3 \times 10^{-6}$ gs^{-1}	2.47×10^{-4} gs^{-1}
Vinyl chloride	$<2.4 \times 10^{-6}$ gs^{-1}	1.88×10^{-5} gs^{-1}
Non-Methane Organic Carbons	3×10^{-4} gs^{-1}	-
Exhaust gas exit temperature	851K (845K – 857K)	723K (minimum) [a]
Exhaust gas velocity	11.6 ms^{-1} [b]	30.0 ms^{-1} (minimum) [a]
June 2022		
NO_2	0.008 gs^{-1}	1.91 gs^{-1}
CO	0.043 gs^{-1}	2.48 gs^{-1}
SO_2	<0.001 gs^{-1}	0.528 gs^{-1}
Benzene	$<4.0 \times 10^{-6}$ gs^{-1}	2.47×10^{-4} gs^{-1}
Vinyl chloride	$<2.2 \times 10^{-6}$ gs^{-1}	1.88×10^{-5} gs^{-1}
Exhaust gas exit temperature	861K (848K – 879K)	723K (minimum) [a]
Exhaust gas velocity	9.7 ms^{-1} [b]	30.0 ms^{-1} (minimum) [a]
July 2022		
NO_2	0.01 gs^{-1}	1.91 gs^{-1}
CO	0.28 gs^{-1}	2.48 gs^{-1}
SO_2	0.003 gs^{-1}	0.528 gs^{-1}
Benzene	$<8.0 \times 10^{-6}$ gs^{-1}	2.47×10^{-4} gs^{-1}
Vinyl chloride	$<1.8 \times 10^{-6}$ gs^{-1}	1.88×10^{-5} gs^{-1}
Exhaust gas exit temperature	864K (848K – 893K)	723K (minimum) [a]
Exhaust gas velocity	11.2 ms^{-1} [b]	30.0 ms^{-1} (minimum) [a]
August 2022		
NO_2	0.04 gs^{-1}	1.91 gs^{-1}
CO	0.622 gs^{-1}	2.48 gs^{-1}
SO_2	0.015 gs^{-1}	0.528 gs^{-1}
Non-Methane Organic Carbons	0.0012 gs^{-1}	-
Benzene	$<8.7 \times 10^{-5}$ gs^{-1}	2.47×10^{-4} gs^{-1}
Vinyl chloride	$<2.1 \times 10^{-6}$ gs^{-1}	1.88×10^{-5} gs^{-1}
Exhaust gas exit temperature	861K (855K – 868K)	723K (minimum) [a]
Exhaust gas velocity	9.3 ms^{-1} [b]	30.0 ms^{-1} (minimum) [a]
September 2022		

NO_2	0.07 gs^{-1}	1.91 gs^{-1}
CO	0.75 gs^{-1}	2.48 gs^{-1}
SO_2	0.008 gs^{-1}	0.528 gs^{-1}
Benzene	<1.92 x 10^{-4} gs^{-1}	2.47 x 10^{-4} gs^{-1}
Vinyl chloride	<9.6 x 10^{-6} gs^{-1}	1.88 x 10^{-5} gs^{-1}
Exhaust gas exit temperature	859K (845K – 880K)	723K (minimum) (a)
Exhaust gas velocity	10.2 ms^{-1} (b)	30.0 ms^{-1} (minimum) (a)
	October 2022	
NO_2	0.08 gs^{-1}	1.91 gs^{-1}
CO	0.56 gs^{-1}	2.48 gs^{-1}
SO_2	0.006 gs^{-1}	0.528 gs^{-1}
Benzene	<1.12 x 10^{-4} gs^{-1}	2.47 x 10^{-4} gs^{-1}
Vinyl chloride	<9.7 x 10^{-6} gs^{-1}	1.88 x 10^{-5} gs^{-1}
Exhaust gas exit temperature	ENGA: 866K (851K – 893K) ENGB : 860K (847K – 867K)	723K (minimum) (a)
Exhaust gas velocity	10.3 ms^{-1} (b)	30.0 ms^{-1} (minimum) (a)
	November 2022	
NO_2	0.01 gs^{-1}	1.91 gs^{-1}
CO	0.429 gs^{-1}	2.48 gs^{-1}
SO_2	<0.001 gs^{-1}	0.528 gs^{-1}
Non-Methane Organic Carbons	<1.6 x 10^{-5} gs^{-1}	-
Benzene	<1.28 x 10^{-5} gs^{-1}	2.47 x 10^{-4} gs^{-1}
Vinyl chloride	<3.0 x 10^{-4} gs^{-1}	1.88 x 10^{-5} gs^{-1}
Exhaust gas exit temperature	ENGA: 904K (890K – 955K) ENGB : 898K (880K – 917K)	723K (minimum) (a)
Exhaust gas velocity	11.6 ms^{-1} (b)	30.0 ms^{-1} (minimum) (a)
	December 2022	
NO_2	-	1.91 gs^{-1}
CO	-	2.48 gs^{-1}
SO_2	-	0.528 gs^{-1}
Benzene	-	2.47 x 10^{-4} gs^{-1}
Vinyl chloride	-	1.88 x 10^{-5} gs^{-1}
Exhaust gas exit temperature	ENGA: - ENGB : -	723K (minimum) (a)
Exhaust gas velocity	-	30.0 ms^{-1} (minimum) (a)

Note:

(a) Level under full load condition.

(b) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring. The limit level was not applicable as the stack was not operated under full load condition.

(c) The Landfill Gas Generator was under maintenance in December 2022.

Limit Levels exceedances were recorded for landfill gas flare stack emission (SO_2 and Benezene) in the reporting period and actions in accordance with the Event and Action Plan presented in *Annex D2* were undertaken. Investigation of the Limit Levels exceedances was conducted and the investigation reports are presented in *Annex D7*.

Based on the investigation conducted for the monitoring event with potential Limit Levels exceedance with the Contractor and the IEC, the landfill gas flare stack emission (SO_2) exceedance on 14 October 2022 and 17 November 2022 and the landfill gas flare stack emission (Benzene) exceedance on 13 December 2022 were considered Project-related.

The Contractor was reminded to implement all relevant mitigation measures for the construction and operation works and maintain good site practice. The ET will keep track on the monitoring data and ensure Contractor's compliance of the environmental requirements.

2.1.4 Ambient VOCs, Ammonia and H_2S Monitoring

Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, ambient VOCs, ammonia and H_2S monitoring was carried out at the four designated locations along the site boundary (i.e. AM1, AM2, AM3 and AM4) during the operation/restoration phase, at quarterly interval.

The Limit Levels for ambient VOCs, ammonia and H_2S monitoring is provided in *Table 2.15* below.

Table 2.15 Limit Levels for Ambient VOCs, Ammonia and H_2S Monitoring

Parameters	**Limit Level (μg m^{-3})**
Methane	NA [a]
Ammonia	180
H_2S	42
Dichlorodifluoro-methane	NA [a]
Vinyl Chloride	26
Methanol	2,660
Ethanol	19,200
Dimethylsulphide	8
Carbon Disulphide	150
Methylene Chloride	3,530
Chloroform	99
Methyl propionate	353
Butan-2-ol	667
1.1.1-Trichloroethane	5,550
1.2-Dichloroethane	210
Benzene	33
Carbon Tetrachloride	64
Dipropyl ether	NA [a]
Heptane	2,746
Trichloroethylene	5,500
Ethyl propionate	29
Methyl butanoate	30
Methanethiol	10

Toluene	1,244
Ethyl butanoate	71
Propyl benzene	19
Octane	7,942
Propyl propionate	276
1.2-Dibromoethane (EDB)	39
Butyl acetate	7,240
Tetrachloroethylene	1,380
Ethyl benzene	738
Nonane	11,540
Ethanethiol	13
Decanes	3,608
Limonene	212
Butyl benzene	47
Undecane	5,562
Butanethiol	4
Terpenes	NA [(a)]
Xylenes	534
Dichlorobenzene	120

Notes:

(a) No relevant WHO/USEPA/CARB's ambient criteria, odour thresholds and WEL available.

VOCs

Ambient air samples were drawn into the pre-cleaned and vacuum canister directly when the valve of the flow controller (with preset flow rate) was opened. After sampling, the valve will be closed manually and the canister with VOCs gas samples were transported for laboratory analysis.

Methane

Pre-cleaned Tedlar bag was placed in the vacuum chamber. Ambient air was collected in the Tedlar bag under the vacuum condition when the pump is switched on. The Tedlar bag was filled up to 90% of total capacity to avoid leakage and bag deformation. After sampling, pump is switched off and the valve of Tedlar bag was closed manually. The air samples were transported back to laboratory for analysis.

Ammonia

Calibrated personal air pump was used to pump the air through a sulfuric acid-treated silica gel sorbent tube. Gaseous ammonia in air was then trapped in the sorbent tube. The tube was transported back to laboratory for analysis.

H_2S

H_2S in air is collected in mid-get impingers by aspirating a measured volume of air through an alkaline suspension of cadmium hydroxide (as the absorbing solution). The sulphide is precipitated as cadmium sulphide to

prevent air oxidation of the sulphide. Arabinogalactan is added to the cadmium hydroxide slurry prior to sampling to minimize photo-decomposition of the precipitated cadmium sulphide. The solution is transported back to laboratory for analysis.

All air samples collected for laboratory analysis were transported to ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066) laboratory within 24 hours and analysed within 48 hours.

The ambient VOCs, ammonia and H_2S monitoring programme and monitoring locations are summarised in *Table 2.16* and illustrated in *Figure 2.1,* respectively.

Table 2.16 Ambient VOCs, Ammonia and H_2S Monitoring Details

Monitoring Station	Location	Parameter	Frequency	Monitoring Date
AM1	SENTX Site Boundary (North)	• Methane • Ammonia • A suite of VOCs [(a)] • H_2S	Quarterly	15 Feb 2022, 16 May 2022, 8 Aug 2022, 17 Nov 2022
AM2	SENTX Site Boundary (West, near DP3)			
AM3	SENTX Site Boundary (West, near RC15)			
AM4	SENTX Site Boundary (West, near EPD building)			

Notes:

(a) A suite of VOCs includes:

- Trichloroethylene
- Vinyl chloride
- Methylene chloride
- Chloroform
- 1,2-dichloroethane
- 1,1,1-trichloroethane
- Carbon tetrachloride
- Tetrachloroethylene
- 1,2-dibromoethane
- Benzene
- Toluene
- Carbon disulphide
- Propyl benzene
- Ethyl benzene
- Butyl benzene
- Xylenes
- Decanes
- Undecane
- Limonene
- Terpenes
- Ethanol
- Butan-2-ol
- Dimethylsulphide
- Methyl propionate
- Ethyl propionate
- Propyl propionate
- Butyl acetate
- Ethyl butanoate
- Dichlorobenzene
- Methyl butanoate
- Dipropyl ether
- Methanethiol
- Ethanethiol
- Butanethiol
- Methanol
- Heptanes
- Octanes
- Nonanes
- Dichlorodifluoro-methane
- Methane

Monitoring Schedule for the Reporting Month

The schedule for ambient VOCs, ammonia and H_2S monitoring during the reporting period is provided in *Annex C.*

Results and Observations

The ambient VOCs, ammonia and H_2S monitoring results are summarized in *Tables 2.17* and provided in *Annex D6.*

Table 2.17 Summary of Ambient VOCs, Ammonia and H_2S Monitoring Results in the Reporting Period

Parameters	Limit Level ($\mu g\ m^{-3}$)	Monitoring Results ($\mu g\ m^{-3}$) (Average)			
		AM1	AM2	AM3	AM4
Ammonia	180	20.25	15.50	16.75	17.25
H_2S	42	14.5	14.5	14.5	14.5
Methane	NA [(a)]	0.0	0.0	0.0	0.0
1.1.1-Trichloroethane	5,550	0.8	0.8	0.8	0.8
1.2-Dibromoethane (EDB)	39	1.1	1.1	1.1	1.1
1.2-Dichloroethane	210	0.8	0.9	0.7	0.9
Benzene	33	1.1	1.0	0.8	1.0
Butan-2-ol	667	0.6	0.6	0.6	0.6
Butanethiol	4	<1.2	<1.2	<1.2	<1.2
Carbon Disulphide	150	0.9	0.7	3.3	1.1
Carbon Tetrachloride	64	0.8	0.8	0.7	0.8
Chloroform	99	<0.8	<0.8	<0.8	<0.8
Decanes	3,608	0.9	0.8	1.2	0.8
Dichlorobenzene	120	1.0	1.0	1.0	1.0
Dichlorodifluoro-methane	NA [(a)]	1.3	1.6	1.2	1.5
Dimethylsulphide	8	<0.3	<0.3	<0.3	<0.3
Dipropyl ether	NA [(a)]	0.8	0.8	0.8	0.8
Limonene	212	0.8	0.7	1.6	0.7
Ethanethiol	13	<0.6	<0.6	<0.6	<0.6
Ethanol	19,200	4.9	3.8	3.8	9.3
Ethyl butanoate	71	<1.0	<1.0	<1.0	<1.0
Ethyl propionate	29	<0.8	<0.8	<0.8	<0.8
Ethyl benzene	738	0.9	0.9	1.3	1.1
Heptane	2,746	<0.8	<0.8	<0.8	<0.8
Methanethiol	10	<0.4	<0.4	<0.4	<0.4
Methanol	2,660	17.9	12.2	12.5	25.3
Methyl butanoate	30	<0.8	<0.8	<0.8	<0.8
Methyl propionate	353	<0.7	<0.7	<0.7	<0.7
Methylene Chloride	3,530	3.0	3.8	3.0	4.3
Butyl acetate	76	<1.0	<1.0	<1.0	<1.2
Butyl benzene	47	<1.0	<1.0	<1.0	<1.0
Nonane	11,540	<0.9	<0.9	<0.9	<0.9
Propyl benzene	19	<0.8	<0.8	<0.8	<0.8
Octane	7,942	<0.9	<0.9	<0.9	<0.9
Propyl propionate	276	<1.0	<1.0	<1.0	<1.0
Terpenes	NA [(a)]	1.3	0.8	1.3	1.3
Tetrachloroethylene	1,380	<0.8	<0.8	<0.8	<0.8
Toluene	1,244	2.1	2.2	2.4	3.2
Trichloroethylene	5,500	<1.1	<1.1	<1.1	<1.1
Undecane	5,562	<1.2	<1.2	<1.3	<1.2
Vinyl Chloride	26	<0.3	<0.3	<0.3	<0.3
Xylenes	534	1.6	1.6	3.3	2.6

Notes:

(a) No relevant WHO/USEPA/CARB's ambient criteria and WEL available.

All ambient VOCs, ammonia and H_2S monitoring results were below the Limit Levels in the reporting period. No action is thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex D2*.

2.2 NOISE MONITORING

2.2.1 Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact noise monitoring was conducted weekly at the monitoring location (i.e. NM1) to obtain one set of 30 minutes measurement between 07:00 and 19:00 hours on normal weekdays.

The Action and Limit Levels for operational noise of the Project are provided in *Table 2.18* below.

Table 2.18 Action and Limit Levels for Operational Noise

Time Period	Action Level [a]	Limit Level [b]
07:00 – 19:00 hrs on all days	When one documented complaint is received from any one of the noise sensitive receivers (NSRs) or 75 dB(A) recorded at the monitoring station	65 dB(A) at NSRs [c]
19:00 – 23:00 hrs on all days		65 dB(A) at NSRs [c]
23:00 – 07:00 hrs on all days		55 dB(A) at NSRs [c]

Notes:

(a) 75dB(A) along and at about 100m from the SENTX site boundary was set as the Action Level.

(b) Limits specified in the GW-TM and IND-TM for construction and operational noise, respectively.

(c) Limit Level only apply to operational noise without road traffic and construction activities noise.

Noise monitoring was performed by ALS Technichem (HK) Pty Ltd (HOKLAS Registration No. 066) using a sound level meter placed at the designated monitoring station NM1 (see *Figure 2.1*) in accordance with the requirements stipulated in the updated EM&A Manual. Acoustic calibrator was deployed to check the sound level meter at a known sound pressure level. Details of the deployed equipment are provided in *Table 2.19*.

Table 2.19 Noise Monitoring Details

Monitoring Station (1)	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
NM1	SENTX Site Boundary (North)	$L_{eq\ (30\ min)}$ measurement between 07:00 and 19:00 hours on normal weekdays (Monday to Saturday)	Once per week for 30 mins during the operation period of the Project	7, 13, 19, 25, 31 Jan 2022 7, 14, 24 Feb 2022 2, 8, 14, 21, 28 Mar 2022 7, 13, 19, 25 Apr 2022 3, 10, 19, 25, 31 May 2022 6, 13, 20, 30 Jun 2022 6, 12, 18, 25 Jul 2022 1, 11, 17, 23, 29 Aug 2022 5, 13, 22, 28 Sep 2022 5, 10, 17, 24 Oct 2022 3, 9, 15, 21, 28 Nov 2022 5, 15, 21, 28 Dec 2022	Sound Level Meter: B&K 2238 (S/N: 2285722) Rion NL-52 (S/N: 00809405) Rion NL-52 (S/N: 00921191) Rion NL-52 (S/N: 00464681) Rion NL-52 (S/N: 00142581) Rion NL-31 (S/N: 00410247) Acoustic Calibrator: Calibrator: Rion NC-74 (S/N: 34246492) Rion NC-74 (S/N: 34657231) Bruel & Kjaer 4231 (S/N: 2713428) B&K 4231 (S&N: 2713428)

2.2.2 *Monitoring Schedule for the Reporting Period*

The schedule for noise monitoring during the reporting period is provided in *Annex C*.

2.2.3 *Results and Observations*

A total of 52 impact noise monitoring events were scheduled during the reporting period. However, noise monitoring on 7 February 2022, 28 March 2022, 10 May 2022, 6 and 30 June 2022 and 11 August 2022 were cancelled due to adverse weather. The noise monitoring results are summarised in *Table 2.20* and graphically presented in *Annex E1*.

Table 2.20 Summary of Operation Noise Monitoring Results in the Reporting Period

Month	Monitoring Station	Measured Noise Level $L_{eq\ (30\ min)}$, dB(A)		
		Average	Range	Action and Limit Level
January 2022	NM1	51.4	49.4 – 53.4	75
February 2022	NM1	48.6	48.1 – 49.0	75
March 2022	NM1	48.6	45.9 – 51.3	75
April 2022	NM1	51.1	49.5 – 51.7	75
May 2022	NM1	51.0	49.3 – 54.7	75
June 2022	NM1	57.8	57.4 – 58.2	75
July 2022	NM1	52.9	51.5 – 54.4	75
August 2022	NM1	52.3	51.1 – 53.0	75
September 2022	NM1	51.0	48.1 – 54.5	75
October 2022	NM1	51.8	51.0 – 53.3	75
November 2022	NM1	50.8	48.1 – 52.7	75
December 2022	NM1	54.6	50.1 – 64.0	75

Major noise sources identified during the noise monitoring included noise from operations of SENTX, the existing SENT landfill and the TKO Area 137 Fill Bank, aircrafts and insects.

No exceedance of the Action and Limit Levels for operation noise monitoring was recorded in the reporting period. No further mitigation measure was required in accordance with the Event and Action Plan presented in *Annex E2*.

2.3 WATER QUALITY MONITORING

2.3.1 Surface Water Quality Monitoring

Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact surface water quality monitoring was carried out at the three designated surface water discharge points (i.e. DP3, DP4 and DP6) at monthly intervals during operation/restoration phase to ensure that the SENTX will not cause adverse water quality impact. Suspension of impact surface water quality monitoring at DP3 was approved under the Baseline Monitoring Report by EPD on 24 July 2019 until the actual commencement of construction works affecting DP3 in 2022.

The parameters as listed in *Table 2.22* were determined by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066).

The Action and Limit Levels of the surface water quality impact monitoring are provided in *Table 2.21*.

Table 2.21 Action and Limit Levels for Surface Water Quality

Parameters	Limit Level
DP4 & DP6	
Ammoniacal-nitrogen	> 7.1 mg/L
COD	> 30 mg/L
SS	> 20 mg/L

The locations of the monitoring stations for the Project are shown in *Figure 2.1*. 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 3 monthly intervals throughout all stages of the surface water quality monitoring programme. Calibration for a DO meter was carried out before measurement according to the instruction manual of the equipment model. Details of the equipment used in the impact surface water quality monitoring works are provided in *Table 2.22*.

Table 2.22 Impact Surface Water Quality Monitoring Details

Monitoring Station	Location	Frequency	Monitoring Dates	Parameter		Equipment
DP4	Surface water discharge point DP4	Monthly	25 Jan 2022, 24 Feb 2022 21 Mar 2022, 25 Apr 2022, 25 May 2022, 24 Jun 2022, 25 Jul 2022, 23 Aug 2022, 22 Sep 2022, 24 Oct 2022, 21 Nov 2022, 21 Dec 2022	• pH • Electrical conductivity (EC) • DO • SS • COD • BOD_5 • TOC • Ammoniacal –nitrogen • Nitrate-nitrogen • Nitrite–nitrogen • TKN • TN • Phosphate • Sulphate • Sulphide • Carbonate • Oil & Grease	• Bicarbonate • Chloride • Sodium • Potassium • Calcium • Magnesium • Nickel • Manganese • Chromium • Cadmium • Copper • Lead • Iron • Zinc • Mercury • Boron	YSI Professional DSS (S/N: 15H103928)
DP6	Surface water discharge point DP6					YSI Professional DSS (S/N: 17B102764) YSI Professional DSS (S/N: 17B100758)

Notes:
(a) Impact surface water quality monitoring at DP3 was suspended from the monitoring event on 25 July 2019 until the actual commencement of construction works affecting DP3 in 2022.

Monitoring Schedule for the Reporting Period

The schedule for surface water quality monitoring during the reporting period is provided in *Annex C*.

Results and Observations

A total of twelve regular monitoring events for impact surface water quality monitoring were scheduled at all designated monitoring stations and three additional surface water quality monitoring event was scheduled during the reporting period. However, sampling could not be carried out from January to April and from August to December 2022 due to insufficient flow. Details of impact water quality monitoring event are provided in *Annex F1*.

Limit Level exceedance (SS) was recorded for surface water quality impact monitoring on 25 May 2022 at DP4 and the exceedance was found to be project-related upon further investigation. Actions in accordance with the Event and Action Plan in *Annex F2* were undertaken.

The additional surface water monitoring at DP4 for SS was conducted on 30 June 2022, 8 July 2022 and 15 July 2022. The SS exceedance at DP4 on 30 June 2022 and 8 July 2022 was found to be project-related upon further investigation. The weekly surface water quality monitoring (SS) was conducted at DP4 until no exceedance of Limit Level. Since the additional surface water monitoring results (SS) at DP4 on 15 July 2022 complied with the Limit Level as stipulated in the updated EM&A Manual, the weekly surface water monitoring (SS) at DP4 was terminated.

The results of the additional surface water monitoring are summarized in *Table 2.23* below. Investigation reports of the exceedances are presented in *Annex F6*.

Table 2.23 Details of Exceedances Recorded for Surface Water Quality Monitoring

Date	Monitoring Location	Parameter	Result	Limit Level	Remarks
25 May 2022	DP3	SS	31.8 mg/L	20 mg/L	Project-related
30 June 2022	DP4	SS	28.2 mg/L	20 mg/L	Weekly monitoring shall be continued
8 July 2022	DP4	SS	26.3 mg/L	20 mg/L	Weekly monitoring shall be continued

Based on the investigation conducted for the monitoring event with potential Action and Limit Levels exceedances with the Contractor, and the IEC, the exceedances were found deemed to Project-related activities.

The Contractor was reminded to implement all relevant mitigation measures for the construction works and maintain good site practice. The ET will keep

track on the monitoring data and ensure Contractor's compliance of the environmental requirements.

2.3.2 *Leachate Monitoring*

Monitoring Requirements and Equipment

According to the updated EM&A Manual, continuous monitoring of leachate level and daily monitoring of effluent quality were carried out during the operation/ restoration phase.

Reduction of effluent monitoring frequency (dry season) (from daily to monthly) was approved by EPD on 22 March 2022. Monthly effluent quality monitoring (dry season) shall be conducted from 23 March 2022. The reduction of effluent monitoring frequency (wet season) (from daily to monthly) was approved by EPD on 2 August 2022. Monthly effluent quality monitoring (wet season) shall be conducted from 3 August 2022.

Temperature, pH and volume of the effluent discharged from the leachate treatment plant were measured in-situ whereas the parameters as listed in *Table 2.22* were determined by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066).

The Limit Levels of the leachate monitoring are provided in *Table 2.24*.

Table 2.24 Limit Levels for Leachate Levels and Effluent Quality

Parameters	Limit Level
Leachate Levels	
Leachate levels above the basal liner	1 m above the primary liner of the leachate containment system
Effluent Quality	
Temperature	> 43 °C
pH Value	6 – 10
Volume Discharged	>2,000 m^3
Suspended Solids (SS)	> 800 mg/L
Phosphate	> 25 mg/L
Sulphate	> 800 mg/L
Total Inorganic Nitrogen [(a)]	> 100 mg/L
Biochemical Oxygen Demand (BOD)	> 800 mg/L
Chemical Oxygen Demand (COD)	> 2,000 mg/L
Oil & Grease	> 20 mg/L
Boron	> 7,000 µg/L
Iron	> 5 mg/L
Cadmium	> 1 µg/L
Chromium	> 300 µg/L
Copper	> 1,000 µg/L
Nickel	> 700 µg/L
Zinc	> 700 µg/L

Parameters	Limit Level
Note:	
(a) Total Inorganic Nitrogen include Ammoniacal-nitrogen, Nitrite-nitrogen and Nitrate-nitrogen.	

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 3 monthly intervals throughout all stages of the leachate quality monitoring programme. Details of the equipment used are provided in *Table 2.25*.

Table 2.25 Leachate Levels and Effluent Quality Monitoring Details

Location	Frequency	Parameter	Monitoring Dates	Equipment
Leachate levels above the basal liner	Continuous	Leachate Levels	1 Jan – 31 Dec 2022	Pairs of pressure transducers
Effluent discharged from LTP	Daily for the first 3 months upon full operation of the LTP at wet season (Apr to Sep) and dry season (Oct to Mar), respectively and reduce to monthly thereafter subject to the monitoring results of the first 3 months for each season and agreement with the EIAO Authority, IEC and IC. (a)	*On-site Measurements*: • Volume • pH • Temperature *Laboratory analysis:* • Suspended Solids • COD • BOD_5 • TOC • Ammoniacal–nitrogen • Nitrate-nitrogen • Nitrite–nitrogen • Total Nitrogen • Sulphate • Phosphate • Oil & Grease • Alkalinity • Chloride • Calcium • Potassium • Magnesium • Iron • Zinc • Copper • Chromium • Nickel • Cadmium • Boron	1 Jan – 3 Aug 2022, 7 Sep 2022, 7 Oct 2022, 8 Nov 2022, 6 Dec 2022	Lutron WA-2017SD (S/N: T.016811) TOA HM-30P (S/N: 790332) LUTRON WA-2017SD (S/N: T.016811) HANNA H198103 (Eqt No.: HK1561) COMARK PDT300 (S/N: 03948681155)

Note:
(a) Reduction of monitoring frequency will be subject to the monitoring results to demonstrate environmentally acceptable performance.

Monitoring Schedule for the Reporting Month

The schedule for leachate monitoring during the reporting period is provided in *Annex C*.

Results and Observations

The leachate levels and effluent quality monitoring results are summarised in *Table 2.26* and *Table 2.27*, respectively. The detailed monitoring results are provided in *Annex F3* and *Annex F4*, respectively.

Table 2.26 Summary of Leachate Levels in the Reporting Period

Monitoring Location	Average Leachate Head Levels (cm) (Range in Bracket)	Limit Level (cm)
Pump Station No. 1X (Cell 1X)		
Meter No. X-1	68 (28 - 103)	> 178
Meter No. X-2	79 (33 – 117)	
Average	74 (38 – 107)	
Pump Station No. 2X (Cell 2X)		
Meter No. X-3	80 (46 – 125)	> 180
Meter No. X-4	76 (39 – 104)	
Average	78 (48 – 104)	
Pump Station No. 3X (Cell 3X)		
Meter No. X-5	75 (46 – 232)	> 175
Meter No. X-6	76 (48 – 237)	
Average	76 (48 – 235)	
Pump Station No. 4X (Cell 4X)		
Meter No. X-7	82 (48 – 329)	> 186
Meter No. X-8	85 (50 – 331)	
Average	84 (49 – 330)	

Table 2.27 Summary of Effluent Quality Monitoring Results in the Reporting Period

Parameters		Monitoring Results			Limit Level
		Average	**Min**	**Max**	
Temperature	°C	30.3	20.4	36.9	> 43 °C
pH Value	pH unit	8.4	8.1	8.6	6 – 10
Volume Discharged	m^3	1153.5	616.0	1995.0	>2,000 m^3
Suspended Solids (SS)	mg/L	31.5	23.6	51.2	> 800 mg/L
Phosphate	mg/L	6.4	2.5	12.7	> 25 mg/L
Sulphate	mg/L	201.8	97.0	385.0	> 800 mg/L
Total Inorganic Nitrogen [(a)]	mg/L	50.4	33.7	65.9	> 100 mg/L
BOD	mg/L	10.6	8.0	25.0	> 800 mg/L
COD	mg/L	928.5	484.0	1600.0	> 2,000 mg/L
Oil & Grease	mg/L	<5.0	<5.0	<5.0	> 20 mg/L
Boron	µg/L	4685.9	3400.0	5760.0	> 7,000 µg/L
Iron	mg/L	1.5	0.7	3.3	> 5 mg/L
Cadmium	µg/L	<1.0	<1.0	<1.0	> 1 µg/L
Chromium	µg/L	127.1	74.0	343.0	> 300 µg/L
Copper	µg/L	16.5	<10.0	29.0	> 1,000 µg/L
Nickel	µg/L	107.6	74.0	163.0	> 700 µg/L
Zinc	µg/L	87.4	50.0	234.0	> 700 µg/L

Limit Levels exceedances were recorded for leachate level monitoring and leachate (Chromium) during water quality monitoring in the reporting period and actions in accordance with the Event and Action Plan presented in *Annex F2*. Investigation of the Action and Limit Levels exceedances was conducted and the investigation reports are presented in *Annex F6*. Based on the

investigation conducted for the monitoring event with potential Limit Levels exceedance with the Contractor and the IEC, the leachate level exceedances at Pump Station No. 4X from 12 August to 20 August 2022, from 30 September 2022 to 3 October 2022 and from 3 November 2022 to 4 November 2022, and at Pump Station No. 3X on 3 November 2022 were considered Project-related. The leachate (Chromium) exceedance on 6 December 2022 was considered Project related.

The Contractor was reminded to implement all relevant mitigation measures for the construction and operation works and maintain good site practice. The ET will keep track on the monitoring data and ensure Contractor's compliance of the environmental requirements..

2.3.3 Groundwater Monitoring

Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project with incorporation of the proposed updates under the Amendment Summary approved by EPD on 15 June 2020, groundwater monitoring was carried out at 14 perimeter groundwater monitoring wells (including 3 up-gradient wells and 11 down-gradient wells) (i.e. MWX-1 to MWX-14) to monitor the groundwater quality and level of the perimeter groundwater monitoring wells at monthly interval.

The Limit Levels for groundwater quality is provided in *Table 2.28* below.

Table 2.28 Limit Levels for Groundwater Quality

Location	Limit Levels	
	Ammoniacal-nitrogen (mg L^{-1})	**COD (mg L^{-1})**
MWX-1	5.00	30
MWX-2	5.00	30
MWX-3	5.00	30
MWX-4	7.63	36
MWX-5	5.00	30
MWX-6	5.00	46
MWX-7	6.55	36
MWX-8	15.85	50
MWX-9	7.30	71
MWX-10	5.00	30
MWX-11	5.00	30
MWX-12	5.00	30
MWX-13	5.00	30
MWX-14	5.00	30

A bladder pump with Teflon sampling tube and adjustable discharge rates was used for purging and taking of groundwater sample from the monitoring wells. Filtered groundwater samples were collected by connecting a disposable in-line filter system to the tubing of the sampling pump, prior to

storage and analysis by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066).

A portable dip meter with 5mm accuracy was used for measurement of groundwater level at each well. The dip meter has an audio indicator of the water level and was checked before use.

The measurements of pH and electrical conductivity (EC) were undertaken *in situ*. *In situ* monitoring instruments in compliance with the specifications listed under Section 4.3.2 of the updated EM&A Manual were used to undertake the groundwater quality monitoring for the Project.

Details of the equipment used and the monitoring locations are summarised in *Table 2.29* and illustrated in *Figure 2.1,* respectively.

Table 2.29 Groundwater Monitoring Details

Monitoring Location	Frequency	Parameter		Monitoring Dates	Equipment
All groundwater monitoring wells (MWX-1 to MWX-14)	Monthly	• Water level • pH • EC • COD • BOD5 • TOC • Ammoniacal–nitrogen • Nitrate-nitrogen • Nitrite–nitrogen • TKN • TN • Sulphate • Sulphide • Carbonate • Bicarbonate • Phosphate	• Chloride • Sodium • Potassium • Calcium • Magnesium • Nickel • Manganese • Chromium • Cadmium • Copper • Lead • Iron • Zinc • Mercury • Boron	4, 11 Jan 2022, 15, 18 Feb 2022, 14, 15 Mar 2022, 11, 12 Apr 2022 10, 11, 18 May 2022, 6, 14 Jun 2022, 4, 5 Jul 2022, 17, 18 Aug 2022, 5, 6 Sept 2022, 10, 11 Oct 2022, 7, 8 Nov 2022, 12, 13 Dec 2022	YSI Professional DSS (S/N: 17B102764) YSI Professional DSS (S/N: 15H103928)

Monitoring Schedule for the Reporting Month

The schedule for groundwater quality monitoring during the reporting period is provided in *Annex C*.

Results and Observations

The groundwater quality monitoring results and detailed monitoring results are summarised in *Table 2.30* and provided in *Annex F5,* respectively.

Table 2.30 Summary of Groundwater Monitoring Results in the Reporting Period

Location	Ammoniacal-nitrogen (mg L^{-1})		COD (mg L^{-1})	
	Average Monitoring Results	Limit Levels	Average Monitoring Results	Limit Levels
MWX-1	0.48	5.00	10	30
MWX-2	0.77	5.00	9	30
MWX-3	1.27	5.00	16	30
MWX-4	4.10	7.63	27	36
MWX-5	1.79	5.00	24	30
MWX-6	3.54	5.00	42	46
MWX-7	5.69	6.55	22	36
MWX-8	9.68	15.85	35	50
MWX-9	2.09	7.30	30	71
MWX-10	0.02	5.00	11	30
MWX-11	0.07	5.00	6	30
MWX-12	0.02	5.00	5	30
MWX-13	0.04	5.00	6	30
MWX-14	0.05	5.00	4	30

Limit Levels exceedances were recorded for groundwater monitoring in the reporting period and actions in accordance with the Event and Action Plan presented in *Annex F2* were undertaken. Investigation of the Limit Levels exceedances was conducted and the investigation report is presented in *Annex F6*.

Based on the investigation conducted for the monitoring event with potential Limit Levels exceedance with the Contractor and the IEC, the groundwater quality (COD) exceedances at MWX-4 and MWX-6 on 15 February 2022, at MWX-4 on 15 March 2022, at MWX-4, MWX5, MWX6 on 11 April 2022 and at MWX-7 on 18 August 2022 and 6 September 2022 were considered non Project-related.

The Contractor was reminded to implement all relevant mitigation measures for the construction and operation works and maintain good site practice. The ET will keep track on the monitoring data and ensure Contractor's compliance of the environmental requirements.

2.4 LANDFILL GAS MONITORING

2.4.1 Monitoring Requirements

According to the updated EM&A Manual of the Project, landfill gas monitoring was carried out at the perimeter of the waste boundary (monitoring wells), area between the SENTX Site boundary and the waste boundary (surface emission), occupied on-site building, service voids, utilities pit and manholes in the vicinity of the SENTX (build-up of landfill gas) during the operation/restoration phase.

The Limit Levels for landfill gas monitoring is provided in *Table 2.31* below.

Table 2.31 Limit Levels for Landfill Gas Constituents

Parameters	Monitoring Location	Limit Level (% (v/v))	
Perimeter Landfill Gas Monitoring Wells [a]			
Methane & Carbon Dioxide		Methane	Carbon Dioxide
	LFG1	1.0	2.2
	LFG2	1.0	4.2
	LFG3	1.0	6.3
	LFG4	1.0	7.0
	LFG5	1.0	3.4
	LFG6	1.0	9.1
	LFG7	1.0	1.5
	LFG8	1.0	1.7
	LFG9	2.5	1.7
	LFG10	1.0	1.6
	LFG11	3.0	2.0
	LFG12	13.2	1.5
	LFG13	22.5	2.7
	LFG14	1.0	1.6
	LFG15	18.2	2.0
	LFG16	1.0	1.7
	LFG17	10.5	2.1
	LFG18	2.3	1.9
	LFG19	6.3	3.1
	LFG20	1.0	4.2
	LFG21	1.0	4.3
	LFG22	1.0	3.9
	LFG23	1.0	10.3
	LFG24	1.0	4.0
	GP1	1.0	8.5
	GP2 (shallow)	1.0	11.4
	GP2 (deep)	1.0	10.4
	GP3 (shallow)	1.0	3.9
	GP3 (deep)	1.0	1.9
	GP4 (shallow)	1.0	2.3
	GP4 (deep)	1.0	5.6
	GP5 (shallow)	1.0	9.5
	GP5 (deep)	1.0	7.5
	GP6	1.0	7.8
	GP7	1.0	4.5
	GP12	1.0	2.3
	GP15	1.0	2.2
	P7	1.0	2.5
	P8	1.0	1.7
	P9	1.0	2.7

Service Voids, Utilities Pits and Manholes		
Methane (or flammable gas)	Service voids, utilities pits and manholes	1% by volume
Permanent Gas Monitoring System		
Methane (or flammable gas)	Permanent Gas Monitoring System	1% by volume (20% LEL)
Area Between the SENTX Site Boundary and Waste Boundary (Surface Emission)		
Flammable gas	Area between SENTX site boundary and waste boundary	30 ppm

Notes:

(a) Limit Levels established based on the pre-operation phase baseline and additional landfill gas monitoring results in the Pre-operation Baseline Monitoring Report.

Gas analysers in compliance with the specifications listed under Section 5.4.1 of the updated EM&A Manual were used to monitor the gas parameters at the landfill gas monitoring wells, service voids, utilities pits and manholes. The gas analyser was calibrated by a laboratory accredited under HOKLAS at yearly intervals and checked before use to ensure the validity and accuracy of the results. A portable dip meter was used to monitor the water level in the monitoring wells.

Permanent gas monitoring systems with pre-set alarm levels for methane at 20% lower explosive limit (LEL, equivalent to 1% methane gas (v/v)) were installed and operated in all occupied on-site buildings at SENTX. A central control panel is equipped to alert site personnel when the gas concentration at any detector reaches the alarm level.

Flammable gas detector in compliance with the specifications listed under Section 5.4.1 of the updated EM&A Manual was used to measure flammable gas concentration. Flammable gas surface emission survey was conducted at a slow pace with the inlet tube of the meter probe a few centimeters above ground surface to detect flammable gas emitted from the ground surface.

Bulk gas samples were collected into inert sample containers (i.e. Tedlar Bag) and transferred to ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066) laboratory within 24 hours of collection for direct analysis on a gas chromatography within 48 hours after collection.

The equipment used in the landfill gas monitoring programme is summarised in *Table 2.32.* The landfill gas monitoring locations for perimeter landfill gas monitoring wells and service voids, utilities and manholes along the Site boundary and within the SENTX site are illustrated in *Figure 2.3 – 2.4* and *Annex G1*, respectively.

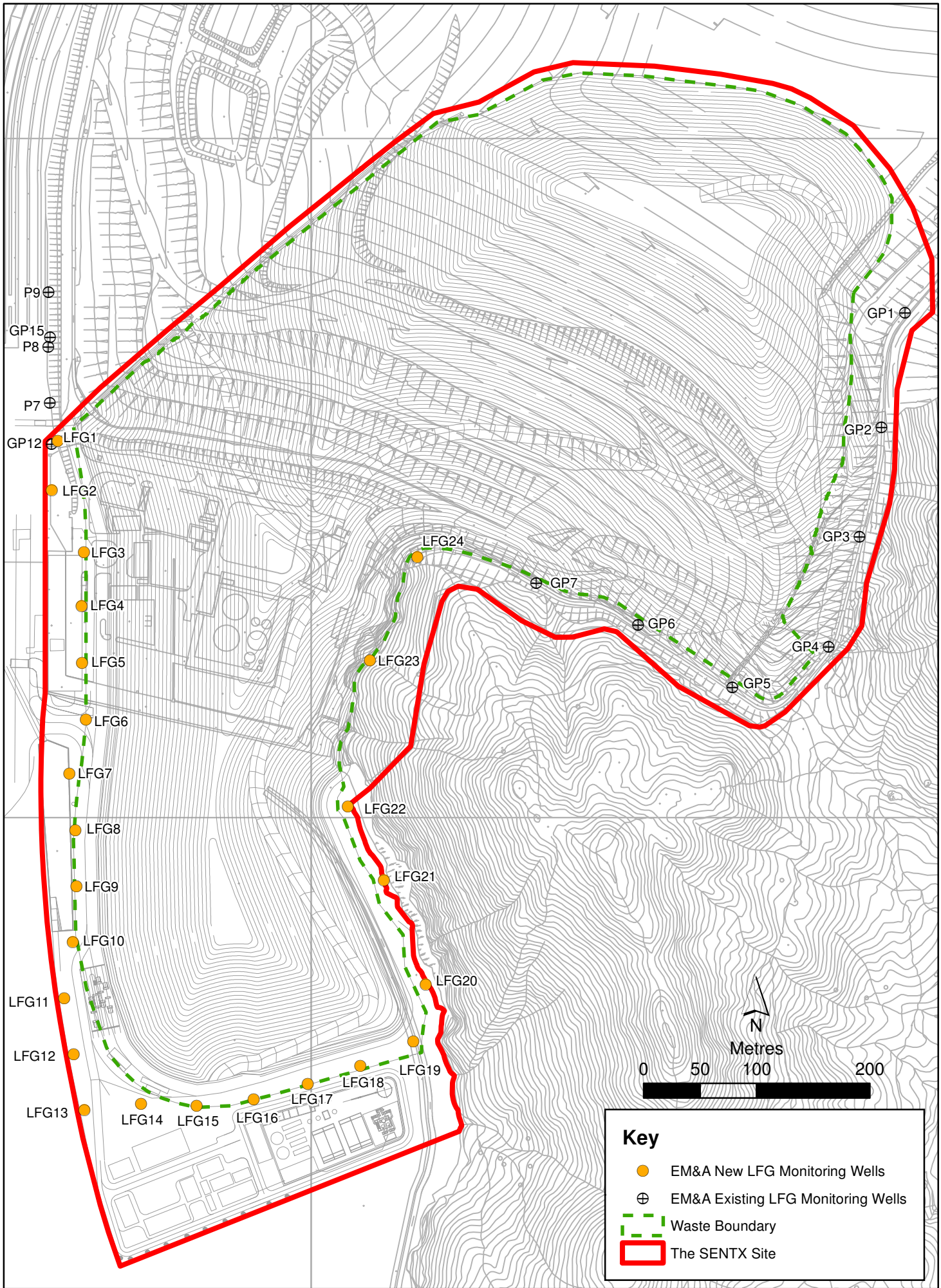

Figure 2.3

Location of Landfill Gas Monitoring Wells

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Date: 20/11/2019

Environmental Resources Management

ERM

TKO Industrial Estate

Fat Tong Chau

TKO AREA 137

Infrastructure Area

Clear Water Bay Country Park

Key

- Existing SENT Landfill
- SENTX Waste Boundary
- The SENTX Site
- Flammable Gas Surface Emission Monitoring Location

N

Metres

0 250 500

Figure 2.4

Flammable Gas Surface Emission Monitoring Locations

Environmental Resources Management

ERM

Table 2.32 Landfill Gas Monitoring Details

Monitoring Location	Frequency	Parameter	Monitoring Dates	Equipment
Perimeter landfill gas monitoring wells (LFG1 to LFG24, P7 to P9, GP1 to GP7, GP12 and GP15)	Monthly	• Methane • Carbon dioxide • Oxygen • Atmospheric pressure	18 Jan 2022, 9 Feb 2022, 8 Mar 2022, 7 Apr 2022, 17 May 2022, 12 Jun 2022, 12 Jul 2022, 15 Aug 2022, 16 Sep 2022, 3 Oct 2022, 1 Nov 2022, 6 Dec 2022	GA5000 (S/N: G507306)
Service voids, utilities and manholes along the Site boundary and within the SENTX Site (UU1 to UU28)	Monthly	• Methane • Carbon dioxide • Oxygen	20 Jan 2022, 11 Feb 2022, 11 Mar 2022, 8 Apr 2022, 16 May 2022, 13 Jun 2022, 13 Jul 2022, 5 Aug 2022, 13 Sep 2022, 5 Oct 2022, 4 Nov 2022, 9 Dec 2022	GA5000 (S/N: G507306)
Permanent gas monitoring system in all occupied on-site buildings	Continuous	• Methane (or flammable gas) by permanent gas monitoring system	1 Jan – 31 Dec 2022	Permanent gas monitoring system
Areas between the SENTX Site boundary and the waste boundary and location of vegetation stress	Quarterly	• Flammable gas emitted from the ground surface	15 Feb 2022, 18 May 2022, 16 Aug 2022, 18 Nov 2022	GMI Leak Surveyor (S/N: 554846)
Bulk gas sampling at least 2 of the perimeters LFG monitoring wells	Quarterly	• Methane • Carbon dioxide • Oxygen • Nitrogen • Carbon monoxide • Other flammable gas	16 Feb 2022, 17 May 2022, 15 Aug 2022, 1 Nov 2022	Gas sampling pump and Tedlar bags

Monitoring Schedule for the Reporting Month

The schedule for dust monitoring during the reporting period is provided in *Annex C*.

The landfill gas monitoring results are summarised and provided in *Tables 2.33 - 2.36 and Annex G2,* respectively.

Table 2.33 Summary of Landfill Gas Monitoring Results at Perimeter LFG Monitoring Wells in the Reporting Period

Location	Methane (% (v/v))				Carbon Dioxide (% (v/v))			
	Monitoring Results			Limit Level [(a)]	Monitoring Results			Limit Level [(a)]
	Average	Min	Max		Average	Min	Max	
LFG1	0.0	0.0	0.0	1.0	0.4	0.0	1.5	3.2
LFG2	0.0	0.0	0.0	1.0	0.7	0.0	2.4	4.3
LFG3	0.0	0.0	0.1	1.0	0.4	0.0	1.8	6.3
LFG4	0.0	0.0	0.0	1.0	0.2	0.0	0.7	7.0
LFG5	0.0	0.0	0.0	1.0	0.2	0.0	0.3	3.4
LFG6	0.2	0.0	1.8	1.0	0.5	0.0	2.1	9.1
LFG7	0.0	0.0	0.0	1.0	0.0	0.0	0.1	1.5
LFG8	1.0	0.0	8.9	12.6	0.1	0.0	0.5	2.4
LFG9	0.2	0.0	1.5	2.5	0.1	0.0	0.3	1.7
LFG10	0.6	0.0	2.9	3.5	0.0	0.0	0.1	1.6
LFG11	0.1	0.0	0.8	3.0	0.1	0.0	0.5	2.0
LFG12	0.0	0.0	0.0	13.2	0.0	0.0	0.1	1.5
LFG13	5.4	0.0	24.1	22.5	0.1	0.0	0.9	2.7
LFG14	0.2	0.0	2.4	5.2	0.0	0.0	0.2	1.8
LFG15	0.8	0.0	4.1	18.2	0.1	0.0	0.3	2.0
LFG16	0.0	0.0	0.1	1.0	0.0	0.0	0.1	2.0
LFG17	1.4	0.0	15.9	17.8	0.1	0.0	0.5	2.4
LFG18	0.0	0.0	0.0	2.3	0.0	0.0	0.1	2.1
LFG19	0.0	0.0	0.0	6.3	0.0	0.0	0.2	3.1
LFG20	0.0	0.0	0.0	1.0	0.4	0.0	2.5	4.6
LFG21	0.0	0.0	0.0	1.0	1.0	0.0	3.0	4.8
LFG22	0.0	0.0	0.0	1.0	0.5	0.0	2.3	4.0
LFG23	0.0	0.0	0.0	1.0	2.3	0.4	4.7	10.3
LFG24	0.0	0.0	0.0	1.0	0.5	0.0	1.0	4.7
GP1	0.0	0.0	0.2	1.0	3.5	0.1	8.5	10.6
GP2 (shallow)	0.0	0.0	0.1	1.0	0.2	0.0	1.2	11.4
GP2 (deep)	0.1	0.0	0.3	1.0	1.4	0.0	8.0	10.4
GP3 (shallow)	0.0	0.0	0.1	1.0	0.8	0.1	3.3	6.9
GP3 (deep)	0.0	0.0	0.0	1.0	0.3	0.1	1.0	5.6
GP4 (shallow)	0.0	0.0	0.0	1.0	0.3	0.1	1.1	11.6
GP4 (deep)	0.0	0.0	0.1	1.0	0.2	0.1	0.4	7.7
GP5 (shallow)	0.0	0.0	0.0	1.0	3.8	0.1	8.4	10.8
GP5 (deep)	0.0	0.0	0.0	1.0	0.1	0.0	0.1	7.5
GP6	0.0	0.0	0.0	1.0	4.5	0.1	6.7	8.4
GP7	0.0	0.0	0.0	1.0	0.3	0.0	1.4	4.5
GP12	0.0	0.0	0.1	1.0	0.2	0.0	0.6	2.3
GP15	0.0	0.0	0.2	1.0	0.0	0.0	0.1	2.2
P7	0.0	0.0	0.1	1.0	0.0	0.0	0.1	2.5
P8	0.0	0.0	0.2	1.0	0.0	0.0	0.1	1.7
P9	0.0	0.0	0.2	1.0	0.1	0.0	0.3	2.7

Notes:

(a) Limit Levels established based on the pre-operation phase baseline and additional landfill gas monitoring results in the Pre-operation Baseline Monitoring Report.

Table 2.34 Summary of Landfill Gas Monitoring Results at Service Voids, Utilities Pits and Manholes in the Reporting Period

Location	Methane (% (v/v))			
	Monitoring Results			Limit Levels
	Average	Min	Max	
UU01	0.0	0.0	0.1	1.0
UU02	0.0	0.0	0.1	1.0
UU03	0.1	0.0	0.2	1.0
UU04	0.0	0.0	0.2	1.0
UU05	0.0	0.0	0.2	1.0
UU06	0.1	0.0	0.2	1.0
UU07	0.1	0.0	0.3	1.0
UU08	0.1	0.0	0.3	1.0
UU09	0.0	0.0	0.0	1.0
UU10	0.0	0.0	0.0	1.0
UU11	0.0	0.0	0.0	1.0
UU12	Voided due to latest site programme and on-going operation work			1.0
UU13	0.0	0.0	0.0	1.0
UU14	0.0	0.0	0.0	1.0
UU15	0.0	0.0	0.0	1.0
UU16	0.0	0.0	0.0	1.0
UU17	Voided due to latest site programme and on-going operation work			1.0
UU18	0.0	0.0	0.1	1.0
UU19	0.1	0.0	0.2	1.0
UU20	0.0	0.0	0.1	1.0
UU21	0.0	0.0	0.0	1.0
UU22	0.0	0.0	0.1	1.0
UU23	0.0	0.0	0.1	1.0
UU24	0.0	0.0	0.1	1.0
UU25	0.0	0.0	0.1	1.0
UU26	0.0	0.0	0.2	1.0
UU27	0.0	0.0	0.2	1.0
UU28	0.0	0.0	0.1	1.0

Table 2.35 Summary of Landfill Gas Bulk Gas Sampling Monitoring Results in the Reporting Period

Parameters	Limit Level (LFG14) [a]	LFG14	Limit Level (LFG15) [a]	LFG15
February 2022				
Methane (% (v/v))	1.0	0.0	18.2	0.0
Carbon Dioxide (% (v/v))	1.6	0.119	2.0	0.110
Oxygen (% (v/v))	-	10.2	-	20.1
Nitrogen (% (v/v))	-	90.5	-	80.3
Carbon Monoxide (% (v/v))	-	<0.020	-	<0.020
Hydrogen (% (v/v))	-	<0.020	-	<0.020
Ethane (ppmv)	-	<1.0	-	<1.0
Propane (ppmv)	-	<1.0	-	<1.0
Butane (ppmv)	-	<1.0	-	<1.0
Parameters	**Limit Level (LFG12) [a]**	**LFG12**	**Limit Level (LFG24) [a]**	**LFG24**
May 2022				
Methane (% (v/v))	13.2	0.415	1.0	<0.020
Carbon Dioxide (% (v/v))	1.5	0.038	4.7	1.03
Oxygen (% (v/v))	-	19.9	-	19.6
Nitrogen (% (v/v))	-	78.7	-	79.0
Carbon Monoxide (% (v/v))	-	<0.020	-	<0.020
Hydrogen (% (v/v))	-	<0.020	-	<0.020
Ethane (ppmv)	-	<1.0	-	<1.0
Propane (ppmv)	-	<1.0	-	<1.0
Butane (ppmv)	-	<1.0	-	<1.0
Parameters	**Limit Level (LFG20) [a]**	**LFG20**	**Limit Level (LFG23) [a]**	**LFG23**
August 2022				
Methane (% (v/v))	1.0	<0.020	1.0	<0.020
Carbon Dioxide (% (v/v))	4.6	0.059	10.3	0.062
Oxygen (% (v/v))	-	20.6	-	20.7
Nitrogen (% (v/v))	-	77.5	-	77.3
Carbon Monoxide (% (v/v))	-	<0.020	-	<0.020
Hydrogen (% (v/v))	-	<0.020	-	<0.020
Ethane (ppmv)	-	<1.0	-	<1.0
Propane (ppmv)	-	<1.0	-	<1.0
Butane (ppmv)	-	<1.0	-	<1.0
Parameters	**Limit Level (LFG1) [a]**	**LFG1**	**Limit Level (LFG8) [a]**	**LFG8**
November 2022				
Methane (% (v/v))	1.0	<0.0200	12.6	<0.020
Carbon Dioxide (% (v/v))	3.2	0.419	2.4	0.138
Oxygen (% (v/v))	-	15.6	-	17.2
Nitrogen (% (v/v))	-	80.6	-	79.2
Carbon Monoxide (% (v/v))	-	<0.020	-	<0.020
Hydrogen (% (v/v))	-	<0.020	-	<0.020
Ethane (ppmv)	-	<1.0	-	<1.0
Propane (ppmv)	-	<1.0	-	<1.0
Butane (ppmv)	-	<1.0	-	<1.0

Notes:

(a) Limit Levels established based on the pre-operation phase baseline and additional landfill gas monitoring results in the Pre-operation Baseline Monitoring Report.

Table 2.36 Summary of Flammable Gas Surface Emission Monitoring Results in the Reporting Period

GPS Coordinates Latitude (N)	Longitude (E)	Monitoring Results (ppm)	Limit Level (ppm)
February 2023			30
22°16′36″	114°16′36″	3	
22°16′24″	114°16′36″	6	
May 2023			
22°16′31″	114°16′17″	8	
22°16′53″	114°16′17″	5	
August 2023			
22°16′33″	114°16′17″	3	
22°16′16″	114°27′78″	6	
22°16′15″	114°16′33″	12	
22°16′14″	114°16′28″	8	
22°16′23″	114°16′26″	8	
22°16′30″	114°16′26″	21	
22°16′37″	114°16′27″	15	
22°16′37″	114°16′31″	12	
November 2023			
22°16′26″	114°16′35″	25	
22°16′26″	114°16′34″	11	

The alarm of the permanent gas monitoring systems with pre-set levels for methane at 20% lower explosive limit (LEL, equivalent to 1% methane gas (v/v)) was not triggered at all occupied on-site buildings at SENTX in the reporting period.

Limit Levels exceedances were recorded for perimeter landfill gas monitoring in the reporting period and actions in accordance with the Event and Action Plan presented in *Annex G3* were undertaken. Investigation of the Action and Limit Levels exceedances was conducted and the investigation report is presented in *Annex G4.* Based on the investigation conducted for the monitoring event with potential Limit Levels exceedance with the Contractor and the IEC, the perimeter landfill gas exceedance at LFG6 and LFG13 on 17 May 2022 and 3 October 2022 were considered non Project-related.

The Contractor was reminded to implement all relevant mitigation measures for the construction and operation works and maintain good site practice. The ET will keep track on the monitoring data and ensure Contractor's compliance of the environmental requirements.

2.5 LANDSCAPE AND VISUAL MONITORING

2.5.1 Monitoring Requirements

According to the updated EM&A Manual of the Project, the monthly landscape and visual audit was conducted on 27 January 2022, 24 February

2022, 18 March 2022, 22 April 2022, 25 May 2022, 24 June 2022, 15 July 2022, 2 August 2022, 22 September 2022, 27 October 2022, 17 November 2022 and 22 December 2022 to monitor the implementation of the landscape and visual mitigation measures during operation/ restoration phase.

All relevant environmental mitigation measures listed in the approved EIA Report and the updated EM&A Manual and their implementation status are summarised in *Annex B*.

2.5.2 Results and Observations

The Contractor has implemented environmental mitigation measures as stated in the approved EIA Report and the EM&A Manual.

Regarding the landscape and visual audit, the Contractor was reminded to maintain the advance screen planting works regularly to ensure effective screening of views of project works from the High Junk Peak Trail.

2.6 EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis with the Contractor, IEC and ER to monitor the implementation of proper environmental pollution control and mitigation measures for air quality, noise, water quality, landfill gas and waste management under the Project. In the reporting period, 52 site inspections were carried out on the following dates:

- 6, 13, 20, 27 and 31 January 2022;
- 10, 17 and 24 February 2022;
- 3, 10, 17, 24 and 31 March 2022;
- 7, 14, 21 and 28 April 2022;
- 5, 12, 19 and 25 May 2022;
- 2, 9, 16, 23 and 30 June 2022;
- 7, 14, 21 and 28 July 2022;
- 4, 11, 18 and 26 August 2022;
- 1, 8, 15, 22 and 29 September 2022;
- 6, 13, 20 and 27 October 2022;
- 3, 10, 17 and 24 November 2022; and
- 1, 8, 15, 22 and 29 December 2022.

Key observations during the site inspections are summarized in *Table 2.37*.

Table 2.37 Key Observations Identified during the Site Inspections in this Reporting Period

Inspection Date	Environmental Observations and Recommendations
6 January 2022	• The Contractor shall replace the faded NRMM label displayed on the generators near DP3 and maintenance building. • The Contractor shall provide drip trays for the chemicals stored near DG house and Chunwo container area. • The Contractor shall remove the stagnant water and general refuse accumulated at the channel near sump house 3. • The Contractor shall remove the general refuse accumulated near water services house regularly to minimise odour and pest issues.
13 January 2022	• The Contractor shall remove the stagnant water and general refuse accumulated at the channel near sump house 3. • The Contractor shall clean up the oil spill at the breaker near buttress wall, handle the clean-up materials as chemical waste and maintain the break to avoid oil spillage, if necessary. • The Contractor shall dispose of the emptied chemical containers at Cell4X and near pump house 3 as chemical waste in the chemical waste cabinet. • The Contractor shall remove the general refuse accumulated near DP3 and dispose of the waste regularly to minimize odour and pest issues.
20 January 2022	• The Contractor shall clean up the oil spillage at the generator near GVL building and handle the clean-up materials as chemical waste. • The Contractor shall provide drip trays for the chemicals stored near DP3 and Chunwo container area. • The Contractor shall segregate the construction waste and materials near sediment trap and dispose of the waste regularly. • The Contractor shall maintain site tidiness and remove the general refuse accumulated at the channel near sump house 3, RC15, u channel near Chunwo container area and DP6 and dispose of the waste regularly to minimise odour and pest issues.
27 January 2022	• The Contractor shall remove the stagnant water accumulated at the channel near sump house 3 regularly and spray larvicides for mosquito control, if necessary. • The Contractor shall maintain site tidiness and remove the general refuse accumulated near town gas plant and dispose of the emptied chemical containers as chemical waste.
31 January 2022	• The Contractor shall clean up the oil spillage near sediment trap and DP6 channel and handle the clean-up materials as chemical waste. • The Contractor shall provide drip trays for the chemicals stored near sediment trap. • The Contractor shall dispose of the emptied chemical containers near sediment trap as chemical waste in accordance with the COP. • The Contractor shall remove the general refuse accumulated near RC15 and at the channel near Chun Wo container area and dispose of the waste regularly.
10 February 2022	• The Contractor shall provide a NRMM label on the crane near sump house 4. • The Contractor shall remove the general refuse accumulated at the channel near sump house 3 and dispose of the waste regularly to minimise odour and pest issues.
17 February 2022	• The Contractor shall provide drip tray for the chemical stored near X10a. • The Contractor shall remove the general refuse accumulated near X10a, Cell 3X perimeter bund and at the channel near sump house 3 and VWF, and dispose of the waste regularly.

Inspection Date	Environmental Observations and Recommendations
24 February 2022	• The Contractor shall cover the water tank near sediment trap with lid to minimise pest issues. • The Contractor shall remove the stagnant water accumulated at the channel near sump house 3 and at Cell 4X regularly and spray larvicides for mosquito control, if necessary. • The Contractor shall remove the stagnant water accumulated in the drip trays at Wetsep near sediment trap.
3 March 2022	• The Contractor shall remove the general refuse accumulated at the channel near sump house 3 and along Western site boundary and dispose of the waste regularly. • The Contractor shall remove the stagnant water accumulated in the drip tray for generator at Cell 4X.
10 March 2022	• The Contractor shall display a NRMM label on the excavator near RC15. • The Contractor shall remove the general refuse accumulated at the channel near sump house 2 and 3 and dispose of the waste regularly. • The Contractor shall clean up the oil spillage near sump house 4 and handle the clean-up materials as chemical waste. • The Contractor shall provide drip tray for the chemical stored at Cell 4X.
17 March 2022	• The Contractor shall remove the stagnant water accumulated at the channel near pump house 3 regularly, and spray larvicides for mosquito control, if necessary. • The Contractor shall dispose of the waste and remove the stagnant water accumulated at the refuse skip near DP6 regularly to minimise odour and pest issues.
24 March 2022	• The Contractor shall display a NRMM label on the excavator near EPD building. • The Contractor shall clean up the oil spillage at the excavator near pump house 3 and handle the clean-up materials as chemical waste. • The Contractor shall remove the general refuse and stagnant water accumulated near Towngas plant and DP6 and dispose of the waste regularly to minimise odour and pest issues.
31 March 2022	• The Contractor shall remove the stagnant water accumulated at the channel near sump house 3 regularly and spray larvicides for mosquito control, if necessary. • The Contractor shall remove the general refuse and stagnant water accumulated at the refuse skip near DP6 and Towngas plant and dispose of the waste regularly to minimise odour and pest issues.
7 April 2022	• The Contractor shall remove the general refuse accumulated near DP3 and at the channel near sump house 3 and dispose of the waste regularly to minimise odour and pest issues. • The Contractor shall remove the stagnant water accumulated in the drip tray for generator at Cell 4X.
14 April 2022	• The Contractor shall clean up the oil spillage near sump house 3 and handle the clean-up materials as chemical waste. • The Contractor shall provide drip tray for the chemical stored near sump house 4. • The Contractor shall maintain the drainage system near VWF and remove the stagnant water accumulated at DP6 channel and the sediment tank regularly, and spray larvicides for mosquito control, if necessary.

Inspection Date	Environmental Observations and Recommendations
21 April 2022	• The Contractor shall cover the stockpile of dusty materials near sediment trap to minimise dust impact. • The Contractor shall replace the NRMM labels displayed on the excavator near Cell 4X and roller near sump house 3 in accordance with the COP. • The Contractor shall remove the deposited silt and grit and refuse accumulated at DP3 sediment pit, channel near sump house 3 and DP6 regularly, to ensure they are functioning properly at all times. • The Contractor shall clean up the oil spillage at the excavator near guardhouse, near sediment trap and maintenance workshop and handle the clean-up materials as chemical waste.
28 April 2022	• The Contractor shall remove the general refuse accumulated near Town gas plant and Sump house 3. • The Contractor shall remove the concrete residue accumulated near EPD building and designate an area for concrete truck washing. • The Contractor shall provide drip tray for the chemical stored near EPD building. • The Contractor shall clean up the oil spillage on the road between biogas plant and LTP and handle the clean-up as chemical waste.
5 May 2022	• The Contractor shall replace the faded NRMM label displayed on the generator near sediment trap. • The Contractor shall provide drip trays for the chemicals stored near X10a channel and sump house 4. • The Contractor shall remove the stagnant water accumulated at the channel near sump house 3. • The Contractor shall remove the general refuse accumulated at channel X10a, near sediment trap and guard house and dispose of the waste regularly.
12 May 2022	• The Contractor shall plug the drip tray for the generator near Cell4X to avoid leakage. • The Contractor shall review the treatment capacity of the Wetsep near DP4 and DP6 to ensure all surface water is treated before discharge. • The Contractor shall enhance surface water management around the site and remove the stagnant water accumulated at the channel near sump house 3. • The Contractor shall remove the general refuse accumulated at channel X10a and dispose of the waste regularly.
19 May 2022	• The Contractor shall replace the NRMM label displayed on the electric generator near sump house 3 in accordance with COP. • The Contractor shall operate the Wetsep near DP4 and review its' treatment capacity to prevent non-compliance with the standard in WPCO licence and EM&A requirement. • The Contractor shall clean up the oil spillage on the road between biogas plant and LTP and handle the clean-up as chemical waste. • The Contractor shall remove the general refuse accumulated near sump house 3, DP4T and RC15 and dispose of the waste regularly to minimize odour and pest issue. • The Contractor shall remove the stagnant water accumulated in the drip tray for the electric generator near LTP.

Inspection Date	Environmental Observations and Recommendations
25 May 2022	• The Contractor shall replace the NRMM label displayed on telescopic handler near buttress wall in accordance with COP. • The Contractor shall provide drip trays for the chemicals stored near cell 4X, at channel x10c, bar bending area and Paul Y container area. The Contractor shall also remove the stagnant water and chemical accumulated in the drip trays near Paul Y container area and treat the clean-up materials as chemical waste. • The Contractor shall clean up the oil spillage at channel x10c, Paul Y container area, near town gas plant and around LTP and handle the clean-up materials as chemical waste. • The Contractor shall remove the stagnant water accumulated near DP6 and spray larvicides for mosquito control, if necessary. • The Contractor shall review Wetsep treatment efficiency to prevent non-compliance with the WPCO standard and EM&A requirement. • The Contractor shall remove the general refuse accumulated near town gas plant, bar bending area, Paul Y container area and RC15 and remove the gravel along the road near MSE wall and dispose of the waste regularly to maintain site cleanliness and tidiness. • The Contractor shall remove the concrete residue accumulated near X10C and designate an area for concrete truck washing. • The contractor shall remove the deposited silt and refuse accumulated at the surface water channels near Paul Y container area and town gas plant to ensure they are functioning properly at all times. • The Contractor shall ensure that the wheel washing facilities are functioning properly at all times and all trucks shall pass the wheel washing facilities before leaving the site to keep the public road clear of muddy materials.
2 June 2022	• The Contractor shall display a NRMM label on the excavator near Cell 4X. • The Contractor shall clean up the oil spillage near the drip tray at Paul Y container area and handle the clean-up materials as chemical waste. • The Contractor shall remove the stagnant water accumulated at the lifting eyes of the concrete blocks near Paul Y container area, and spray larvicides for mosquito control, if necessary. • The Contractor shall maintain site tidiness and remove the general refuse accumulated near Paul Y container area and at the temporary drain near GVL container area.
9 June 2022	• The Contractor shall provide surface water management around the site (especially at DP3 upstream) and review the treatment capacity of the Wetsep near DP4 and DP6 to ensure all surface water is treated before discharge. • The Contractor shall clean up the oil spillage near buttress wall and Paul Y container area and handle the clean-up materials as chemical waste. • The Contractor shall remove the stagnant water accumulated at the drip tray near Paul Y container area. • The Contractor shall remove the concrete residue near Paul Y container area and designate an area for concrete truck washing. • The Contractor shall remove the general refuse and vegetation at the temporary drain near Paul Y container area and site entrance.

Inspection Date	Environmental Observations and Recommendations
16 June 2022	• The Contractor shall replace the faded NRMM label displayed on the excavator near sump house 4 in accordance with the COP. • The Contractor shall provide surface water management at DP3 upstream (e.g. cover the exposed area and surface water diversion) to ensure that all surface water is treated before discharge. • The Contractor shall clean up the oil spillage near Paul Y container area and handle the clean-up materials as chemical waste. • The Contractor shall remove the stagnant water accumulated at the drip tray near Paul Y container area. • The Contractor shall remove the general refuse and stagnant water accumulated at the channel near sump house 3 and dispose of the waste regularly.
23 June 2022	• The Contractor shall cover the stockpile of dusty materials near DP3 to minimise dust impact. • The Contractor shall remove the deposited silt and grit accumulated at the sediment pits at DP3 and DP6 regularly to ensure they are functioning properly at all times. • The Contractor shall cover the exposed soil area at DP3 upstream to minimise muddy surface runoff to DP3 channel. • The Contractor shall remove the stagnant water accumulated at the drip tray near Paul Y container area and treat the contaminated water as chemical waste.
30 June 2022	• The Contractor shall remove/ cover the stockpile of dusty materials near buttress wall to minimise dust impact. • The Contractor shall seal the baffle plates at DP3 channel and outlet and maintain the silt fencing along DP3 channel to minimise SS runoff to the channel. • The Contractor shall clean up the oil spillage near Towngas plant and handle the clean-up materials as chemical waste. • The Contractor shall remove the stagnant water accumulated at the drip tray near Paul Y container area. • The Contractor shall maintain site tidiness and remove the general refuse accumulated around Paul Y container area.
7 July 2022	• The Contractor shall display NRMM labels on the excavator near X10c channel and generator near DP6 and replace the faded NRMM label on the excavator near DP3. • The Contractor shall remove the general refuse accumulated at X10a channel regularly to ensure it is functioning properly at all times. • The Contractor shall remove the stagnant water accumulated at the drip tray near LTP. • The Contractor shall provide surface water management at DP3 upstream to minimise SS runoff to the channel.
14 July 2022	• The Contractor shall display NRMM labels on the excavator at DP3 and roller near buttress wall. • The Contractor shall remove/ cover the stockpile of dusty materials near DP3 to minimise dust impact. • The Contractor shall provide surface water management at DP3 upstream to minimise SS runoff to the channel.

Inspection Date	Environmental Observations and Recommendations
21 July 2022	• The Contractor shall remove the deposited silt and grit and stagnant water accumulated at DP3 sediment pit regularly to ensure it is functioning properly at all times. • The Contractor shall remove the stagnant water accumulated in the manholes near channel X10C and spray larvicides for mosquito control, if necessary. • The Contractor shall provide surface water management at DP3 upstream and cover the exposed slope to minimise SS runoff to the channel. • The Contractor shall dispose of the empties chemical containers near DP3 as chemical waste in accordance with the COP.
28 July 2022	• The Contractor shall remove the deposited silt and grit and stagnant water accumulated at DP3 sediment pit regularly to ensure it is functioning properly at all times. • The Contractor shall remove the general refuse and stagnant water accumulated at the channel near sump house 3 to minimize odour and pest issues and spray larvicides for mosquito control, if necessary. • The Contractor shall provide surface water management at DP3 upstream to minimise SS runoff to the channel. • The Contractor shall remove the algae and scum in the Wetsep near DP4 to ensure it is functioning properly at all times.
4 August 2022	• The Contractor shall remove the general refuse accumulated near DP3 and dispose of the waste regularly. • The Contractor shall enhance the surface water management at DP3 upstream to minimise SS runoff to the channel. • The Contractor shall install pumps at DP3 to divert the surface water discharged from SENTX construction works to ensure all surface water is treated before discharge.
11 August 2022	• The Contractor shall clear the dusty materials with road sweepers at the site entrance regularly to minimise dust impact. • The Contractor shall replace the faded NRMM label displayed on the excavator near western site boundary planting area. • The Contractor shall review the treatment capacity and efficiency of the Wetseps near DP4 to ensure all surface water is treated properly before discharge. • The Contractor shall remove the stagnant water accumulated in the drip trays of the Wetseps near DP4. • The Contractor shall remove the stagnant water and general refuse accumulated near sump house 3 and at X10a channel regularly.
18 August 2022	• The Contractor shall remove the stagnant water accumulated in X10a channel regularly, and spray larvicides for mosquito control, if necessary. • The Contractor shall remove the general refuse accumulated at DP3 channel and X10a channel regularly to ensure they are functioning properly at all times.

Inspection Date	Environmental Observations and Recommendations
26 August 2022	• The Contractor shall provide drip trays for the chemicals stored near LTP. • The Contractor shall remove the general refuse and deposited silt accumulated at DP3 channel, X10c channel and surface water channels near town gas plant and LTP regularly to ensure they are functioning properly at all times. • The Contractor shall remove the general refuse accumulated near town gas plant, DP4 and LTP and dispose of the waste regularly. • The Contractor shall maintain the Wetsep near DP4 to ensure it is functioning properly at all times. • The Contractor shall sweep the road near vehicle exit regularly to ensure it is clear of dusty materials. • The Contractor shall improve the sewage drainage system to ensure that no untreated sewage is discharged to the surrounding water body.
1 September 2022	• The Contractor shall clean up the oil spillage near DP6 container area and handle the clean-up materials as chemical waste. • The Contractor shall remove the deposited silt and grit accumulated at DP3 sediment pit regularly. • The contractor shall remove the general refuse accumulated at X10a channel regularly to ensure it is functioning properly at all times.
8 September 2022	• The Contractor shall clean up the oil spillage in sediment trap and treat the clean-up materials as chemical waste. • The Contractor shall remove the deposited silt and grit accumulated at DP3 sediment pit regularly. • The contractor shall remove the stagnant water accumulated at the channel leading to DP6. • The Contractor shall remove the general refuse around Paul Y area to maintain site cleanliness and tidiness. • The Contractor shall cover the stockpiles of dusty materials near maintenance building with impervious sheeting or remove them to minimize dust impact.
15 September 2022	• The Contractor shall remove the general refuse accumulated near DP3 and dispose of the waste regularly to maintain site cleanliness. • The Contractor shall remove the deposited silt and grit and general refuse accumulated at DP3 sediment pit, outlet of sediment trap and DP6 regularly.
22 September 2022	• The Contractor shall remove the general refuse accumulated at DP3 sediment pits regularly. • The Contractor shall enhance maintenance of the Wetsep at DP4 to ensure it is functioning properly at all times. • The Contractor shall clean up the oil spillage near LTP and handle the clean-up materials as chemical waste.
29 September 2022	• The Contractor shall remove the general refuse accumulated at DP3 sediment pits regularly.
6 October 2022	• The Contractor shall remove the general refuse accumulated at the surface channel near Paul Y area to ensure it is functioning properly at all times. • The Contractor shall remove the deposited silt accumulated at the surface channel near sump house 3 to ensure it is functioning properly at all times.
10 October 2022	• The Contractor shall remove the general refuse accumulated near Paul Y area to maintain site cleanliness.

Inspection Date	Environmental Observations and Recommendations
20 October 2022	• The Contractor shall cover the stockpile of dusty materials by impervious sheeting near LTP to minimize dust impact issue. • The Contractor shall cover the exposed soil area near buttress wall area to reduce the contamination of runoff and erosion. • The Contractor shall refill flocculent agent in Wetsep at DP4 to ensure it is functioning properly at all times. • The Contractor shall remove the oil spillage near town gas plant and handle the clean-up materials as chemical waste. • The Contractor shall remove the general refuse accumulated at the channel leading to DP3, DP3 sediment pit, x10C channel and near Paul Y area to maintain site cleanliness.
27 October 2022	• The Contractor shall remove the general refuse accumulated at the x10C channel to ensure it is functioning properly at all times.
3 November 2022	• The Contractor shall remove the stagnant water and general refuse accumulated at DP3 sedimentation pit and X10a channel near sump house 2 to ensure they are functioning properly at all times. • The Contractor shall divert the SENTX surface water runoff affecting DP3 catchment area to the drop inlet X9 for discharge via sediment trap and DP4 in accordance with the Proposal on the Extension of Temporary Suspension of Surface Water Quality Monitoring at DP3. • The Contractor shall review the operation and treatment capacity of the Wetseps near DP4 and DP6 to ensure all surface water is treated before discharge. • The Contractor shall remove the general refuse accumulated at Paul Y area regularly to minimise odour and pest issues.
10 November 2022	• The Contractor shall remove the general refuse, deposited silt and grit accumulated at X9 drop inlet and general refuse at X10a channel near sump house no. 2 to ensure they are functioning properly at all times. • The Contractor shall divert the SENTX surface water runoff affecting DP3 catchment area to the drop inlet X9 for discharge via sediment trap and DP4 in accordance with the Proposal on the Extension of Temporary Suspension of Surface Water Quality Monitoring at DP3. • The Contractor shall remove the stagnant water accumulated in the drip tray at Wetseps near DP4 and handle the clean-up materials as chemical waste.
17 November 2022	• The Contractor shall remove the deposited silt and grit accumulated at X10a channel regularly to ensure it is functioning properly at all times.
24 November 2022	• The Contractor shall remove the deposited silt and grit accumulated at X10a channel and stagnant water accumulated at DP3 sedimentation pit to ensure they are functioning properly at all times. • The Contractor shall divert the SENTX surface water runoff affecting DP3 catchment area to the drop inlet X9 for discharge via sediment trap and DP4 in accordance with the Proposal on the Extension of Temporary Suspension of Surface Water Quality Monitoring at DP3.
1 December 2022	• The Contractor shall cover the stockpile of dusty materials by impervious sheeting in the Paul Y. area to minimize dust impact. • The Contractor shall remove the deposited silt and grit accumulated at X10a channel and general refuse at X10 channel near DP3 regularly to ensure they are functioning properly at all times. • The Contractor shall remove the silt and grit accumulated alongside X10 channel regularly to prevent surface run-off. • The Contractor shall remove the general refuse accumulated at area X2 along the access road to site entrance to minimize odour and pest issues.

Inspection Date	Environmental Observations and Recommendations
8 December 2022	• The Contractor shall remove the general refuse accumulated at X10 channel near DP3 and the deposited silt and grit accumulated at X10a channel to ensure they are functioning properly at all times.
15 December 2022	• The Contractor shall remove the deposited silt and grit accumulated at X10a channel regularly to ensure it is functioning properly at all times.
22 December 2022	• The Contractor shall enhance watering at the main haul road along the tie-in area to minimise dust impact. • The Contractor shall remove the general refuse, deposited silt and grit accumulated at X10a channel regularly to ensure it is functioning properly at all times.
29 December 2022	• The Contractor shall remove the deposited silt and grit accumulated at X10a channel and the general refuse accumulated at X10 channel near DP3, X9 drop inlet and the channel downstream of the sediment trap to ensure they are functioning properly at all times.

The Contractor has rectified all of the observations identified during environmental site inspections in the reporting period. Key environmental deficiencies identified and the corresponding rectification actions are presented in *Table 2.38*.

Table 2.38 Summary of Environmental Deficiencies Identified and Corresponding Additional Control Measures

Deficiencies	Rectifications Implemented	Proposed Additional Control Measures
Surface Water		
Intercepting channels & drainage system	• Reviewed drainage plan.	• Provision of additional drainage channels. • Expedite the construction of permanent sediment trap and discharge culverts.
DP channels (design & regular silt removal)	• Carried out regular maintenance and cleaning of channels. • DP4 channel: Area near the channel was paved with concrete and a bund was built. • DP6 channel: Gravel piles on the channel were covered with concrete which serve as blocks for running water and to divide the channel into several sections. A pump was placed in the water zone in the upstream section to pump water to the Wetsep for treatment prior to the discharge to the last section before the weir plate. • DP6: Pipes through the gravel piles between different channel sections were covered with geotextiles to block debris and silt.	N.A.
Stockpiles & exposed soil	• Installed silt fencing near surface water channel along DP6 channel.	• Improve soil covering. • Compaction and cover for stockpiles and soil slopes.
Wetsep (treatment capacity & number)	• Reviewed Wetsep capacity. • Chemicals dosage of the Wetsep was increased to enhance the efficiency.	• Install additional Wetsep.
Backflow / ponding during heavy rainfall	• Raised with EPD (LDG) and CEDD.	N.A.

2.7 *WASTE MANAGEMENT STATUS*

The Contractor has registered as a chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

As informed by the Contractor, waste generated during this reporting period include mainly non-inert C&D materials, yard waste and chemical wastes. Reference has been made to the waste flow table prepared by the Contractor. The quantities of different types of wastes and imported fill materials are summarised in *Table 2.39*.

Table 2.39 Quantities of Different Waste Disposed and Imported Fill Materials

Month/ Year	Inert C&D Materials [(a)] (in '000m³)	Imported Fill (in '000kg) [(b)]		Inert Construction Waste Re-used (in '000m³)	Non-inert Construction Waste [(c)] (in '000m³)	Recyclable Materials [(d)] (in '000kg)	Yard Waste (in '000kg)		Chemical Wastes (in '000kg)
		Rock	Soil				Y Park	SENT	
Jan 22	0.273	0	0	0	0.035	0	0	0	0.800
Feb 22	1.284	0	0	0	0.016	0	0	0	0.460
Mar 22	0.039	0	0	0	0.010	0	0	0	0.800
Apr 22	0	0	0	0	0.013	0	0	0	0.800
May 22	0	0	0	0	0.002	0	0	0	0.800
Jun 22	0	0	0	0	0	0	0	0	0.800
Jul 22	0	0	0	0	0.012	0	28.44	0	0.800
Aug 22	0	0	0	0	0	0	0	0	0.800
Sep 22	0	0	0	0	0	0	1.70	38.73	0.800
Oct 22	0	0	0	0	0.001	0	6.930	82.000	0.800
Nov 22	0	0	0	0	0	0	35.90	252.39	0.800
Dec 22	0	0	0	0	0.0747	0	0	0	0.800

Notes:

(a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill. Density assumption: 1.6 (kg/L) for public fill.

(b) Imported fill refers to materials generated from other project for on-site reuse.

(c) Non-inert construction wastes include general refuse disposed at landfill. Density assumption: 0.9 (kg/L) for general refuse.

(d) Recyclable materials include metals, paper, cardboard, plastics and others.

2.8 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

A summary of the Environmental Mitigation Implementation Schedule is presented in *Annex B*. The necessary mitigation measures were implemented properly for the Project.

2.9 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

The operation/ restoration phase noise monitoring results complied with the Action and Limit Levels in the reporting period.

Two exceedances of the Action and Limit Levels for dust (TSP), two exceedances of the Limit Level for landfill gas flare stack emission (SO_2), one exceedance of Limit Level for landfill gas flare stack emission (Benzene), three exceedance of the Limit Level for surface water (SS), sixteen exceedances of the Limit Level for Leachate Level, one exceedance of Limit Level for leachate quality (Chromium), eight exceedances of the Limit Level for groundwater (COD) and two exceedances of the Limit Level for perimeter landfill gas monitoring (methane) were recorded in the reporting period.

The TSP exceedance at AM2 on 29 July 2022 was considered Project-related while the exceedance at AM4 on 29 July 2022 was considered non Project-related upon further investigation. The landfill gas flare stack emission (SO_2) exceedances on 14 October 2022 and 17 November 2022 and landfill gas flare stack emission (Benzene) exceedance on 13 December 2022 were considered Project-related upon further investigation.

The SS exceedances at DP4 on 25 May 2022, 30 June 2022 and 8 July 2022 were found deemed to Project-related activities and weekly surface water quality (SS) monitoring has been commenced since June 2022. The additional surface water monitoring results (SS) at DP4 on 15 July 2022 complied with the Limit Level as stipulated in the updated EM&A Manual and the weekly surface water monitoring (SS) at DP4 was terminated.

The groundwater (COD) exceedances at MWX-4 and MWX-6 on 15 February 2022, at MWX-4 on 15 March 2022, at MWX-4, MWX5 and MWX6 on 11 April 2022 and at MWX-7 on 18 August 2022 and 6 September 2022 were considered non Project-related upon further investigation.

The leachate level exceedances at Pump Station No. 4X from 12 August to 20 August 2022, from 30 September 2022 to 3 October 2022 and from 3 November 2022 to 4 November 2022, and at Pump Station No. 3X on 3 November 2022 were considered Project-related upon further investigation.

The leachate quality (Chromium) exceedance on 6 December 2022 was considered Project-related upon further investigation.

The landfill gas (methane) exceedances at LFG6 on 17 May 2022 and at LFG13 on 3 October 2022 were considered non Project-related upon further investigation.

Cumulative statistics on exceedances is provided in *Annex H*.

2.10 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

There were no complaints, notification of summons or prosecution recorded in the reporting period.

Statistics on complaints, notifications of summons and successful prosecutions are summarised in *Annex H*.

This Annual EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 January to 31 December 2022 in accordance with the updated EM&A Manual and the requirements of the Environmental Permit (*EP-308/2008/B)*.

Air quality quality (24-hour TSP, odour, thermal oxidiser, landfill gas flare and landfill gas generator stack emission, ambient VOCs, ammonia and H_2S), noise, water quality (surface water, leachate and groundwater) and landfill gas monitoring were carried out in the reporting period. Results for noise monitoring complied with the Action and Limit Levels in the reporting period.

Two exceedances of the Action and Limit Levels for dust (TSP), two exceedances of the Limit Level for landfill gas flare stack emission (SO_2), one exceedance of Limit Level for landfill gas flare stack emission (Benzene), three exceedance of the Limit Level for surface water (SS), sixteen exceedances of the Limit Level for Leachate Level, one exceedance of Limit Level for leachate quality (Chromium), eight exceedances of the Limit Level for groundwater (COD) and two exceedances of the Limit Level for perimeter landfill gas monitoring (methane) were recorded in the reporting period.

Fifty-two environmental site inspections were carried out during the reporting period. Environmental deficiencies were identified during the site inspection and the Contractor has proposed additional control measures to rectify the deficiencies.

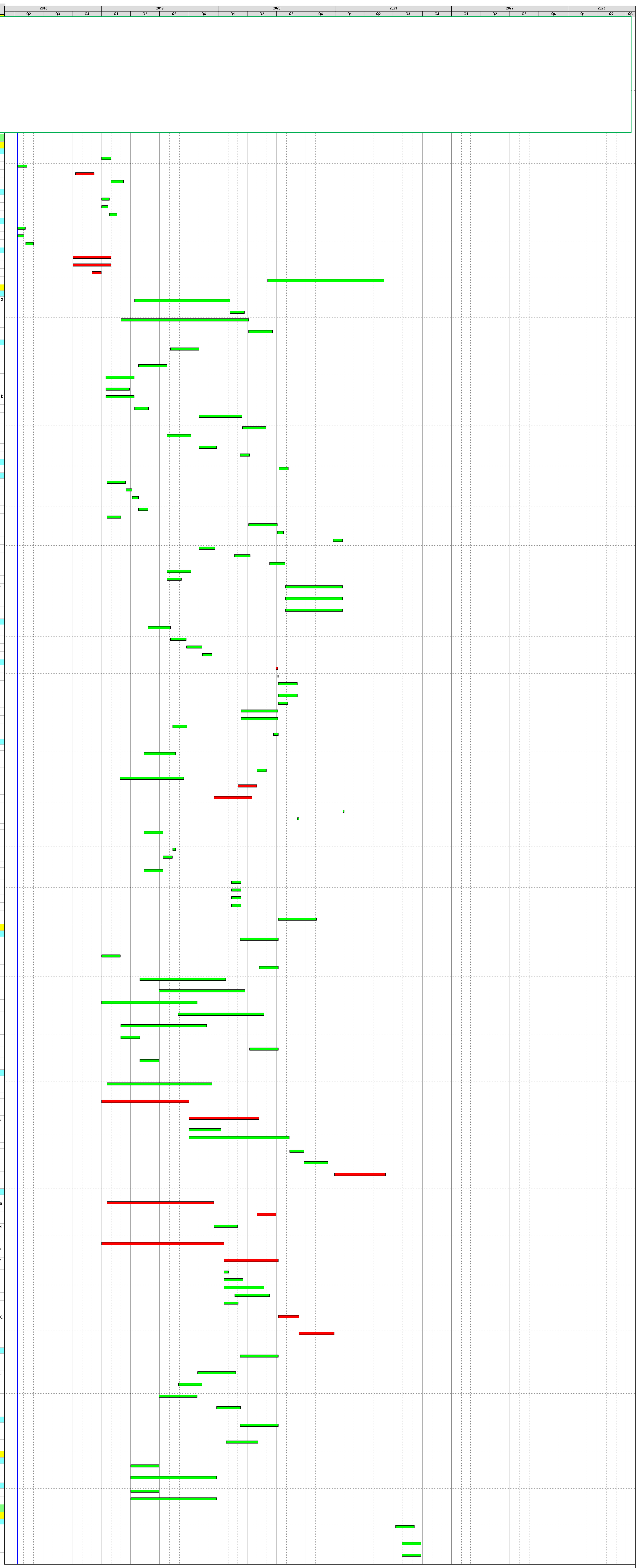
There were no complaints, notification of summons or prosecution recorded in the reporting period.

It is noted that most environmental pollution control and mitigation measures were properly implemented and the construction and operation activities of the Project did not introduce any adverse impact to the sensitive receivers in the reporting period. Yet, some environmental deficiencies were identified during the reporting period and additional control measures have been proposed by the Contractor to rectify the corresponding deficiencies. The monitoring programme has been reviewed and was considered as adequate to cater for the nature of works in progress. Change to the monitoring programme was thus not recommended at this stage. The monitoring programme will be evaluated as appropriate in the next reporting period. The ET will keep track on the construction and operation works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Annex A

Work Programme

#	WBS Path	Activity ID	Activity Name	Dur	Start	Finish	Total Float	Predecessor Details	Successor Details
336									
337									
338									
339									
340									
341									
342									
343									
344									
345									
346									
347									
348									
349									
350									
351									
352	SA2.5 Construction (Initial Works)			1153	12-Apr-18	07-Jun-21	705		
353	SA2.5.02 Advance Works & Site Establishment			1148	12-Apr-18	02-Jun-21	35		
354	SA2.5.02.01 Site Establishment & Mobilization			333	12-Apr-18	10-Mar-19	820		
355	5.02.01	52-1000	Site Mobilization for Parts X1 & X2	30	31-Dec-18	29-Jan-19	820	11-1100: FS, 11-1200: FS	52-1300: FS, M 3. 1: FS, M 3. 2: FS
356	5.02.01	52-1100	Site Mobilization for Parts X3, X4 & X5	30	12-Apr-18	11-May-18	1083	11-1300: FS, 11-1400: FS, 11-1500: FS	52-1300: FS, M 3. 1: FF
357	5.02.01	52-1200	Temporary Office for Employer / ER / IC	60	10-Oct-18	08-Dec-18	0	23-1300: FS	11-1700: SS, M 3. 1: FS
358	5.02.01	52-1300	Hoarding and Fencing Works	40	30-Jan-19	10-Mar-19	820	52-1000: FS, 52-1100: FS	32-1500: FS, M10. 1: FS -26, M10. 2: FS -13, M10. 3: FS
359	SA2.5.02.02 Site Survey & Investigation Works for Parts X1 & X2			50	31-Dec-18	18-Feb-19	840		
360	5.02.02	52-1400	Condition Survey	25	31-Dec-18	24-Jan-19	840	11-1100: FS, 11-1200: FS	52-1600: FS
361	5.02.02	52-1500	Topographic Survey	20	31-Dec-18	19-Jan-19	845	11-1100: FS, 11-1200: FS	52-1600: FS
362	5.02.02	52-1600	Site inspection, Review of Condition Survey Report	25	25-Jan-19	18-Feb-19	840	52-1500: FS, 52-1400: FS	32-1500: FS
363	SA2.5.02.03 Site Survey & Investigation Works for Parts X3, X4 & X5			50	12-Apr-18	31-May-18	1103		
364	5.02.03	52-1700	Condition Survey	25	12-Apr-18	06-May-18	1103	11-1300: FS, 11-1400: FS, 11-1500: FS	52-1900: FS
365	5.02.03	52-1800	Topographic Survey	20	12-Apr-18	01-May-18	1108	11-1300: FS, 11-1400: FS, 11-1500: FS	52-1900: FS
366	5.02.03	52-1900	Site inspection, Review of Condition Survey Report	25	07-May-18	31-May-18	1103	52-1700: FS, 52-1800: FS	32-1500: FS
367	SA2.5.02.04 Environmental Monitoring			975	02-Oct-18	02-Jun-21	35		
368	5.02.04	52-2000	Installation of Monitoring Stations & Wells (GP & GW)	120	02-Oct-18	29-Jan-19	0	23-1600: FS	52-2200: SS 60
369	5.02.04	52-2100	Installation of Monitoring Stations & Wells (GP & GW) on Buttress Wall	120	02-Oct-18	29-Jan-19	0	23-1600: FS	52-2200: SS 60
370	5.02.04	52-2200	Conduct Baseline Monitoring for Construction (one month)	30	01-Dec-18	30-Dec-18	0	52-2000: SS 60, 52-2100: SS 60	11-1100: FS
371	5.02.04	52-2300	Conduct Baseline Monitoring for Operation (one year)	365	03-Jun-20	02-Jun-21	35	32-1500: FS -400, 53-4500: FS	12-1400: FS
372	SA2.5.03 Civil Engineering Works			748	13-Jan-19	29-Jan-21	834		
373	SA2.5.03.0 Buttress Wall			475	02-Mar-19	18-Jun-20	83		
374	5.03.0	53-1000	Section adj. SENT	300	13-Apr-19	06-Feb-20	96	11-1300: FS, 23-2500: FS, 53-3000: FS, 31-1200: FS, 11-1400: FS	53-1100: FS, 53-1300: FS, 53-3100: FS, M 3. 5: FS -150, M 3. 7: FS
375	5.03.0	53-1100	Diversion of SENT Landfill Gas Pipe	45	07-Feb-20	22-Mar-20	96	23-2500: FS, 53-1000: FS	53-1300: FS, 54-4000: FS, M 3. 3: FS
376	5.03.0	53-1200	Section at Cell 4	400	02-Mar-19	04-Apr-20	83	11-1300: FS, 23-2500: FS, 53-3000: FS, 11-1400: FS	53-1300: FS, 53-3100: FS, M 3. 7: FS, M 3. 6: FS -200
377	5.03.0	53-1300	Install Landfill Gas Pipe on Buttress Wall	75	05-Apr-20	18-Jun-20	83	41-1500: FS, 53-1100: FS, 53-1200: FS, 53-1000: FS	54-4000: FS
378	SA2.5.03.1 Landfill Cell 1			503	13-Jan-19	29-May-20	214		
379	5.03.1	53-1400	Earth bund (Eastern)	90	04-Aug-19	01-Nov-19	9	11-1100: FS, 23-2500: FS, 53-4200: FS, 53-2800: FS	53-2000: FS, 53-2300: FS, 53-3400: FS, 63-1000: FS, 63-1100: FS, 63-1200: FS, 63-1300: FS, M 4. 2: FS
380	5.03.1	53-1500	Earth bund (Southern)	90	26-Apr-19	24-Jul-19	314	11-1100: FS, 23-2500: FS, 53-2800: FS	53-2000: FS, 53-2200: FS, 53-2300: FS, 53-3400: FS, 53-3700: FS, 53-3800: FS
381	5.03.1	53-1600	Earth bund (Western)	90	13-Jan-19	12-Apr-19	417	11-1100: FS, 23-2500: FS	53-1900: FS, 53-2000: FS, 53-2200: FS, 53-3800: FS
382	5.03.1	53-1700	Intercell bund (Cell 1/2)	75	13-Jan-19	28-Mar-19	432	11-1100: FS, 23-2500: FS	53-2000: FS
383	5.03.1	53-1800	Site Formation	90	13-Jan-19	12-Apr-19	217	11-1100: FS, 23-2500: FS, 31-1300: FS	53-1900: FS, 63-1100: FS, 63-1200: FS, 63-1300: FS, M 4. 1: FS -45
384	5.03.1	53-1900	Pump Station (PS#1X)	45	13-Apr-19	27-May-19	507	53-1800: FS, 53-1600: FS	53-2100: FS, 53-2200: FS
385	5.03.1	53-2000	Lining Works	135	02-Nov-19*	15-Mar-20	214	41-1500: FS, 53-1400: FS, 53-1500: FS, 53-1600: FS, 53-1700: FS	53-2100: FS
386	5.03.1	53-2100	Protective Stone Laying & Leachate Collection Pipe	75	16-Mar-20	29-May-20	214	53-2000: FS, 41-1500: FS, 53-1900: FS	32-1500: FS, 54-2800: FS, M 4. 3: FS
387	5.03.1	53-2200	Install Leachate Force Main	75	25-Jul-19	07-Oct-19	449	53-1500: FS, 53-1600: FS, 41-1500: FS, 53-1900: FS	54-2800: FS
388	5.03.1	53-2300	Install Landfill Gas Pipe on earth bund	55	02-Nov-19	26-Dec-19	258	41-1500: FS, 53-1400: FS, 53-1500: FS	54-4000: FS
389	5.03.1	53-2400	Leachate Pipe Connection (Cell 1 to LTP)	30	09-Mar-20	07-Apr-20	266	23-2500: FS, 54-1000: SS	54-2800: FS
390	SA2.5.03.4 Landfill Cell 4			30	09-Jul-20	07-Aug-20	144		
391	5.03.4	53-2500	Provide Temporary Leachate Pipe on Cell 4 Area	30	09-Jul-20	07-Aug-20	144	23-2500: FS, 63-2600: SS -90	54-2800: FS, M 3. 3: FS
392	SA2.5.03.5 Drainage - Surface Run-Off			740	16-Jan-19	24-Jan-21	839		
393	5.03.5	53-2600	Construct Cut-Off Channel 12A	60	16-Jan-19	16-Mar-19	9	11-1100: FS, 23-2800: FS	53-2700: FS
394	5.03.5	53-2700	Connect Cut-Off Channel 12A to DP6	20	17-Mar-19	05-Apr-19	9	53-2600: FS, 31-1400: FS, 23-1900: FS	53-2800: FS
395	5.03.5	53-2800	Diversion from Existing Trapezoidal Channel into Channel 12A	20	06-Apr-19	25-Apr-19	9	53-2700: FS	53-1400: FS, 53-1500: FS, 53-2900: FS, 63-1000: FS, 63-1900: FS, M 3. 3: FS
396	5.03.5	53-2900	Removal of Existing Trapezoidal Channel along Eastern Bund	30	26-Apr-19	25-May-19	9	53-2800: FS	53-4200: FS
397	5.03.5	53-3000	Cut-Off Channel C4 Diversion to Cut-Off Channel 17-2	45	16-Jan-19	01-Mar-19	83	11-1300: FS, 23-2800: FS	53-1000: FS, 53-1200: FS
398	5.03.5	53-3100	Cut-Off Channel X5 on Buttress Wall, Cell 4, Cell 3	90	05-Apr-20	03-Jul-20	289	53-1000: FS, 53-1200: FS	53-3200: FS
399	5.03.5	53-3200	Temporary Diversion Cut-Off Channel X5 to 12A	20	04-Jul-20	23-Jul-20	289	53-3100: FS, 23-1900: FS	53-3300: FS, M 3. 4: FS
400	5.03.5	53-3300	Culvert X5 (5m long) & Perm Connection of Cut-Off Channel X5	30	26-Dec-20	24-Jan-21	134	53-4100: FF, 63-1900: FS, 53-3200: FS	32-1500: FS
401	5.03.5	53-3400	Construct Perimeter Channel X6 on Eastern Bund & Southern Bund of Cell 1	50	02-Nov-19	21-Dec-19	249	53-1400: FS, 53-1500: FS	53-3500: FS
402	5.03.5	53-3500	Construct Perimeter Channel X6 on Eastern Bund of Cell 2	50	20-Feb-20	09-Apr-20	189	63-1000: FS, 53-3400: FS	53-3600: FS
403	5.03.5	53-3600	Construct Perimeter Channel X6 Eastern Bund of Cell 3	50	09-Jun-20	28-Jul-20	129	63-1900: FS, 53-3500: FS	53-3900: FS
404	5.03.5	53-3700	Culvert X6 (25m long) at Cell 1 Southern Bund	75	25-Jul-19	07-Oct-19	1314	53-1500: FS	
405	5.03.5	53-3800	Perimeter Channel (X9B) at Cell 1 Southern & Western Bund	45	25-Jul-19	07-Sep-19	1344	53-1500: FS, 53-1600: FS	
406	5.03.5	53-3900	Drop Inlet & Culvert (X9) - 21m long	180	29-Jul-20	24-Jan-21	129	11-1100: FS, 23-1900: FS, 53-3600: FS	53-4000: FF, 53-4100: FF, 53-6000: FS, M 9. 1: FS -90, M 9. 2: FS
407	5.03.5	53-4000	Sediment Trap (ST)	180	29-Jul-20	24-Jan-21	129	11-1100: FS, 23-1900: FS, 11-1200: FS, 53-3900: FF	53-6000: FS, M 9. 3: FS -90, M 9. 4: FS
408	5.03.5	53-4100	Dual Culvert 74m long (connect to DP4)	180	29-Jul-20	24-Jan-21	129	11-1100: FS, 11-1200: FS, 23-1900: FS, 53-3900: FF	53-3300: FF, 53-6000: FS, M 9. 1: FS -90, M 9. 2: FS
409	SA2.5.03.6 Drainage - Ground Water			200	26-May-19	11-Dec-19	209		
410	5.03.6	53-4200	Construct Groundwater Collection Pipe along Cells X1 & X2 Eastern Bund	70	26-May-19	03-Aug-19	9	11-1100: FS, 23-1600: FS, 53-2900: FS	53-1400: FS, 53-4300: FS, 63-1000: FS, 63-1900: FS
411	5.03.6	53-4300	Construct Groundwater Collection Pipe along Cell X3 Eastern Bund	50	04-Aug-19	22-Sep-19	159	53-4200: FS	53-4400: FS, 63-1900: FS
412	5.03.6	53-4400	Construct Groundwater Collection Pipe along Intercell Bund X2/X3	50	23-Sep-19	11-Nov-19	209	53-4300: FS	53-4500: FS, 63-1200: FS
413	5.03.6	53-4500	Construct Manhole MH-X1	30	12-Nov-19	11-Dec-19	209	53-4400: FS	52-2300: FS, M 9. 5: FS
414	SA2.5.03.7 Utilities - Distribution within New Infrastructure Area			391	11-Aug-19	04-Sep-20	276		
415	5.03.7	53-4600	Power Supply HV Works (Transformer & HV switchgear)	5	30-Jun-20	04-Jul-20	0	54-3000: FS	12-1200: FS
416	5.03.7	53-4700	Power Distribution, LV Power Supply Works	2	05-Jul-20	06-Jul-20	0	54-3100: FS, 12-1200: FS	12-1000: FS
417	5.03.7	53-4800	Sewerage (Collection to LTP)	60	07-Jul-20	04-Sep-20	271	54-1000: FS, 54-3100: FS, 54-3300: FS, 54-4100: FS	12-1100: FS, 53-6100: FS
418	5.03.7	53-4900	Sewerage (Discharge to Site Boundary)	60	07-Jul-20	04-Sep-20	271	54-1000: FS, 54-4100: FS, 54-4600: FS	12-1100: FS, 53-6100: FS
419	5.03.7	53-5000	Lighting Provision	30	07-Jul-20	05-Aug-20	6	54-1000: FS, 54-4100: FS, 54-4600: FS	12-1100: FS, 32-2100: FS
420	5.03.7	53-5100	Fire Services	115	12-Mar-20	04-Jul-20	2	53-6800: FS	12-1000: FS
421	5.03.7	53-5200	Water Supply (Fresh & Salt)	115	12-Mar-20	04-Jul-20	338	53-6600: FS, 53-6700: FS	12-1100: FS
422	5.03.7	53-5300	Telecom & Network	45	11-Aug-19	24-Sep-19	622	53-6400: FS	12-1100: FS
423	5.03.7	53-5400	Gas Network (LFG to LTP)	15	22-Jun-20	06-Jul-20	176	54-1000: FF	54-2800: FS
424	SA2.5.03.8 Utilities - Works Associated with Utilities Undertakers			703	27-Feb-19	29-Jan-21	129		
425	SA2.5.03.8.U1 CLP			459	27-Feb-19	30-May-20	43		
426	5.03.8.U1	53-5500	Excavate Trench for CLP Cable	100	13-May-19	20-Aug-19	194	23-2900: FS	53-5800: FS, 54-1000: SS, 54-4100: SS, 54-4600: SS, M10. 1: FS -60, M10. 2: FS -30, M10. 3: FS
427	5.03.8.U1	53-5600	Backfill Trench after CLP Cable Laying	30	01-May-20	30-May-20	43	53-5800: FS	54-1000: FF, 54-4100: FF, 54-4600: FF
428	5.03.8.U1	53-5700	CLP Cable Laying (from CLP Substation to Site Boundary)	200	27-Feb-19	14-Sep-19	229	32-2400: FS	54-3000: FS
429	5.03.8.U1	53-5800	CLP Cable Laying (from Site Boundary to HV Switchroom)	60	02-Mar-20	30-Apr-20	0	53-5500: FS, 54-2900: FS, 32-2400: FS, 53-5900: FF 15	53-5600: FS, 54-3000: FS
430	5.03.8.U1	53-5900	CLP HV associated equipment installation	120	18-Dec-19	15-Apr-20	0	54-2900: FS, 32-2400: FS	53-5800: FF 15
431	SA2.5.03.8.U2 DSD			147	05-Sep-20	29-Jan-21	129		
432	5.03.8.U2	53-6000	Connection to Storm Drain System	5	25-Jan-21	29-Jan-21	129	53-4100: FS, 53-4000: FS, 53-3900: FS	32-1500: FS
433	5.03.8.U2	53-6100	Connection to Foul Drain System	5	05-Sep-20	09-Sep-20	271	53-4800: FS, 53-4900: FS	32-1500: FS
434	SA2.5.03.8.U3 Telecom			100	13-May-19	20-Aug-19	327		
435	5.03.8.U3	53-6200	Excavate Trench for PCCW	60	13-May-19	11-Jul-19	307	23-2900: FS	53-6400: FS, 54-1000: SS, 54-4100: SS, 54-4600: SS, M10. 1: FS -40, M10. 2: FS -20, M10. 3: FS
436	5.03.8.U3	53-6300	Backfill Trench after PCCW Cable Laying	10	11-Aug-19	20-Aug-19	327	53-6400: FS	54-1000: FF, 54-4100: FF, 54-4600: FF
437	5.03.8.U3	53-6400	Laying Cables & Connection	30	12-Jul-19	10-Aug-19	327	53-6200: FS	53-5300: FS, 53-6300: FS
438	SA2.5.03.8.U4 WSD			304	13-May-19	11-Mar-20	338		
439	5.03.8.U4	53-6500	Install Watermain & Piping for Water Supplies	60	13-May-19	11-Jul-19	216	23-2900: FS	53-6600: FS, 53-6700: FS, 53-6800: FS, 53-6900: FS
440	5.03.8.U4	53-6600	Connection for Fresh Water & Meter Installation	30	11-Feb-20	11-Mar-20	338	53-6500: FS, 32-2300: FS	53-5200: FS
441	5.03.8.U4	53-6700	Connection for Salt Water	30	11-Feb-20	11-Mar-20	338	53-6500: FS, 32-2300: FS	53-5200: FS
442	5.03.8.U4	53-6800	Connection for Fire Services	30	11-Feb-20	11-Mar-20	2	53-6500: FS, 32-2300: FS	53-5100: FS
443	5.03.8.U4	53-6900	Connection for Cooling Tower & Meter Installation	30	11-Feb-20	11-Mar-20	117	53-6500: FS, 32-2300: FS	54-2700: FS, 54-3900: FS
444	SA2.5.03.8.U5 HyD Lighting			120	07-Jul-20	03-Nov-20	216		
445	5.03.8.U5	53-7000	Installation of Public Street Lighting / Handover	120	07-Jul-20	03-Nov-20	216	54-4100: FS, 54-4600: FS, 54-1000: FS	32-1500: FS
446	SA2.5.04 Building Construction, incl. E&M and System Installation, and T&C			890	31-Dec-18	07-Jun-21	0		
447	SA2.5.04.A Part X1 Area A			554	31-Dec-18	06-Jul-20	36		
448	5.04.A	54-1000	General Area & Access Road	120	09-Mar-20	06-Jul-20	6	23-1300: FS, 53-5500: SS, 53-5600: FF, 53-6200: SS, 53-6300: FF, 12-1000: FF, 11-1100: FS, 54-1100: FF, 54-1800: FF	32-2100: FS, 53-2400: SS, 53-4800: FS, 53-4900: FS, 53-5000: FS, 53-5400: FF, 53-7000: FS, 68-1700: FS
449	5.04.A	54-1100	Carpark & Supporting Area	60	31-Dec-18	28-Feb-19	64	23-1300: FS, 11-1100: FS	32-1500: FS, M 5.11: FS -30, M 5.12: FS, 54-1000: FF, 54-1800: FS
450	5.04.A	54-1200	Diesel Fuel Tanks	60	08-May-20	06-Jul-20	36	23-1300: FS, 23-5200: FS, 12-1000: FF, 11-1100: FS	32-2200: FS
451	5.04.A	54-1300	EPD Building	270	30-Apr-19	24-Jan-20	44	23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1700: SS 60	32-2100: FS, M 5. 4: FS -135, M 5. 5: FS, 12-1000: FS, 54-1400: SS 60
452	5.04.A	54-1400	Fire Service Tank	270	29-Jun-19	24-Mar-20	44	23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1300: SS 60	32-2100: FS, M 5.10: FS, 12-1000: FS, 54-1600: SS 60
453	5.04.A	54-1500	GVL Building	300	31-Dec-18	26-Oct-19	44	23-1300: FS, 23-5200: FS, 11-1100: FS	32-2100: FS, M 5. 1: SF 30, M 5. 2: SF 150, M 5. 3: FS, 54-1700: SS 60
454	5.04.A	54-1600	Laboratory Building	270	28-Aug-19	23-May-20	44	23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1400: SS 60	32-2100: FS, M 5. 6: FS -135, M 5. 7: FS, 12-1000: FS, 32-2200: FS
455	5.04.A	54-1700	Maintenance Building & Area	270	01-Mar-19	25-Nov-19	44	23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1500: SS 60	32-2100: FS, M 5. 8: FS -135, M 5. 9: FS, 12-1000: FS, 54-1300: SS 60
456	5.04.A	54-1800	Storage Facility & Area	60	01-Mar-19	29-Apr-19	64	23-1300: FS, 11-1100: FS, 54-1100: FS	32-1500: FS, M 5.11: FS -30, M 5.12: FS, 54-1000: FF, 54-2000: FS
457	5.04.A	54-1900	Waste Oil Tanks	90	08-Apr-20	06-Jul-20	36	23-1300: FS, 23-5200: FS, 12-1000: FF, 11-1100: FS	32-2200: FS
458	5.04.A	54-2000	Water Service House	60	30-Apr-19	28-Jun-19	64	23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1800: FS	32-2100: FS, M 5.10: FS, 12-1000: FS, 54-4400: FS
459	SA2.5.04.B Part X1 Area B			890	31-Dec-18	07-Jun-21	0		
460	SA2.5.04.B.1 BioPlant Building			330	17-Jan-19	12-Dec-19	243		
461	5.04.B.1	54-2100	LTP BioPlant Building	330	17-Jan-19	12-Dec-19	243	23-1300: FS, 23-5200: FS, 23-3200: FS, 11-1100: FS, 31-1000: FS	32-2100: FS, 32-2200: FS, M 6. 2: FS -165, M 6. 3: FS
462	SA2.5.04.B.2 Leachate Treatment Plant			589	31-Dec-18	10-Aug-20	21		
463	5.04.B.2	54-2200	Main Plant Area included Civil works	274	31-Dec-18	30-Sep-19	0	23-1300: FS, 23-3200: FS, 11-1100: FS	54-2300: FS, 54-2400: FS, 54-2500: FS, 64-1100: FS, M 6. 1: SF 30, M 6. 4: FS -137, M 6. 5: FS
464	5.04.B.2	54-2300	MEP Installation	220	01-Oct-19	07-May-20	0	41-2100: FS, 41-1800: FS, 22-2100: FS, 54-2200: FS, 11-1100: FS	12-1000: FS 60, 32-1900: FS, 54-2600: FS, M 6. 8: FS -110, M 6. 9: FS, 32-2200: FS
465	5.04.B.2	54-2400	SBR Tanks	100	01-Oct-19	08-Jan-20	236	41-2400: FS, 54-2200: FS	54-2600: FS, M 6. 6: FS
466	5.04.B.2	54-2500	Ammonia Stripper	315	01-Oct-19	10-Aug-20	21	41-3000: FS, 54-2200: FS	54-2600: FS, M 6. 8: FS -150, M 6. 9: FS
467	SA2.5.04.B.3 LTP - Test & Commission			301	11-Aug-20	07-Jun-21	0		
468	5.04.B.3	54-2600	Dry testing	45	11-Aug-20	24-Sep-20	21	54-2300: FS, 54-2400: FS, 54-2500: FS	23-6600: FS -150, 23-6900: SS, 54-2700: FS, M11. 1: FS
469	5.04.B.3	54-2700	Wet testing	75	25-Sep-20	08-Dec-20	21	54-2600: FS, 12-1200: FS, 53-6900: FS, 31-2200: FS, 23-6800: FS	54-2800: FS, M11. 2: FS
470	5.04.B.3	54-2800	Operational testing	160	30-Dec-20	07-Jun-21	0	54-2700: FS, 53-2400: FS, 53-2500: FS, 53-2100: FS, 53-2200: FS, 63-1700: FS, 63-2600: FS, 53-5400: FS, 54-4000: FS	32-1500: FS, M11. 3: FS, M11. 4: FS
471	SA2.5.04.C Part X1 Area C			730	31-Dec-18	29-Dec-20	0		
472	SA2.5.04.C.1 LFG - Power Supply Building			530	17-Jan-19	29-Jun-20	5		
473	5.04.C.1	54-2900	LFG Building (with Transformer Room)	335	17-Jan-19	17-Dec-19	0	23-1300: FS, 23-3500: FS, 11-1100: FS, 31-1000: FS	53-5800: FS, 53-5900: FS, 54-3000: FS, 54-3100: FS, M 7. 6: FS
474	5.04.C.1	54-3000	Transformer & HV Swtichgear Installation	60	01-May-20	29-Jun-20	0	54-2900: FS, 41-1200: FS, 53-5800: FS, 53-5700: FS	53-4600: FS, M 7. 4: FS -30, M 7. 5: FS, M 7. 5: FF
475	5.04.C.1	54-3100	MEP Installation, with T&C	75	18-Dec-19	01-Mar-20	125	54-2900: FS	32-1400: FS, 32-2100: FS, 53-4700: FS, 53-4800: FS, M 7. 4: FS -30, M 7. 5: FS
476	SA2.5.04.C.2 LFG Treatment Plant			554	31-Dec-18	06-Jul-20	0		
477	5.04.C.2	54-3200	Main Plant Area included Civil Works	384	31-Dec-18	18-Jan-20	0	23-3500: FS, 11-1100: FS	54-3300: FS, 54-3400: FS, 54-3500: FS, 54-3600: FS, 54-3700: FS, 54-3800: FS, M 7. 1: SF 30, M 7. 2: FS -200, M 7. 3: FS
478	5.04.C.2	54-3300	MEP Installation	170	19-Jan-20	06-Jul-20	0	54-3200: FS, 12-1000: FF	32-2000: FS, 53-4800: FS, 54-3900: FS, M 7. 4: FS -80, M 7. 5: FS
479	5.04.C.2	54-3400	GHS600 Blower 601 A&B Relocation	15	19-Jan-20	02-Feb-20	155	23-5800: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -8, M 7. 5: FS
480	5.04.C.2	54-3500	Pre-treatment	60	19-Jan-20	18-Mar-20	110	41-3900: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -30, M 7. 5: FS
481	5.04.C.2	54-3600	Flares (incl. PLC control, interlink to Towngas PF & LTP)	125	19-Jan-20	22-May-20	45	41-3300: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -60, M 7. 5: FS
482	5.04.C.2	54-3700	LFG Engine (incl. on-grid protection, PLC control, turning)	110	21-Feb-20	09-Jun-20	27	41-3600: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -60
483	5.04.C.2	54-3800	Cooling System	45	19-Jan-20	03-Mar-20	125	22-1500: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -25, M 7. 5: FS
484	SA2.5.04.C.3 LFG - Test & Commission			176	07-Jul-20	29-Dec-20	0		
485	5.04.C.3	54-3900	MEP Testing	65	07-Jul-20	09-Sep-20	0	54-3400: FS, 54-3500: FS, 54-3600: FS, 54-3700: FS, 54-3800: FS, 12-1200: FS, 53-6900: FS, 31-2200: FS, 54-3300: FS	23-7000: SS -150, 23-7300: SS, 54-4000: FS, M11. 1: FS -30, M11. 2: FS
486	5.04.C.3	54-4000	Operational Testing	111	10-Sep-20	29-Dec-20	0	53-1300: FS, 63-2700: FS, 63-1800: FS, 53-2300: FS, 53-1100: FS, 54-3900: FS, 23-7200: FS	32-1500: FS, 54-2800: FS, 63-4800: FF, 63-4900: FS, 63-4600: FS, M11. 3: FS, M11. 4: FS
487	SA2.5.04.D Part X1 Area D			374	29-Jun-19	06-Jul-20	6		
488	5.04.D	54-4100	General Area & Access Road	120	09-Mar-20	06-Jul-20	6	23-1300: FS, 53-5500: SS, 53-5600: FF, 53-6200: SS, 53-6300: FF, 12-1000: FF, 11-1100: FS	32-2100: FS, 53-4800: FS, 53-4900: FS, 53-5000: FS, 53-7000: FS, M 8. 5: FS
489	5.04.D	54-4200	VWF Building	120	28-Oct-19	24-Feb-20	63	23-1300: FS, 23-5200: FS, 41-4500: FS, 11-1100: FS, 54-4300: SS 60	32-2100: FS, M 8. 4: FS, M 8. 6: FS -60, M 8. 7: FS, 12-1000: FS, 54-4500: SS 60
490	5.04.D	54-4300	Weighbridge	75	29-Aug-19	11-Nov-19	63	41-4200: FS, 23-1300: FS, 23-5200: FS, 11-1100: FS, 54-4400: SS 60	32-2100: FS, M 8. 6: FS -40, M 8. 7: FS, 54-4200: SS 60
491	5.04.D	54-4400	Weighmaster House	120	29-Jun-19	26-Oct-19	64	23-1300: FS, 23-5200: FS, 11-1100: FS, 54-2000: FS	32-2100: FS, M 8. 1: FS, 12-1000: FS, 54-4300: SS 60
492	5.04.D	54-4500	Wheel Wash Bath	75	27-Dec-19	10-Mar-20	63	23-1300: FS, 23-5200: FS, 41-4500: FS, 11-1100: FS, 54-4200: SS 60	32-2100: FS, M 8. 3: FS, 12-1000: FS, 54-4700: SS 30
493	SA2.5.04.E Part X1 Area E & Part X2			163	26-Jan-20	06-Jul-20	6		
494	5.04.E	54-4600	General Area & Access Road	120	09-Mar-20	06-Jul-20	6	53-5500: SS, 53-5600: FF, 53-6200: SS, 53-6300: FF, 12-1000: FF, 11-1100: FS, 11-1200: FS	32-2100: FS, 53-4900: FS, 53-5000: FS, 53-7000: FS
495	5.04.E	54-4700	Guard House & Entrance Gate	100	26-Jan-20	04-May-20	63	23-1300: FS, 23-5200: FS, 11-1100: FS, 11-1200: FS, 54-4500: SS 30	32-2100: FS, M 8. 2: FS, 12-1000: FS
496	SA2.5.08 Landscape Works - Advance Screen Planting in CWB Country Park			270	01-Apr-19	26-Dec-19	529		
497	SA2.5.08.N Area N			270	01-Apr-19	26-Dec-19	529		
498	5.08.N	58-1000	Advance Screen Planting	90	01-Apr-19*	29-Jun-19	529	23-7900: FS, 31-1100: FS, 11-1500: FS	14-1800: SS -60, 58-1100: SS, 68-1600: SS 30, M 3. 2: FS
499	5.08.N	58-1100	Establishment of Screen Planting	270	01-Apr-19*	26-Dec-19	529	58-1000: SS, 14-1800: FS	32-1500: FS
500	SA2.5.08.S Area S			270	01-Apr-19	26-Dec-19	529		
501	5.08.S	58-1200	Advance Screen Planting	90	01-Apr-19*	29-Jun-19	529	23-7900: FS, 31-1100: FS, 11-1500: FS	58-1300: SS, M 3. 2: FS
502	5.08.S	58-1300	Establishment of Screen Planting	270	01-Apr-19*	26-Dec-19	529	58-1200: SS	32-1500: FS
503	SA2.6 Construction (Remaining Works)			1474	01-Apr-19	13-Apr-23	30		
504	SA2.6.02 Advance Works			80	09-Jul-21	26-Sep-21	339		
505	SA2.6.02.9 Demolition of SENT Infrastructure Area			80	09-Jul-21	26-Sep-21	339		
506	6.02.9	62-1000	Existing SENT General Infrastructure Facility & Building	60	09-Jul-21	06-Sep-21	239	32-2100: FS, 12-1300: FS	23-2000: SS -90, 63-2800: FS, 63-2900: FS, 63-3000: FS, 63-4300: FS, M12. 4: FS -30, M12. 5: FS
507	6.02.9	62-1100	Existing SENT LTP	60	29-Jul-21	26-Sep-21	339	32-1500: FS, 12-1300: FS, 23-2200: FS	63-3000: FS, 63-4500: FS, M12. 4: FS -30, M12. 5: FS
508	6.02.9	62-1200	Existing SENT LFG	60	29-Jul-21	26-Sep-21	339	32-1500: FS, 12-1300: FS, 23-2200: FS	63-3000: FS, 63-4500: FS, M12. 4: FS -30, M12. 5: FS



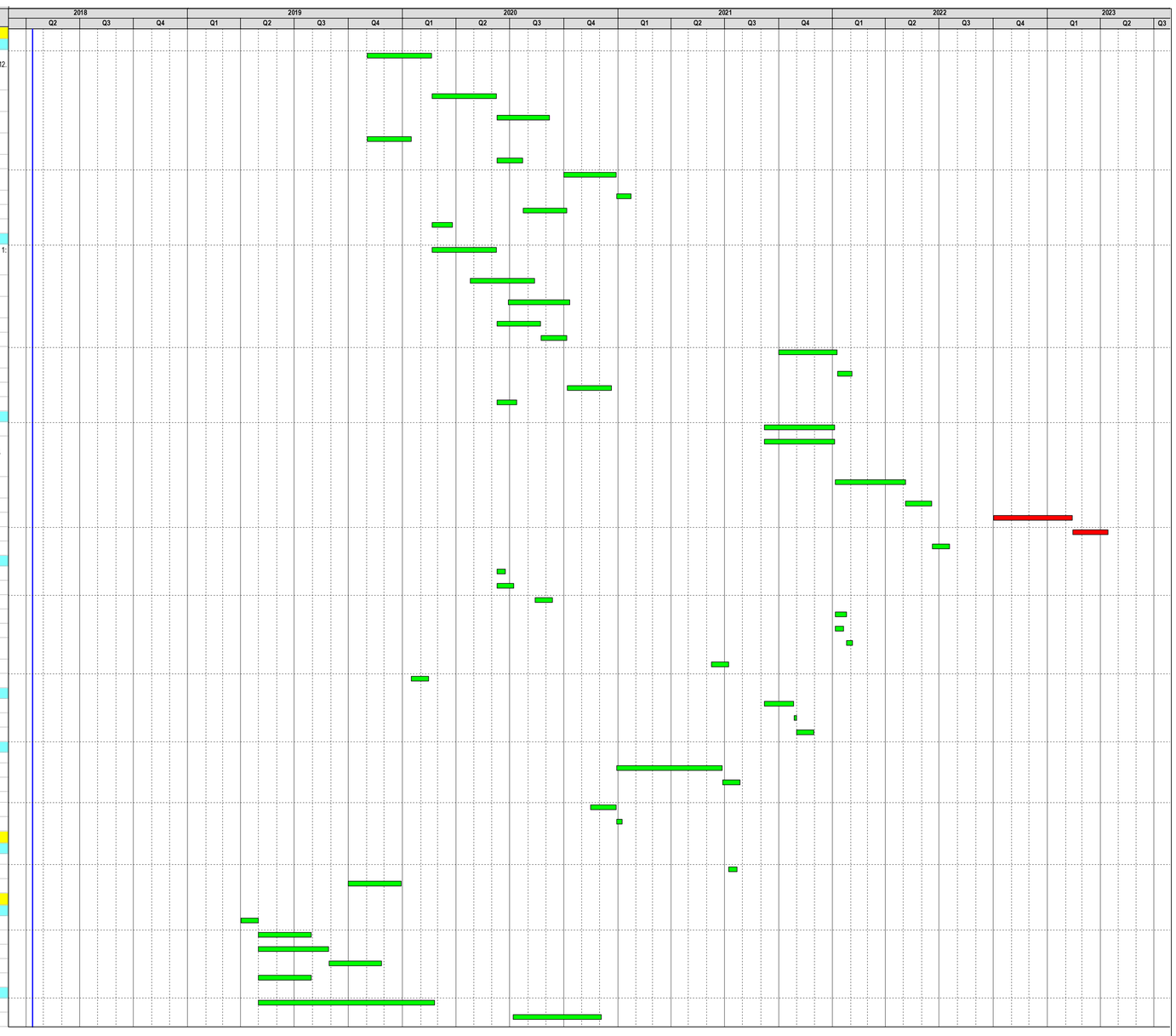
Remaining Work
Critical Remaining Work
Milestone

South-East New Territories Land Fill Extension (SA2-SENTX)
Baseline Programme

GREEN VALLEY LANDFILL, LIMITED

Date	Revision	Checked	Approved
11-May-18	SENTX-GVL-W-PB-ZZ-0001 Rev. I01		
20-Jul-18	SENTX-GVL-W-PB-ZZ-0001 Rev. I02 (Detailed)		

#	WBS Path	Activity ID	Activity Name	Dur	Start	Finish	Total Float	Predecessor Details	Successor Details
509			**SA2.6.03 Civil Engineering Works**	1259	02-Nov-19	13-Apr-23	30		
510			**SA2.6.03.2 Landfill Cell 2**	449	02-Nov-19	23-Jan-21	810		
511	6.03.2	63-1000	Earth bund (Eastern)	110	02-Nov-19	19-Feb-20	9	11-1100: FS, 23-2500: FS, 53-4200: FS, 53-1400: FS, 53-2800: FS	53-3500: FS, 63-1500: FS, 63-1800: FS, 63-1900: FS, 63-2000: FS, 63-2100: FS, 63-2200: FS, M12. 1: FS -50, M12. 2: FS, 63-1100: FS
512	6.03.2	63-1100	Earth bund (Western)	110	20-Feb-20	08-Jun-20	84	11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS, 63-1000: FS	63-1400: FS, 63-1500: FS, 63-1700: FS, 63-3500: FS, 63-3600: FS, 63-1200: FS
513	6.03.2	63-1200	Intercell bund (Cell 2/3)	90	09-Jun-20	06-Sep-20	734	11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS, 53-4400: FS, 63-1100: FS	63-1500: FS
514	6.03.2	63-1300	Site Formation	75	02-Nov-19	15-Jan-20	14	11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS	63-1400: FS, 63-4200: FS
515	6.03.2	63-1400	Pump Station (PS#2X)	45	09-Jun-20	23-Jul-20	84	63-1300: FS, 63-1100: FS	63-1600: FS, 63-1700: FS
516	6.03.2	63-1500	Lining Works	90	01-Oct-20*	29-Dec-20	710	41-1500: FS, 63-1000: FS, 63-1100: FS, 63-1200: FS	63-1600: FS, M12. 3: FS, 63-2400: FS
517	6.03.2	63-1600	Protective Stone Laying & Leachate Collection Pipe	25	30-Dec-20	23-Jan-21	810	63-1500: FS, 41-1500: FS, 63-1400: FS	32-1600: FS, M12. 3: FS
518	6.03.2	63-1700	Install Leachate Force Main	75	24-Jul-20	06-Oct-20	84	63-1100: FS, 41-1500: FS, 63-1400: FS	54-2800: FS, M12. 3: FS
519	6.03.2	63-1800	Install Landfill Gas Pipe on earth bund	35	20-Feb-20	25-Mar-20	168	41-1500: FS, 63-1000: FS	54-4000: FS, M12. 3: FS
520			**SA2.6.03.3 Landfill Cell 3**	714	20-Feb-20	02-Feb-22	435		
521	6.03.3	63-1900	Earth bund (Eastern)	110	20-Feb-20	08-Jun-20	9	11-1100: FS, 53-4200: FS, 63-1000: FS, 53-4300: FS, 53-2800: FS, 63-4200: FS	53-3300: FS, 53-3600: FS, 63-2400: FS, 63-2700: FS, M12. 1: FS -50, M12. 2: FS, 63-2000: FS -45, 63-2200: FS
522	6.03.3	63-2000	Earth bund (Western)	110	25-Apr-20	12-Aug-20	19	11-1100: FS, 63-1000: FS, 63-1900: FS -45	63-2300: FS, 63-2400: FS, 63-2600: FS, 63-3700: FS, 63-2100: FS -45
523	6.03.3	63-2100	Intercell bund (Cell 3/4)	105	29-Jun-20	11-Oct-20	789	11-1100: FS, 63-1000: FS, 63-4200: FS, 63-2000: FS -45	63-2400: FS
524	6.03.3	63-2200	Site Formation	75	09-Jun-20	22-Aug-20	9	11-1100: FS, 63-1000: FS, 63-1900: FS	63-2300: FS
525	6.03.3	63-2300	Pump Station (PS#3X)	45	23-Aug-20	06-Oct-20	9	63-2200: FS, 63-2000: FS	63-2500: FS, 63-2600: FS
526	6.03.3	63-2400	Lining Works	100	01-Oct-21*	08-Jan-22	435	41-1500: FS, 63-1900: FS, 63-2000: FS, 63-2100: FS, 63-1500: FS	63-2500: FS, M12. 3: FS
527	6.03.3	63-2500	Protective Stone Laying & Leachate Collection Pipe	25	09-Jan-22	02-Feb-22	435	63-2400: FS, 41-1500: FS, 63-2300: FS	32-1700: FS, M12. 3: FS
528	6.03.3	63-2600	Install Leachate Force Main	75	07-Oct-20	20-Dec-20	9	63-2000: FS, 41-1500: FS, 63-2300: FS	53-2500: SS -90, 54-2800: FS, M12.3: FS
529	6.03.3	63-2700	Install Landfill Gas Pipe on earth bund	35	09-Jun-20	13-Jul-20	58	41-1500: FS, 63-1900: FS	54-4000: FS, M12. 3: FS
530			**SA2.6.03.4 Landfill Cell 4**	584	07-Sep-21	13-Apr-23	30		
531	6.03.4	63-2800	Remaining Portion of Buttress Wall	120	07-Sep-21	04-Jan-22	494	62-1000: FS	
532	6.03.4	63-2900	Earth bund (Western) incl. MSE Wall	120	07-Sep-21	04-Jan-22	239	62-1000: FS	63-3000: FS, 63-3100: FS, 63-3200: FS, 63-3400: FS, 63-3800: FS, 63-3900: FS, 63-4100: SS -90, M 9. 6: FS -60, M 9. 7: FS -30, M 9. 8: FS
533	6.03.4	63-3000	Site Formation	120	05-Jan-22	04-May-22	239	62-1000: FS, 62-1100: FS, 62-1200: FS, 63-2900: FS, 63-4100: FS	63-3100: FS
534	6.03.4	63-3100	Pump Station (PS#4X)	45	05-May-22	18-Jun-22	239	63-3000: FS, 63-2900: FS	63-3300: FS, 63-3400: FS
535	6.03.4	63-3200	Lining Works	135	01-Oct-22*	12-Feb-23	0	41-1500: FS, 63-2900: FS	63-3300: FS, M12. 6: FS
536	6.03.4	63-3300	Protective Stone Laying & Leachate Collection Pipe	60	13-Feb-23	13-Apr-23	0	41-1500: FS, 63-3200: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS
537	6.03.4	63-3400	Install Leachate Force Main & Remove Temporary Leachate Pipe	30	19-Jun-22	18-Jul-22	269	41-1500: FS, 63-2900: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS
538			**SA2.6.03.5 Drainage - Surface Run-Off**	750	16-Jan-20	03-Feb-22	464		
539	6.03.5	63-3500	Perimeter Channel (X9A) at Cell 2 Western Bund	15	09-Jun-20	23-Jun-20	1054	63-1100: FS	12-1900: FS
540	6.03.5	63-3600	Perimeter Channel (X10A) at Cell 2 Western Bund	30	09-Jun-20	08-Jul-20	1029	63-1100: FS	63-4000: FS
541	6.03.5	63-3700	Perimeter Channel (X10A) at Cell 3 Western Bund	30	13-Aug-20	11-Sep-20	964	63-2000: FS	63-4000: FS
542	6.03.5	63-3800	Perimeter Channel (X10A) at Cell 4 Western Bund	20	05-Jan-22	24-Jan-22	464	63-2900: FS	63-4000: FS
543	6.03.5	63-3900	Perimeter Channel (X10C) at Cell 4 Western Bund	15	05-Jan-22	19-Jan-22	469	63-2900: FS	63-4000: FS
544	6.03.5	63-4000	Connection to Existing DP3	10	25-Jan-22	03-Feb-22	464	63-3900: FS, 63-3600: FS, 63-3700: FS, 63-3800: FS	12-1900: FS
545	6.03.5	63-4100	Remove Cut-Off Channel C-7 at bottom of Buttress Wall	30	09-Jun-21	08-Jul-21	419	63-2900: SS -90	63-3000: FS
546	6.03.5	63-4200	Temporary Channel (X7T) at SENT Infrastructure Area	30	16-Jan-20	14-Feb-20	14	63-1300: FS	63-1900: FS, 63-2100: FS
547			**SA2.6.03.6 Drainage - Ground Water**	85	07-Sep-21	30-Nov-21	529		
548	6.03.6	63-4300	Construct Temporary Channel (TC-1), from MH-1 to Existing UC-825	50	07-Sep-21	26-Oct-21	529	23-1900: FS, 11-1300: FS, 62-1000: FS	63-4400: FS
549	6.03.6	63-4400	Divert GW at MH-1 to TC-1	5	27-Oct-21	31-Oct-21	529	63-4300: FS	63-4500: FS, M 9. 9: FS
550	6.03.6	63-4500	Reconnection of GWCP across Cell 4	30	01-Nov-21	30-Nov-21	529	62-1100: FS, 62-1200: FS, 63-4400: FS	12-1900: FS
551			**SA2.6.03.8 Utilities - Works Associated with Utilities Undertakes**	255	15-Nov-20	27-Jul-21	655		
552			SA2.6.03.8.U1 CLP	210	30-Dec-20	27-Jul-21	655		
553	6.03.8.U1	63-4600	LFG Generator On-grid Testing	180	30-Dec-20	27-Jun-21	655	32-2500: FS, 12-1200: FS, 54-4000: FS	63-4700: FS
554	6.03.8.U1	63-4700	LFG Generator On-grid Inspection & Verify	30	28-Jun-21	27-Jul-21	655	63-4600: FS	12-1900: FS
555			SA2.6.03.8.U6 TownGas	55	15-Nov-20	08-Jan-21	855		
556	6.03.8.U6	63-4800	Laying Gas Mains (from LFG to Town Gas PF)	45	15-Nov-20	29-Dec-20	855	54-4000: FF	63-4900: FS
557	6.03.8.U6	63-4900	Gas Meter Relocation & Connection at LFG	10	30-Dec-20	08-Jan-21	855	63-4800: FS, 54-4000: FS	12-1900: FS
558			**SA2.6.04 Building & E&M Works**	661	01-Oct-19	22-Jul-21	660		
559			**SA2.6.04.C Part X1 Area C**	661	01-Oct-19	22-Jul-21	660		
560			SA2.6.04.C.02 LFG Treatment Plant	661	01-Oct-19	22-Jul-21	660		
561	6.04.C.02	64-1000	GHS600 Blower 601 C Relocation	15	08-Jul-21	22-Jul-21	660	32-1500: FS	12-1900: FS
562	6.04.C.02	64-1100	Absorption Chiller (Optional)	90	01-Oct-19	29-Dec-19	1231	54-2200: FS	12-1900: FS
563			**SA2.6.08 Landscape Works**	613	01-Apr-19	03-Dec-20	891		
564			**SA2.6.08.1 SENT Area - Tree Removal & Transplanting**	240	01-Apr-19	26-Nov-19	1264		
565	6.08.1	68-1000	Access trees condition and select for transplanting	30	01-Apr-19*	30-Apr-19	1264	14-1300: FS	68-1100: FS, 68-1200: FS, 68-1400: FS
566	6.08.1	68-1100	Prepare new site to receive trees	90	01-May-19	29-Jul-19	1264	68-1000: FS	68-1200: SS
567	6.08.1	68-1200	Transplant selected trees	120	01-May-19	28-Aug-19	1264	68-1000: FS, 68-1100: SS	68-1300: FS
568	6.08.1	68-1300	Prune trees prior to removal from Cell 4	90	29-Aug-19	26-Nov-19	1264	68-1200: FS	12-1900: FS
569	6.08.1	68-1400	Tree Felling - Part X3	90	01-May-19	29-Jul-19	1384	23-8200: FS, 31-1600: FS, 68-1000: FS	12-1900: FS
570			**SA2.6.08.2 SENTX Area - Trial Nursery & Tree Planting**	583	01-May-19	03-Dec-20	891		
571	6.08.2	68-1600	Trial Nursery	300	01-May-19	24-Feb-20	1174	14-1800: FS, 58-1000: SS 30	12-1900: FS, M 3. 2: FS
572	6.08.2	68-1700	Landscaping in New Infrastructure Area	150	07-Jul-20	03-Dec-20	891	54-1000: FS, 23-7600: FS	12-1900: FS



Remaining Work
Critical Remaining Work
Milestone

South-East New Territories Land Fill Extension (SA2-SENTX)
Baseline Programme

GREEN VALLEY LANDFILL LIMITED

Date	Revision	Checked	Approved
11-May-18	SENTX-GVL-W-PB-ZZ-0001 Rev. I01		
20-Jul-18	SENTX-GVL-W-PB-ZZ-0001 Rev. I02 (Detailed)		

Annex B

Environmental Mitigation Implementation Schedule

Annex B Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D C O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
Air Quality – Construction Phase								
4.8.1	AQ1	<u>Blasting</u> • The area within 30m of the blasting area will be wetted prior to blasting. • Blasting will not be carried out when the strong wind signal or tropical cyclone warning signal No. 3 or higher is hoisted, unless this is with the express prior permission of the Commissioner of Mines. • loose material and stones in the Site will be removed prior to the blast operation • During blasting, blast nets, screens and other protective covers will be used to prevent the projection of flying fragments and material resulting from blasting	To minimise potential dust nuisance	Blasting area and 30m of blasting area	SENTX Contractor	✓	*Air Pollution Control (Construction Dust) Regulations*	Not applicable. Blasting is not required in the latest landfill design
4.8.1	AQ2	<u>Rock Drilling</u> • Watering will be carried out at the rock drilling activities to avoid fugitive dust emissions.	To minimise potential dust nuisance	Rock drilling area	SENTX Contractor	✓	*Air Pollution Control (Construction Dust) Regulations*	Not applicable. Rock drilling is not required in the latest landfill design

(1) D=Design; C=Construction; O/R=Operation/Restoration; A=Aftercare

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
4.8.1	AQ3	<u>Site Access Road</u> • The main haul road will be kept clear of dusty materials or sprayed with water. • The main haul road will be paved with aggregate or gravel. • Vehicle speed will be limited to 10kph.	To minimise potential dust nuisance	Main haul road	SENTX Contractor		✓			*Air Pollution Control (Construction Dust) Regulations* *HKAQO and EIAO-TM Annex 4*	Implemented
4.8.1	AQ4	<u>Stockpiling of Dusty Materials</u> • Any stockpile of dusty materials will be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides or sprayed with water so as to ensure that the entire surface is wet.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓			*Air Pollution Control (Construction Dust) Regulations* *HKAQO and EIAO-TM Annex 4*	Reminder was given to the contractor
4.8.1	AQ5	<u>Loading, unloading or transfer of dusty materials</u> • All dusty materials will be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓			*Air Pollution Control (Construction Dust) Regulations* *HKAQO and EIAO-TM Annex 4*	Implemented
4.8.1	AQ6	<u>Site Boundary and Entrance</u> • Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of height not less than 2.4m from ground level will be provided along the entire length of that portion of the site boundary except for the site entrance or exit.	To minimise potential dust nuisance	Site boundary and entrance	SENTX Contractor		✓			*Air Pollution Control (Construction Dust) Regulations* *HKAQO and EIAO-TM Annex 4*	Not applicable

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4.8.1	AQ7	<u>Excavation Works</u> • Working area of any excavation or earth moving operation will be sprayed with water immediately before, during and immediately after the operation so as to ensure that the entire surface is wet.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓			*Air Pollution Control (Construction Dust) Regulations* *HKAQO and EIAO-TM Annex 4*	Implemented
4.8.1	AQ8	<u>Building Demolition</u> • The area where the demolition works are planned to take place will be sprayed with water immediately prior to, during and immediately after the demolition activities. • Any dusty materials remaining after a stockpile is removed will be wetted with water and cleared from the surface of roads or street.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓			*Air Pollution Control (Construction Dust) Regulations* *HKAQO and EIAO-TM Annex 4*	Implemented
4.8.1	AQ9	<u>Construction of the Superstructure of Building</u> • Effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground level up to the highest level of the scaffolding.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓			*Air Pollution Control (Construction Dust) Regulations* *HKAQO and EIAO-TM Annex 4*	Implemented
4.8.1	AQ10	Should a stone crushing plant be needed on site, the control measures recommended in the *Best Practicable Means Requirement for Mineral Works (Stone Crushing Plants) BPM 11/1* should be implemented.	To minimise potential dust nuisance	Stone crushing plant/ construction phase	SENTX Contractor		✓			*Best Practicable Means Requirement for Mineral Works (Stone Crushing Plants) BPM 11/1*	Not applicable. Stone crushing plant is not required in the latest landfill design

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4.8.1	AQ11	Good site practices such as regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emissions.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓			*HKAQO and EIAO-TM Annex 4*	Implemented
4.10.1	AQ12	Dust monitoring once every 6 days	Ensure the dust generated from the project meets the air quality requirement	At monitoring locations shown in *Figure 3.2a*	SENTX Contractor		✓			*HKAQO and EIAO-TM Annex 4*	Implemented
Air Quality – Operation, Restoration and Aftercare Phases											
4.8.2	AQ13	<u>Odour</u> • Enclosing the weighbridge area	To minimise odour nuisance	Weighbridge area	SENTX Contractor	✓		✓		*EIAO-TM Annex 4*	Not Applicable. As SENTX will receive construction waste only which is significantly less odorous, enclosing the weighbridge area is not necessary
4.8.2	AQ14	• Providing a vehicle washing facility before the exit of SENTX and providing sufficient signage to remind RCV drivers to pass through the facility before leaving SENTX	To minimise odour nuisance	Vehicle washing facility	SENTX Contractor	✓		✓		*EIAO-TM Annex 4*	Implemented
4.8.2	AQ15	• Reminding the RCV drivers to empty the liquor collection sump and close the valve	To minimise odour nuisance	Tipping face	SENTX Contractor	✓		✓	✓	*EIAO-TM Annex 4*	Not Applicable. As SENTX will receive construction waste

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		before leaving the tipping face									only, which is relatively dry, the amount of liquor generated is expected to minimal
4.8.2	AQ16	• Washing down the area where spillage of RCV liquor is discovered promptly	To minimise odour nuisance	SENTX Site	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. As SENTX will receive construction waste only, which is relatively dry, the amount of liquor generated is expected to minimal.
4.8.2	AQ17	• Reminding operators to properly maintain their RCVs and ensure that liquor does not leak from the vehicles	To minimise odour nuisance	SENTX Site	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. As SENTX will receive construction waste only, which is relatively dry, the amount of liquor generated is expected to minimal.
4.8.2	AQ18	• Installation of landfill gas control system to enhance collection of landfill gas from the waste mass and hence minimise odour associated with fugitive landfill gas emissions	To minimise odour nuisance	SENTX Site	SENTX Contractor	✓		✓	✓	*EIAO-TM Annex 4*	Implemented

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4.8.2	AQ19	• Progressive restoration of the areas which reach the finished profile (a final capping system including an impermeable liner will be put in place) and installation of a permanent landfill gas extraction system	To minimise odour nuisance	SENTX Site	SENTX Contractor	✓		✓	✓	*EIAO-TM Annex 4*	Implemented
4.8.2	AQ20	• Installing deodorizers along the site boundary adjacent to the ASRs	To minimise odour nuisance	SENTX Site boundary	SENTX Contractor			✓	✓	*EIAO-TM Annex 4*	Not Applicable. As SENTX will receive construction waste only which is significantly less odorous, installation of deodorizers is not necessary.
4.8.2	AQ21	• Erecting a vertical barrier, wall or structure softened by planting rows of trees/shrubs or landscape feature along the site boundary, particularly in the areas near the ASRs	To minimise odour nuisance	SENTX Site boundary	SENTX Contractor	✓		✓	✓	*EIAO-TM Annex 4*	Implemented
4.8.2 and SENTX latest design	AQ22	• Maintaining the size of the active tipping face not greater than 1,200 m^2	To minimise odour nuisance	Active tipping face	SENTX Contractor			✓		*EIAO-TM Annex 4*	Implemented
4.8.2	AQ23	• Promptly covering the MSW with soil or selected inert materials to control odour emissions	To minimise odour nuisance	Active tipping face	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. SENTX will not receive MSW.

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4.8.2	AQ24	• Maintaining the size of the special waste trench not greater than 6m (l) × 2.5m (w)	To minimise odour nuisance	Special waste trench	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. SENTX will not have any special waste trench.
4.8.2 and SENTX latest design	AQ25	• Covering daily covered area with a tarpaulin sheet or 300mm of soil after the landfill operating hours	To minimise odour nuisance	Daily covered area	SENTX Contractor			✓		*EIAO-TM Annex 4*	Implemented
4.8.2	AQ26	• Covering special waste trench with 600 mm of soil and an impervious liner after 5 pm	To minimise odour nuisance	Special waste trench	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. SENTX will not have any special waste trench.
4.8.2	AQ27	• Covering the non-active tipping face with 600mm of soil and an impermeable liner (on top of the intermediate cover), which will not only control odour emissions from landfilled waste but also enhance landfill gas extraction by the landfill gas extraction system	To minimise odour nuisance	Intermediate cover	SENTX Contractor			✓		*EIAO-TM Annex 4*	Implemented
4.8.2	AQ28	• Applying deodorizers or odour suppression agents to control odour emissions from the active tipping face and special waste trench, if any, through spraying or fogging equipment	To minimise odour nuisance	Active tipping face and special waste trench	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. As SENTX will receive construction waste only which is significantly less odorous, installation of deodorizers is not necessary. Moreover,

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
											SENTX will not have any special waste trench.
4.8.2	AQ29	• Providing a mobile cover with retractable or suitable opening to cover up the opening of the special waste trench except during waste deposition and a suitable odour removal unit. The mobile cover should be equipped with powered extraction and suitable odour removal unit for purifying the trapped gas inside the trench before release into the atmosphere	To minimise odour nuisance	Special waste trench	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. SENTX will not have any special waste trench.
4.8.2 and SENTX latest design	AQ30	• Providing a thermal oxidizer for the leachate treatment plant	To minimise odour nuisance as a result of breakdown of thermal oxidizer	Leachate treatment plant	SENTX Contractor	✓		✓	✓	*EIAO-TM Annex 4*	Implemented
4.8.2 and SENTX latest design	AQ31	• Enclosing all the leachate storage and treatment tanks (except for the Sequential Batch Reactor (SBR) or Membrane Bioreactor (MBR) tanks) and diverting the exhaust air from these tanks to a thermal oxidizer or flare to avoid potential odour emissions from the LTP	To minimise odour nuisance	Leachate treatment plant	SENTX Contractor	✓		✓	✓	*EIAO-TM Annex 4*	Implemented
4.8.2	AQ32	• Rescheduling of waste filling activities on-site by avoiding waste filling activities carrying out at the northern area of the site	To minimise odour nuisance	SENTX Site	SENTX Contractor			✓		*EIAO-TM Annex 4*	Not Applicable. As SENTX will receive construction waste

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		in the summer months between July to November									only which is significantly less odorous, rescheduling of waste filling activities is not necessary.
4.8.2 and SENTX latest design	AQ33	<u>Dust, Gaseous Emission and LFG including Volatile Organic Compounds (VOCs)</u> • Keeping the main haul road to the waste filling area wet by regular watering ;	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		*HKAQO and EIAO-TM Annex 4*	Implemented
4.8.2	AQ34	• Compacting the exposed daily and intermediate covered areas well to avoid fugitive dust emission;	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		*HKAQO and EIAO-TM Annex 4*	Implemented
4.8.2	AQ35	• Limiting the vehicle speed within SENTX site boundary;	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		*HKAQO and EIAO-TM Annex 4*	Implemented
4.8.2	AQ36	• Providing vehicle washing bay to avoid vehicles carrying dust to public roads;	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		*HKAQO and EIAO-TM Annex 4*	Implemented
4.8.2	AQ37	• Switching off the engine when the diesel-driven equipment is idling;	To minimise gaseous emissions	SENTX Site	SENTX Contractor			✓	✓	-	Implemented
4.8.2	AQ38	• Maintaining the construction equipment properly to avoid any black smoke emissions;	To minimise gaseous emissions	SENTX Site	SENTX Contractor			✓	✓	-	Implemented

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4.8.2	AQ39	Providing sufficient underground landfill gas collection system to capture the landfill gas generated as much as possible; and	To minimise gaseous emissions, including LFG and VOCs	SENTX Site	SENTX Contractor			✓	✓	*EIAO-TM Annex 4*	Implemented
4.8.2	AQ40	Periodic inspections of the final cover should be undertaken to ensure that the capping layer is in good conditions at all times.	To minimise gaseous emissions, including LFG and VOCs	SENTX Site	SENTX Contractor			✓	✓	*EIAO-TM Annex 4*	Implemented
4.10.2	AQ41	Monitoring of ambient TSP once every 6 days	Ensure the dust emission from the project meets the dust requirement	At monitoring locations shown in *Figure 11.3a*	SENTX Contractor		✓	✓		*HKAQO* and *EIAO-TM Annex 4*	Implemented
4.10.2	AQ42	Monitoring of ambient VOCs, ammonia and H_2S, quarterly	Ensure the gaseous emission from the project meets the air quality requirement	At monitoring locations shown in *Figure 11.3a*	SENTX Contractor			✓	✓	Odour thresholds or 1% of Occupational Exposure Limit (OEL) as stipulated in the "*UK Health and Safety Executive (HSE) EH 40/05 Occupational Exposure Limits*", whichever is lower.	Implemented
4.10.2 and	AQ43	Monitoring of parameters for thermal oxidizer, flares and generator in accordance	Ensure the gaseous emission	At the flares and thermal	SENTX Contractor			✓	✓ (1)	Emission Limits	Implemented

(1) For LFG flare and LFG generator only.

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SENTX latest design		with requirements stated in Tables 3.4a, 3.5a and 3.6a of the EM&A Manual respectively.	from the project meets the air quality requirement	oxidizer stacks when they are in operation						specified in Contract	
4.10.2	AQ44	To confirm design assumption of ammonia, it is recommended that the ammonia concentration in the flue gas of the thermal oxidiser be monitored during the commissioning stage of the thermal oxidiser. If required, an emission standard will be set for ammonia for the thermal oxidiser based on the monitoring results. If no ammonia is detected in the flue gas during the decommissioning stage, the monitoring of ammonia in the flue gas of the thermal oxidiser could be discontinued.	Ensure the gaseous emission from the project meets the air quality requirement	At the thermal oxidizer stack during commissioning. If ammonia is detected during commissioning stage, the monitoring will continue.	SENTX Contractor			✓		Emission Limits determined during commissioning stage	Implemented
4.10.2 and SENTX latest design	AQ45	Odour patrol in accordance with requirements stated in Table 3.7a of the EM&A Manual.	Ensure the odour emission from the project meets the odour requirement	Along SENTX Site boundary	SENTX Contractor			✓		*EIAO-TM Annex 4*	Implemented
4.10.2	AQ46	Monitoring of meteorological station, continuously	Collect site specific meteorological data	At meteorological station shown in *Figure 11.3a*	SENTX Contractor		✓	✓	✓	-	Implemented

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Noise – Construction Phase								
5.7.1	N1	Adopt good site practice listed below: • Only well-maintained plant will be operated on-site and plant should be serviced regularly during the construction program; • Silencers or mufflers on construction equipment should be utilized and will be properly maintained during the construction program; • Mobile plant, if any, will be sited as far from NSRs as possible; • Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or should be throttled down to a minimum; • Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	To minimise potential construction noise nuisance.	All construction works area	SENTX Contractor	✓	*Noise Control Ordinance (NCO) and EIAO-TM Annex 5*	Implemented

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5.8	N2	Weekly noise monitoring	Ensure noise generated from the project meets the criteria	At monitoring locations shown in *Figure 6.4a*	SENTX Contractor		✓			*Noise Control Ordinance (NCO) and EIAO-TM Annex 5*	Implemented
Noise – Operation/Restoration Phase											
5.7.2	N3	Adopt good site practice listed below: • Choose quieter PME;	To minimise potential operational noise nuisance.	Within the SENTX Site	SENTX Contractor			✓		*Noise Control Ordinance (NCO) and EIAO-TM Annex 5*	Implemented
		• Include noise levels specification when ordering new plant items;								-	Implemented
		• Locate fixed plant items or noise emission points away from the NSRs as far as practicable;								-	Implemented
		• Locate noisy machines in completely enclosed plant rooms or buildings; and								-	Implemented
		• Develop and implement a regularly scheduled plant maintenance programme so that plant items are properly operated and serviced. The programme should be implemented by properly trained personnel.								-	Implemented

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5.8	N4	Weekly noise monitoring	Ensure noise generated from the project meets the criteria	At monitoring locations shown in *Figure 6.4a*	SENTX Contractor			✓		*Noise Control Ordinance (NCO) and EIAO-TM Annex 5*	Implemented
Water Quality – Construction Phase											
6.8.1	WQ1	<u>Construction Runoff</u> • Exposed soil areas will be minimised to reduce the contamination of runoff and erosion.	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor		✓			*ProPECC PN 1/94* *EIAO-TM Annex 6*	Deficiency of mitigation measures but rectified by the Contractor
6.8.1	WQ2	• Perimeter channels will be constructed in advance of site formation works and earthworks and intercepting channels will be provided for example along the edge of excavation.	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor	✓	✓			*ProPECC PN 1/94* *Water Pollution Control Ordinance (WPCO)* *EIAO-TM Annex 6*	Implemented
6.8.1	WQ3	• Silt removal facilities, channels and manholes will be maintained and the deposited silt and grit should be removed regularly to ensure they are functioning properly at all times.	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor		✓			*ProPECC PN 1/94* *WPCO* *EIAO-TM Annex 6*	Deficiency of mitigation measures but rectified by the Contractor

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6.8.1	WQ4	• Temporary covers such as tarpaulin will also be provided to minimise the generation of high SS runoff.	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor		✓			*ProPECC PN 1/94* *WPCO*	Deficiency of mitigation measures but rectified by the Contractor
6.8.1	WQ5	• The surface runoff contained any oil and grease will pass through the oil interceptors.	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor		✓			*ProPECC PN 1/94* *WPCO* *EIAO-TM Annex 6*	Implemented
6.8.1	WQ6	• All sewer and drains will be sealed to prevent building debris, soil etc from entering public sewers/drains before commencing any demolition works	To minimise potential water quality impacts arising from the demolition works	Infrastructure area at existing SENT Landfill	SENTX Contractor		✓			*ProPECC PN 1/94* *WPCO* *EIAO-TM Annex 6*	Not applicable
6.8.1	WQ7	• During the excavation works for the twin drainage tunnels, the recycle water for cooling the cutter head of the TBM will be conveyed to the sedimentation tanks for treatment and most of the treated water will be reused, where applicable and as much as possible, in the boring operations.	To minimise potential water quality impacts arising from the tunnel works	Tunnel boring sites	SENTX Contractor		✓			*ProPECC PN 1/94* *WPCO* *EIAO-TM Annex 6*	Not applicable. Excavation of drainage tunnels is not required in the latest landfill design.
6.8.1	WQ8	• The fuel and waste lubricant oil from the on-site maintenance of machinery and equipment will be collected by a licensed chemical waste collector.	To minimise potential water quality impacts arising from improper	SENTX Site	SENTX Contractor		✓			*ProPECC PN 1/94* *WPCO* *Waste Disposal Ordinance (WDO)*	Implemented

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			handling of fuel and oil								
6.8.1	WQ9	• Implementation of excavation schedules, lining and covering of excavated stockpiles	To minimise contaminated stormwater run-off from the SENTX Site	All construction works	SENTX Contractor		✓			*ProPECC PN 1/94* *WPCO* *EIAO-TM Annex 6*	Implemented
6.13	WQ10	• Monitoring of surface water quality will be conducted on a regular basis as stated in the EM&A Manual.	To minimise potential water quality impacts on surface water arising from the construction works	SENTX Site	SENTX Contractor		✓			*WPCO* *Water-TM*	Implemented
6.8.2	WQ11	<u>Sewage Effluents</u>									
		• Sufficient chemical toilets will be provided for the construction workforce.	To minimise potential water quality impacts arising from the sewage effluents	SENTX Site	SENTX Contractor		✓			*WPCO*	Implemented
6.8.2	WQ12	• Untreated sewage will not be allowed to discharge into the surrounding water body.	To minimise potential water quality impacts arising from the sewage effluents	SENTX Site	SENTX Contractor		✓			*WPCO* *WDO*	Deficiency of mitigation measures but rectified by the Contractor
6.8.2	WQ13	• A licensed waste collector will be employed to clean the chemical toilets on a regular basis.	To minimise potential water quality impacts	SENTX Site	SENTX Contractor		✓			*WPCO* *WDO*	Implemented

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			arising from the sewage effluents								
Water Quality – Operation/Restoration and Aftercare Phases											
6.9.1	WQ14	<u>Surface Water Management</u> • Inspections of the drainage system, sand traps, settlement ponds and surface water channels will be performed regularly to identify areas necessary for maintenance, cleaning or repair.	To minimise potential water quality impacts on surface water arising from the landfill operations.	SENTX Site	SENTX Contractor			✓		*WPCO* *Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Inshore Waters (Water-TM)* *EIAO-TM Annex 6*	Implemented
6.9.1	WQ15	• Regular maintenance and replacement, if required, of the HDPE liner will be conducted to prevent degradation from affecting the performance of the capping system.	To minimise potential water quality impacts on surface water arising from the landfill operations.	SENTX Site	SENTX Contractor			✓		*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented
6.9.1	WQ16	• Monitoring of surface water quality will be conducted on a regular basis as stated in the EM&A Manual.	To minimise potential water quality impacts on surface water arising from the landfill operations.	SENTX Site	SENTX Contractor			✓	✓	*WPCO* *Water-TM*	Implemented

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6.9.2 and SENTX latest design	WQ17	<u>Groundwater Management</u> • The groundwater management facilities including the groundwater monitoring wells will be inspected regularly during routine groundwater monitoring programme.	To minimise potential water quality impacts on groundwater arising from the landfill operations.	SENTX Site	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented
6.9.2	WQ18	• Monitoring of groundwater water quality will be conducted on a regular basis as stated in the EM&A Manual.	To minimise potential water quality impacts on groundwater arising from the landfill operations.	SENTX Site	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented
SENTX latest design	WQ19	<u>Sewage</u> • All sewage from the operation staff will be diverted to the LTP for treatment or public sewer, if available.	To ensure proper handling of sewage	SENTX Site	SENTX Contractor			✓	✓	-	Implemented
6.9.3	WQ20	<u>Leachate Management</u> • The leachate pump houses and related ancillary equipment will be inspected regularly and repairs, if necessary.	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate pump houses and related ancillary equipment	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented

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6.9.3	WQ21	• For equipment such as pumps that require routine scheduled maintenance, the maintenance will be performed following manufacturer's recommended frequency.	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate pumps	SENTX Contractor			✓	✓	*WPCO* *Water-TM*	Implemented
6.9.3	WQ22	• Preventive maintenance will be implemented so that the possibility for forced shutdown during wet season will be kept to minimal.	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate treatment plant	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented
6.9.3	WQ23	• Emergency procedures or a contingency plan will be established when the LTP is malfunctioned.	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate treatment plant	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented
6.9.3 and SENTX latest design	WQ24	• There will be sufficient redundancy in the system to handle the leachate flow even if one treatment train is down for maintenance. The leachate may be required to temporarily store within the	To minimise potential water quality impacts on surrounding water bodies	Leachate treatment plant	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented

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		landfill if the leachate storage lagoon are full and leachate cannot be transported to the LTP for treatment.	arising from the landfill operations.								
6.13	WQ25	• Monitor the quality of effluent discharged from the LTP	To ensure discharge quality comply with WPCO requirement	Leachate treatment plant discharge point	SENTX Contractor			✓	✓	*WPCO* *Water-TM*	Implemented
6.10.1	WQ26	<u>Potential Leakage of Leachate</u>									Implemented
		• Regular groundwater quality monitoring will be carried out to monitor the performance of the leachate containment system.	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	SENTX Site	SENTX Contractor			✓	✓	*WPCO* *Water-TM*	
6.10.1	WQ27	• Maintenance and replacement of the capping system should be carried out, if necessary, to prevent control infiltration and leachate seepage from any damaged cap.	To minimise potential water quality impacts on surrounding water bodies arising from the leachate leakage.	SENTX Site	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented
6.10.1	WQ28	• Maintaining control of the leachate level through extraction	To minimise potential water quality impacts on surrounding water bodies	SENTX Site	SENTX Contractor			✓	✓	*WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented

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			arising from surface breakout of leachate.								
Waste Management – Construction Phase											
7.6.1	WM1	All the necessary waste disposal permits are obtained prior to the commencement of construction work.	To ensure compliance with relevant statutory requirements	Before construction works commence	SENTX Contractor	✓	✓			*WDO*	Implemented
7.6.1	WM2	<u>Management of Waste Disposal</u> The construction contractor will open a billing account with the EPD. Every construction waste or public fill load to be transferred to the Government waste disposal facilities such as public fill reception facilities, sorting facilities, landfills will required a valid "chit" which contains the information of the account holder to facilitate waste transaction recording and billing to the waste producer. A trip-ticket system will also be established to monitor the disposal of construction waste at the SENT Landfill and to control fly-tipping. The trip-ticket system will be included as one of the contractual requirements and implemented by the contractor. A recording system for the amount of waste generated, recycled and disposed of (including the disposal sites) will be	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor		✓			*WDO* *Waste Disposal (Charges for Disposal of Construction Waste) Regulation;* *Works Bureau Technical Circular No.31/2004; and* *Annex 5 and Annex 6 of Appendix G of ETWBTC No. 19/2005)*	Implemented

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		established.						
7.6.1	WM3	<u>Measures for the Reduction of Construction Waste Generation</u>						
		Inert and non-inert construction waste will be segregated and stored in different containers or skips to facilitate reuse or recycling of the inert waste and proper disposal of the non-inert construction waste. Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	To reduce construction waste generation	SENTX Site	SENTX Contractor	✓	*WDO* *EIAO-TM Annex 7*	Deficiency of mitigation measures but rectified by the Contractor
7.6.1	WM4	<u>Chemical Waste</u>						
		The construction contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the *Code of Practice on the Packaging, Handling and Storage of Chemical Wastes*.	To ensure proper handling of chemical waste	SENTX Site	SENTX Contractor	✓	*WDO* *Code of Practice on the Packaging, Handling and Storage of Chemical Wastes*	Deficiency of mitigation measures but rectified by the Contractor
7.6.1	WM5	<u>Sewage</u>						
		An adequate number of portable toilets will be provided at the site to ensure that sewage from site staff is properly collected. The portable toilets will be desludged and maintained regularly by a specialist contractor.	To ensure proper handling of sewage	SENTX Site	SENTX Contractor	✓	*WDO* *EIAO-TM Annex 7*	Deficiency of mitigation measures but rectified by the Contractor

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7.6.1 and SENTX latest design	WM6	<u>General Refuse</u> General refuse will be stored in enclosed bins separately from construction and chemical wastes. The general refuse will be delivered to a transfer station or other landfill, separately from construction and chemical wastes, on a daily basis to reduce odour, pest and litter impacts. Recycling bins will be provided at strategic locations to facilitate recovery of aluminium can and waste paper from the SENTX Site. Materials recovered will be sold for recycling.	To ensure proper handling of general refuse	SENTX Site	SENTX Contractor		✓			*WDO* *EIAO-TM Annex 7*	Deficiency of mitigation measures but rectified by the Contractor
7.6.1	WM7	<u>Staff Training</u> At the commencement of the construction works, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling.	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor		✓				Implemented
7.8	WM8	<u>Environmental Monitoring & Audit Requirements</u> Weekly audits of the waste management practices will be carried out during the construction phase. The audits examine all aspects of waste management including waste generation, storage, recycling,	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor		✓			*WDO*	Implemented

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		transport and disposal.									
Waste Management – Operation/Restoration Phase											
7.6.2 and SENTX latest design	WM9	<u>Sludge</u> In case off-site disposal is required, the Contractor will ensure that sludge generated from the LTP will be delivered in closed container to other waste disposal facility e.g. other landfills or a sludge treatment facility, for proper disposal on a daily basis.	To ensure proper handling of sludge	SENTX Site	SENTX Contractor			✓		*WDO* *EIAO-TM Annex 7*	Implemented
7.6.2	WM10	<u>Chemical Waste</u> The construction contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the *Code of Practice on the Packaging, Handling and Storage of Chemical Wastes*.	To ensure proper handling of chemical waste	SENTX Site	SENTX Contractor			✓		*WDO* *EIAO-TM Annex 7* *Code of Practice on the Packaging, Handling and Storage of Chemical Wastes*	Implemented
7.6.2	WM11	<u>Sewage</u> All sewage from the operation staff will be diverted to the LTP for treatment or public sewer, if available.	To ensure proper handling of sewage	SENTX Site	SENTX Contractor			✓		*WDO* *EIAO-TM Annex 7*	Moved to mitigation measure under water quality WQ19. It is a measure for water quality rather than waste management.

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7.6.2 and SENTX latest design	WM12	<u>General Refuse</u> General refuse will be stored in enclosed bins and disposed of at other landfills or transfer station on a daily basis to reduce odour, pest and litter impacts. Recycling bins will be provided at strategic locations to facilitate recovery of aluminium can and waste paper from the SENTX Site. Materials recovered will be sold for recycling.	To ensure proper handling of general refuse	SENTX Site	SENTX Contractor			✓		*WDO* *EIAO-TM Annex 7*	Implemented
Landfill Gas Hazards – Design and Construction Phase											
8.6.2 and SENTX latest design	LFG1	Precautionary measures to be adopted by the contractors at the Project site and the adjacent development site within the landfill consultation zone are outlined in Paragraphs 8.3 to 8.49 of EPD's *Landfill Gas Hazard Assessment Guidance Notes (the Guidance Note*). Those precautionary measures applicable to the SENTX will be confirmed in the detailed Qualitative Landfill Gas Hazard Assessment to be submitted by the contractor.	To protect workers from landfill gas risk	All construction works area	SENTX Contractor		✓			*Paragraphs 8.3 to 8.49 of EPD's Landfill Gas Hazards Assessment Guidance Note* *EIAO-TM Annex 7*	Implemented
8.6.2	LFG2	Monitoring will be undertaken when construction works are carried out in confined space within the consultation zone with reference to the monitoring requirements and procedures specified in Paragraphs 8.23 to 8.28 of EPD's *Guidance*	To protect workers from landfill gas risk	Confined space within the construction works area	SENTX Contractor		✓				Implemented

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		Note will be followed. In the event of the trigger levels being exceeded, it is recommended that a person, such as the Safety Officer, is nominated, with deputies, to be responsible for dealing with any emergency which may occur due to landfill gas. In an emergency situation, the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas. The appropriate organisations shall be contact.									
8.6.3	LFG4	Implementation of engineering measures according to Contract Specification requirements. These measures will include the placement of liner and installation of landfill gas management system to contain, manage and control landfill gas.	To protect workers from landfill gas risk	SENTX Site	SENTX Contractor	✓	✓	✓	✓	*EIAO-TM Annex 7*	Implemented
8.6.3	LFG5	Engineering measures to significant engineering measures will be required in the design of the SENTX to protect the staff working in the infrastructure area. These measures include a combination of passive and active systems (examples are recommended in EPD's *Guidance Notes*). Landfill gas monitoring boreholes will be installed at the edge of the waste slope between the waste and the new infrastructure	To protect workers from landfill gas risk	Infrastructure Area	SENTX Contractor	✓	✓			*EPD's Landfill Gas Hazards Assessment Guidance Note* *EIAO-TM Annex 7*	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		area to monitor the migration of landfill gas, if any.									
Landfill Gas Hazards – Operation, Restoration and Aftercare Phases											
8.6.4	LFG7	To train and ensure staff to take appropriate precautions at all times when entering enclosed spaces or plant rooms. Undertake regular monitoring of landfill gas at the perimeter boreholes to detect if there are any signs of off-site landfill gas migration. Prepare and implement emergency plan in case off-site landfill gas migration is detected. A permanent gas monitoring system with alarm will be installed and operated in all occupied on-site buildings.	To protect workers from landfill gas risk	SENTX Site	SENTX Contractor			✓	✓	*Landfill Gas Hazards Assessment Guidance Note*	Implemented
8.7 and SENTX latest design	LFG8	<u>Environmental Monitoring & Audit Requirements</u> Undertake regular monitoring of landfill gas within the SENTX and along the SENTX boundary as required by the Contract Specification.	To protect workers from landfill gas risk	Within the SENTX and along the SENTX boundary	SENTX Contractor			✓	✓	*Landfill Gas Hazards Assessment Guidance Note*	Implemented
Ecology – Construction Phase											
9.10.2	EC1	Measures to control construction runoff: • Exposed soil areas will be minimised to reduce the contamination of runoff and	To minimise potential water quality impacts	All construction works area	SENTX Contractor		✓			*EIAO-TM Annex 16* *ProPECC PN 1/94*	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D C O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		erosion;	affecting ecological resources				*Water Pollution Control Ordinance (WPCO)* *EIAO-TM Annex 6*	
		• To prevent stormwater runoff from washing across exposed soil surfaces, perimeter channels will be constructed in advance of site formation works and earthworks and intercepting channels will be provided for example along the edge of excavation;					-	Implemented
		• Silt removal facilities, channels and manholes will be maintained and the deposited silt and grit will be removed regularly to ensure they are functioning properly at all times;					-	Deficiency of mitigation measures but rectified by the Contractor
		• Temporary covers such as tarpaulin will also be provided to minimise the generation of high suspended solids runoff;					-	Implemented
		• The surface runoff contained any oil and grease will pass through the oil interceptors; and,					-	Implemented
		• Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated					-	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		stormwater run-off from the SENTX site.									
9.10.2 and SENTX latest design	EC2	<u>Good Construction Practice</u>: • Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas. • The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.	To minimise potential ecological impacts arising from the Project	SENTX Site	SENTX Contractor		✓			*EIAO-TM Annex 16*	Implemented
Ecology – Operation, Restoration and Aftercare Phases											
9.10.2	EC3	<u>Measures for Controlling Leakage of Landfill Leachate</u> Leachate will be contained within the SENTX Site by the proposed impermeable leachate containment system and collected by the installation of drainage system to prevent potential migration of leachate to habitats in the vicinity.	To minimise potential water quality impact affecting the ecological resources	SENTX Site	SENTX Contractor			✓	✓	*EIAO-TM Annex 16* *WPCO* *Water-TM* *EIAO-TM Annex 6*	Implemented
9.10.2	EC4	<u>Measures for Controlling Migration of Landfill Gas</u> Disturbance to habitat in the vicinity and associated wildlife due to migration of landfill gas will be prevented by proper management of the landfill gas generated from the SENTX. Ignition fires will be	To minimise potential landfill gas migration affecting ecological	SENTX Site	SENTX Contractor			✓	✓	*EIAO-TM Annex 16*	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		prohibited to occur within the boundary of the SENTX Site. Surface emission and off-site migration of landfill gas will be regularly monitored.	resources								
9.10.3 and SENTX latest design	EC5	The following compensation planting is recommended as the mitigation measures for the habitat affected due to the SENTX: • Provision of 6 ha of mixed woodland planting to compensate the loss of shrubland; and • Provision of a mosaic of grassland and shrubland in the remaining areas of the SENTX Site. Compensatory planting and restoration of the SENTX can be implemented progressively according to the filling plan of SENTX.	Compensation of habitat loss due to the Project	SENTX Site	SENTX Contractor			✓	✓	*EIAO-TM Annex 16*	Implemented
9.10.3	EC6	The mixture of grassland, shrubland and woodland habitats are recommended to diversify the habitats for supporting various wildlife in particular butterflies, birds and herpetofauna and blend into the existing undisturbed ecological environment.	To diversify habitats	SENTX Site	SENTX Contractor			✓	✓	*EIAO-TM Annex 16*	Implemented
9.10.3	EC7	Indigenous plant species of shallow root system, softwood in nature and adaptive to sea shore habitat are recommended to be used in the restoration plan, which can establish well in coastal area with exposure to strong wind and salt spray, with sand soil base. Taking consideration of the relative poor substrate and the difficulties of	To enhance ecological value of the habitats	SENTX Site	SENTX Contractor			✓	✓	*EIAO-TM Annex 16*	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		establishment of some native trees in Hong Kong, it is recommended to include approximately 20% of non-native tree species in the compensatory woodland. The non-native tree species can serve as a nurse species to facilitate the establishment of the native tree species, especially the shading, and it can be replaced by established native tree species progressively. Plant species can also make reference to food plants of butterfly species (in particularly butterfly species of conservation interests recorded within the CWBCP).									
9.10.3	EC8	It is also recommended that a trial nursery for native plant species be set up to fine tone the planting matrix and management intensity of the recommended indigenous tree species for the restoration of the SENTX. It should be noted that native shrubs and tree species had been used for restoration of the existing SENT Landfill, native plant species that could not successfully be established on the existing SENT Landfill should be reviewed before the preparation of the compensatory planting list. Special care and intensive management of native plant should be implemented in order to ensure proper establishment of the native plants.	To select the most suitable indigenous tree species for the SENTX	SENTX Site	SENTX Contractor	✓		✓	✓	*EIAO-TM Annex 16*	Implemented
9.12.1	EC9	<u>Environmental Monitoring & Audit Requirements</u>	To ensure that	SENTX	SENTX		✓	✓	✓	*EIAO-TM Annex 16*	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		The implementation of the ecological mitigation measures should be checked as part of the environmental monitoring and audit procedures during the construction period.	adverse ecological impacts are prevented		Contractor						
Landscape and Visual – Construction Phase											
10.6.5	LV1	CM1 - The construction area and area allowed for the contractor's office, leachate treatment plant and laboratory areas will be minimised to a practical minimum, to avoid impacts on adjacent landscape.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor		✓			*EIAO-TM Annex 18 and ETWBC 3/2006*	Implemented
10.6.5	LV2	CM2 - Topsoil, where identified, will be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification will include storage and reuse of topsoil as appropriate.	To minimise the landscape and visual impacts	All construction works area	SENTX Contractor		✓			*EIAO-TM Annex 18*	Not applicable
10.6.5	LV3	CM3 - All existing trees at the edges of the landfill will be carefully protected during construction. Detailed Tree Protection Specification will be provided in the Contract Specification. Under this Specification, the Contractor will be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in Contractor's works areas.	To minimise the landscape and visual impacts	Potential impacted area	SENTX Contractor		✓			*EIAO-TM Annex 18 and ETWBC 3/2006*	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
10.6.5	LV4	CM4 - Trees unavoidably affected by the works will be transplanted, where necessary and practical. A detailed Tree Transplanting Specification will be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods will be allowed in the project programme.	To minimise the landscape and visual impacts	Potential impacted area	SENTX Contractor	✓	✓			*EIAO-TM Annex 18 and ETWBC 3/2006*	Implemented
10.6.5 and SENTX latest design	LV5	CM5 - Within 3 months of taking possession of the SENTX Site, the Contractor will plant advance screen planting of native species at Light Standard size at 1.5m centres along the High Junk Peak Trail so as to screen views of the Works from the trail. Tree planting locations will be agreed with AFCD. Works will be completed within 9 months of taking possession of the SENTX Site.	To minimise the landscape and visual impacts	At High Junk Peak Hiking Trail	SENTX Contractor		✓			*EIAO-TM Annex 18*	Implemented
10.6.5	LV6	CM6 - The Contractor's office, leachate treatment plant and laboratory will be given an aesthetic treatment in earth tones to reduce their visual impact and albedo and blend them into the surrounding landscape.	To minimise the landscape and visual impacts	Infrastructure area	SENTX Contractor	✓	✓			*EIAO-TM Annex 18*	Implemented
10.6.5	LV7	CM7 - The Contractor's office, leachate treatment plant and laboratory will be surrounded by a minimum of 5m wide and 0.75m high earth bund on the west and south sides planted with a dense screen of tree and shrub vegetation. Additional tree planting will be provided in unused spaces with thin	To minimise the landscape and visual impacts	Infrastructure area	SENTX Contractor	✓	✓			*EIAO-TM Annex 18 and ETWBC 7/2002*	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		infrastructure site, along access roads and in and around car parks. This will be supplemented with shrub planting, where appropriate.									
10.6.5	LV8	CM8 - Planting trials will be carried out in an on-site nursery prior to implementation of the first phase of restoration to establish the best planting matrix and management intensity of the recommended plant materials for the restoration.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor		✓			*EIAO-TM Annex 18*	Implemented
11.4.1 and SENTX latest design	LV9	During the preparation of the detailed landscape design plan, the design submission will be audited against the recommendation proposed in the *ER Report* by the Registered Landscape Architect from the ET.	To ensure the implementation of mitigation measures proposed in this EIA Report	SENTX Site	SENTX Contractor/ET	✓	✓			*EIAO-TM Annex 18*	Implemented
Landscape and Visual – Operation/Restoration Phase											
10.6.5 and SENTX latest design	LV10	OM1 - Landfill materials will be covered with general fill material or tarpaulin sheet on a daily basis to reduce visual impact.	To minimise the landscape and visual impacts	Tipping area	SENTX Contractor			✓		*EIAO-TM Annex 18*	Implemented
10.6.5 and SENTX latest design	LV11	OM2 - Filling and restoration will be phased during the course of operations in a minimum of 4 phases, the restoration of each phase to commence immediately on the completion of filling in that phase.	To minimise the landscape and visual impacts	Tipping area	SENTX Contractor			✓		*EIAO-TM Annex 18*	Implemented
10.6.5	LV12	OM3 - Catch fences will be erected at the	To minimise the	Tipping area	SENTX			✓		*EIAO-TM Annex 18*	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? (1) D	C	O/R	A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		perimeter of the waste boundary, to ensure that all waste stays within the site and is not blown into surrounding areas.	landscape and visual impacts		Contractor						
10.6.5	LV13	OM4 - All night-time lighting will be reduced to a practical minimum both in terms of number of units and lux level and will be hooded and directional.	To minimise the landscape and visual impacts	Tipping area	SENTX Contractor			✓		*EIAO-TM Annex 18*	Implemented
11.4.2 and SENTX latest design	LV14	The condition of the restoration plantation will be audited at monthly intervals by a Registered Landscape Architect from the ET.	To check the restoration plantation	SENTX Site	SENTX Contractor/ET			✓		*EIAO-TM Annex 18*	Implemented

Annex C

Monitoring Schedule for This Reporting Period

South East New Territories (SENT) Landfill Extension

EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

January 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Odour Monitoring Leachate Monitoring
2 Odour Monitoring Leachate Monitoring	3 Odour Monitoring Leachate Monitoring	4 Odour Monitoring Leachate Monitoring Groundwater Monitoring	5 Odour Monitoring Leachate Monitoring	6 Odour Monitoring Leachate Monitoring Dust Monitoring	7 Odour Monitoring Leachate Monitoring Noise Monitoring	8 Odour Monitoring Leachate Monitoring
9 Odour Monitoring Leachate Monitoring	10 Odour Monitoring Leachate Monitoring	11 Odour Monitoring Leachate Monitoring Groundwater Monitoring	12 Odour Monitoring Leachate Monitoring Stack Monitoring Dust Monitoring	13 Odour Monitoring Leachate Monitoring Noise Monitoring	14 Odour Monitoring Leachate Monitoring	15 Odour Monitoring Leachate Monitoring
16 Odour Monitoring Leachate Monitoring	17 Odour Monitoring Leachate Monitoring	18 Odour Monitoring Leachate Monitoring Perimeter LFG Monitoring Dust Monitoring	19 Odour Monitoring Leachate Monitoring Noise Monitoring	20 Odour Monitoring Leachate Monitoring Service Void LFG Monitoring	21 Odour Monitoring Leachate Monitoring	22 Odour Monitoring Leachate Monitoring
23 Odour Monitoring Leachate Monitoring	24 Odour Monitoring Leachate Monitoring Dust Monitoring	25 Odour Monitoring Leachate Monitoring Noise Monitoring Surface Water Monitoring	26 Odour Monitoring Leachate Monitoring	27 Odour Monitoring Leachate Monitoring	28 Odour Monitoring Leachate Monitoring	29 Odour Monitoring Leachate Monitoring
30 Odour Monitoring Leachate Monitoring Dust Monitoring	31 Odour Monitoring Leachate Monitoring Noise Monitoring					

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

February 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 Odour Monitoring	2 Odour Monitoring	3 Odour Monitoring Leachate Monitoring	4 Odour Monitoring Leachate Monitoring	5 Leachate Monitoring Dust Monitoring
6 Leachate Monitoring	7 Leachate Monitoring Noise Monitoring	8 Leachate Monitoring	9 Leachate Monitoring Perimeter LFG Monitoring	10 Leachate Monitoring	11 Leachate Monitoring Dust Monitoring Service Void LFG Monitoring Stack Monitoring Odour Monitoring	12 Leachate Monitoring
13 Leachate Monitoring	14 Leachate Monitoring Noise Monitoring Stack Monitoring	15 Leachate Monitoring Groundwater Monitoring VOCs Monitoring Flammable Gas Monitoring	16 Leachate Monitoring Perimeter LFG Bulk Gas Sampling	17 Leachate Monitoring Dust Monitoring	18 Leachate Monitoring Groundwater Monitoring Odour Monitoring	19 Leachate Monitoring
20 Leachate Monitoring	21 Leachate Monitoring Odour Monitoring	22 Leachate Monitoring	23 Leachate Monitoring Dust Monitoring	24 Leachate Monitoring Surface Water Monitoring Noise Monitoring	25 Leachate Monitoring	26 Leachate Monitoring
27 Leachate Monitoring	28 Leachate Monitoring Odour Monitoring					

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

March 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 Leachate Monitoring Dust Monitoring	2 Leachate Monitoring Noise Monitoring	3 Leachate Monitoring	4 Leachate Monitoring	5 Leachate Monitoring
6 Leachate Monitoring	7 Leachate Monitoring Dust Monitoring Stack Monitoring Odour Monitoring	8 Leachate Monitoring Perimeter LFG Monitoring Noise Monitoring Stack Monitoring	9 Leachate Monitoring	10 Leachate Monitoring	11 Leachate Monitoring Service Void LFG Monitoring	12 Leachate Monitoring
13 Leachate Monitoring Dust Monitoring	14 Leachate Monitoring Groundwater Monitoring Noise Monitoring	15 Leachate Monitoring Groundwater Monitoring	16 Leachate Monitoring Odour Monitoring	17 Leachate Monitoring	18 Leachate Monitoring	19 Leachate Monitoring Dust Monitoring
20 Leachate Monitoring	21 Leachate Monitoring Noise Monitoring Surface Water Monitoring Odour Monitoring	22 Leachate Monitoring	23 Leachate Monitoring	24	25 Dust Monitoring	26
27	28 Noise Monitoring	29 Odour Monitoring	30	31 Dust Monitoring		

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

April 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Leachate Monitoring	2 Leachate Monitoring
3 Leachate Monitoring	4 Leachate Monitoring Odour Monitoring	5 Leachate Monitoring	6 Dust Monitoring Leachate Monitoring	7 Perimeter LFG Monitoring Leachate Monitoring Noise Monitoring	8 Service Void LFG Monitoring Leachate Monitoring	9 Leachate Monitoring
10 Leachate Monitoring	11 Groundwater Monitoring Stack Monitoring Leachate Monitoring	12 Dust Monitoring Groundwater Monitoring Stack Monitoring Leachate Monitoring Odour Monitoring	13 Noise Monitoring Leachate Monitoring	14 Leachate Monitoring	15 Leachate Monitoring	16 Leachate Monitoring
17 Leachate Monitoring	18 Dust Monitoring Leachate Monitoring	19 Noise Monitoring Leachate Monitoring Odour Monitoring	20 Leachate Monitoring	21 Leachate Monitoring	22 Leachate Monitoring	23 Leachate Monitoring
24 Dust Monitoring Leachate Monitoring	25 Odour Monitoring Leachate Monitoring Noise Monitoring Surface Water Monitoring	26 Leachate Monitoring	27 Leachate Monitoring	28 Leachate Monitoring	29 Leachate Monitoring	30 Leachate Monitoring Dust Monitoring

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

May 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 Leachate Monitoring (11:30 - 12:00)	2 Leachate Monitoring	3 Leachate Monitoring Noise Monitoring	4 Leachate Monitoring Odour Monitoring	5 Leachate Monitoring	6 Dust Monitoring Leachate Monitoring	7 Leachate Monitoring
8 Leachate Monitoring (11:30 - 12:00)	9 Leachate Monitoring	10 Groundwater Monitoring Noise Monitoring Odour Monitoring Leachate Monitoring	11 Groundwater Monitoring Leachate Monitoring	12 Dust Monitoring Leachate Monitoring	13 Leachate Monitoring	14 Leachate Monitoring
15 Leachate Monitoring (11:30 - 12:00)	16 Service Void LFG Monitoring Stack Monitoring VOCs Monitoring Leachate Monitoring	17 Perimeter LFG Monitoring Perimeter LFG Bulk Gas Sampling Stack Monitoring Leachate Monitoring Odour Monitoring	18 Dust Monitoring Perimeter LFG Monitoring Perimeter LFG Bulk Gas Sampling Flammable Gas Monitoring Leachate Monitoring Groundwater Monitoring	19 Leachate Monitoring Noise Monitoring	20 Leachate Monitoring	21 Leachate Monitoring
22 Leachate Monitoring (11:30 - 12:00)	23 Odour Monitoring Leachate Monitoring	24 Dust Monitoring Leachate Monitoring	25 Leachate Monitoring Noise Monitoring Surface Water Monitoring	26 Leachate Monitoring	27 Leachate Monitoring	28 Leachate Monitoring
29 Leachate Monitoring (11:30 - 12:00)	30 Dust Monitoring Leachate Monitoring Odour Monitoring	31 Leachate Monitoring Noise Monitoring				

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

June 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Leachate Monitoring	2 Leachate Monitoring	3 Leachate Monitoring	4 Leachate Monitoring
5 Dust Monitoring Leachate Monitoring	6 Groundwater Monitoring Leachate Monitoring Noise Monitoring	7 Leachate Monitoring	8 Leachate Monitoring	9 Leachate Monitoring	10 Leachate Monitoring	11 Dust Monitoring (AM1,AM3,AM4) Leachate Monitoring
12 Leachate Monitoring	13 Perimeter LFG Monitoring Leachate Monitoring Noise Monitoring	14 Groundwater Monitoring Leachate Monitoring	15 Dust Monitoring (AM2) Service Void LFG Monitoring Leachate Monitoring	16 Stack Monitoring Leachate Monitoring	17 Dust Monitoring Stack Monitoring Leachate Monitoring	18 Leachate Monitoring
19 Leachate Monitoring	20 Leachate Monitoring Noise Monitoring	21 Leachate Monitoring	22 Leachate Monitoring	23 Dust Monitoring Leachate Monitoring	24 Leachate Monitoring Surface Water Monitoring	25 Leachate Monitoring
26 Leachate Monitoring	27 Leachate Monitoring	28 Leachate Monitoring Odour Monitoring	29 Dust Monitoring Leachate Monitoring	30 Leachate Monitoring Additional Surface Water Monitoring Noise Monitoring		

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

July 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Leachate Monitoring	2 Leachate Monitoring
3 Leachate Monitoring	4 Groundwater Monitoring Leachate Monitoring	5 Dust Monitoring Groundwater Monitoring Leachate Monitoring	6 Noise Monitoring Leachate Monitoring	7 Leachate Monitoring	8 Additional Surface Water Monitoring Leachate Monitoring	9 Leachate Monitoring
10 Leachate Monitoring	11 Dust Monitoring Leachate Monitoring	12 Perimeter LFG Monitoring Stack Monitoring Leachate Monitoring Noise Monitoring	13 Service Void LFG Monitoring Leachate Monitoring	14 Leachate Monitoring	15 Additional Surface Water Monitoring Leachate Monitoring	16 Leachate Monitoring
17 Dust Monitoring Leachate Monitoring	18 Stack Monitoring Noise Monitoring Leachate Monitoring	19 Leachate Monitoring	20 Leachate Monitoring	21 Leachate Monitoring	22 Leachate Monitoring Odour Monitoring	23 Dust Monitoring Leachate Monitoring
24 Leachate Monitoring	25 Noise Monitoring Surface Water Monitoring Leachate Monitoring	26 Leachate Monitoring	27 Leachate Monitoring	28 Leachate Monitoring	29 Dust Monitoring Leachate Monitoring	30 Leachate Monitoring
31 Leachate Monitoring						

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

August 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Noise Monitoring Leachate Monitoring	2 Leachate Monitoring	3 Leachate Monitoring	4 Dust Monitoring	5 Service Void LFG Monitoring	6
7	8 VOCs Monitoring Stack Monitoring	9 Stack Monitoring	10 Dust Monitoring	11 Noise Monitoring	12	13
14	15 Perimeter LFG Monitoring Perimeter LFG Bulk Gas Sampling	16 Dust Monitoring Flammable Gas Monitoring	17 Groundwater Monitoring Noise Monitoring	18 Groundwater Monitoring	19	20
21	22 Dust Monitoring Odour Monitoring	23 Noise Monitoring Surface Water Monitoring	24	25	26	27
28 Dust Monitoring	29 Noise Monitoring	30	31			

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

September 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3 Dust Monitoring
4	5 Noise Monitoring Groundwater Monitoring	6 Groundwater Monitoring	7 Leachate Monitoring	8	9 Dust Monitoring	10
11	12	13 Noise Monitoring Service Void LFG Monitoring	14	15 Dust Monitoring Stack Monitoring Odour Monitoring	16 Stack Monitoring Perimeter LFG Monitoring	17
18	19	20	21 Dust Monitoring	22 Noise Monitoring Surface Water Monitoring	23	24
25	26	27 Dust Monitoring	28 Noise Monitoring	29	30	

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

October 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3 Dust Monitoring Perimeter LFG Monitoring	4	5 Service Void LFG Monitoring Noise Monitoring	6	7 Leachate Monitoring	8
9 Dust Monitoring	10 Noise Monitoring Groundwater Monitoring	11 Groundwater Monitoring	12	13 Odour Monitoring	14 Stack Monitoring	15 Dust Monitoring
16	17 Stack Monitoring Noise Monitoring	18	19	20	21 Dust Monitoring	22
23	24 Noise Monitoring Surface Water Monitoring	25	26	27 Dust Monitoring	28	29
30	31					

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

November 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 Perimeter LFG Monitoring Perimeter LFG Bulk Gas Sampling	2 Dust Monitoring	3 Noise Monitoring	4 Service Void LFG Monitoring	5
6	7 Groundwater Monitoring	8 Dust Monitoring Groundwater Monitoring Leachate Monitoring	9 Noise Monitoring	10	11	12
13	14 Dust Monitoring	15 Noise Monitoring	16	17 VOCs Monitoring Stack Monitoring	18 Flammable Gas Monitoring Stack Monitoring	19
20 Dust Monitoring	21 Surface Water Monitoring Noise Monitoring	22	23	24 Odour Monitoring	25	26 Dust Monitoring
27	28 Noise Monitoring	29	30			

South East New Territories (SENT) Landfill Extension
EM&A Impact Monitoring Schedule during Operation/ Restoration Phase

December 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2 Dust Monitoring	3
4	5 Noise Monitoring	6 Perimeter LFG Monitoring Leachate Monitoring	7	8 Dust Monitoring	9 Service Void LFG Monitoring	10
11	12 Groundwater Monitoring	13 Groundwater Monitoring Stack Monitoring Odour Monitoring	14 Dust Monitoring	15 Noise Monitoring	16	17
18	19	20 Dust Monitoring	21 Noise Monitoring Surface Water Monitoring	22	23	24
25	26 Dust Monitoring	27	28 Noise Monitoring Stack Monitoring	29	30	31

Annex D

Air Quality

Annex D1

24-hour TSP Monitoring Results

Table D1.1 24-hour TSP Monitoring Results at AM1

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
6 Jan 22	9:00	7 Jan 22	9:00	Fine	210
12 Jan 22	9:00	13 Jan 22	9:00	Fine	182
18 Jan 22	9:00	19 Jan 22	9:00	Fine	155
24 Jan 22	9:00	25 Jan 22	9:00	Fine	61
30 Jan 22	9:00	31 Jan 22	9:00	Fine	55
5 Feb 22	9:00	6 Feb 22	9:00	Fine	60
11 Feb 22	9:00	12 Feb 22	9:00	Fine	132
17 Feb 22	9:00	18 Feb 22	9:00	Fine	56
23 Feb 22	9:00	24 Feb 22	9:00	Fine	42
1 Mar 22	9:00	2 Mar 22	9:01	Fine	62
7 Mar 22	9:00	8 Mar 22	9:00	Fine	68
13 Mar 22	9:00	14 Mar 22	9:01	Fine	113
19 Mar 22	9:00	20 Mar 22	9:00	Fine	133
25 Mar 22	16:00	26 Mar 22	16:38	Fine	107
31 Mar 22	9:00	1 Apr 22	8:41	Fine	104
6 Apr 22	9:00	7 Apr 22	8:43	Fine	84
12 Apr 22	9:00	13 Apr 22	8:12	Fine	53
18 Apr 22	9:00	19 Apr 22	8:45	Fine	79
24 Apr 22	9:00	25 Apr 22	8:17	Fine	45
30 Apr 22	9:00	1 May 22	8:46	Fine	46
6 May 22	9:00	7 May 22	8:38	Fine	65
12 May 22	NA	13 May 22	NA	Rainy	No monitoring due to power failure
18 May 22	9:00	19 May 22	8:41	Fine	68
24 May 22	9:00	25 May 22	8:42	Fine	45
30 May 22	9:00	31 May 22	9:21	Fine	39
5 Jun 22	9:00	6 Jun 22	8:39	Fine	80
11 Jun 22	9:00	12 Jun 22	8:39	Rainy	31
17 Jun 22	9:00	18 Jun 22	8:41	Fine	41
23 Jun 22	9:00	24 Jun 22	8:50	Fine	26
29 Jun 22	9:00	30 Jun 22	9:19	Fine	47
5 Jul 22	9:00	6 Jul 22	8:21	Fine	42
11 Jul 22	9:00	12 Jul 22	8:47	Fine	52
17 Jul 22	9:00	18 Jul 22	8:41	Fine	39
23 Jul 22	9:00	24 Jul 22	9:09	Sunny	58
29 Jul 22	9:00	30 Jul 22	9:12	Sunny	156
4 Aug 22	9:00	5 Aug 22	9:13	Fine	26
10 Aug 22	9:00	11 Aug 22	9:12	Overcast	47
16 Aug 22	9:00	17 Aug 22	9:13	Fine	49
22 Aug 22	9:00	23 Aug 22	8:41	Sunny	94
28 Aug 22	9:00	29 Aug 22	9:10	Sunny	90
3 Sep 22	9:00	4 Sep 22	9:09	Sunny	58
9 Sep 22	9:00	10 Sep 22	9:10	Sunny	151
15 Sep 22	9:00	16 Sep 22	9:13	Sunny	132
21 Sep 22	9:00	22 Sep 22	9:19	Sunny	174
27 Sep 22	9:00	28 Sep 22	9:12	Sunny	162
3 Oct 22	9:00	4 Oct 22	9:51	Sunny	64
9 Oct 22	9:00	10 Oct 22	9:07	Sunny	78
15 Oct 22	9:00	16 Oct 22	9:09	Sunny	98
21 Oct 22	9:00	22 Oct 22	9:12	Sunny	91
27 Oct 22	9:00	28 Oct 22	9:13	Sunny	136
2 Nov 22	9:00	3 Nov 22	9:14	Rainy	45
9 Nov 22	9:00	10 Nov 22	9:07	Fine	119

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
14 Nov 22	9:00	15 Nov 22	9:22	Fine	117
20 Nov 22	9:00	21 Nov 22	8:10	Fine	228
26 Nov 22	9:00	27 Nov 22	9:10	Fine	45
2 Dec 22	9:00	3 Dec 22	9:07	Fine	55
8 Dec 22	9:00	9 Dec 22	9:08	Fine	225
14 Dec 22	9:00	15 Dec 22	9:14	Fine	29
21 Dec 22	14:00	22 Dec 22	14:14	Fine	113
26 Dec 22	9:00	27 Dec 22	9:10	Fine	111
				Average	88
				Min	26
				Max	228

Figure D1.1 Graphical Presentation for 24-hr TSP Monitoring at AM1

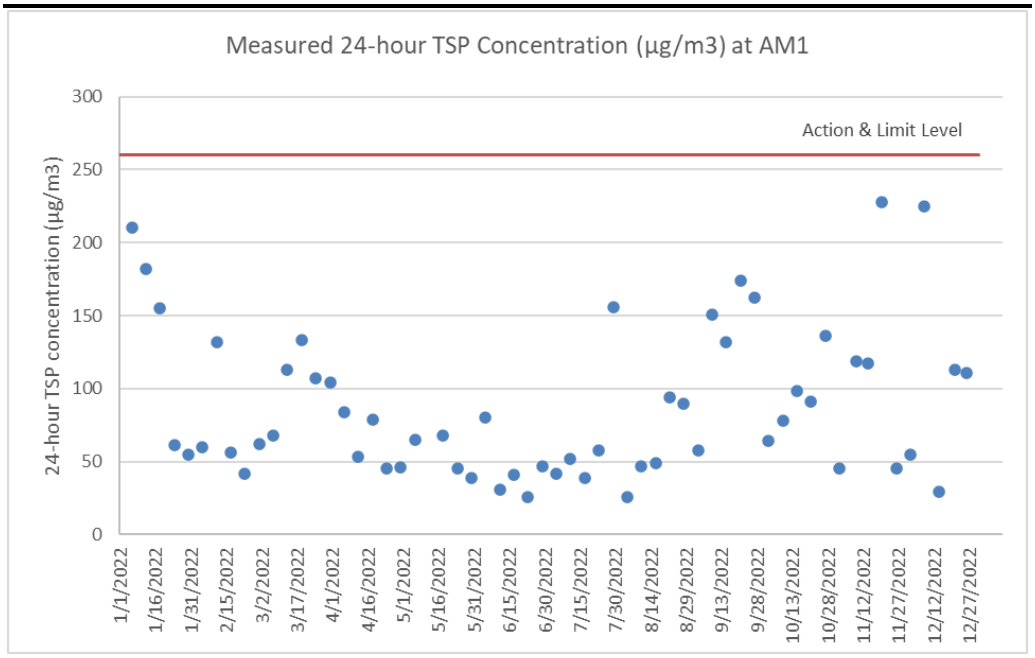


Table D1.2 24-hour TSP Monitoring Results at AM2

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
6 Jan 22	9:00	7 Jan 22	9:00	Fine	102
12 Jan 22	9:00	13 Jan 22	9:00	Fine	91
18 Jan 22	9:00	19 Jan 22	9:00	Fine	64
24 Jan 22	9:00	25 Jan 22	9:00	Fine	41
30 Jan 22	9:00	31 Jan 22	9:00	Fine	32
5 Feb 22	9:00	6 Feb 22	9:00	Fine	32
11 Feb 22	9:00	12 Feb 22	9:01	Fine	85
17 Feb 22	9:00	18 Feb 22	9:00	Fine	40
23 Feb 22	9:00	24 Feb 22	9:01	Fine	65
1 Mar 22	9:00	2 Mar 22	9:03	Fine	84
7 Mar 22	9:00	8 Mar 22	9:01	Fine	69
13 Mar 22	9:00	14 Mar 22	9:00	Fine	106
19 Mar 22	9:00	20 Mar 22	9:00	Fine	72
25 Mar 22	9:00	26 Mar 22	8:45	Fine	50
31 Mar 22	9:00	1 Apr 22	8:47	Fine	39
6 Apr 22	9:00	7 Apr 22	8:44	Fine	46
12 Apr 22	9:00	13 Apr 22	8:42	Fine	78
18 Apr 22	9:00	19 Apr 22	8:44	Fine	48
24 Apr 22	9:00	25 Apr 22	8:44	Fine	60
30 Apr 22	9:00	1 May 22	8:45	Fine	54
6 May 22	9:00	7 May 22	8:45	Fine	69
12 May 22	9:00	13 May 22	8:45	Rainy	34
18 May 22	9:00	19 May 22	8:44	Fine	52
24 May 22	9:00	25 May 22	8:44	Fine	24
30 May 22	9:00	31 May 22	8:48	Fine	66
5 Jun 22	9:00	6 Jun 22	8:45	Fine	110
15 Jun 22	11:15	16 Jun 22	11:00	Fine	56
17 Jun 22	9:00	18 Jun 22	8:39	Fine	104
23 Jun 22	9:00	24 Jun 22	8:25	Fine	123
29 Jun 22	9:00	30 Jun 22	9:04	Fine	56
5 Jul 22	9:00	6 Jul 22	9:03	Fine	43
11 Jul 22	9:00	12 Jul 22	9:01	Fine	96
17 Jul 22	9:00	18 Jul 22	9:00	Fine	64
23 Jul 22	9:00	24 Jul 22	8:59	Sunny	118
29 Jul 22	9:00	30 Jul 22	9:00	Sunny	312
4 Aug 22	9:00	5 Aug 22	9:00	Sunny	36
10 Aug 22	9:00	11 Aug 22	9:02	Overcast	41
16 Aug 22	9:00	17 Aug 22	9:02	Fine	43
22 Aug 22	9:00	23 Aug 22	9:35	Sunny	111
28 Aug 22	9:00	29 Aug 22	9:00	Sunny	102
6 Sep 22	9:00	7 Sep 22	8:59	Sunny	69
9 Sep 22	9:00	10 Sep 22	8:58	Sunny	136
15 Sep 22	9:00	16 Sep 22	9:01	Sunny	146
21 Sep 22	9:00	22 Sep 22	9:04	Sunny	125
27 Sep 22	9:00	28 Sep 22	8:59	Sunny	190
3 Oct 22	9:00	4 Oct 22	8:59	Sunny	76
9 Oct 22	9:00	10 Oct 22	8:59	Sunny	75
15 Oct 22	9:00	16 Oct 22	8:59	Sunny	89
21 Oct 22	9:00	22 Oct 22	9:01	Sunny	71
27 Oct 22	9:00	28 Oct 22	9:02	Sunny	126
2 Nov 22	9:00	3 Nov 22	9:00	Rainy	33
8 Nov 22	9:00	9 Nov 22	9:01	Fine	36
14 Nov 22	9:00	15 Nov 22	8:58	Fine	95
20 Nov 22	9:00	21 Nov 22	8:56	Fine	92
26 Nov 22	9:00	27 Nov 22	8:56	Fine	41
2 Dec 22	9:00	3 Dec 22	8:57	Fine	77

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
8 Dec 22	9:00	9 Dec 22	8:58	Fine	110
14 Dec 22	9:00	15 Dec 22	9:02	Fine	34
20 Dec 22	9:00	21 Dec 22	8:58	Fine	121
26 Dec 22	9:00	27 Dec 22	8:58	Fine	103
				Average	79
				Min	24
				Max	312

Figure D1.2 Graphical Presentation for 24-hr TSP Monitoring at AM2

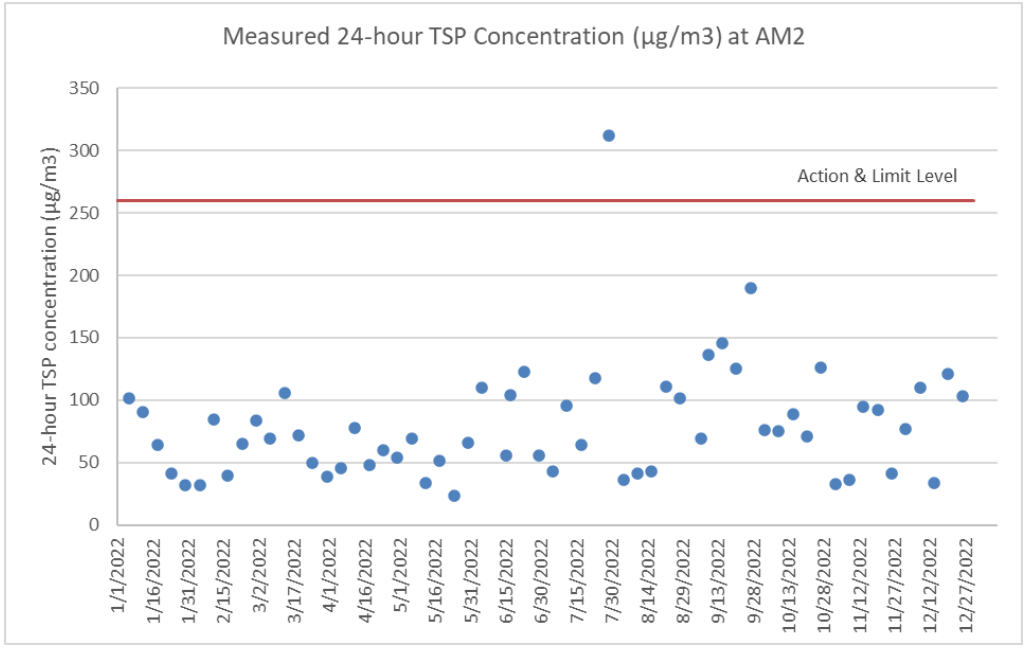


Table D1.3 24-hour TSP Monitoring Results at AM3

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
6 Jan 22	10:17	7 Jan 22	10:17	Fine	179
12 Jan 22	9:00	13 Jan 22	9:00	Fine	218
18 Jan 22	9:00	19 Jan 22	9:00	Fine	136
24 Jan 22	9:00	25 Jan 22	9:00	Fine	117
30 Jan 22	9:00	31 Jan 22	9:00	Fine	100
5 Feb 22	9:00	6 Feb 22	9:01	Fine	131
11 Feb 22	9:00	12 Feb 22	9:00	Fine	140
17 Feb 22	9:00	18 Feb 22	9:00	Fine	71
23 Feb 22	9:00	24 Feb 22	9:01	Fine	57
1 Mar 22	9:00	2 Mar 22	8:52	Fine	171
7 Mar 22	11:35	8 Mar 22	11:28	Fine	146
13 Mar 22	9:00	14 Mar 22	9:12	Fine	198
19 Mar 22	9:00	20 Mar 22	9:00	Fine	211
25 Mar 22	14:11	26 Mar 22	13:58	Fine	35
31 Mar 22	9:00	1 Apr 22	8:19	Fine	224
6 Apr 22	9:00	7 Apr 22	8:56	Fine	169
12 Apr 22	9:00	13 Apr 22	8:23	Fine	141
18 Apr 22	9:00	19 Apr 22	8:20	Fine	160
24 Apr 22	9:00	25 Apr 22	8:17	Fine	69
30 Apr 22	9:00	1 May 22	8:27	Fine	124
6 May 22	9:00	7 May 22	8:28	Fine	127
12 May 22	9:00	13 May 22	8:28	Rainy	43
18 May 22	9:00	19 May 22	8:32	Fine	114
24 May 22	9:00	25 May 22	8:32	Fine	53
30 May 22	9:00	31 May 22	8:27	Fine	80
5 Jun 22	9:00	6 Jun 22	8:24	Fine	159
11 Jun 22	9:00	12 Jun 22	8:27	Rainy	42
17 Jun 22	9:00	18 Jun 22	8:28	Fine	55
23 Jun 22	9:00	24 Jun 22	8:32	Fine	111
29 Jun 22	9:00	30 Jun 22	8:23	Fine	198
5 Jul 22	9:00	6 Jul 22	8:43	Fine	56
11 Jul 22	9:00	12 Jul 22	8:14	Fine	93
17 Jul 22	9:00	18 Jul 22	9:32	Fine	72
23 Jul 22	9:00	24 Jul 22	8:33	Sunny	132
29 Jul 22	9:00	30 Jul 22	9:34	Sunny	241
4 Aug 22	9:00	5 Aug 22	9:38	Sunny	43
10 Aug 22	9:00	11 Aug 22	9:36	Overcast	65
16 Aug 22	9:00	17 Aug 22	9:36	Fine	104
22 Aug 22	9:00	23 Aug 22	9:33	Sunny	114
28 Aug 22	9:00	29 Aug 22	9:34	Sunny	150
3 Sep 22	9:00	4 Sep 22	9:34	Sunny	252
9 Sep 22	9:00	10 Sep 22	9:34	Sunny	182
15 Sep 22	9:00	16 Sep 22	9:37	Sunny	214
21 Sep 22	9:00	22 Sep 22	9:41	Sunny	118
27 Sep 22	9:00	28 Sep 22	9:37	Sunny	207
3 Oct 22	9:00	4 Oct 22	9:32	Sunny	111
9 Oct 22	9:00	10 Oct 22	9:33	Sunny	112
15 Oct 22	9:00	16 Oct 22	9:32	Sunny	194
21 Oct 22	9:00	22 Oct 22	9:34	Sunny	133
27 Oct 22	9:00	28 Oct 22	9:37	Sunny	118
2 Nov 22	9:00	3 Nov 22	8:50	Rainy	45
8 Nov 22	9:00	9 Nov 22	8:53	Fine	80
14 Nov 22	9:00	15 Nov 22	9:03	Fine	126
20 Nov 22	9:00	21 Nov 22	8:28	Fine	119
26 Nov 22	9:00	27 Nov 22	8:44	Fine	45
2 Dec 22	9:00	3 Dec 22	8:50	Fine	108

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
8 Dec 22	9:00	9 Dec 22	8:59	Fine	180
14 Dec 22	9:00	15 Dec 22	8:44	Fine	66
20 Dec 22	9:00	21 Dec 22	8:53	Fine	108
26 Dec 22	9:00	27 Dec 22	8:49	Fine	158
				Average	125
				Min	35
				Max	252

Figure D1.3 Graphical Presentation for 24-hr TSP Monitoring at AM3

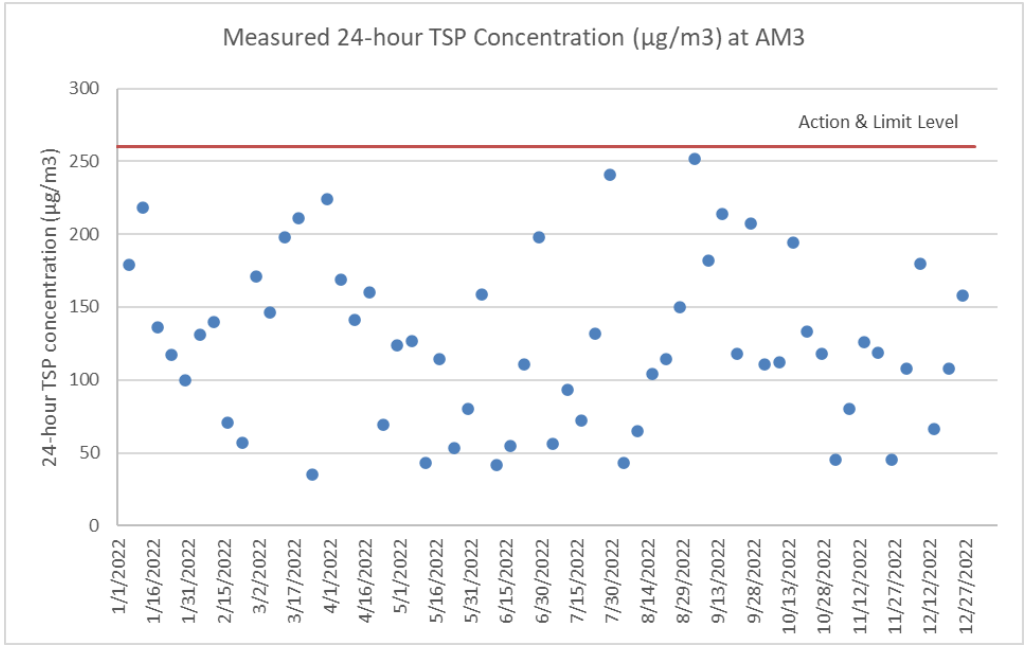
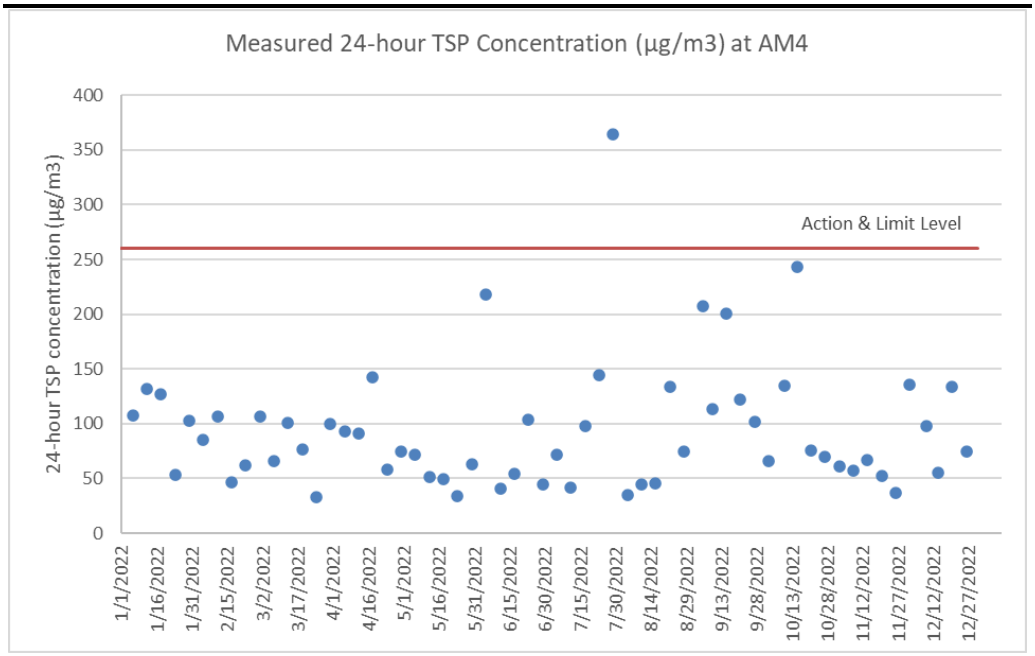


Table D1.4 24-hour TSP Monitoring Results at AM4

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
6 Jan 22	9:00	7 Jan 22	9:00	Fine	108
12 Jan 22	9:00	13 Jan 22	9:00	Fine	132
18 Jan 22	9:00	19 Jan 22	9:00	Fine	127
24 Jan 22	9:00	25 Jan 22	9:00	Fine	53
30 Jan 22	9:00	31 Jan 22	9:00	Fine	103
5 Feb 22	9:00	6 Feb 22	9:01	Fine	85
11 Feb 22	9:00	12 Feb 22	9:00	Fine	107
17 Feb 22	9:00	18 Feb 22	9:00	Fine	47
23 Feb 22	9:00	24 Feb 22	9:00	Fine	62
1 Mar 22	9:00	2 Mar 22	9:00	Fine	107
7 Mar 22	9:00	8 Mar 22	9:00	Fine	66
13 Mar 22	9:00	14 Mar 22	9:01	Fine	101
19 Mar 22	9:00	20 Mar 22	9:00	Fine	77
25 Mar 22	9:00	26 Mar 22	9:15	Fine	33
31 Mar 22	9:00	1 Apr 22	8:59	Fine	100
6 Apr 22	9:00	7 Apr 22	8:30	Fine	93
12 Apr 22	9:00	13 Apr 22	8:53	Fine	91
18 Apr 22	9:00	19 Apr 22	8:26	Fine	142
24 Apr 22	9:00	25 Apr 22	8:23	Fine	58
30 Apr 22	9:00	1 May 22	8:23	Fine	75
6 May 22	9:00	7 May 22	8:25	Fine	72
12 May 22	9:00	13 May 22	8:24	Rainy	51
18 May 22	9:00	19 May 22	8:29	Fine	49
24 May 22	9:00	25 May 22	8:26	Fine	34
30 May 22	9:00	31 May 22	8:36	Fine	63
5 Jun 22	9:00	6 Jun 22	8:21	Fine	218
11 Jun 22	9:00	12 Jun 22	8:23	Rainy	41
17 Jun 22	9:00	18 Jun 22	8:24	Fine	54
23 Jun 22	9:00	24 Jun 22	8:26	Fine	104
29 Jun 22	9:00	30 Jun 22	8:37	Fine	45
5 Jul 22	9:00	6 Jul 22	8:36	Fine	72
11 Jul 22	9:00	12 Jul 22	8:33	Fine	42
17 Jul 22	9:00	18 Jul 22	9:11	Fine	98
23 Jul 22	9:00	24 Jul 22	9:15	Sunny	144
29 Jul 22	9:00	30 Jul 22	9:17	Sunny	364
4 Aug 22	9:00	5 Aug 22	9:17	Sunny	35
10 Aug 22	9:00	11 Aug 22	9:15	Overcast	45
16 Aug 22	9:00	17 Aug 22	9:12	Fine	46
22 Aug 22	9:00	23 Aug 22	9:34	Sunny	134
28 Aug 22	9:00	29 Aug 22	9:17	Sunny	75
5 Sep 22	9:00	6 Sep 22	9:19	Sunny	207
9 Sep 22	9:00	10 Sep 22	9:12	Sunny	113
15 Sep 22	9:00	16 Sep 22	8:54	Sunny	201
21 Sep 22	9:00	22 Sep 22	9:15	Sunny	122
27 Sep 22	9:00	28 Sep 22	9:12	Sunny	102
3 Oct 22	9:00	4 Oct 22	9:11	Sunny	66
10 Oct 22	11:45	11 Oct 22	11:50	Sunny	135
15 Oct 22	9:00	16 Oct 22	9:05	Sunny	243
21 Oct 22	9:00	22 Oct 22	8:58	Sunny	76
27 Oct 22	9:00	28 Oct 22	8:20	Sunny	70
2 Nov 22	9:00	3 Nov 22	8:19	Rainy	61
8 Nov 22	9:00	9 Nov 22	8:21	Fine	57
14 Nov 22	9:00	15 Nov 22	8:19	Fine	67
20 Nov 22	9:00	21 Nov 22	8:20	Fine	52
26 Nov 22	9:00	27 Nov 22	8:24	Fine	37
2 Dec 22	9:00	3 Dec 22	8:26	Fine	136

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
9 Dec 22	9:00	10 Dec 22	8:29	Fine	98
14 Dec 22	9:00	15 Dec 22	8:10	Fine	55
20 Dec 22	9:00	21 Dec 22	8:25	Fine	134
26 Dec 22	9:00	27 Dec 22	8:26	Fine	75
				Average	94
				Min	33
				Max	364

Figure D1.4 Graphical Presentation for 24-hr TSP Monitoring at AM4



Annex D2

Event and Action Plan for Air Quality Monitoring

Annex D2 Event and Action Plan for Air Quality Monitoring During Operation/ Restoration Phase

	Action		
Event	**ET**	**IEC**	**Contractor**
Exceedance of Action/Limit Level for dust monitoring	• Identify the source(s) and investigate the cause(s) of exceedance • Prepare the Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures • Ensure remedial measures are properly implemented • Assess effectiveness of Contractor's remedial measures and keep the Project Proponent and IEC informed of the results • Repeat measurement to confirm finding if exceedance is due to the Project • Increase monitoring frequency to daily and continue until the monitoring results reduce to below action level	• Verify the Notification of Exceedance • Check monitoring data submitted by ET • Check Contractor's working methods • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Take immediate action to avoid further exceedance • Submit proposals for remedial measures to IEC • Implement the agreed proposals • Amend proposal if appropriate
Exceedance of Action Level for odour	• Identify source(s) and investigate the cause(s) of exceedance or complaint • Prepare the odour complaint form or the Notification of Exceedance within 24 hours • Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures • Ensure remedial measures are properly implemented • Increase monitoring frequency to daily until odour not being detected for three consecutive days	• Verify the Notification of Exceedance • Check monitoring data submitted by ET • Check Contractor's working methods • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Rectify any unacceptable practice • Amend working methods as required • Implement amended working methods, if necessary

Event	Action		
	ET	IEC	Contractor
Exceedance of Limit Level for odour	• Identify source(s) and investigate the cause(s) of exceedance or complaint • Prepare the odour complaint form or the Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures • Ensure remedial measures are properly implemented • Assess effectiveness of Contractor's remedial measures and keep the Project Proponent and IEC informed of the results	• Verify the Notification of Exceedance • Check with Contractor on the operating activities and implementation of odour mitigation measures • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Rectify any unacceptable practice • Submit proposals for remedial measures to IEC within 3 working days of notification • Implement the agreed proposal or amend working methods as required • Resubmit proposals if problem still not under control
Exceedance of Limit Level for ambient VOCs, ammonia and H_2S at the monitoring locations	• Identify the source(s) and investigate the cause(s) of exceedance • Prepare the Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures • Ensure remedial measures are properly implemented • Assess effectiveness of Contractor's remedial measures and keep the Project Proponent and IEC informed of the results • Repeat measurement to confirm finding if exceedance is due to the Project • Increase monitoring frequency to monthly and continue until the monitoring results reduce to below limit level	• Verify the Notification of Exceedance • Check with Contractor on the operating activities and implementation of landfill gas control measures • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Rectify any unacceptable practice • Amend working methods as required • Implement amended working methods, if necessary

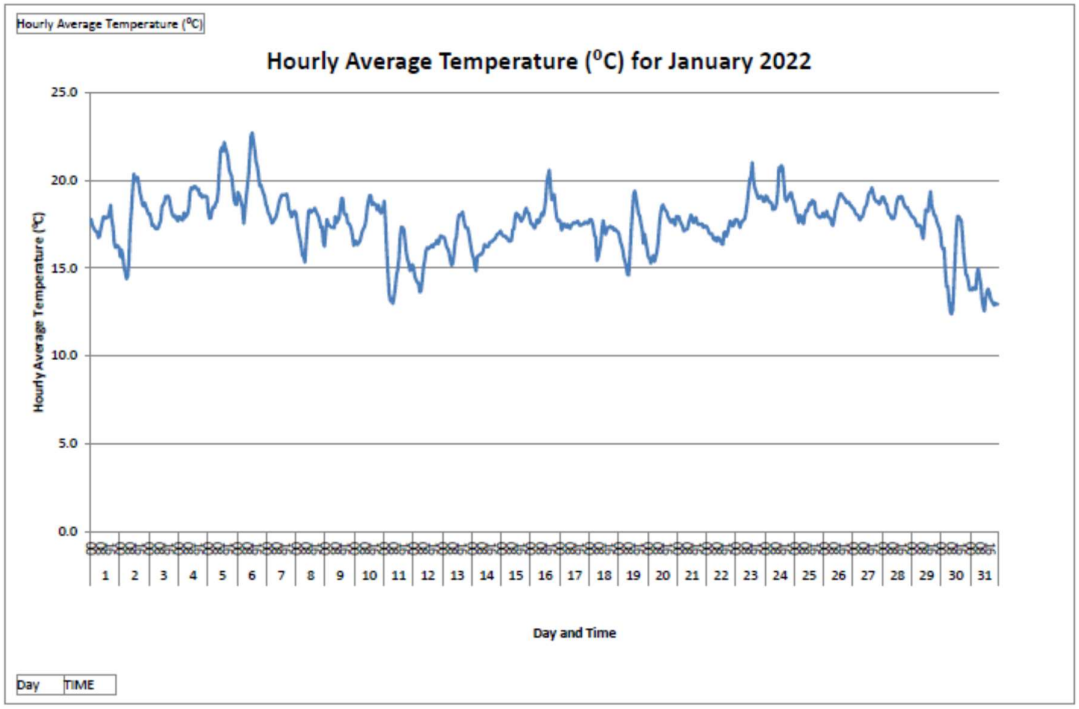
	Action		
Event	**ET**	**IEC**	**Contractor**
Exceedance of Limit Level of stack emission of the thermal oxidizer, flares and generator	• Identify source(s) and investigate the cause(s) of exceedance • Prepare the Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures • Ensure remedial measures are properly implemented • Assess effectiveness of Contractor's remedial measures and keep the Project Proponent and IEC informed of the results • Repeat measurement to confirm finding if exceedance is due to the Project • Increase monitoring frequency to monthly when there are two consecutive exceedances and continue until the monitoring results reduce to below limit level	• Verify the Notification of Exceedance • Check with Contractor on the operating performance of the stack • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Rectify any unacceptable performance • Amend design as required • Implement amended design, if necessary

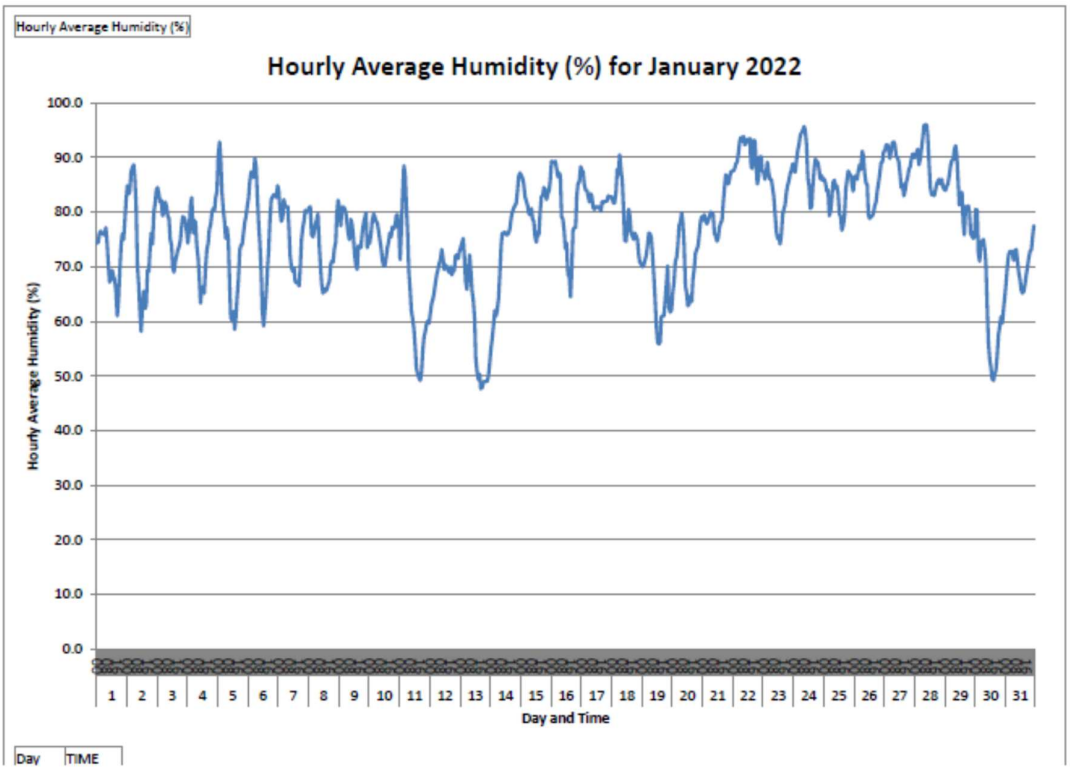
Annex D3

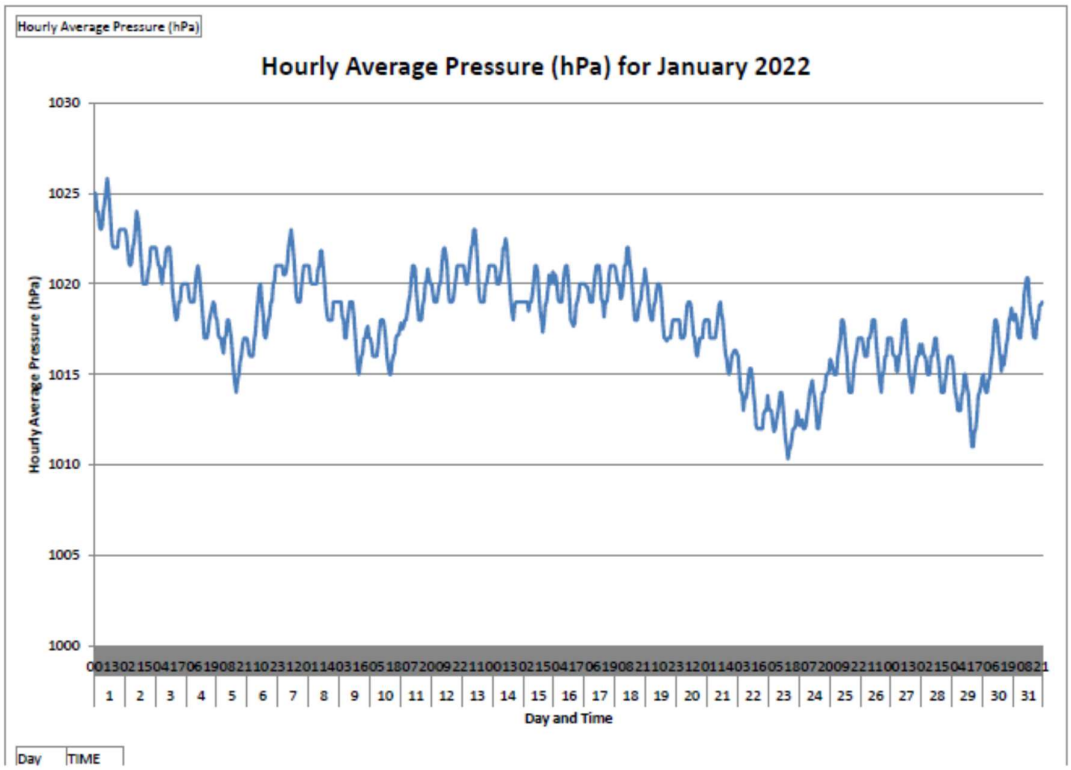
Meteorological Data

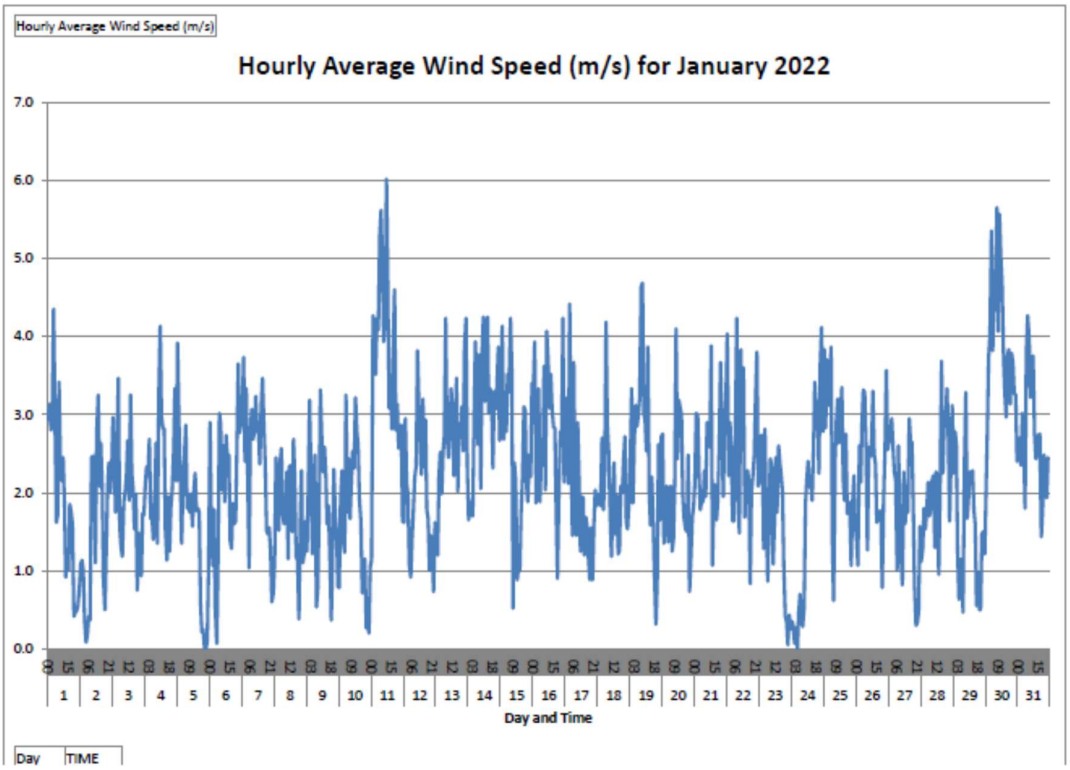
Annex D3 Meteorological Data

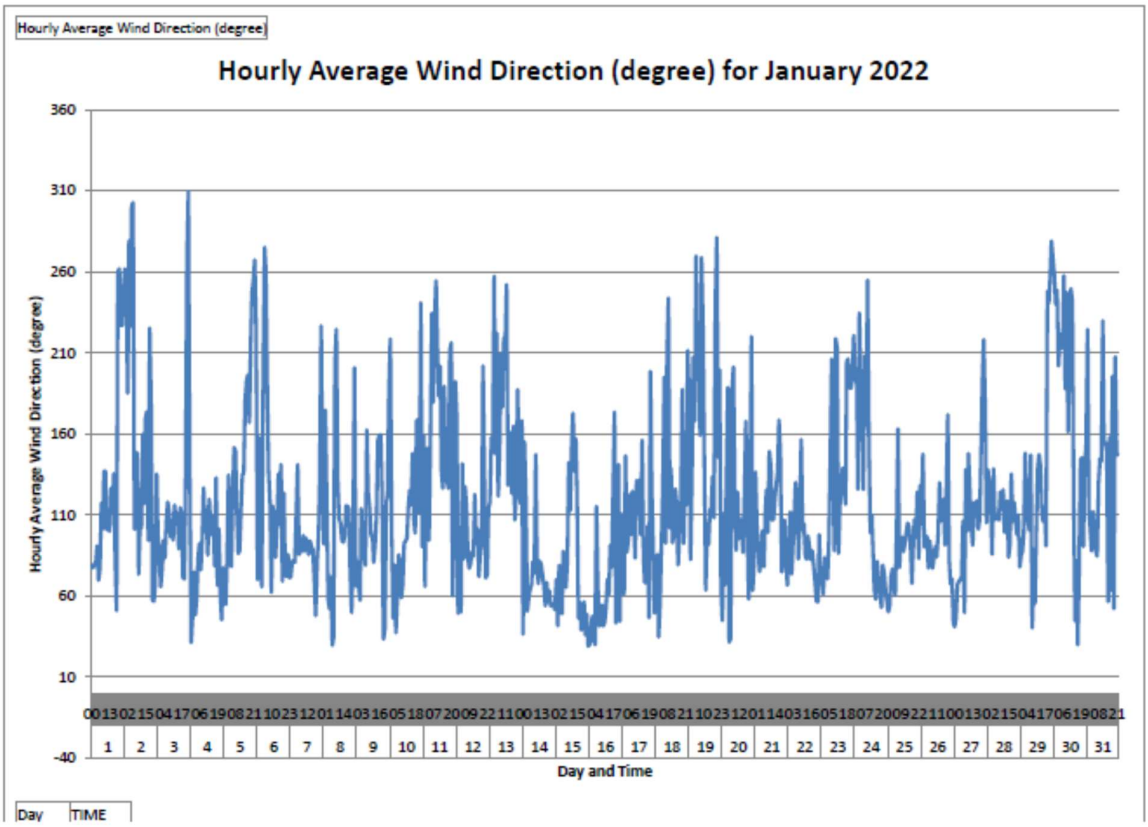
January 2022

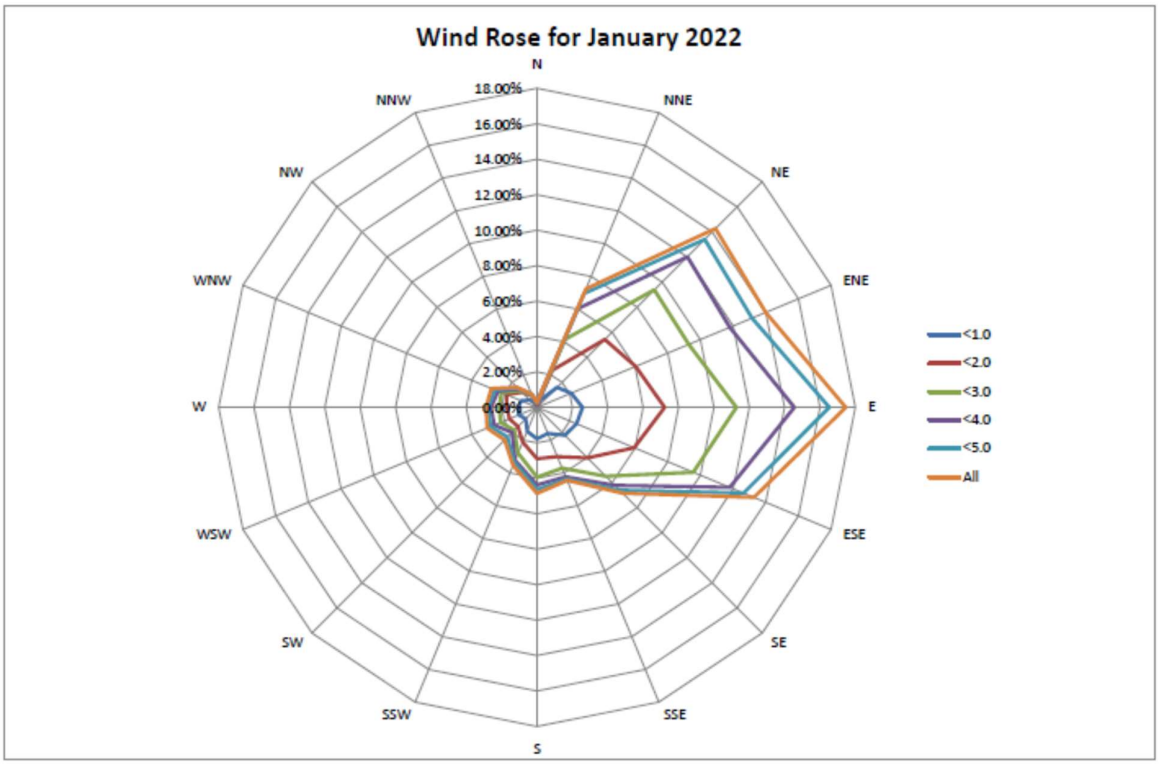


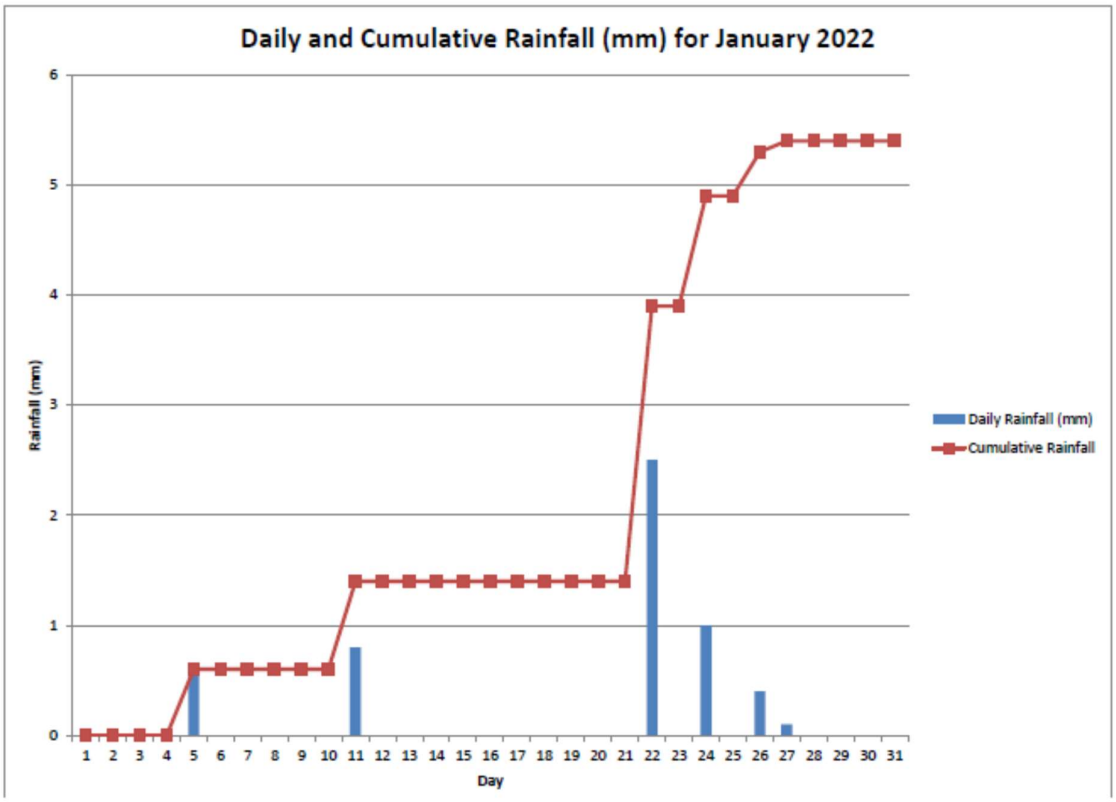



Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for January 2022
1030
1025
1020
1015
1010
1005
1000
Hourly Average Pressure (hPa)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

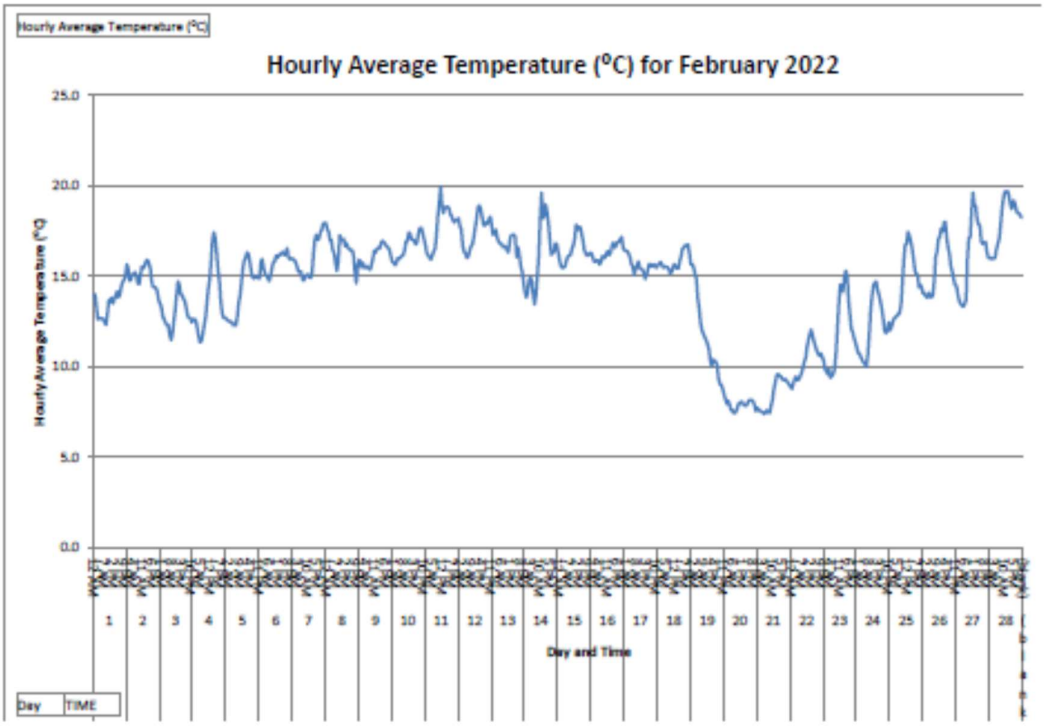

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for January 2022
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

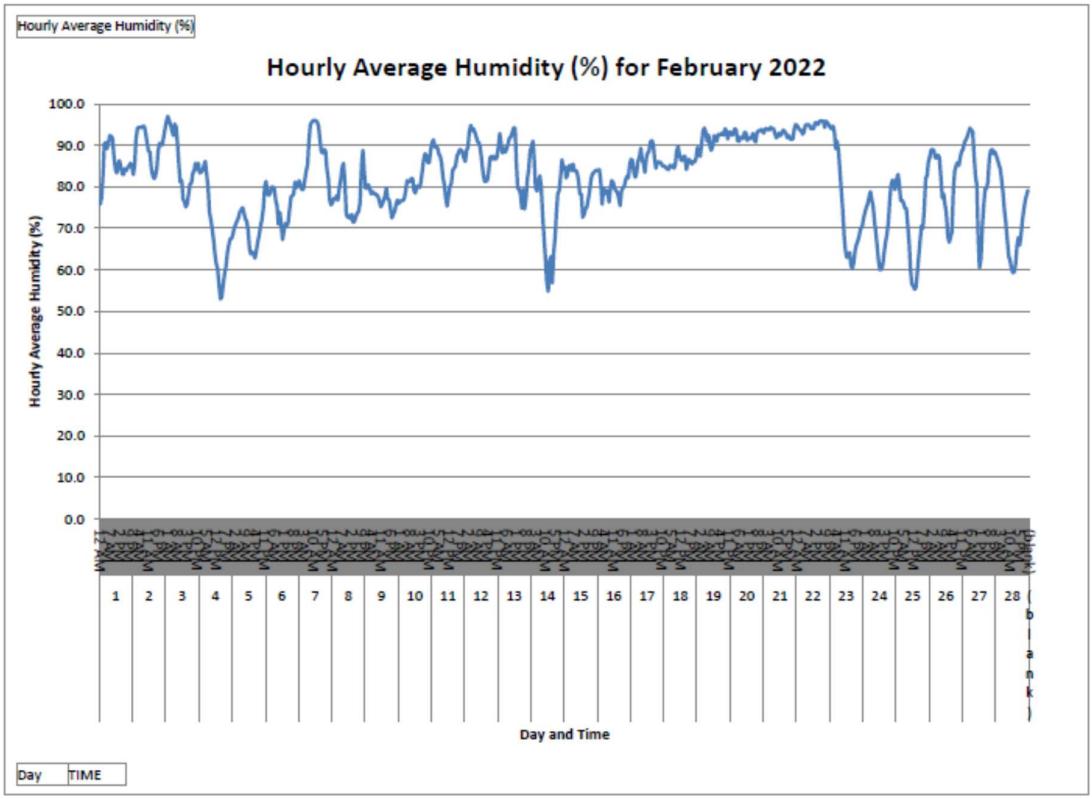

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for January 2022
Hourly Average Wind Direction (degree)
Day and Time
Day
TIME

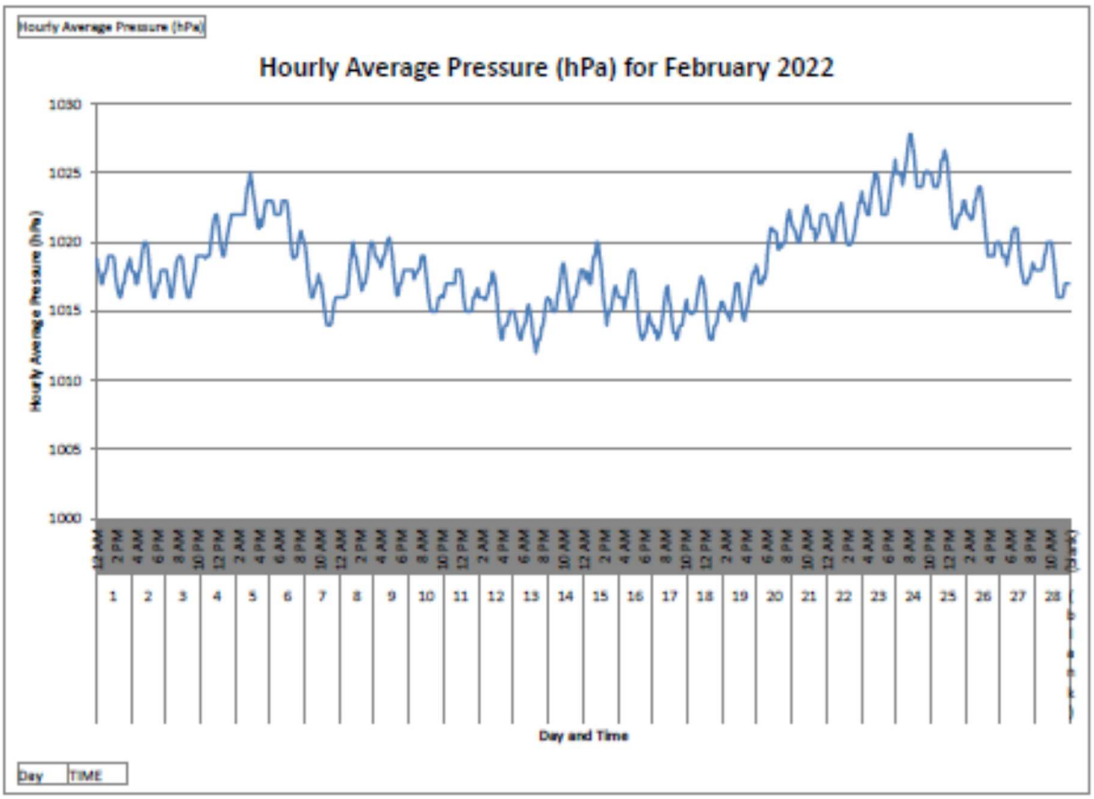

Wind Rose for January 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
18.00%
16.00%
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All

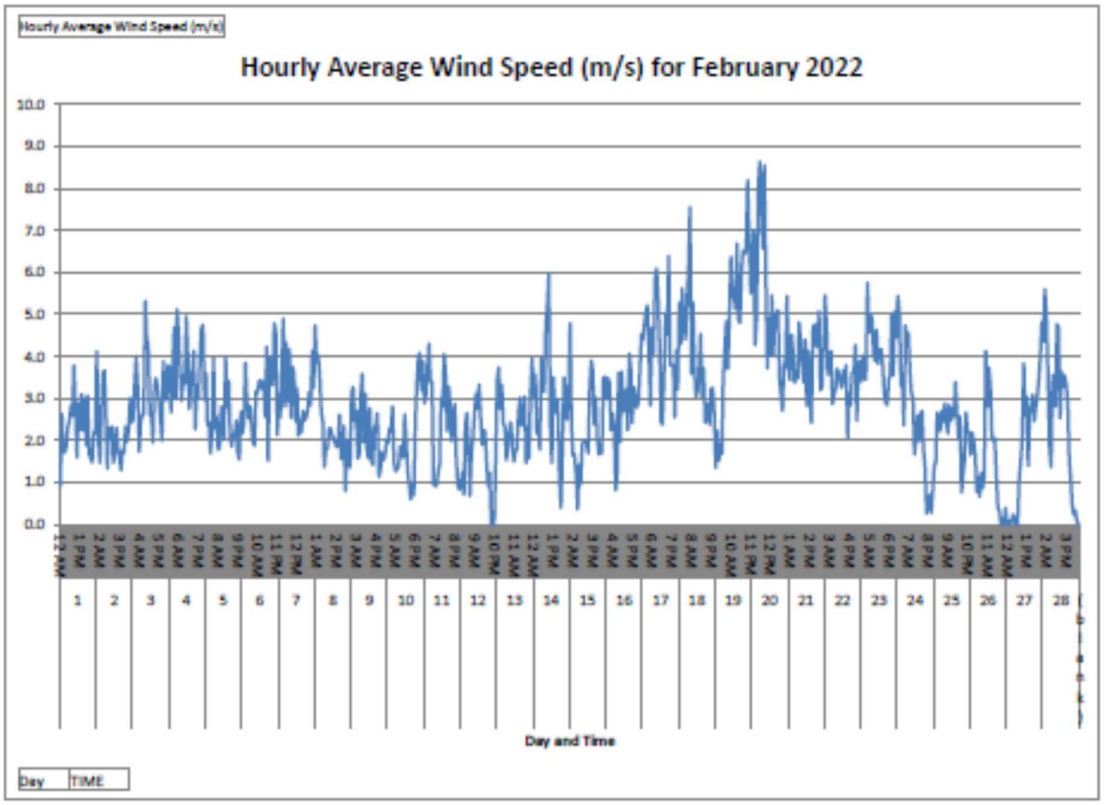

Daily and Cumulative Rainfall (mm) for January 2022
Rainfall (mm)
Day
Daily Rainfall (mm)
Cumulative Rainfall

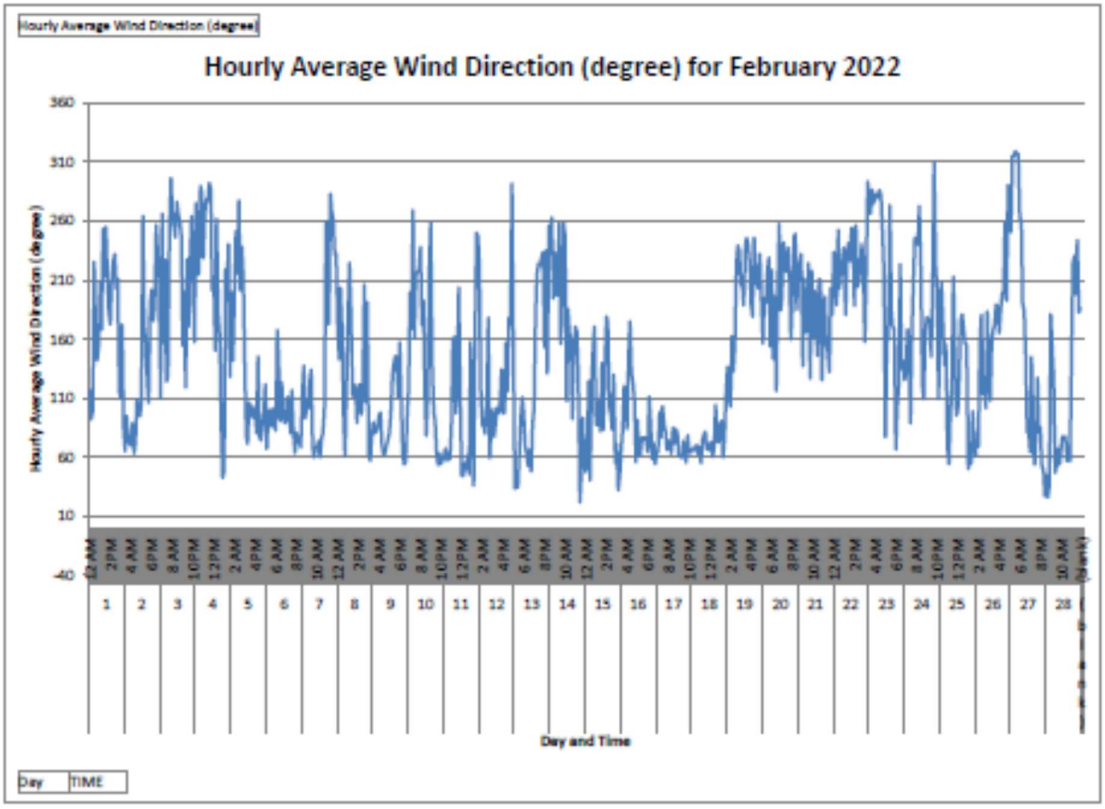
February 2022

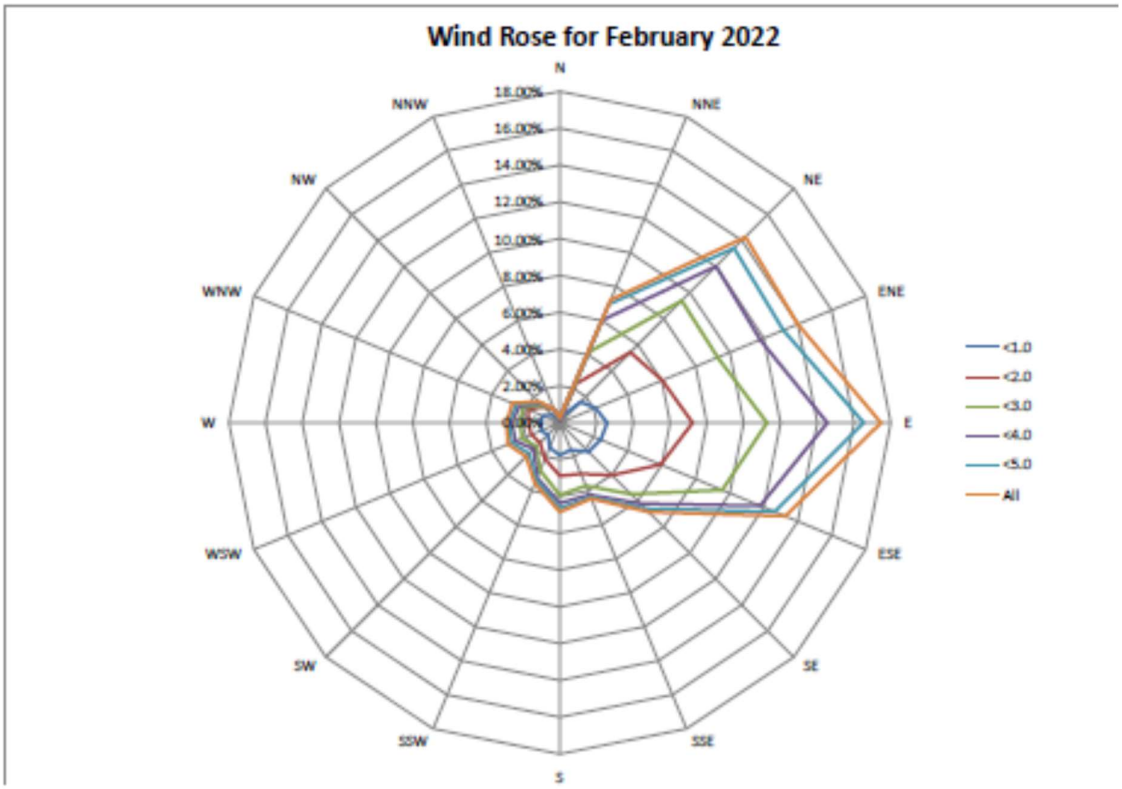


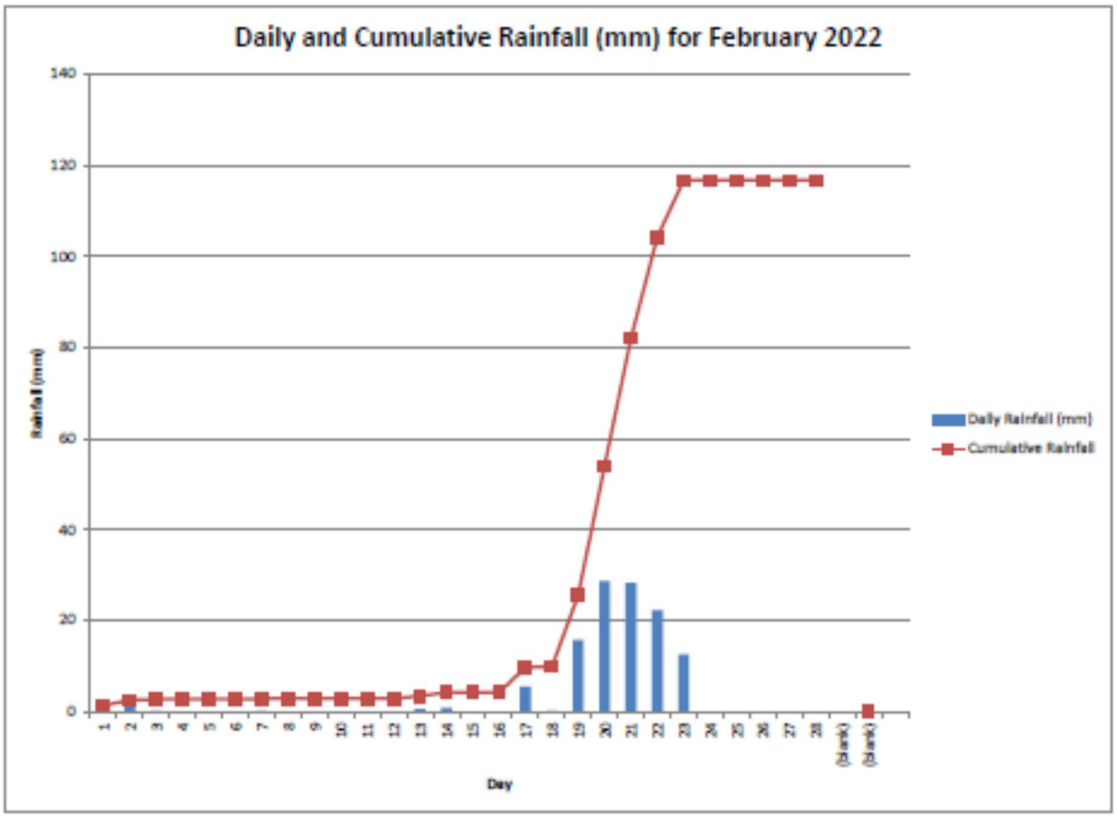



Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for February 2022
Hourly Average Pressure (hPa)
1030
1025
1020
1015
1010
1005
1000
Day and Time
Day
TIME

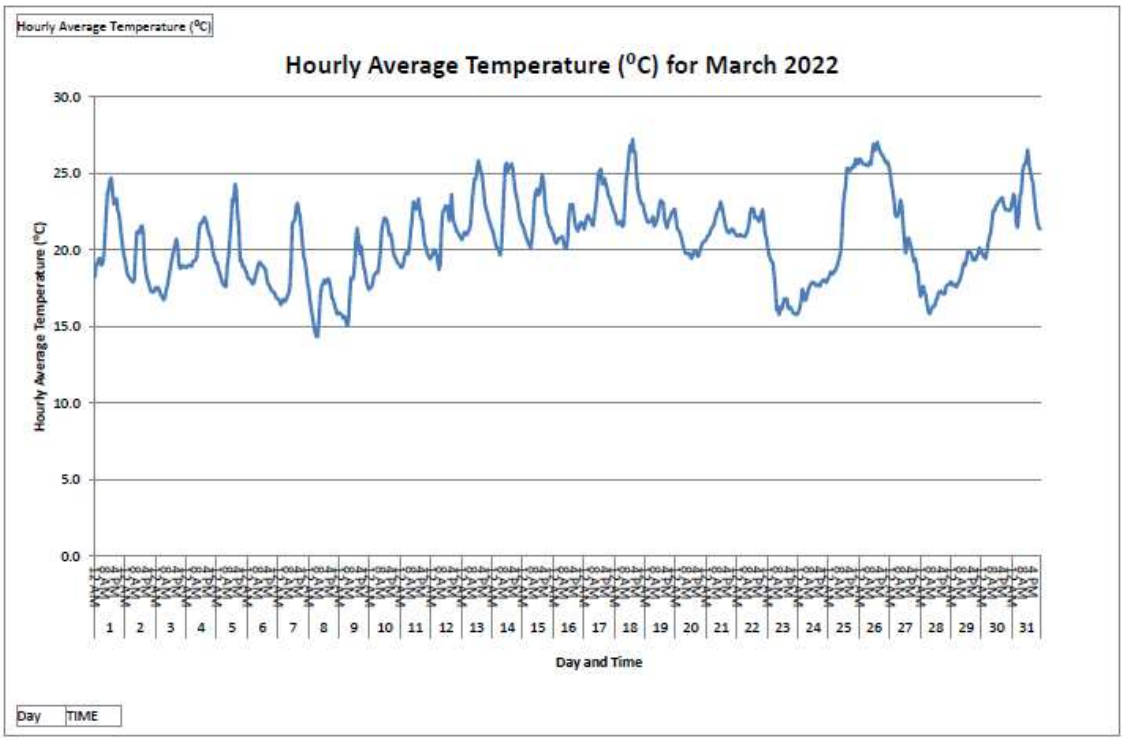

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for February 2022
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Day and Time
Day
TIME

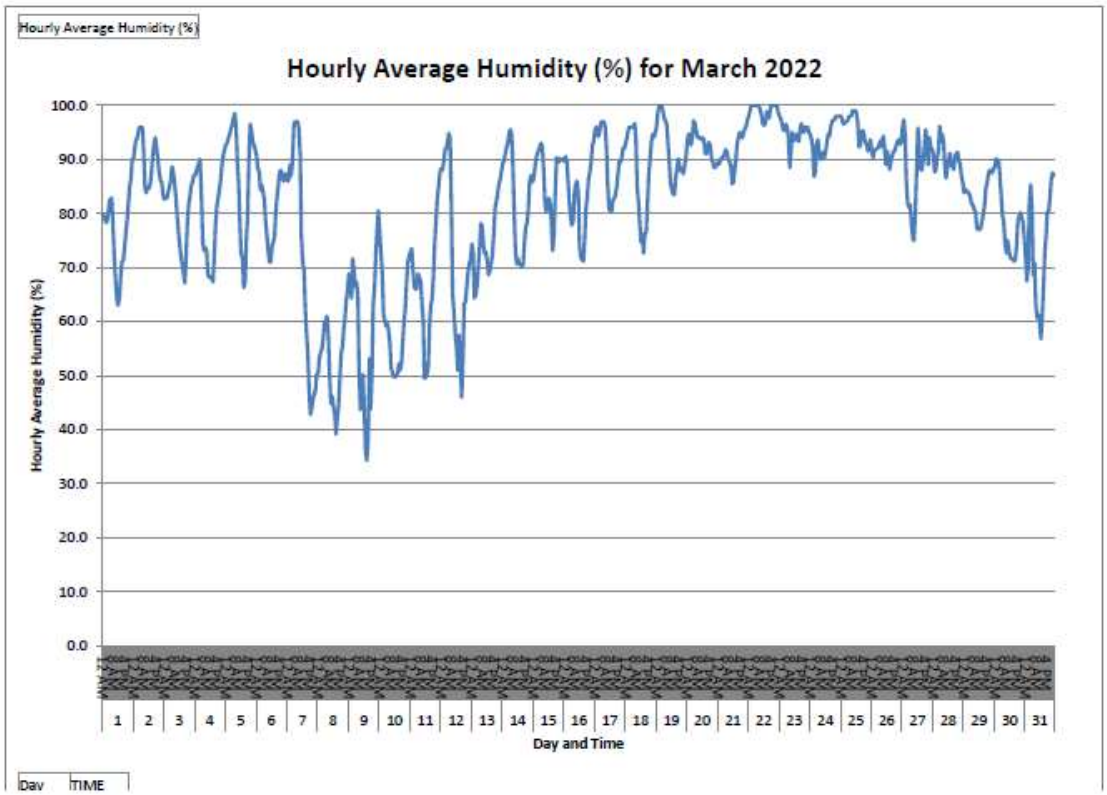

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for February 2022
Hourly Average Wind Direction (degree)
Day and Time
Day
TIME

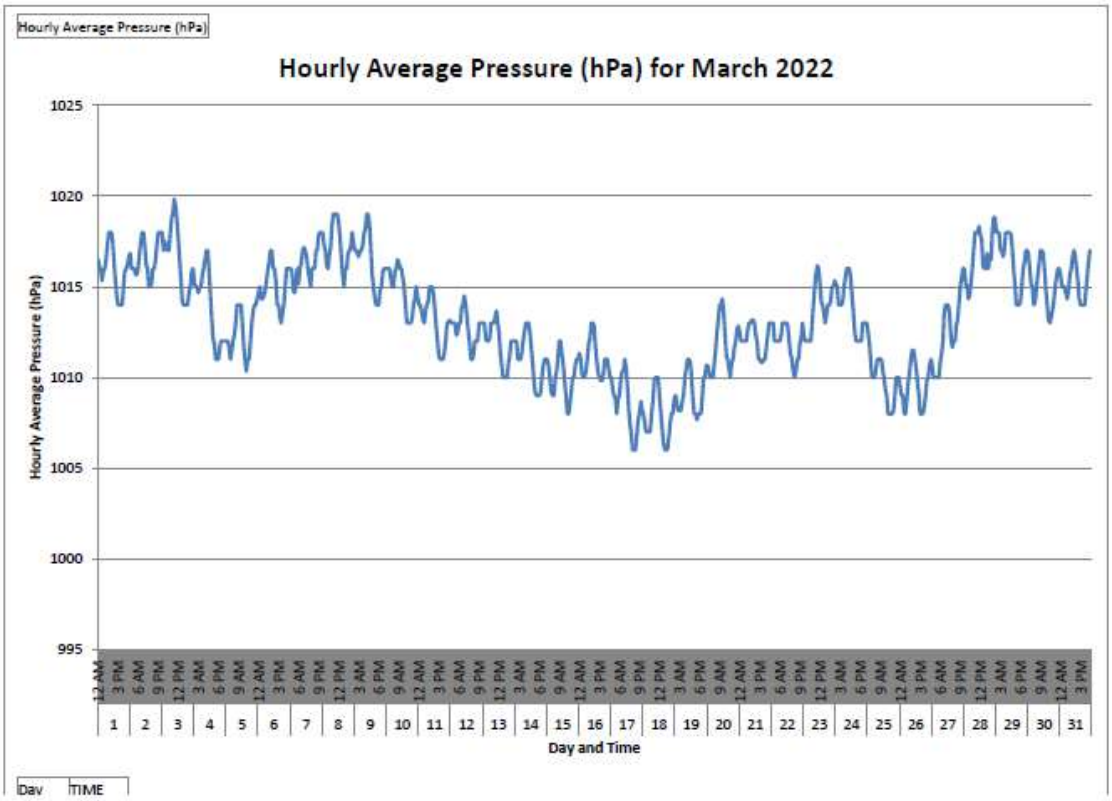

Wind Rose for February 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
<1.0
<2.0
<3.0
<4.0
<5.0
All

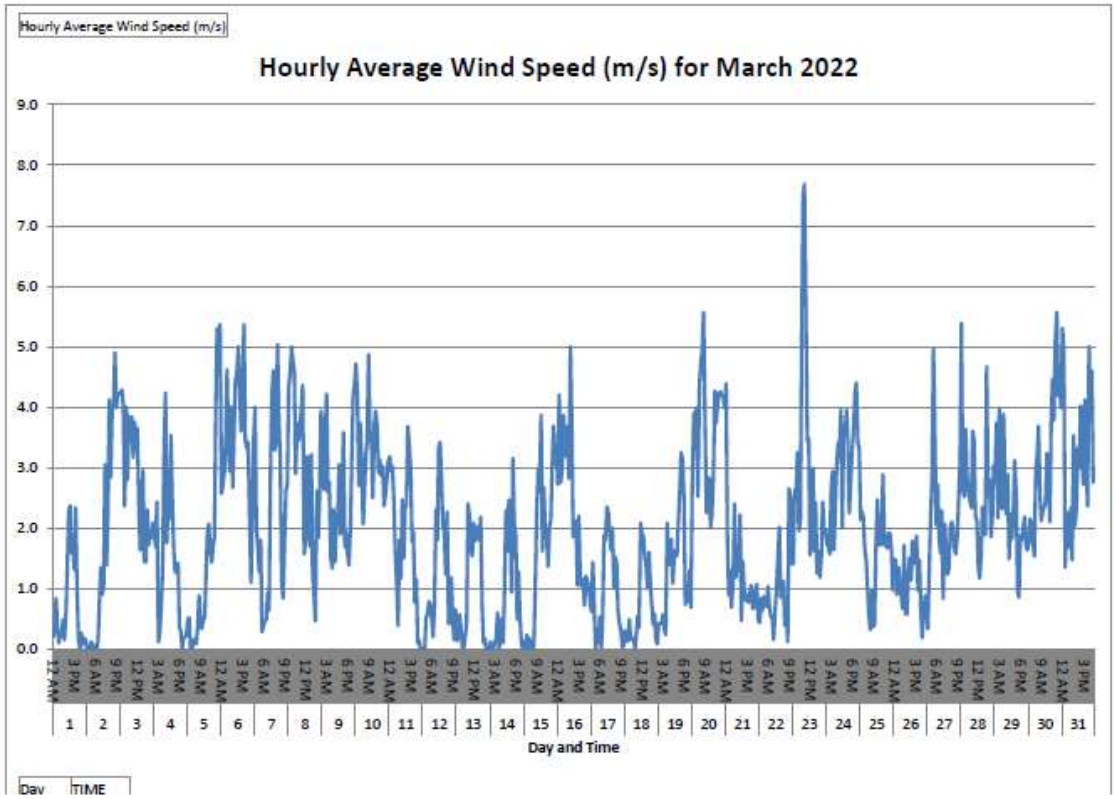

Daily and Cumulative Rainfall (mm) for February 2022
Rainfall (mm)
Day
Daily Rainfall (mm)
Cumulative Rainfall

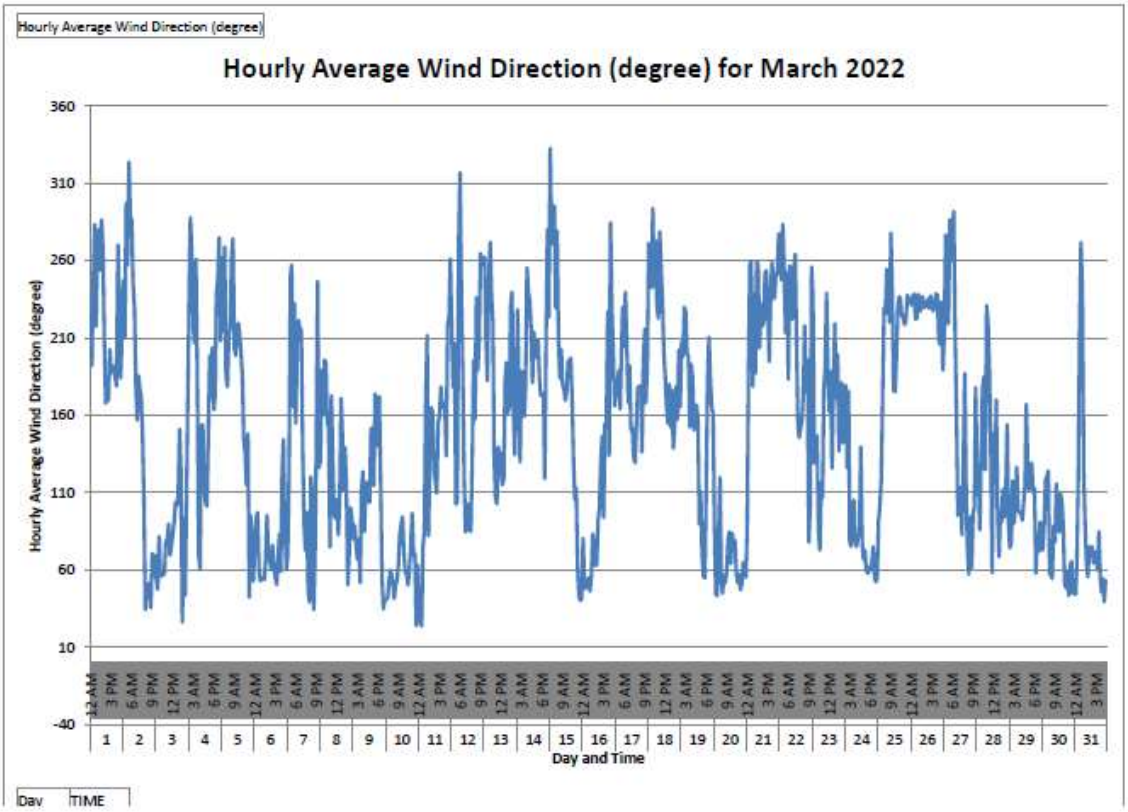
March 2022

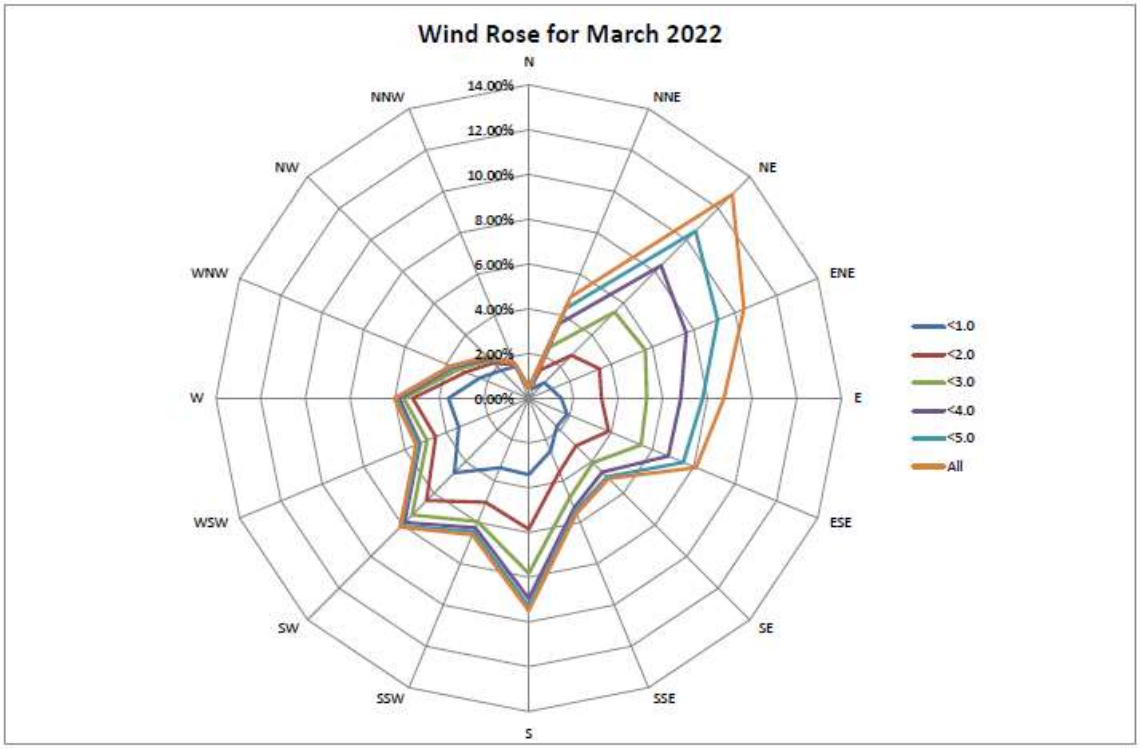

Hourly Average Temperature (°C)
Hourly Average Temperature (°C) for March 2022
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Hourly Average Temperature (°C)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

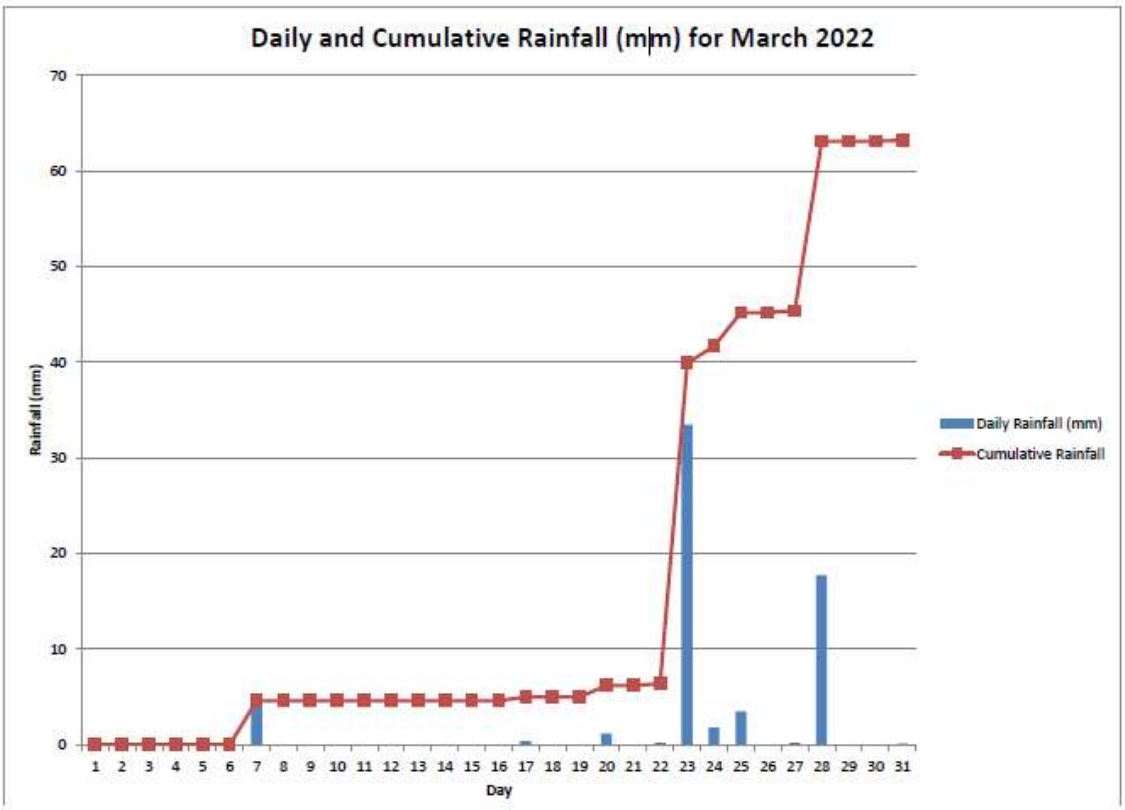

Hourly Average Humidity (%)
Hourly Average Humidity (%) for March 2022
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Hourly Average Humidity (%)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME


Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for March 2022
Hourly Average Pressure (hPa)
1025
1020
1015
1010
1005
1000
995
Day and Time
Day
TIME

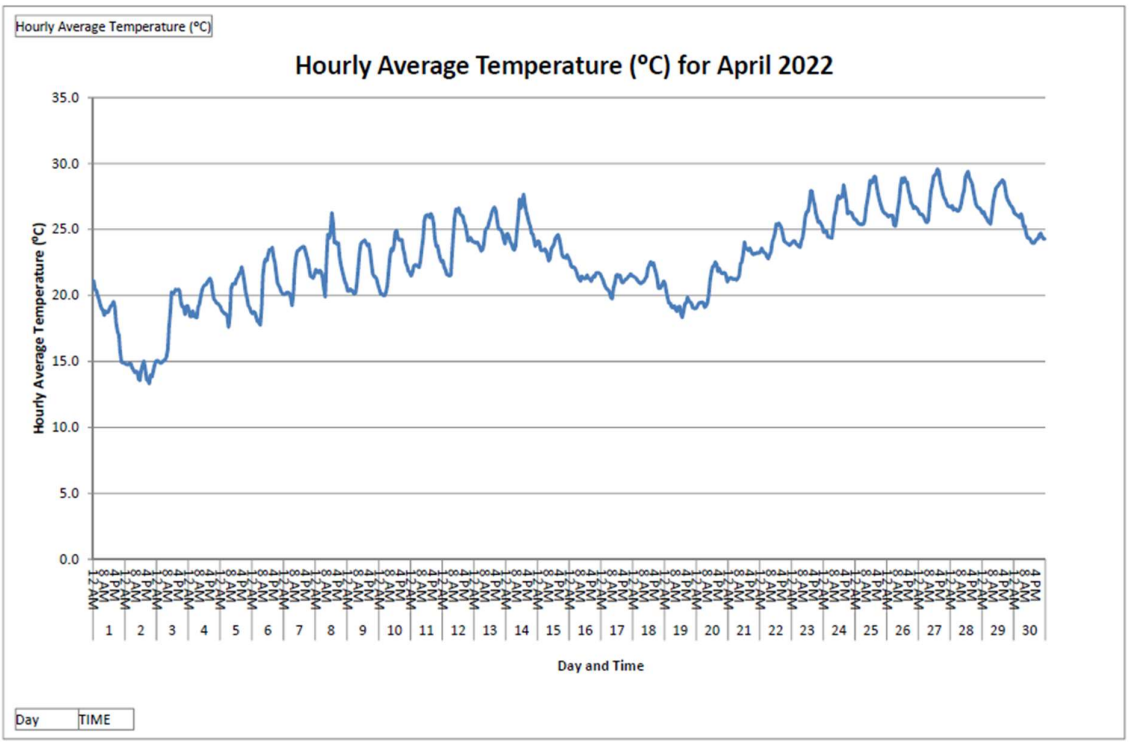

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for March 2022
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Day and Time
Day
TIME

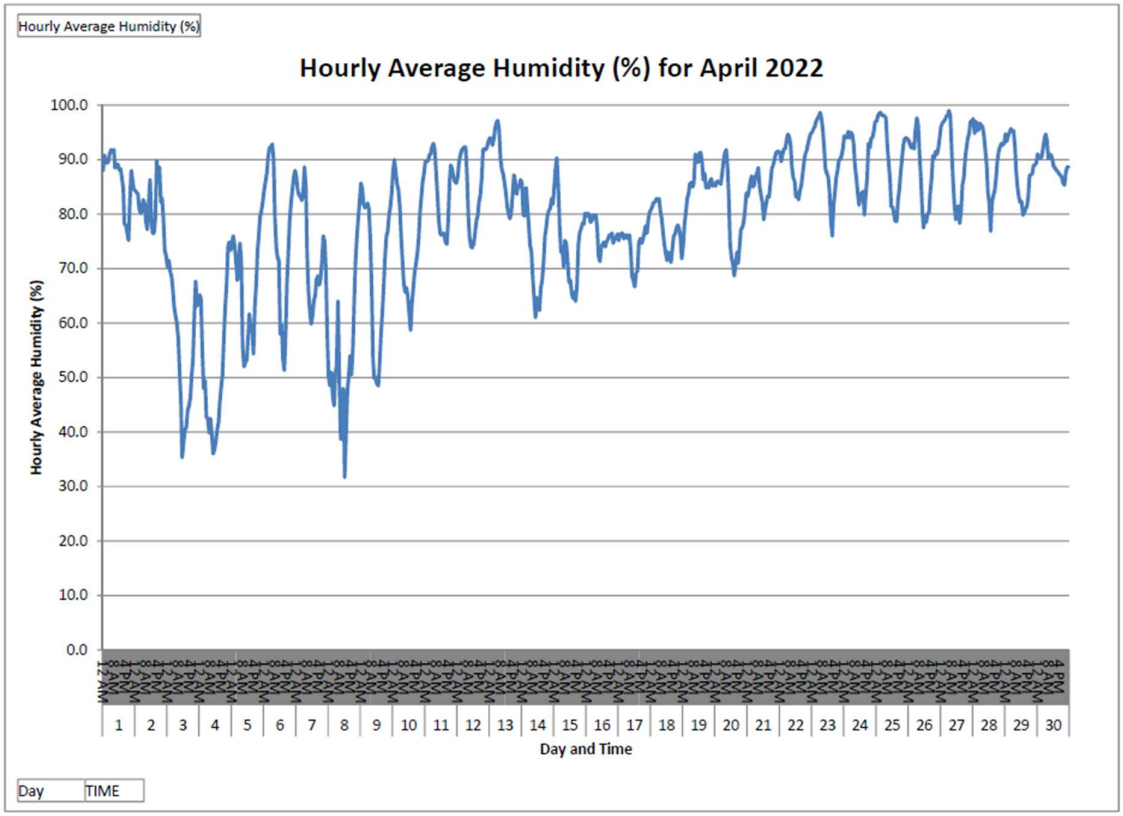

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for March 2022
Hourly Average Wind Direction (degree)
360
310
260
210
160
110
60
10
-40
Day and Time
Day
TIME

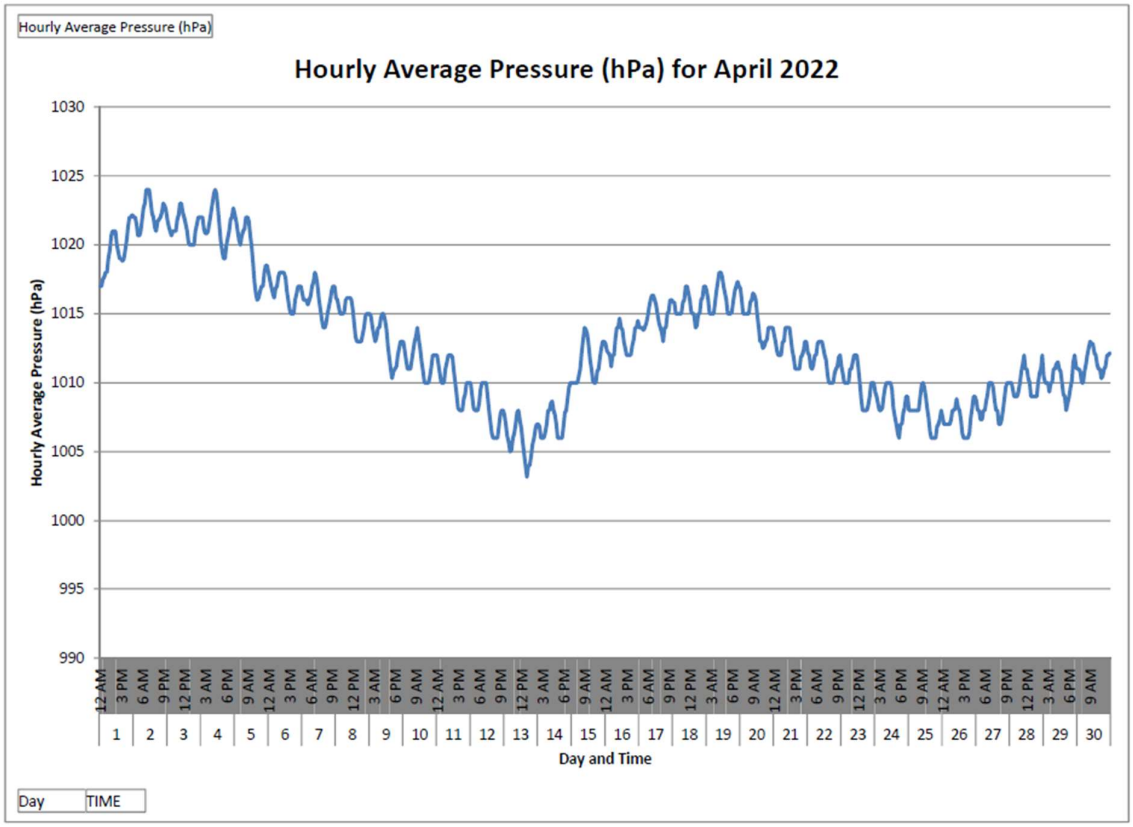

Wind Rose for March 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All

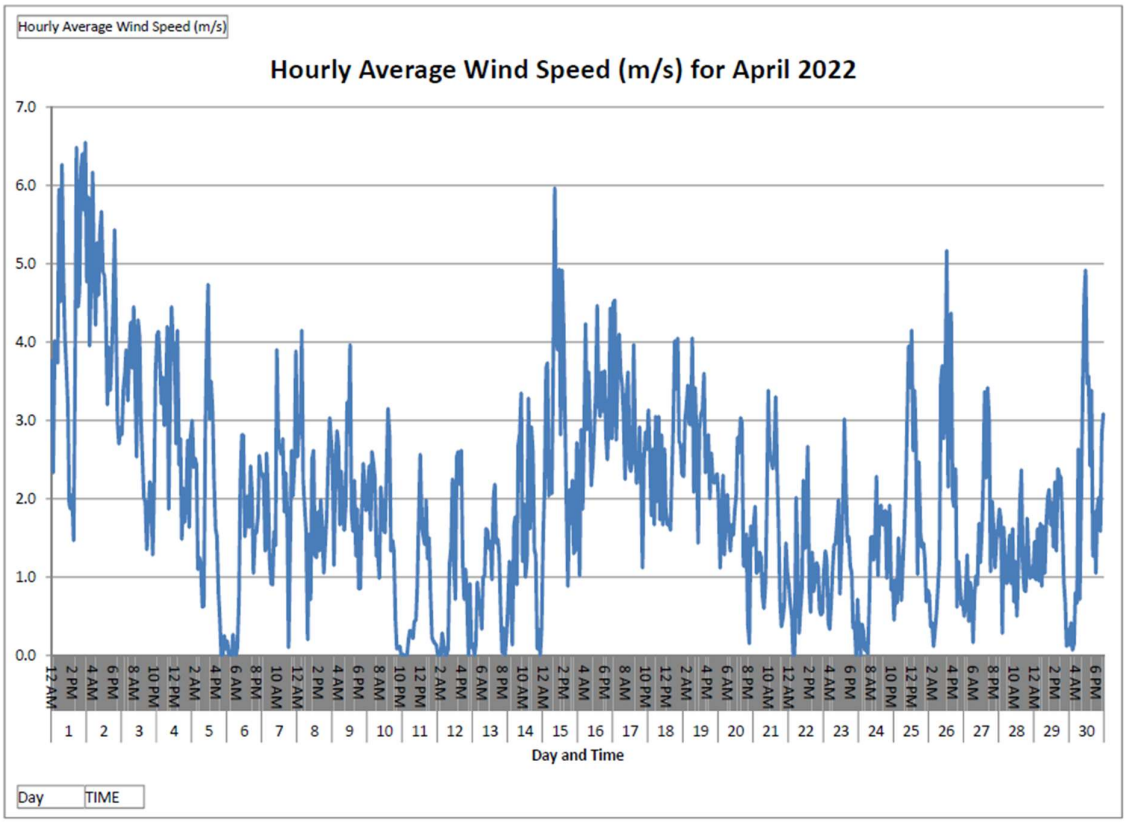

Daily and Cumulative Rainfall (mm) for March 2022
Rainfall (mm)
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
Daily Rainfall (mm)
Cumulative Rainfall

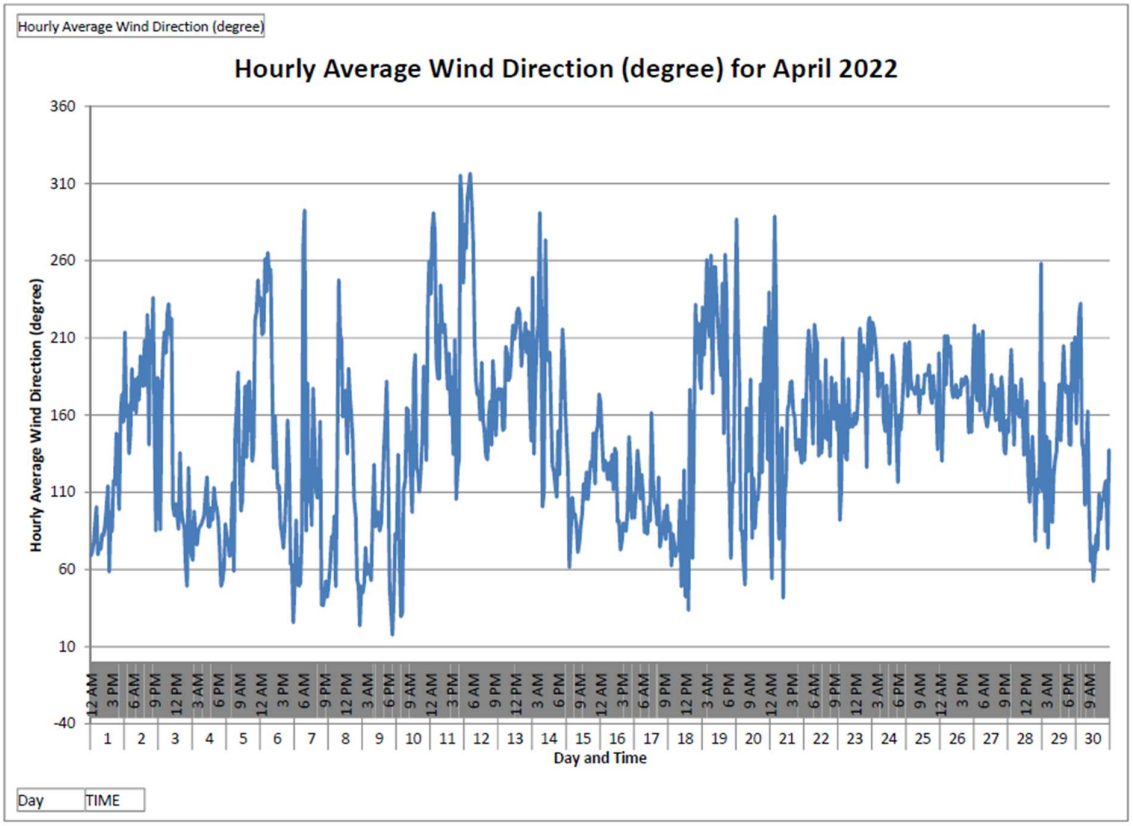
April 2022

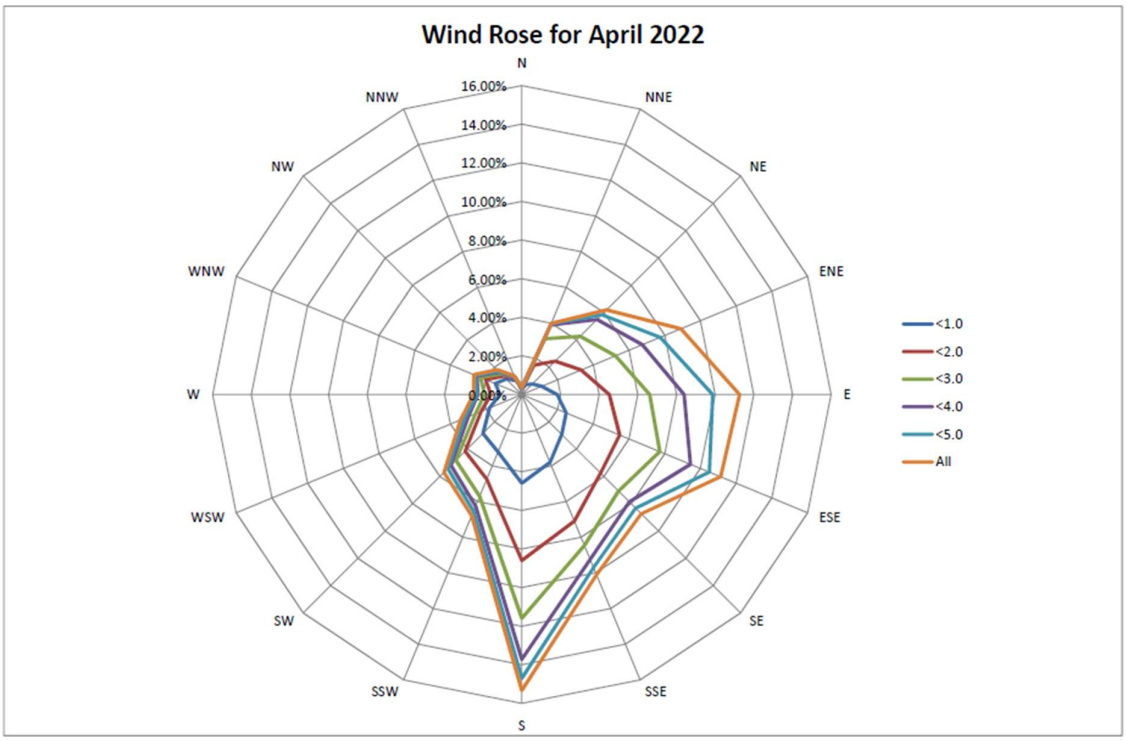

Hourly Average Temperature (°C)
Hourly Average Temperature (°C) for April 2022
Hourly Average Temperature (°C)
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
Day
TIME

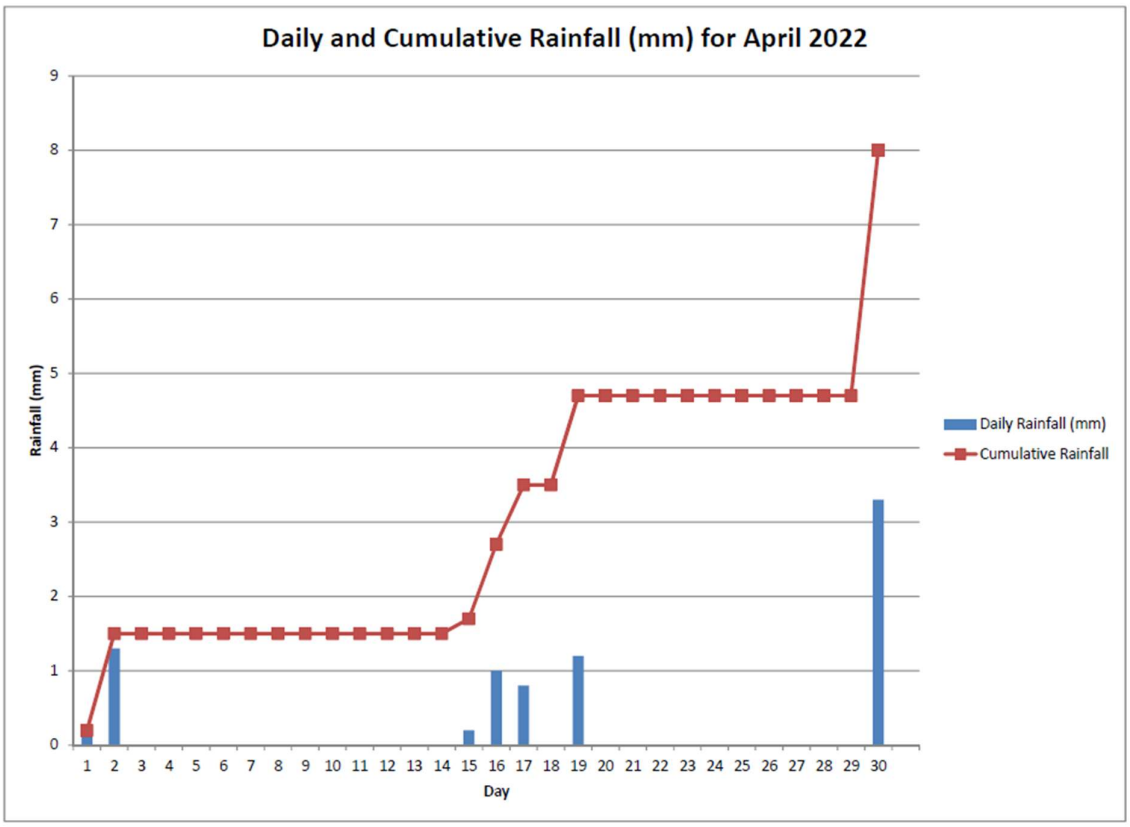

Hourly Average Humidity (%)
Hourly Average Humidity (%) for April 2022
Hourly Average Humidity (%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
Day
TIME


Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for April 2022
Hourly Average Pressure (hPa)
Day and Time
Day
TIME

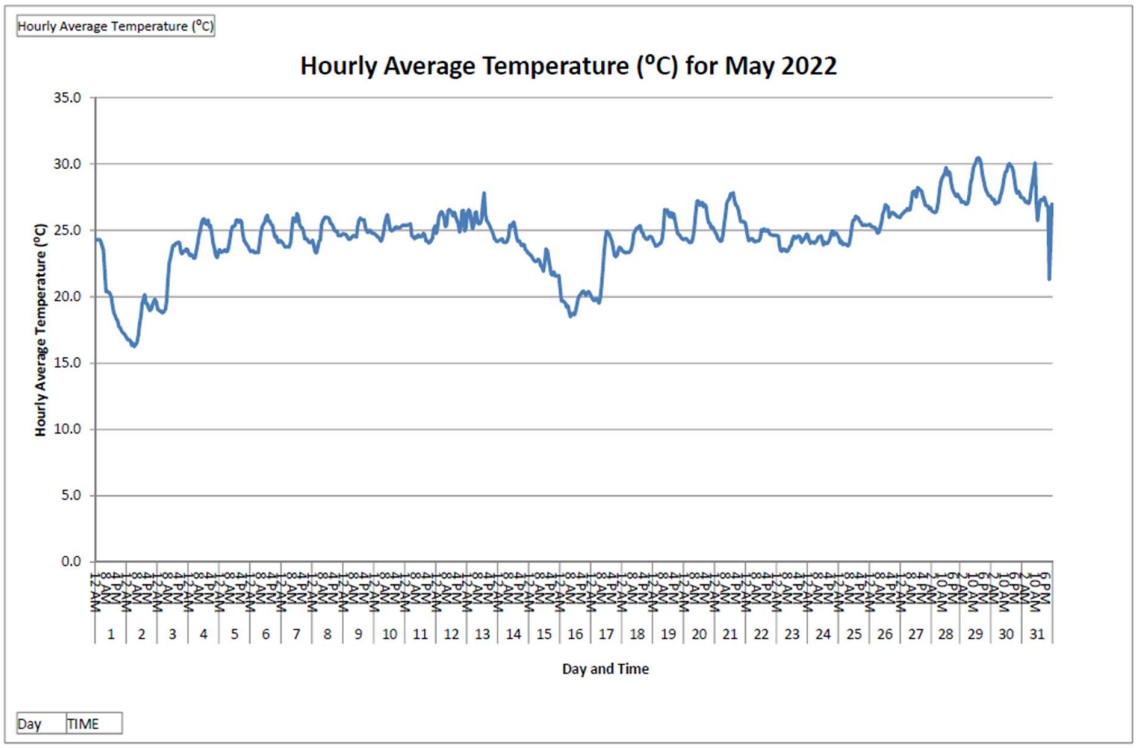

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for April 2022
Day and Time
Day
TIME

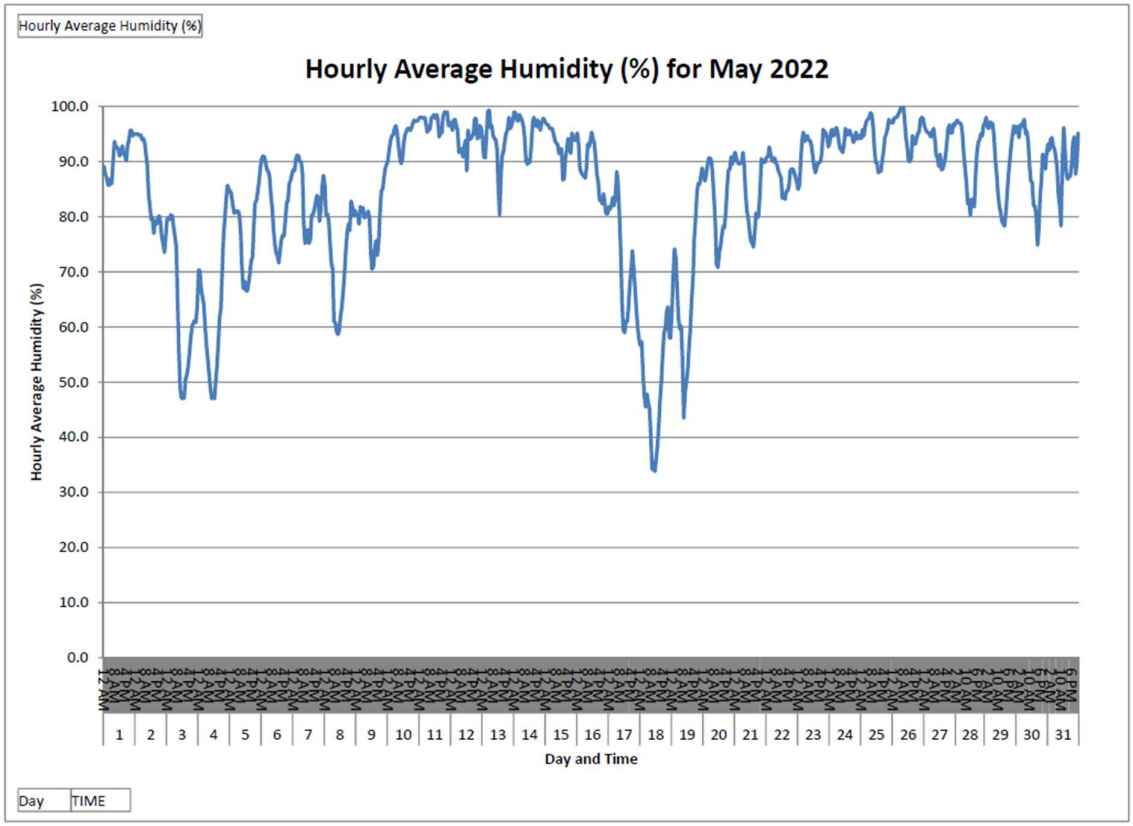

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for April 2022
Hourly Average Wind Direction (degree)
360
310
260
210
160
110
60
10
-40
12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
Day
TIME

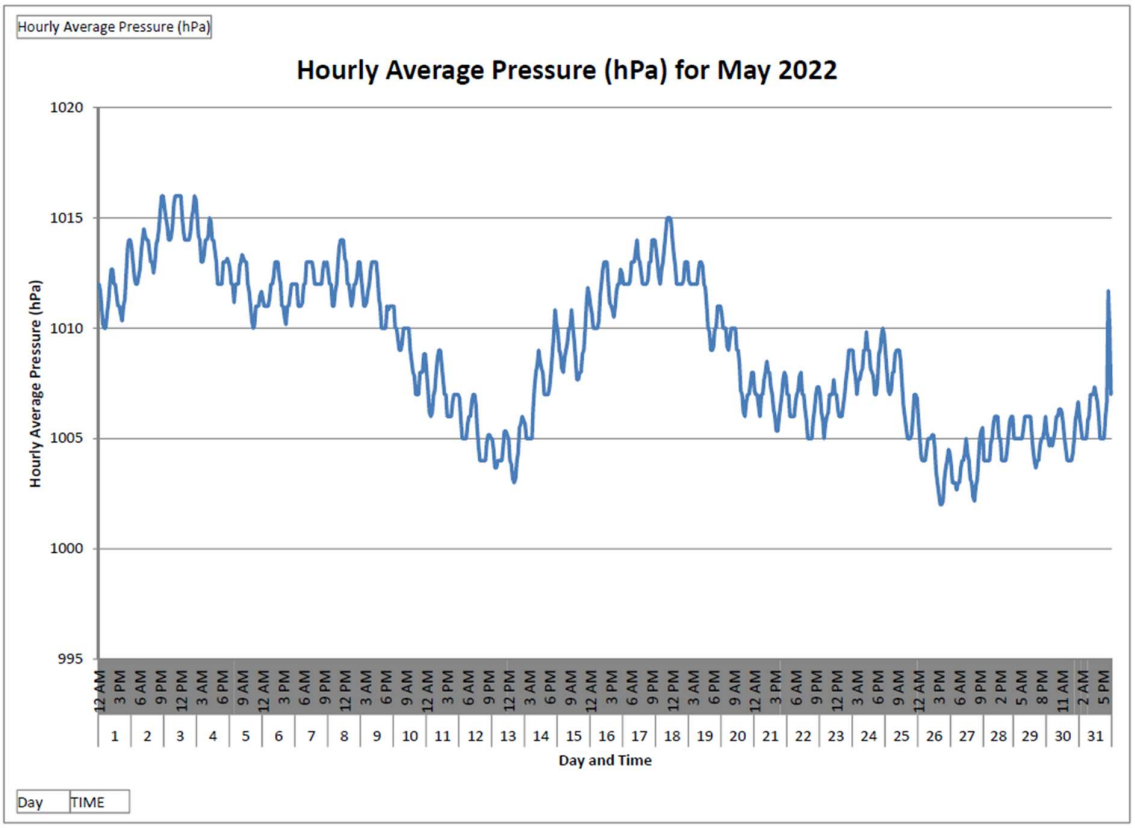

Wind Rose for April 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
16.00%
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All

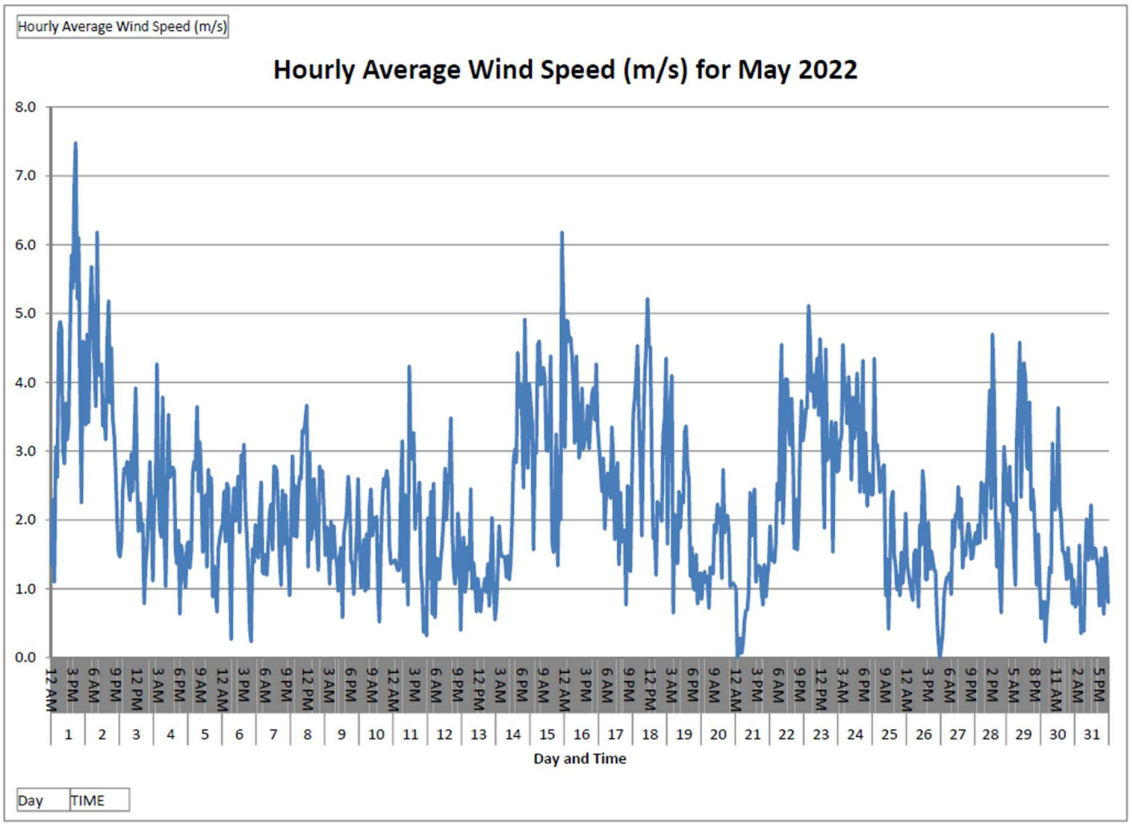

Daily and Cumulative Rainfall (mm) for April 2022
Rainfall (mm)
Day
Daily Rainfall (mm)
Cumulative Rainfall

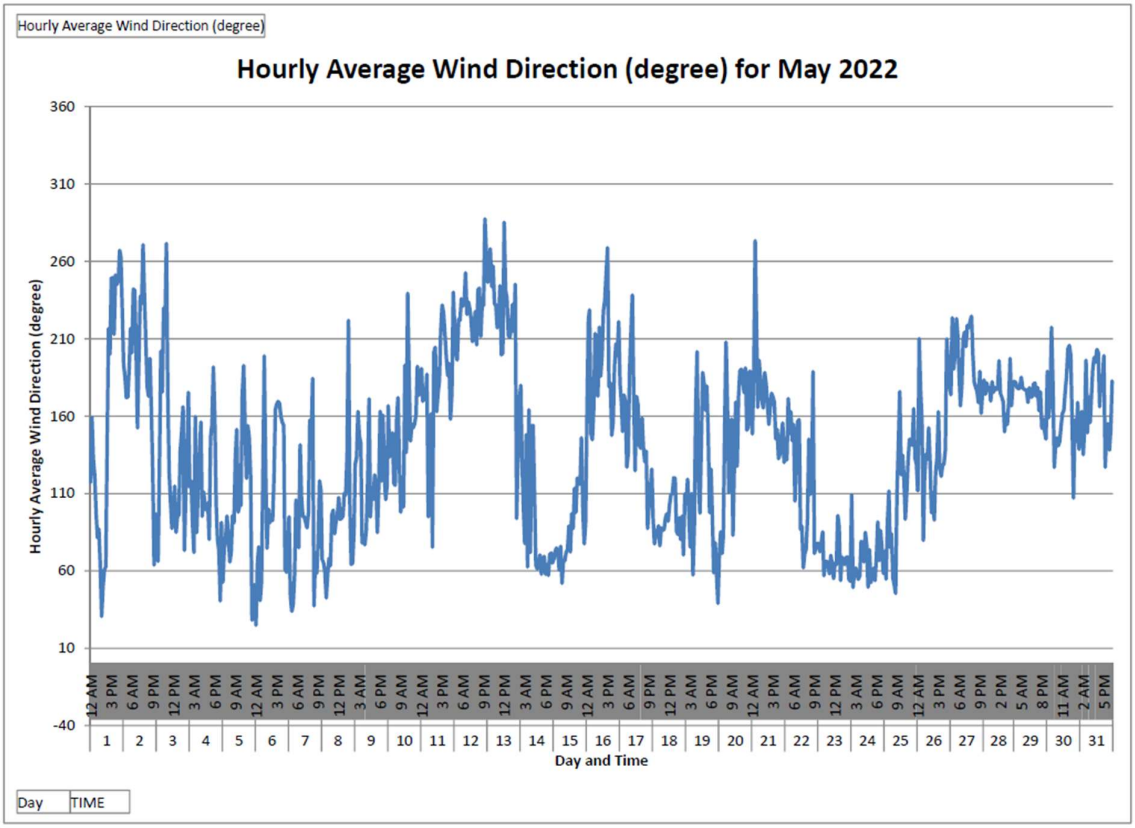
May 2022

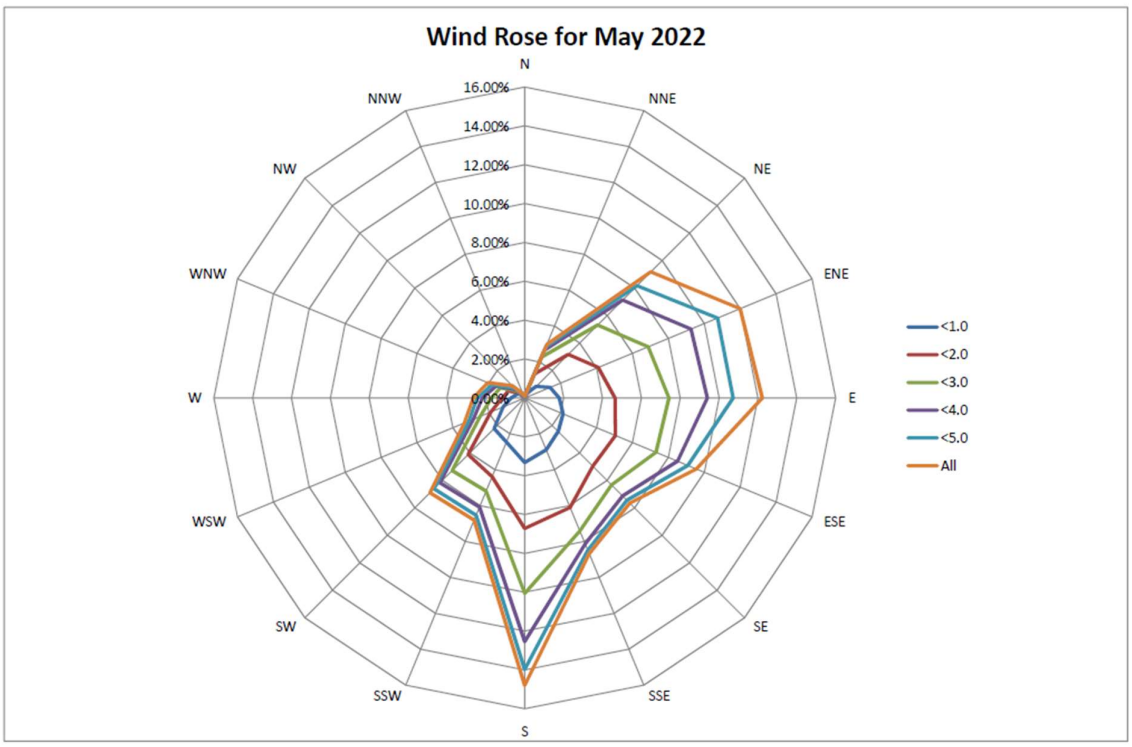

Hourly Average Temperature (°C)
Hourly Average Temperature (°C) for May 2022
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Hourly Average Temperature (°C)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

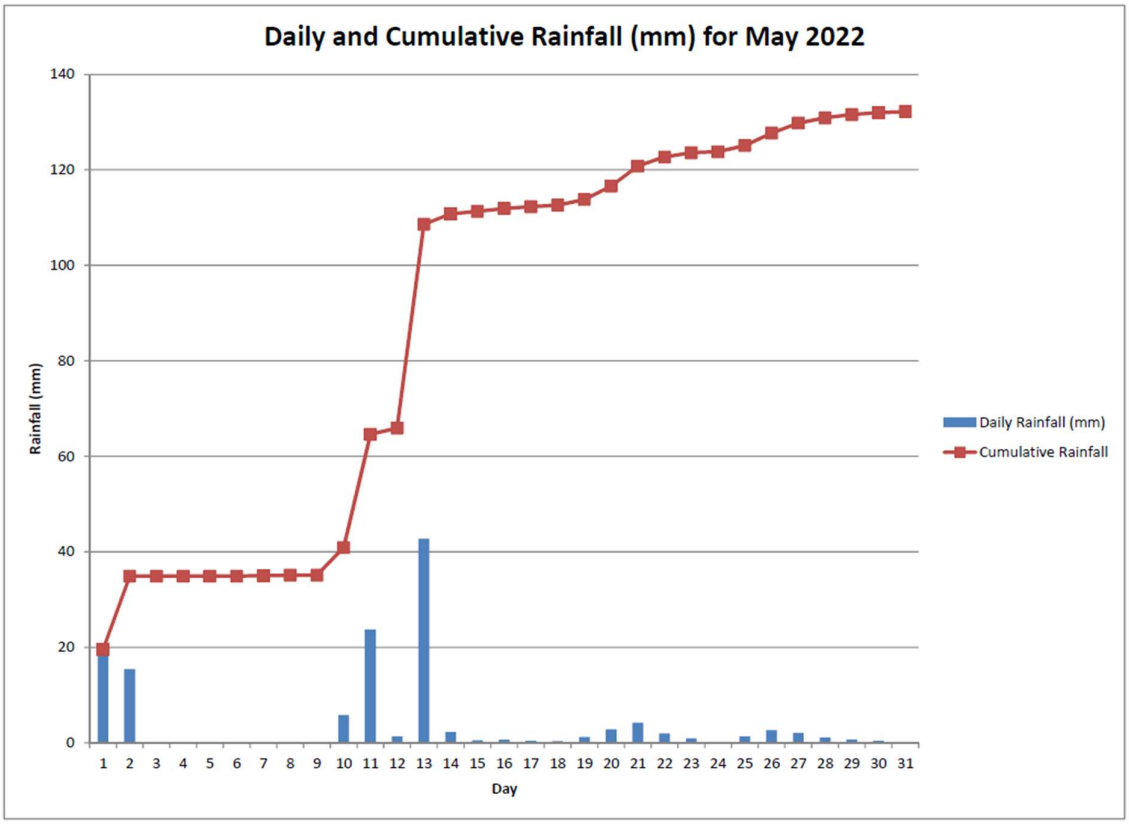

Hourly Average Humidity (%)
Hourly Average Humidity (%) for May 2022
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Hourly Average Humidity (%)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME


Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for May 2022
Hourly Average Pressure (hPa)
1020
1015
1010
1005
1000
995
Day and Time
Day
TIME

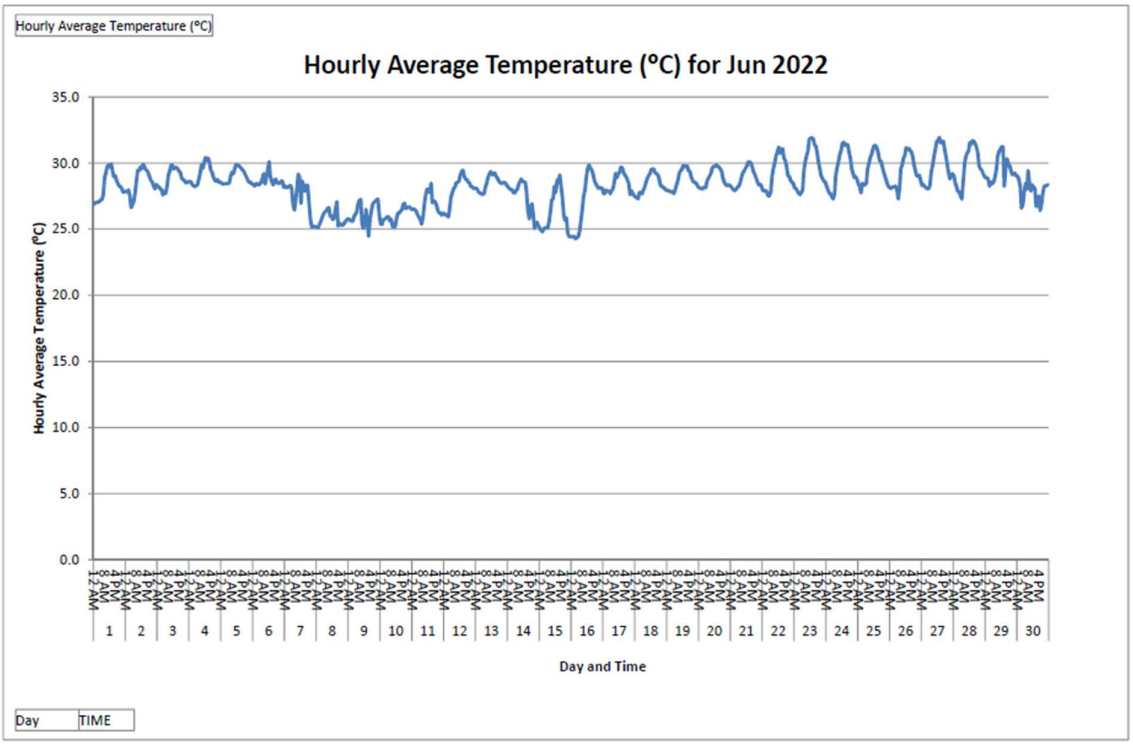

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for May 2022
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Day and Time
Day
TIME

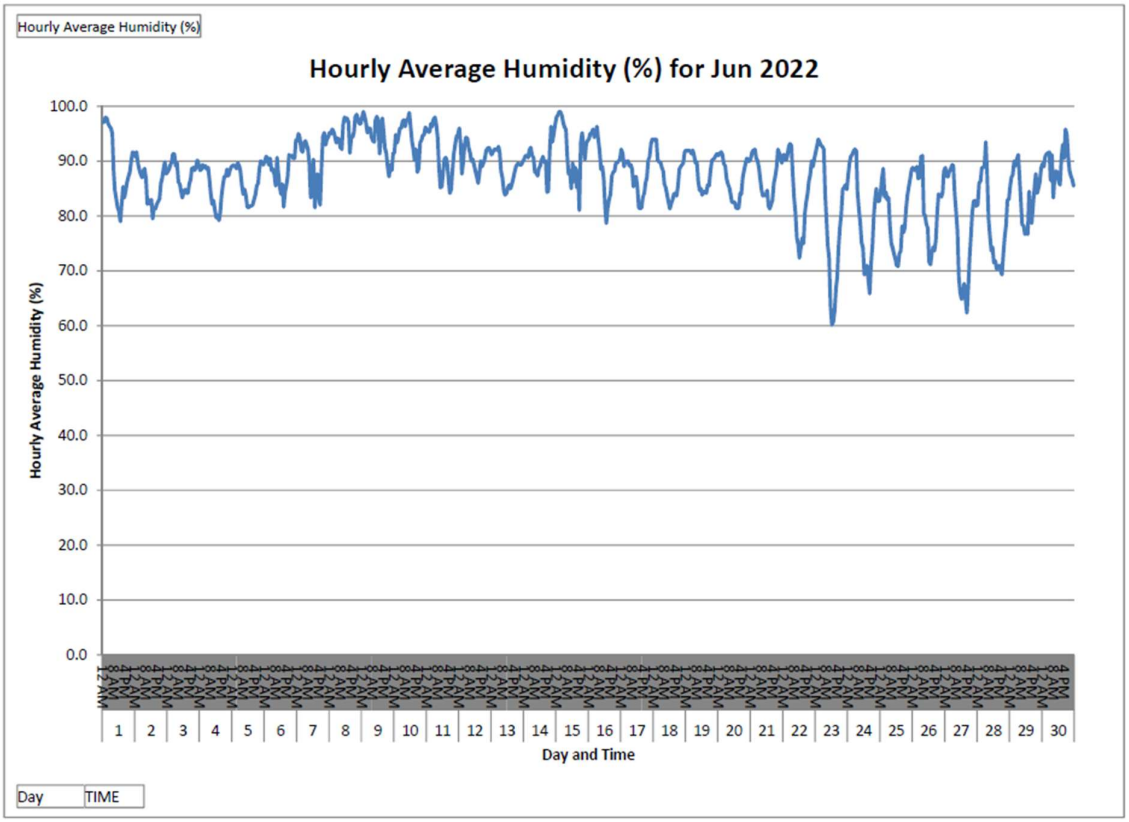

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for May 2022
Hourly Average Wind Direction (degree)
Day and Time
Day
TIME

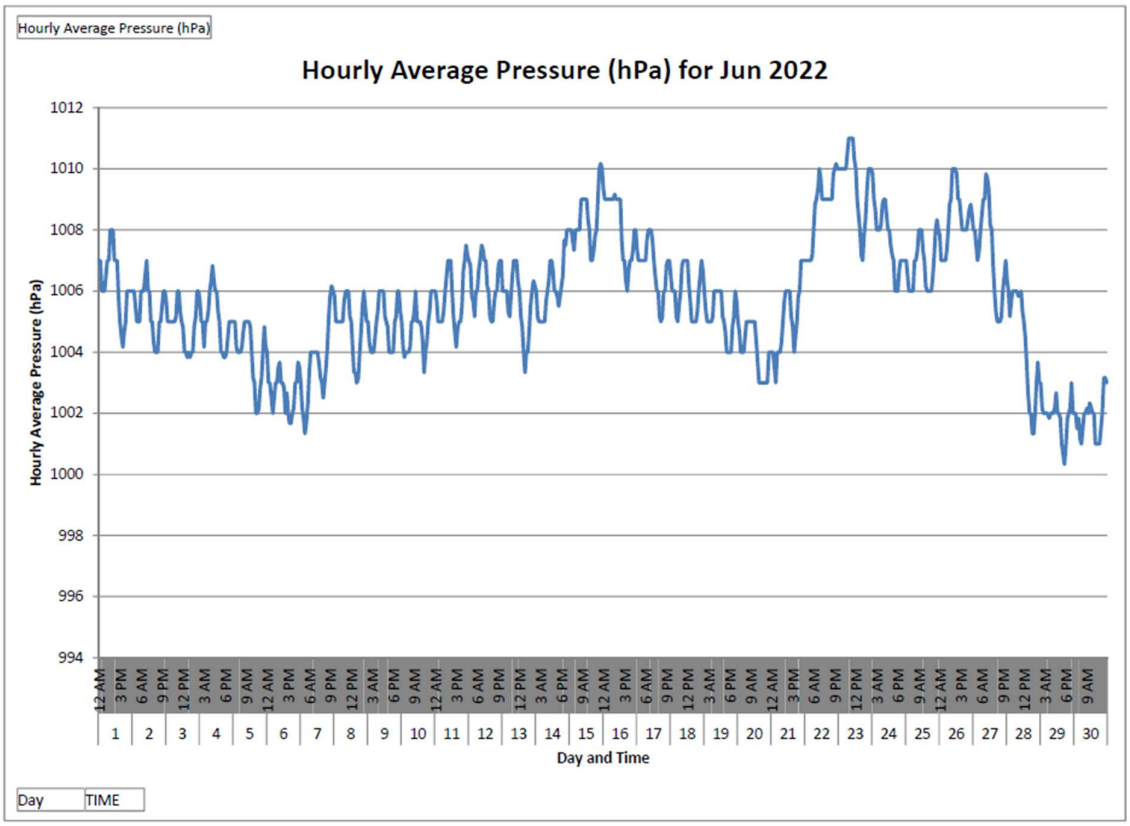

Wind Rose for May 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
16.00%
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All

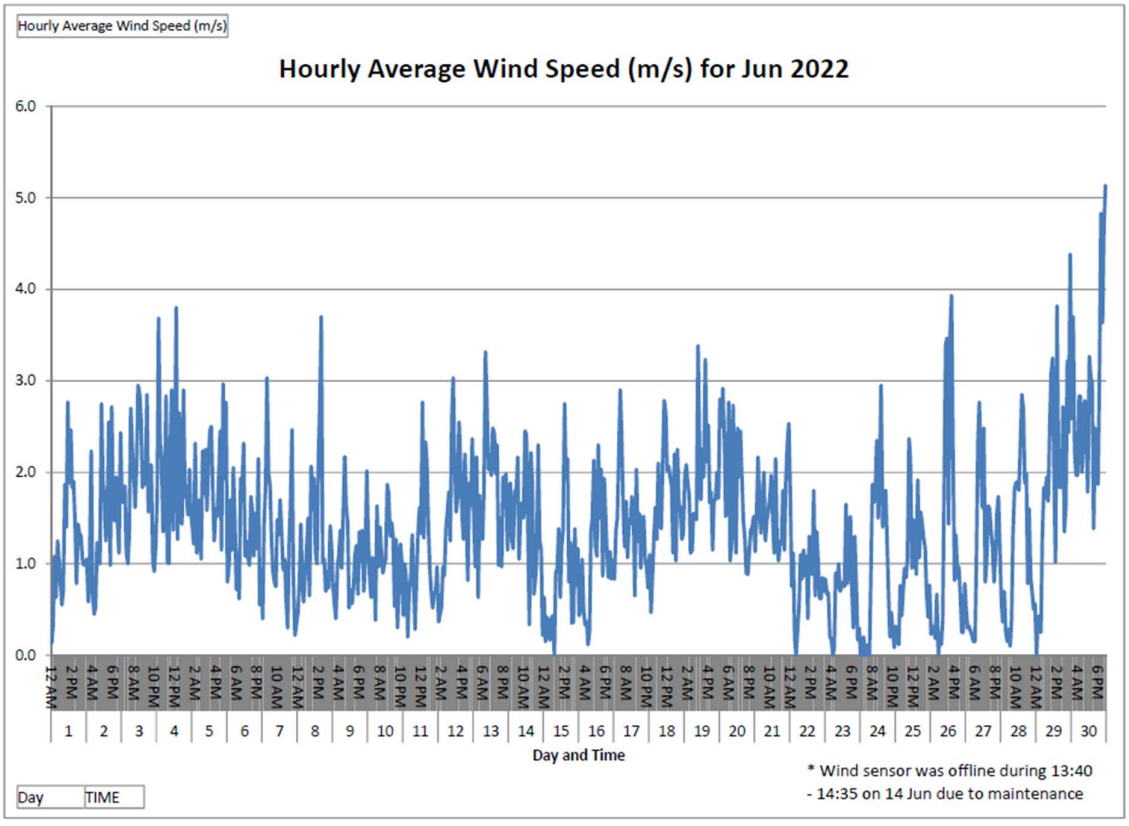

Daily and Cumulative Rainfall (mm) for May 2022
Rainfall (mm)
Day
Daily Rainfall (mm)
Cumulative Rainfall
0
20
40
60
80
100
120
140
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

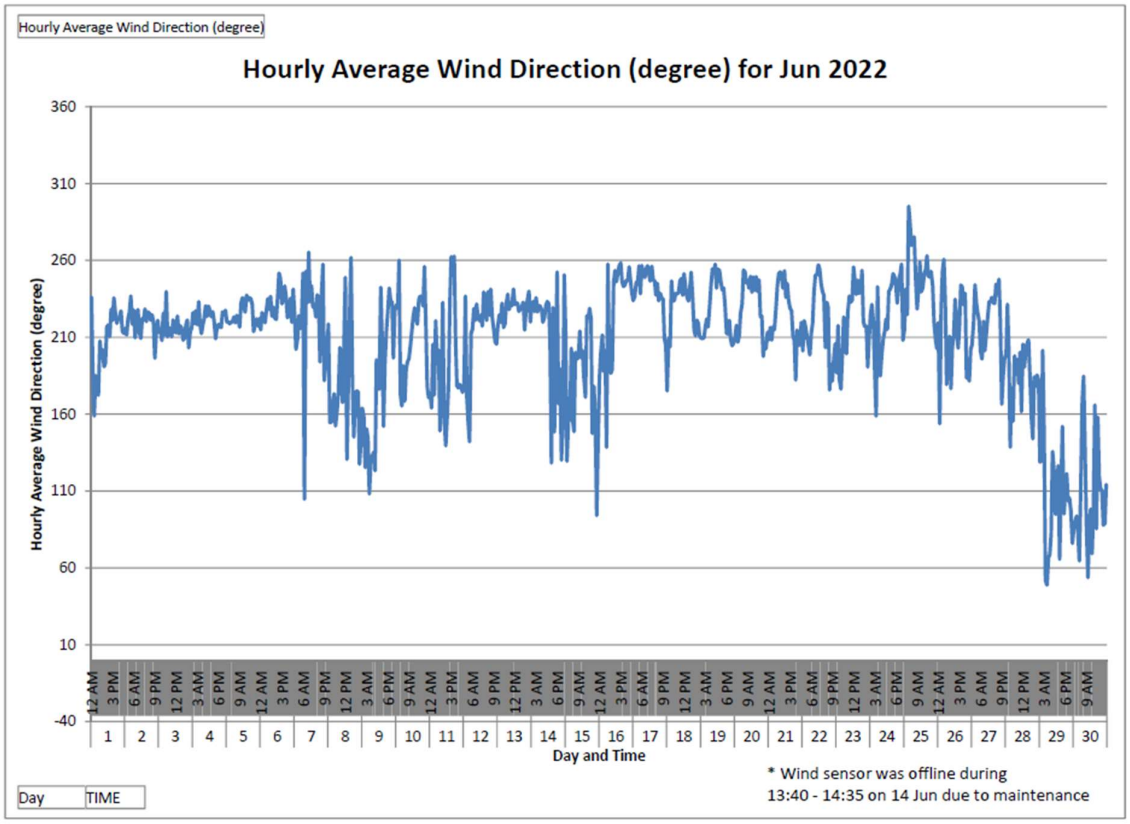
June 2022

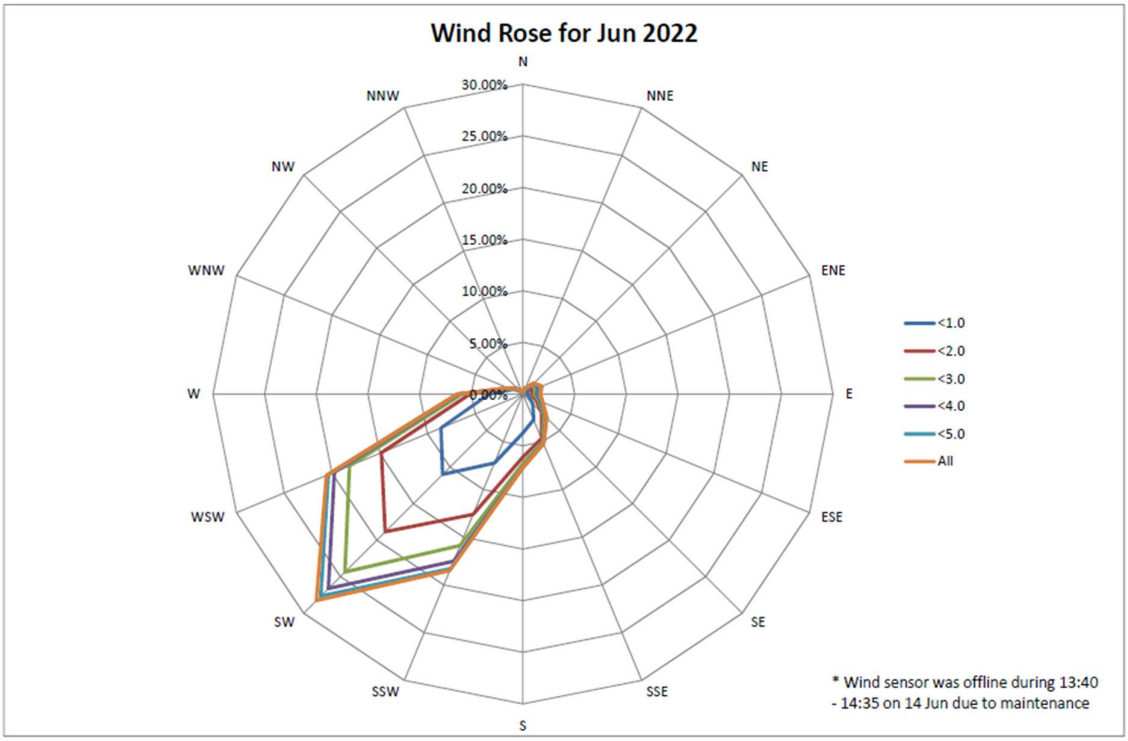

Hourly Average Temperature (°C)
Hourly Average Temperature (°C) for Jun 2022
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Hourly Average Temperature (°C)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
Day
TIME

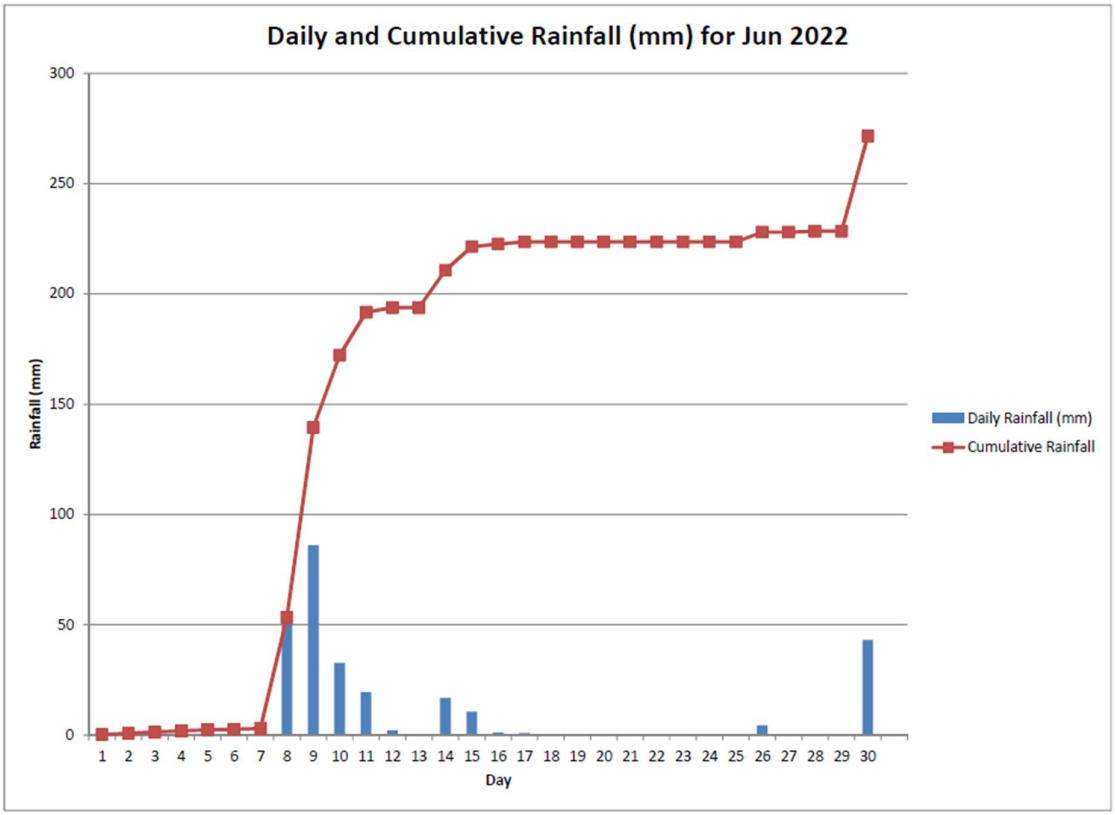

Hourly Average Humidity (%)
Hourly Average Humidity (%) for Jun 2022
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Hourly Average Humidity (%)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
Day
TIME


Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for Jun 2022
Hourly Average Pressure (hPa)
1012
1010
1008
1006
1004
1002
1000
998
996
994
Day and Time
Day
TIME

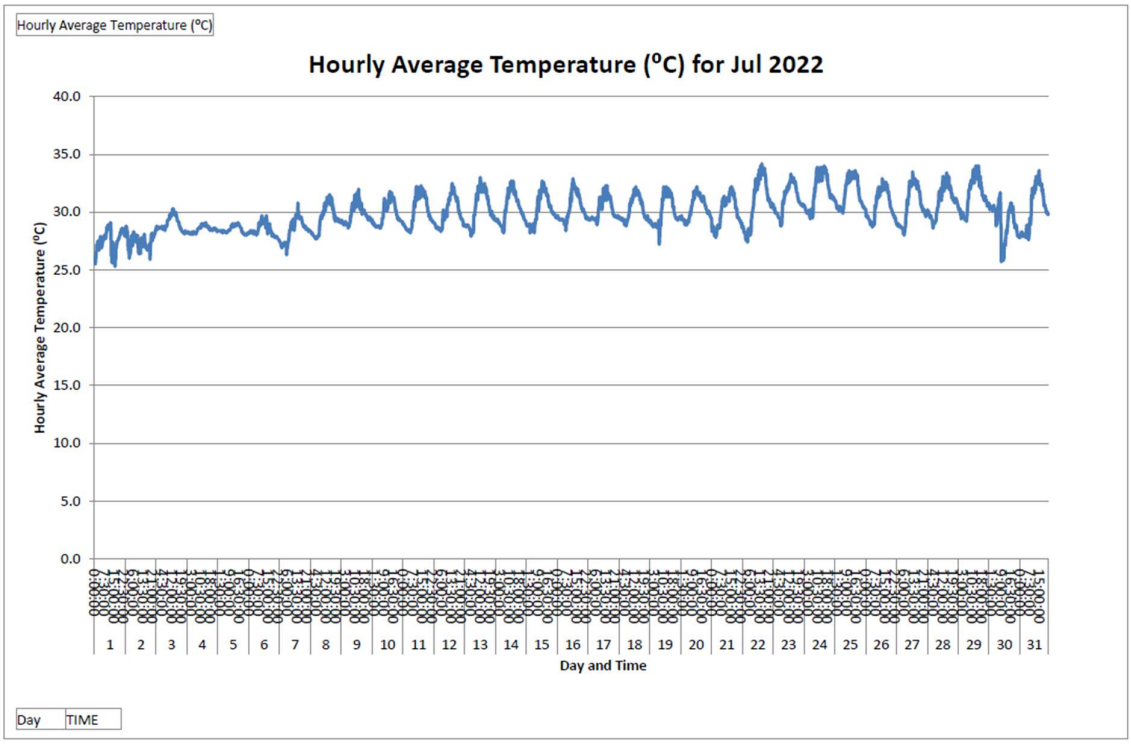

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for Jun 2022
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Day and Time
* Wind sensor was offline during 13:40
- 14:35 on 14 Jun due to maintenance
Day
TIME

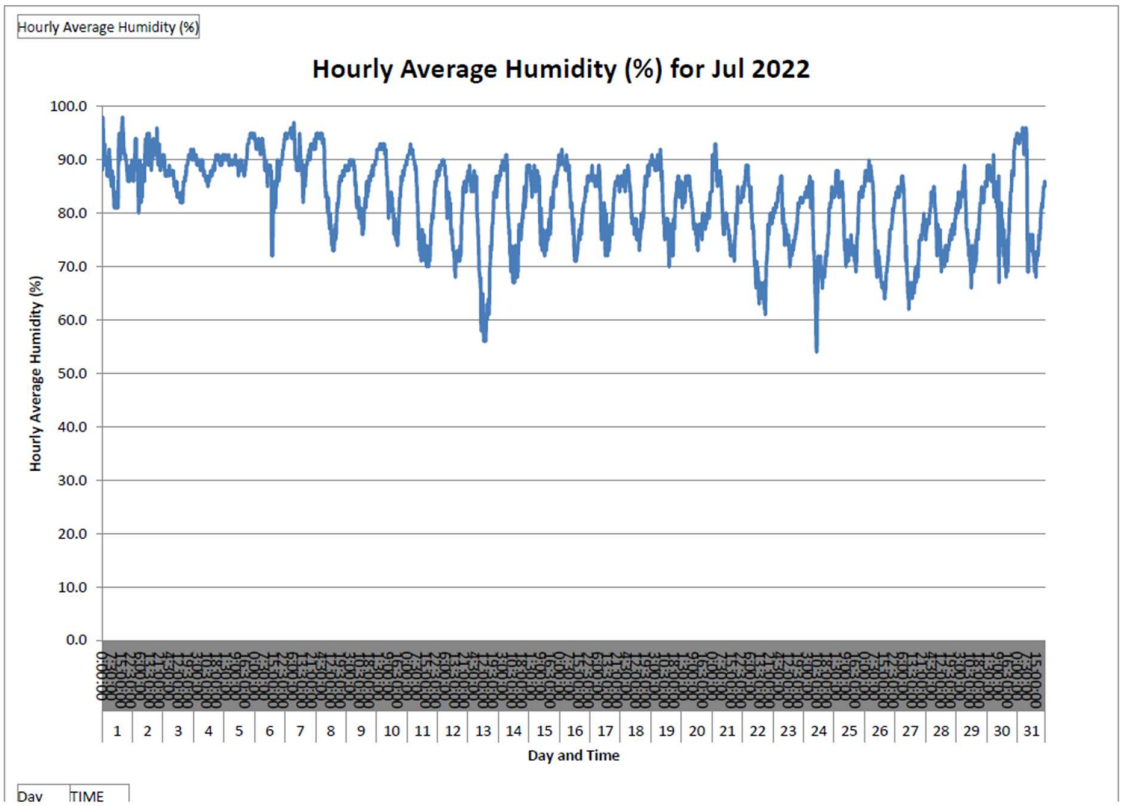

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for Jun 2022
Hourly Average Wind Direction (degree)
360
310
260
210
160
110
60
10
-40
12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM 12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
* Wind sensor was offline during
13:40 - 14:35 on 14 Jun due to maintenance
Day
TIME

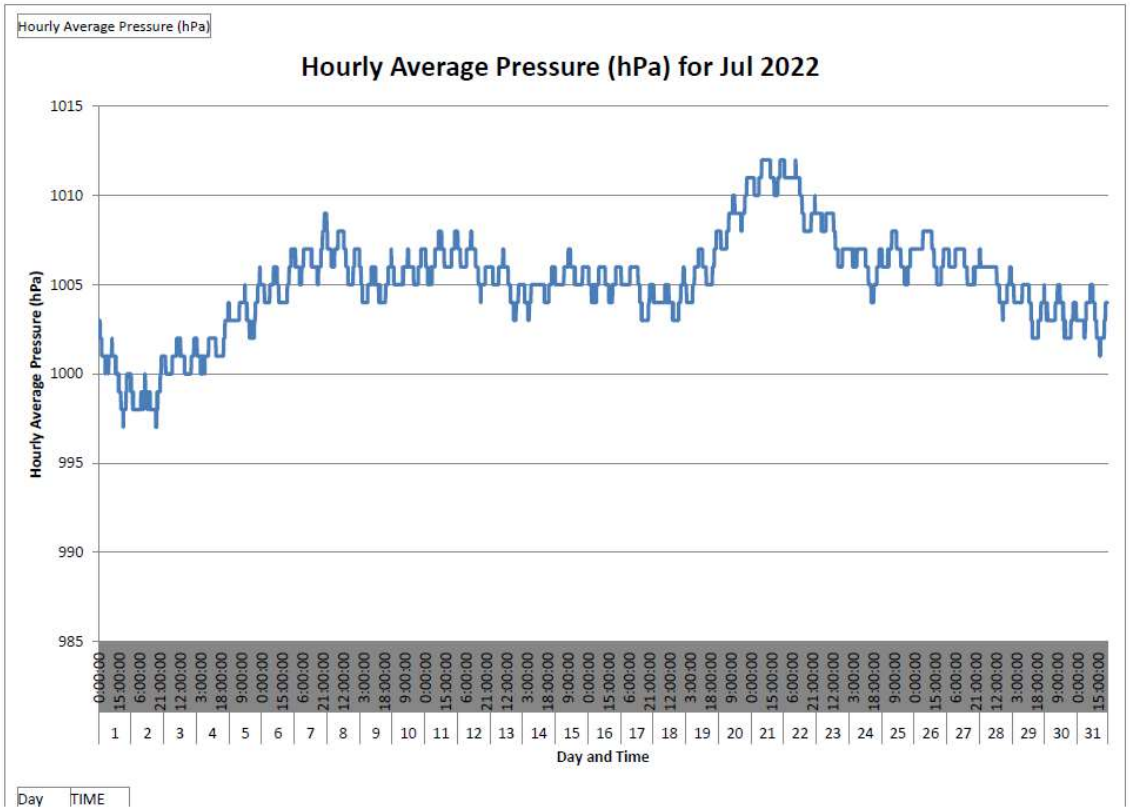

Wind Rose for Jun 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All
* Wind sensor was offline during 13:40
- 14:35 on 14 Jun due to maintenance

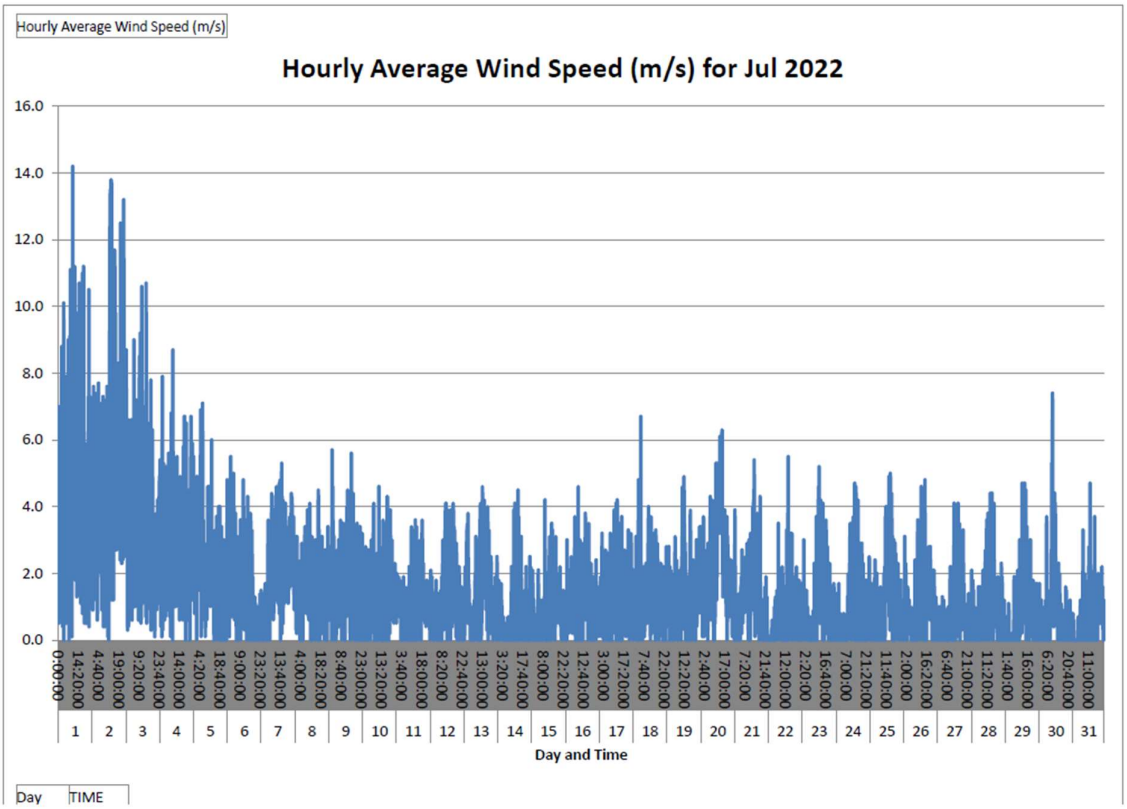

Daily and Cumulative Rainfall (mm) for Jun 2022
Rainfall (mm)
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
Daily Rainfall (mm)
Cumulative Rainfall

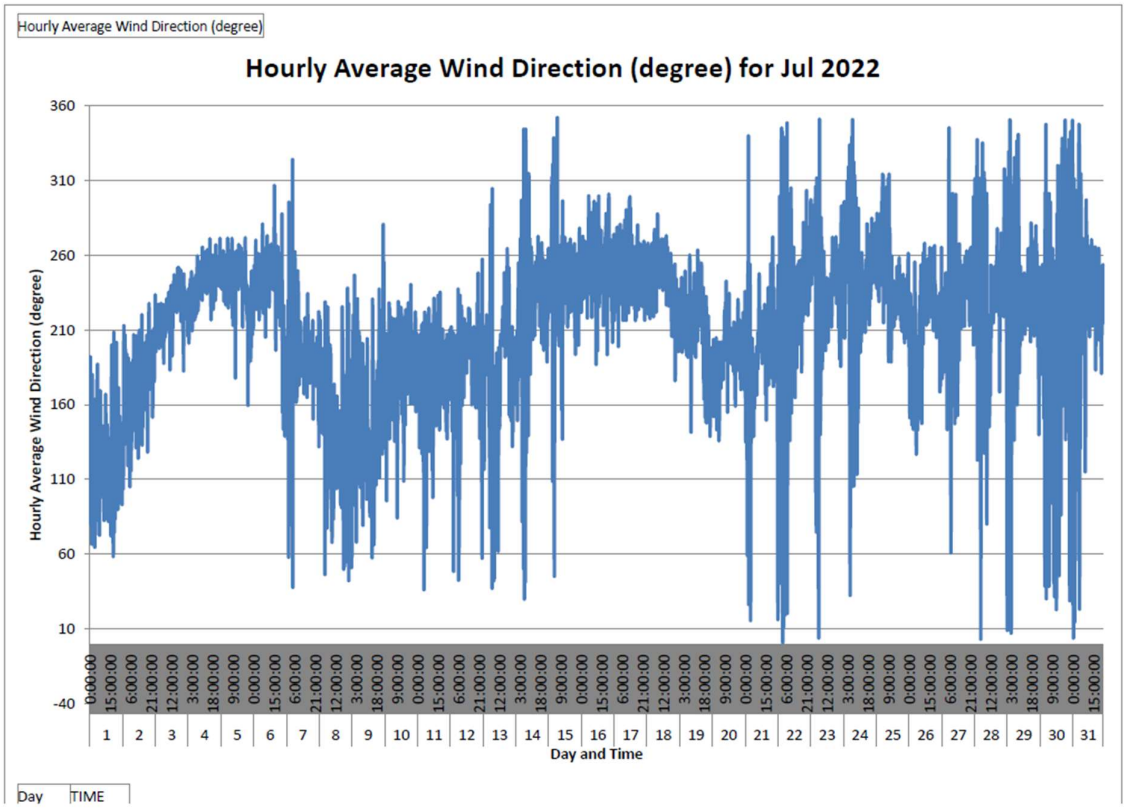
July 2022

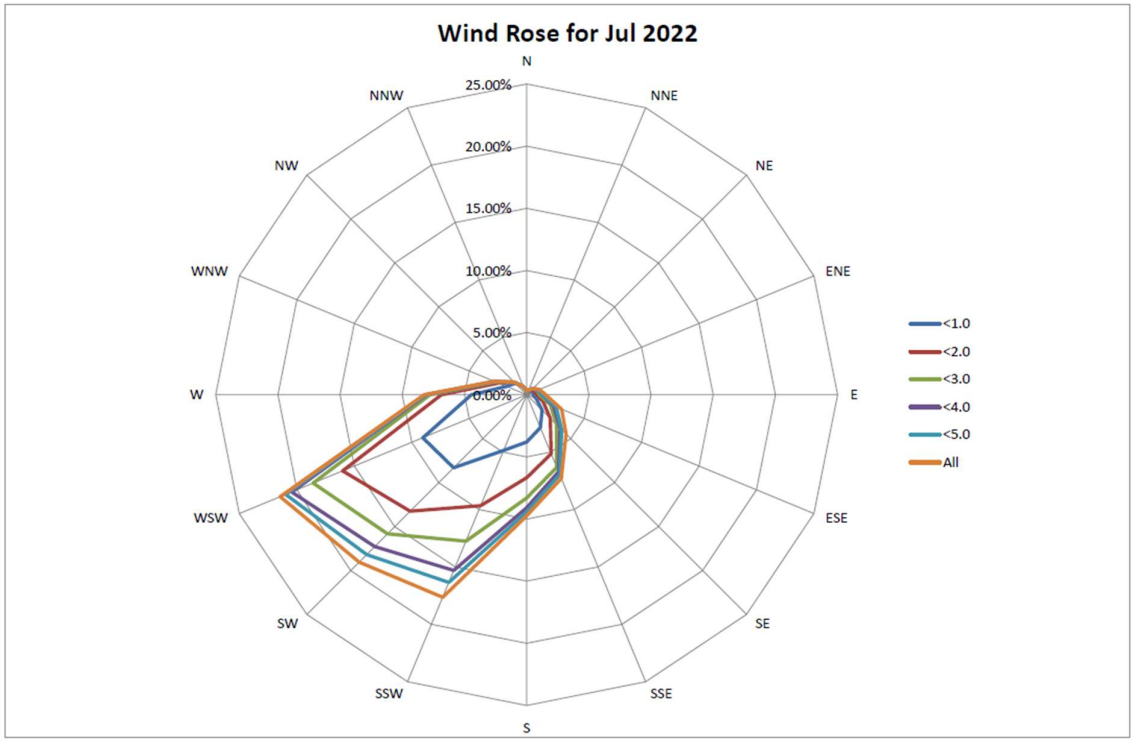

Hourly Average Temperature (°C)
Hourly Average Temperature (°C) for Jul 2022
Hourly Average Temperature (°C)
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

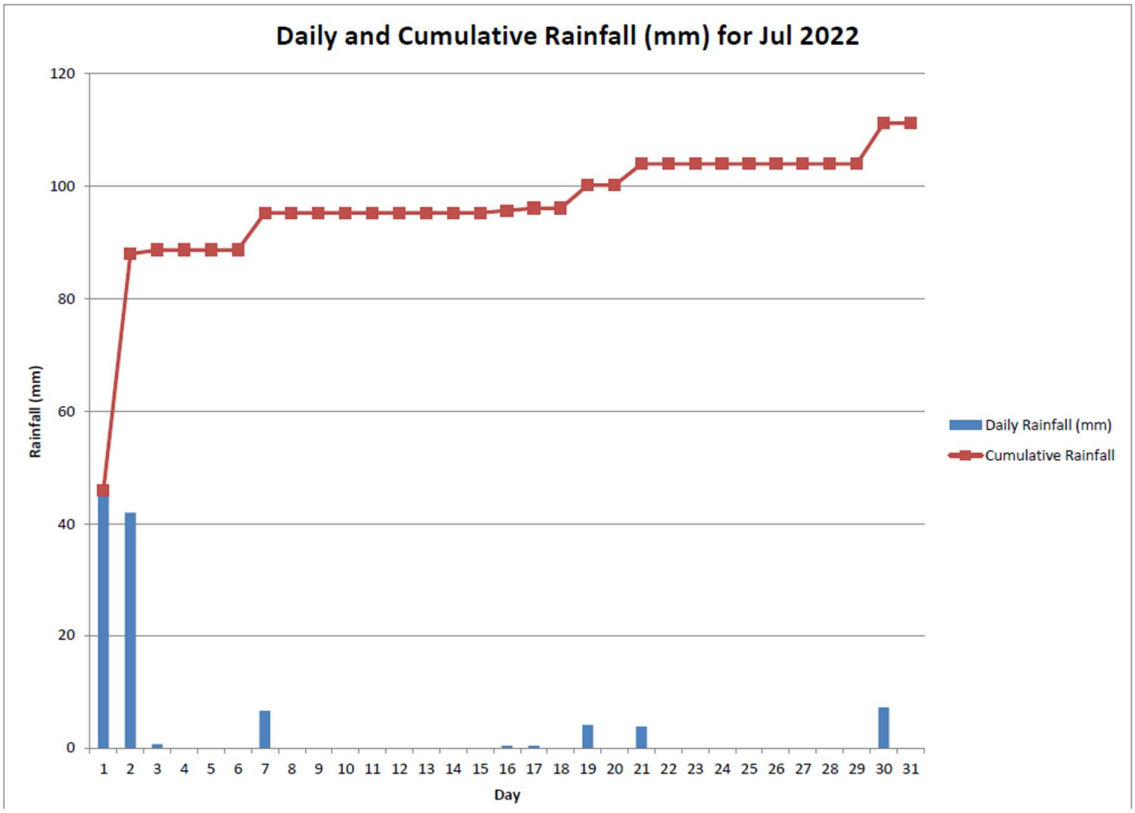

Hourly Average Humidity (%)
Hourly Average Humidity (%) for Jul 2022
Hourly Average Humidity (%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME


Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for Jul 2022
Hourly Average Pressure (hPa)
1015
1010
1005
1000
995
990
985
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

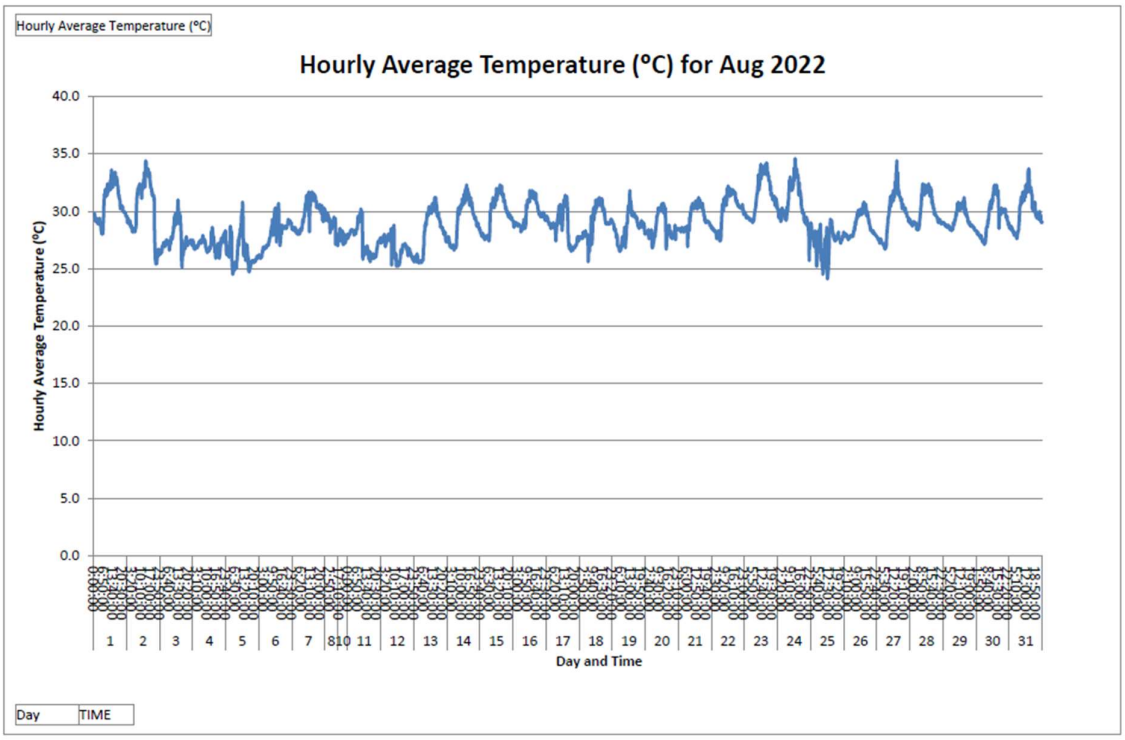

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for Jul 2022
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME


Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for Jul 2022
Hourly Average Wind Direction (degree)
360
310
260
210
160
110
60
10
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

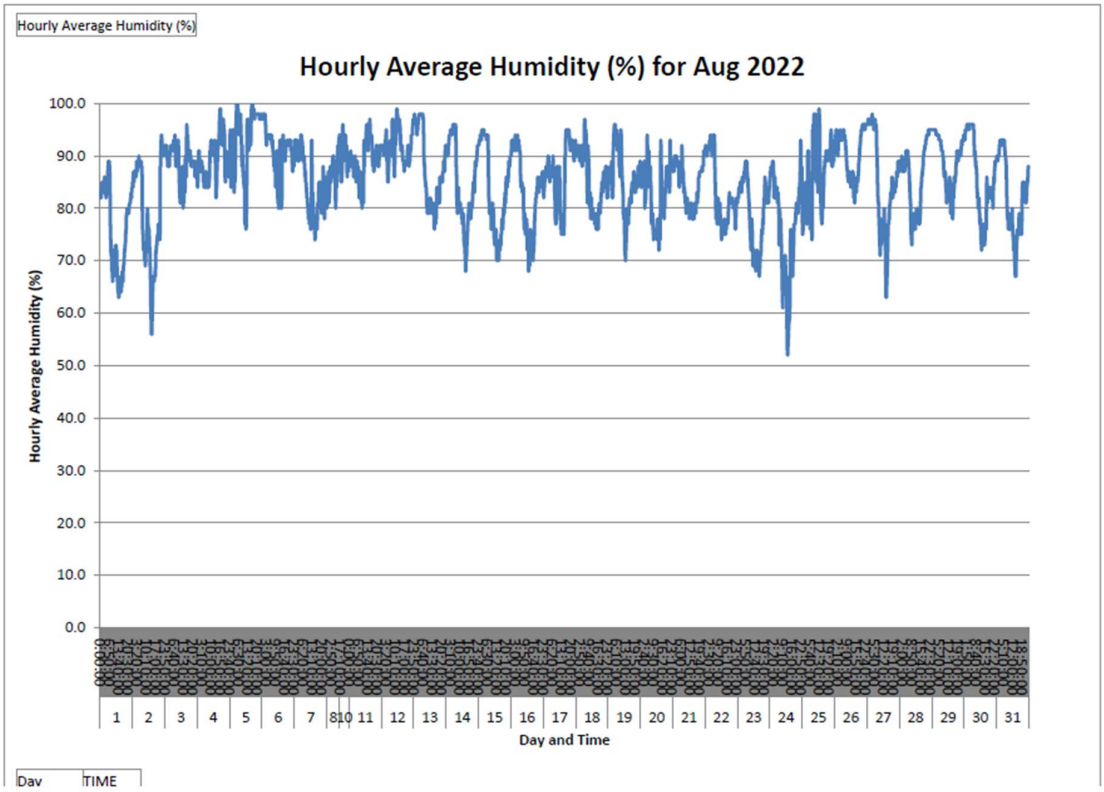

Wind Rose for Jul 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All


Daily and Cumulative Rainfall (mm) for Jul 2022
Rainfall (mm)
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
Daily Rainfall (mm)
Cumulative Rainfall

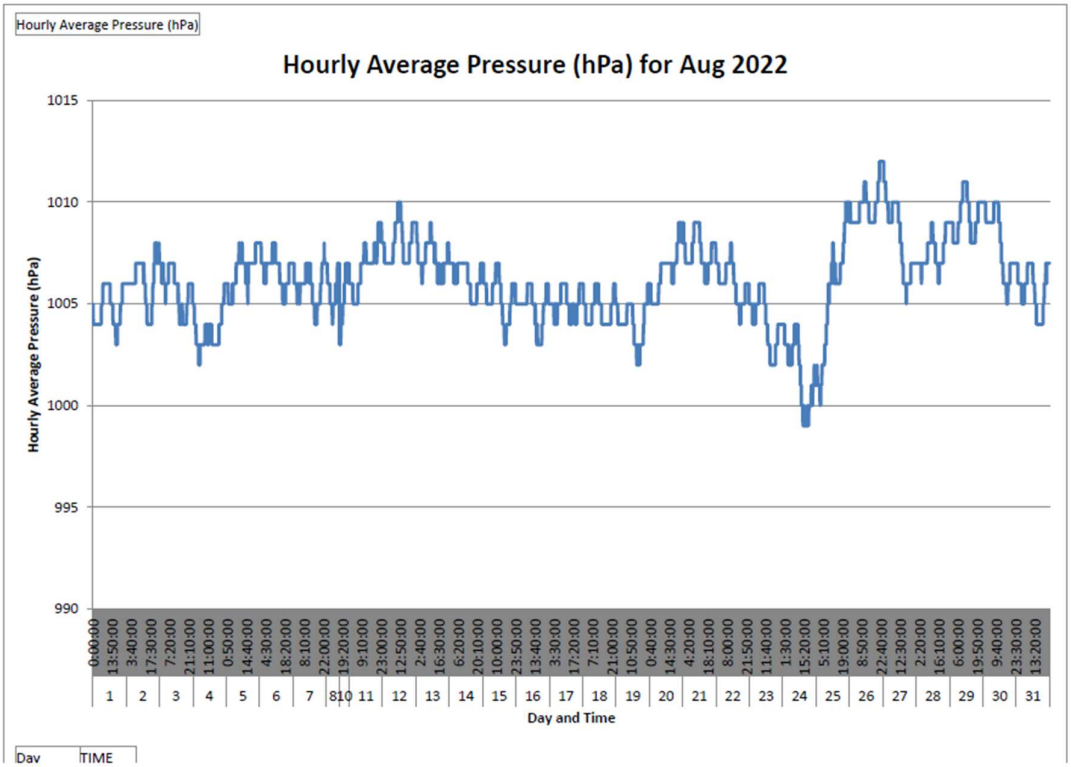
August 2022



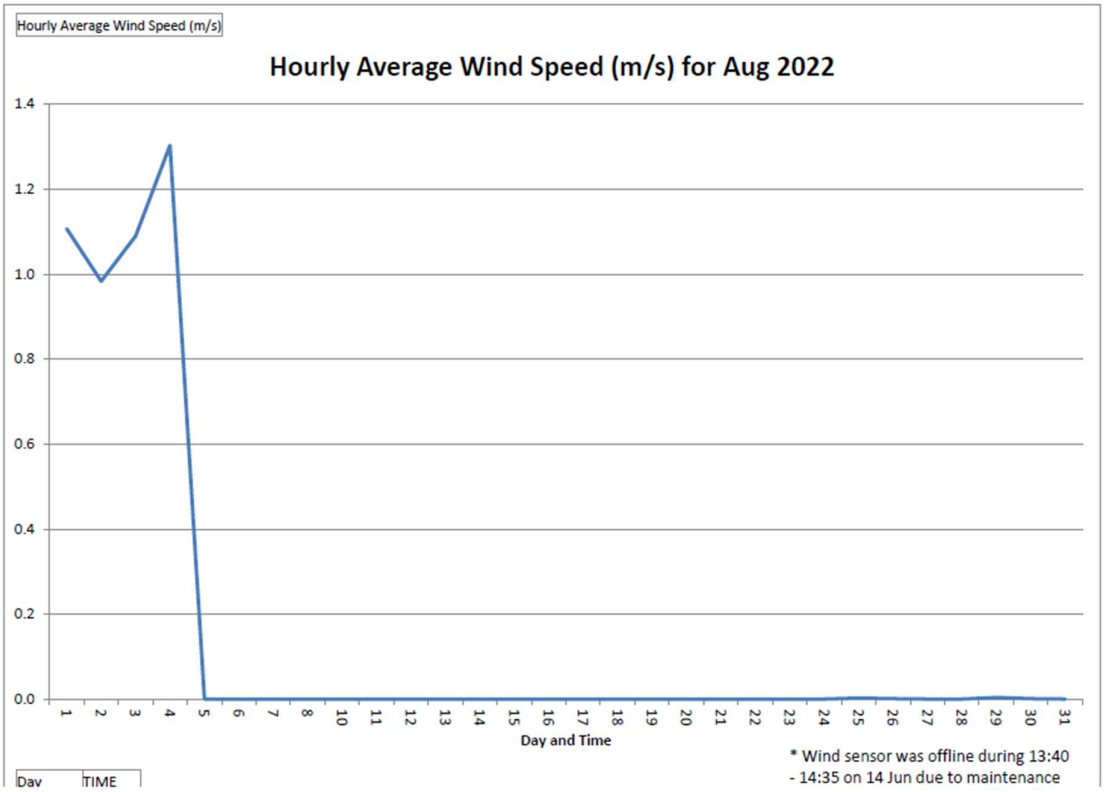
*Remark: Due to the met station system failure on 8 Aug 2022, the data from 8 Aug 2022 - 09:20 to 10 Aug 2022 - 17:00 has been lost.



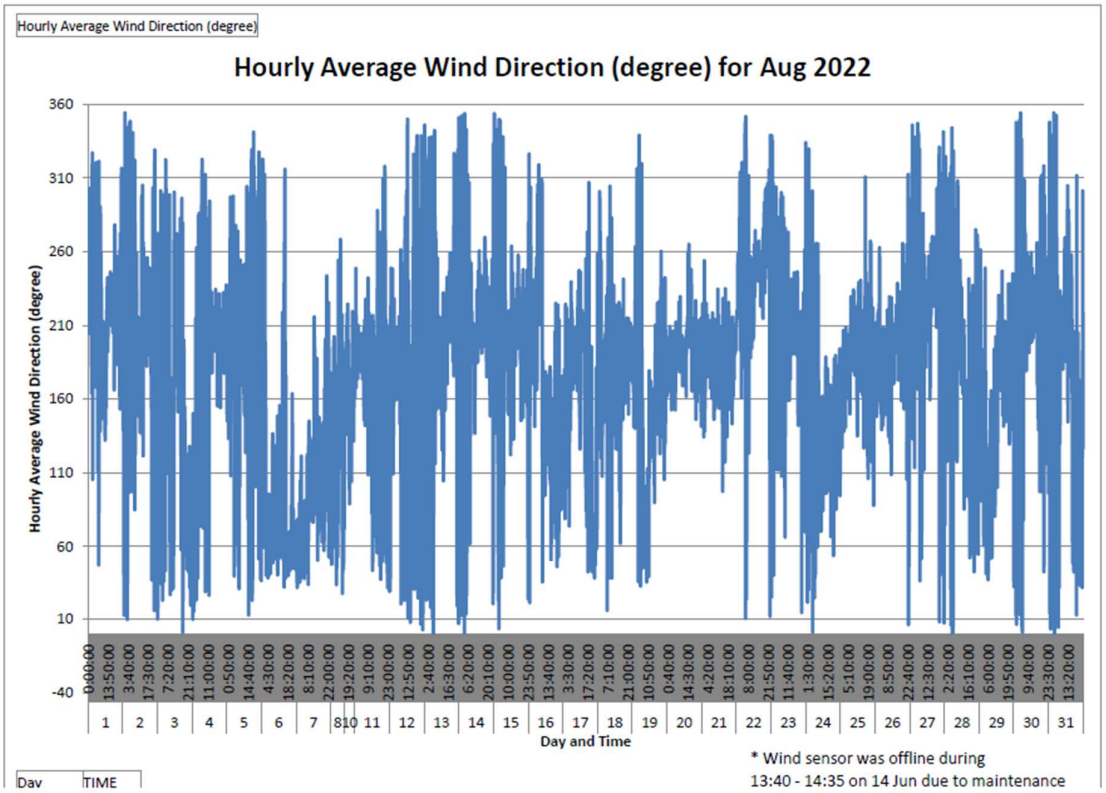
*Remark: Due to the met station system failure on 8 Aug 2022, the data from 8 Aug 2022 - 09:20 to 10 Aug 2022 - 17:00 has been lost.



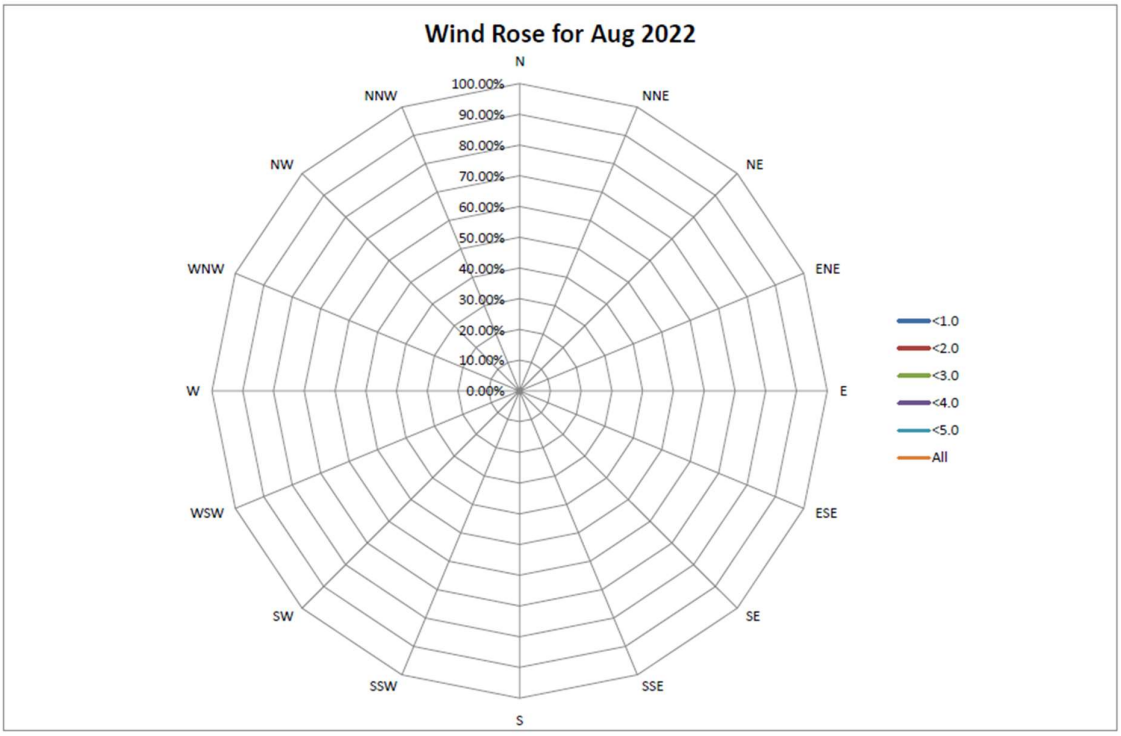
*Remark: Due to the met station system failure on 8 Aug 2022, the data from 8 Aug 2022 - 09:20 to 10 Aug 2022 - 17:00 has been lost.



*Remark: Due to the Wind Speed Sensor has been disconnected on 4 Aug 2022, data loss in Aug 2022.
Due to the met station system failure on 8 Aug 2022, the data from 8 Aug 2022 - 09:20 to 10 Aug 2022 - 17:00 has been lost.
- Data from 5 Aug 2022 to 31 Aug 2022 is pending from Hong Kong Observatory and to be supplemented in subsequent version.

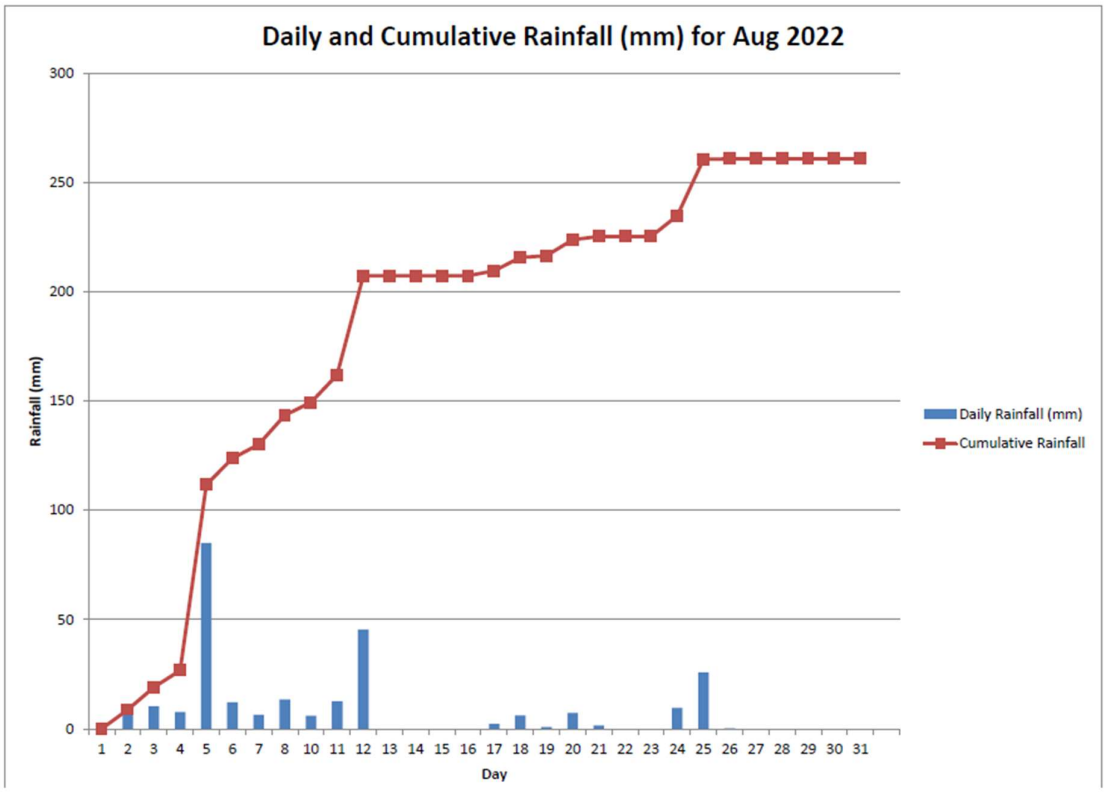


*Remark: Due to the met station system failure on 8 Aug 2022, the data from 8 Aug 2022 - 09:20 to 10 Aug 2022 - 17:00 has been lost.



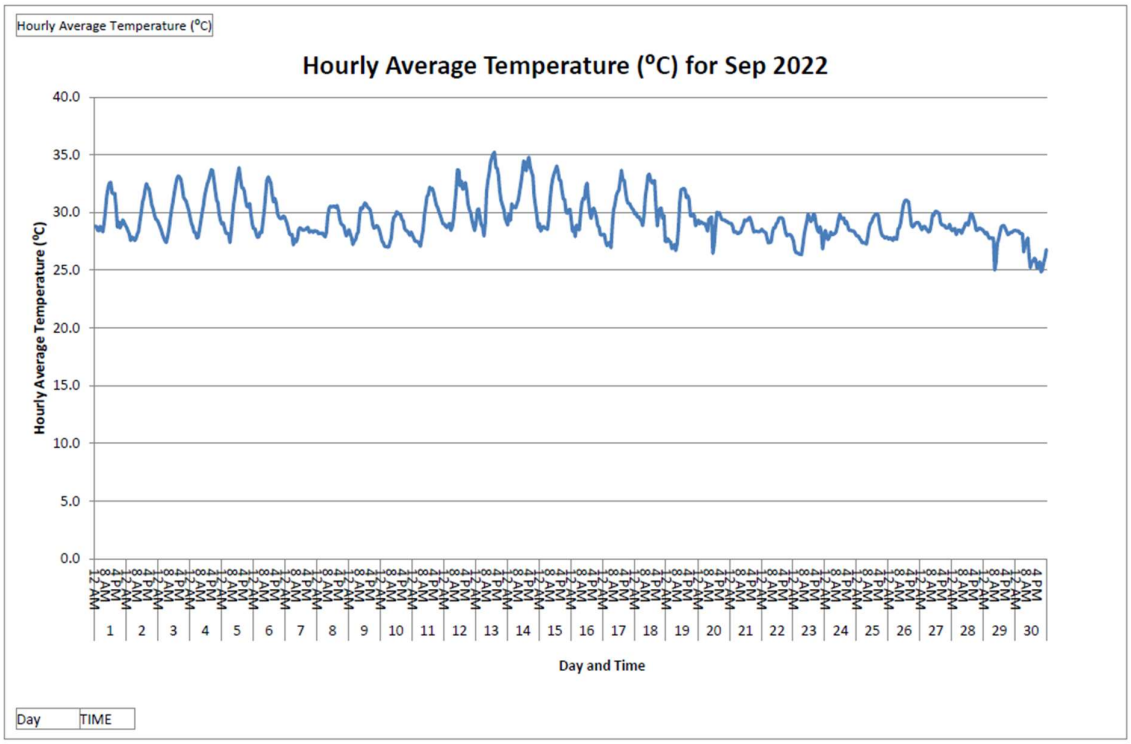
*Remark: Due to the Wind Speed Sensor has been disconnected on 4 Aug 2022, data loss in Aug 2022.

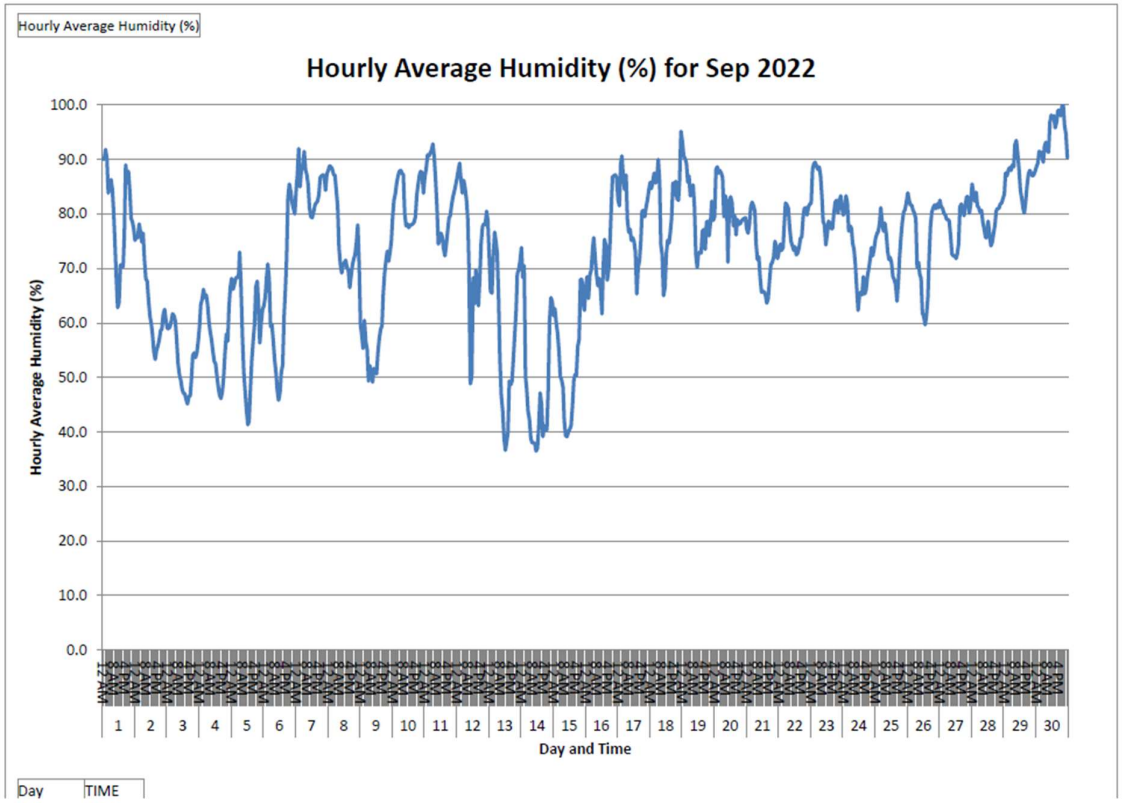
- Data from 5 Aug 2022 to 31 Aug 2022 is pending from Hong Kong Observatory and to be supplemented in subsequent version.

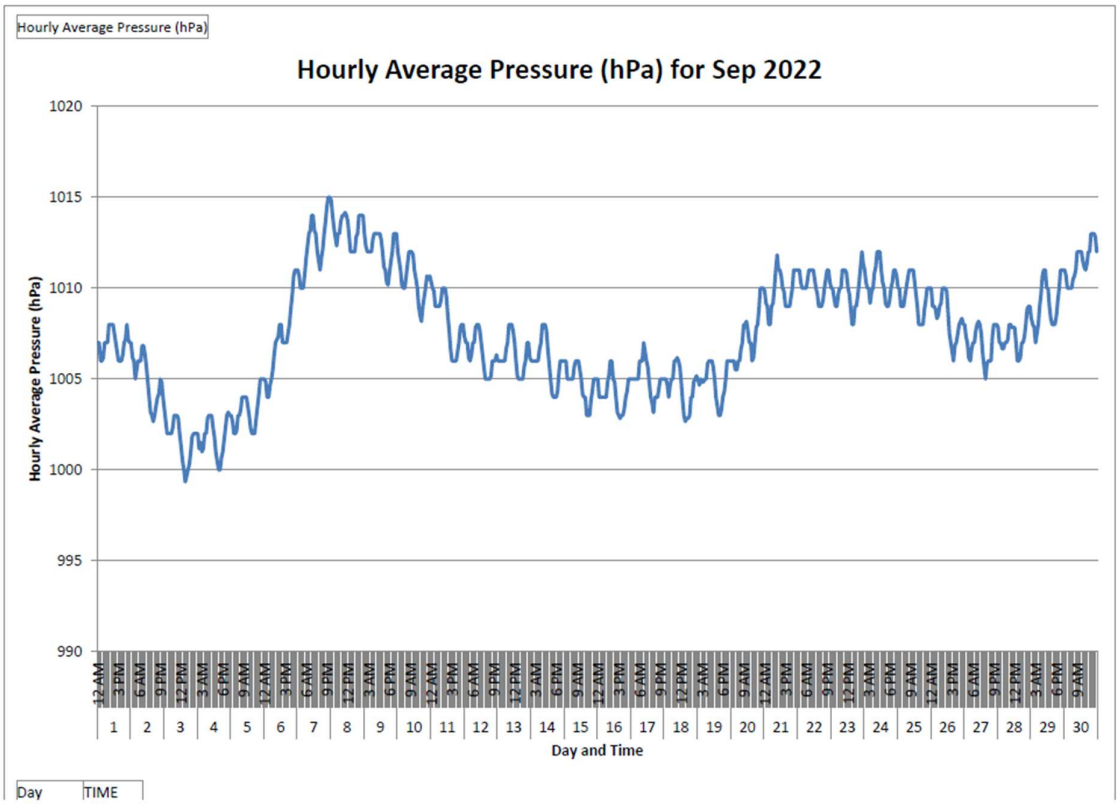


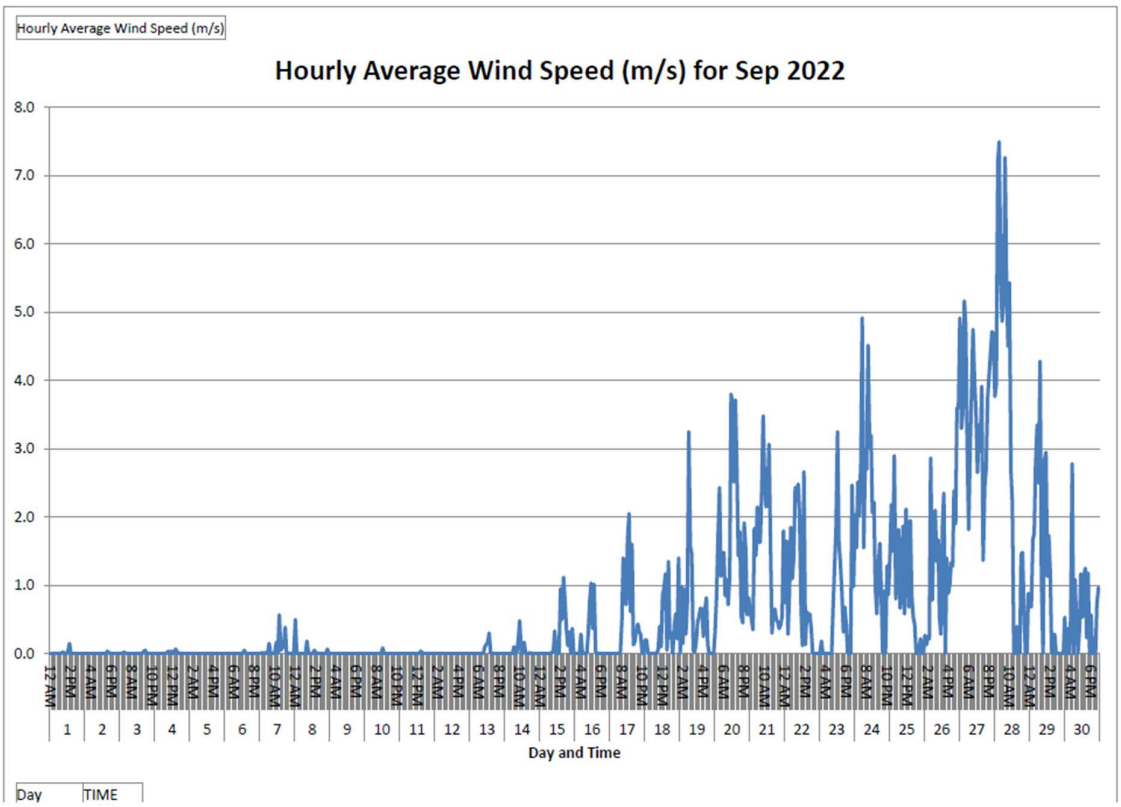
*Remark: Due to the met station system failure on 8 Aug 2022, the data from 8 Aug 2022 - 09:20 to 10 Aug 2022 - 17:00 has been lost.

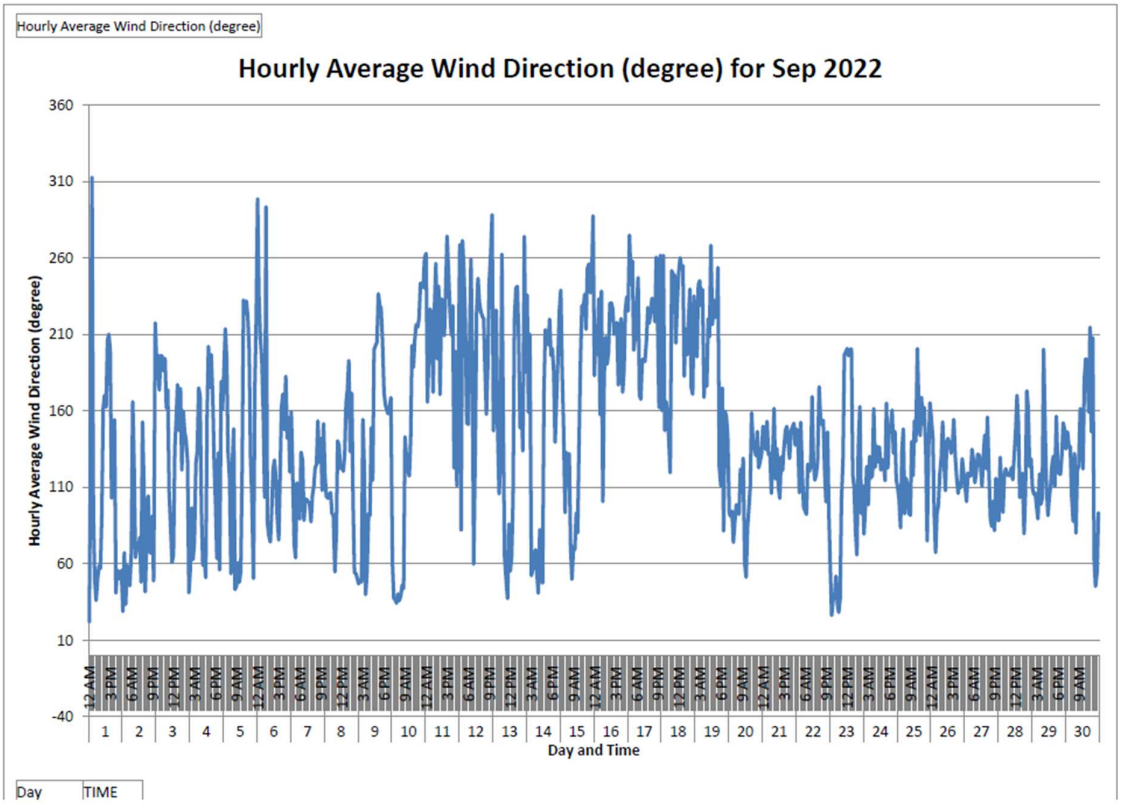
September 2022

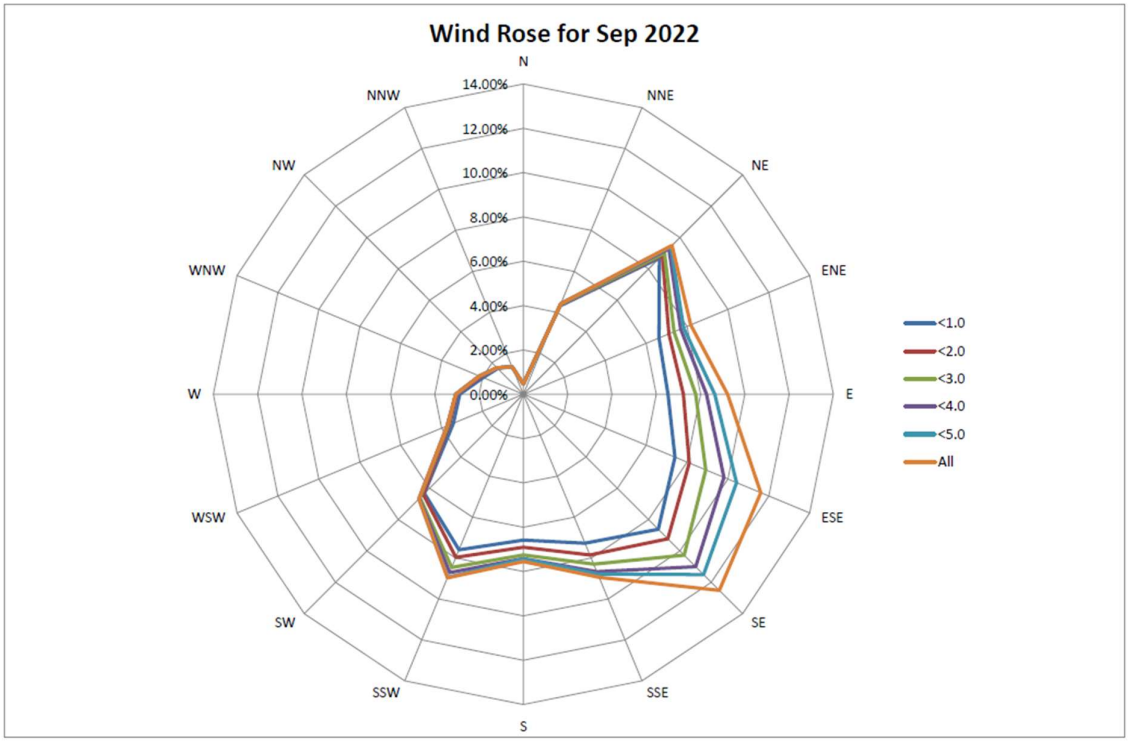


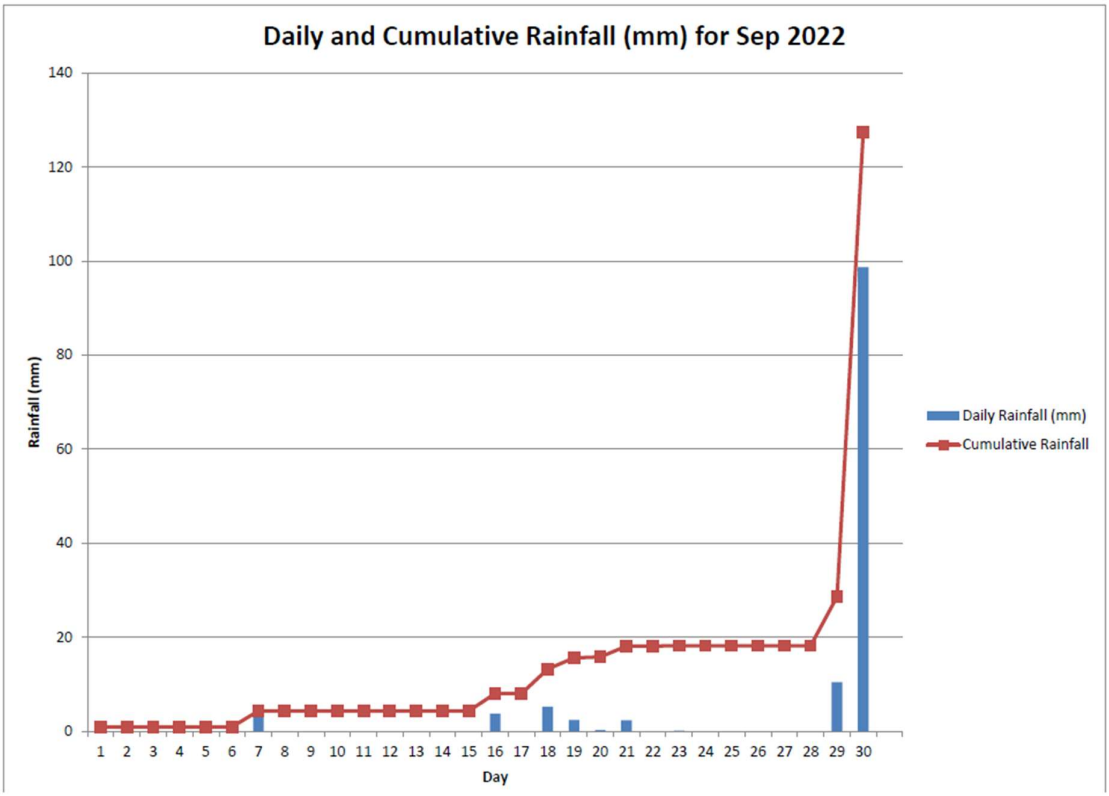



Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for Sep 2022
Hourly Average Pressure (hPa)
1020
1015
1010
1005
1000
995
990
Day and Time
Day
TIME

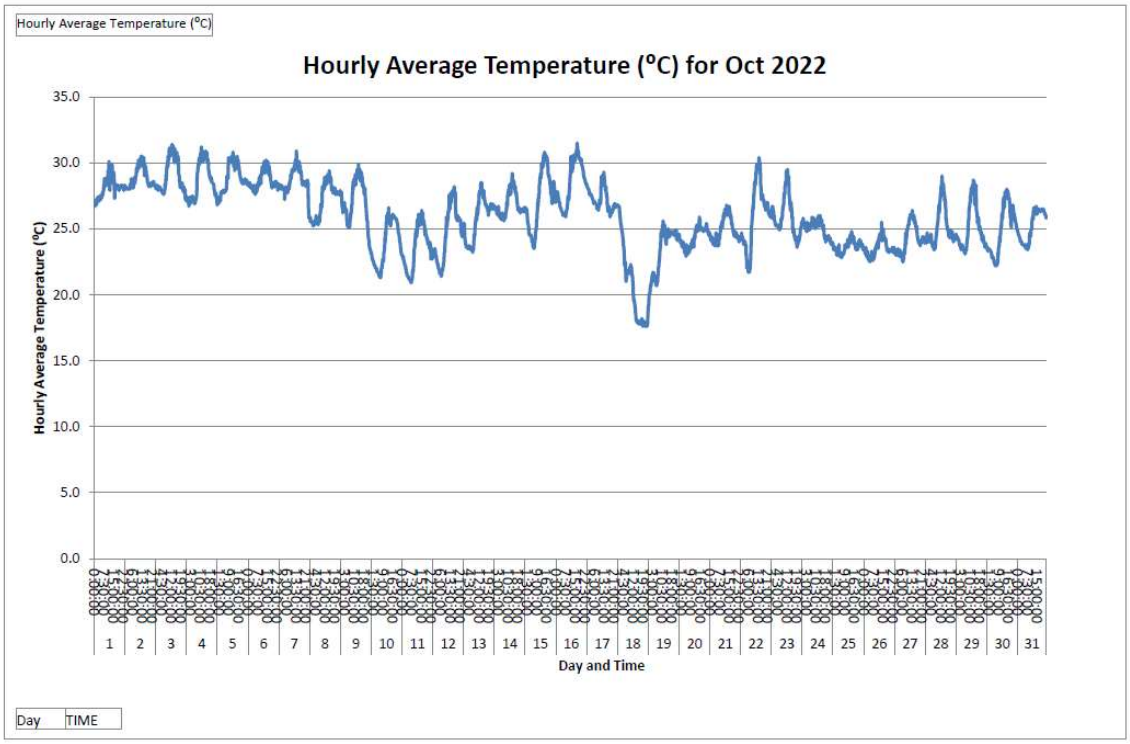

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for Sep 2022
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Day and Time
Day
TIME

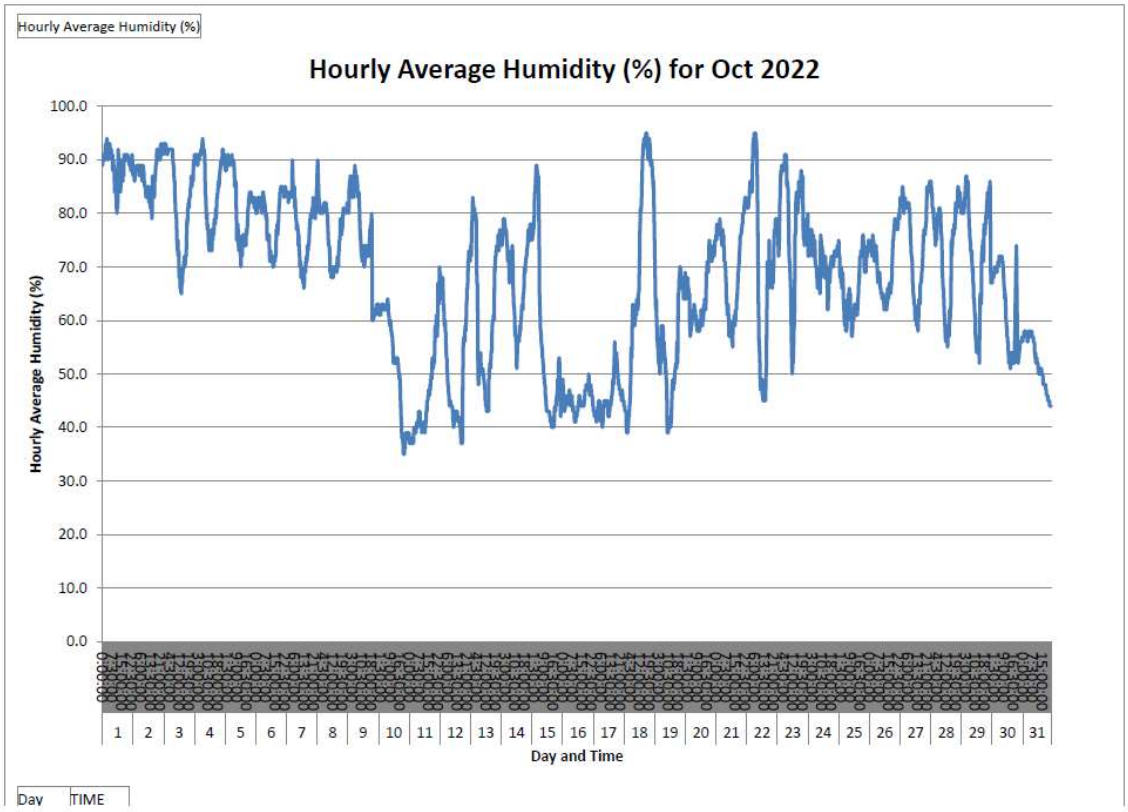

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for Sep 2022
Hourly Average Wind Direction (degree)
360
310
260
210
160
110
60
10
-40
12 AM 3 PM 6 AM 9 PM 12 PM 3 AM 6 PM 9 AM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
Day
TIME

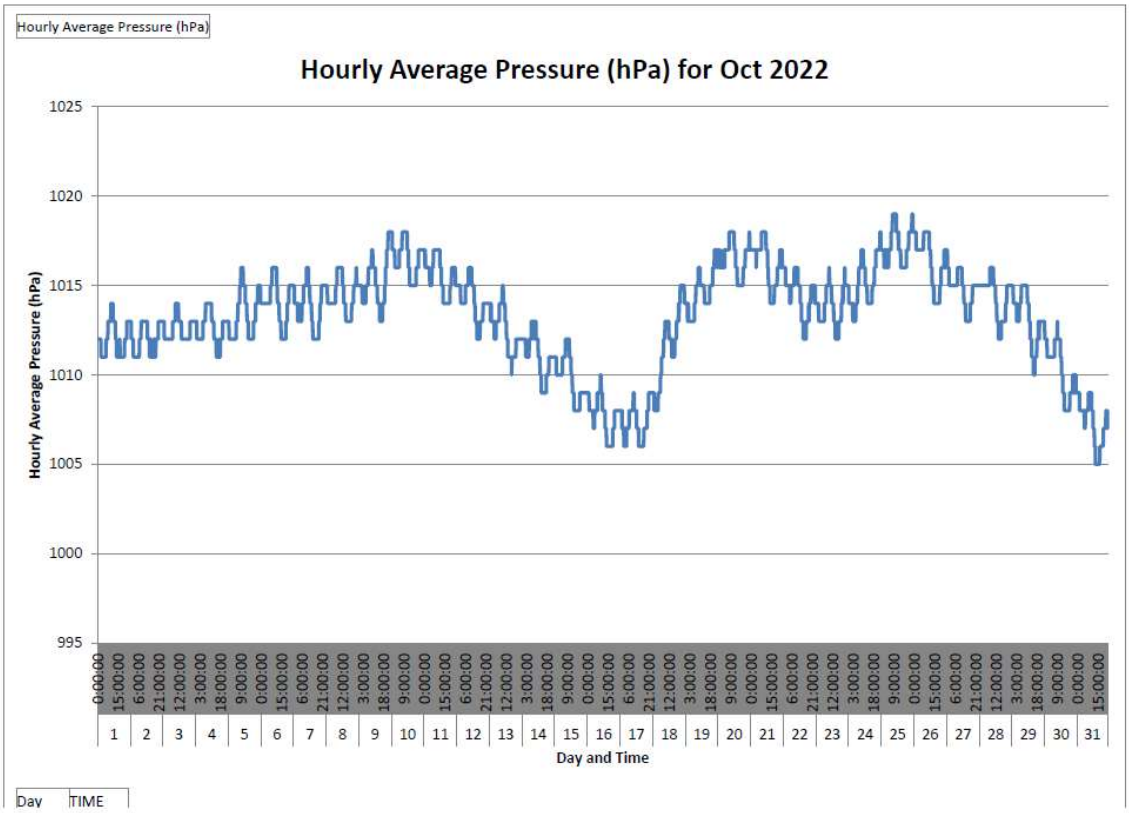

Wind Rose for Sep 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All

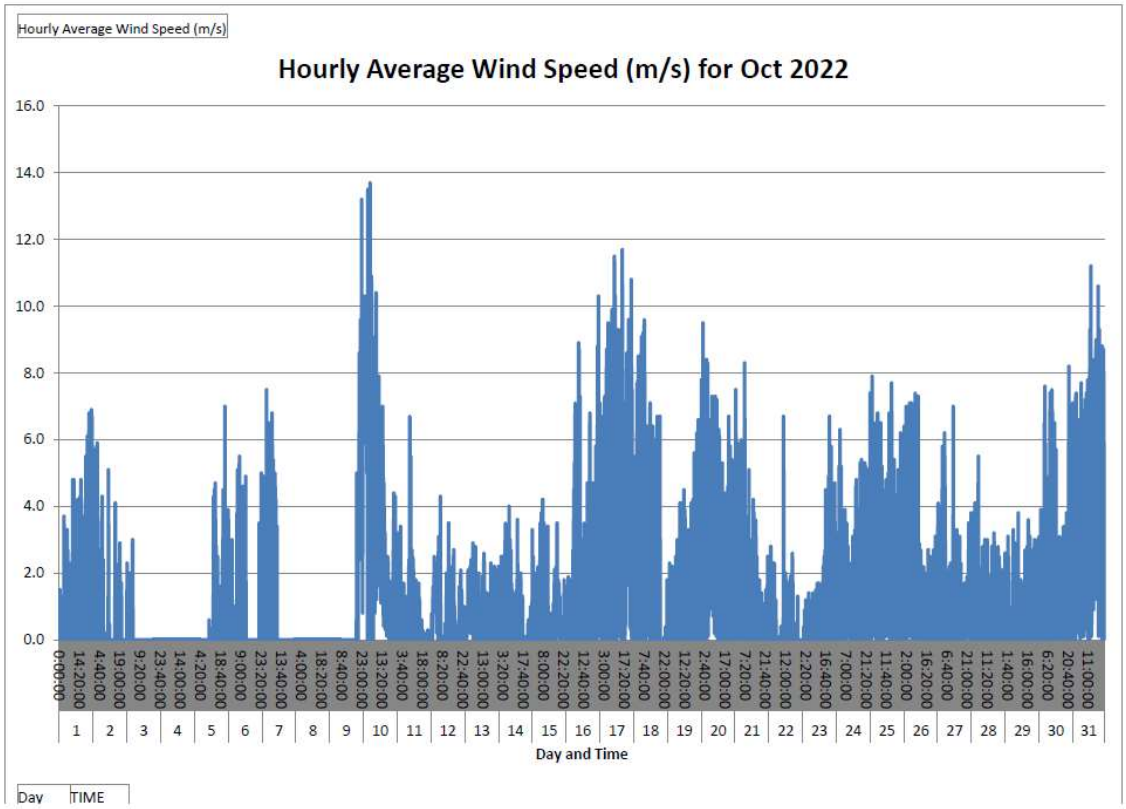

Daily and Cumulative Rainfall (mm) for Sep 2022
Rainfall (mm)
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
Daily Rainfall (mm)
Cumulative Rainfall

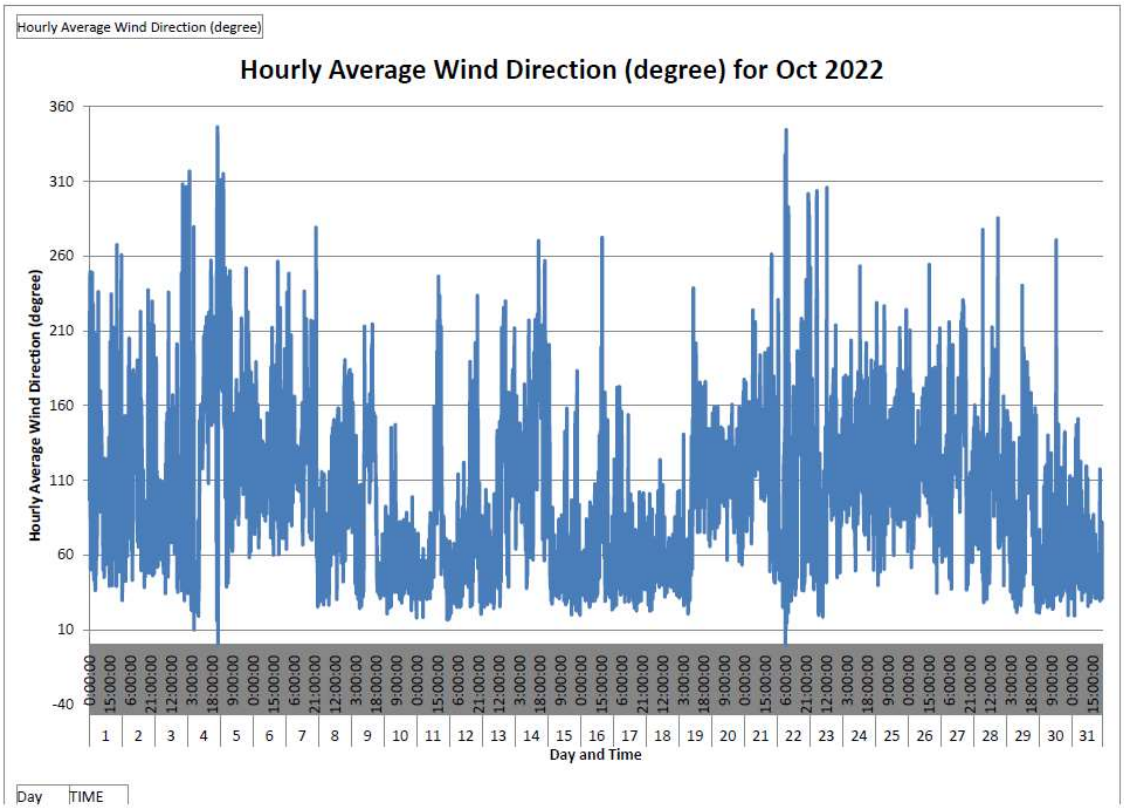
October 2022

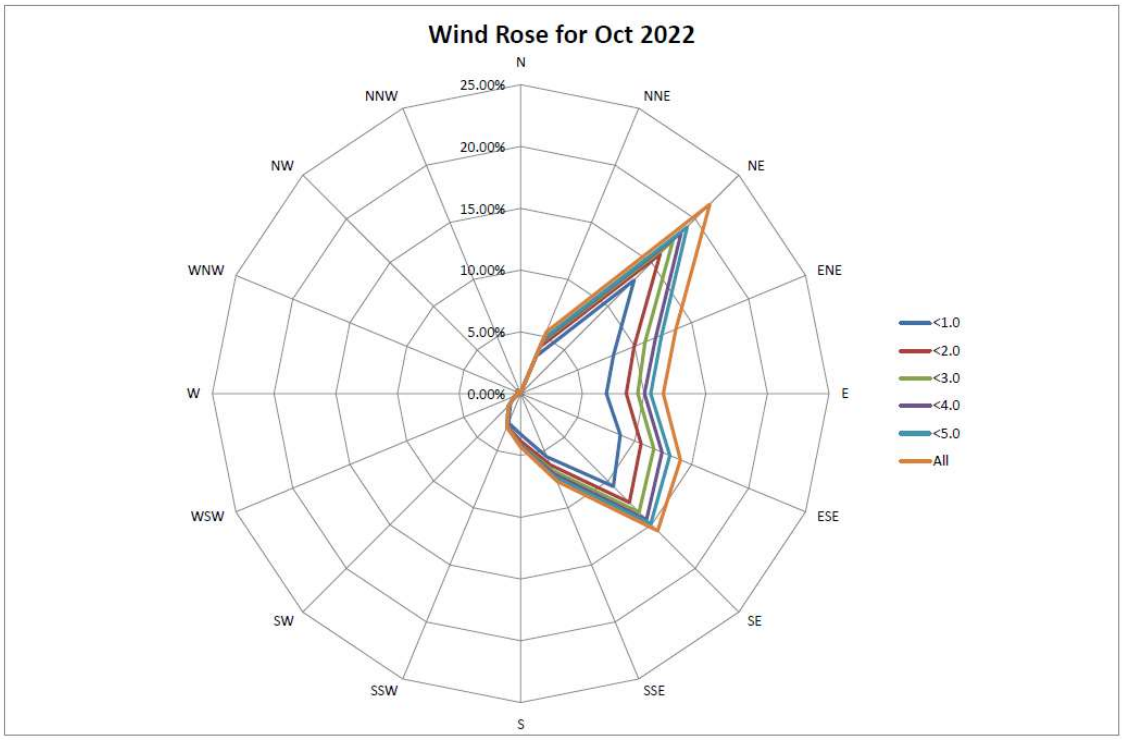


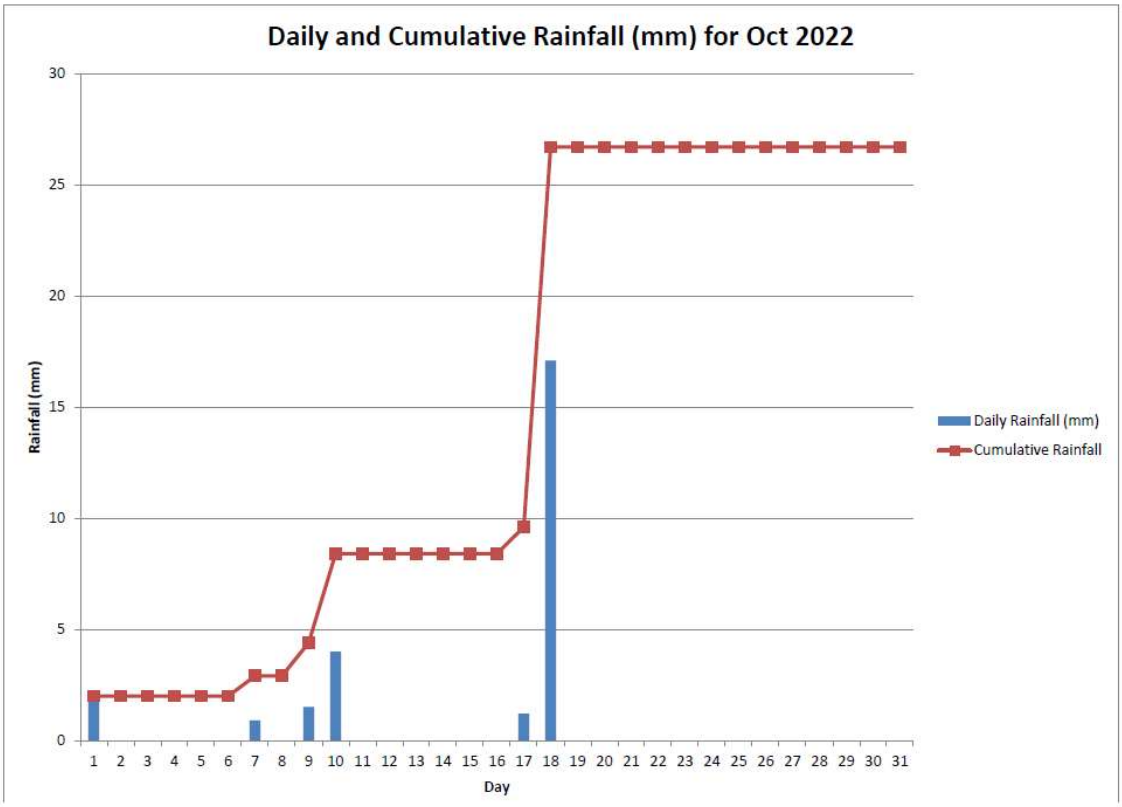



Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for Oct 2022
Hourly Average Pressure (hPa)
1025
1020
1015
1010
1005
1000
995
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

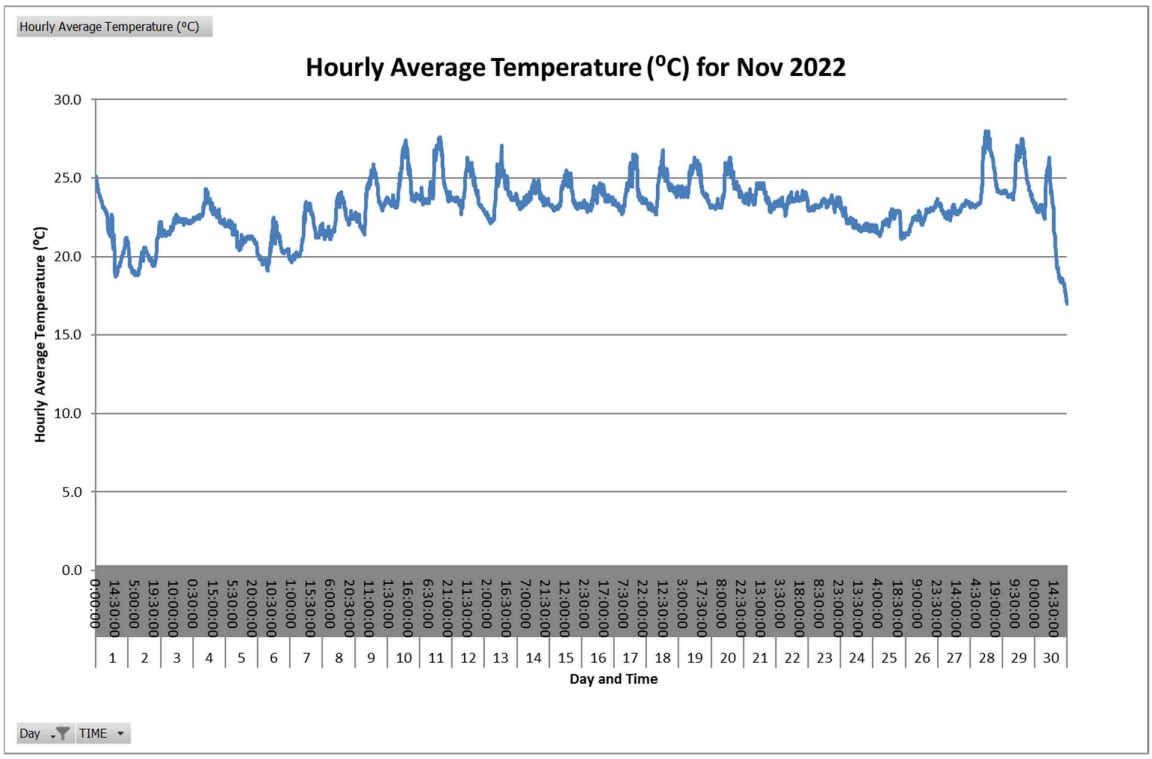

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for Oct 2022
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

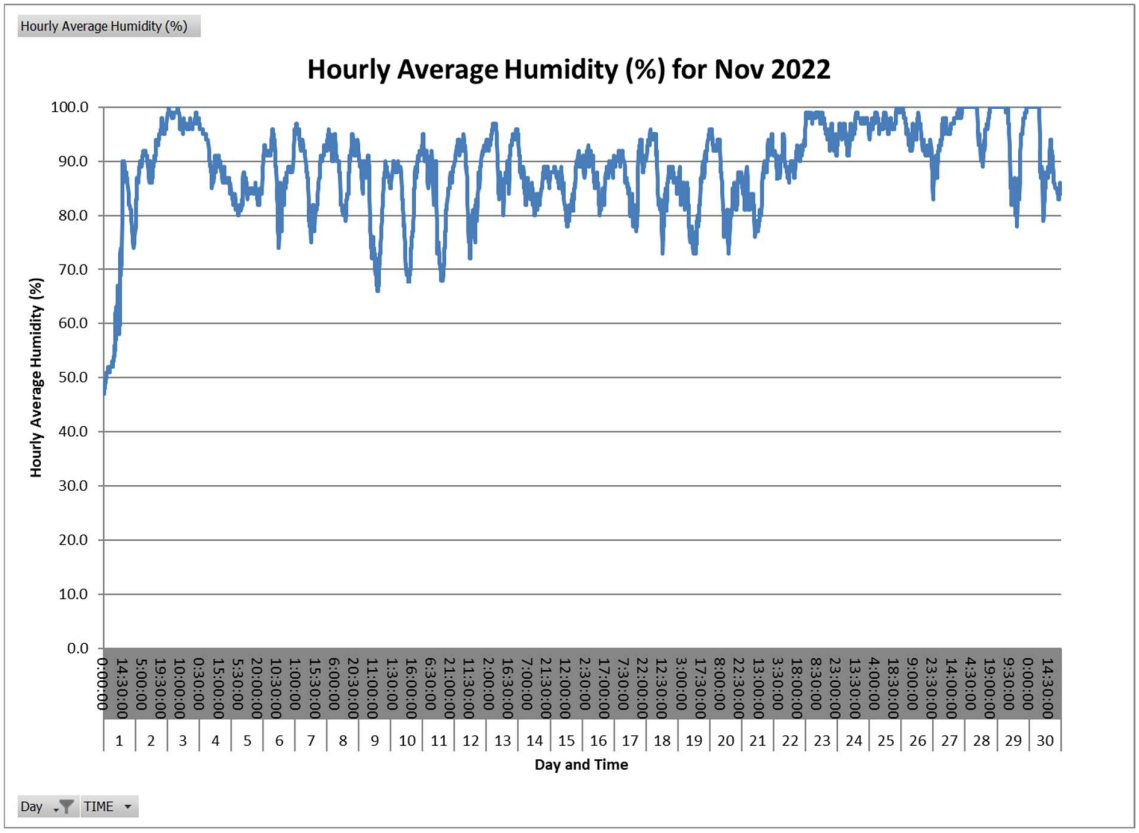

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for Oct 2022
Hourly Average Wind Direction (degree)
360
310
260
210
160
110
60
10
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME

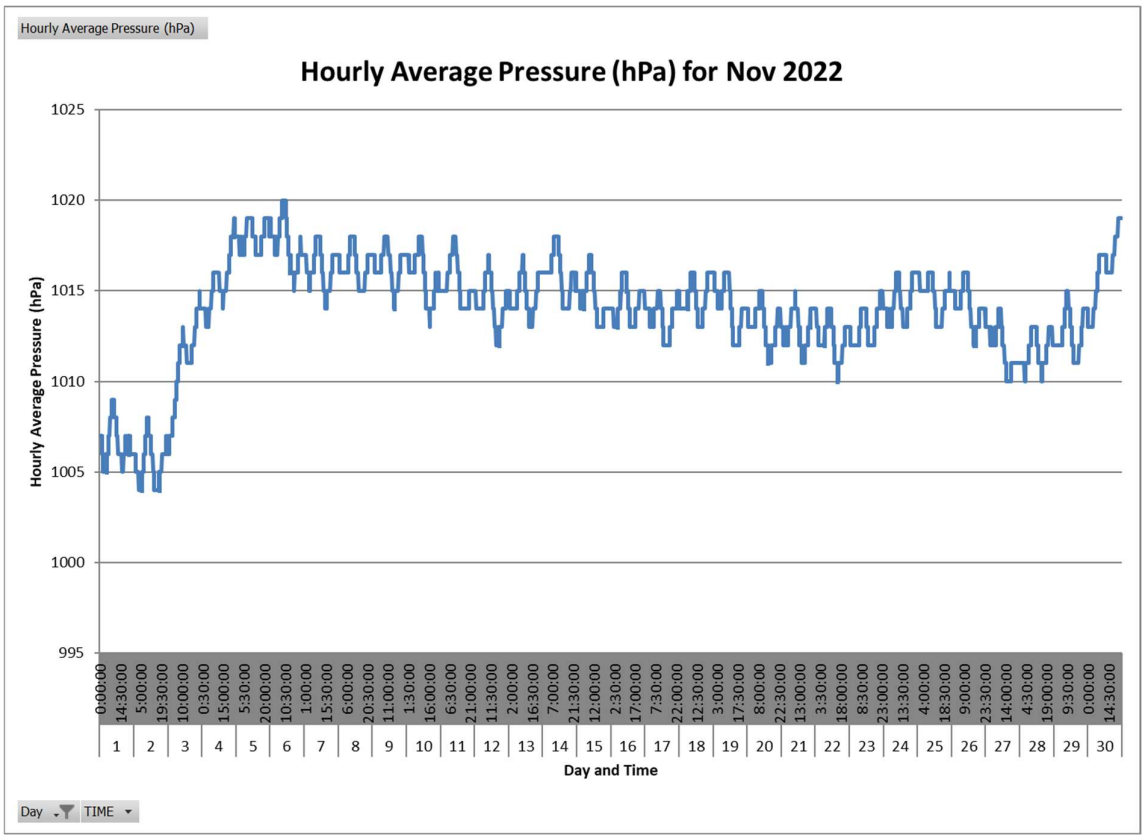

Wind Rose for Oct 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All

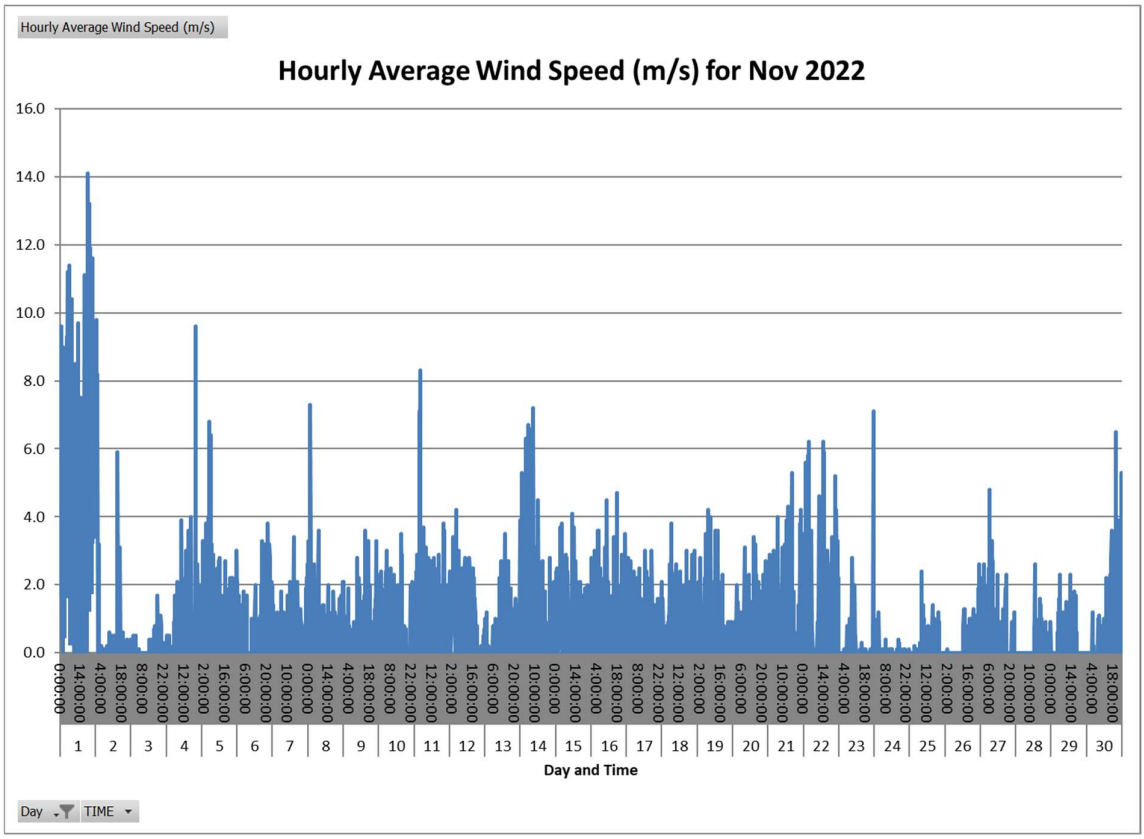

Daily and Cumulative Rainfall (mm) for Oct 2022
Rainfall (mm)
Day
Daily Rainfall (mm)
Cumulative Rainfall

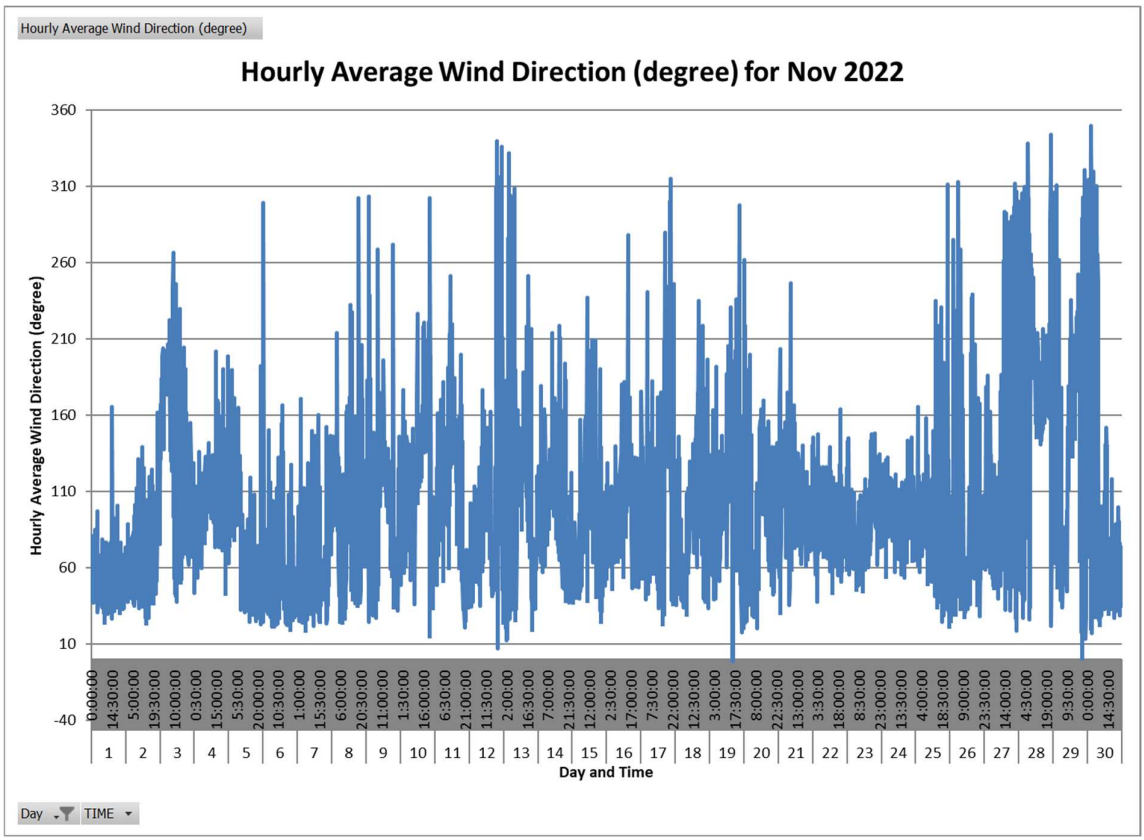
November 2022

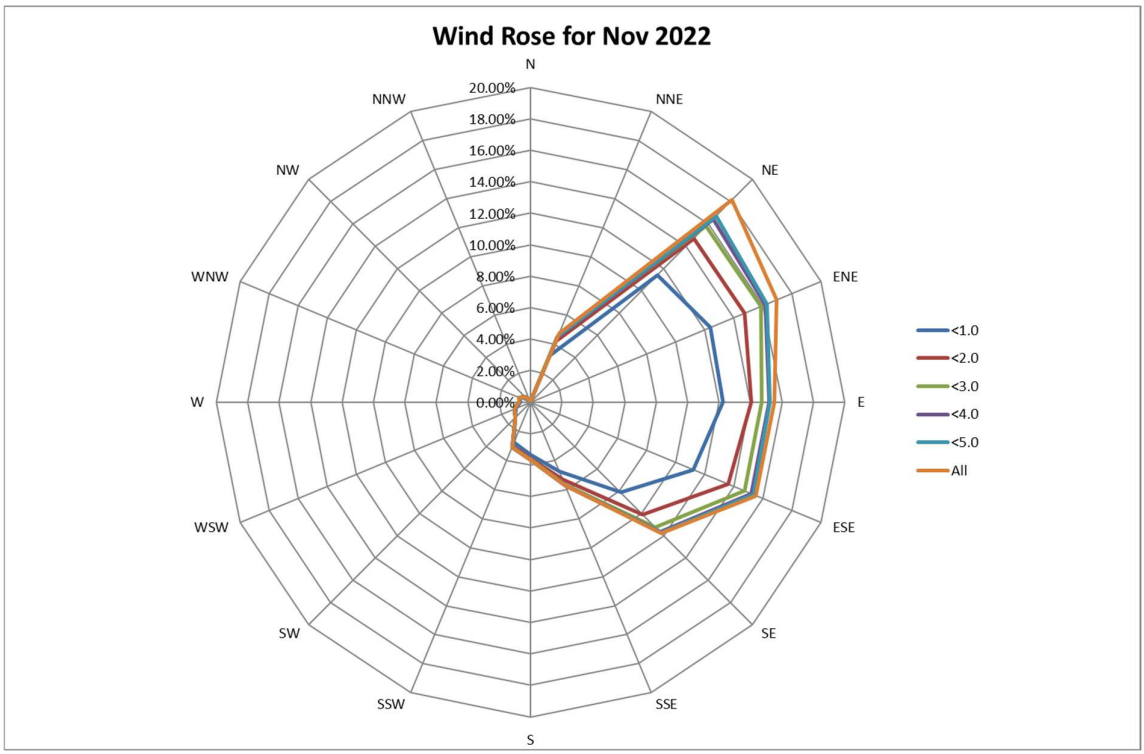


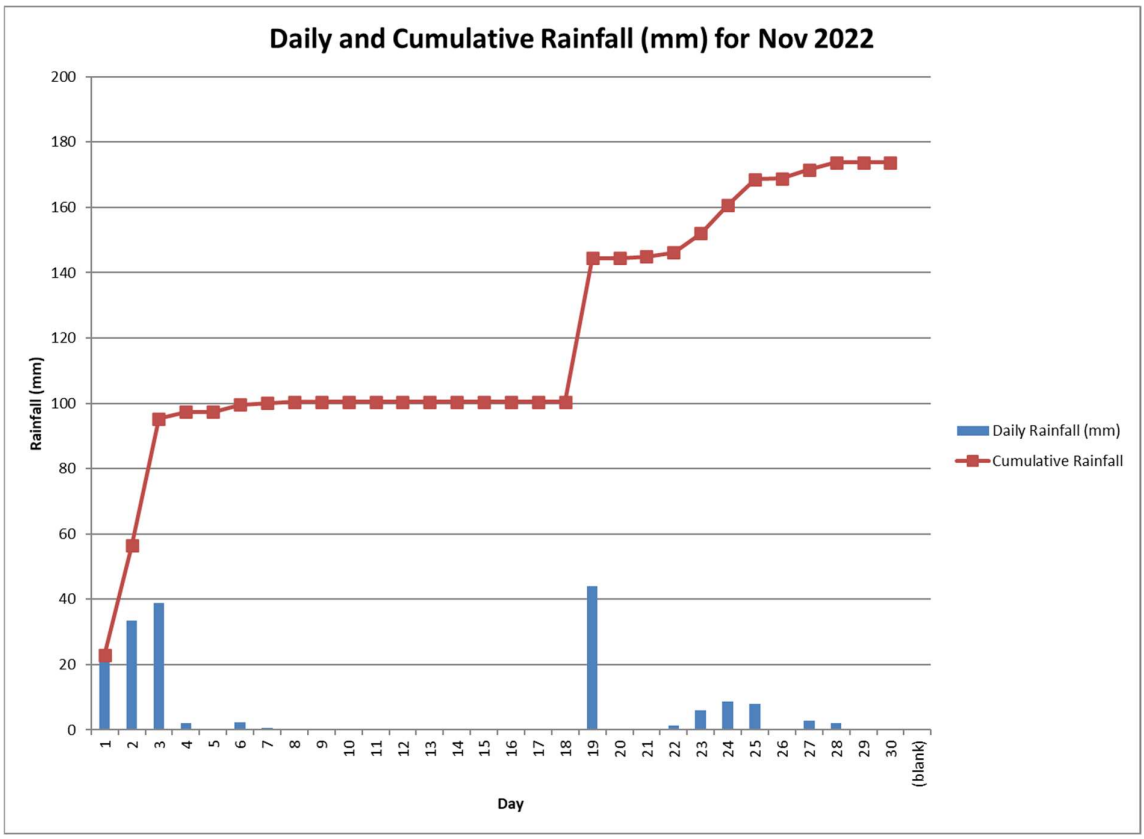



Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for Nov 2022
Hourly Average Pressure (hPa)
1025
1020
1015
1010
1005
1000
995
Day and Time
Day
TIME

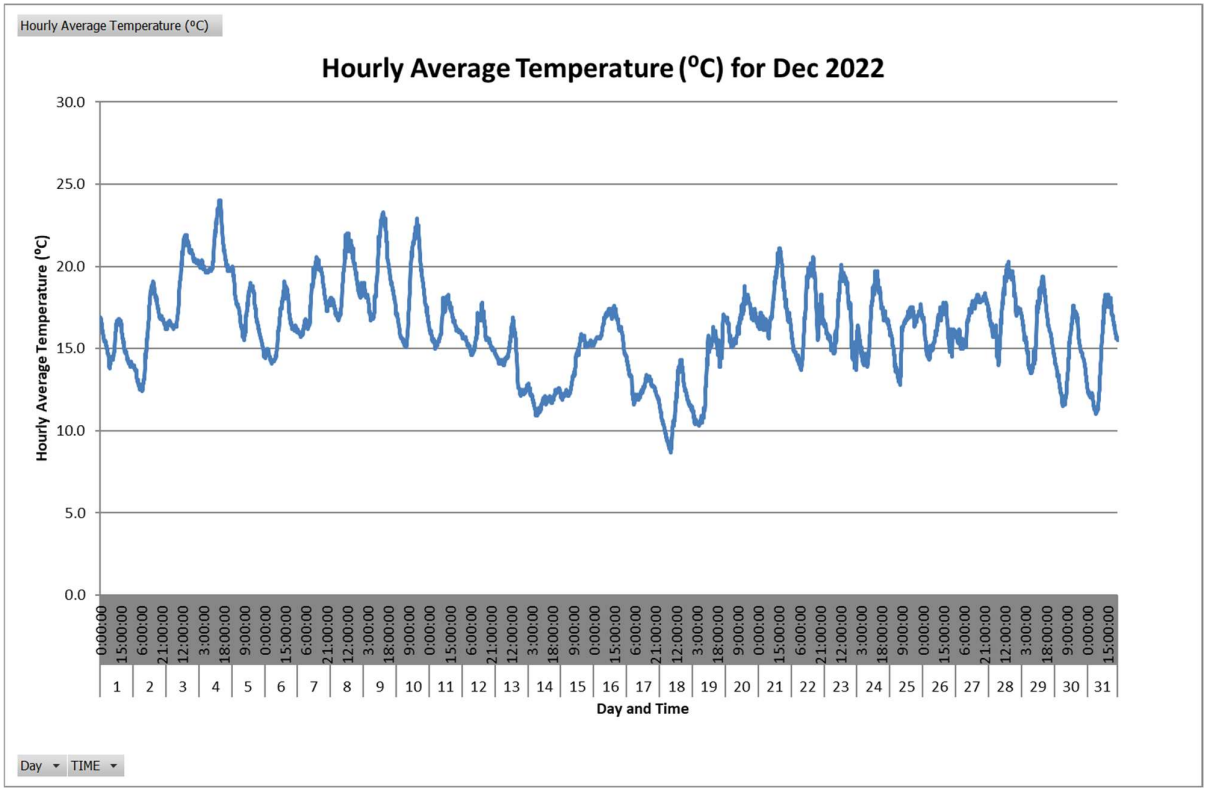

Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for Nov 2022
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Day and Time
Day
TIME

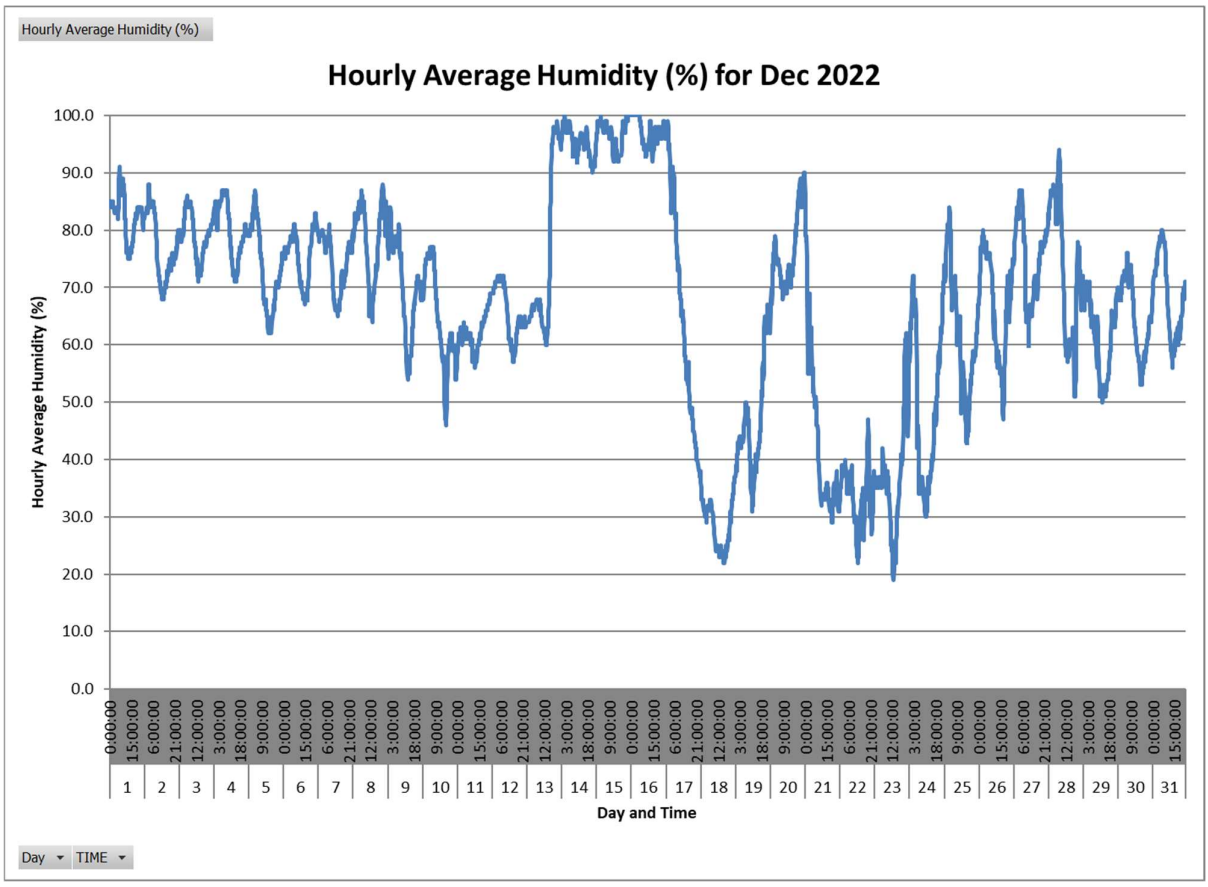

Hourly Average Wind Direction (degree)
Hourly Average Wind Direction (degree) for Nov 2022
Hourly Average Wind Direction (degree)
360
310
260
210
160
110
60
10
-40
0:00:00
14:30:00
5:00:00
19:30:00
10:00:00
0:30:00
15:00:00
5:30:00
20:00:00
10:30:00
1:00:00
15:30:00
6:00:00
20:30:00
11:00:00
1:30:00
16:00:00
6:30:00
21:00:00
11:30:00
2:00:00
16:30:00
7:00:00
21:30:00
12:00:00
2:30:00
17:00:00
7:30:00
22:00:00
12:30:00
3:00:00
17:30:00
8:00:00
22:30:00
13:00:00
3:30:00
18:00:00
8:30:00
23:00:00
13:30:00
4:00:00
18:30:00
9:00:00
23:30:00
14:00:00
4:30:00
19:00:00
9:30:00
0:00:00
14:30:00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day and Time
Day
TIME

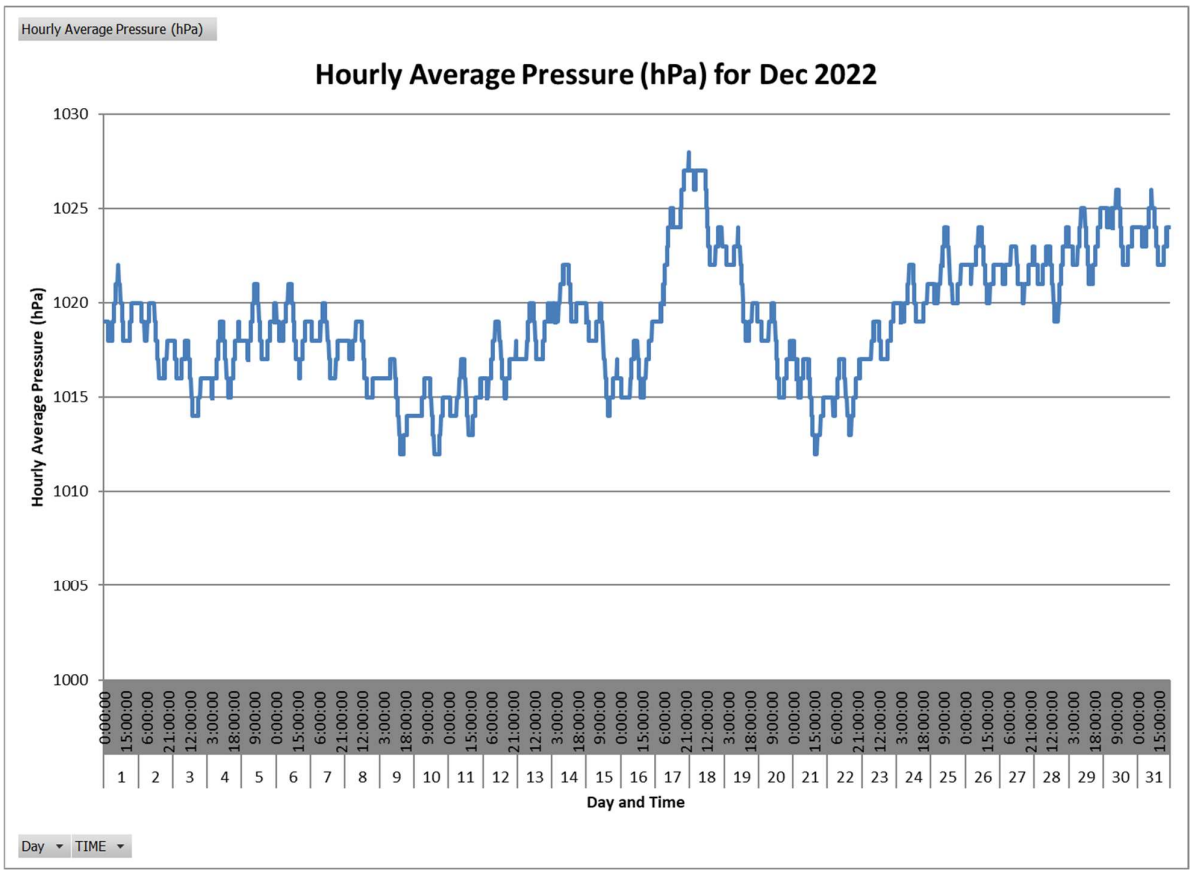

Wind Rose for Nov 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
20.00%
18.00%
16.00%
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
<1.0
<2.0
<3.0
<4.0
<5.0
All

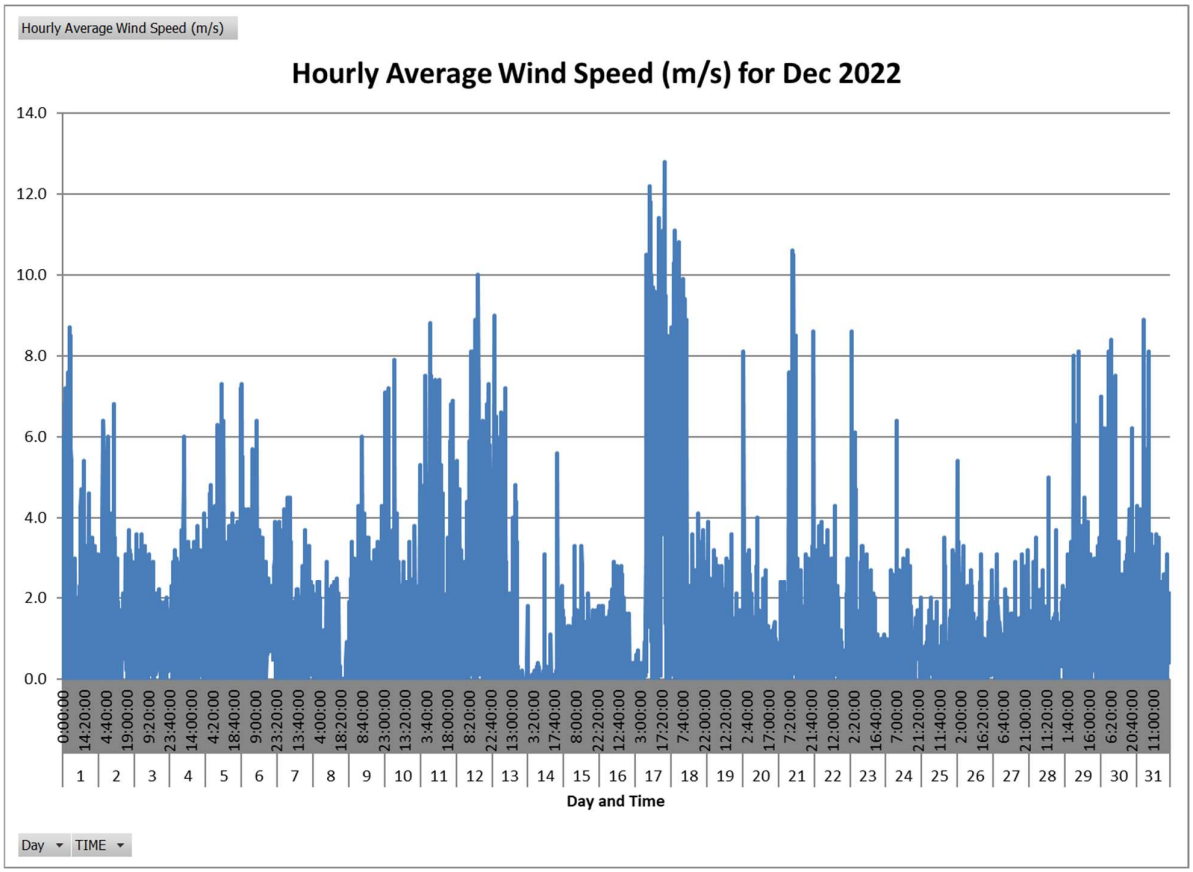

Daily and Cumulative Rainfall (mm) for Nov 2022
Rainfall (mm)
200
180
160
140
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
(blank)
Day
Daily Rainfall (mm)
Cumulative Rainfall

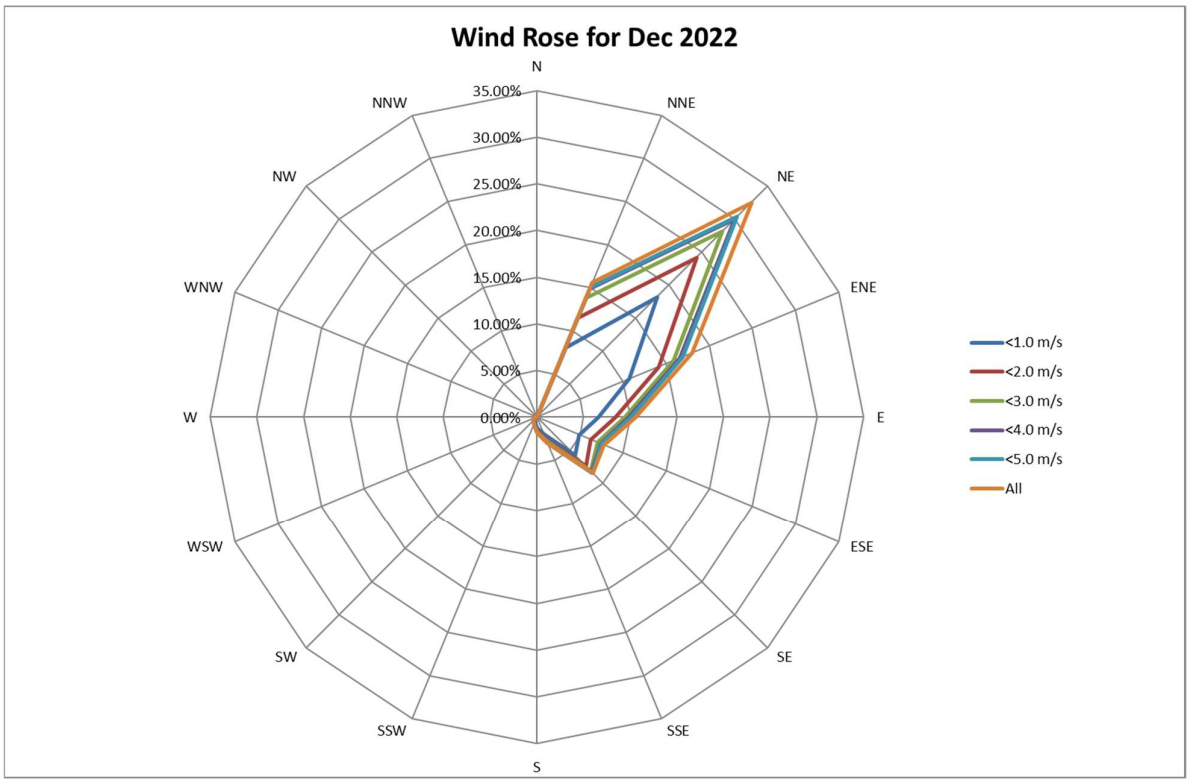
December 2022

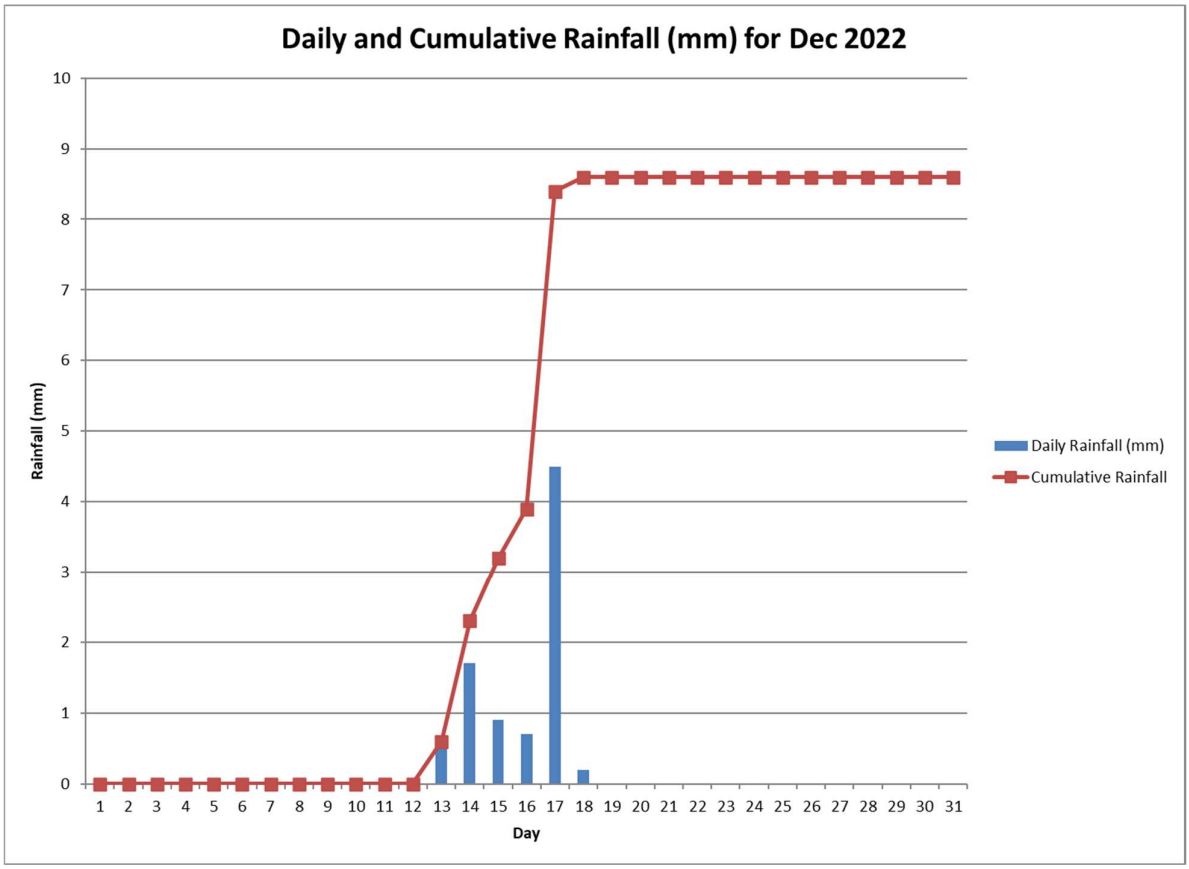





Hourly Average Pressure (hPa)
Hourly Average Pressure (hPa) for Dec 2022
Hourly Average Pressure (hPa)
1030
1025
1020
1015
1010
1005
1000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME


Hourly Average Wind Speed (m/s)
Hourly Average Wind Speed (m/s) for Dec 2022
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day and Time
Day
TIME


Wind Rose for Dec 2022
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
<1.0 m/s
<2.0 m/s
<3.0 m/s
<4.0 m/s
<5.0 m/s
All


Daily and Cumulative Rainfall (mm) for Dec 2022
Rainfall (mm)
Day
Daily Rainfall (mm)
Cumulative Rainfall

Annex D4

Odour Monitoring Results

Table D4.1 Odour Monitoring Results

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
1-Jan-22	Overcast	OP1	10:38	18.5	0.8	N	Yes	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP2	10:41	18.6	1.8	S	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP3	10:45	18.3	1.6	S	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP4	10:48	18.1	2.4	E	No	1	Acidic	Leachate Treatment Plant	N/A
1-Jan-22	Overcast	OP5	10:52	18.1	2.5	E	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP6	10:55	18.5	0.8	N	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP7	10:58	18.7	0.7	N	Yes	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP8	11:02	18.6	0.8	N	Yes	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP9	11:06	18.8	1.2	N	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP10	11:09	18.5	2.1	N	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP11	11:20	18.8	0.4	E	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP1	14:38	19.1	0.9	S	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP2	14:41	19.7	0.4	S	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP3	14:45	19.0	0.5	SW	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP4	14:48	18.6	2.3	E	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP5	14:52	18.4	2.5	E	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP6	14:56	19.0	0.6	N	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP7	14:59	18.7	1.5	N	Yes	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP8	15:03	18.9	0.5	N	Yes	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP9	15:07	19.4	0.6	N	No	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP10	15:10	19.6	0.9	NE	Yes	0	N/A	N/A	N/A
1-Jan-22	Overcast	OP11	15:23	20.2	0.7	W	No	0	N/A	N/A	N/A
1-Jan-22	Fine	OP1	18:06	16.7	0.4	N	Yes	0	N/A	N/A	N/A
1-Jan-22	Fine	OP2	18:09	16.1	0.5	S	No	0	N/A	N/A	N/A
1-Jan-22	Fine	OP3	18:13	15.7	0.6	SE	No	0	N/A	N/A	N/A
1-Jan-22	Fine	OP4	18:17	15.5	0.8	E	No	0	N/A	N/A	N/A
1-Jan-22	Fine	OP5	18:20	15.6	1.4	E	No	0	N/A	N/A	N/A
1-Jan-22	Fine	OP6	18:23	15.5	1.4	E	Yes	0	N/A	N/A	N/A
1-Jan-22	Fine	OP7	18:27	15.7	0.7	SW	No	0	N/A	N/A	N/A
1-Jan-22	Fine	OP8	18:30	15.2	0.8	N	Yes	0	N/A	N/A	N/A
1-Jan-22	Fine	OP9	18:34	14.9	0.5	N	No	1	Acidic	Town Gas Plant	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
1-Jan-22	Fine	OP10	18:37	15.0	1.1	NE	Yes	0	N/A	N/A	N/A
1-Jan-22	Fine	OP11	18:48	14.8	0.6	E	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP1	10:45	23.5	0.7	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP2	10:49	24.2	0.9	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP3	10:53	24.8	2.7	SE	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP4	10:57	25.0	1.2	E	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP5	11:00	25.3	0.8	E	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP6	11:04	24.9	1.6	N	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP7	11:07	24.6	1.8	N	Yes	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP8	11:11	24.7	1.2	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP9	11:15	24.9	2.4	N	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP10	11:18	24.4	1.4	N	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP11	11:29	24.1	4.3	E	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP1	15:05	21.7	2.6	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP2	15:09	21.2	3.7	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP3	15:13	21.6	1.4	N	Yes	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP4	15:16	22.4	0.5	E	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP5	15:20	22.5	1.1	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP6	15:23	22.8	2.3	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP7	15:27	21.7	2.6	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP8	15:30	22.2	2.5	S	No	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP9	15:34	22.9	1.3	E	Yes	0	N/A	N/A	N/A
2-Jan-22	Sunny	OP10	15:38	23.3	2.8	S	No	1	Acidic	Town Gas Plant	N/A
2-Jan-22	Sunny	OP11	15:49	22.9	1.2	E	No	0	N/A	N/A	N/A
2-Jan-22	Fine	OP1	18:00	18.8	1.2	N	Yes	0	N/A	N/A	N/A
2-Jan-22	Fine	OP2	18:03	18.6	0.5	N	Yes	0	N/A	N/A	N/A
2-Jan-22	Fine	OP3	18:07	17.9	0.8	E	No	0	N/A	N/A	N/A
2-Jan-22	Fine	OP4	18:10	18.0	1.5	W	No	0	N/A	N/A	N/A
2-Jan-22	Fine	OP5	18:13	18.2	0.7	S	No	0	N/A	N/A	N/A
2-Jan-22	Fine	OP6	18:17	18.4	1.2	N	No	0	N/A	N/A	N/A
2-Jan-22	Fine	OP7	18:21	18.3	0.8	N	Yes	0	N/A	N/A	N/A
2-Jan-22	Fine	OP8	18:25	17.9	1.0	N	Yes	1	Town Gas	Town Gas Plant	N/A
2-Jan-22	Fine	OP9	18:29	18.3	0.5	N	No	0	N/A	N/A	N/A
2-Jan-22	Fine	OP10	18:32	18.2	1.6	N	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
2-Jan-22	Fine	OP11	18:42	17.3	0.6	N	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP1	10:40	23.0	0.7	S	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP2	10:43	23.3	0.8	S	No	1	Exhaust Gas	Vehicle	N/A
3-Jan-22	Sunny	OP3	10:47	22.8	2.4	W	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP4	10:50	23.4	1.3	S	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP5	10:54	23.6	2.6	E	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP6	10:57	23.2	3.4	E	Yes	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP7	10:59	22.8	2.5	S	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP8	11:03	23.3	3.2	E	Yes	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP9	11:07	23.7	2.2	N	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP10	11:11	23.9	1.8	E	Yes	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP11	11:21	23.7	2.9	E	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP1	14:33	22.3	0.0	N/A	N/A	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP2	14:36	21.5	0.5	S	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP3	14:38	20.3	2.5	SW	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP4	14:40	19.4	2.0	E	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP5	14:42	19.4	2.2	E	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP6	14:44	21.8	0.0	N/A	N/A	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP7	14:46	19.8	1.3	N	Yes	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP8	14:49	19.7	2.4	NE	Yes	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP9	14:52	20.5	2.1	N	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP10	14:53	22.0	0.7	N	No	0	N/A	N/A	N/A
3-Jan-22	Sunny	OP11	15:00	21.0	0.0	N/A	N/A	0	N/A	N/A	N/A
3-Jan-22	Fine	OP1	18:06	20.1	0.4	S	No	0	N/A	N/A	N/A
3-Jan-22	Fine	OP2	18:09	19.6	0.6	S	No	0	N/A	N/A	N/A
3-Jan-22	Fine	OP3	18:13	19.1	0.9	S	No	1	Oil	Electric Generator	N/A
3-Jan-22	Fine	OP4	18:16	18.6	1.5	S	No	0	N/A	N/A	N/A
3-Jan-22	Fine	OP5	18:20	18.9	1.3	E	No	0	N/A	N/A	N/A
3-Jan-22	Fine	OP6	18:23	18.6	1.7	E	Yes	0	N/A	N/A	N/A
3-Jan-22	Fine	OP7	18:27	18.4	1.1	N	Yes	0	N/A	N/A	N/A
3-Jan-22	Fine	OP8	18:31	18.3	0.5	N	Yes	0	N/A	N/A	N/A
3-Jan-22	Fine	OP9	18:35	18.1	0.6	N	No	1	Town Gas	Town Gas Plant	N/A
3-Jan-22	Fine	OP10	18:38	18.0	0.4	E	Yes	0	N/A	N/A	N/A
3-Jan-22	Fine	OP11	18:47	17.6	0.7	E	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
4-Jan-22	Sunny	OP1	10:52	22.0	0.8	N	Yes	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP2	10:55	21.8	4.3	S	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP3	10:59	21.6	3.4	S	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP4	11:03	21.5	3.6	E	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP5	11:07	21.6	2.5	E	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP6	11:10	21.5	2.8	S	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP7	11:14	21.9	0.9	S	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP8	11:17	22.2	1.8	S	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP9	11:20	22.1	3.6	N	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP10	11:24	22.0	4.2	N	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP11	11:34	23.4	0.7	E	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP1	14:32	24.2	1.2	W	Yes	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP2	14:35	23.8	1.7	S	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP3	14:38	24.1	1.3	SW	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP4	14:41	24.2	1.7	E	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP5	14:45	24.6	3.0	E	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP6	14:49	25.1	0.7	N	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP7	14:53	25.9	0.8	W	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP8	14:56	26.1	1.5	E	Yes	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP9	15:00	26.3	2.4	N	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP10	15:03	26.5	0.8	N	No	0	N/A	N/A	N/A
4-Jan-22	Sunny	OP11	15:13	24.7	0.5	NE	No	0	N/A	N/A	N/A
4-Jan-22	Fine	OP1	18:07	22.3	0.5	S	No	0	N/A	N/A	N/A
4-Jan-22	Fine	OP2	18:10	20.9	0.0	N/A	N/A	0	N/A	N/A	N/A
4-Jan-22	Fine	OP3	18:14	20.3	0.0	N/A	N/A	0	N/A	N/A	N/A
4-Jan-22	Fine	OP4	18:18	20.1	1.1	E	No	0	N/A	N/A	N/A
4-Jan-22	Fine	OP5	18:21	20.3	0.6	NW	No	0	N/A	N/A	N/A
4-Jan-22	Fine	OP6	18:25	19.9	0.8	N	No	0	N/A	N/A	N/A
4-Jan-22	Fine	OP7	18:28	20.0	0.7	N	Yes	0	N/A	N/A	N/A
4-Jan-22	Fine	OP8	18:31	20.1	1.3	N	Yes	0	N/A	N/A	N/A
4-Jan-22	Fine	OP9	18:35	19.8	0.9	N	No	0	N/A	N/A	N/A
4-Jan-22	Fine	OP10	18:38	19.7	1.0	N	No	0	N/A	N/A	N/A
4-Jan-22	Fine	OP11	18:47	20.5	0.9	W	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP1	10:55	25.5	1.7	N	Yes	1	Grassy	Nearby Vegetation	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
5-Jan-22	Sunny	OP2	10:58	23.1	1.3	SW	Yes	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP3	11:01	22.8	0.6	W	No	1	Diesel	Generator	N/A
5-Jan-22	Sunny	OP4	11:05	23.9	0.4	W	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP5	11:08	22.5	2.1	E	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP6	11:11	24.2	1.2	N	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP7	11:14	22.6	1.9	NE	Yes	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP8	11:18	23.1	1.8	NE	Yes	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP9	11:21	23.1	2.4	E	Yes	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP10	11:24	24.4	2.8	NE	Yes	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP11	11:32	22.7	2.8	SE	No	1	Earthy	From the ground	N/A
5-Jan-22	Sunny	OP1	14:35	25.9	3.0	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP2	14:38	26.2	3.7	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP3	14:41	25.4	2.4	SW	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP4	14:45	25.1	3.0	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP5	14:49	24.8	2.6	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP6	14:52	25.7	2.5	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP7	14:55	25.3	3.4	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP8	14:59	25.9	2.4	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP9	15:02	26.0	2.2	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP10	15:05	25.9	1.9	S	No	0	N/A	N/A	N/A
5-Jan-22	Sunny	OP11	15:15	26.3	0.9	W	Yes	0	N/A	N/A	N/A
5-Jan-22	Fine	OP1	18:00	22.1	0.0	N/A	N/A	0	N/A	N/A	N/A
5-Jan-22	Fine	OP2	18:03	21.7	0.4	E	No	0	N/A	N/A	N/A
5-Jan-22	Fine	OP3	18:06	20.5	0.4	SE	No	0	N/A	N/A	N/A
5-Jan-22	Fine	OP4	18:10	20.3	0.6	E	No	0	N/A	N/A	N/A
5-Jan-22	Fine	OP5	18:14	20.6	0.5	S	No	0	N/A	N/A	N/A
5-Jan-22	Fine	OP6	18:17	20.7	0.9	E	Yes	0	N/A	N/A	N/A
5-Jan-22	Fine	OP7	18:21	20.6	0.4	N	Yes	0	N/A	N/A	N/A
5-Jan-22	Fine	OP8	18:25	20.4	0.6	N	Yes	0	N/A	N/A	N/A
5-Jan-22	Fine	OP9	18:27	20.2	0.5	S	No	0	N/A	N/A	N/A
5-Jan-22	Fine	OP10	18:30	19.8	1.2	NE	Yes	0	N/A	N/A	N/A
5-Jan-22	Fine	OP11	18:40	19.4	0.6	NE	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP1	10:35	24.7	1.4	N	Yes	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP2	10:39	25.1	3.2	N	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
6-Jan-22	Sunny	OP3	10:42	24.9	1.8	W	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP4	10:45	24.7	0.8	W	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP5	10:48	24.9	1.0	NE	Yes	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP6	10:50	25.2	1.2	N	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP7	10:53	25.3	1.5	N	Yes	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP8	10:57	25.1	0.9	NE	Yes	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP9	11:00	25.2	1.8	NE	Yes	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP10	11:02	25.3	0.4	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP11	11:15	25.2	2.1	E	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP1	14:49	25.5	2.3	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP2	14:52	24.8	2.7	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP3	14:55	24.2	2.3	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP4	14:59	24.1	2.2	E	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP5	15:03	24.6	3.0	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP6	15:07	25.3	1.8	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP7	15:10	26.0	2.4	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP8	15:14	25.8	4.1	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP9	15:18	26.3	1.4	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP10	15:20	26.6	1.6	S	No	0	N/A	N/A	N/A
6-Jan-22	Sunny	OP11	15:30	25.1	0.6	N	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP1	18:09	20.6	1.2	W	Yes	0	N/A	N/A	N/A
6-Jan-22	Fine	OP2	18:13	20.2	1.7	W	Yes	0	N/A	N/A	N/A
6-Jan-22	Fine	OP3	18:17	20.3	0.6	SW	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP4	18:20	20.5	2.5	E	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP5	18:24	20.4	3.2	E	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP6	18:27	20.3	1.5	E	Yes	0	N/A	N/A	N/A
6-Jan-22	Fine	OP7	18:30	20.2	0.8	S	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP8	18:34	20.2	0.5	S	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP9	18:37	20.2	0.5	W	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP10	18:40	20.0	0.4	N	No	0	N/A	N/A	N/A
6-Jan-22	Fine	OP11	18:51	19.5	0.6	E	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP1	10:50	24.5	3.1	S	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP2	10:53	25.6	0.8	N	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP3	10:56	24.6	1.5	N	Yes	1	Oil	Electric Generator	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
7-Jan-22	Sunny	OP4	11:00	24.0	1.3	E	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP5	11:04	23.9	2.0	E	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP6	11:07	23.1	2.4	E	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP7	11:10	24.3	2.9	S	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP8	11:13	25.0	1.4	E	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP9	11:17	25.5	0.8	S	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP10	11:21	24.8	3.3	E	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP11	11:32	25.6	1.5	E	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP1	14:34	22.7	0.0	N/A	N/A	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP2	14:37	21.7	0.9	SE	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP3	14:40	20.9	1.1	SW	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP4	14:43	21.5	0.8	NW	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP5	14:46	20.8	0.4	NE	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP6	14:48	21.0	0.7	SE	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP7	14:50	20.9	1.9	S	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP8	14:54	21.7	0.6	S	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP9	14:56	21.8	2.1	N	No	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP10	14:59	20.0	2.2	NE	Yes	0	N/A	N/A	N/A
7-Jan-22	Sunny	OP11	15:08	23.2	0.0	N/A	N/A	0	N/A	N/A	N/A
7-Jan-22	Fine	OP1	18:16	19.0	0.4	S	No	0	N/A	N/A	N/A
7-Jan-22	Fine	OP2	18:19	18.2	0.7	E	No	0	N/A	N/A	N/A
7-Jan-22	Fine	OP3	18:22	17.9	0.9	NE	No	0	N/A	N/A	N/A
7-Jan-22	Fine	OP4	18:26	18.0	1.5	E	No	0	N/A	N/A	N/A
7-Jan-22	Fine	OP5	18:30	18.4	1.1	N	Yes	0	N/A	N/A	N/A
7-Jan-22	Fine	OP6	18:33	18.2	0.9	E	Yes	0	N/A	N/A	N/A
7-Jan-22	Fine	OP7	18:37	18.0	0.6	N	Yes	0	N/A	N/A	N/A
7-Jan-22	Fine	OP8	18:40	17.9	0.5	N	Yes	0	N/A	N/A	N/A
7-Jan-22	Fine	OP9	18:44	17.7	0.7	N	No	0	N/A	N/A	N/A
7-Jan-22	Fine	OP10	18:47	17.6	0.4	E	Yes	0	N/A	N/A	N/A
7-Jan-22	Fine	OP11	18:57	18.0	0.6	E	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP1	10:38	22.4	1.4	S	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP2	10:41	22.1	2.4	S	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP3	10:45	22.5	0.6	SW	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP4	10:48	22.6	1.8	E	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
8-Jan-22	Sunny	OP5	10:52	22.8	2.9	E	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP6	10:55	22.7	1.0	S	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP7	10:59	22.9	1.1	S	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP8	11:03	22.8	2.6	N	Yes	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP9	11:07	22.7	2.6	N	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP10	11:10	22.9	1.3	N	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP11	11:22	23.2	2.1	S	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP1	14:37	23.2	0.4	S	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP2	14:40	22.9	1.4	S	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP3	14:44	23.0	0.7	SE	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP4	14:47	22.7	3.0	E	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP5	14:51	23.3	1.3	E	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP6	14:55	23.8	1.4	E	Yes	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP7	14:58	24.0	1.1	E	Yes	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP8	15:01	24.1	1.3	SE	Yes	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP9	15:05	23.6	1.9	W	No	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP10	15:08	23.3	2.0	E	Yes	0	N/A	N/A	N/A
8-Jan-22	Sunny	OP11	15:20	23.0	1.2	E	No	0	N/A	N/A	N/A
8-Jan-22	Fine	OP1	18:07	20.7	0.5	N	Yes	0	N/A	N/A	N/A
8-Jan-22	Fine	OP2	18:10	20.0	0.7	E	No	0	N/A	N/A	N/A
8-Jan-22	Fine	OP3	18:14	19.8	0.5	SE	No	0	N/A	N/A	N/A
8-Jan-22	Fine	OP4	18:17	19.3	1.3	E	No	0	N/A	N/A	N/A
8-Jan-22	Fine	OP5	18:20	20.4	0.7	E	No	0	N/A	N/A	N/A
8-Jan-22	Fine	OP6	18:24	20.2	1.1	N	No	0	N/A	N/A	N/A
8-Jan-22	Fine	OP7	18:27	19.5	1.2	N	Yes	0	N/A	N/A	N/A
8-Jan-22	Fine	OP8	18:30	19.0	1.1	E	Yes	0	N/A	N/A	N/A
8-Jan-22	Fine	OP9	18:34	19.1	1.5	S	No	0	N/A	N/A	N/A
8-Jan-22	Fine	OP10	18:37	18.9	2.1	E	Yes	0	N/A	N/A	N/A
8-Jan-22	Fine	OP11	18:50	19.6	0.4	N	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP1	10:45	20.9	0.6	N	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP2	10:49	19.9	3.3	SE	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP3	10:52	20.0	2.8	W	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP4	10:56	20.2	2.3	E	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP5	11:00	19.9	3.1	E	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
9-Jan-22	Fine	OP6	11:04	20.2	2.5	NE	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP7	11:08	20.8	1.7	SW	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP8	11:11	20.3	2.3	SW	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP9	11:15	21.0	0.6	N	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP10	11:18	20.9	0.5	NW	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP11	11:28	20.7	0.8	E	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP1	15:11	20.8	1.7	SE	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP2	15:07	21.0	0.7	SE	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP3	15:04	22.3	0.8	N	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP4	15:01	22.3	0.9	S	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP5	14:57	21.5	1.0	SE	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP6	14:54	21.7	1.1	SE	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP7	14:50	21.5	2.0	S	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP8	14:46	22.3	0.7	S	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP9	14:42	22.0	1.4	S	Yes	0	N/A	N/A	N/A
9-Jan-22	Fine	OP10	14:39	21.7	1.1	N	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP11	14:30	23.1	0.8	E	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP1	18:00	20.3	0.4	SE	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP2	18:04	20.1	0.4	SE	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP3	18:07	18.2	0.5	W	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP4	18:11	18.2	4.0	W	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP5	18:15	18.1	0.5	NW	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP6	18:18	18.1	0.7	SE	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP7	18:22	17.9	0.5	SW	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP8	18:26	17.9	0.7	SW	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP9	18:30	18.0	0.4	S	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP10	18:33	17.7	0.5	NE	No	0	N/A	N/A	N/A
9-Jan-22	Fine	OP11	18:42	19.1	0.5	NE	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP1	10:40	20.4	2.0	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP2	10:43	21.0	1.3	S	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP3	10:47	20.7	0.8	S	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP4	10:50	20.2	1.7	E	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP5	10:54	21.4	1.6	E	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP6	10:57	21.2	2.4	E	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
10-Jan-22	Fine	OP7	11:01	20.9	2.6	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP8	11:04	21.1	1.5	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP9	11:07	22.3	0.7	E	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP10	11:10	21.6	2.1	E	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP11	11:19	21.9	1.0	N	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP1	14:30	19.8	0.5	NW	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP2	14:33	21.4	0.6	S	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP3	14:36	22.3	0.5	SW	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP4	14:38	21.6	0.0	N/A	N/A	0	N/A	N/A	N/A
10-Jan-22	Fine	OP5	14:41	20.8	2.2	E	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP6	14:44	20.4	1.1	NW	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP7	14:47	20.0	2.4	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP8	14:50	20.2	1.7	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP9	14:52	21.8	0.9	N	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP10	14:55	20.4	2.3	NE	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP11	15:03	19.3	1.5	SE	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP1	18:06	20.4	0.5	W	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP2	18:09	20.3	0.7	W	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP3	18:13	19.6	1.1	SW	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP4	18:16	19.1	1.4	S	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP5	18:20	19.3	0.7	E	No	0	N/A	N/A	N/A
10-Jan-22	Fine	OP6	18:23	19.5	1.0	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP7	18:27	19.4	0.6	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP8	18:30	19.2	0.7	N	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP9	18:34	19.3	0.9	E	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP10	18:37	19.2	0.7	E	Yes	0	N/A	N/A	N/A
10-Jan-22	Fine	OP11	18:47	19.1	0.6	S	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP1	10:55	18.4	3.3	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP2	10:58	18.3	3.9	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP3	11:02	19.5	1.3	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP4	11:05	20.3	1.8	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP5	11:08	19.6	2.1	E	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP6	11:12	19.1	3.3	N	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP7	11:15	19.4	3.1	N	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
11-Jan-22	Sunny	OP8	11:19	19.0	4.4	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP9	11:22	18.8	2.1	N	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP10	11:25	18.2	2.4	N	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP11	11:34	20.1	1.3	E	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP1	14:30	20.0	2.7	NW	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP2	14:32	19.3	3.3	NW	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP3	14:35	20.9	0.0	N/A	N/A	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP4	14:37	20.9	0.0	N/A	N/A	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP5	14:43	20.1	2.2	E	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP6	14:45	19.4	1.7	NW	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP7	14:48	18.6	4.2	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP8	14:51	19.0	2.0	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP9	14:53	18.3	4.2	N	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP10	14:55	19.5	2.4	N	No	0	N/A	N/A	N/A
11-Jan-22	Sunny	OP11	15:03	20.1	2.1	SW	Yes	1	Earthy	Ground	N/A
11-Jan-22	Fine	OP1	18:03	17.7	3.6	NW	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP2	18:06	17.5	3.5	NW	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP3	18:10	17.6	1.5	NW	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP4	18:13	17.4	1.8	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP5	18:17	17.5	1.2	NW	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP6	18:20	17.4	1.5	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP7	18:23	17.3	3.1	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP8	18:27	17.4	3.4	N	Yes	0	N/A	N/A	N/A
11-Jan-22	Fine	OP9	18:31	17.5	2.2	N	No	0	N/A	N/A	N/A
11-Jan-22	Fine	OP10	18:33	17.6	0.8	N	No	0	N/A	N/A	N/A
11-Jan-22	Fine	OP11	18:42	17.5	0.6	E	No	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP1	10:50	20.1	2.3	N	Yes	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP2	10:53	21.0	1.9	S	No	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP3	10:57	20.3	2.1	SW	No	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP4	11:00	21.2	2.2	E	No	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP5	11:04	21.0	3.9	E	No	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP6	11:07	20.9	1.4	N	No	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP7	11:10	21.3	1.1	N	Yes	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP8	11:14	20.2	1.1	E	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
12-Jan-22	Sunny	OP9	11:18	19.4	1.8	N	No	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP10	11:21	19.6	1.7	E	Yes	0	N/A	N/A	N/A
12-Jan-22	Sunny	OP11	11:30	21.0	0.8	E	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP1	14:41	20.0	0.8	S	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP2	14:45	19.3	1.2	N	Yes	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP3	14:48	19.2	1.8	S	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP4	14:51	19.1	0.8	W	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP5	14:55	18.4	2.4	E	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP6	14:57	18.8	2.6	S	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP7	15:00	19.2	0.8	S	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP8	15:03	20.0	1.0	S	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP9	15:06	19.8	1.5	N	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP10	15:09	20.2	1.3	N	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP11	15:17	20.1	1.4	E	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP1	18:01	17.3	0.5	NW	Yes	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP2	18:04	16.8	1.7	NW	Yes	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP3	18:07	17.0	0.8	SE	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP4	18:11	16.8	2.1	E	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP5	18:15	16.6	2.5	E	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP6	18:17	16.8	1.8	SE	Yes	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP7	18:20	16.9	1.3	N	Yes	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP8	18:24	16.8	1.5	E	Yes	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP9	18:27	17.0	1.2	E	Yes	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP10	18:30	16.9	1.0	N	No	0	N/A	N/A	N/A
12-Jan-22	Overcast	OP11	18:40	16.8	1.4	E	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP1	10:30	19.1	3.7	NW	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP2	10:32	18.2	1.9	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP3	10:34	18.2	2.0	NE	Yes	1	Diesel	Generator	N/A
13-Jan-22	Overcast	OP4	10:38	18.8	0.9	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP5	10:41	17.1	3.0	N	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP6	10:43	17.9	1.2	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP7	10:47	17.2	3.9	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP8	10:50	17.5	2.0	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP9	10:52	17.7	2.7	N	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
13-Jan-22	Overcast	OP10	10:55	17.8	0.6	N	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP11	11:03	17.8	0.0	N/A	N/A	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP1	14:45	20.7	1.0	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP2	14:48	20.3	3.0	NW	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP3	14:51	20.6	1.3	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP4	14:55	20.3	0.7	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP5	14:59	19.8	1.1	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP6	15:03	19.5	2.7	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP7	15:07	19.6	2.5	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP8	15:11	19.5	1.6	NW	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP9	15:15	18.9	2.9	NW	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP10	15:19	20.1	0.5	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP11	15:29	19.8	1.3	NE	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP1	18:10	17.1	1.3	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP2	18:13	16.9	1.7	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP3	18:17	17.8	1.1	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP4	18:20	17.8	2.4	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP5	18:23	17.9	1.2	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP6	18:26	17.5	1.5	NE	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP7	18:30	16.8	2.2	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP8	18:33	16.9	1.1	N	Yes	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP9	18:37	16.8	1.0	NW	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP10	18:40	17.3	0.5	N	No	0	N/A	N/A	N/A
13-Jan-22	Overcast	OP11	18:49	17.1	1.1	NE	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP1	10:40	16.2	3.2	W	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP2	10:43	15.8	1.1	S	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP3	10:47	16.0	1.9	W	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP4	10:50	15.8	1.0	E	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP5	10:53	15.7	2.6	E	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP6	10:57	15.4	2.5	E	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP7	11:00	15.5	2.9	N	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP8	11:03	15.3	2.4	E	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP9	11:07	14.9	3.6	N	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP10	11:10	15.3	0.0	N/A	N/A	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
14-Jan-22	Overcast	OP11	11:20	15.1	1.2	E	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP1	14:40	16.7	1.3	W	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP2	14:43	16.6	1.4	N	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP3	14:47	17.4	1.2	SW	No	1	Oil	Electric Generator	N/A
14-Jan-22	Overcast	OP4	14:50	16.6	3.3	E	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP5	14:54	16.0	3.6	N	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP6	14:57	15.9	2.5	N	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP7	15:01	16.8	1.4	N	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP8	15:04	16.3	2.1	S	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP9	15:07	16.6	2.5	S	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP10	15:10	16.2	2.3	E	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP11	15:20	15.8	1.8	N	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP1	18:04	16.4	0.6	N	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP2	18:07	15.7	0.9	S	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP3	18:10	15.6	1.3	N	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP4	18:13	15.3	2.5	E	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP5	18:17	15.4	1.7	E	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP6	18:20	15.1	1.3	E	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP7	18:24	15.1	1.4	N	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP8	18:27	15.2	0.8	N	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP9	18:31	14.9	3.3	N	No	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP10	18:34	15.0	1.0	E	Yes	0	N/A	N/A	N/A
14-Jan-22	Overcast	OP11	18:44	15.4	0.7	N	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP1	10:38	17.8	0.6	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP2	10:41	17.6	1.8	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP3	10:45	17.7	2.8	SW	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP4	10:48	17.6	0.9	W	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP5	10:52	17.8	1.5	E	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP6	10:55	17.4	2.3	E	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP7	10:59	17.5	2.2	SW	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP8	11:04	17.6	2.5	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP9	11:07	17.9	2.3	N	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP10	11:10	17.8	2.7	N	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP11	11:20	18.3	2.6	E	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
15-Jan-22	Fine	OP1	14:40	19.2	0.8	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP2	14:43	20.0	0.7	S	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP3	14:47	19.8	0.9	SW	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP4	14:50	18.8	2.1	E	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP5	14:53	19.2	3.0	E	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP6	14:57	19.6	1.6	E	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP7	14:59	20.1	1.3	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP8	15:03	20.3	1.0	SE	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP9	15:07	20.8	0.9	E	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP10	15:10	20.3	0.7	W	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP11	15:20	19.7	2.2	E	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP1	18:05	17.3	0.6	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP2	18:08	17.5	0.5	S	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP3	18:12	17.4	1.1	SE	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP4	18:15	17.6	1.0	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP5	18:19	17.0	2.9	E	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP6	18:22	17.1	1.5	N	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP7	18:26	17.0	1.2	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP8	18:29	16.8	1.0	N	Yes	0	N/A	N/A	N/A
15-Jan-22	Fine	OP9	18:33	16.9	1.8	N	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP10	18:36	17.0	0.9	N	No	0	N/A	N/A	N/A
15-Jan-22	Fine	OP11	18:45	17.0	0.0	N/A	N/A	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP1	11:00	18.8	0.9	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP2	11:03	19.1	0.8	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP3	11:07	18.9	2.5	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP4	11:10	19.5	1.9	E	No	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP5	11:14	19.3	2.4	E	No	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP6	11:17	19.1	2.8	N	No	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP7	11:21	19.7	2.3	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP8	11:24	18.9	2.5	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP9	11:28	18.7	2.2	N	No	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP10	11:31	18.5	2.3	E	Yes	0	N/A	N/A	N/A
16-Jan-22	Overcast	OP11	11:41	19.6	0.7	E	No	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP1	15:18	21.7	3.2	S	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
16-Jan-22	Sunny	OP2	15:14	22.0	2.8	S	No	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP3	15:11	21.8	1.7	NW	Yes	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP4	15:08	21.9	2.2	E	No	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP5	15:04	22.1	3.2	E	No	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP6	15:01	22.3	2.8	S	No	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP7	14:58	23.7	1.2	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP8	14:55	23.6	1.0	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP9	14:52	22.7	1.6	N	No	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP10	14:49	22.2	2.2	E	Yes	0	N/A	N/A	N/A
16-Jan-22	Sunny	OP11	14:40	23.1	1.3	N	No	0	N/A	N/A	N/A
16-Jan-22	Fine	OP1	18:02	18.9	0.9	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Fine	OP2	18:05	18.4	1.9	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Fine	OP3	18:09	18.6	0.8	SW	No	0	N/A	N/A	N/A
16-Jan-22	Fine	OP4	18:12	18.4	1.9	W	No	0	N/A	N/A	N/A
16-Jan-22	Fine	OP5	18:15	18.5	0.9	N	No	0	N/A	N/A	N/A
16-Jan-22	Fine	OP6	18:19	18.6	1.1	E	Yes	0	N/A	N/A	N/A
16-Jan-22	Fine	OP7	18:22	18.0	2.0	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Fine	OP8	18:26	18.3	1.3	N	Yes	0	N/A	N/A	N/A
16-Jan-22	Fine	OP9	18:29	17.9	1.0	N	No	0	N/A	N/A	N/A
16-Jan-22	Fine	OP10	18:33	17.7	0.9	N	No	0	N/A	N/A	N/A
16-Jan-22	Fine	OP11	18:43	17.0	0.5	N	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP1	10:44	18.5	1.3	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP2	10:47	18.4	1.4	S	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP3	10:50	19.2	1.0	SW	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP4	10:54	18.7	2.8	E	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP5	10:57	19.1	2.3	E	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP6	11:00	18.6	3.5	S	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP7	11:03	19.1	1.1	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP8	11:07	19.2	1.7	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP9	11:11	18.8	2.8	S	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP10	11:15	19.3	1.2	S	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP11	11:25	18.7	0.7	E	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP1	14:30	18.7	1.5	N	Yes	1	Grassy	Nearby Vegetation	N/A
17-Jan-22	Overcast	OP2	14:34	19.1	0.5	N	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
17-Jan-22	Overcast	OP3	14:36	18.9	0.5	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP4	14:39	19.0	0.8	NE	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP5	14:42	18.4	2.0	E	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP6	14:45	18.2	3.0	S	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP7	14:49	18.8	0.9	E	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP8	14:52	18.8	1.0	SE	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP9	14:56	19.3	1.5	SW	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP10	14:59	19.5	0.9	NE	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP11	15:08	18.9	0.7	SW	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP1	18:10	17.6	0.7	W	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP2	18:13	17.5	0.8	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP3	18:16	16.3	0.7	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP4	18:20	15.8	1.8	E	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP5	18:24	16.5	0.6	E	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP6	18:27	15.9	1.4	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP7	18:30	15.7	1.2	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP8	18:34	16.4	1.6	N	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP9	18:37	16.2	0.8	N	No	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP10	18:40	16.4	0.8	E	Yes	0	N/A	N/A	N/A
17-Jan-22	Overcast	OP11	18:49	16.5	0.9	E	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP1	10:35	18.1	1.2	S	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP2	10:38	18.5	0.0	N/A	N/A	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP3	10:42	18.4	1.1	SW	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP4	10:45	18.7	0.4	W	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP5	10:48	18.4	2.4	E	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP6	10:51	18.5	1.2	S	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP7	10:54	18.6	0.4	S	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP8	10:57	18.2	2.6	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP9	11:02	18.4	2.4	N	No	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP10	11:05	18.6	1.7	NE	Yes	0	N/A	N/A	N/A
18-Jan-22	Sunny	OP11	11:15	18.3	1.6	E	No	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP1	14:39	18.4	1.9	N	Yes	1	Grassy	Nearby Vegetation	N/A
18-Jan-22	Overcast	OP2	14:42	18.2	2.2	N	Yes	1	Grassy	Nearby Vegetation	N/A
18-Jan-22	Overcast	OP3	14:45	18.7	0.6	N	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
18-Jan-22	Overcast	OP4	14:48	19.1	1.1	NW	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP5	14:52	18.9	0.5	N	No	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP6	14:54	18.5	0.8	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP7	14:57	18.8	1.0	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP8	15:01	18.6	0.7	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP9	15:04	19.0	0.6	N	No	1	Decayed grass	Nearby Vegetation	N/A
18-Jan-22	Overcast	OP10	15:08	19.1	0.4	N	No	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP11	15:18	18.0	2.1	E	No	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP1	18:17	17.5	1.7	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP2	18:20	17.7	1.4	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP3	18:24	17.8	0.6	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP4	18:27	17.7	0.7	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP5	18:30	17.6	0.9	N	No	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP6	18:34	17.4	1.8	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP7	18:37	17.2	2.1	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP8	18:40	17.0	2.8	N	Yes	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP9	18:43	17.3	1.4	N	No	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP10	18:47	17.4	1.5	N	No	0	N/A	N/A	N/A
18-Jan-22	Overcast	OP11	18:56	17.5	1.6	SE	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP1	10:55	19.2	1.9	N	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP2	10:58	20.1	2.2	N	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP3	11:02	21.7	1.2	N	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP4	11:05	21.9	1.4	N	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP5	11:08	22.6	2.5	N	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP6	11:11	22.1	1.3	N	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP7	11:15	21.8	2.3	N	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP8	11:19	21.6	3.5	N	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP9	11:23	21.4	2.3	N	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP10	11:26	21.9	0.7	N	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP11	11:35	22.3	2.2	E	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP1	14:34	24.2	1.2	S	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP2	14:37	20.2	3.1	S	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP3	14:39	21.1	0.7	N	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP4	14:42	19.8	3.3	E	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
19-Jan-22	Sunny	OP5	14:47	21.4	3.6	E	No	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP6	14:49	20.2	2.3	E	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP7	14:52	21.8	0.5	SE	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP8	14:55	20.4	0.6	SE	Yes	1	Diesel	Generator	N/A
19-Jan-22	Sunny	OP9	14:59	20.3	2.0	N	No	1	Decayed grass	Nearby Vegetation	N/A
19-Jan-22	Sunny	OP10	15:07	20.8	3.0	E	Yes	0	N/A	N/A	N/A
19-Jan-22	Sunny	OP11	15:17	19.7	2.9	SE	No	0	N/A	N/A	N/A
19-Jan-22	Fine	OP1	18:03	20.7	0.0	N/A	N/A	0	N/A	N/A	N/A
19-Jan-22	Fine	OP2	18:06	19.7	0.1	S	No	0	N/A	N/A	N/A
19-Jan-22	Fine	OP3	18:10	18.6	0.4	NE	Yes	0	N/A	N/A	N/A
19-Jan-22	Fine	OP4	18:13	18.6	0.4	E	No	0	N/A	N/A	N/A
19-Jan-22	Fine	OP5	18:17	18.4	0.9	E	Yes	0	N/A	N/A	N/A
19-Jan-22	Fine	OP6	18:20	18.5	0.7	S	No	0	N/A	N/A	N/A
19-Jan-22	Fine	OP7	18:24	18.4	0.4	S	No	0	N/A	N/A	N/A
19-Jan-22	Fine	OP8	18:27	18.3	0.3	NW	No	0	N/A	N/A	N/A
19-Jan-22	Fine	OP9	18:31	18.2	0.5	NE	Yes	0	N/A	N/A	N/A
19-Jan-22	Fine	OP10	18:35	18.1	0.6	E	Yes	0	N/A	N/A	N/A
19-Jan-22	Fine	OP11	18:44	18.2	0.4	E	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP1	10:30	18.3	1.2	NE	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP2	10:33	18.1	3.1	S	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP3	10:37	18.5	1.7	W	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP4	10:40	18.4	2.5	SE	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP5	10:43	18.3	4.3	E	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP6	10:47	18.7	1.5	N	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP7	10:50	18.6	1.9	S	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP8	10:54	18.3	2.8	N	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP9	10:57	18.8	1.3	N	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP10	11:00	18.7	2.7	N	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP11	11:10	18.9	1.7	E	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP1	14:48	21.2	1.1	S	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP2	14:51	20.5	1.5	S	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP3	14:55	20.2	1.9	SW	No	1	Oil	Electric Generator	N/A
20-Jan-22	Sunny	OP4	14:58	20.4	1.5	E	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP5	15:02	20.8	2.2	E	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
20-Jan-22	Sunny	OP6	15:05	20.0	1.2	E	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP7	15:08	21.2	1.1	S	No	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP8	15:11	20.6	3.3	SE	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP9	15:15	21.0	0.7	E	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP10	15:18	21.7	1.0	E	Yes	0	N/A	N/A	N/A
20-Jan-22	Sunny	OP11	15:27	20.6	1.6	E	No	0	N/A	N/A	N/A
20-Jan-22	Fine	OP1	18:03	18.7	0.5	N	Yes	0	N/A	N/A	N/A
20-Jan-22	Fine	OP2	18:07	18.6	0.8	S	No	0	N/A	N/A	N/A
20-Jan-22	Fine	OP3	18:11	18.8	1.2	SW	No	0	N/A	N/A	N/A
20-Jan-22	Fine	OP4	18:15	18.7	1.6	E	No	0	N/A	N/A	N/A
20-Jan-22	Fine	OP5	18:18	18.9	1.5	E	Yes	0	N/A	N/A	N/A
20-Jan-22	Fine	OP6	18:21	18.6	1.3	NE	Yes	0	N/A	N/A	N/A
20-Jan-22	Fine	OP7	18:24	18.5	2.1	N	Yes	0	N/A	N/A	N/A
20-Jan-22	Fine	OP8	18:27	18.7	1.8	NE	Yes	0	N/A	N/A	N/A
20-Jan-22	Fine	OP9	18:31	18.9	1.1	E	Yes	0	N/A	N/A	N/A
20-Jan-22	Fine	OP10	18:34	18.8	1.6	NE	Yes	0	N/A	N/A	N/A
20-Jan-22	Fine	OP11	18:44	18.7	1.4	E	No	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP1	11:00	20.3	0.9	N	Yes	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP2	11:03	20.5	0.0	N/A	N/A	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP3	11:07	20.2	1.9	S	No	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP4	11:10	19.3	2.5	W	No	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP5	11:14	20.2	2.7	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP6	11:17	19.5	2.5	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP7	11:20	20.2	2.2	S	No	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP8	11:24	19.4	3.0	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP9	11:28	20.8	2.2	S	No	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP10	11:31	20.5	2.7	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Sunny	OP11	11:41	20.8	2.5	E	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP1	14:39	19.6	2.8	N	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP2	14:42	20.5	1.4	E	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP3	14:45	20.8	1.9	SW	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP4	14:48	20.1	1.4	S	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP5	14:51	20.7	2.2	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP6	14:55	20.0	2.5	S	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
21-Jan-22	Fine	OP7	14:58	20.3	2.1	S	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP8	15:02	21.3	1.2	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP9	15:05	21.9	1.0	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP10	15:08	21.1	1.5	N	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP11	15:17	20.6	1.4	E	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP1	18:04	17.3	4.3	N	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP2	18:07	17.8	2.3	N	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP3	18:10	17.8	1.9	SW	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP4	18:14	17.6	2.8	W	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP5	18:17	17.9	1.5	E	No	0	N/A	N/A	N/A
21-Jan-22	Fine	OP6	18:20	17.6	2.1	NE	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP7	18:23	17.6	1.4	NE	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP8	18:27	17.1	4.6	NE	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP9	18:31	17.3	3.7	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP10	18:34	17.6	1.4	E	Yes	0	N/A	N/A	N/A
21-Jan-22	Fine	OP11	18:43	17.9	0.6	E	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP1	10:38	17.8	2.1	NW	Yes	0	N/A	N/A	N/A
22-Jan-22	Shower	OP2	10:42	17.5	2.5	SW	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP3	10:45	17.5	2.8	W	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP4	10:49	17.2	3.8	SW	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP5	10:54	17.1	3.2	NE	Yes	0	N/A	N/A	N/A
22-Jan-22	Shower	OP6	10:59	17.5	1.5	N	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP7	11:02	17.8	0.6	NW	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP8	11:05	17.7	2.1	SE	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP9	11:09	17.9	0.6	W	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP10	11:12	17.9	1.2	S	No	0	N/A	N/A	N/A
22-Jan-22	Shower	OP11	11:23	18.0	0.6	S	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP1	15:00	19.1	0.6	N	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP2	15:03	19.2	0.4	S	No	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP3	15:07	19.1	0.5	N	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP4	15:10	18.7	1.3	W	No	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP5	15:14	18.8	0.8	NE	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP6	15:17	18.2	2.9	N	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP7	15:21	18.3	1.2	NE	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
22-Jan-22	Overcast	OP8	15:24	18.1	1.9	S	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP9	15:28	18.0	1.0	N	No	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP10	15:31	17.9	1.4	NE	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP11	15:40	19.1	0.5	NE	No	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP1	18:00	18.8	0.6	N	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP2	18:03	18.5	0.8	N	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP3	18:07	18.4	0.6	N	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP4	18:10	17.9	0.6	SW	No	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP5	18:14	17.7	1.7	E	No	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP6	18:17	17.6	0.4	NE	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP7	18:21	17.5	1.4	S	No	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP8	18:25	17.6	1.1	SE	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP9	18:28	17.6	1.2	NE	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP10	18:32	17.5	1.0	NE	Yes	0	N/A	N/A	N/A
22-Jan-22	Overcast	OP11	18:41	17.1	2.9	E	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP1	11:00	20.4	0.0	N/A	N/A	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP2	11:03	21.0	0.0	N/A	N/A	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP3	11:07	21.5	1.0	S	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP4	11:10	21.7	1.4	S	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP5	11:13	21.4	1.1	S	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP6	11:16	21.9	1.3	W	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP7	11:20	22.2	1.1	N	Yes	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP8	11:24	21.9	1.2	N	Yes	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP9	11:27	21.7	2.8	N	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP10	11:31	22.1	2.5	E	Yes	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP11	11:40	21.5	1.4	E	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP1	14:30	21.6	1.5	S	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP2	14:33	20.9	2.3	S	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP3	14:36	21.3	1.4	S	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP4	14:40	21.5	1.8	E	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP5	14:43	21.2	0.7	N	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP6	14:47	21.1	1.6	SE	Yes	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP7	14:50	21.4	1.2	N	Yes	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP8	14:54	22.0	2.0	N	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
23-Jan-22	Overcast	OP9	14:57	22.1	1.2	N	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP10	15:00	22.4	1.1	N	No	0	N/A	N/A	N/A
23-Jan-22	Overcast	OP11	15:11	22.9	0.0	N/A	N/A	0	N/A	N/A	N/A
23-Jan-22	Fine	OP1	18:00	18.8	1.1	S	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP2	18:03	18.9	1.1	S	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP3	18:07	18.5	2.3	SW	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP4	18:10	18.2	3.1	E	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP5	18:14	18.6	0.9	E	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP6	18:17	18.9	0.3	S	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP7	18:20	18.4	1.1	SW	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP8	18:24	18.8	0.4	SW	No	0	N/A	N/A	N/A
23-Jan-22	Fine	OP9	18:28	18.5	0.6	NE	Yes	0	N/A	N/A	N/A
23-Jan-22	Fine	OP10	18:31	18.6	0.5	NE	Yes	0	N/A	N/A	N/A
23-Jan-22	Fine	OP11	18:42	18.7	0.6	E	No	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP1	11:10	23.2	0.6	N	Yes	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP2	11:07	22.9	2.5	N	Yes	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP3	11:03	23.1	0.6	W	No	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP4	11:00	22.7	1.3	N	Yes	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP5	11:16	23.8	1.8	E	No	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP6	11:19	23.3	2.2	N	No	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP7	11:22	22.0	1.6	N	Yes	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP8	11:25	23.4	3.2	N	Yes	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP9	11:29	23.0	3.1	N	No	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP10	11:32	23.2	1.0	N	No	0	N/A	N/A	N/A
24-Jan-22	Sunny	OP11	11:42	23.5	1.1	N	No	0	N/A	N/A	N/A
24-Jan-22	Fine	OP1	14:33	22.2	0.5	S	No	1	Grassy	Nearby Vegetation	N/A
24-Jan-22	Fine	OP2	14:37	22.3	0.0	N/A	N/A	0	N/A	N/A	N/A
24-Jan-22	Fine	OP3	14:40	21.6	3.4	W	W	0	N/A	N/A	N/A
24-Jan-22	Fine	OP4	14:42	21.9	1.4	NE	NE	0	N/A	N/A	N/A
24-Jan-22	Fine	OP5	14:46	21.8	2.6	E	E	0	N/A	N/A	N/A
24-Jan-22	Fine	OP6	14:49	21.1	3.7	SE	SE	0	N/A	N/A	N/A
24-Jan-22	Fine	OP7	14:51	22.3	0.0	N/A	N/A	0	N/A	N/A	N/A
24-Jan-22	Fine	OP8	14:55	21.4	0.7	N	N	0	N/A	N/A	N/A
24-Jan-22	Fine	OP9	14:58	21.7	1.8	N	N	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
24-Jan-22	Fine	OP10	15:01	22.1	0.7	N	N	0	N/A	N/A	N/A
24-Jan-22	Fine	OP11	15:11	23.4	0.0	N/A	N/A	0	N/A	N/A	N/A
24-Jan-22	Fine	OP1	18:00	19.1	0.8	S	No	0	N/A	N/A	N/A
24-Jan-22	Fine	OP2	18:03	19.3	0.6	N	Yes	0	N/A	N/A	N/A
24-Jan-22	Fine	OP3	18:07	19.1	1.1	NE	Yes	0	N/A	N/A	N/A
24-Jan-22	Fine	OP4	18:10	19.0	1.2	NE	Yes	0	N/A	N/A	N/A
24-Jan-22	Fine	OP5	18:14	18.9	3.0	SE	No	0	N/A	N/A	N/A
24-Jan-22	Fine	OP6	18:17	18.7	3.4	N	No	0	N/A	N/A	N/A
24-Jan-22	Fine	OP7	18:20	19.1	0.7	SW	No	0	N/A	N/A	N/A
24-Jan-22	Fine	OP8	18:23	19.1	0.8	SW	No	0	N/A	N/A	N/A
24-Jan-22	Fine	OP9	18:27	18.9	1.8	N	No	0	N/A	N/A	N/A
24-Jan-22	Fine	OP10	18:30	19.2	0.7	NE	Yes	0	N/A	N/A	N/A
24-Jan-22	Fine	OP11	18:41	19.2	0.6	E	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP1	11:07	18.3	1.2	N	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP2	11:10	18.4	1.8	S	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP3	11:13	18.6	1.5	S	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP4	11:16	18.7	0.5	E	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP5	11:20	18.5	3.6	E	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP6	11:23	18.3	1.8	E	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP7	11:26	18.4	0.5	S	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP8	11:30	18.7	0.6	E	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP9	11:34	18.9	1.4	N	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP10	11:37	18.6	1.6	E	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP11	11:47	18.9	0.9	E	No	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP1	14:33	21.9	0.7	SE	No	1	Grassy	Nearby Vegetation	N/A
25-Jan-22	Sunny	OP2	14:36	20.7	1.9	SE	No	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP3	14:39	21.2	0.8	NW	Yes	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP4	14:42	21.3	0.8	E	No	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP5	14:45	20.6	2.0	E	No	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP6	14:47	20.0	2.2	SE	Yes	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP7	14:50	21.9	0.8	SE	Yes	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP8	14:54	20.6	1.5	SW	No	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP9	14:56	20.2	2.9	NE	Yes	0	N/A	N/A	N/A
25-Jan-22	Sunny	OP10	14:59	21.9	0.4	N	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
25-Jan-22	Sunny	OP11	15:08	20.3	2.0	E	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP1	18:00	19.1	1.6	S	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP2	18:03	18.7	0.6	S	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP3	18:06	18.7	0.7	N	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP4	18:09	18.4	3.7	E	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP5	18:13	18.5	2.4	E	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP6	18:17	18.7	1.1	NE	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP7	18:20	18.9	0.5	S	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP8	18:24	18.9	0.8	E	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP9	18:27	18.8	0.8	N	No	0	N/A	N/A	N/A
25-Jan-22	Fine	OP10	18:31	18.6	2.1	NE	Yes	0	N/A	N/A	N/A
25-Jan-22	Fine	OP11	18:41	18.9	0.1	S	Yes	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP1	10:36	19.2	1.9	S	No	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP2	10:39	19.3	1.4	S	No	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP3	10:42	19.1	1.3	W	No	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP4	10:44	19.5	2.6	E	No	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP5	10:47	19.2	3.4	E	No	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP6	10:49	19.2	1.4	NE	Yes	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP7	10:52	20.2	0.0	N/A	N/A	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP8	10:55	19.6	1.0	N	Yes	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP9	10:57	19.6	2.8	N	Yes	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP10	11:00	19.9	1.6	E	Yes	0	N/A	N/A	N/A
26-Jan-22	Overcast	OP11	11:08	19.7	3.2	SE	No	1	Vehicle Exhaust	Heavy Vehicles	N/A
26-Jan-22	Fine	OP1	14:45	22.1	0.9	NW	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP2	14:48	22.7	0.4	N	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP3	14:52	22.7	1.3	N	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP4	14:55	22.4	1.1	SW	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP5	14:58	22.2	3.3	E	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP6	15:02	22.6	1.0	S	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP7	15:05	22.8	0.0	N/A	N/A	0	N/A	N/A	N/A
26-Jan-22	Fine	OP8	15:09	22.1	2.6	NW	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP9	15:13	22.4	2.2	N	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP10	15:17	22.3	1.2	NE	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP11	15:28	22.5	0.9	NE	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
26-Jan-22	Fine	OP1	18:00	19.7	0.6	N	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP2	18:04	19.6	0.7	S	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP3	18:07	19.7	0.5	N	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP4	18:11	19.6	0.5	N	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP5	18:14	19.4	0.4	E	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP6	18:17	19.3	0.8	NE	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP7	18:21	19.1	0.7	NW	No	0	N/A	N/A	N/A
26-Jan-22	Fine	OP8	18:25	18.9	1.5	N	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP9	18:28	19.0	1.2	NE	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP10	18:31	18.9	1.9	NE	Yes	0	N/A	N/A	N/A
26-Jan-22	Fine	OP11	18:41	19.1	1.3	E	No	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP1	10:30	19.2	0.6	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP2	10:33	19.0	2.3	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP3	10:36	19.3	0.7	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP4	10:39	19.2	1.5	E	No	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP5	10:43	19.5	0.5	E	No	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP6	10:47	19.4	1.5	N	No	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP7	10:50	19.6	0.4	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP8	10:53	19.5	1.4	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP9	10:57	19.2	2.1	N	No	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP10	11:01	19.7	0.5	N	No	0	N/A	N/A	N/A
27-Jan-22	Overcast	OP11	11:10	19.6	1.7	SE	No	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP1	14:45	20.9	3.6	S	No	1	Dead Body	Wild Animal	N/A
27-Jan-22	Sunny	OP2	14:48	21.7	0.9	S	No	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP3	14:51	21.6	1.4	SW	No	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP4	14:55	21.8	1.8	W	No	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP5	14:58	22.1	1.7	S	No	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP6	15:01	22.3	0.6	E	Yes	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP7	15:04	22.2	1.5	SW	No	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP8	15:08	22.3	1.2	SE	Yes	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP9	15:11	22.1	1.9	SE	Yes	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP10	15:14	22.1	2.2	E	Yes	0	N/A	N/A	N/A
27-Jan-22	Sunny	OP11	15:23	21.9	2.0	E	No	0	N/A	N/A	N/A
27-Jan-22	Fine	OP1	18:05	19.1	0.5	S	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
27-Jan-22	Fine	OP2	18:08	19.0	0.6	S	No	0	N/A	N/A	N/A
27-Jan-22	Fine	OP3	18:11	19.1	1.0	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Fine	OP4	18:15	18.9	1.1	E	No	0	N/A	N/A	N/A
27-Jan-22	Fine	OP5	18:18	19.0	0.9	NE	Yes	0	N/A	N/A	N/A
27-Jan-22	Fine	OP6	18:21	19.1	0.7	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Fine	OP7	18:25	19.1	1.3	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Fine	OP8	18:28	18.9	0.9	N	Yes	0	N/A	N/A	N/A
27-Jan-22	Fine	OP9	18:31	19.1	0.4	NW	No	0	N/A	N/A	N/A
27-Jan-22	Fine	OP10	18:34	19.0	1.2	E	Yes	0	N/A	N/A	N/A
27-Jan-22	Fine	OP11	18:42	19.0	0.3	NE	No	0	N/A	N/A	N/A
28-Jan-22	Shower	OP1	10:45	18.8	2.9	N	Yes	1	Dead Body	Boar	N/A
28-Jan-22	Shower	OP2	10:48	19.1	0.7	N	Yes	0	N/A	N/A	N/A
28-Jan-22	Shower	OP3	10:51	18.8	2.4	W	No	0	N/A	N/A	N/A
28-Jan-22	Shower	OP4	10:54	19.0	0.5	SW	No	0	N/A	N/A	N/A
28-Jan-22	Shower	OP5	10:58	19.2	1.0	E	No	0	N/A	N/A	N/A
28-Jan-22	Shower	OP6	11:01	18.7	3.9	NE	Yes	0	N/A	N/A	N/A
28-Jan-22	Shower	OP7	11:04	19.2	2.1	N	Yes	0	N/A	N/A	N/A
28-Jan-22	Shower	OP8	11:07	19.0	1.3	S	No	0	N/A	N/A	N/A
28-Jan-22	Shower	OP9	11:10	18.9	2.7	E	Yes	0	N/A	N/A	N/A
28-Jan-22	Shower	OP10	11:13	18.9	3.3	SE	Yes	0	N/A	N/A	N/A
28-Jan-22	Shower	OP11	11:23	19.3	0.7	SE	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP1	14:45	18.9	1.9	N	Yes	1	Dead Body	Boar	N/A
28-Jan-22	Fine	OP2	14:48	19.0	2.0	N	Yes	0	N/A	N/A	N/A
28-Jan-22	Fine	OP3	14:51	18.8	2.7	SW	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP4	14:54	18.9	1.8	SW	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP5	14:57	18.7	3.2	E	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP6	15:01	18.9	1.2	NW	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP7	15:04	19.0	1.1	W	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP8	15:07	19.1	1.3	SW	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP9	15:11	18.9	2.4	SE	Yes	0	N/A	N/A	N/A
28-Jan-22	Fine	OP10	15:15	19.2	1.5	NW	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP11	15:25	19.1	1.8	W	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP1	18:00	19.2	0.4	N	Yes	1	Dead Body	Boar	N/A
28-Jan-22	Fine	OP2	18:03	18.8	1.1	NW	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
28-Jan-22	Fine	OP3	18:07	18.8	2.4	NW	Yes	0	N/A	N/A	N/A
28-Jan-22	Fine	OP4	18:10	18.2	4.3	E	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP5	18:14	18.3	3.1	SE	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP6	18:17	18.3	2.0	S	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP7	18:20	18.5	1.9	N	Yes	0	N/A	N/A	N/A
28-Jan-22	Fine	OP8	18:23	18.4	1.6	S	No	0	N/A	N/A	N/A
28-Jan-22	Fine	OP9	18:27	18.4	1.7	NE	Yes	0	N/A	N/A	N/A
28-Jan-22	Fine	OP10	18:30	19.0	0.4	E	Yes	0	N/A	N/A	N/A
28-Jan-22	Fine	OP11	18:41	18.8	2.5	E	No	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP1	10:38	18.7	1.1	N	Yes	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP2	10:41	18.5	2.0	N	Yes	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP3	10:45	18.8	0.5	SE	No	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP4	10:48	18.5	1.3	N	Yes	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP5	10:52	18.6	2.9	E	No	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP6	10:55	18.4	1.2	N	No	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP7	10:58	18.5	1.1	N	Yes	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP8	11:02	18.7	0.8	N	Yes	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP9	11:06	19.0	0.6	N	No	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP10	11:09	18.9	1.5	E	Yes	0	N/A	N/A	N/A
29-Jan-22	Overcast	OP11	11:20	19.1	0.4	E	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP1	15:00	22.2	1.1	S	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP2	15:03	22.1	5.1	S	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP3	15:07	22.3	0.7	SW	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP4	15:11	22.1	2.5	E	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP5	15:14	22.7	0.6	E	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP6	15:17	22.5	1.6	SE	Yes	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP7	15:21	23.0	0.5	S	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP8	15:25	22.9	1.8	NW	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP9	15:28	21.9	1.6	N	No	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP10	15:31	21.6	2.1	NE	Yes	0	N/A	N/A	N/A
29-Jan-22	Sunny	OP11	15:41	20.8	2.7	NE	No	0	N/A	N/A	N/A
29-Jan-22	Fine	OP1	18:00	19.7	0.3	S	No	0	N/A	N/A	N/A
29-Jan-22	Fine	OP2	18:03	19.3	1.1	S	No	0	N/A	N/A	N/A
29-Jan-22	Fine	OP3	18:06	19.1	0.5	NE	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
29-Jan-22	Fine	OP4	18:10	19.0	1.1	E	No	0	N/A	N/A	N/A
29-Jan-22	Fine	OP5	18:14	18.9	1.9	E	No	0	N/A	N/A	N/A
29-Jan-22	Fine	OP6	18:17	19.4	0.6	SE	Yes	0	N/A	N/A	N/A
29-Jan-22	Fine	OP7	18:21	19.3	0.8	N	Yes	0	N/A	N/A	N/A
29-Jan-22	Fine	OP8	18:24	19.2	0.7	E	Yes	0	N/A	N/A	N/A
29-Jan-22	Fine	OP9	18:28	19.0	1.5	N	No	0	N/A	N/A	N/A
29-Jan-22	Fine	OP10	18:31	19.3	1.2	E	Yes	0	N/A	N/A	N/A
29-Jan-22	Fine	OP11	18:42	19.2	0.1	E	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP1	10:30	14.6	2.4	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP2	10:33	14.4	3.8	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP3	10:36	14.7	1.4	NE	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP4	10:40	14.6	1.8	NE	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP5	10:43	14.5	3.4	NE	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP6	10:46	14.8	1.7	N	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP7	10:50	14.7	2.6	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP8	10:53	14.9	1.3	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP9	10:57	15.0	1.6	N	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP10	11:00	15.1	1.3	N	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP11	11:10	15.3	3.2	S	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP1	15:11	18.5	3.0	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP2	15:07	18.7	2.5	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP3	15:03	18.9	1.2	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP4	15:00	19.0	0.6	W	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP5	14:57	18.8	3.2	E	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP6	14:54	18.7	2.7	N	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP7	14:50	18.6	3.2	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP8	14:47	18.4	2.8	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP9	14:43	18.7	2.6	N	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP10	14:40	18.5	1.4	N	No	0	N/A	N/A	N/A
30-Jan-22	Sunny	OP11	14:30	18.9	1.7	S	No	0	N/A	N/A	N/A
30-Jan-22	Fine	OP1	18:00	16.7	2.0	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Fine	OP2	18:03	16.7	2.4	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Fine	OP3	18:06	16.8	1.1	NE	No	0	N/A	N/A	N/A
30-Jan-22	Fine	OP4	18:10	16.9	0.9	E	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
30-Jan-22	Fine	OP5	18:13	16.6	1.3	NE	Yes	0	N/A	N/A	N/A
30-Jan-22	Fine	OP6	18:17	16.3	2.4	NE	Yes	0	N/A	N/A	N/A
30-Jan-22	Fine	OP7	18:20	16.0	2.0	N	Yes	0	N/A	N/A	N/A
30-Jan-22	Fine	OP8	18:24	15.9	1.7	NW	No	0	N/A	N/A	N/A
30-Jan-22	Fine	OP9	18:28	16.0	0.6	N	No	0	N/A	N/A	N/A
30-Jan-22	Fine	OP10	18:31	15.9	1.3	NE	Yes	0	N/A	N/A	N/A
30-Jan-22	Fine	OP11	18:42	15.6	1.1	E	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP1	11:05	12.1	2.6	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP2	11:08	12.4	3.5	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP3	11:11	12.3	1.4	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP4	11:14	12.3	1.0	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP5	11:17	12.5	1.7	N	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP6	11:20	12.2	2.2	N	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP7	11:24	12.0	3.0	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP8	11:27	12.3	2.6	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP9	11:30	12.4	3.4	N	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP10	11:33	12.5	2.2	N	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP11	11:44	12.4	1.5	E	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP1	15:11	14.5	2.1	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP2	15:14	14.7	2.4	NW	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP3	15:16	15.2	0.5	W	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP4	15:19	14.6	1.3	E	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP5	15:22	14.2	1.6	SE	No	1	Cooking Smell	EPD Office Building	N/A
31-Jan-22	Fine	OP6	15:25	15.4	0.0	N/A	N/A	0	N/A	N/A	N/A
31-Jan-22	Fine	OP7	15:28	14.5	2.2	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP8	15:31	14.3	0.8	NE	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP9	15:34	14.5	1.8	E	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP10	15:36	14.9	0.6	SE	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP11	15:45	14.2	1.1	SE	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP1	18:00	13.8	2.4	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP2	18:03	14.1	2.1	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP3	18:07	14.2	1.0	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP4	18:10	14.2	2.0	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP5	18:14	14.0	2.1	NE	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
31-Jan-22	Fine	OP6	18:18	14.4	0.0	N/A	N/A	0	N/A	N/A	N/A
31-Jan-22	Fine	OP7	18:21	14.6	2.2	E	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP8	18:25	14.0	0.6	N	Yes	0	N/A	N/A	N/A
31-Jan-22	Fine	OP9	18:28	14.2	0.8	N	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP10	18:31	14.3	0.6	N	No	0	N/A	N/A	N/A
31-Jan-22	Fine	OP11	18:42	14.0	1.4	E	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP1	10:55	14.9	2.0	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP2	10:58	14.6	1.8	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP3	11:01	14.5	2.3	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP4	11:04	14.5	2.4	W	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP5	11:08	15.1	0.7	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP6	11:11	14.9	0.9	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP7	11:15	15.2	1.4	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP8	11:19	15.4	2.2	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP9	11:23	14.6	2.7	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP10	11:27	14.0	1.5	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP11	11:38	13.8	2.9	E	No	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP1	15:47	13.5	1.8	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP2	15:44	14.7	0.4	W	Yes	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP3	15:39	14.5	0.8	NW	Yes	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP4	15:35	14.3	N/A	N/A	N/A	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP5	15:32	14.2	1.4	N	No	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP6	15:28	13.7	2.2	N	No	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP7	15:24	13.5	2.1	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP8	15:20	13.4	1.8	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP9	15:17	13.5	1.7	N	No	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP10	15:14	13.7	2.2	N	No	0	N/A	N/A	N/A
1-Feb-22	Overcast	OP11	15:04	14.0	N/A	N/A	N/A	0	N/A	N/A	N/A
1-Feb-22	Fine	OP1	18:00	14.0	1.1	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP2	18:04	13.9	0.8	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP3	18:07	13.6	0.9	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP4	18:10	13.4	0.6	S	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP5	18:14	12.8	0.8	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP6	18:17	12.3	2.1	N	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
1-Feb-22	Fine	OP7	18:21	12.2	2.6	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP8	18:24	11.7	1.0	N	Yes	0	N/A	N/A	N/A
1-Feb-22	Fine	OP9	18:27	11.9	1.2	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP10	18:31	11.7	1.3	N	No	0	N/A	N/A	N/A
1-Feb-22	Fine	OP11	18:42	11.5	1.8	E	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP1	10:45	15.3	1.3	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP2	10:48	15.4	0.7	NW	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP3	10:51	15.3	1.0	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP4	10:54	15.2	1.1	SW	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP5	10:57	15.0	3.1	E	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP6	11:01	15.1	1.4	SW	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP7	11:05	15.0	2.1	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP8	11:08	15.2	0.7	SW	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP9	11:12	15.0	0.8	NW	No	1	Acidic	Town Gas Plant	N/A
2-Feb-22	Overcast	OP10	11:15	14.9	1.3	NE	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP11	11:26	15.3	0.9	SW	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP1	14:55	16.8	1.1	NW	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP2	14:58	16.6	0.8	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP3	15:02	16.7	0.5	NE	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP4	15:05	16.8	0.9	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP5	15:09	16.4	1.2	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP6	15:12	16.9	0.5	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP7	15:16	17.0	0.1	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP8	15:19	16.6	1.5	NE	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP9	15:23	16.5	0.6	NW	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP10	15:26	16.9	0.3	NW	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP11	15:36	16.1	1.4	NE	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP1	18:00	14.6	0.9	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP2	18:03	14.2	1.5	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP3	18:06	14.1	1.2	NE	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP4	18:10	14.8	0.5	E	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP5	18:13	14.6	0.7	E	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP6	18:16	14.3	1.6	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP7	18:20	13.9	1.0	NE	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
2-Feb-22	Overcast	OP8	18:24	14.1	2.1	N	Yes	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP9	18:27	14.2	1.4	N	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP10	18:30	14.6	0.8	N	No	0	N/A	N/A	N/A
2-Feb-22	Overcast	OP11	18:41	14.1	0.9	NE	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP1	10:30	13.5	2.1	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP2	10:33	13.6	2.0	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP3	10:37	13.6	2.1	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP4	10:40	13.8	1.1	NE	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP5	10:43	14.0	1.2	E	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP6	10:47	13.9	1.6	E	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP7	10:50	14.1	1.4	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP8	10:53	13.7	2.0	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP9	10:57	13.7	0.6	N	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP10	11:00	13.8	0.4	N	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP11	11:11	13.5	3.0	E	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP1	15:44	14.0	3.2	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP2	15:41	14.1	1.4	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP3	15:37	13.9	2.7	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP4	15:34	14.2	1.0	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP5	15:30	14.5	2.1	N	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP6	15:27	14.0	3.0	NW	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP7	15:24	14.2	2.1	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP8	15:20	14.6	0.6	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP9	15:17	14.5	0.7	NE	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP10	15:14	14.6	0.8	NE	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP11	15:03	14.3	3.0	E	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP1	18:00	14.2	0.6	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP2	18:02	14.3	0.8	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP3	18:06	13.9	0.5	NE	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP4	18:10	13.7	0.9	NE	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP5	18:14	14.0	1.2	N	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP6	18:17	14.1	1.1	NE	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP7	18:19	13.9	0.9	N	Yes	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP8	18:22	13.8	2.0	N	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
3-Feb-22	Overcast	OP9	18:26	13.9	1.3	N	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP10	18:29	14.2	1.4	N	No	0	N/A	N/A	N/A
3-Feb-22	Overcast	OP11	18:42	13.7	2.0	E	No	0	N/A	N/A	N/A
4-Feb-22	Fine	OP1	10:33	14.3	2.1	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP2	10:36	14.0	2.1	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP3	10:38	14.3	1.9	NE	No	0	N/A	N/A	N/A
4-Feb-22	Fine	OP4	10:40	15.1	1.0	E	No	0	N/A	N/A	N/A
4-Feb-22	Fine	OP5	10:43	14.6	2.0	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP6	10:45	14.5	3.2	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP7	10:48	14.3	3.6	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP8	10:50	14.4	2.7	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP9	10:52	14.9	0.8	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP10	10:54	15.1	0.0	N/A	N/A	0	N/A	N/A	N/A
4-Feb-22	Fine	OP11	11:02	14.6	2.2	SE	No	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP1	14:48	17.3	3.2	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP2	14:51	17.6	1.4	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP3	14:54	17.2	1.7	W	No	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP4	14:57	17.5	1.2	E	No	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP5	15:01	18.1	2.2	N	No	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP6	15:05	18.3	2.9	N	No	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP7	15:09	18.5	2.4	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP8	15:13	18.4	2.3	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP9	15:17	18.1	2.1	N	No	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP10	15:20	18.6	0.9	N	No	0	N/A	N/A	N/A
4-Feb-22	Sunny	OP11	15:30	18.8	1.8	E	No	0	N/A	N/A	N/A
4-Feb-22	Fine	OP1	18:00	15.3	3.3	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP2	18:03	15.6	1.7	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP3	18:06	14.9	0.5	NW	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP4	18:10	14.8	1.4	E	No	0	N/A	N/A	N/A
4-Feb-22	Fine	OP5	18:14	14.4	2.9	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP6	18:17	14.3	1.8	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP7	18:21	14.2	1.6	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP8	18:25	14.5	1.7	N	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP9	18:29	14.6	1.4	NE	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
4-Feb-22	Fine	OP10	18:32	14.8	1.0	NE	Yes	0	N/A	N/A	N/A
4-Feb-22	Fine	OP11	18:43	14.1	2.7	E	No	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP1	14:55	20.2	1.9	NW	Yes	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP2	14:58	20.8	2.0	NW	Yes	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP3	15:00	20.1	1.0	N	Yes	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP4	15:02	20.3	2.2	NE	Yes	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP5	15:04	19.5	3.2	E	No	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP6	15:06	20.3	3.4	NW	No	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP7	15:09	20.3	1.2	N	Yes	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP8	15:11	19.8	2.0	N	Yes	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP9	15:13	20.8	N/A	N/A	N/A	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP10	15:16	21.2	0.8	NE	Yes	0	N/A	N/A	N/A
11-Feb-22	Overcast	OP11	15:24	19.7	3.0	SE	No	1	Exhaust gas	Generator	N/A
18-Feb-22	Overcast	OP1	14:28	16.7	4.3	SE	No	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP2	14:31	16.1	3.0	SE	No	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP3	14:33	15.8	9.0	N	Yes	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP4	14:36	16.1	2.0	N	Yes	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP5	14:38	16.2	8.8	E	No	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP6	14:41	16.5	4.7	N	No	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP7	14:44	16.7	5.6	NW	No	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP8	14:46	16.8	1.0	E	Yes	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP9	14:49	16.2	10.1	N	No	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP10	14:51	17.9	1.2	N	No	0	N/A	N/A	N/A
18-Feb-22	Overcast	OP11	14:59	17.8	0.7	E	No	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP1	14:44	8.7	1.3	NW	Yes	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP2	14:48	8.9	1.8	NW	Yes	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP3	14:51	9.2	0.8	NE	No	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP4	14:53	10.6	N/A	N/A	N/A	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP5	14:56	9.9	1.0	NW	Yes	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP6	14:58	9.9	2.0	NW	Yes	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP7	15:00	9.8	1.2	N	Yes	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP8	15:03	9.8	1.4	N	No	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP9	15:06	9.8	1.2	N	No	0	N/A	N/A	N/A
21-Feb-22	Rainy	OP10	15:13	9.7	1.4	N	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
21-Feb-22	Rainy	OP11	15:20	9.6	0.8	SE	No	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP1	13:43	23.3	3.9	N	Yes	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP2	13:46	20.4	9.6	N	Yes	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP3	13:49	22.3	0.9	N	Yes	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP4	13:52	22.8	11.7	NE	Yes	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP5	13:55	20.1	6.2	E	Yes	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP6	13:59	21.8	2.3	NW	Yes	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP7	14:03	21.0	4.2	NW	No	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP8	14:07	21.7	3.1	NW	No	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP9	14:10	23.2	3.8	NE	No	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP10	14:13	24.2	4.0	NE	Yes	0	N/A	N/A	N/A
28-Feb-22	Sunny	OP11	14:24	21.4	2.9	NE	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP1	11:20	22.4	2.5	NW	Yes	0	N/A	N/A	N/A
7-Mar-22	Fine	OP2	11:23	22.4	2.4	NW	Yes	0	N/A	N/A	N/A
7-Mar-22	Fine	OP3	11:25	23.7	1.0	NE	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP4	11:27	24.3	1.0	E	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP5	11:30	23.5	3.0	E	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP6	11:32	23.8	0.8	NW	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP7	11:34	23.1	2.1	N	Yes	0	N/A	N/A	N/A
7-Mar-22	Fine	OP8	11:40	24.0	1.3	N	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP9	11:44	23.5	1.8	N	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP10	11:46	23.1	2.3	N	No	0	N/A	N/A	N/A
7-Mar-22	Fine	OP11	11:55	23.1	1.1	SE	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP1	13:26	24.6	6.5	S	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP2	13:30	24.9	1.8	S	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP3	13:33	26.1	1.6	S	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP4	13:35	25.4	1.5	W	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP5	13:39	24.8	2.9	E	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP6	13:41	24.8	3.2	N	Yes	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP7	13:45	24.7	0.0	N/A	N/A	1	Acidic	Slurry Truck	N/A
16-Mar-22	Sunny	OP8	13:50	23.8	7.1	N	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP9	13:54	25.0	2.6	E	Yes	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP10	13:56	23.8	3.2	N	No	0	N/A	N/A	N/A
16-Mar-22	Sunny	OP11	14:06	26.6	0.0	N/A	N/A	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
21-Mar-22	Overcast	OP1	13:39	23.0	2.4	N	Yes	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP2	13:41	22.8	2.1	N	Yes	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP3	13:44	23.1	1.6	W	No	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP4	13:46	23.3	0.8	N	Yes	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP5	13:49	22.4	2.0	NW	No	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP6	13:51	22.4	2.2	N	Yes	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP7	13:53	22.3	1.0	N	Yes	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP8	13:56	22.4	2.8	N	No	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP9	13:59	22.3	1.5	E	Yes	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP10	14:02	22.6	1.8	NE	Yes	0	N/A	N/A	N/A
21-Mar-22	Overcast	OP11	14:10	22.3	0.8	SE	No	0	N/A	N/A	N/A
29-Mar-22	Fine	OP1	13:27	22.3	4.7	N	Yes	0	N/A	N/A	N/A
29-Mar-22	Fine	OP2	13:31	22.5	2.0	S	No	0	N/A	N/A	N/A
29-Mar-22	Fine	OP3	13:34	23.5	5.0	SW	No	0	N/A	N/A	N/A
29-Mar-22	Fine	OP4	13:37	21.2	3.7	E	No	0	N/A	N/A	N/A
29-Mar-22	Fine	OP5	13:40	21.6	4.9	E	No	0	N/A	N/A	N/A
29-Mar-22	Fine	OP6	13:42	21.2	5.4	E	Yes	0	N/A	N/A	N/A
29-Mar-22	Fine	OP7	13:44	21.5	1.3	N	Yes	0	N/A	N/A	N/A
29-Mar-22	Fine	OP8	13:48	22.7	6.2	N	No	1	Diesel	Generator	N/A
29-Mar-22	Fine	OP9	13:53	22.3	8.3	E	Yes	0	N/A	N/A	N/A
29-Mar-22	Fine	OP10	13:55	22.6	5.9	N	No	0	N/A	N/A	N/A
29-Mar-22	Fine	OP11	14:04	21.1	3.8	E	No	1	Exhaust Gas	Excavator	N/A
7-Apr-22	Sunny	OP1	14:07	26.3	1.4	S	No	1	Grassy	Nearby Vegetation	N/A
7-Apr-22	Sunny	OP2	14:12	26.2	1.9	S	No	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP3	14:14	26.2	0.9	N	Yes	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP4	14:17	26.3	0.5	N	Yes	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP5	14:21	25.7	0.9	E	No	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP6	14:23	26.4	1.5	SE	Yes	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP7	14:27	26.6	1.0	SE	Yes	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP8	14:30	24.8	2.0	S	No	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP9	14:33	25.2	2.2	SE	Yes	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP10	14:35	24.9	2.9	S	No	0	N/A	N/A	N/A
7-Apr-22	Sunny	OP11	14:44	26.0	1.6	SE	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP1	13:27	27.6	3.2	S	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
12-Apr-22	Sunny	OP2	13:29	27.3	4.7	S	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP3	13:32	27.0	5.3	SW	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP4	13:34	28.0	5.5	E	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP5	13:37	29.0	3.4	S	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP6	13:40	28.5	5.8	S	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP7	13:43	28.4	5.2	S	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP8	13:46	28.7	4.4	S	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP9	13:50	31.0	2.5	S	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP10	13:52	32.5	1.2	N	No	0	N/A	N/A	N/A
12-Apr-22	Sunny	OP11	14:02	32.2	3.4	E	No	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP1	14:40	27.5	1.6	S	No	1	Grassy	Nearby Vegetation	N/A
22-Apr-22	Sunny	OP2	14:49	25.6	1.3	SW	Yes	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP3	14:53	25.4	1.8	SW	No	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP4	14:56	28.0	0.4	SW	No	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP5	15:00	28.2	1.7	SE	No	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP6	15:02	27.1	2.2	SW	No	1	Paint	Painting Site Work	N/A
22-Apr-22	Sunny	OP7	15:06	26.6	1.8	SW	No	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP8	15:10	28.3	1.2	SW	No	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP9	15:13	27.8	1.1	NE	Yes	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP10	15:15	26.1	2.3	E	Yes	0	N/A	N/A	N/A
22-Apr-22	Sunny	OP11	15:25	26.2	2.8	SE	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP1	9:39	28.5	3.6	S	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP2	9:43	28.1	1.2	S	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP3	9:46	28.7	2.0	SW	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP4	9:49	31.3	0.0	N/A	N/A	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP5	9:52	31.3	1.4	SW	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP6	9:55	29.5	1.3	S	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP7	9:57	29.7	5.2	S	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP8	10:02	28.3	7.3	S	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP9	10:06	29.2	5.2	S	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP10	10:08	32.7	1.5	S	No	0	N/A	N/A	N/A
25-Apr-22	Sunny	OP11	10:21	29.9	5.5	W	Yes	0	N/A	N/A	N/A
4-May-22	Sunny	OP1	9:23	25.9	1.0	S	No	1	Grassy	Nearby Vegetation	N/A
4-May-22	Sunny	OP2	9:27	26.7	0.0	NA	NA	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
4-May-22	Sunny	OP3	9:29	26.1	1.9	SW	No	0	N/A	N/A	N/A
4-May-22	Sunny	OP4	9:31	26.4	0.6	SW	No	0	N/A	N/A	N/A
4-May-22	Sunny	OP5	9:35	26.9	1.8	E	No	0	N/A	N/A	N/A
4-May-22	Sunny	OP6	9:38	27.2	2.2	S	No	0	N/A	N/A	N/A
4-May-22	Sunny	OP7	9:41	27.4	1.1	NE	Yes	0	N/A	N/A	N/A
4-May-22	Sunny	OP8	9:44	27.0	1.2	E	Yes	1	Exhaust	Heavy Vehicles	N/A
4-May-22	Sunny	OP9	9:47	27.0	2.2	E	Yes	0	N/A	N/A	N/A
4-May-22	Sunny	OP10	9:50	26.6	5.9	E	Yes	0	N/A	N/A	N/A
4-May-22	Sunny	OP11	10:00	27.7	0.7	SE	No	0	N/A	N/A	N/A
10-May-22	Rainy	OP1	13:25	26.0	1.0	S	No	0	N/A	N/A	N/A
10-May-22	Rainy	OP2	13:29	28.7	0.8	S	No	0	N/A	N/A	N/A
10-May-22	Rainy	OP3	13:32	28.2	1.2	N	Yes	0	N/A	N/A	N/A
10-May-22	Rainy	OP4	13:34	27.8	1.8	W	Yes	0	N/A	N/A	N/A
10-May-22	Rainy	OP5	13:38	26.0	1.8	W	No	0	N/A	N/A	N/A
10-May-22	Rainy	OP6	13:41	26.1	4.3	N	No	0	N/A	N/A	N/A
10-May-22	Rainy	OP7	13:44	26.2	2.2	N	Yes	0	N/A	N/A	N/A
10-May-22	Rainy	OP8	13:48	25.9	4.5	N	No	0	N/A	N/A	N/A
10-May-22	Rainy	OP9	13:52	26.4	3.3	E	Yes	1	Town Gas	Town Gas Plant	N/A
10-May-22	Rainy	OP10	13:57	26.5	4.5	E	Yes	0	N/A	N/A	N/A
10-May-22	Rainy	OP11	14:07	26.3	0.0	N/A	N/A	0	N/A	N/A	N/A
17-May-22	Sunny	OP1	14:40	27.5	3.0	SE	No	1	Grassy	Nearby Vegetation	N/A
17-May-22	Sunny	OP2	14:43	24.8	1.1	SE	No	1	Grassy	Nearby Vegetation	N/A
17-May-22	Sunny	OP3	14:46	25.0	3.2	SW	No	0	N/A	N/A	N/A
17-May-22	Sunny	OP4	14:48	25.6	1.8	SW	No	0	N/A	N/A	N/A
17-May-22	Sunny	OP5	14:51	28.6	1.1	SE	No	0	N/A	N/A	N/A
17-May-22	Sunny	OP6	14:53	27.3	1.2	S	No	0	N/A	N/A	N/A
17-May-22	Sunny	OP7	14:56	26.3	1.6	SW	No	0	N/A	N/A	N/A
17-May-22	Sunny	OP8	14:59	26.4	1.3	S	No	0	N/A	N/A	N/A
17-May-22	Sunny	OP9	15:01	25.3	5.0	E	Yes	1	Fragrance	Town Gas Plant	N/A
17-May-22	Sunny	OP10	15:06	27.7	0.8	E	Yes	0	N/A	N/A	N/A
17-May-22	Sunny	OP11	15:14	26.2	0.0	N/A	N/A	0	N/A	N/A	N/A
23-May-22	Shower	OP1	9:46	24.1	7.2	S	No	1	Grassy	Nearby Vegetation	N/A
23-May-22	Shower	OP2	9:49	24.6	1.2	S	No	1	Grassy	Nearby Vegetation	N/A
23-May-22	Shower	OP3	9:54	24.0	4.4	E	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
23-May-22	Shower	OP4	10:01	24.4	2.4	SW	No	0	N/A	N/A	N/A
23-May-22	Shower	OP5	10:04	24.7	3.8	N	No	0	N/A	N/A	N/A
23-May-22	Shower	OP6	10:06	24.7	5.9	N	No	0	N/A	N/A	N/A
23-May-22	Shower	OP7	10:08	24.6	2.2	N	Yes	0	N/A	N/A	N/A
23-May-22	Shower	OP8	10:12	24.5	8.8	E	Yes	1	Waste	Tipping Area	N/A
23-May-22	Shower	OP9	10:21	24.6	3.9	E	Yes	1	Dead mouse	Town Gas Plant	N/A
23-May-22	Shower	OP10	10:26	25.3	2.3	W	No	0	N/A	N/A	N/A
23-May-22	Shower	OP11	10:35	25.7	2.2	S	Yes	0	N/A	N/A	N/A
30-May-22	Sunny	OP1	13:48	30.6	2.7	S	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP2	13:51	30.4	1.1	S	No	1	Grassy	Nearby Vegetation	N/A
30-May-22	Sunny	OP3	13:54	30.9	1.4	SW	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP4	13:55	31.7	1.4	SW	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP5	13:58	32.8	1.0	SW	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP6	14:00	30.6	3.1	SW	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP7	14:03	31.2	4.1	S	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP8	14:05	32.0	1.8	SW	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP9	14:07	32.0	1.5	SE	Yes	0	N/A	N/A	N/A
30-May-22	Sunny	OP10	14:12	32.4	1.4	SW	No	0	N/A	N/A	N/A
30-May-22	Sunny	OP11	14:19	31.5	2.3	W	Yes	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP1	13:22	32.2	1.5	S	No	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP2	13:25	31.8	1.3	SE	No	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP3	13:27	31.8	1.9	SW	No	1	Biogas	TCU	N/A
28-Jun-22	Sunny	OP4	13:33	34.2	0.7	SE	No	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP5	13:36	34.6	1.1	NE	Yes	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP6	13:38	32.3	2.6	S	No	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP7	13:41	34.1	1.8	S	No	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP8	13:44	33.1	1.2	SW	No	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP9	13:46	32.7	2.7	NE	Yes	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP10	13:50	34.0	1.7	E	Yes	0	N/A	N/A	N/A
28-Jun-22	Sunny	OP11	13:57	32.5	0.7	NE	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP1	14:13	33.5	5.1	S	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP2	14:16	33.5	5.1	S	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP3	14:18	35.6	3.5	SW	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP4	14:21	36.4	0.0	NA	NA	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
22-Jul-22	Sunny	OP5	14:24	36.8	1.1	W	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP6	14:27	35.1	5.0	S	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP7	14:30	34.3	5.4	S	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP8	14:33	34.9	4.7	S	No	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP9	14:36	35.4	4.0	SE	Yes	0	N/A	N/A	N/A
22-Jul-22	Sunny	OP10	14:39	38.0	2.3	E	Yes	1	Town gas	Town gas plant	N/A
22-Jul-22	Sunny	OP11	14:48	36.1	1.8	S	Yes	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP1	13:21	34.2	2.8	S	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP2	13:24	33.1	1.0	S	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP3	13:26	33.3	2.1	SW	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP4	13:29	33.4	1.7	W	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP5	13:33	32.3	4.0	SW	No	1	Exhaust gas	Area 137 Excavator	N/A
22-Aug-22	Sunny	OP6	13:35	32.9	5.7	S	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP7	13:38	32.6	8.5	S	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP8	13:41	33.4	1.5	S	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP9	13:44	35.0	1.6	E	Yes	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP10	13:47	34.0	1.5	W	No	0	N/A	N/A	N/A
22-Aug-22	Sunny	OP11	13:56	32.7	2.4	S	Yes	1	Waste	Tipping Area	N/A
15-Sep-22	Sunny	OP1	14:28	35.3	3.3	S	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP2	14:31	33.9	2.8	S	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP3	14:34	33.7	1.2	SW	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP4	14:36	35.9	0.6	SW	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP5	14:40	37.5	0.9	SW	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP6	14:42	35.2	2.0	S	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP7	14:45	35.6	0.6	S	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP8	14:49	36.7	1.1	SW	No	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP9	14:56	35.8	0.4	SW	Yes	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP10	14:58	34.9	1.5	SE	Yes	0	N/A	N/A	N/A
15-Sep-22	Sunny	OP11	15:05	36.1	0.8	SE	Yes	1	Exhaust gas	Vehicle	N/A
13-Oct-22	Sunny	OP1	14:44	29.1	5.4	S	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP2	14:47	28.4	3.5	S	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP3	14:50	30.7	4.6	SE	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP4	14:52	31.1	2.4	E	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP5	14:54	30.0	3.8	S	No	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
13-Oct-22	Sunny	OP6	14:56	29.8	1.7	NE	Yes	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP7	14:58	29.9	2.9	S	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP8	15:01	30.4	6.3	S	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP9	15:01	29.7	6.6	E	Yes	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP10	15:01	28.9	1.3	N	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP11	15:01	30.5	2.6	NE	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP12	15:24	29.4	1.3	E	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP13	15:18	28.4	0.0	N/A	N/A	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP14	15:15	28.6	2.6	N	No	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP15	14:20	30.5	1.4	W	Yes	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP16	14:25	31.5	2.2	W	Yes	0	N/A	N/A	N/A
13-Oct-22	Sunny	OP17	14:27	32.2	2.0	W	Yes	0	N/A	N/A	N/A
24-Nov-22	Shower	OP1	15:00	21.9	12.3	S	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP2	15:04	21.7	4.0	S	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP3	15:07	21.9	0.7	N	Yes	0	N/A	N/A	N/A
24-Nov-22	Shower	OP4	15:09	21.9	4.8	E	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP5	15:11	22.2	2.3	E	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP6	15:12	22.5	7.6	N	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP7	15:14	22.0	4.3	N	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP8	15:17	22.0	3.5	E	Yes	1	N/A	Tipping area	Waste
24-Nov-22	Shower	OP9	15:22	21.6	1.0	E	Yes	0	N/A	N/A	N/A
24-Nov-22	Shower	OP10	15:24	21.7	1.3	E	Yes	0	N/A	N/A	N/A
24-Nov-22	Shower	OP11	15:38	21.4	3.5	E	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP12	15:36	21.4	2.3	E	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP13	15:34	21.1	4.7	E	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP14	15:31	21.2	1.5	N	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP15	15:46	21.2	1.7	E	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP16	15:51	21.5	1.8	E	No	0	N/A	N/A	N/A
24-Nov-22	Shower	OP17	15:53	21.4	1.2	NE	No	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP1	14:29	16.4	2.2	NW	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP2	14:33	16.4	2.6	N	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP3	14:36	17.0	0.8	NE	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP4	14:38	17.6	1.5	E	No	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP5	14:40	17.3	1.0	N	Yes	0	N/A	N/A	N/A

Date	Weather	Location	Time	Temperature (oC)	Wind Speed (m/s)	Wind Direction	From Project Site	Odour Intensity	Odour Characteristic	Possible Source	Remarks
13-Dec-22	Cloudy	OP6	14:42	17.2	2.2	NE	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP7	14:44	16.7	1.6	N	No	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP8	14:47	17.7	2.3	NE	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP9	14:52	17.4	1.0	E	Yes	1	Towngas	Towngas plant	N/A
13-Dec-22	Cloudy	OP10	14:54	17.3	1.0	SE	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP11	15:09	16.4	1.6	NW	No	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP12	15:07	17.6	1.2	SW	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP13	15:04	16.6	0.7	SW	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP14	15:02	16.8	3.4	NE	Yes	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP15	15:26	15.2	1.5	SE	No	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP16	15:24	15.6	4.3	NW	No	0	N/A	N/A	N/A
13-Dec-22	Cloudy	OP17	15:20	15.2	1.7	E	Yes	0	N/A	N/A	N/A

Annex D5

Thermal Oxidizer, Landfill Gas Flare and Landfill Gas Generator Stack Emission Monitoring Results

Table D5.1 Thermal Oxidiser Stack Emission Monitoring Results

Parameters	**Monitoring Results (January 2022)**
NO_2	0.38 gs^{-1}
CO	0.047 gs^{-1}
SO_2	<0.015 gs^{-1}
Benzene	<4 x 10^{-5} gs^{-1}
Vinyl chloride	<3 x 10^{-5} gs^{-1}
Exhaust gas velocity	9.9 ms^{-1}
Parameters	**Monitoring Results (February 2022)**
NO_2	1.17 gs^{-1}
CO	0.06 gs^{-1}
SO_2	0.02 gs^{-1}
Benzene	<3 x 10^{-5} gs^{-1}
Vinyl chloride	<3 x 10^{-5} gs^{-1}
Non-methane Organic Carbons	3.6 x 10^{-3} gs^{-1}
Ammonia	6.52 x 10^{-2} gs^{-1}
Exhaust gas velocity	9.9 ms^{-1}
Parameters	**Monitoring Results (March 2022)**
NO_2	1.54 gs^{-1}
CO	0.04 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<3 x 10^{-5} gs^{-1}
Vinyl chloride	<2 x 10^{-5} gs^{-1}
Exhaust gas velocity	9.1 ms^{-1}
Parameters	**Monitoring Results (April 2022)**
NO_2	0.63 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<6 x 10^{-4} gs^{-1}
Vinyl chloride	<2 x 10^{-5} gs^{-1}
Exhaust gas velocity	6.6 ms^{-1}
Parameters	**Monitoring Results (May 2022)**
NO_2	0.11 gs^{-1}
CO	<0.02 gs^{-1}
SO_2	0.06 gs^{-1}
Benzene	<3 x 10^{-5} gs^{-1}
Vinyl chloride	<4 x 10^{-5} gs^{-1}
Non-Methane Organic Carbons	0.0048 gs^{-1}
Ammonia (NH_3)	0.01 gs^{-1}
Exhaust gas velocity	11 ms^{-1}
Parameters	**Monitoring Results (June 2022)**
NO_2	0.39 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<2 x 10^{-5} gs^{-1}
Vinyl chloride	<2 x 10^{-5} gs^{-1}
Exhaust gas velocity	9.0 ms^{-1}

Parameters	Monitoring Results (July 2022)
NO_2	0.89 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<2.1 x 10^{-4} gs^{-1}
Vinyl chloride	<2 x 10^{-5} gs^{-1}
Exhaust gas velocity	9.7 ms^{-1}
Parameters	**Monitoring Results (August 2022)**
NO_2	0.86 gs-1
CO	<0.01 gs-1
SO_2	<0.02 gs-1
Non-Methane Organic Carbon	0.0055 gs-1
Benzene	<3 x 10-5 gs-1
Vinyl chloride	<2 x 10-5 gs-1
Ammonia	0.232 gs-1
Exhaust gas velocity	9.3 ms^{-1}
Parameters	**Monitoring Results (September 2022)**
NO_2	0.38 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<2 x 10^{-4} gs^{-1}
Vinyl chloride	<1.3 x 10^{-4} gs^{-1}
Ammonia	0.0414 gs^{-1}
Exhaust gas velocity	11.2 ms^{-1}
Parameters	**Monitoring Results (October 2022)**
NO_2	0.39 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	0.04 gs^{-1}
Benzene	<2 x 10^{-4} gs^{-1}
Vinyl chloride	<1.3 x 10^{-4} gs^{-1}
Exhaust gas velocity	11.9 ms^{-1}
Parameters	**Monitoring Results (November 2022)**
NO_2	0.28 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	0.07 gs^{-1}
Benzene	<1.0 x 10^{-4} gs^{-1}
Vinyl chloride	<1.0 x 10^{-4} gs^{-1}
Non-Methane Organic Carbons	<0.002 gs^{-1}
Ammonia	0.0423 gs^{-1}
Exhaust gas velocity	6.8 ms^{-1}
Parameters	**Monitoring Results (December 2022)**
NO_2	1.06 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	0.03 gs^{-1}
Benzene	<1.0 x 10^{-4} gs^{-1}
Vinyl chloride	<1.0 x 10^{-4} gs^{-1}
Exhaust gas velocity	7.9 ms^{-1}

Table D5.2 Thermal Oxidiser Stack Continuous Monitoring Results

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]
01 Jan 22	983	1246	
02 Jan 22	963	1236	
03 Jan 22	975	1231	
04 Jan 22	971	1234	
05 Jan 22	971	1242	
06 Jan 22	974	1243	
07 Jan 22	993	1265	
08 Jan 22	982	1242	
09 Jan 22	964	1235	
10 Jan 22	973	1232	
11 Jan 22	966	1230	
12 Jan 22	966	1223	
13 Jan 22	952	1226	
14 Jan 22	987	1241	
15 Jan 22	959	1223	
16 Jan 22	963	1223	9.9
17 Jan 22	975	1243	
18 Jan 22	968	1233	
19 Jan 22	956	1218	
20 Jan 22	979	1244	
21 Jan 22	968	1241	
22 Jan 22	975	1241	
23 Jan 22	970	1247	
24 Jan 22	987	1235	
25 Jan 22	971	1232	
26 Jan 22	994	1264	
27 Jan 22	967	1232	
28 Jan 22	975	1242	
29 Jan 22	968	1230	
30 Jan 22	973	1236	
31 Jan 22	968	1234	
01 Feb 22	- [b]	- [b]	
02 Feb 22	- [b]	- [b]	
03 Feb 22	963	1221	
04 Feb 22	976	1232	
05 Feb 22	970	1227	
06 Feb 22	984	1234	
07 Feb 22	968	1231	
08 Feb 22	970	1236	
09 Feb 22	969	1228	
10 Feb 22	977	1239	
11 Feb 22	972	1232	
12 Feb 22	984	1241	9.9
13 Feb 22	965	1231	
14 Feb 22	972	1220	
15 Feb 22	969	1234	
16 Feb 22	966	1234	
17 Feb 22	975	1238	
18 Feb 22	975	1235	
19 Feb 22	969	1230	
20 Feb 22	958	1222	
21 Feb 22	975	1225	
22 Feb 22	963	1229	
23 Feb 22	980	1221	
24 Feb 22	964	1227	

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]
25 Feb 22	976	1239	
26 Feb 22	981	1233	
27 Feb 22	964	1226	
28 Feb 22	1013	1219	
01 Mar 22	970	1230	
02 Mar 22	971	1221	
03 Mar 22	983	1244	
04 Mar 22	969	1223	
05 Mar 22	975	1234	
06 Mar 22	964	1219	
07 Mar 22	1015	1222	
08 Mar 22	983	1230	
09 Mar 22	974	1231	
10 Mar 22	972	1221	
11 Mar 22	969	1235	
12 Mar 22	979	1237	
13 Mar 22	959	1223	
14 Mar 22	981	1232	
15 Mar 22	993	1248	
16 Mar 22	978	1227	9.1
17 Mar 22	971	1232	
18 Mar 22	978	1233	
19 Mar 22	974	1228	
20 Mar 22	968	1222	
21 Mar 22	967	1225	
22 Mar 22	1028	1276	
23 Mar 22	Under maintenance	-	
24 Mar 22	1035	1246	
25 Mar 22	962	1214	
26 Mar 22	967	1217	
27 Mar 22	960	1218	
28 Mar 22	984	1236	
29 Mar 22	982	1223	
30 Mar 22	977	1234	
31 Mar 22	967	1228	
01 Apr 22	980	1238	
02 Apr 22	964	1242	
03 Apr 22	955	1236	
04 Apr 22	973	1224	
05 Apr 22	956	1231	
06 Apr 22	980	1216	
07 Apr 22	955	1233	
08 Apr 22	956	1217	
09 Apr 22	972	1200	
10 Apr 22	950	1244	
11 Apr 22	974	1234	
12 Apr 22	949	1220	
13 Apr 22	Under Maintenance	-	
14 Apr 22	961	1232	
15 Apr 22	946	1242	6.6
16 Apr 22	935	1225	
17 Apr 22	942	1225	
18 Apr 22	965	1231	
19 Apr 22	928	1235	
20 Apr 22	920	1214	
21 Apr 22	958	1213	
22 Apr 22	978	1247	
23 Apr 22	929	1237	

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]
24 Apr 22	928	1225	
25 Apr 22	970	1215	
26 Apr 22	972	1325	
27 Apr 22	944	1241	
28 Apr 22	Under Maintenance	-	
29 Apr 22	955	1215	
30 Apr 22	930	1234	
01 May 22	937	1201	
02 May 22	926	1193	
03 May 22	948	1215	
04 May 22	Under Maintenance	-	
05 May 22	Under Maintenance	-	
06 May 22	Under Maintenance	-	
07 May 22	936	1205	
08 May 22	935	1205	
09 May 22	928	1197	
10 May 22	Under Maintenance	-	
11 May 22	935	1201	
12 May 22	940	1205	
13 May 22	935	1194	
14 May 22	943	1202	11.0
15 May 22	949	1199	
16 May 22	927	1188	
17 May 22	930	1197	
18 May 22	935	1196	
19 May 22	Under Maintenance	-	
20 May 22	912	1182	
21 May 22	933	1197	
22 May 22	944	1209	
23 May 22	921	1197	
24 May 22	928	1197	
25 May 22	933	1203	
26 May 22	931	1207	
27 May 22	943	1211	
28 May 22	901	1190	
29 May 22	946	1210	
30 May 22	944	1211	
31 May 22	948	1216	
01 Jun 22	930	1202	
02 Jun 22	924	1199	
03 Jun 22	929	1203	
04 Jun 22	936	1206	
05 Jun 22	927	1198	
06 Jun 22	926	1196	
07 Jun 22	929	1195	
08 Jun 22	927	1185	
09 Jun 22	927	1173	
10 Jun 22	924	1157	
11 Jun 22	924	1167	
12 Jun 22	931	1169	9.0
13 Jun 22	925	1165	
14 Jun 22	929	1164	
15 Jun 22	926	1167	
16 Jun 22	930	1169	
17 Jun 22	930	1171	
18 Jun 22	922	1165	
19 Jun 22	925	1168	
20 Jun 22	918	1166	

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]
21 Jun 22	915	1162	
22 Jun 22	927	1168	
23 Jun 22	924	1170	
24 Jun 22	921	1167	
25 Jun 22	920	1170	
26 Jun 22	Under Maintenance	-	
27 Jun 22	Under Maintenance	-	
28 Jun 22	Under Maintenance	-	
29 Jun 22	Under Maintenance	-	
30 Jun 22	923	1148	
01 Jul 22	928	1168	
02 Jul 22	924	1167	
03 Jul 22	923	1165	
04 Jul 22	924	1171	
05 Jul 22	923	1172	
06 Jul 22	928	1171	
07 Jul 22	923	1170	
08 Jul 22	929	1171	
09 Jul 22	920	1169	
10 Jul 22	924	1172	
11 Jul 22	930	1172	
12 Jul 22	Under Maintenance	-	
13 Jul 22	Under Maintenance	-	
14 Jul 22	934	1169	
15 Jul 22	926	1170	
16 Jul 22	920	1168	9.7
17 Jul 22	928	1171	
18 Jul 22	929	1162	
19 Jul 22	918	1167	
20 Jul 22	932	1175	
21 Jul 22	924	1172	
22 Jul 22	918	1169	
23 Jul 22	924	1173	
24 Jul 22	927	1173	
25 Jul 22	925	1170	
26 Jul 22	924	1168	
27 Jul 22	925	1170	
28 Jul 22	930	1172	
29 Jul 22	922	1168	
30 Jul 22	924	1168	
31 Jul 22	927	1167	
01 Aug 22	924	1181	
02 Aug 22	933	1229	
03 Aug 22	928	1227	
04 Aug 22	930	1230	
05 Aug 22	926	1227	
06 Aug 22	929	1228	
07 Aug 22	926	1227	
08 Aug 22	917	1224	
09 Aug 22	880	1230	
10 Aug 22	924	1231	
11 Aug 22	923	1227	
12 Aug 22	923	1225	
13 Aug 22	920	1226	
14 Aug 22	921	1229	
15 Aug 22	928	1234	
16 Aug 22	925	1233	
17 Aug 22	921	1232	9.3

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]
18 Aug 22	927	1231	
19 Aug 22	927	1232	
20 Aug 22	928	1233	
21 Aug 22	924	1234	
22 Aug 22	924	1239	
23 Aug 22	921	1235	
24 Aug 22	924	1236	
25 Aug 22	928	1236	
26 Aug 22	926	1237	
27 Aug 22	929	1241	
28 Aug 22	921	1237	
29 Aug 22	921	1239	
30 Aug 22	920	1238	
31 Aug 22	948	1216	
01 Sep 22	923	1236	
02 Sep 22	925	1225	
03 Sep 22	930	1239	
04 Sep 22	921	1235	
05 Sep 22	917	1235	
06 Sep 22	925	1233	
07 Sep 22	926	1234	
08 Sep 22	932	1240	
09 Sep 22	912	1234	
10 Sep 22	923	1236	
11 Sep 22	925	1237	
12 Sep 22	928	1237	11.2
13 Sep 22	924	1236	
14 Sep 22	926	1231	
15 Sep 22	921	1235	
16 Sep 22	926	1238	
17 Sep 22	924	1236	
18 Sep 22	922	1235	
19 Sep 22	932	1242	
20 Sep 22	929	1248	
21 Sep 22	923	1242	
22 Sep 22	925	1244	
23 Sep 22	922	1242	
24 Sep 22	920	1239	
25 Sep 22	921	1241	
26 Sep 22	924	1244	
27 Sep 22	922	1242	
28 Sep 22	925	1244	
29 Sep 22	920	1243	
30 Sep 22	917	1239	
01 Oct 22	920	1240	
02 Oct 22	924	1246	
03 Oct 22	921	1238	
04 Oct 22	928	1444	
05 Oct 22	921	1593	
06 Oct 22	928	1486	
07 Oct 22	934	1334	
08 Oct 22	930	1280	
09 Oct 22	926	1272	
10 Oct 22	926	1243	
11 Oct 22	930	1264	
12 Oct 22	928	1206	11.9
13 Oct 22	922	1205	
14 Oct 22	935	1205	

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]
15 Oct 22	931	1206	
16 Oct 22	927	1204	
17 Oct 22	931	1206	
18 Oct 22	928	1208	
19 Oct 22	901	1189	
20 Oct 22	934	1210	
21 Oct 22	934	1215	
22 Oct 22	927	1207	
23 Oct 22	917	1184	
24 Oct 22	927	1212	
25 Oct 22	912	1193	
26 Oct 22	920	1207	
27 Oct 22	931	1206	
28 Oct 22	937	1210	
29 Oct 22	933	1209	
30 Oct 22	933	1204	
31 Oct 22	912	1147	
01 Nov 22	906	1125	
02 Nov 22	977	1270	
03 Nov 22	928	1200	
04 Nov 22	967	1266	
05 Nov 22	967	1254	
06 Nov 22	952	1236	
07 Nov 22	967	1250	
08 Nov 22	955	1240	
09 Nov 22	962	1247	
10 Nov 22	964	1251	
11 Nov 22	943	1232	
12 Nov 22	954	1241	
13 Nov 22	960	1246	
14 Nov 22	950	1236	
15 Nov 22	952	1239	6.8
16 Nov 22	953	1240	
17 Nov 22	957	1238	
18 Nov 22	933	1208	
19 Nov 22	945	1223	
20 Nov 22	964	1247	
21 Nov 22	938	1202	
22 Nov 22	939	1216	
23 Nov 22	923	1203	
24 Nov 22	925	1190	
25 Nov 22	930	1195	
26 Nov 22	910	1174	
27 Nov 22	953	1243	
28 Nov 22	950	1222	
29 Nov 22	935	1204	
30 Nov 22	928	1184	
01 Dec 22	922	1177	
02 Dec 22	915	1145	
03 Dec 22	916	1168	
04 Dec 22	933	1188	
05 Dec 22	918	1163	
06 Dec 22	927	1172	
07 Dec 22	922	1176	
08 Dec 22	926	1180	
09 Dec 22	920	1179	
10 Dec 22	924	1211	
11 Dec 22	922	1187	

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]
12 Dec 22	925	1176	
13 Dec 22	926	1177	7.9
14 Dec 22	925	1167	
15 Dec 22	919	1178	
16 Dec 22	934	1219	
17 Dec 22	922	1161	
18 Dec 22	927	1174	
19 Dec 22	926	1194	
20 Dec 22	924	1197	
21 Dec 22	923	1198	
22 Dec 22	921	1204	
23 Dec 22	927	1218	
24 Dec 22	924	1216	
25 Dec 22	927	1222	
26 Dec 22	926	1283	
27 Dec 22	909	1225	
28 Dec 22	919	1231	
29 Dec 22	923	1233	
30 Dec 22	921	1228	
31 Dec 22	928	1236	
Average	942.1	1218.3	9.4
Min	880	1125	6.6
Max	1035	1593	11.9

Notes:
(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.
(b) Stack emission monitoring was suspended on 1 and 2 February 2022 as the thermal oxidiser was not in operation.

Table D5.3 Landfill Gas Flare Stack Emission Monitoring Results

Parameters	Monitoring Results (January 2022)	
	Flare 1 – F601	**Flare 2 – F602**
NO_2	<0.01 gs^{-1}	<0.01 gs^{-1}
CO	0.032 gs^{-1}	0.04 gs^{-1}
SO_2	0.09 gs^{-1}	0.10 gs^{-1}
Benzene	1.3×10^{-5} gs^{-1}	1.6×10^{-5} gs^{-1}
Vinyl chloride	<1.1×10^{-5} gs^{-1}	<1.3×10^{-5} gs^{-1}
Exhaust gas velocity	4.3 ms^{-1}	2.0 ms^{-1}
Parameters	**Monitoring Results (February 2022)**	
	Flare 1 – F601	
NO_2	<0.01 gs^{-1}	
CO	0.027 gs^{-1}	
SO_2	0.110 gs^{-1}	
Benzene	5.1×10^{-5} gs^{-1}	
Vinyl chloride	<1.1×10^{-5} gs^{-1}	
Non-methane Organic Carbons	4.1×10^{-3} gs^{-1}	
Exhaust gas velocity	4.4 ms^{-1}	

Parameters	Monitoring Results (March 2022)
	Flare 2 – F602
NO_2	0.02 gs^{-1}
CO	0.056 gs^{-1}
SO_2	0.007 gs^{-1}
Benzene	<1.2 x 10^{-5} gs^{-1}
Vinyl chloride	<1 x 10^{-5} gs^{-1}
Exhaust gas velocity	3.9 ms^{-1}
Parameters	**Monitoring Results (April 2022)**
	Flare 1 – F601
NO_2	0.03 gs^{-1}
CO	<0.005 gs^{-1}
SO_2	<0.005 gs^{-1}
Benzene	<1.3 x 10^{-5} gs^{-1}
Vinyl chloride	<1 x 10^{-5} gs^{-1}
Exhaust gas velocity	4.5 ms^{-1}
Parameters	**Monitoring Results (May 2022)**
	Flare 2 – F602
NO_2	0.01 gs^{-1}
CO	0.04 gs^{-1}
SO_2	0.06 gs^{-1}
Benzene	<1.8 x 10^{-5} gs^{-1}
Vinyl chloride	<1.5 x 10^{-5} gs^{-1}
Non-Methane Organic Carbons	<0.0014 gs^{-1}
Exhaust gas velocity	2.7 ms^{-1}
Parameters	**Monitoring Results (June 2022)**
	Flare 1 – F601
NO_2	0.03 gs^{-1}
CO	0.098 gs^{-1}
SO_2	0.11 gs^{-1}
Benzene	<3.6 x 10^{-5} gs^{-1}
Vinyl chloride	<1.6 x 10^{-5} gs^{-1}
Exhaust gas velocity	8.3 ms^{-1}
Parameters	**Monitoring Results (July 2022)**
	Flare 2 – F602
NO_2	<0.01 gs^{-1}
CO	0.53 gs^{-1}
SO_2	0.01 gs^{-1}
Benzene	<1.8 x 10^{-5} gs^{-1}
Vinyl chloride	<1.4 x 10^{-5} gs^{-1}
Exhaust gas velocity	6.5 ms^{-1}

Parameters	Monitoring Results (August 2022)
	Flare 1 – F601
NO_2	<0.02 gs^{-1}
CO	0.83 gs^{-1}
SO_2	0.12 gs^{-1}
Non-Methane Organic Carbon	<0.002 gs^{-1}
Benzene	<2.5 x 10^{-5} gs^{-1}
Vinyl chloride	<2.0 x 10^{-5} gs^{-1}
Exhaust gas velocity	8.9 ms^{-1}
Parameters	**Monitoring Results (September 2022)**
	Flare 1 – F601
NO_2	<0.02 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<1.23 x 10^{-4} gs^{-1}
Vinyl chloride	<9.8 x 10^{-5} gs^{-1}
Exhaust gas velocity	8.9 ms^{-1}
Parameters	**Monitoring Results (October 2022)**
	Flare 1 – F601
NO_2	0.013 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	0.26 gs^{-1}
Benzene	<1.22 x 10^{-4} gs^{-1}
Vinyl chloride	<9.8 x 10^{-5} gs^{-1}
Exhaust gas velocity	6.5 ms^{-1}
Parameters	**Monitoring Results (November 2022)**
	Flare 1 – F601
NO_2	<0.02 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	1.27 gs^{-1}
Benzene	<1.22 x 10^{-4} gs^{-1}
Vinyl chloride	<9.8 x 10^{-5} gs^{-1}
Non-Methane Organic Carbons	<0.002 gs^{-1}
Exhaust gas velocity	8.9 ms^{-1}
Parameters	**Monitoring Results (December 2022)**
	Flare 1 – F601
NO_2	0.03 gs^{-1}
CO	0.783 gs^{-1}
SO_2	0.16 gs^{-1}
Benzene	6.61 x 10^{-4} gs^{-1}
Vinyl chloride	<1.35 x 10^{-4} gs^{-1}
Exhaust gas velocity	12.8 ms^{-1}

Table D5.4 Landfill Gas Flare Stack Continuous Monitoring Results

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
Flare 1 – F601				
01 Jan 22	-	-		Standby
02 Jan 22	-	-		Standby
03 Jan 22	1072	1115		In Operation
04 Jan 22	907	1143		In Operation
05 Jan 22	920	1133		In Operation
06 Jan 22	931	1163		In Operation
07 Jan 22	891	1023		In Operation
08 Jan 22	929	1143		In Operation
09 Jan 22	-	-		Standby
10 Jan 22	1077	1183		In Operation
11 Jan 22	-	-		Standby
12 Jan 22	854	1028		In Operation
13 Jan 22	1156	1184		In Operation
14 Jan 22	968	1133		In Operation
15 Jan 22	999	1133		In Operation
16 Jan 22	1051	1133	4.3	In Operation
17 Jan 22	1171	1133		In Operation
18 Jan 22	-	-		Standby
19 Jan 22	1076	1189		In Operation
20 Jan 22	-	-		Standby
21 Jan 22	1064	1223		In Operation
22 Jan 22	1037	1163		In Operation
23 Jan 22	1087	1163		In Operation
24 Jan 22	992	1123		In Operation
25 Jan 22	1015	1223		In Operation
26 Jan 22	-	-		Standby
27 Jan 22	-	-		Standby
28 Jan 22	-	-		Standby
29 Jan 22	-	-		Standby
30 Jan 22	-	-		Standby
31 Jan 22	-	-		Standby
01 Feb 22	-	-		Standby
02 Feb 22	-	-		Standby
03 Feb 22	-	-		Standby
04 Feb 22	-	-		Standby
05 Feb 22	-	-		Standby
06 Feb 22	-	-		Standby
07 Feb 22	-	-		Standby
08 Feb 22	-	-		Standby
09 Feb 22	995	1213		In Operation
10 Feb 22	-	-		Standby
11 Feb 22	-	-		Standby
12 Feb 22	930	1181		In Operation
13 Feb 22	-	-		Standby
14 Feb 22	816	1083	4.4	In Operation
15 Feb 22	-	-		Standby
16 Feb 22	-	-		Standby
17 Feb 22	-	-		Standby
18 Feb 22	-	-		Standby
19 Feb 22	-	-		Standby
20 Feb 22	-	-		Standby
21 Feb 22	832	1093		In Operation
22 Feb 22	-	-		Standby
23 Feb 22	-	-		Standby

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
24 Feb 22	-	-		Standby
25 Feb 22	-	-		Standby
26 Feb 22	-	-		Standby
27 Feb 22	-	-		Standby
28 Feb 22	-	-		Standby
01 Mar 22	-	-		Standby
02 Mar 22	-	-		Standby
03 Mar 22	-	-		Standby
04 Mar 22	986	1181		In operation
05 Mar 22	-	-		Standby
06 Mar 22	-	-		Standby
07 Mar 22	-	-		Standby
08 Mar 22	-	-		Standby
09 Mar 22	880	1133		In operation
10 Mar 22	-	-		Standby
11 Mar 22	-	-		Standby
12 Mar 22	-	-		Standby
13 Mar 22	-	-		Standby
14 Mar 22	-	-		Standby
15 Mar 22	-	-		Standby
16 Mar 22	-	-	3.9	Standby
17 Mar 22	-	-		Standby
18 Mar 22	-	-		Standby
19 Mar 22	-	-		Standby
20 Mar 22	-	-		Standby
21 Mar 22	-	-		Standby
22 Mar 22	-	-		Standby
23 Mar 22	-	-		Standby
24 Mar 22	-	-		Standby
25 Mar 22	-	-		Standby
26 Mar 22	990	1223		In operation
27 Mar 22	830	1093		In operation
28 Mar 22	880	1113		In operation
29 Mar 22	860	1073		In operation
30 Mar 22	-	-		Standby
31 Mar 22	950	1173		In operation
01 Apr 22	-	-		Standby
02 Apr 22	-	-		Standby
03 Apr 22	870	1113		In Operation
04 Apr 22	-	-		Standby
05 Apr 22	-	-		Standby
06 Apr 22	-	-		Standby
07 Apr 22	-	-		Standby
08 Apr 22	840	1093		In Operation
09 Apr 22	-	-		Standby
10 Apr 22	-	-		Standby
11 Apr 22	-	-		Standby
12 Apr 22	860	1103		In Operation
13 Apr 22	860	1103		In Operation
14 Apr 22	-	-		Standby
15 Apr 22	-	-		Standby
16 Apr 22	-	-	4.5	Standby
17 Apr 22	880	1123		In Operation
18 Apr 22	-	-		Standby
19 Apr 22	-	-		Standby
20 Apr 22	850	1113		In Operation
21 Apr 22	-	-		Standby
22 Apr 22	900	1093		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
23 Apr 22	920	1123		In Operation
24 Apr 22	-	-		Standby
25 Apr 22	988	1203		In Operation
26 Apr 22	930	1103		In Operation
27 Apr 22	820	1078		In Operation
28 Apr 22	870	1093		In Operation
29 Apr 22	840	1083		In Operation
30 Apr 22	860	1033		In Operation
01 May 22	940	983		In Operation
02 May 22	860	953		In Operation
03 May 22	850	973		In Operation
04 May 22	850	953		In Operation
05 May 22	990	1053		In Operation
06 May 22	990	1063		In Operation
07 May 22	980	1023		In Operation
08 May 22	890	983		In Operation
09 May 22	940	983		In Operation
10 May 22	-	-		Standby
11 May 22	-	-		Standby
12 May 22	-	-		Standby
13 May 22	850	983		In Operation
14 May 22	-	-		Standby
15 May 22	-	-	2.7	Standby
16 May 22	930	983		In Operation
17 May 22	880	973		In Operation
18 May 22	847	1063		In Operation
19 May 22	830	1063		In Operation
20 May 22	-	-		Standby
21 May 22	880	1053		In Operation
22 May 22	820	943		In Operation
23 May 22	850	953		In Operation
24 May 22	870	983		In Operation
25 May 22	950	1003		In Operation
26 May 22	880	953		In Operation
27 May 22	860	1073		In Operation
28 May 22	830	953		In Operation
29 May 22	910	1033		In Operation
30 May 22	870	983		In Operation
31 May 22	900	1013		In Operation
01 Jun 22	867	993		In Operation
02 Jun 22	940	1083		In Operation
03 Jun 22	920	1083		In Operation
04 Jun 22	890	1023		In Operation
05 Jun 22	880	1033		In Operation
06 Jun 22	940	1033		In Operation
07 Jun 22	822	1013		In Operation
08 Jun 22	880	1053		In Operation
09 Jun 22	930	1123		In Operation
10 Jun 22	870	1053		In Operation
11 Jun 22	890	1143		In Operation
12 Jun 22	970	1033		In Operation
13 Jun 22	870	1013		In Operation
14 Jun 22	-	-		Standby
15 Jun 22	840	1043	8.3	In Operation
16 Jun 22	-	-		Standby
17 Jun 22	940	1083		In Operation
18 Jun 22	-	-		Standby
19 Jun 22	-	-		Standby

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
20 Jun 22	-	-		Standby
21 Jun 22	-	-		Standby
22 Jun 22	900	1013		In Operation
23 Jun 22	830	983		In Operation
24 Jun 22	900	1003		In Operation
25 Jun 22	860	1063		In Operation
26 Jun 22	842	1073		In Operation
27 Jun 22	850	1043		In Operation
28 Jun 22	900	1023		In Operation
29 Jun 22	886	1024		In Operation
30 Jun 22	878	993		In Operation
01 Jul 22	923	1029		In Operation
02 Jul 22	911	999		In Operation
03 Jul 22	891	1068		In Operation
04 Jul 22	899	1073		In Operation
05 Jul 22	902	1072		In Operation
06 Jul 22	822	1070		In Operation
07 Jul 22	947	1045		In Operation
08 Jul 22	894	990		In Operation
09 Jul 22	915	1037		In Operation
10 Jul 22	901	1057		In Operation
11 Jul 22	895	1025		In Operation
12 Jul 22	940	1063		In Operation
13 Jul 22	836	1060		In Operation
14 Jul 22	950	1033		In Operation
15 Jul 22	880	973		In Operation
16 Jul 22	900	1013	6.5	In Operation
17 Jul 22	885	1028		In Operation
18 Jul 22	920	1033		In Operation
19 Jul 22	950	1083		In Operation
20 Jul 22	920	1073		In Operation
21 Jul 22	890	1033		In Operation
22 Jul 22	880	1053		In Operation
23 Jul 22	920	1053		In Operation
24 Jul 22	900	1053		In Operation
25 Jul 22	890	1003		In Operation
26 Jul 22	955	998		In Operation
27 Jul 22	860	1033		In Operation
28 Jul 22	880	1013		In Operation
29 Jul 22	900	963		In Operation
30 Jul 22	860	993		In Operation
31 Jul 22	920	1063		In Operation
01 Aug 22	874	1139		In Operation
02 Aug 22	858	1129		In Operation
03 Aug 22	841	1096		In Operation
04 Aug 22	828	1040		In Operation
05 Aug 22	943	1203		In Operation
06 Aug 22	897	1163		In Operation
07 Aug 22	920	1183		In Operation
08 Aug 22	920	1153		In Operation
09 Aug 22	863	1123		In Operation
10 Aug 22	865	1093		In Operation
11 Aug 22	848	1023		In Operation
12 Aug 22	899	1141		In Operation
13 Aug 22	940	1203		In Operation
14 Aug 22	910	1001	8.9	In Operation
15 Aug 22	875	1043		In Operation
16 Aug 22	930	1083		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
17 Aug 22	913	1170		In Operation
18 Aug 22	826	1073		In Operation
19 Aug 22	872	1118		In Operation
20 Aug 22	880	1023		In Operation
21 Aug 22	865	1095		In Operation
22 Aug 22	864	1013		In Operation
23 Aug 22	950	1150		In Operation
24 Aug 22	966	1248		In Operation
25 Aug 22	873	993		In Operation
26 Aug 22	910	1163		In Operation
27 Aug 22	860	1123		In Operation
28 Aug 22	863	1028		In Operation
29 Aug 22	920	1133		In Operation
30 Aug 22	930	1183		In Operation
31 Aug 22	884	1073		In Operation
01 Sep 22	828	991		In Operation
02 Sep 22	839	1035		In Operation
03 Sep 22	901	1036		In Operation
04 Sep 22	840	1091		In Operation
05 Sep 22	869	1127		In Operation
06 Sep 22	875	1003		In Operation
07 Sep 22	892	1033		In Operation
08 Sep 22	875	996		In Operation
09 Sep 22	877	1004		In Operation
10 Sep 22	865	1027		In Operation
11 Sep 22	-	-		Under Maintenance
12 Sep 22	-	-		Under Maintenance
13 Sep 22	838	1073		In Operation
14 Sep 22	883	1056		In Operation
15 Sep 22	894	1020	8.9	In Operation
16 Sep 22	881	1003		In Operation
17 Sep 22	859	1103		In Operation
18 Sep 22	944	1077		In Operation
19 Sep 22	890	1113		In Operation
20 Sep 22	868	1005		In Operation
21 Sep 22	873	987		In Operation
22 Sep 22	890	987		In Operation
23 Sep 22	820	1067		In Operation
24 Sep 22	824	1073		In Operation
25 Sep 22	-	-		Under Maintenance
26 Sep 22	848	1099		In Operation
27 Sep 22	-	-		Under Maintenance
28 Sep 22	840	1047		In Operation
29 Sep 22	868	1113		In Operation
30 Sep 22	822	1033		In Operation
01 Oct 22	924	1074		In Operation
02 Oct 22	910	988		In Operation
03 Oct 22	954	1183		In Operation
04 Oct 22	-	-		Under Maintenance
05 Oct 22	945	1006		In Operation
06 Oct 22	820	1023		In Operation
07 Oct 22	990	1013		In Operation
08 Oct 22	880	1073		In Operation
09 Oct 22	990	1163		In Operation
10 Oct 22	880	1083		In Operation
11 Oct 22	990	1083		In Operation
12 Oct 22	970	1093		In Operation
13 Oct 22	830	993		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
14 Oct 22	830	1073		In Operation
15 Oct 22	900	1033		In Operation
16 Oct 22	890	1003	6.5	In Operation
17 Oct 22	980	1083		In Operation
18 Oct 22	900	1063		In Operation
19 Oct 22	900	1153		In Operation
20 Oct 22	935	1073		In Operation
21 Oct 22	950	1113		In Operation
22 Oct 22	925	1073		In Operation
23 Oct 22	890	1063		In Operation
24 Oct 22	820	1023		In Operation
25 Oct 22	960	1103		In Operation
26 Oct 22	880	1023		In Operation
27 Oct 22	960	1073		In Operation
28 Oct 22	890	1033		In Operation
29 Oct 22	850	1013		In Operation
30 Oct 22	870	1023		In Operation
31 Oct 22	820	1003		In Operation
01 Nov 22	890	1050		In Operation
02 Nov 22	865	1068		In Operation
03 Nov 22	871	1030		In Operation
04 Nov 22	859	1063		In Operation
05 Nov 22	870	1079		In Operation
06 Nov 22	860	1063		In Operation
07 Nov 22	845	1073		In Operation
08 Nov 22	850	1073		In Operation
09 Nov 22	835	1053		In Operation
10 Nov 22	830	1063		In Operation
11 Nov 22	860	1033		In Operation
12 Nov 22	860	1063		In Operation
13 Nov 22	830	1063		In Operation
14 Nov 22	830	1053		In Operation
15 Nov 22	860	1043	8.9	In Operation
16 Nov 22	860	1073		In Operation
17 Nov 22	850	1073		In Operation
18 Nov 22	870	1063		In Operation
19 Nov 22	840	1033		In Operation
20 Nov 22	850	1093		In Operation
21 Nov 22	850	1053		In Operation
22 Nov 22	850	1073		In Operation
23 Nov 22	-	-		Under Maintenance
24 Nov 22	-	-		Under Maintenance
25 Nov 22	890	1083		In Operation
26 Nov 22	820	1073		In Operation
27 Nov 22	880	1083		In Operation
28 Nov 22	870	1093		In Operation
29 Nov 22	880	1073		In Operation
30 Nov 22	850	1053		In Operation
01 Dec 22	890	1089		In Operation
02 Dec 22	860	1093		In Operation
03 Dec 22	870	1063		In Operation
04 Dec 22	910	1033		In Operation
05 Dec 22	890	1073		In Operation
06 Dec 22	890	1103		In Operation
07 Dec 22	850	1063		In Operation
08 Dec 22	840	1053		In Operation
09 Dec 22	860	1083		In Operation
10 Dec 22	890	1093		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
11 Dec 22	870	1093		In Operation
12 Dec 22	880	1043		In Operation
13 Dec 22	890	1083		In Operation
14 Dec 22	870	1033		In Operation
15 Dec 22	860	1093	12.8	In Operation
16 Dec 22	860	1063		In Operation
17 Dec 22	870	1063		In Operation
18 Dec 22	-	-		Under Maintenance
19 Dec 22	870	1063		In Operation
20 Dec 22	860	1083		In Operation
21 Dec 22	870	1043		In Operation
22 Dec 22	880	1113		In Operation
23 Dec 22	860	1033		In Operation
24 Dec 22	880	1043		In Operation
25 Dec 22	880	1033		In Operation
26 Dec 22	870	1113		In Operation
27 Dec 22	900	1153		In Operation
28 Dec 22	890	1133		In Operation
29 Dec 22	880	1053		In Operation
30 Dec 22	870	1083		In Operation
31 Dec 22	860	1113		In Operation
Average	893.8	1068	6.7	
Min	816	943	2.7	
Max	1171	1248	12.8	
Flare 2 – F602				
01 Jan 22	824	1058		In Operation
02 Jan 22	820	1060		In Operation
03 Jan 22	822	1061		In Operation
04 Jan 22	827	1071		In Operation
05 Jan 22	824	1049		In Operation
06 Jan 22	826	1069		In Operation
07 Jan 22	828	1069		In Operation
08 Jan 22	826	1074		In Operation
09 Jan 22	1082	1226		In Operation
10 Jan 22	908	1119		In Operation
11 Jan 22	970	1148		In Operation
12 Jan 22	905	1102		In Operation
13 Jan 22	923	1062		In Operation
14 Jan 22	904	1093		In Operation
15 Jan 22	1171	1099		In Operation
16 Jan 22	877	1283	2.0	In Operation
17 Jan 22	874	1061		In Operation
18 Jan 22	872	1067		In Operation
19 Jan 22	873	1060		In Operation
20 Jan 22	843	1045		In Operation
21 Jan 22	900	1120		In Operation
22 Jan 22	873	1096		In Operation
23 Jan 22	1080	1241		In Operation
24 Jan 22	933	1204		In Operation
25 Jan 22	905	1132		In Operation
26 Jan 22	965	1142		In Operation
27 Jan 22	997	1120		In Operation
28 Jan 22	939	1134		In Operation
29 Jan 22	967	1160		In Operation
30 Jan 22	957	1153		In Operation
31 Jan 22	1090	1223		In Operation
01 Feb 22	-	-		Standby
02 Feb 22	-	-		Standby

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
03 Feb 22	-	-		Standby
04 Feb 22	924	1015		In Operation
05 Feb 22	845	1083		In Operation
06 Feb 22	830	1073		In Operation
07 Feb 22	870	1113		In Operation
08 Feb 22	850	1093		In Operation
09 Feb 22	850	1083		In Operation
10 Feb 22	840	1063		In Operation
11 Feb 22	850	1068		In Operation
12 Feb 22	850	1068		In Operation
13 Feb 22	880	1123		In Operation
14 Feb 22	870	1073		In Operation
15 Feb 22	850	1073	4.4	In Operation
16 Feb 22	850	1037		In Operation
17 Feb 22	860	1083		In Operation
18 Feb 22	860	1080		In Operation
19 Feb 22	850	1039		In Operation
20 Feb 22	-	-		Standby
21 Feb 22	890	1113		In Operation
22 Feb 22	830	1038		In Operation
23 Feb 22	900	1083		In Operation
24 Feb 22	830	1066		In Operation
25 Feb 22	850	1053		In Operation
26 Feb 22	870	1063		In Operation
27 Feb 22	850	1057		In Operation
28 Feb 22	830	1076		In Operation
01 Mar 22	850	1043		In operation
02 Mar 22	850	1043		In operation
03 Mar 22	850	1055		In operation
04 Mar 22	850	1053		In operation
05 Mar 22	860	1083		In operation
06 Mar 22	830	1053		In operation
07 Mar 22	850	1083		In operation
08 Mar 22	840	1073		In operation
09 Mar 22	880	1033		In operation
10 Mar 22	880	1103		In operation
11 Mar 22	860	1093		In operation
12 Mar 22	850	1113		In operation
13 Mar 22	870	1073		In operation
14 Mar 22	880	1123		In operation
15 Mar 22	830	1073		In operation
16 Mar 22	840	1083	3.9	In operation
17 Mar 22	830	1073		In operation
18 Mar 22	880	1093		In operation
19 Mar 22	840	1073		In operation
20 Mar 22	830	1093		In operation
21 Mar 22	850	1093		In operation
22 Mar 22	-	-		Standby
23 Mar 22	820	1043		In operation
24 Mar 22	880	1083		In operation
25 Mar 22	850	1063		In operation
26 Mar 22	880	1083		In operation
27 Mar 22	840	1073		In operation
28 Mar 22	-	-		Standby
29 Mar 22	-	-		Standby
30 Mar 22	840	1083		In operation
31 Mar 22	890	1113		In operation
01 Apr 22	873	1083		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
02 Apr 22	876	1073		In Operation
03 Apr 22	870	1123		In Operation
04 Apr 22	880	1093		In Operation
05 Apr 22	950	1203		In Operation
06 Apr 22	844	1093		In Operation
07 Apr 22	-	-		Standby
08 Apr 22	-	-		Standby
09 Apr 22	-	-		Standby
10 Apr 22	880	1123		In Operation
11 Apr 22	850	1073		In Operation
12 Apr 22	870	1133		In Operation
13 Apr 22	850	1103		In Operation
14 Apr 22	860	1103		In Operation
15 Apr 22	890	1123		In Operation
16 Apr 22	880	1103	4.5	In Operation
17 Apr 22	870	1103		In Operation
18 Apr 22	850	1073		In Operation
19 Apr 22	840	1073		In Operation
20 Apr 22	870	1128		In Operation
21 Apr 22	875	1103		In Operation
22 Apr 22	-	-		Standby
23 Apr 22	850	1093		In Operation
24 Apr 22	-	-		Standby
25 Apr 22	880	1103		In Operation
26 Apr 22	840	1093		In Operation
27 Apr 22	850	1103		In Operation
28 Apr 22	870	1113		In Operation
29 Apr 22	910	1143		In Operation
30 Apr 22	875	1113		In Operation
01 May 22	875	1093		In Operation
02 May 22	860	1113		In Operation
03 May 22	870	1103		In Operation
04 May 22	860	1103		In Operation
05 May 22	870	1113		In Operation
06 May 22	880	1133		In Operation
07 May 22	840	1083		In Operation
08 May 22	840	1083		In Operation
09 May 22	860	1113		In Operation
10 May 22	850	1063		In Operation
11 May 22	850	1053		In Operation
12 May 22	870	1093		In Operation
13 May 22	880	1103		In Operation
14 May 22	870	1083		In Operation
15 May 22	860	1093		In Operation
16 May 22	880	1093	2.7	In Operation
17 May 22	840	1063		In Operation
18 May 22	870	1093		In Operation
19 May 22	860	1043		In Operation
20 May 22	880	1123		In Operation
21 May 22	880	1103		In Operation
22 May 22	870	1103		In Operation
23 May 22	890	1123		In Operation
24 May 22	840	1083		In Operation
25 May 22	830	1073		In Operation
26 May 22	850	1083		In Operation
27 May 22	870	1123		In Operation
28 May 22	870	1123		In Operation
29 May 22	850	1103		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
30 May 22	840	1093		In Operation
31 May 22	820	1073		In Operation
01 Jun 22	860	1103		In Operation
02 Jun 22	830	1093		In Operation
03 Jun 22	850	1093		In Operation
04 Jun 22	880	1093		In Operation
05 Jun 22	880	1103		In Operation
06 Jun 22	870	1093		In Operation
07 Jun 22	830	1063		In Operation
08 Jun 22	840	1083		In Operation
09 Jun 22	880	1113		In Operation
10 Jun 22	840	1073	8.3	In Operation
11 Jun 22	880	1103		In Operation
12 Jun 22	840	1073		In Operation
13 Jun 22	880	1103		In Operation
14 Jun 22	880	1073		In Operation
15 Jun 22	870	1043		In Operation
16 Jun 22	870	1073		In Operation
17 Jun 22	870	1053		In Operation
18 Jun 22	870	1073		In Operation
19 Jun 22	860	1073		In Operation
20 Jun 22	880	1093		In Operation
21 Jun 22	880	1083		In Operation
22 Jun 22	860	1093		In Operation
23 Jun 22	880	1093		In Operation
24 Jun 22	880	1103		In Operation
25 Jun 22	840	1093		In Operation
26 Jun 22	860	1123		In Operation
27 Jun 22	870	1123		In Operation
28 Jun 22	930	1183		In Operation
29 Jun 22	877	1118		In Operation
30 Jun 22	860	1103		In Operation
01 Jul 22	830	1073		In Operation
02 Jul 22	860	1073		In Operation
03 Jul 22	890	1113		In Operation
04 Jul 22	930	1153		In Operation
05 Jul 22	860	1103		In Operation
06 Jul 22	884	1109		In Operation
07 Jul 22	834	1068		In Operation
08 Jul 22	830	1083		In Operation
09 Jul 22	870	1093		In Operation
10 Jul 22	830	1063		In Operation
11 Jul 22	905	1163		In Operation
12 Jul 22	840	1093		In Operation
13 Jul 22	870	1113		In Operation
14 Jul 22	840	1083		In Operation
15 Jul 22	824	1067		In Operation
16 Jul 22	834	1093	6.5	In Operation
17 Jul 22	904	1143		In Operation
18 Jul 22	865	1096		In Operation
19 Jul 22	845	1083		In Operation
20 Jul 22	880	1118		In Operation
21 Jul 22	854	1089		In Operation
22 Jul 22	830	1078		In Operation
23 Jul 22	880	1083		In Operation
24 Jul 22	830	1063		In Operation
25 Jul 22	842	1077		In Operation
26 Jul 22	844	1097		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
27 Jul 22	854	1061		In Operation
28 Jul 22	875	1063		In Operation
29 Jul 22	835	1091		In Operation
30 Jul 22	874	1101		In Operation
31 Jul 22	860	1093		In Operation
01 Aug 22	855	1093		In Operation
02 Aug 22	870	1063		In Operation
03 Aug 22	860	1073		In Operation
04 Aug 22	840	1053		In Operation
05 Aug 22	840	1053		In Operation
06 Aug 22	840	1043		In Operation
07 Aug 22	825	1033		In Operation
08 Aug 22	890	1053		In Operation
09 Aug 22	880	1053		In Operation
10 Aug 22	835	1043		In Operation
11 Aug 22	860	1084		In Operation
12 Aug 22	830	1033		In Operation
13 Aug 22	826	1023		In Operation
14 Aug 22	860	1073		In Operation
15 Aug 22	870	1093	8.9	In Operation
16 Aug 22	850	1043		In Operation
17 Aug 22	820	1063		In Operation
18 Aug 22	830	1073		In Operation
19 Aug 22	830	1063		In Operation
20 Aug 22	820	1053		In Operation
21 Aug 22	870	1083		In Operation
22 Aug 22	820	1053		In Operation
23 Aug 22	890	1103		In Operation
24 Aug 22	890	1093		In Operation
25 Aug 22	850	1065		In Operation
26 Aug 22	820	1023		In Operation
27 Aug 22	820	1083		In Operation
28 Aug 22	830	1053		In Operation
29 Aug 22	820	1043		In Operation
30 Aug 22	840	1063		In Operation
31 Aug 22	850	1073		In Operation
01 Sep 22	876	1061		In Operation
02 Sep 22	821	1049		In Operation
03 Sep 22	826	1056		In Operation
04 Sep 22	948	1127		In Operation
05 Sep 22	847	1047		In Operation
06 Sep 22	830	1071		In Operation
07 Sep 22	833	1047		In Operation
08 Sep 22	860	1103		In Operation
09 Sep 22	852	1069	8.9	In Operation
10 Sep 22	895	1111		In Operation
11 Sep 22	-	-		Under Maintenance
12 Sep 22	-	-		Under Maintenance
13 Sep 22	832	1088		In Operation
14 Sep 22	828	1055		In Operation
15 Sep 22	876	1058		In Operation
16 Sep 22	877	1093		In Operation
17 Sep 22	850	1083		In Operation
18 Sep 22	899	1119		In Operation
19 Sep 22	870	1096		In Operation
20 Sep 22	890	1108		In Operation
21 Sep 22	880	1097		In Operation
22 Sep 22	854	1051		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status
23 Sep 22	880	1098		In Operation
24 Sep 22	834	1088		In Operation
25 Sep 22	844	1096		In Operation
26 Sep 22	830	1057		In Operation
27 Sep 22	912	1125		In Operation
28 Sep 22	825	1046		In Operation
29 Sep 22	850	1068		In Operation
30 Sep 22	883	1083		In Operation
01 Oct 22	890	1103		In Operation
02 Oct 22	890	1098		In Operation
03 Oct 22	890	1053		In Operation
04 Oct 22	860	1093		In Operation
05 Oct 22	890	1083		In Operation
06 Oct 22	890	1083		In Operation
07 Oct 22	830	1053		In Operation
08 Oct 22	880	1093		In Operation
09 Oct 22	840	1053		In Operation
10 Oct 22	890	1073		In Operation
11 Oct 22	880	1093		In Operation
12 Oct 22	825	1033		In Operation
13 Oct 22	890	1093		In Operation
14 Oct 22	820	993		In Operation
15 Oct 22	880	1043		In Operation
16 Oct 22	880	1103	6.5	In Operation
17 Oct 22	880	1073		In Operation
18 Oct 22	830	1083		In Operation
19 Oct 22	830	1043		In Operation
20 Oct 22	910	1133		In Operation
21 Oct 22	880	1103		In Operation
22 Oct 22	890	1053		In Operation
23 Oct 22	900	1113		In Operation
24 Oct 22	890	1093		In Operation
25 Oct 22	840	1053		In Operation
26 Oct 22	860	1073		In Operation
27 Oct 22	900	1113		In Operation
28 Oct 22	860	1073		In Operation
29 Oct 22	890	1083		In Operation
30 Oct 22	880	1073		In Operation
31 Oct 22	870	1053		In Operation
01 Nov 22	840	1061		In Operation
02 Nov 22	890	1049		In Operation
03 Nov 22	880	1073		In Operation
04 Nov 22	890	1053		In Operation
05 Nov 22	850	1113		In Operation
06 Nov 22	850	1123		In Operation
07 Nov 22	890	1073		In Operation
08 Nov 22	860	1083		In Operation
09 Nov 22	850	1123		In Operation
10 Nov 22	840	1073	8.9	In Operation
11 Nov 22	860	1063		In Operation
12 Nov 22	870	1083		In Operation
13 Nov 22	870	1053		In Operation
14 Nov 22	840	1093		In Operation
15 Nov 22	820	1088		In Operation
16 Nov 22	870	1073		In Operation
17 Nov 22	880	1053		In Operation
18 Nov 22	870	1093		In Operation
19 Nov 22	830	1113		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]	Operation Status
20 Nov 22	820	1083		In Operation
21 Nov 22	850	1073		In Operation
22 Nov 22	840	1063		In Operation
23 Nov 22	830	1093		In Operation
24 Nov 22	860	1083		In Operation
25 Nov 22	850	1073		In Operation
26 Nov 22	820	1083		In Operation
27 Nov 22	850	1063		In Operation
28 Nov 22	880	1063		In Operation
29 Nov 22	830	1043		In Operation
30 Nov 22	830	1093		In Operation
01 Dec 22	830	1043		In Operation
02 Dec 22	880	1103		In Operation
03 Dec 22	850	1073		In Operation
04 Dec 22	850	1093		In Operation
05 Dec 22	880	1103		In Operation
06 Dec 22	860	1093		In Operation
07 Dec 22	850	1093		In Operation
08 Dec 22	870	1113		In Operation
09 Dec 22	840	1073		In Operation
10 Dec 22	870	1113	12.8	In Operation
11 Dec 22	870	1123		In Operation
12 Dec 22	870	1113		In Operation
13 Dec 22	860	1093		In Operation
14 Dec 22	860	1073		In Operation
15 Dec 22	860	1073		In Operation
16 Dec 22	840	1053		In Operation
17 Dec 22	-	-		Under Maintenance
18 Dec 22	890	1073		In Operation
19 Dec 22	850	1033		In Operation
20 Dec 22	-	-		Under Maintenance
21 Dec 22	-	-		Under Maintenance
22 Dec 22	-	-		Under Maintenance
23 Dec 22	-	-		Under Maintenance
24 Dec 22	-	-		Under Maintenance
25 Dec 22	-	-		Under Maintenance
26 Dec 22	-	-		Under Maintenance
27 Dec 22	-	-		Under Maintenance
28 Dec 22	-	-		Under Maintenance
29 Dec 22	-	-		Under Maintenance
30 Dec 22	-	-		Under Maintenance
31 Dec 22	-	-		Under Maintenance
Average	865	1086.1	6.5	
Min	820	993	2	
Max	1171	1283	12.8	

Notes:

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.

Table D5.5 Landfill Gas Generator Stack Emission Monitoring Results

Parameters	**Monitoring Results (January 2022)**
NO_2	0.008 gs^{-1}
CO	0.050 gs^{-1}
SO_2	0.009 gs^{-1}
Benzene	2×10^{-6} gs^{-1}
Vinyl chloride	$<1.3 \times 10^{-6}$ gs^{-1}
Exhaust gas velocity	7.8 ms^{-1}
Parameters	**Monitoring Results (February 2022)**
NO_2	0.016 gs^{-1}
CO	0.056 gs^{-1}
SO_2	0.002 gs^{-1}
Benzene	$<3 \times 10^{-6}$ gs^{-1}
Vinyl chloride	$<2 \times 10^{-6}$ gs^{-1}
Non-methane Organic Carbons	2×10^{-4} gs^{-1}
Exhaust gas velocity	11.9 ms^{-1}
Parameters	**Monitoring Results (March 2022)**
NO_2	1.54 gs^{-1}
CO	0.04 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	$<3 \times 10^{-5}$ gs^{-1}
Vinyl chloride	$<2 \times 10^{-5}$ gs^{-1}
Exhaust gas velocity	9.1 ms^{-1}
Parameters	**Monitoring Results (April 2022)**
NO_2	0.25 gs^{-1}
CO	0.094 gs^{-1}
SO_2	<0.001 gs^{-1}
Benzene	$<3 \times 10^{-6}$ gs^{-1}
Vinyl chloride	$<2.3 \times 10^{-6}$ gs^{-1}
Exhaust gas velocity	13.3 ms^{-1}
Parameters	**Monitoring Results (May 2022)**
NO_2	0.01 gs^{-1}
CO	0.099 gs^{-1}
SO_2	0.004 gs^{-1}
Benzene	$<3 \times 10^{-6}$ gs^{-1}
Vinyl chloride	$<2.4 \times 10^{-6}$ gs^{-1}
Non-Methane Organic Carbons	3×10^{-4} gs^{-1}
Exhaust gas velocity	11.6 ms^{-1}
Parameters	**Monitoring Results (June 2022)**
NO_2	0.008 gs^{-1}
CO	0.043 gs^{-1}
SO_2	<0.001 gs^{-1}
Benzene	$<4.0 \times 10^{-6}$ gs^{-1}
Vinyl chloride	$<2.2 \times 10^{-6}$ gs^{-1}
Exhaust gas velocity	9.7 ms^{-1}

Parameters	Monitoring Results (July 2022)
NO_2	0.01 gs^{-1}
CO	0.28 gs^{-1}
SO_2	0.003 gs^{-1}
Benzene	<8.0 x 10^{-6} gs^{-1}
Vinyl chloride	<1.8 x 10^{-6} gs^{-1}
Exhaust gas velocity	11.2 ms^{-1}
Parameters	**Monitoring Results (August 2022)**
NO_2	0.04 gs^{-1}
CO	0.622 gs^{-1}
SO_2	0.015 gs^{-1}
Non-Methane Organic Carbon	0.0012 gs^{-1}
Benzene	<8.7 x 10^{-5} gs^{-1}
Vinyl chloride	<2.1 x 10^{-6} gs^{-1}
Exhaust gas velocity	9.3 ms^{-1}
Parameters	**Monitoring Results (September 2022)**
NO_2	0.07 gs^{-1}
CO	0.75 gs^{-1}
SO_2	0.008 gs^{-1}
Benzene	<1.92 x 10^{-4} gs^{-1}
Vinyl chloride	<9.6 x 10^{-6} gs^{-1}
Exhaust gas velocity	10.2 ms^{-1}
Parameters	**Monitoring Results (October 2022)**
NO_2	0.08 gs^{-1}
CO	0.56 gs^{-1}
SO_2	0.006 gs^{-1}
Benzene	<1.12 x 10^{-4} gs^{-1}
Vinyl chloride	<9.7 x 10^{-6} gs^{-1}
Exhaust gas velocity	10.3 ms^{-1}
Parameters	**Monitoring Results (November 2022)**
NO_2	0.01 gs^{-1}
CO	0.429 gs^{-1}
SO_2	<0.001 gs^{-1}
Benzene	<1.6 x 10^{-5} gs^{-1}
Vinyl chloride	<1.28 x 10^{-5} gs^{-1}
Non-Methane Organic Carbons	<3.0 x 10^{-4} gs^{-1}
Exhaust gas velocity	11.6 ms^{-1}
Parameters	**Monitoring Results (December 2022)[(a)]**
NO_2	-
CO	-
SO_2	-
Benzene	-
Vinyl chloride	-
Non-Methane Organic Carbons	-

Notes:

(a) The Landfill Gas Generator was under maintenance

Table D5.6 Landfill Gas Generator Stack Continuous Monitoring Results

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]	Operation Status (Landfill Gas Generator in Operation)
ENGA			
01 Jan 22	-		Under Maintenance
02 Jan 22	-		Under Maintenance
03 Jan 22	-		Under Maintenance
04 Jan 22	-		Under Maintenance
05 Jan 22	-		Under Maintenance
06 Jan 22	-		Under Maintenance
07 Jan 22	-		Under Maintenance
08 Jan 22	-		Under Maintenance
09 Jan 22	-		Under Maintenance
10 Jan 22	-		Under Maintenance
11 Jan 22	-		Under Maintenance
12 Jan 22	-		Under Maintenance
13 Jan 22	-		Under Maintenance
14 Jan 22	845		In Operation
15 Jan 22	838		In Operation
16 Jan 22	853	7.8	In Operation
17 Jan 22	836		In Operation
18 Jan 22	844		In Operation
19 Jan 22	843		In Operation
20 Jan 22	846		In Operation
21 Jan 22	846		In Operation
22 Jan 22	849		In Operation
23 Jan 22	840		In Operation
24 Jan 22	846		In Operation
25 Jan 22	846		In Operation
26 Jan 22	847		In Operation
27 Jan 22	848		In Operation
28 Jan 22	847		In Operation
29 Jan 22	847		In Operation
30 Jan 22	843		In Operation
31 Jan 22	847		In Operation
01 Feb 22	836		In Operation
02 Feb 22	842		In Operation
03 Feb 22	841		In Operation
04 Feb 22	841		In Operation
05 Feb 22	843		In Operation
06 Feb 22	844		In Operation
07 Feb 22	845		In Operation
08 Feb 22	836		In Operation
09 Feb 22	844		In Operation
10 Feb 22	847		In Operation
11 Feb 22	847		In Operation
12 Feb 22	846		In Operation
13 Feb 22	845		In Operation
14 Feb 22	-		Under Maintenance
15 Feb 22	-		Under Maintenance
16 Feb 22	-	11.9	Under Maintenance
17 Feb 22	-		Under Maintenance
18 Feb 22	-		Under Maintenance
19 Feb 22	-		Under Maintenance
20 Feb 22	-		Under Maintenance
21 Feb 22	-		Under Maintenance
22 Feb 22	-		Under Maintenance
23 Feb 22	-		Under Maintenance

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
24 Feb 22	-		Under Maintenance
25 Feb 22	-		Under Maintenance
26 Feb 22	-		Under Maintenance
27 Feb 22	-		Under Maintenance
28 Feb 22	-		Under Maintenance
01 Mar 22	842		In Operation
02 Mar 22	844		In Operation
03 Mar 22	-		Under Maintenance
04 Mar 22	-		Under Maintenance
05 Mar 22	-		Under Maintenance
06 Mar 22	-		Under Maintenance
07 Mar 22	-		Under Maintenance
08 Mar 22	-		Under Maintenance
09 Mar 22	-		Under Maintenance
10 Mar 22	-		Under Maintenance
11 Mar 22	-		Under Maintenance
12 Mar 22	-		Under Maintenance
13 Mar 22	-		Under Maintenance
14 Mar 22	-		Under Maintenance
15 Mar 22	-		Under Maintenance
16 Mar 22	-	9.1	Under Maintenance
17 Mar 22	-		Under Maintenance
18 Mar 22	-		Under Maintenance
19 Mar 22	-		Under Maintenance
20 Mar 22	-		Under Maintenance
21 Mar 22	-		Under Maintenance
22 Mar 22	-		Under Maintenance
23 Mar 22	-		Under Maintenance
24 Mar 22	-		Under Maintenance
25 Mar 22	-		Under Maintenance
26 Mar 22	-		Under Maintenance
27 Mar 22	-		Under Maintenance
28 Mar 22	-		Under Maintenance
29 Mar 22	-		Under Maintenance
30 Mar 22	-		Under Maintenance
31 Mar 22	-		Under Maintenance
01 Apr 22	-		Under Maintenance
02 Apr 22	-		Under Maintenance
03 Apr 22	-		Under Maintenance
04 Apr 22	-		Under Maintenance
05 Apr 22	-		Under Maintenance
06 Apr 22	-		Under Maintenance
07 Apr 22	-		Under Maintenance
08 Apr 22	-		Under Maintenance
09 Apr 22	-		Under Maintenance
10 Apr 22	-		Under Maintenance
11 Apr 22	-		Under Maintenance
12 Apr 22	-		Under Maintenance
13 Apr 22	-		Under Maintenance
14 Apr 22	-		Under Maintenance
15 Apr 22	-		Under Maintenance
16 Apr 22	-	13.3	Under Maintenance
17 Apr 22	-		Under Maintenance
18 Apr 22	-		Under Maintenance
19 Apr 22	-		Under Maintenance
20 Apr 22	-		Under Maintenance
21 Apr 22	-		Under Maintenance
22 Apr 22	-		Under Maintenance

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
23 Apr 22	-		Under Maintenance
24 Apr 22	-		Under Maintenance
25 Apr 22	-		Under Maintenance
26 Apr 22	-		Under Maintenance
27 Apr 22	-		Under Maintenance
28 Apr 22	-		Under Maintenance
29 Apr 22	-		Under Maintenance
30 Apr 22	-		Under Maintenance
01 May 22	-		Under Maintenance
02 May 22	-		Under Maintenance
03 May 22	-		Under Maintenance
04 May 22	-		Under Maintenance
05 May 22	-		Under Maintenance
06 May 22	-		Under Maintenance
07 May 22	-		Under Maintenance
08 May 22	-		Under Maintenance
09 May 22	-		Under Maintenance
10 May 22	-		Under Maintenance
11 May 22	-		Under Maintenance
12 May 22	-		Under Maintenance
13 May 22	-		Under Maintenance
14 May 22	-		Under Maintenance
15 May 22	-		Under Maintenance
16 May 22	-		Under Maintenance
17 May 22	-		Under Maintenance
18 May 22	-	11.6	Under Maintenance
19 May 22	-		Under Maintenance
20 May 22	-		Under Maintenance
21 May 22	-		Under Maintenance
22 May 22	-		Under Maintenance
23 May 22	-		Under Maintenance
24 May 22	-		Under Maintenance
25 May 22	-		Under Maintenance
26 May 22	-		Under Maintenance
27 May 22	-		Under Maintenance
28 May 22	-		Under Maintenance
29 May 22	-		Under Maintenance
30 May 22	-		Under Maintenance
31 May 22	-		Under Maintenance
01 Jun 22	-		Under Maintenance
02 Jun 22	-		Under Maintenance
03 Jun 22	-		Under Maintenance
04 Jun 22	-		Under Maintenance
05 Jun 22	-		Under Maintenance
06 Jun 22	-		Under Maintenance
07 Jun 22	-		Under Maintenance
08 Jun 22	-		Under Maintenance
09 Jun 22	-		Under Maintenance
10 Jun 22	-		Under Maintenance
11 Jun 22	-		Under Maintenance
12 Jun 22	-		Under Maintenance
13 Jun 22	-		Under Maintenance
14 Jun 22	-		Under Maintenance
15 Jun 22	-		Under Maintenance
16 Jun 22	863		In Operation
17 Jun 22	857		In Operation
18 Jun 22	866	9.7	In Operation
19 Jun 22	866		In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
20 Jun 22	-		Under Maintenance
21 Jun 22	-		Under Maintenance
22 Jun 22	-		Under Maintenance
23 Jun 22	-		Under Maintenance
24 Jun 22	-		Under Maintenance
25 Jun 22	-		Under Maintenance
26 Jun 22	-		Under Maintenance
27 Jun 22	868		In Operation
28 Jun 22	867		In Operation
29 Jun 22	879		In Operation
30 Jun 22	868		In Operation
01 Jul 22	867		In Operation
02 Jul 22	865		In Operation
03 Jul 22	869		In Operation
04 Jul 22	848		In Operation
05 Jul 22	852		In Operation
06 Jul 22	851		In Operation
07 Jul 22	884		In Operation
08 Jul 22	886		In Operation
09 Jul 22	887		In Operation
10 Jul 22	888		In Operation
11 Jul 22	889		In Operation
12 Jul 22	880		In Operation
13 Jul 22	880		In Operation
14 Jul 22	893		In Operation
15 Jul 22	-		Under Maintenance
16 Jul 22	885	11.2	In Operation
17 Jul 22	886		In Operation
18 Jul 22	859		In Operation
19 Jul 22	866		In Operation
20 Jul 22	857		In Operation
21 Jul 22	857		In Operation
22 Jul 22	859		In Operation
23 Jul 22	860		In Operation
24 Jul 22	861		In Operation
25 Jul 22	863		In Operation
26 Jul 22	866		In Operation
27 Jul 22	859		In Operation
28 Jul 22	861		In Operation
29 Jul 22	859		In Operation
30 Jul 22	857		In Operation
31 Jul 22	860		In Operation
01 Aug 22	859		In Operation
02 Aug 22	857		In Operation
03 Aug 22	862		In Operation
04 Aug 22	858		In Operation
05 Aug 22	860		In Operation
06 Aug 22	863		In Operation
07 Aug 22	861		In Operation
08 Aug 22	859		In Operation
09 Aug 22	858		In Operation
10 Aug 22	857		In Operation
11 Aug 22	858		In Operation
12 Aug 22	856		In Operation
13 Aug 22	860		In Operation
14 Aug 22	858		In Operation
15 Aug 22	858		In Operation
16 Aug 22	862	9.3	In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
17 Aug 22	860		In Operation
18 Aug 22	859		In Operation
19 Aug 22	859		In Operation
20 Aug 22	865		In Operation
21 Aug 22	865		In Operation
22 Aug 22	865		In Operation
23 Aug 22	864		In Operation
24 Aug 22	863		In Operation
25 Aug 22	866		In Operation
26 Aug 22	865		In Operation
27 Aug 22	865		In Operation
28 Aug 22	864		In Operation
29 Aug 22	868		In Operation
30 Aug 22	865		In Operation
31 Aug 22	862		In Operation
01 Sep 22	865		In Operation
02 Sep 22	867		In Operation
03 Sep 22	858		In Operation
04 Sep 22	860		In Operation
05 Sep 22	860		In Operation
06 Sep 22	863		In Operation
07 Sep 22	864		In Operation
08 Sep 22	880		In Operation
09 Sep 22	861		In Operation
10 Sep 22	856		In Operation
11 Sep 22	856		In Operation
12 Sep 22	854		In Operation
13 Sep 22	-		Under Maintenance
14 Sep 22	856		In Operation
15 Sep 22	853	10.2	In Operation
16 Sep 22	859		In Operation
17 Sep 22	863		In Operation
18 Sep 22	855		In Operation
19 Sep 22	863		In Operation
20 Sep 22	862		In Operation
21 Sep 22	858		In Operation
22 Sep 22	862		In Operation
23 Sep 22	860		In Operation
24 Sep 22	859		In Operation
25 Sep 22	860		In Operation
26 Sep 22	861		In Operation
27 Sep 22	860		In Operation
28 Sep 22	863		In Operation
29 Sep 22	864		In Operation
30 Sep 22	852		In Operation
01 Oct 22	861		In Operation
02 Oct 22	867		In Operation
03 Oct 22	865		In Operation
04 Oct 22	865		In Operation
05 Oct 22	865		In Operation
06 Oct 22	865		In Operation
07 Oct 22	864		In Operation
08 Oct 22	863		In Operation
09 Oct 22	860		In Operation
10 Oct 22	856		In Operation
11 Oct 22	855		In Operation
12 Oct 22	864		In Operation
13 Oct 22	865		In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
14 Oct 22	865	10.3	In Operation
15 Oct 22	851		In Operation
16 Oct 22	852		In Operation
17 Oct 22	855		In Operation
18 Oct 22	859		In Operation
19 Oct 22	865		In Operation
20 Oct 22	866		In Operation
21 Oct 22	867		In Operation
22 Oct 22	869		In Operation
23 Oct 22	874		In Operation
24 Oct 22	871		In Operation
25 Oct 22	873		In Operation
26 Oct 22	869		In Operation
27 Oct 22	874		In Operation
28 Oct 22	877		In Operation
29 Oct 22	877		In Operation
30 Oct 22	875		In Operation
31 Oct 22	893		In Operation
01 Nov 22	-	11.6	Under Maintenance
02 Nov 22	-		Under Maintenance
03 Nov 22	-		Under Maintenance
04 Nov 22	-		Under Maintenance
05 Nov 22	-		Under Maintenance
06 Nov 22	-		Under Maintenance
07 Nov 22	-		Under Maintenance
08 Nov 22	-		Under Maintenance
09 Nov 22	-		Under Maintenance
10 Nov 22	-		Under Maintenance
11 Nov 22	-		Under Maintenance
12 Nov 22	893		In Operation
13 Nov 22	892		In Operation
14 Nov 22	892		In Operation
15 Nov 22	890		In Operation
16 Nov 22	895		In Operation
17 Nov 22	896		In Operation
18 Nov 22	903		In Operation
19 Nov 22	916		In Operation
20 Nov 22	906		In Operation
21 Nov 22	907		In Operation
22 Nov 22	955		In Operation
23 Nov 22	-		Under Maintenance
24 Nov 22	-		Under Maintenance
25 Nov 22	-		Under Maintenance
26 Nov 22	-		Under Maintenance
27 Nov 22	-		Under Maintenance
28 Nov 22	-		Under Maintenance
29 Nov 22	-		Under Maintenance
30 Nov 22	-		Under Maintenance
01 Dec 22	-		Under Maintenance
02 Dec 22	-		Under Maintenance
03 Dec 22	-		Under Maintenance
04 Dec 22	-		Under Maintenance
05 Dec 22	-		Under Maintenance
06 Dec 22	-		Under Maintenance
07 Dec 22	-		Under Maintenance
08 Dec 22	-		Under Maintenance
09 Dec 22	-		Under Maintenance
10 Dec 22	-		Under Maintenance

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
11 Dec 22	-		Under Maintenance
12 Dec 22	-	-	Under Maintenance
13 Dec 22	-		Under Maintenance
14 Dec 22	-		Under Maintenance
15 Dec 22	-		Under Maintenance
16 Dec 22	-		Under Maintenance
17 Dec 22	-		Under Maintenance
18 Dec 22	-		Under Maintenance
19 Dec 22	-		Under Maintenance
20 Dec 22	-		Under Maintenance
21 Dec 22	-		Under Maintenance
22 Dec 22	-		Under Maintenance
23 Dec 22	-		Under Maintenance
24 Dec 22	-		Under Maintenance
25 Dec 22	-		Under Maintenance
26 Dec 22	-		Under Maintenance
27 Dec 22	-		Under Maintenance
28 Dec 22	-		Under Maintenance
29 Dec 22	-		Under Maintenance
30 Dec 22	-		Under Maintenance
31 Dec 22	-		Under Maintenance
Average	862.9	10.5	
Min	836	7.8	
Max	955	13.3	
ENGB			
01 Jan 22	840		In Operation
02 Jan 22	839		In Operation
03 Jan 22	839		In Operation
04 Jan 22	842		In Operation
05 Jan 22	842		In Operation
06 Jan 22	841		In Operation
07 Jan 22	841		In Operation
08 Jan 22	835		In Operation
09 Jan 22	840		In Operation
10 Jan 22	839		In Operation
11 Jan 22	841		In Operation
12 Jan 22	839		In Operation
13 Jan 22	840		In Operation
14 Jan 22	-		Under Maintenance
15 Jan 22	-		Under Maintenance
16 Jan 22	-	7.8	Under Maintenance
17 Jan 22	-		Under Maintenance
18 Jan 22	-		Under Maintenance
19 Jan 22	-		Under Maintenance
20 Jan 22	-		Under Maintenance
21 Jan 22	-		Under Maintenance
22 Jan 22	-		Under maintenance
23 Jan 22	-		Under Maintenance
24 Jan 22	-		Under Maintenance
25 Jan 22	817		In Operation
26 Jan 22	-		Under Maintenance
27 Jan 22	-		Under Maintenance
28 Jan 22	-		Under Maintenance
29 Jan 22	-		Under Maintenance
30 Jan 22	-		Under Maintenance
31 Jan 22	-		Under Maintenance
01 Feb 22	836		Under Maintenance
02 Feb 22	842		Under Maintenance

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
03 Feb 22	-		Under Maintenance
04 Feb 22	-		Under Maintenance
05 Feb 22	-		Under Maintenance
06 Feb 22	-		Under Maintenance
07 Feb 22	-		Under Maintenance
08 Feb 22	-		Under Maintenance
09 Feb 22	-		Under Maintenance
10 Feb 22	-		Under Maintenance
11 Feb 22	-		Under Maintenance
12 Feb 22	-		Under Maintenance
13 Feb 22	-		Under Maintenance
14 Feb 22	846		In Operation
15 Feb 22	845		In Operation
16 Feb 22	846	11.9	In Operation
17 Feb 22	844		In Operation
18 Feb 22	845		In Operation
19 Feb 22	841		In Operation
20 Feb 22	843		In Operation
21 Feb 22	841		In Operation
22 Feb 22	841		In Operation
23 Feb 22	840		In Operation
24 Feb 22	840		In Operation
25 Feb 22	841		In Operation
26 Feb 22	841		In Operation
27 Feb 22	842		In Operation
28 Feb 22	842		In Operation
01 Mar 22	843		In Operation
02 Mar 22	-		Under Maintenance
03 Mar 22	841		In Operation
04 Mar 22	843		In Operation
05 Mar 22	845		In Operation
06 Mar 22	844		In Operation
07 Mar 22	841		In Operation
08 Mar 22	840		In Operation
09 Mar 22	842		In Operation
10 Mar 22	842		In Operation
11 Mar 22	842		In Operation
12 Mar 22	844		In Operation
13 Mar 22	844		In Operation
14 Mar 22	844		In Operation
15 Mar 22	845		In Operation
16 Mar 22	846	9.1	In Operation
17 Mar 22	846		In Operation
18 Mar 22	847		In Operation
19 Mar 22	847		In Operation
20 Mar 22	848		In Operation
21 Mar 22	847		In Operation
22 Mar 22	849		In Operation
23 Mar 22	846		In Operation
24 Mar 22	842		In Operation
25 Mar 22	844		In Operation
26 Mar 22	850		In Operation
27 Mar 22	850		In Operation
28 Mar 22	843		In Operation
29 Mar 22	841		In Operation
30 Mar 22	846		In Operation
31 Mar 22	846		In Operation
01 Apr 22	843		In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
02 Apr 22	841		In Operation
03 Apr 22	844		In Operation
04 Apr 22	843		In Operation
05 Apr 22	842		In Operation
06 Apr 22	846		In Operation
07 Apr 22	843		In Operation
08 Apr 22	848		In Operation
09 Apr 22	847		In Operation
10 Apr 22	845		In Operation
11 Apr 22	847		In Operation
12 Apr 22	849		In Operation
13 Apr 22	848		In Operation
14 Apr 22	851		In Operation
15 Apr 22	850		In Operation
16 Apr 22	845	13.3	In Operation
17 Apr 22	846		In Operation
18 Apr 22	846		In Operation
19 Apr 22	846		In Operation
20 Apr 22	848		In Operation
21 Apr 22	851		In Operation
22 Apr 22	852		In Operation
23 Apr 22	853		In Operation
24 Apr 22	852		In Operation
25 Apr 22	854		In Operation
26 Apr 22	862		In Operation
27 Apr 22	855		In Operation
28 Apr 22	843		In Operation
29 Apr 22	870		In Operation
30 Apr 22	851		In Operation
01 May 22	848		In Operation
02 May 22	849		In Operation
03 May 22	848		In Operation
04 May 22	849		In Operation
05 May 22	850		In Operation
06 May 22	850		In Operation
07 May 22	850		In Operation
08 May 22	852		In Operation
09 May 22	851		In Operation
10 May 22	857		In Operation
11 May 22	855		In Operation
12 May 22	853		In Operation
13 May 22	854		In Operation
14 May 22	852		In Operation
15 May 22	849		In Operation
16 May 22	847		In Operation
17 May 22	847		In Operation
18 May 22	845	11.6	In Operation
19 May 22	852		In Operation
20 May 22	851		In Operation
21 May 22	851		In Operation
22 May 22	850		In Operation
23 May 22	851		In Operation
24 May 22	851		In Operation
25 May 22	852		In Operation
26 May 22	857		In Operation
27 May 22	-		Under Maintenance
28 May 22	855		In Operation
29 May 22	855		In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
30 May 22	854		In Operation
31 May 22	855		In Operation
01 Jun 22	848		In Operation
02 Jun 22	853		In Operation
03 Jun 22	858		In Operation
04 Jun 22	856		In Operation
05 Jun 22	856		In Operation
06 Jun 22	856		In Operation
07 Jun 22	859		In Operation
08 Jun 22	853		In Operation
09 Jun 22	850		In Operation
10 Jun 22	855		In Operation
11 Jun 22	856		In Operation
12 Jun 22	854		In Operation
13 Jun 22	856		In Operation
14 Jun 22	856		In Operation
15 Jun 22	850		In Operation
16 Jun 22	-		Under Maintenance
17 Jun 22	-		Under Maintenance
18 Jun 22	-	9.7	Under Maintenance
19 Jun 22	-		Under Maintenance
20 Jun 22	867		In Operation
21 Jun 22	868		In Operation
22 Jun 22	864		In Operation
23 Jun 22	874		In Operation
24 Jun 22	875		In Operation
25 Jun 22	865		In Operation
26 Jun 22	867		In Operation
27 Jun 22	-		Under Maintenance
28 Jun 22	-		Under Maintenance
29 Jun 22	-		Under Maintenance
30 Jun 22	-		Under Maintenance
01 Jul 22	-		Under Maintenance
02 Jul 22	-		Under Maintenance
03 Jul 22	-		Under Maintenance
04 Jul 22	848		In Operation
05 Jul 22	851		In Operation
06 Jul 22	850		In Operation
07 Jul 22	-		Under Maintenance
08 Jul 22	-		Under Maintenance
09 Jul 22	-		Under Maintenance
10 Jul 22	-		Under Maintenance
11 Jul 22	-		Under Maintenance
12 Jul 22	-		Under Maintenance
13 Jul 22	-		Under Maintenance
14 Jul 22	-		Under Maintenance
15 Jul 22	871	11.2	In Operation
16 Jul 22	-		Under Maintenance
17 Jul 22	-		Under Maintenance
18 Jul 22	854		In Operation
19 Jul 22	860		In Operation
20 Jul 22	852		In Operation
21 Jul 22	852		In Operation
22 Jul 22	854		In Operation
23 Jul 22	855		In Operation
24 Jul 22	856		In Operation
25 Jul 22	856		In Operation
26 Jul 22	864		In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
27 Jul 22	854		In Operation
28 Jul 22	858		In Operation
29 Jul 22	855		In Operation
30 Jul 22	861		In Operation
31 Jul 22	853		In Operation
01 Aug 22	859		In Operation
02 Aug 22	857		In Operation
03 Aug 22	860		In Operation
04 Aug 22	861		In Operation
05 Aug 22	855		In Operation
06 Aug 22	860		In Operation
07 Aug 22	861		In Operation
08 Aug 22	858		In Operation
09 Aug 22	861		In Operation
10 Aug 22	859		In Operation
11 Aug 22	855		In Operation
12 Aug 22	857		In Operation
13 Aug 22	857		In Operation
14 Aug 22	858		In Operation
15 Aug 22	858		In Operation
16 Aug 22	858	9.3	In Operation
17 Aug 22	857		In Operation
18 Aug 22	856		In Operation
19 Aug 22	855		In Operation
20 Aug 22	863		In Operation
21 Aug 22	864		In Operation
22 Aug 22	862		In Operation
23 Aug 22	864		In Operation
24 Aug 22	861		In Operation
25 Aug 22	865		In Operation
26 Aug 22	864		In Operation
27 Aug 22	863		In Operation
28 Aug 22	861		In Operation
29 Aug 22	864		In Operation
30 Aug 22	863		In Operation
31 Aug 22	866		In Operation
01 Sep 22	865		In Operation
02 Sep 22	867		In Operation
03 Sep 22	857		In Operation
04 Sep 22	856		In Operation
05 Sep 22	855		In Operation
06 Sep 22	857		In Operation
07 Sep 22	856		In Operation
08 Sep 22	-		In Operation
09 Sep 22	845		In Operation
10 Sep 22	856		In Operation
11 Sep 22	857	10.2	In Operation
12 Sep 22	854		In Operation
13 Sep 22	879		Under Maintenance
14 Sep 22	855		In Operation
15 Sep 22	851		In Operation
16 Sep 22	856		In Operation
17 Sep 22	859		In Operation
18 Sep 22	851		In Operation
19 Sep 22	855		In Operation
20 Sep 22	851		In Operation
21 Sep 22	856		In Operation
22 Sep 22	860		In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [a]	Operation Status (Landfill Gas Generator in Operation)
23 Sep 22	859		In Operation
24 Sep 22	857		In Operation
25 Sep 22	859		In Operation
26 Sep 22	862		In Operation
27 Sep 22	861		In Operation
28 Sep 22	860		In Operation
29 Sep 22	863		In Operation
30 Sep 22	848		In Operation
01 Oct 22	847		In Operation
02 Oct 22	863		In Operation
03 Oct 22	861		In Operation
04 Oct 22	858		In Operation
05 Oct 22	860		In Operation
06 Oct 22	857		In Operation
07 Oct 22	864		In Operation
08 Oct 22	862		In Operation
09 Oct 22	859		In Operation
10 Oct 22	855		In Operation
11 Oct 22	856		In Operation
12 Oct 22	858		In Operation
13 Oct 22	862		In Operation
14 Oct 22	859		In Operation
15 Oct 22	858		In Operation
16 Oct 22	848	10.3	In Operation
17 Oct 22	859		In Operation
18 Oct 22	858		In Operation
19 Oct 22	857		In Operation
20 Oct 22	857		In Operation
21 Oct 22	861		In Operation
22 Oct 22	862		In Operation
23 Oct 22	867		In Operation
24 Oct 22	865		In Operation
25 Oct 22	865		In Operation
26 Oct 22	863		In Operation
27 Oct 22	864		In Operation
28 Oct 22	866		In Operation
29 Oct 22	866		In Operation
30 Oct 22	863		In Operation
31 Oct 22	865		In Operation
01 Nov 22	883		In Operation
02 Nov 22	882		In Operation
03 Nov 22	893		In Operation
04 Nov 22	892		In Operation
05 Nov 22	892		In Operation
06 Nov 22	898		In Operation
07 Nov 22	910		In Operation
08 Nov 22	910		In Operation
09 Nov 22	903		In Operation
10 Nov 22	917	11.6	In Operation
11 Nov 22	915		In Operation
12 Nov 22	907		In Operation
13 Nov 22	893		In Operation
14 Nov 22	890		In Operation
15 Nov 22	892		In Operation
16 Nov 22	890		In Operation
17 Nov 22	886		In Operation
18 Nov 22	893		In Operation
19 Nov 22	897		In Operation

Date	Exhaust temperature (K)	Exhaust gas velocity (ms^{-1}) [(a)]	Operation Status (Landfill Gas Generator in Operation)
20 Nov 22	880		In Operation
21 Nov 22	880		In Operation
22 Nov 22	914		In Operation
23 Nov 22	908		In Operation
24 Nov 22	909		In Operation
25 Nov 22	910		In Operation
26 Nov 22	896		In Operation
27 Nov 22	904		In Operation
28 Nov 22	901		In Operation
29 Nov 22	-		Under Maintenance
30 Nov 22	-		Under Maintenance
01 Dec 22	-		Under Maintenance
02 Dec 22	-		Under Maintenance
03 Dec 22	-		Under Maintenance
04 Dec 22	-		Under Maintenance
05 Dec 22	-		Under Maintenance
06 Dec 22	-		Under Maintenance
07 Dec 22	-		Under Maintenance
08 Dec 22	-		Under Maintenance
09 Dec 22	-		Under Maintenance
10 Dec 22	-		Under Maintenance
11 Dec 22	-		Under Maintenance
12 Dec 22	-		Under Maintenance
13 Dec 22	-		Under Maintenance
14 Dec 22	-		Under Maintenance
15 Dec 22	-		Under Maintenance
16 Dec 22	-	-	Under Maintenance
17 Dec 22	-		Under Maintenance
18 Dec 22	-		Under Maintenance
19 Dec 22	-		Under Maintenance
20 Dec 22	-		Under Maintenance
21 Dec 22	-		Under Maintenance
22 Dec 22	-		Under Maintenance
23 Dec 22	-		Under Maintenance
24 Dec 22	-		Under Maintenance
25 Dec 22	-		Under Maintenance
26 Dec 22	-		Under Maintenance
27 Dec 22	-		Under Maintenance
28 Dec 22	-		Under Maintenance
29 Dec 22	-		Under test run
30 Dec 22	-		Under test run
31 Dec 22	-		Under test run
Average	857.2	10.5	
Min	817	7.8	
Max	917	13.3	

Notes:

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.

Annex D6

Ambient VOCs, Ammonia and H_2S Monitoring Results

Table D6.1 Ambient VOCs, Ammonia and H_2S Monitoring Results (February 2022)

Parameters	Limit Level	Monitoring Results (μg m^{-3})			
		AM1	AM2	AM3	AM4
Ammonia	180	<10	<10	<10	<10
H_2S	42	<14	<14	<14	<14
Methane	NA [a]	0.00068% (v/v)	0.00031% (v/v)	0.00020% (v/v)	0.00020% (v/v)
1.1.1-Trichloroethane	5,550	<0.8	<0.8	<0.8	<0.8
1.2-Dibromoethane (EDB)	39	<1.0	<1.0	<1.0	<1.0
1.2-Dichloroethane	210	0.5	0.5	0.5	0.6
Benzene	33	2.0	1.5	1.2	1.5
Butan-2-ol	667	<0.6	<0.6	<0.6	<0.6
Butanethiol	4	<1.2	<1.2	<1.2	<1.2
Carbon Disulphide	150	1.8	1.2	0.8	1.2
Carbon Tetrachloride	64	0.7	0.8	0.7	0.8
Chloroform	99	<0.8	<0.8	<0.8	<0.8
Decanes	3,608	0.7	<0.7	1.8	<0.7
Dichlorobenzene	120	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoro-methane	NA [a]	1.3	1.8	1.3	1.9
Dimethylsulphide	8	<0.2	<0.2	<0.2	<0.2
Dipropyl ether	NA [a]	<0.8	<0.8	<0.8	<0.8
Limonene	212	0.8	<0.4	0.9	<0.4
Ethanethiol	13	<0.6	<0.6	<0.6	<0.6
Ethanol	19,200	8.2	<3.8	<3.8	<3.8
Ethyl butanoate	71	<1.0	<1.0	<1.0	<1.0
Ethyl propionate	29	<0.8	<0.8	<0.8	<0.8
Ethyl benzene	738	0.9	0.6	1.5	0.6
Heptane	2,746	<0.8	<0.8	<0.8	<0.8
Methanethiol	10	<0.4	<0.4	<0.4	<0.4
Methanol	2,660	13.3	29.9	37.2	22.0
Methyl butanoate	30	<0.8	<0.8	<0.8	<0.8
Methyl propionate	353	<0.7	<0.7	<0.7	<0.7
Methylene Chloride	3,530	2.4	3.0	2.9	3.2
Butyl acetate	76	<1.0	<1.0	<1.0	<1.0
Butyl benzene	47	<1.0	<1.0	<1.0	<1.0

Parameters	Limit Level	Monitoring Results (μg m^{-3})			
		AM1	AM2	AM3	AM4
Nonane	11,540	<0.9	<0.9	<0.9	<0.9
Propyl benzene	19	<0.8	<0.8	<0.8	<0.8
Octane	7,942	<0.9	<0.9	<0.9	<0.9
Propyl propionate	276	<1.0	<1.0	<1.0	<1.0
Terpenes	NA (a)	2.3	0.9	0.9	<0.8
Tetrachloroethylene	1,380	0.7	0.7	0.7	<0.7
Toluene	1,244	1.7	1.5	2.8	1.9
Trichloroethylene	5,500	<1.1	<1.1	<1.1	<1.1
Undecane	5,562	<1.2	<1.2	<1.2	<1.2
Vinyl Chloride	26	<0.3	<0.3	<0.3	<0.3
Xylenes	534	2.3	1.6	3.5	1.0

Notes:

(a) No relevant WHO/USEPA/CARB's ambient criteria, odour thresholds and WEL available.

Table D6.2 Ambient VOCs, Ammonia and H_2S Monitoring Results (May 2022)

Parameters	Limit Level	Monitoring Results (μg m^{-3})			
		AM1	AM2	AM3	AM4
Ammonia	180	<10	<10	<10	<10
H_2S	42	<14	<14	<14	<14
Methane	NA [a]	0.00019% (v/v)	0.00017% (v/v)	0.00041% (v/v)	0.00018% (v/v)
1.1.1-Trichloroethane	5,550	<0.8	<0.8	<0.8	<0.8
1.2-Dibromoethane (EDB)	39	<1.0	<1.0	<1.0	<1.0
1.2-Dichloroethane	210	0.9	0.9	0.4	1.0
Benzene	33	1.0	0.8	<0.5	0.9
Butan-2-ol	667	<0.6	<0.6	<0.6	<0.6
Butanethiol	4	<1.2	<1.2	<1.2	<1.2
Carbon Disulphide	150	0.8	<0.5	<0.5	1.1
Carbon Tetrachloride	64	0.7	0.6	<0.6	0.6
Chloroform	99	<0.8	<0.8	<0.8	<0.8
Decanes	3,608	0.7	<0.7	1.1	0.7
Dichlorobenzene	120	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoro-methane	NA [a]	1.0	1.1	<0.6	0.9
Dimethylsulphide	8	<0.2	<0.2	<0.2	<0.2
Dipropyl ether	NA [a]	<0.8	<0.8	<0.8	<0.8
Limonene	212	1.1	1.2	4.0	1.1
Ethanethiol	13	<0.6	<0.6	<0.6	<0.6
Ethanol	19,200	<3.8	<3.8	<3.8	<3.8
Ethyl butanoate	71	<1.0	<1.0	<1.0	<1.0
Ethyl propionate	29	<0.8	<0.8	<0.8	<0.8
Ethyl benzene	738	1.0	1.0	1.3	2.0
Heptane	2,746	<0.8	<0.8	<0.8	0.8
Methanethiol	10	<0.4	<0.4	<0.4	<0.4
Methanol	2,660	29.4	13.7	<2.6	31.3
Methyl butanoate	30	<0.8	<0.8	<0.8	<0.8
Methyl propionate	353	<0.7	<0.7	<0.7	<0.7
Methylene Chloride	3,530	4.5	5.4	0.6	5.5
Butyl acetate	76	1.1	<1.0	<1.0	1.7
Butyl benzene	47	<1.0	<1.0	<1.0	<1.0
Nonane	11,540	<0.9	<0.9	<0.9	<0.9

Parameters	Limit Level	Monitoring Results (μg m^{-3})			
		AM1	AM2	AM3	AM4
Propyl benzene	19	<0.8	<0.8	<0.8	<0.8
Octane	7,942	<0.9	<0.9	<0.9	<0.9
Propyl propionate	276	<1.0	<1.0	<1.0	<1.0
Terpenes	NA [(a)]	1.0	<0.8	1.8	2.2
Tetrachloroethylene	1,380	<0.7	<0.7	<0.7	<0.7
Toluene	1,244	3.5	3.6	2.6	5.4
Trichloroethylene	5,500	<1.1	<1.1	<1.1	<1.1
Undecane	5,562	<1.2	<1.2	1.5	<1.2
Vinyl Chloride	26	<0.3	<0.3	<0.3	<0.3
Xylenes	534	3.0	3.0	5.9	6.3

Notes:

(a) No relevant WHO/USEPA/CARB's ambient criteria, odour thresholds and WEL available.

Table D6.3 Ambient VOCs, Ammonia and H_2S Monitoring Results (August 2022)

Parameters	Limit Level	Monitoring Results (μg m^{-3})			
		AM1	AM2	AM3	AM4
Ammonia	180	18	19	25	26
H_2S	42	<15	<15	<15	<15
Methane	NA [a]	0.00023% (v/v)	0.00022% (v/v)	0.00036% (v/v)	0.00032% (v/v)
1.1.1-Trichloroethane	5,550	<0.9	<0.9	<0.9	<0.9
1.2-Dibromoethane (EDB)	39	<1.3	<1.3	<1.3	<1.3
1.2-Dichloroethane	210	<0.6	<0.6	<0.6	<0.6
Benzene	33	<0.5	<0.5	<0.5	<0.5
Butan-2-ol	667	<0.6	<0.6	<0.6	<0.6
Butanethiol	4	<1.2	<1.2	<1.2	<1.2
Carbon Disulphide	150	<0.5	<0.5	11.4	1.6
Carbon Tetrachloride	64	<1.0	<1.0	<1.0	<1.0
Chloroform	99	<0.8	<0.8	<0.8	<0.8
Decanes	3,608	1.3	<1.0	1.1	<1.0
Dichlorobenzene	120	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoro-methane	NA [a]	1.4	1.7	2.1	2
Dimethylsulphide	8	<0.4	<0.4	<0.4	<0.4
Dipropyl ether	NA [a]	<0.8	<0.8	<0.8	<0.8
Limonene	212	<0.9	<0.9	<0.9	<0.9
Ethanethiol	13	<0.6	<0.6	<0.6	<0.6
Ethanol	19,200	<3.8	<3.8	<3.8	25.4
Ethyl butanoate	71	<1.0	<1.0	<1.0	<1.0
Ethyl propionate	29	<0.8	<0.8	<0.8	<0.8
Ethyl benzene	738	<0.8	<0.8	<0.8	1.3
Heptane	2,746	<0.8	<0.8	<0.8	<0.8
Methanethiol	10	<0.4	<0.4	<0.4	<0.4
Methanol	2,660	13	<2.6	7.6	29.5
Methyl butanoate	30	<0.8	<0.8	<0.8	<0.8
Methyl propionate	353	<0.7	<0.7	<0.7	<0.7
Methylene Chloride	3,530	<0.6	<0.6	2.7	4
Butyl acetate	76	<1.0	<1.0	<1.0	<1.0
Butyl benzene	47	<1.0	<1.0	<1.0	<1.0
Nonane	11,540	<0.9	<0.9	<0.9	<0.9

Parameters	Limit Level	Monitoring Results (μg m^{-3})			
		AM1	AM2	AM3	AM4
Propyl benzene	19	<0.8	<0.8	<0.8	<0.8
Octane	7,942	<0.9	<0.9	<0.9	<0.9
Propyl propionate	276	<1.0	<1.0	<1.0	<1.0
Terpenes	NA (a)	1	<0.8	1.1	1.4
Tetrachloroethylene	1,380	<1.2	<1.2	<1.2	<1.2
Toluene	1,244	<0.6	<0.6	0.7	2.7
Trichloroethylene	5,500	<1.1	<1.1	<1.1	<1.1
Undecane	5,562	<1.2	<1.2	<1.2	<1.2
Vinyl Chloride	26	<0.4	<0.4	<0.4	<0.4
Xylenes	534	<0.5	<0.5	<0.5	2.5

Notes:

(a) No relevant WHO/USEPA/CARB's ambient criteria, odour thresholds and WEL available.

Table D6.4 Ambient VOCs, Ammonia and H_2S Monitoring Results (November 2022)

Parameters	Limit Level	Monitoring Results (µg m^{-3})			
		AM1	AM2	AM3	AM4
Ammonia	180	43	23	22	23
H_2S	42	<15	<15	<15	<15
Methane	NA [a]	0.0003 %(v/v)	0.0003 %(v/v)	0.00024 %(v/v)	0.00017 %(v/v)
1.1.1-Trichloroethane	5,550	<0.8	<0.8	<0.8	<0.8
1.2-Dibromoethane (EDB)	39	<1.0	<1.0	<1.0	<1.0
1.2-Dichloroethane	210	1.3	1.6	1.3	1.4
Benzene	33	0.9	1	0.8	0.9
Butan-2-ol	667	<0.6	<0.6	<0.6	<0.6
Butanethiol	4	<1.2	<1.2	<1.2	<1.2
Carbon Disulphide	150	<0.5	<0.5	<0.5	0.5
Carbon Tetrachloride	64	<0.6	<0.6	<0.6	<0.6
Chloroform	99	<0.8	<0.8	<0.8	<0.8
Decanes	3,608	<0.7	<0.7	<0.7	<0.7
Dichlorobenzene	120	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoro-methane	NA [a]	1.3	1.9	0.9	1.2
Dimethylsulphide	8	<0.2	<0.2	<0.2	<0.2
Dipropyl ether	NA [a]	<0.8	<0.8	<0.8	<0.8
Limonene	212	<0.4	<0.4	<0.4	<0.4
Ethanethiol	13	<0.6	<0.6	<0.6	<0.6
Ethanol	19,200	<3.8	<3.8	<3.8	4.1
Ethyl butanoate	71	<1.0	<1.0	<1.0	<1.0
Ethyl propionate	29	<0.8	<0.8	<0.8	<0.8
Ethyl benzene	738	0.8	1	1.4	0.6
Heptane	2,746	<0.8	<0.8	<0.8	<0.8
Methanethiol	10	<0.4	<0.4	<0.4	<0.4
Methanol	2,660	15.8	<2.6	<2.6	18.3
Methyl butanoate	30	<0.8	<0.8	<0.8	<0.8
Methyl propionate	353	<0.7	<0.7	<0.7	<0.7
Methylene Chloride	3,530	4.6	6.1	5.7	4.6
Butyl acetate	76	<1.0	<1.0	<1.0	<1.0
Butyl benzene	47	<1.0	<1.0	<1.0	<1.0
Nonane	11,540	<0.9	<0.9	<0.9	<0.9

Parameters	Limit Level	Monitoring Results (μg m^{-3})			
		AM1	AM2	AM3	AM4
Propyl benzene	19	<0.8	<0.8	<0.8	<0.8
Octane	7,942	<0.9	<0.9	<0.9	<0.9
Propyl propionate	276	<1.0	<1.0	<1.0	<1.0
Terpenes	NA [(a)]	0.9	<0.8	1.2	<0.8
Tetrachloroethylene	1,380	<0.7	<0.7	<0.7	<0.7
Toluene	1,244	2.6	3	3.6	2.6
Trichloroethylene	5,500	<1.1	<1.1	<1.1	<1.1
Undecane	5,562	<1.2	<1.2	<1.2	<1.2
Vinyl Chloride	26	<0.3	<0.3	<0.3	<0.3
Xylenes	534	0.7	1.1	3.3	0.6

Notes:

(a) No relevant WHO/USEPA/CARB's ambient criteria, odour thresholds and WEL available.

Annex D7

Investigation Reports of Environmental Quality Limit Exceedance

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	29 July 2022
Time	9:00 (29 July 2022) – 9:00 (30 July 2022)
Monitoring Location	AM2, AM4
Parameter	24-hour Total Suspended Particulates (TSP)
Action / Limit Levels	Action level: >260 µg/ m^3 Limit level: >260 µg/m^3
Measured Level	AM2: 312 µg /m^3 AM4: 364 µg /m^3
Possible reason	From the meteorological data obtained from the SENTX on-site meteorological monitoring station, a predominantly southwesterly to west-southwesterly wind with highest wind speed 7.5 m/s was recorded on 29 and 30 July 2022 during the sampling event. <u>AM2</u> On 29 July 2022, the ET site representative observed that dust emitted from Cell 4X and the unpaved areas in the vicinity was blown toward dust monitoring station AM2. This could be the potential cause for the exceedance. Based on this observation, the TSP exceedance at AM2 was deemed to Project-related activities. In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted at AM2 on 4 August 2022 to confirm findings. The 24-hour TSP level was 36 µg/m^3, which is well below Action/Limit Level. There is no consecutive exceedance at this dust monitoring location. <u>AM4</u> On 29 July 2022, the ET site representative observed that dust emitted from the public fill stockpiling areas and active earthworks from another project site in close vicinity of dust monitoring station AM4. No works from SENTX which may generate dust emission were conducted in the vicinity of AM4 on the sampling day based on the ET site representative on-site observations and the Contractor's record of the construction and operation activities carried out on that day. Due to presence of the influencing factor from another project site and no Project-related dust emission source was identified in the vicinity of AM4, there is no adequate evidence showing that the exceedance at AM4 was due to Project-related activities. In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted at AM4 on 4 August 2022 to confirm findings. The 24-hour TSP level was 35 µg/m^3, which is

	well below the Action/Limit Level. There is no consecutive exceedance at this dust monitoring location.
Action Taken / Action to be Taken	In accordance with Table 3.8b of the updated EM&A Manual, the monitoring frequency at AM2 shall be increased to daily, until no exceedance of the Action/Limit Level. It should be noted that the turnaround time for the laboratory analysis of the dust filter paper is 5 working days and the preliminary results for the monitoring event conducted on 29 to 30 July 2022 were available on 4 August 2022. Repeat measurement was conducted on 4 August 2022 and the TSP monitoring result at AM2 is well below the Action/Limit Level. Hence, the daily TSP monitoring at AM2 shall not be triggered. Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action/Limit Level. In addition, the Contractor was reminded to discuss the dust control measures with CEDD to minimize the dust impact from the other project site to proximity to the SENTX boundary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 17 August 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	14 October 2022
Time	12:09 – 12:39
Monitoring Location	Landfill Gas Flare 1 (F601)
Parameter	Sulphur Dioxide (SO_2)
Limit Levels	>0.22 g/s
Measured Level	0.26 g/s
Possible reason	As confirmed by the Contractor, Landfill Gas Flare 1 (F601) was under normal operating conditions during the sampling event. The landfill gas flare emission monitoring results (NO_2, CO, Benzene, Vinyl chloride, gas combustion temperature, exhaust temperature and exhaust gas velocity) at Landfill Gas Flare 1 (F601) on 14 October 2022 were well within the respective limit levels. It is possible that the slight exceedance of SO_2 limit level measured on 14 October 2022 could be due to some short-term system instability (e.g. insufficient air, short gas residence time or ineffective mixing of landfill gas and air during the combustion) during the sampling event and excess SO_2 was formed from the oxidation of trace quantities of sulphur compounds in the landfill gas. Hence, the SO_2 exceedance at Landfill Gas Flare 1 (F601) on 14 October 2022 is considered to be Project related. In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted on 17 November 2022 (it should be noted that the turnaround time of the laboratory analysis of the flue gas sample is 3 weeks and the results were available on 6 December 2022) to confirm findings. Exceedance of SO_2 Limit Level was recorded at Landfill Gas Flare 1 (F601) (1.27 mg/L) during the sampling event. Landfill Gas Flare 1 (F601) showed consecutive exceedance of the landfill gas flare stack emission limit (SO_2). It should be noted that although the measured SO_2 level exceeded the limit level of the EM&A programme (which was set based on the stack design parameters), the slight exceedance of SO_2 on 14 October 2022 will not cause adverse air quality impact to the identified ASRs as the anticipated SO_2 concentrations at the identified ASRs will still be well below the respective AQO criteria with reference to the findings of the operational air quality impact assessment of the SENTX Environmental Review Report.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to closely monitoring the operating conditions of the

	flare to avoid any exceedance of the Limit Levels. The Contractor is also reminded to adjust the inlet flow and quality of the LFG during the routine gas well monitoring to ensure complete oxidation of the sulphur compounds (e.g. H_2S) in the landfill gas during LFG flaring.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 27 December 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	17 November 2022
Time	13:25 – 13:55
Monitoring Location	Landfill Gas Flare 1 (F601)
Parameter	Sulphur Dioxide (SO_2)
Limit Levels	>0.22 g/s
Measured Level	1.27 g/s
Possible reason	As confirmed by the Contractor, Landfill Gas Flare 1 (F601) was under normal operating conditions during the sampling event. The landfill gas flare emission monitoring results (NO_2, CO, Benzene, Vinyl chloride, gas combustion temperature, exhaust temperature and exhaust gas velocity) at Landfill Gas Flare 1 (F601) on 17 November 2022 were well within the respective limit levels. It is possible that the slight exceedance of SO_2 limit level measured on 17 November 2022 could be due to some short-term system instability (e.g. insufficient air, short gas residence time or ineffective mixing of landfill gas and air during the combustion) during the sampling event and excess SO_2 was formed from the oxidation of trace quantities of sulphur compounds in the landfill gas. Hence, the SO_2 exceedance at Landfill Gas Flare 1 (F601) on 17 November 2022 is considered to be Project related. In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted on 13 December 2022 (it should be noted that the turnaround time of the laboratory analysis of the flue gas sample is 3 weeks and the results were available on 9 January 2023) to confirm findings. The SO_2 concentration (0.16 g/s) measured on 13 December 2022 is well below Limit Level. There is no consecutive exceedance of SO_2 concentrations in the flue gas emission of Landfill Gas Flare 1 (F601).
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to closely monitoring the operating conditions of the flare to avoid any exceedance of the Limit Levels. The Contractor is also reminded to adjust the inlet flow and quality of the LFG during the routine gas well monitoring to ensure complete oxidation of the sulphur compounds (e.g. H_2S) in the landfill gas during LFG flaring.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 10 January 2023

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	13 December 2022
Time	13:24 – 13:54
Monitoring Location	Landfill Gas Flare 1 (F601)
Parameter	Benzene
Limit Levels	>0.000414 g/s
Measured Level	0.000661 g/s
Possible reason	As confirmed by the Contractor, Landfill Gas Flare 1 (F601) was under normal operating conditions during the sampling event. The landfill gas flare emission monitoring results (SO_2, NO_2, CO, Vinyl chloride, gas combustion temperature, exhaust temperature and exhaust gas velocity) at Landfill Gas Flare 1 (F601) on 13 December 2022 were well within the respective limit levels. It is possible that the slight exceedance of benzene limit level measured on 13 December 2022 could be due to some short-term system instability (e.g. insufficient air, short gas residence time or ineffective mixing of landfill gas and air during the combustion) during the sampling event. Hence, the benzene exceedance at Landfill Gas Flare 1 (F601) on 13 December 2022 is considered to be Project related. In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted on 17 January 2023 (it should be noted that the turnaround time of the laboratory analysis of the flue gas sample is 3 weeks and the results were available on 9 February 2023) to confirm findings. The benzene concentration (<0.000180 g/s) measured on 17 January 2023 is well below Limit Level. There is no consecutive exceedance of benzene concentrations in the flue gas emission of Landfill Gas Flare 1 (F601).
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to closely monitoring the operating conditions of the flare to avoid any exceedance of the Limit Levels.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 20 February 2023

Annex E

Noise

Annex E1

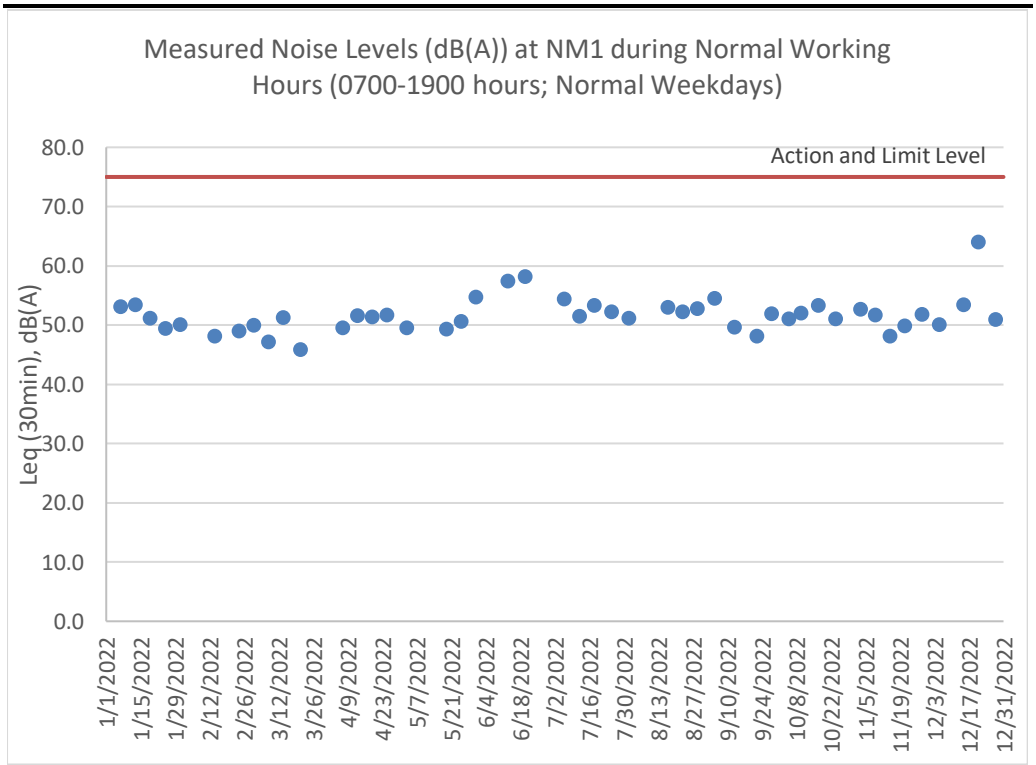
Noise Monitoring Results

Table E1.1 Measured Noise Levels (dB(A)) at NM1 during Normal Working Hours (0700-1900 hours; Normal Weekdays)

Date	Start Time	Finish Time	Weather	$L_{10\ (30min)}$	$L_{90\ (30min)}$	$L_{eq\ (30min)}$
7 Jan 22	10:15	10:45	Sunny	53.5	47.0	53.1
13 Jan 22	14:33	15:03	Sunny	55.0	48.5	53.4
19 Jan 22	10:15	10:45	Sunny	52.0	49.0	51.1
25 Jan 22	10:36	11:06	Cloudy	50.5	46.5	49.4
31 Jan 22	10:17	10:47	Cloudy	51.6	48.3	50.1
7 Feb 22	NA	NA	Drizzle	Monitoring was cancelled due to adverse weather.		
14 Feb 22	15:06	15:36	Sunny	49.0	43.8	48.1
24 Feb 22	15:39	16:09	Sunny	49.9	44.9	49.0
2 Mar 22	9:50	10:20	Sunny	51.0	46.7	50.0
8 Mar 22	13:41	14:11	Sunny	49.0	45.4	47.2
14 Mar 22	14:05	14:35	Sunny	53.7	48.8	51.3
21 Mar 22	15:14	15:44	Cloudy	47.1	43.6	45.9
28 Mar 22	NA	NA	Drizzle	Monitoring was cancelled due to adverse weather.		
7 Apr 22	15:17	15:47	Sunny	51.6	45.4	49.5
13 Apr 22	15:00	15:30	Sunny	52.8	50.0	51.6
19 Apr 22	14:49	15:19	Sunny	52.4	49.7	51.4
25 Apr 22	11:06	11:36	Sunny	53.0	48.9	51.7
3 May 22	15:00	15:30	Sunny	52.0	45.2	49.5
10 May 22	NA	NA	Pouring	Monitoring was cancelled due to adverse weather.		
19 May 22	14:50	15:20	Sunny	51.2	46.7	49.3
25 May 22	15:48	16:18	Cloudy	53.2	46.9	50.6
31 May 22	14:39	15:39	Cloudy	57.7	50.7	54.7
6 Jun 22	NA	NA	Pouring	Monitoring was cancelled due to adverse weather.		
13 Jun 22	14:14	14:44	Cloudy	57.1	52.3	57.4
20 Jun 22	14:22	14:52	Cloudy	56.1	51.8	58.2
30 Jun 22	NA	NA	Drizzle	Monitoring was cancelled due to adverse weather.		
6 Jul 22	14:02	14:32	Cloudy	55.8	52.7	54.4
12 Jul 22	14:36	15:06	Sunny	53.2	48.1	51.5
18 Jul 22	9:48	10:18	Sunny	54.5	51.2	53.3
25 Jul 22	10:32	11:02	Sunny	53.9	49.9	52.2
1 Aug 22	9:46	10:16	Sunny	52.4	49.5	51.1
11 Aug 22	14:34	15:04	Pouring	Monitoring was cancelled due to adverse weather.		
17 Aug 22	14:31	15:01	Cloudy	54.9	49.8	53.0
23 Aug 22	9:52	10:22	Sunny	53.3	50.6	52.2
29 Aug 22	14:33	15:03	Sunny	53.8	50.5	52.8
5 Sep 22	14:13	14:43	Sunny	57.6	50.4	54.5
13 Sep 22	13:46	14:16	Sunny	50.9	47.6	49.6
22 Sep 22	15:06	15:36	Sunny	49.3	46.1	48.1
28 Sep 22	9:57	10:27	Sunny	54.2	48.4	51.9
5 Oct 22	13:50	14:20	Sunny	53.5	47.0	51.0
10 Oct 22	13:58	14:28	Cloudy	53.4	50.4	52.0
17 Oct 22	14:24	14:54	Cloudy	55.1	51.1	53.3
24 Oct 22	10:06	10:36	Sunny	52.8	47.1	51.0
3 Nov 22	13:15	13:45	Cloudy	55.2	48.8	52.7

Date	Start Time	Finish Time	Weather	$L_{10\ (30min)}$	$L_{90\ (30min)}$	$L_{eq\ (30min)}$
9 Nov 22	14:06	14:36	Sunny	53.8	47.6	51.7
15 Nov 22	10:43	11:13	Sunny	49.9	44.2	48.1
21 Nov 22	10:20	10:50	Cloudy	52.3	46.6	49.9
28 Nov 22	10:25	10:55	Sunny	53.4	49.4	51.8
5 Dec 22	11:09	11:39	Cloudy	53.1	53.5	50.1
15 Dec 22	10:30	11:00	Cloudy	54.1	48.2	53.4
21 Dec 22	11:00	11:30	Sunny	67.8	55.6	64.0
28 Dec 22	10:20	10:50	Sunny	53.5	46.7	50.9
					Average	51.7
					Min	45.9
					Max	64.0

Figure E1.1 Graphical Presentation for Noise Monitoring at NM1



Annex E2

Event and Action Plan for Noise Monitoring

Annex E2 Event and Action Plan for Operational Noise Monitoring

Event	Action		
	ET	**IEC**	**Contractor**
Action Level	• Identify the source(s) and investigate the cause(s) of exceedance and complaint • Prepare Notification of Exceedance within 24 hours • Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • 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 • Check monitoring data submitted by ET • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Submit proposals for remedial measures to IEC • Implement the agreed proposals
Limit Level	• Identify the source(s) and investigate the cause(s) of exceedance and complaint • Prepare Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project • Analyse the operation of SENTX and investigate the causes of exceedance • Provide interim report to Contractor, IEC, Project Proponent and EPD the causes of the exceedances • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented • Report the remedial measures implemented and the additional monitoring results to Contactor, IEC, Project Proponent and EPD • Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring	• Verify the Notification of Exceedance • Check monitoring data submitted by ET • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Take immediate measures to avoid further exceedance • Submit proposals for remedial measures to IEC within 3 working days of notification • Implement the agreed proposals • Resubmit proposals if problem still not under control • Stop the relevant activity of works as determined by the Project Proponent until the exceedance is abated

Annex F

Water Quality

Annex F1

Surface Water Quality Monitoring Results

Table F1.1 Surface Water Quality Monitoring Results at DP4

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks
25 Jan 22	10:02	Cloudy	Unable to collect water sample due to insufficient flow						-
24 Feb 22	16:11	Sunny	Unable to collect water sample due to insufficient flow						-
21 Mar 22	14:31	Overcast	Unable to collect water sample due to insufficient flow						-
25 Apr 22	13:37	Sunny	Unable to collect water sample due to insufficient flow						-
25 May 22	14:58	Overcast	Light Yellow	-	26.8	0.18	9	31.8	-
24 Jun 22	13:19	Sunny	Light Yellow	-	26.9	0.18	10	30.9	Duplicate
30 Jun 22	11:15	Sunny	Unable to collect water sample due to insufficient flow						-
8 Jul 22	10:45	Sunny	Light Yellow	Semi-clear	-	-	-	26.3	-
15 Jul 22	10:30	Sunny	Light Yellow	Semi-clear	-	-	-	7.1	-
25 Jul 22	09:30	Sunny	Unable to collect water sample due to insufficient flow						-
23 Aug 22	10:55	Sunny	Unable to collect water sample due to insufficient flow						-
22 Sep 22	14:07	Sunny	Unable to collect water sample due to insufficient flow						-
24 Oct 22	10:30	Sunny	Unable to collect water sample due to insufficient flow						-
21 Nov 22	09:50	Sunny	Unable to collect water sample due to insufficient flow						-
21 Dec 22	14:10	Sunny	Unable to collect water sample due to insufficient flow						-
					Average	0.18	9.5	24	-
					Min	0.18	9	7.1	-
					Max	0.18	10	31.8	-

Table F1.2 Surface Water Quality Monitoring Results at DP6

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Suspended Solids (SS) (mg/L)	Remarks
25 Jan 22	10:16	Cloudy	Unable to collect water sample due to insufficient flow						-
24 Feb 22	15:54	Sunny	Unable to collect water sample due to insufficient flow						-
21 Mar 22	14:37	Overcast	Unable to collect water sample due to insufficient flow						-
25 Apr 22	13:48	Sunny	Unable to collect water sample due to insufficient flow						-
25 May 22	15:15	Overcast	Unable to collect water sample due to insufficient flow						-
24 Jun 22	13:19	Sunny	Unable to collect water sample due to insufficient flow						-
25 Jul 22	09:39	Sunny	Unable to collect water sample due to insufficient flow						-
23 Aug 22	10:43	Sunny	Unable to collect water sample due to insufficient flow						-
22 Sep 22	14:10	Sunny	Unable to collect water sample due to insufficient flow						-
24 Oct 22	10:45	Sunny	Unable to collect water sample due to insufficient flow						-
21 Nov 22	10:00	Sunny	Unable to collect water sample due to insufficient flow						-
21 Dec 22	14:35	Sunny	Unable to collect water sample due to insufficient flow						-
					Average	-	-	-	-
					Min	-	-	-	-
					Max	-	-	-	-

Table F1.3 Surface Water Monitoring Results (May 2022)

		Limit Level	DP4	DP4(Duplicate)
On-site Measurement				
pH Value	pH Unit	6 - 9	8.10	8.02
Electrical Conductivity	µS/cm	-	393.3	321.4
Dissolved Oxygen	mg/L	-	8.10	8.02
Volume Discharge	m^3	-	1390	1390
Laboratory Analysis				
Bicarbonate	mg/L	-	48	49
Carbonate	mg/L	-	2	1
Suspended Solids (SS)	mg/L	20	31.8	30.9
Ammonia-nitrogen	mg/L	7.1	0.18	0.18
Chloride	mg/L	-	24	23
Nitrite-nitrogen	mg/L	-	0.07	0.06
Phosphate	mg/L	5	0.06	0.04
Sulphate	mg/L	-	47	49
Sulphide	mg/L	2.5	<0.1	<0.1
Total Kjeldahl Nitrogen(TKN)	mg/L	-	0.9	0.8
Nitrate-nitrogen	mg/L	-	1.16	1.17
Total Nitrogen(TN)	mg/L	50	2.1	2.1
Biochemical Oxygen Demand	mg/L	20	<2	<2
Chemical Oxygen Demand	mg/L	30	9	10
Oil & Grease	mg/L	20	<5	<5
Total Organic Carbon	mg/L	-	5	5
Boron	µg/L	1100	40	50
Calcium	mg/L	-	24.9	24.8
Mercury	µg/L	1	<0.20	<0.20
Magnesium	mg/L	-	1.61	1.5
Sodium	mg/L	-	16.8	15.8
Iron	mg/L	3	<0.04	<0.04
Potassium	mg/L	-	9.67	9.43
Cadmium	µg/L	1	<0.2	<0.2
Chromium	µg/L	300	3	3
Copper	µg/L	300	2	2
Lead	µg/L	300	<1	<1
Manganese	µg/L	-	<1	<1
Nickel	µg/L	300	<1	<1
Zinc	µg/L	-	<10	<10

Annex F2

Event and Action Plan for Water Quality Monitoring

Annex F2 Event and Action Plan for Water Quality Monitoring During Operation/ Restoration Phase

Event	Action		
	ET	**IEC**	**Contractor**
Exceedance of Limit Level for surface water monitoring	• Identify source(s) of impact and investigate the cause(s) of exceedance • Prepare Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented • Repeat measurement to confirm finding if exceedance is due to the Project • Increase monitoring frequency to weekly if exceedance is due to the Project until no exceedance of Limit Level •	• Verify the Notification of Exceedance • Check monitoring data submitted by ET • Check Contractor's working methods • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Take immediate action to avoid further exceedance • Submit proposals for remedial measures to IEC • Implement the agreed proposals • Amend proposal if appropriate
Exceedance of Limit Level for groundwater monitoring	• Identify source(s) of impact and investigate the cause(s) of exceedance • Prepare Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented • Repeat measurement to confirm finding if exceedance is due to the Project • Increase monitoring frequency to weekly if exceedance is due to the Project until no exceedance of Limit Level	• Verify the Notification of Exceedance • Check monitoring data submitted by ET • Check Contractor's working methods • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Divert groundwater collected at the collection sumps to the leachate treatment plant • Submit proposals for remedial measures to IEC • Rectify any unacceptable practice or design • Amend working methods as required • Implement amended working methods, if necessary

Event	Action		
	ET	**IEC**	**Contractor**
Exceedance of Limit Level for leachate level	• Investigate the cause(s) of exceedance • Prepare Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented	• Verify the Notification of Exceedance • Check with Contractor on the operating activities and performance of the leachate collection system • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Check the performance of the leachate collection system • Rectify any unacceptable practice; • Amend leachate collection design if required • Implement amended leachate collection system, if necessary
Exceedance of Limit Level of effluent discharge from LTP	• Investigate the cause(s) of exceedance • Prepare Notification of Exceedance within 24 hours • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented • Repeat measurement to confirm finding if exceedance is due to the Project • Increase monitoring frequency to weekly until no exceedance of Limit Level	• Verify the Notification of Exceedance • Check with Contractor on the operation performance of the LTP • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Rectify any unacceptable practice; • Carry out remedial measures or amend design as required • Implement amended design, if necessary

Annex F3

Leachate Levels Monitoring Results

Table F3.1 *Leachate Levels Monitoring Results (Pump Station No.1X (Cell 1X))*

Date	Meter No.X1 (cm)	Meter No.X2 (cm)	Average (cm)
Pump Station No. 1X (Cell 1X)			
01 Jan 22	28	48	38
02 Jan 22	28	48	38
03 Jan 22	28	48	38
04 Jan 22	30	50	40
05 Jan 22	53	33	43
06 Jan 22	35	55	45
07 Jan 22	39	59	49
08 Jan 22	42	62	52
09 Jan 22	48	68	58
10 Jan 22	48	68	58
11 Jan 22	50	70	60
12 Jan 22	53	73	63
13 Jan 22	57	77	67
14 Jan 22	66	66	66
15 Jan 22	70	91	81
16 Jan 22	75	95	85
17 Jan 22	75	95	85
18 Jan 22	77	97	87
19 Jan 22	77	97	87
20 Jan 22	79	99	89
21 Jan 22	53	73	63
22 Jan 22	57	77	67
23 Jan 22	64	82	73
24 Jan 22	64	82	73
25 Jan 22	66	86	76
26 Jan 22	68	88	78
27 Jan 22	72	91	82
28 Jan 22	73	93	83
29 Jan 22	75	95	85
30 Jan 22	77	97	87
31 Jan 22	77	97	87
01 Feb 22	59	79	69
02 Feb 22	59	79	69
03 Feb 22	59	79	69
04 Feb 22	82	62	72
05 Feb 22	68	88	78
06 Feb 22	68	88	78
07 Feb 22	70	91	81
08 Feb 22	70	91	81
09 Feb 22	93	73	83
10 Feb 22	75	95	85
11 Feb 22	77	97	87
12 Feb 22	53	73	63
13 Feb 22	73	53	63
14 Feb 22	57	77	67
15 Feb 22	62	82	72
16 Feb 22	64	84	74
17 Feb 22	68	86	77
18 Feb 22	70	91	81
19 Feb 22	77	97	87
20 Feb 22	77	97	87
21 Feb 22	77	97	87
22 Feb 22	97	117	107
23 Feb 22	66	86	76
24 Feb 22	73	95	84

Date	Meter No.X1 (cm)	Meter No.X2 (cm)	Average (cm)
25 Feb 22	77	97	87
26 Feb 22	64	84	74
27 Feb 22	64	84	74
28 Feb 22	77	97	87
1 Mar 22	64	84	74
2 Mar 22	75	95	85
3 Mar 22	53	73	63
4 Mar 22	66	86	76
5 Mar 22	79	99	89
6 Mar 22	79	99	89
7 Mar 22	50	70	60
8 Mar 22	59	79	69
9 Mar 22	68	88	78
10 Mar 22	46	68	57
11 Mar 22	55	77	66
12 Mar 22	42	62	52
13 Mar 22	42	62	52
14 Mar 22	50	70	60
15 Mar 22	57	77	67
16 Mar 22	64	84	74
17 Mar 22	42	62	52
18 Mar 22	48	70	59
19 Mar 22	62	82	72
20 Mar 22	62	82	72
21 Mar 22	66	88	77
22 Mar 22	46	66	56
23 Mar 22	44	64	54
24 Mar 22	48	68	58
25 Mar 22	57	77	67
26 Mar 22	68	48	58
27 Mar 22	68	48	58
28 Mar 22	44	64	54
29 Mar 22	62	82	72
30 Mar 22	46	66	56
31 Mar 22	48	68	58
1 Apr 22	44	64	54
2 Apr 22	53	73	63
3 Apr 22	53	73	63
4 Apr 22	53	73	63
5 Apr 22	53	73	63
6 Apr 22	64	84	74
7 Apr 22	44	64	54
8 Apr 22	55	75	65
9 Apr 22	46	66	56
10 Apr 22	46	66	56
11 Apr 22	55	75	65
12 Apr 22	64	84	74
13 Apr 22	44	64	54
14 Apr 22	53	73	63
15 Apr 22	62	82	72
16 Apr 22	48	68	58
17 Apr 22	48	68	58
18 Apr 22	57	77	67
19 Apr 22	64	84	74
20 Apr 22	44	64	54
21 Apr 22	53	73	63
22 Apr 22	59	79	69
23 Apr 22	44	64	54
24 Apr 22	44	64	54

Date	Meter No.X1 (cm)	Meter No.X2 (cm)	Average (cm)
25 Apr 22	53	70	62
26 Apr 22	57	79	68
27 Apr 22	64	84	74
28 Apr 22	42	62	52
29 Apr 22	48	70	59
30 Apr 22	66	86	76
1 May 22	66	86	76
2 May 22	66	86	76
3 May 22	48	70	59
4 May 22	44	66	55
5 May 22	62	82	72
6 May 22	48	68	58
7 May 22	57	77	67
8 May 22	57	77	67
9 May 22	57	77	67
10 May 22	68	88	78
11 May 22	93	115	104
12 May 22	101	110	106
13 May 22	84	83	84
14 May 22	42	62	52
15 May 22	42	62	52
16 May 22	55	75	65
17 May 22	46	64	55
18 May 22	50	70	60
19 May 22	48	68	58
20 May 22	53	73	63
21 May 22	62	82	72
22 May 22	62	82	72
23 May 22	44	64	54
24 May 22	44	64	54
25 May 22	55	75	65
26 May 22	44	64	54
27 May 22	62	82	72
28 May 22	48	68	58
29 May 22	48	68	58
30 May 22	46	68	57
31 May 22	68	88	78
1 Jun 22	50	70	60
2 Jun 22	57	77	67
3 Jun 22	57	77	67
4 Jun 22	66	88	77
5 Jun 22	66	88	77
6 Jun 22	53	73	63
7 Jun 22	68	86	77
8 Jun 22	70	61	66
9 Jun 22	62	82	72
10 Jun 22	66	84	75
11 Jun 22	62	82	72
12 Jun 22	62	82	72
13 Jun 22	55	70	63
14 Jun 22	44	64	54
15 Jun 22	62	82	72
16 Jun 22	50	66	58
17 Jun 22	62	79	71
18 Jun 22	48	68	58
19 Jun 22	48	68	58
20 Jun 22	66	82	74
21 Jun 22	66	68	67
22 Jun 22	66	86	76

Date	Meter No.X1 (cm)	Meter No.X2 (cm)	Average (cm)
23 Jun 22	53	73	63
24 Jun 22	55	75	65
25 Jun 22	57	77	67
26 Jun 22	57	77	67
27 Jun 22	46	66	56
28 Jun 22	59	79	69
29 Jun 22	50	70	60
30 Jun 22	55	75	65
1 Jul 22	55	75	65
2 Jul 22	55	75	65
3 Jul 22	55	75	65
4 Jul 22	55	75	65
5 Jul 22	68	88	78
6 Jul 22	57	77	67
7 Jul 22	62	82	72
8 Jul 22	68	88	78
9 Jul 22	59	77	68
10 Jul 22	46	66	56
11 Jul 22	46	66	56
12 Jul 22	53	75	64
13 Jul 22	57	79	68
14 Jul 22	59	79	69
15 Jul 22	59	79	69
16 Jul 22	57	77	67
17 Jul 22	48	68	58
18 Jul 22	48	68	58
19 Jul 22	68	88	78
20 Jul 22	68	88	78
21 Jul 22	46	66	56
22 Jul 22	46	66	56
23 Jul 22	55	75	65
24 Jul 22	48	68	58
25 Jul 22	48	68	58
26 Jul 22	73	86	80
27 Jul 22	66	79	73
28 Jul 22	57	70	64
29 Jul 22	73	86	80
30 Jul 22	64	77	71
31 Jul 22	64	73	69
1 Aug 22	64	73	69
2 Aug 22	75	88	82
3 Aug 22	73	84	79
4 Aug 22	53	66	60
5 Aug 22	84	97	91
6 Aug 22	64	70	67
7 Aug 22	62	75	69
8 Aug 22	62	75	69
9 Aug 22	73	79	76
10 Aug 22	59	73	66
11 Aug 22	73	86	80
12 Aug 22	77	88	83
13 Aug 22	62	75	69
14 Aug 22	73	86	80
15 Aug 22	73	86	80
16 Aug 22	66	79	73
17 Aug 22	66	77	72
18 Aug 22	73	86	80
19 Aug 22	66	79	73
20 Aug 22	70	82	76

Date	Meter No.X1 (cm)	Meter No.X2 (cm)	Average (cm)
21 Aug 22	86	73	80
22 Aug 22	73	86	80
23 Aug 22	68	79	74
24 Aug 22	66	77	72
25 Aug 22	62	66	64
26 Aug 22	66	79	73
27 Aug 22	68	79	74
28 Aug 22	75	88	82
29 Aug 22	75	88	82
30 Aug 22	73	86	80
31 Aug 22	66	79	73
1 Sep 22	73	86	80
2 Sep 22	70	82	76
3 Sep 22	73	84	79
4 Sep 22	64	75	70
5 Sep 22	64	75	70
6 Sep 22	64	77	71
7 Sep 22	66	77	72
8 Sep 22	70	82	76
9 Sep 22	73	84	79
10 Sep 22	64	77	71
11 Sep 22	68	79	74
12 Sep 22	68	79	74
13 Sep 22	68	79	74
14 Sep 22	64	64	64
15 Sep 22	64	75	70
16 Sep 22	75	88	82
17 Sep 22	62	75	69
18 Sep 22	75	86	81
19 Sep 22	75	86	81
20 Sep 22	64	75	70
21 Sep 22	68	79	74
22 Sep 22	64	77	71
23 Sep 22	66	77	72
24 Sep 22	73	84	79
25 Sep 22	75	86	81
26 Sep 22	75	86	81
27 Sep 22	73	86	80
28 Sep 22	70	84	77
29 Sep 22	68	82	75
30 Sep 22	73	89	81
1 Oct 22	66	79	73
2 Oct 22	66	79	73
3 Oct 22	66	79	73
4 Oct 22	62	73	68
5 Oct 22	62	73	68
6 Oct 22	70	82	76
7 Oct 22	68	82	75
8 Oct 22	73	84	79
9 Oct 22	70	84	77
10 Oct 22	70	84	77
11 Oct 22	75	88	82
12 Oct 22	70	82	76
13 Oct 22	77	88	83
14 Oct 22	66	77	72
15 Oct 22	68	79	74
16 Oct 22	70	82	76
17 Oct 22	70	82	76
18 Oct 22	70	82	76

Date	Meter No.X1 (cm)	Meter No.X2 (cm)	Average (cm)
19 Oct 22	70	84	77
20 Oct 22	64	64	64
21 Oct 22	75	88	82
22 Oct 22	68	82	75
23 Oct 22	75	86	81
24 Oct 22	75	86	81
25 Oct 22	75	88	82
26 Oct 22	75	88	82
27 Oct 22	73	86	80
28 Oct 22	73	84	79
29 Oct 22	70	82	76
30 Oct 22	62	75	69
31 Oct 22	62	75	69
1 Nov 22	75	86	81
2 Nov 22	75	88	82
3 Nov 22	68	70	69
4 Nov 22	73	73	73
5 Nov 22	64	75	70
6 Nov 22	64	75	70
7 Nov 22	64	75	70
8 Nov 22	68	79	74
9 Nov 22	62	75	69
10 Nov 22	75	88	82
11 Nov 22	68	79	74
12 Nov 22	70	82	76
13 Nov 22	64	77	71
14 Nov 22	64	77	71
15 Nov 22	73	84	79
16 Nov 22	64	75	70
17 Nov 22	68	82	75
18 Nov 22	73	84	79
19 Nov 22	75	86	81
20 Nov 22	77	88	83
21 Nov 22	77	88	83
22 Nov 22	62	75	69
23 Nov 22	70	82	76
24 Nov 22	68	82	75
25 Nov 22	77	75	76
26 Nov 22	73	68	71
27 Nov 22	73	86	80
28 Nov 22	73	86	80
29 Nov 22	73	84	79
30 Nov 22	66	79	73
1 Dec 22	70	82	76
2 Dec 22	68	79	74
3 Dec 22	75	73	74
4 Dec 22	75	88	82
5 Dec 22	75	88	82
6 Dec 22	66	77	72
7 Dec 22	68	79	74
8 Dec 22	70	82	76
9 Dec 22	70	82	76
10 Dec 22	70	84	77
11 Dec 22	70	84	77
12 Dec 22	70	84	77
13 Dec 22	70	84	77
14 Dec 22	73	86	80
15 Dec 22	68	82	75
16 Dec 22	66	79	73

Date	Meter No.X1 (cm)	Meter No.X2 (cm)	Average (cm)
17 Dec 22	75	88	82
18 Dec 22	75	88	82
19 Dec 22	75	88	82
20 Dec 22	70	84	77
21 Dec 22	64	75	70
22 Dec 22	70	82	76
23 Dec 22	73	84	79
24 Dec 22	75	86	81
25 Dec 22	73	86	80
26 Dec 22	73	86	80
27 Dec 22	73	84	79
28 Dec 22	70	84	77
29 Dec 22	70	82	76
30 Dec 22	66	79	73
31 Dec 22	66	77	72
Average	68.1	79.2	73.6
Min	28	33	38
Max	103	117	107

Table F3.2 *Leachate Levels Monitoring Results (Pump Station No.2X (Cell 2X))*

Date	Meter No.X3 (cm)	Meter No.X4 (cm)	Average (cm)
Pump Station No. 2X (Cell 2X)			
1 Jan 22	125	39	82
2 Jan 22	125	39	82
3 Jan 22	125	39	82
4 Jan 22	125	39	82
5 Jan 22	125	39	82
6 Jan 22	125	39	82
7 Jan 22	125	39	82
8 Jan 22	125	39	82
9 Jan 22	125	39	82
10 Jan 22	125	39	82
11 Jan 22	125	39	82
12 Jan 22	125	39	82
13 Jan 22	125	45	85
14 Jan 22	125	45	85
15 Jan 22	125	45	85
16 Jan 22	125	50	88
17 Jan 22	125	50	88
18 Jan 22	125	50	88
19 Jan 22	125	50	88
20 Jan 22	125	56	91
21 Jan 22	125	56	91
22 Jan 22	125	56	91
23 Jan 22	125	56	91
24 Jan 22	125	56	91
25 Jan 22	125	61	93
26 Jan 22	125	61	93
27 Jan 22	125	61	93
28 Jan 22	125	61	93
29 Jan 22	125	61	93
30 Jan 22	125	61	93
31 Jan 22	125	61	93
1 Feb 22	86	88	87
2 Feb 22	86	88	87
3 Feb 22	86	88	87
4 Feb 22	91	93	92

Date	Meter No.X3 (cm)	Meter No.X4 (cm)	Average (cm)
5 Feb 22	86	90	88
6 Feb 22	86	90	88
7 Feb 22	75	77	76
8 Feb 22	79	82	81
9 Feb 22	84	88	86
10 Feb 22	88	90	89
11 Feb 22	93	97	95
12 Feb 22	75	77	76
13 Feb 22	75	77	76
14 Feb 22	79	84	82
15 Feb 22	84	88	86
16 Feb 22	91	93	92
17 Feb 22	95	97	96
18 Feb 22	70	75	73
19 Feb 22	97	97	97
20 Feb 22	97	97	97
21 Feb 22	91	95	93
22 Feb 22	102	104	103
23 Feb 22	82	84	83
24 Feb 22	86	88	87
25 Feb 22	73	75	74
26 Feb 22	88	90	89
27 Feb 22	88	90	89
28 Feb 22	75	77	76
1 Mar 22	88	90	89
2 Mar 22	75	77	76
3 Mar 22	73	75	74
4 Mar 22	84	86	85
5 Mar 22	73	75	74
6 Mar 22	73	75	74
7 Mar 22	82	84	83
8 Mar 22	88	90	89
9 Mar 22	66	68	67
10 Mar 22	75	79	77
11 Mar 22	84	86	85
12 Mar 22	66	70	68
13 Mar 22	66	70	68
14 Mar 22	75	77	76
15 Mar 22	82	84	83
16 Mar 22	86	90	88
17 Mar 22	77	79	78
18 Mar 22	66	68	67
19 Mar 22	77	79	78
20 Mar 22	77	79	78
21 Mar 22	84	86	85
22 Mar 22	66	68	67
23 Mar 22	84	86	85
24 Mar 22	84	86	85
25 Mar 22	77	79	78
26 Mar 22	79	79	79
27 Mar 22	79	79	79
28 Mar 22	84	84	84
29 Mar 22	75	75	75
30 Mar 22	73	73	73
31 Mar 22	88	90	89
1 Apr 22	79	79	79
2 Apr 22	73	73	73
3 Apr 22	73	73	73
4 Apr 22	88	88	88

Date	Meter No.X3 (cm)	Meter No.X4 (cm)	Average (cm)
5 Apr 22	88	88	88
6 Apr 22	68	68	68
7 Apr 22	73	73	73
8 Apr 22	79	79	79
9 Apr 22	88	90	89
10 Apr 22	88	90	89
11 Apr 22	68	70	69
12 Apr 22	75	75	75
13 Apr 22	79	82	81
14 Apr 22	84	86	85
15 Apr 22	88	88	88
16 Apr 22	70	70	70
17 Apr 22	70	70	70
18 Apr 22	75	77	76
19 Apr 22	79	82	81
20 Apr 22	84	84	84
21 Apr 22	86	88	87
22 Apr 22	62	62	62
23 Apr 22	70	73	72
24 Apr 22	70	73	72
25 Apr 22	75	77	76
26 Apr 22	79	79	79
27 Apr 22	82	84	83
28 Apr 22	86	86	86
29 Apr 22	88	88	88
30 Apr 22	70	73	72
1 May 22	70	73	72
2 May 22	70	73	72
3 May 22	88	88	88
4 May 22	73	73	73
5 May 22	79	79	79
6 May 22	86	86	86
7 May 22	77	77	77
8 May 22	77	77	77
9 May 22	77	77	77
10 May 22	86	86	86
11 May 22	70	70	70
12 May 22	99	98	99
13 May 22	103	104	104
14 May 22	101	101	101
15 May 22	101	101	101
16 May 22	86	85	86
17 May 22	82	84	83
18 May 22	88	88	88
19 May 22	64	66	65
20 May 22	84	86	85
21 May 22	66	68	67
22 May 22	66	68	67
23 May 22	64	66	65
24 May 22	64	66	65
25 May 22	77	77	77
26 May 22	75	77	76
27 May 22	64	66	65
28 May 22	77	79	78
29 May 22	77	79	78
30 May 22	64	66	65
31 May 22	82	82	82
1 Jun 22	73	75	74
2 Jun 22	75	75	75

Date	Meter No.X3 (cm)	Meter No.X4 (cm)	Average (cm)
3 Jun 22	75	75	75
4 Jun 22	70	70	70
5 Jun 22	70	70	70
6 Jun 22	70	73	72
7 Jun 22	66	66	66
8 Jun 22	67	70	69
9 Jun 22	57	64	61
10 Jun 22	88	93	91
11 Jun 22	57	64	61
12 Jun 22	57	64	61
13 Jun 22	77	84	81
14 Jun 22	82	86	84
15 Jun 22	57	64	61
16 Jun 22	66	70	68
17 Jun 22	70	75	73
18 Jun 22	66	73	70
19 Jun 22	66	73	70
20 Jun 22	68	73	71
21 Jun 22	64	70	67
22 Jun 22	86	90	88
23 Jun 22	77	84	81
24 Jun 22	66	70	68
25 Jun 22	68	73	71
26 Jun 22	68	73	71
27 Jun 22	82	86	84
28 Jun 22	64	70	67
29 Jun 22	84	88	86
30 Jun 22	64	66	65
1 Jul 22	64	66	65
2 Jul 22	64	66	65
3 Jul 22	64	66	65
4 Jul 22	64	66	65
5 Jul 22	62	66	64
6 Jul 22	82	88	85
7 Jul 22	82	88	85
8 Jul 22	73	77	75
9 Jul 22	64	70	67
10 Jul 22	79	85	82
11 Jul 22	79	85	82
12 Jul 22	79	84	82
13 Jul 22	75	79	77
14 Jul 22	68	73	71
15 Jul 22	59	64	62
16 Jul 22	79	86	83
17 Jul 22	84	90	87
18 Jul 22	84	90	87
19 Jul 22	73	77	75
20 Jul 22	86	90	88
21 Jul 22	73	79	76
22 Jul 22	86	90	88
23 Jul 22	70	77	74
24 Jul 22	66	73	70
25 Jul 22	66	73	70
26 Jul 22	77	84	81
27 Jul 22	57	64	61
28 Jul 22	70	77	74
29 Jul 22	79	86	83
30 Jul 22	59	64	62
31 Jul 22	86	90	88

Date	Meter No.X3 (cm)	Meter No.X4 (cm)	Average (cm)
1 Aug 22	86	90	88
2 Aug 22	68	73	71
3 Aug 22	73	77	75
4 Aug 22	84	88	86
5 Aug 22	98	99	99
6 Aug 22	89	88	89
7 Aug 22	79	84	82
8 Aug 22	79	84	82
9 Aug 22	62	66	64
10 Aug 22	84	88	86
11 Aug 22	66	70	68
12 Aug 22	66	70	68
13 Aug 22	62	66	64
14 Aug 22	86	90	88
15 Aug 22	86	90	88
16 Aug 22	84	88	86
17 Aug 22	77	82	80
18 Aug 22	66	70	68
19 Aug 22	86	90	88
20 Aug 22	75	79	77
21 Aug 22	79	84	82
22 Aug 22	79	84	82
23 Aug 22	64	68	66
24 Aug 22	77	82	80
25 Aug 22	62	66	64
26 Aug 22	82	86	84
27 Aug 22	68	73	71
28 Aug 22	62	66	64
29 Aug 22	62	66	64
30 Aug 22	73	77	75
31 Aug 22	82	86	84
1 Sep 22	62	66	64
2 Sep 22	46	50	48
3 Sep 22	55	59	57
4 Sep 22	73	77	75
5 Sep 22	73	77	75
6 Sep 22	79	84	82
7 Sep 22	84	88	86
8 Sep 22	64	68	66
9 Sep 22	73	77	75
10 Sep 22	77	82	80
11 Sep 22	68	75	72
12 Sep 22	68	75	72
13 Sep 22	68	75	72
14 Sep 22	75	79	77
15 Sep 22	79	84	82
16 Sep 22	90	84	87
17 Sep 22	64	68	66
18 Sep 22	79	84	82
19 Sep 22	79	84	82
20 Sep 22	59	66	63
21 Sep 22	70	75	73
22 Sep 22	75	82	79
23 Sep 22	82	86	84
24 Sep 22	86	90	88
25 Sep 22	70	75	73
26 Sep 22	70	75	73
27 Sep 22	75	82	79
28 Sep 22	79	84	82

Date	Meter No.X3 (cm)	Meter No.X4 (cm)	Average (cm)
29 Sep 22	84	88	86
30 Sep 22	70	77	74
1 Oct 22	66	70	68
2 Oct 22	66	70	68
3 Oct 22	66	70	68
4 Oct 22	79	84	82
5 Oct 22	79	84	82
6 Oct 22	75	82	79
7 Oct 22	70	75	73
8 Oct 22	70	70	70
9 Oct 22	62	66	64
10 Oct 22	62	66	64
11 Oct 22	82	86	84
12 Oct 22	70	75	73
13 Oct 22	82	88	85
14 Oct 22	66	73	70
15 Oct 22	79	84	82
16 Oct 22	70	75	73
17 Oct 22	70	75	73
18 Oct 22	79	84	82
19 Oct 22	75	79	77
20 Oct 22	86	90	88
21 Oct 22	70	75	73
22 Oct 22	79	84	82
23 Oct 22	66	70	68
24 Oct 22	66	70	68
25 Oct 22	73	79	76
26 Oct 22	79	84	82
27 Oct 22	84	88	86
28 Oct 22	64	68	66
29 Oct 22	70	75	73
30 Oct 22	79	86	74
31 Oct 22	79	86	83
1 Nov 22	84	90	87
2 Nov 22	64	68	66
3 Nov 22	68	68	68
4 Nov 22	62	66	64
5 Nov 22	75	79	77
6 Nov 22	86	90	88
7 Nov 22	86	90	88
8 Nov 22	73	66	70
9 Nov 22	73	70	72
10 Nov 22	70	66	68
11 Nov 22	64	62	63
12 Nov 22	82	79	81
13 Nov 22	86	82	84
14 Nov 22	86	82	84
15 Nov 22	73	70	72
16 Nov 22	84	82	83
17 Nov 22	68	66	67
18 Nov 22	79	77	78
19 Nov 22	88	84	86
20 Nov 22	79	77	78
21 Nov 22	79	77	78
22 Nov 22	88	84	86
23 Nov 22	70	66	68
24 Nov 22	82	79	81
25 Nov 22	66	62	64
26 Nov 22	77	73	75

Date	Meter No.X3 (cm)	Meter No.X4 (cm)	Average (cm)
27 Nov 22	82	79	81
28 Nov 22	82	79	81
29 Nov 22	79	75	77
30 Nov 22	59	63	61
1 Dec 22	86	82	84
2 Dec 22	75	70	73
3 Dec 22	84	82	83
4 Dec 22	79	75	77
5 Dec 22	79	75	77
6 Dec 22	88	84	86
7 Dec 22	68	64	66
8 Dec 22	77	73	75
9 Dec 22	84	82	83
10 Dec 22	66	62	64
11 Dec 22	82	77	80
12 Dec 22	82	77	80
13 Dec 22	86	82	84
14 Dec 22	68	64	66
15 Dec 22	75	70	73
16 Dec 22	82	77	80
17 Dec 22	88	84	86
18 Dec 22	64	59	62
19 Dec 22	64	59	62
20 Dec 22	75	70	73
21 Dec 22	82	77	80
22 Dec 22	88	84	86
23 Dec 22	68	64	66
24 Dec 22	75	70	73
25 Dec 22	86	82	84
26 Dec 22	86	82	84
27 Dec 22	62	66	64
28 Dec 22	75	70	73
29 Dec 22	79	75	77
30 Dec 22	84	82	83
31 Dec 22	79	77	78
Average	80.3	75.8	78
Min	46	39	48
Max	125	104	104

Table F3.3 *Leachate Levels Monitoring Results (Pump Station No.3X (Cell 3X))*

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
Pump Station No. 3X (Cell 3X)			
1 Jan 22	93	93	93
2 Jan 22	93	93	93
3 Jan 22	93	93	93
4 Jan 22	93	93	93
5 Jan 22	93	93	93
6 Jan 22	95	95	95
7 Jan 22	95	95	95
8 Jan 22	97	95	96
9 Jan 22	97	97	97
10 Jan 22	97	97	97
11 Jan 22	97	97	97
12 Jan 22	97	97	97
13 Jan 22	97	97	97
14 Jan 22	97	97	97
15 Jan 22	97	97	97

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
16 Jan 22	97	97	97
17 Jan 22	97	97	97
18 Jan 22	97	97	97
19 Jan 22	97	97	97
20 Jan 22	97	97	97
21 Jan 22	97	97	97
22 Jan 22	97	97	97
23 Jan 22	99	99	99
24 Jan 22	99	99	99
25 Jan 22	93	95	94
26 Jan 22	95	95	95
27 Jan 22	75	75	75
28 Jan 22	84	84	84
29 Jan 22	82	85	84
30 Jan 22	88	88	88
31 Jan 22	90	90	90
1 Feb 22	90	90	90
2 Feb 22	90	90	90
3 Feb 22	90	90	90
4 Feb 22	93	93	93
5 Feb 22	93	93	93
6 Feb 22	93	93	93
7 Feb 22	90	90	90
8 Feb 22	90	90	90
9 Feb 22	90	90	90
10 Feb 22	93	93	93
11 Feb 22	93	93	93
12 Feb 22	93	93	93
13 Feb 22	93	93	93
14 Feb 22	93	93	93
15 Feb 22	93	93	93
16 Feb 22	75	75	75
17 Feb 22	77	77	77
18 Feb 22	144	144	144
19 Feb 22	144	144	144
20 Feb 22	108	108	108
21 Feb 22	102	102	102
22 Feb 22	75	75	75
23 Feb 22	75	75	75
24 Feb 22	93	93	93
25 Feb 22	68	67	68
26 Feb 22	68	67	68
27 Feb 22	62	62	62
28 Feb 22	90	90	90
1 Mar 22	168	168	168
2 Mar 22	128	128	128
3 Mar 22	102	102	102
4 Mar 22	64	64	64
5 Mar 22	88	88	88
6 Mar 22	88	88	88
7 Mar 22	59	59	59
8 Mar 22	70	70	70
9 Mar 22	79	79	79
10 Mar 22	86	86	86
11 Mar 22	90	90	90
12 Mar 22	66	66	66
13 Mar 22	66	66	66
14 Mar 22	73	73	73
15 Mar 22	79	79	79

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
16 Mar 22	84	84	84
17 Mar 22	88	88	88
18 Mar 22	53	53	53
19 Mar 22	68	68	68
20 Mar 22	68	68	68
21 Mar 22	75	75	75
22 Mar 22	57	57	57
23 Mar 22	90	90	90
24 Mar 22	90	90	90
25 Mar 22	64	64	64
26 Mar 22	77	77	77
27 Mar 22	77	77	77
28 Mar 22	88	88	88
29 Mar 22	79	79	79
30 Mar 22	73	73	73
31 Mar 22	53	53	53
1 Apr 22	75	75	75
2 Apr 22	66	66	66
3 Apr 22	66	66	66
4 Apr 22	90	90	90
5 Apr 22	90	90	90
6 Apr 22	62	62	62
7 Apr 22	70	70	70
8 Apr 22	90	90	90
9 Apr 22	82	82	82
10 Apr 22	82	82	82
11 Apr 22	70	70	70
12 Apr 22	79	79	79
13 Apr 22	62	62	62
14 Apr 22	74	74	74
15 Apr 22	82	82	82
16 Apr 22	59	59	59
17 Apr 22	59	59	59
18 Apr 22	68	70	69
19 Apr 22	48	48	48
20 Apr 22	57	57	57
21 Apr 22	90	90	90
22 Apr 22	75	75	75
23 Apr 22	53	53	53
24 Apr 22	53	53	53
25 Apr 22	64	64	64
26 Apr 22	73	73	73
27 Apr 22	82	82	82
28 Apr 22	88	88	88
29 Apr 22	55	55	55
30 Apr 22	59	59	59
1 May 22	59	59	59
2 May 22	59	59	59
3 May 22	55	55	55
4 May 22	79	79	79
5 May 22	53	53	53
6 May 22	70	70	70
7 May 22	68	68	68
8 May 22	68	68	68
9 May 22	68	68	68
10 May 22	75	75	75
11 May 22	55	55	55
12 May 22	96	96	96
13 May 22	104	104	104

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
14 May 22	110	110	110
15 May 22	110	110	110
16 May 22	91	89	90
17 May 22	61	61	61
18 May 22	82	82	82
19 May 22	75	75	75
20 May 22	90	90	90
21 May 22	57	57	57
22 May 22	57	57	57
23 May 22	59	59	59
24 May 22	57	55	56
25 May 22	79	79	79
26 May 22	64	64	64
27 May 22	73	73	73
28 May 22	68	68	68
29 May 22	68	68	68
30 May 22	55	55	55
31 May 22	73	73	73
1 Jun 22	86	86	86
2 Jun 22	77	77	77
3 Jun 22	77	77	77
4 Jun 22	86	88	87
5 Jun 22	86	88	87
6 Jun 22	62	62	62
7 Jun 22	55	55	55
8 Jun 22	59	59	59
9 Jun 22	112	115	114
10 Jun 22	104	100	102
11 Jun 22	112	115	114
12 Jun 22	112	115	114
13 Jun 22	79	73	76
14 Jun 22	76	65	71
15 Jun 22	64	64	64
16 Jun 22	64	64	64
17 Jun 22	46	68	57
18 Jun 22	73	73	73
19 Jun 22	73	73	73
20 Jun 22	73	73	73
21 Jun 22	70	70	70
22 Jun 22	68	68	68
23 Jun 22	73	73	73
24 Jun 22	70	70	70
25 Jun 22	66	66	66
26 Jun 22	66	66	66
27 Jun 22	73	73	73
28 Jun 22	73	73	73
29 Jun 22	50	66	58
30 Jun 22	53	73	63
1 Jul 22	53	73	63
2 Jul 22	53	73	63
3 Jul 22	53	73	63
4 Jul 22	53	73	63
5 Jul 22	75	75	75
6 Jul 22	75	75	75
7 Jul 22	73	73	73
8 Jul 22	70	70	70
9 Jul 22	70	70	70
10 Jul 22	73	73	73
11 Jul 22	73	73	73

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
12 Jul 22	70	70	70
13 Jul 22	75	75	75
14 Jul 22	75	75	75
15 Jul 22	68	68	68
16 Jul 22	68	68	68
17 Jul 22	66	66	66
18 Jul 22	66	66	66
19 Jul 22	68	68	68
20 Jul 22	70	70	70
21 Jul 22	70	70	70
22 Jul 22	68	68	68
23 Jul 22	62	62	62
24 Jul 22	75	75	75
25 Jul 22	75	75	75
26 Jul 22	64	64	64
27 Jul 22	68	68	68
28 Jul 22	70	70	70
29 Jul 22	70	70	70
30 Jul 22	70	70	70
31 Jul 22	64	64	64
1 Aug 22	64	64	64
2 Aug 22	70	70	70
3 Aug 22	66	66	66
4 Aug 22	59	59	59
5 Aug 22	97	97	97
6 Aug 22	59	59	59
7 Aug 22	70	70	70
8 Aug 22	70	70	70
9 Aug 22	64	64	64
10 Aug 22	62	62	62
11 Aug 22	48	66	57
12 Aug 22	57	75	66
13 Aug 22	48	70	59
14 Aug 22	73	73	73
15 Aug 22	73	73	73
16 Aug 22	70	70	70
17 Aug 22	73	73	73
18 Aug 22	66	66	66
19 Aug 22	75	75	75
20 Aug 22	66	66	66
21 Aug 22	73	73	73
22 Aug 22	73	73	73
23 Aug 22	73	73	73
24 Aug 22	73	73	73
25 Aug 22	50	70	60
26 Aug 22	53	75	64
27 Aug 22	73	73	73
28 Aug 22	73	73	73
29 Aug 22	73	73	73
30 Aug 22	75	75	75
31 Aug 22	75	75	75
1 Sep 22	70	70	70
2 Sep 22	73	75	74
3 Sep 22	75	75	75
4 Sep 22	66	66	66
5 Sep 22	66	66	66
6 Sep 22	73	73	73
7 Sep 22	68	68	68
8 Sep 22	73	73	73

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
9 Sep 22	68	68	68
10 Sep 22	68	68	68
11 Sep 22	75	75	75
12 Sep 22	75	75	75
13 Sep 22	75	75	75
14 Sep 22	64	64	64
15 Sep 22	68	68	68
16 Sep 22	68	70	69
17 Sep 22	75	75	75
18 Sep 22	66	66	66
19 Sep 22	66	66	66
20 Sep 22	70	68	69
21 Sep 22	62	62	62
22 Sep 22	66	66	66
23 Sep 22	64	64	64
24 Sep 22	64	64	64
25 Sep 22	68	68	68
26 Sep 22	68	68	68
27 Sep 22	64	64	64
28 Sep 22	68	68	68
29 Sep 22	64	62	63
30 Sep 22	66	66	66
1 Oct 22	215	213	214
2 Oct 22	215	213	214
3 Oct 22	215	213	214
4 Oct 22	160	162	161
5 Oct 22	160	162	161
6 Oct 22	61	63	62
7 Oct 22	65	70	68
8 Oct 22	48	52	50
9 Oct 22	56	59	58
10 Oct 22	56	59	58
11 Oct 22	56	61	59
12 Oct 22	48	52	50
13 Oct 22	56	61	59
14 Oct 22	59	61	60
15 Oct 22	48	52	50
16 Oct 22	61	63	62
17 Oct 22	61	63	62
18 Oct 22	50	52	51
19 Oct 22	65	67	66
20 Oct 22	65	70	68
21 Oct 22	63	67	65
22 Oct 22	61	65	63
23 Oct 22	54	56	55
24 Oct 22	54	56	55
25 Oct 22	54	56	55
26 Oct 22	50	54	52
27 Oct 22	65	70	68
28 Oct 22	61	65	63
29 Oct 22	52	56	54
30 Oct 22	54	56	55
31 Oct 22	54	56	55
1 Nov 22	61	65	63
2 Nov 22	61	65	63
3 Nov 22	232	237	235
4 Nov 22	197	199	198
5 Nov 22	56	61	59
6 Nov 22	59	61	60

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
7 Nov 22	59	61	60
8 Nov 22	65	70	68
9 Nov 22	52	54	53
10 Nov 22	61	65	63
11 Nov 22	61	65	63
12 Nov 22	54	59	57
13 Nov 22	59	70	65
14 Nov 22	59	70	65
15 Nov 22	48	52	50
16 Nov 22	48	52	50
17 Nov 22	65	70	68
18 Nov 22	61	65	63
19 Nov 22	52	56	54
20 Nov 22	54	59	57
21 Nov 22	54	59	57
22 Nov 22	63	67	65
23 Nov 22	56	61	59
24 Nov 22	63	65	64
25 Nov 22	50	54	52
26 Nov 22	61	67	64
27 Nov 22	52	56	54
28 Nov 22	52	56	54
29 Nov 22	59	61	60
30 Nov 22	59	63	61
1 Dec 22	66	66	66
2 Dec 22	68	68	68
3 Dec 22	66	66	66
4 Dec 22	66	66	66
5 Dec 22	66	66	66
6 Dec 22	68	68	68
7 Dec 22	68	68	68
8 Dec 22	68	68	68
9 Dec 22	66	66	66
10 Dec 22	64	64	64
11 Dec 22	68	68	68
12 Dec 22	68	68	68
13 Dec 22	66	66	66
14 Dec 22	64	64	64
15 Dec 22	68	68	68
16 Dec 22	64	64	64
17 Dec 22	70	70	70
18 Dec 22	68	68	68
19 Dec 22	68	68	68
20 Dec 22	66	66	66
21 Dec 22	70	70	70
22 Dec 22	66	66	66
23 Dec 22	70	68	69
24 Dec 22	64	64	64
25 Dec 22	70	70	70
26 Dec 22	70	70	70
27 Dec 22	64	64	64
28 Dec 22	66	66	66
29 Dec 22	68	68	68
30 Dec 22	70	70	70
31 Dec 22	64	64	64
Average	75	76.2	75.6
Min	46	48	48
Max	232	237	235

Table F3.4 *Leachate Levels Monitoring Results (Pump Station No.4X (Cell 4X))*

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
Pump Station No. 3X (Cell 3X)			
13 Aug 22	307	309	308
14 Aug 22	329	331	330
15 Aug 22	307	307	307
16 Aug 22	307	307	307
17 Aug 22	294	294	294
18 Aug 22	278	278	278
19 Aug 22	261	263	262
20 Aug 22	243	245	244
21 Aug 22	215	217	216
22 Aug 22	100	100	100
23 Aug 22	59	63	61
24 Aug 22	54	56	55
25 Aug 22	48	50	49
26 Aug 22	184	184	184
27 Aug 22	162	166	164
28 Aug 22	59	61	60
29 Aug 22	50	52	51
30 Aug 22	50	52	51
31 Aug 22	65	67	66
1 Sep 22	52	56	54
2 Sep 22	56	59	58
3 Sep 22	56	59	58
4 Sep 22	67	70	69
5 Sep 22	67	70	69
6 Sep 22	59	61	60
7 Sep 22	67	70	69
8 Sep 22	59	61	60
9 Sep 22	54	56	55
10 Sep 22	67	65	66
11 Sep 22	63	67	65
12 Sep 22	63	67	65
13 Sep 22	63	67	65
14 Sep 22	67	70	69
15 Sep 22	50	52	51
16 Sep 22	52	56	54
17 Sep 22	61	65	63
18 Sep 22	54	56	55
19 Sep 22	54	56	55
20 Sep 22	61	63	62
21 Sep 22	50	52	51
22 Sep 22	55	57	56
23 Sep 22	56	59	58
24 Sep 22	50	54	52
25 Sep 22	61	65	63
26 Sep 22	61	65	63
27 Sep 22	63	67	65
28 Sep 22	65	67	66
29 Sep 22	65	67	66
30 Sep 22	246	246	246
1 Oct 22	215	213	214
2 Oct 22	215	213	214
3 Oct 22	215	213	214
4 Oct 22	160	162	161
5 Oct 22	160	162	161
6 Oct 22	61	63	62

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
7 Oct 22	65	70	68
8 Oct 22	48	52	50
9 Oct 22	56	59	58
10 Oct 22	56	59	58
11 Oct 22	56	61	59
12 Oct 22	48	52	50
13 Oct 22	56	61	59
14 Oct 22	59	61	60
15 Oct 22	48	52	50
16 Oct 22	61	63	62
17 Oct 22	61	63	62
18 Oct 22	50	52	51
19 Oct 22	65	67	66
20 Oct 22	65	70	68
21 Oct 22	63	67	65
22 Oct 22	61	65	63
23 Oct 22	54	56	55
24 Oct 22	54	56	55
25 Oct 22	54	56	55
26 Oct 22	50	54	52
27 Oct 22	65	70	68
28 Oct 22	61	65	63
29 Oct 22	52	56	54
30 Oct 22	54	56	55
31 Oct 22	54	56	55
1 Nov 22	61	65	63
2 Nov 22	61	65	63
3 Nov 22	232	237	235
4 Nov 22	197	199	198
5 Nov 22	56	61	59
6 Nov 22	59	61	60
7 Nov 22	59	61	60
8 Nov 22	65	70	68
9 Nov 22	52	54	53
10 Nov 22	61	65	63
11 Nov 22	61	65	63
12 Nov 22	54	59	57
13 Nov 22	59	70	65
14 Nov 22	59	70	65
15 Nov 22	48	52	50
16 Nov 22	48	52	50
17 Nov 22	65	70	68
18 Nov 22	61	65	63
19 Nov 22	52	56	54
20 Nov 22	54	59	57
21 Nov 22	54	59	57
22 Nov 22	63	67	65
23 Nov 22	56	61	59
24 Nov 22	63	65	64
25 Nov 22	50	54	52
26 Nov 22	61	67	64
27 Nov 22	52	56	54
28 Nov 22	52	56	54
29 Nov 22	59	61	60
30 Oct 22	59	63	61
1 Dec 22	63	67	65
2 Dec 22	52	56	54
3 Dec 22	48	52	50
4 Dec 22	65	67	66

Date	Meter No.X5 (cm)	Meter No.X6 (cm)	Average (cm)
5 Dec 22	65	67	66
6 Dec 22	65	70	68
7 Dec 22	65	70	68
8 Dec 22	61	65	63
9 Dec 22	56	61	59
10 Dec 22	48	52	50
11 Dec 22	50	54	52
12 Dec 22	50	54	52
13 Dec 22	59	63	61
14 Dec 22	54	59	57
15 Dec 22	63	67	65
16 Dec 22	50	52	51
17 Dec 22	59	65	62
18 Dec 22	63	67	65
19 Dec 22	63	67	65
20 Dec 22	63	67	65
21 Dec 22	65	70	68
22 Dec 22	61	65	63
23 Dec 22	59	63	61
24 Dec 22	54	50	52
25 Dec 22	50	54	52
26 Dec 22	50	54	52
27 Dec 22	59	63	61
28 Dec 22	65	70	68
29 Dec 22	50	54	52
30 Dec 22	56	61	59
31 Dec 22	61	65	63
Average	82.3	85.4	83.9
Min	48	50	49
Max	329	331	330

Figure F3.1 *Graphical Presentation for Leachate Levels Monitoring (Pump Station No.1X (Cell 1X))*

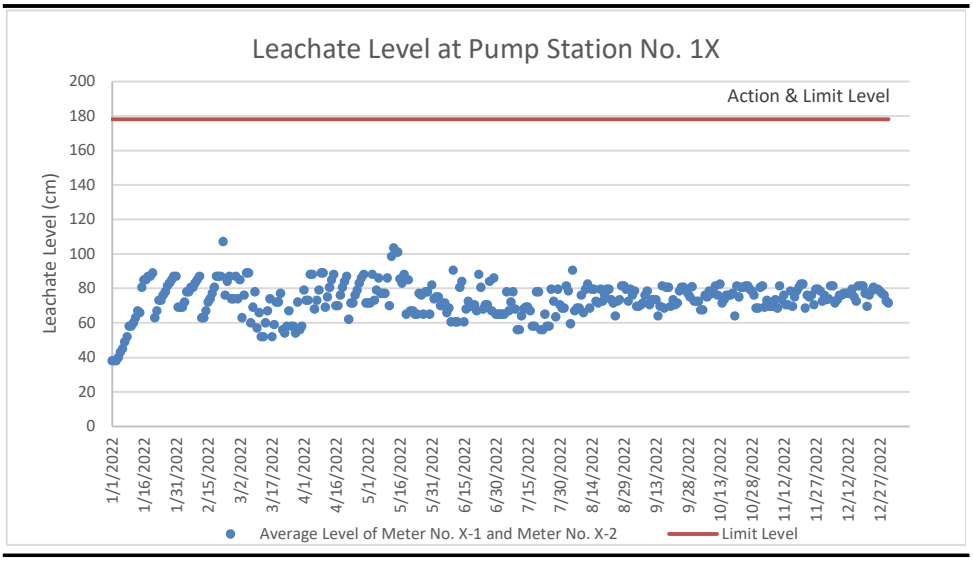


Figure F3.2 *Graphical Presentation for Leachate Levels Monitoring (Pump Station No.2X (Cell 2X))*

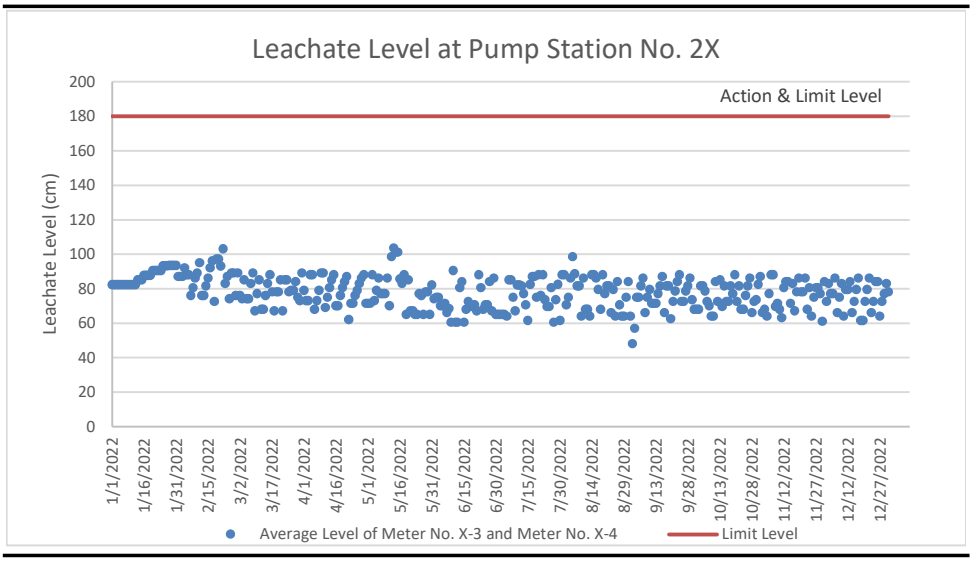


Figure F3.3 *Graphical Presentation for Leachate Levels Monitoring (Pump Station No.3X (Cell 3X))*

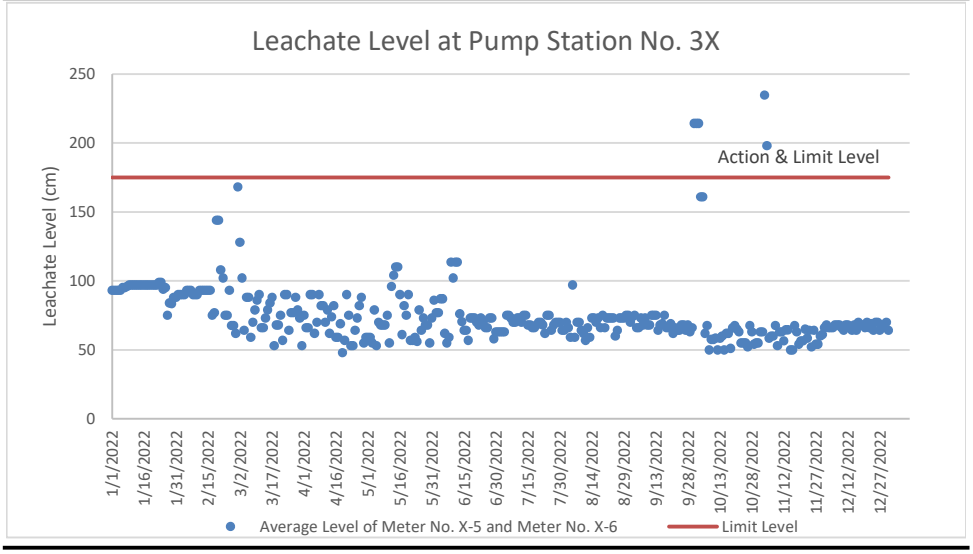
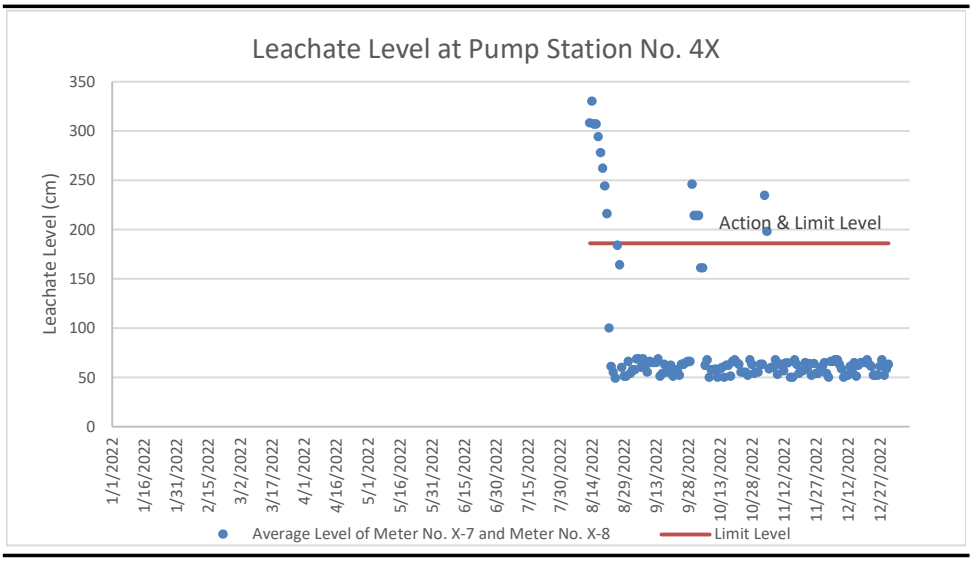


Figure F3.4 *Graphical Presentation for Leachate Levels Monitoring (Pump Station No.4X (Cell 4X))*



Annex F4

Effluent Quality Monitoring Results

Table F4.1 Effluent Monitoring Results

		1 Jan 22	2 Jan 22	3 Jan 22	4 Jan 22	5 Jan 22	6 Jan 22	7 Jan 22	8 Jan 22	9 Jan 22	10 Jan 22	11 Jan 22
On-site Measurements												
Temperature	°C	27.2	28.1	27.1	28.2	26.8	29.4	29.5	29	28.7	21.0	25.7
pH Value	pH Unit	8.4	8.4	8.4	8.4	8.4	8.5	8.4	8.4	8.6	8.6	8.5
Volume Discharged	m^3	1194	810	588	1363	1230	1235	1392	1273	804	616	1229
Laboratory Analysis												
Suspended Solids (SS)	mg/L	75	24.7	23.8	24.2	22.1	22.9	21.1	29.1	23.6	16.2	21.6
Alkalinity	mg/L	2240	2260	2300	2330	2310	2240	2250	2270	2260	2270	2280
Ammoniacal-nitrogen	mg/L	0.3	0.27	0.56	0.43	0.46	0.49	0.47	0.51	0.36	1.2	0.3
Chloride	mg/L	2070	2110	2080	1980	2320	2130	2290	2230	2280	2370	2410
Nitrite-nitrogen	mg/L	0.14	0.17	0.55	0.19	0.32	0.19	0.23	0.37	0.39	0.88	0.2
Phosphate	mg/L	7.99	8.34	8.82	8.7	8.31	9.53	8.95	8.45	7.76	8.13	8.07
Sulphate	mg/L	92	94	94	100	103	108	108	100	94	97	96
Total Nitrogen	mg/L	114	99.3	98.4	93.1	101	105	119	124	121	118	114
Nitrate-nitrogen	mg/L	56.6	50.2	52.5	48.3	52.7	59.2	61.9	66.9	65.1	61.2	57.9
Total Inorganic Nitrogen	mg/L	57.0	50.6	53.6	48.9	53.5	59.9	62.6	67.8	65.9	63.3	58.4
Biochemical Oxygen Demand (BOD)	mg/L	14	10	8	9	9	15	9	14	9	20	6
Chemical Oxygen Demand (COD)	mg/L	1090	999	1010	1090	892	957	948	1080	984	993	1010
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	360	391	356	349	358	375	385	373	394	366	359
Boron	µg/L	5680	5440	5590	5760	5730	5380	5400	5240	5760	5380	5160
Calcium	mg/L	13.4	15.4	15.3	14.2	16.5	17.3	16.5	16.4	15.1	14.8	18.1
Iron	mg/L	1.04	1.25	1.26	1.15	1.64	1.35	1.43	1.47	1.19	1.26	1.56
Magnesium	mg/L	14.9	16.1	16.1	16.7	25.2	23.2	24.8	26.2	22.4	22.9	28.9
Potassium	mg/L	890	883	888	845	907	930	971	975	899	892	828
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	131	125	125	127	143	134	133	130	123	121	144
Copper	µg/L	22	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	µg/L	118	115	113	122	132	127	122	122	120	118	128
Zinc	µg/L	64	46	50	52	64	57	50	48	54	48	52

		12 Jan 22	13 Jan 22	14 Jan 22	15 Jan 22	16 Jan 22	17 Jan 22	18 Jan 22	19 Jan 22	20 Jan 22	21 Jan 22	22 Jan 22
On-site Measurements												
Temperature	°C	24.6	25	25.5	25.3	29.8	27	27	27.8	28	21.7	28.3
pH Value	pH Unit	8.5	8.6	8.5	8.5	8.6	8.6	8.5	8.5	8.5	8.5	8.5
Volume Discharged	m^3	1041	825	1052	1144	1182	1090	1251	1186	1444	836	1034
Laboratory Analysis												
Suspended Solids (SS)	mg/L	22.7	13.8	23.5	15.4	24.9	17.6	13.6	17.9	17.7	16.2	35.8
Alkalinity	mg/L	2270	2270	2300	2290	2250	2270	2280	2290	2280	2360	2310
Ammoniacal-nitrogen	mg/L	0.35	0.36	0.34	0.3	0.34	0.35	0.35	0.32	0.3	4.74	0.38
Chloride	mg/L	2310	2220	2320	2360	2370	2330	2250	2230	2310	2270	2360
Nitrite-nitrogen	mg/L	0.23	0.3	0.2	0.15	0.28	0.36	0.29	0.3	0.21	0.63	0.19
Phosphate	mg/L	7.56	8.9	9.81	9.52	8.98	9.32	9.48	8.5	8.64	9.6	8.37
Sulphate	mg/L	100	94	94	102	101	96	97	101	100	106	102
Total Nitrogen	mg/L	112	114	118	110	117	120	120	119	125	123	109
Nitrate-nitrogen	mg/L	59.3	60.2	57	58.9	63.3	65	68.4	66.3	72.1	61.5	56.4
Total Inorganic Nitrogen	mg/L	59.9	60.9	57.5	59.4	63.9	65.7	69.0	66.9	72.6	66.9	57.0
Biochemical Oxygen Demand (BOD)	mg/L	8	7	9	8	10	8	8	13	13	18	15
Chemical Oxygen Demand (COD)	mg/L	1040	1020	989	943	1010	943	1050	1070	1050	1090	1050
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	373	353	376	337	391	354	351	356	363	392	379
Boron	µg/L	5300	5610	5540	5400	5830	6380	6060	5990	5890	6100	6220
Calcium	mg/L	20	15.8	15.3	16.8	14.4	15.4	16.7	12.5	13.5	22	19.8
Iron	mg/L	1	1.3	1.27	1.23	1.34	1.34	1.24	1.25	1.26	1.58	1.36
Magnesium	mg/L	30	26.6	25.6	26.2	26.6	27.6	27.4	20.4	21.1	26.9	25.1
Potassium	mg/L	990	962	879	906	1010	996	944	696	706	1010	974
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	144	125	130	121	144	136	131	139	130	139	132
Copper	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	µg/L	128	118	122	119	126	126	124	127	122	129	129
Zinc	µg/L	49	45	51	47	49	50	50	49	48	51	49

		23 Jan 22	24 Jan 22	25 Jan 22	26 Jan 22	27 Jan 22	28 Jan 22	29 Jan 22	30 Jan 22	31 Jan 22
On-site Measurements										
Temperature	°C	33.5	28.9	29.5	27.1	30.7	27.9	32.6	27.2	25.5
pH Value	pH Unit	8.5	8.4	8.5	8.5	8.3	8.5	8.5	8.5	8.5
Volume Discharged	m^3	819	597	930	1220	1109	1136	1089	1059	791
Laboratory Analysis										
Suspended Solids (SS)	mg/L	38.5	20.5	19.2	36.1	23.4	19.8	30	38.2	20.5
Alkalinity	mg/L	2310	2380	2310	2290	2310	2290	2280	2320	2300
Ammoniacal-nitrogen	mg/L	0.57	0.59	0.4	0.34	0.45	0.98	0.39	0.42	0.38
Chloride	mg/L	2440	2430	2200	2230	2310	2290	2290	2260	2290
Nitrite-nitrogen	mg/L	0.27	0.41	0.25	0.22	0.3	0.55	0.19	0.22	0.26
Phosphate	mg/L	8.27	8.22	7.96	8.41	8.43	9.25	8.89	9.47	8.94
Sulphate	mg/L	113	113	113	127	98	100	98	86	99
Total Nitrogen	mg/L	117	110	98.1	99.9	119	122	127	128	119
Nitrate-nitrogen	mg/L	57.7	55	47.7	48.6	62.8	67.3	66.6	66.5	62.3
Total Inorganic Nitrogen	mg/L	58.5	56.0	48.4	49.2	63.6	68.8	67.2	67.1	62.9
Biochemical Oxygen Demand (BOD)	mg/L	13	13	9	10	9	13	14	16	9
Chemical Oxygen Demand (COD)	mg/L	1040	1000	948	975	992	993	1050	1080	1000
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	369	370	380	406	445	438	394	386	381
Boron	µg/L	5640	5840	5190	5270	4830	4720	5040	5100	5010
Calcium	mg/L	21.4	22	19.8	19.7	16.8	16.5	19.2	16.6	14.3
Iron	mg/L	1.38	1.34	1.4	1.52	1.52	1.5	1.47	1.56	1.43
Magnesium	mg/L	26.1	26.1	28.8	31.2	28.4	28.2	29.3	28.2	25.9
Potassium	mg/L	979	1000	913	891	887	862	937	807	875
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	130	132	129	143	130	132	127	128	127
Copper	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	µg/L	130	132	122	138	122	122	122	123	121
Zinc	µg/L	50	47	51	57	43	43	49	47	50

		3 Feb 22	4 Feb 22	5 Feb 22	6 Feb 22	7 Feb 22	8 Feb 22	9 Feb 22	10 Feb 22	11 Feb 22	12 Feb 22	13 Feb 22
On-site Measurements												
Temperature	°C	23.5	23.8	25	22.7	22.3	24.5	24.8	28.1	27	28.6	24.2
pH Value	pH Unit	8.5	8.6	8.6	8.6	8.5	8.6	8.5	8.6	8.5	8.5	8.5
Volume Discharged	m^3	508	1256	819	772	385	1297	1235	1346	1495	1386	762
Laboratory Analysis												
Suspended Solids (SS)	mg/L	35.1	35.2	49.2	52.9	30.7	24.9	17.1	21.4	23.6	33.1	27.6
Alkalinity	mg/L	2360	2390	2360	2330	2350	2370	2330	2260	2250	2200	2070
Ammoniacal-nitrogen	mg/L	2.73	0.31	0.3	0.26	0.4	0.36	0.38	0.27	0.44	0.3	0.3
Chloride	mg/L	2160	2230	2250	2240	2210	2150	2380	2250	2270	2220	2160
Nitrite-nitrogen	mg/L	0.67	0.19	0.18	0.25	0.17	0.18	0.19	0.18	0.1	0.17	0.17
Phosphate	mg/L	9.32	9.41	8	8.06	8.01	7.9	7.88	7.92	8.52	8.74	8.38
Sulphate	mg/L	100	109	116	115	112	123	118	119	112	110	126
Total Nitrogen	mg/L	118	101	98.2	95.8	92.9	92.3	101	103	111	120	126
Nitrate-nitrogen	mg/L	56.8	45.2	43.7	41.6	41.7	39.1	47.1	53.1	59.8	65.2	67.8
Total Inorganic Nitrogen	mg/L	60.2	45.7	44.2	42.1	42.3	39.6	47.7	53.6	60.3	65.7	68.3
Biochemical Oxygen Demand (BOD)	mg/L	22	9	12	10	10	10	9	10	9	15	10
Chemical Oxygen Demand (COD)	mg/L	1070	1050	1090	1030	984	1040	1030	856	967	893	800
Oil & Grease	mg/L	<5	<5	<5	<5	<5	6	6	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	398	424	407	389	389	409	477	457	498	469	416
Boron	µg/L	5790	5410	6180	5750	5830	5690	6010	5890	5470	5310	5030
Calcium	mg/L	16.9	18	19.1	17.8	17.6	16.8	16.1	16.8	20.3	20	19
Iron	mg/L	1.53	1.65	1.66	1.62	1.48	1.65	1.61	1.4	1.49	1	1.2
Magnesium	mg/L	27.2	31.2	33.2	32.2	30.7	32.3	32.2	28.1	30.8	29	25.6
Potassium	mg/L	801	877	880	906	855	832	928	852	977	856	807
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	142	140	139	140	137	139	137	128	132	127	122
Copper	µg/L	<10	<10	<10	68	<10	<10	<10	<10	<10	<10	56
Nickel	µg/L	125	123	123	121	122	127	128	126	123	118	112
Zinc	µg/L	54	62	59	92	60	57	57	52	53	54	79

Notes:

Effluent monitoring was suspended on 1 and 2 Feb 2022 as the Leachate Treatment Plant (LTP) was not in operation and no treated effluent was discharged from the on-site LTP to the foul sewer leading to Tseung Kwan O Sewage Treatment Works (TKO STW) on 1 and 2 Feb 2022.

		14 Feb 22	15 Feb 22	16 Feb 22	17 Feb 22	18 Feb 22	19 Feb 22	20 Feb 22	21 Feb 22	22 Feb 22	23 Feb 22	24 Feb 22
On-site Measurements												
Temperature	°C	26	26.3	27.4	26.7	24.5	26.3	15.3	13.2	18.2	21	21.8
pH Value	pH Unit	8.5	8.5	8.5	8.6	8.6	8.3	8.4	8.6	8.4	8.3	8.3
Volume Discharged	m^3	821	1221	1434	1475	1352	1445	1274	747	1492	1492	1492
Laboratory Analysis												
Suspended Solids (SS)	mg/L	22.3	28.5	26.4	49.6	40.1	40.4	16.5	13.6	32	20.3	20.3
Alkalinity	mg/L	2250	2080	2320	2240	2180	2210	1940	2030	1650	20.3	20.3
Ammoniacal-nitrogen	mg/L	0.32	0.22	0.28	0.25	0.3	0.26	0.25	0.26	0.14	20.3	20.3
Chloride	mg/L	2280	1820	2170	2120	2120	2090	1660	1920	1670	20.3	20.3
Nitrite-nitrogen	mg/L	0.33	0.19	0.21	0.21	0.24	0.22	0.18	0.29	0.14	20.3	20.3
Phosphate	mg/L	9.39	8.58	8.84	8.93	8.63	8.52	7.17	8.33	6.55	20.3	20.3
Sulphate	mg/L	106	130	127	121	120	96	138	107	121	20.3	20.3
Total Nitrogen	mg/L	132	124	121	129	134	128	106	119	102	20.3	20.3
Nitrate-nitrogen	mg/L	72.8	65.2	63.7	67.5	71.3	63.7	53.4	71	58.8	20.3	20.3
Total Inorganic Nitrogen	mg/L	73.5	65.6	64.2	68.0	71.8	64.2	53.8	71.6	59.1	45.2	38.9
Biochemical Oxygen Demand (BOD)	mg/L	9	10	11	15	14	15	8	15	9	20.3	20.3
Chemical Oxygen Demand (COD)	mg/L	837	982	1040	1040	1060	1000	718	915	753	20.3	20.3
Oil & Grease	mg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	20.3	20.3
Total Organic Carbon (TOC)	mg/L	470	426	490	449	431	449	363	421	325	20.3	20.3
Boron	µg/L	5560	5280	5780	5390	5570	5720	4770	4980	4560	20.3	20.3
Calcium	mg/L	17.2	19.5	18.7	20.1	20	18.4	20.1	17.1	24.1	20.3	20.3
Iron	mg/L	1.36	1.37	1.54	1.73	1.68	1.54	1.24	1.29	1.05	20.3	20.3
Magnesium	mg/L	26.7	26.3	28.8	29	28.4	27.2	24	24	22	20.3	20.3
Potassium	mg/L	895	790	908	893	919	812	755	825	699	20.3	20.3
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	20.3	20.3
Chromium	µg/L	129	126	138	135	132	135	115	118	102	20.3	20.3
Copper	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	21	20.3	20.3
Nickel	µg/L	116	112	124	119	123	120	105	107	92	20.3	20.3
Zinc	µg/L	47	48	55	50	53	56	58	67	85	20.3	20.3

		25 Feb 22	26 Feb 22	27 Feb 22	28 Feb 22
On-site Measurements					
Temperature	°C	26.5	25.1	25.6	27.5
pH Value	pH Unit	8.2	8.3	8.3	8.3
Volume Discharged	m^3	1496	1495	1495	1140
Laboratory Analysis					
Suspended Solids (SS)	mg/L	20	44	33.7	20.2
Alkalinity	mg/L	1400	1540	1560	1560
Ammoniacal-nitrogen	mg/L	0.32	0.25	0.28	0.27
Chloride	mg/L	1330	1470	1500	1480
Nitrite-nitrogen	mg/L	0.2	0.11	0.1	0.1
Phosphate	mg/L	4.09	4.37	4.2	4.61
Sulphate	mg/L	203	194	196	192
Total Nitrogen	mg/L	84.5	86.4	87.9	72
Nitrate-nitrogen	mg/L	39.7	38.9	37.4	35.6
Total Inorganic Nitrogen	mg/L	40.2	39.3	37.8	36.0
Biochemical Oxygen Demand (BOD)	mg/L	9	11	9	6
Chemical Oxygen Demand (COD)	mg/L	910	1000	764	619
Oil & Grease	mg/L	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	288	302	296	284
Boron	µg/L	3680	3870	4100	4030
Calcium	mg/L	55	54.3	58.9	54.6
Iron	mg/L	0.86	1.06	1.46	0.93
Magnesium	mg/L	21.4	24.4	24.4	21.5
Potassium	mg/L	544	640	670	633
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	80	92	100	94
Copper	µg/L	<10	<10	<10	<10
Nickel	µg/L	77	89	93	92
Zinc	µg/L	68	76	76	62

		1 Mar 22	2 Mar 22	3 Mar 22	4 Mar 22	5 Mar 22	6 Mar 22	7 Mar 22	8 Mar 22	9 Mar 22	10 Mar 22	11 Mar 22
On-site Measurements												
Temperature	°C	30.1	30	27.8	30.1	28.9	24.9	27.7	28.7	28.5	32.7	32.6
pH Value	pH Unit	8.3	8.4	8.4	8.4	8.4	8.5	8.5	8.5	8.4	8.4	8.5
Volume Discharged	m^3	1341	1496	1496	1498	1372	678	644	1367	1497	1380	950
Laboratory Analysis												
Suspended Solids (SS)	mg/L	27	38.7	16.7	18.3	19.2	17.1	14.2	23.9	20.4	31.5	22.6
Alkalinity	mg/L	1460	1540	1520	1470	1530	1750	1830	1670	1980	2070	2260
Ammoniacal-nitrogen	mg/L	0.35	0.29	0.35	0.31	0.35	0.38	0.47	0.31	0.34	0.37	0.33
Chloride	mg/L	1420	1550	1400	1390	1520	1690	1780	1610	1850	1700	1910
Nitrite-nitrogen	mg/L	0.11	0.11	0.11	0.13	0.16	0.15	0.44	0.11	0.14	0.14	0.16
Phosphate	mg/L	4.41	4.98	5.29	5.47	5.98	6.82	7.25	6.95	9	9.8	10.1
Sulphate	mg/L	199	157	181	182	181	163	164	175	164	128	122
Total Nitrogen	mg/L	69.6	96.4	87.9	96.3	98.6	91.4	84.2	78.5	84.7	100	116
Nitrate-nitrogen	mg/L	32.3	46.7	49.6	56	57.2	45	37.5	37.6	37.3	48.7	61.4
Total Inorganic Nitrogen	mg/L	32.8	47.1	50.1	56.4	57.7	45.5	38.4	38.0	37.8	49.2	61.9
Biochemical Oxygen Demand (BOD)	mg/L	8	9	13	13	10	6	7	9	6	7	7
Chemical Oxygen Demand (COD)	mg/L	710	692	983	619	856	902	826	790	826	1190	544
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	334	314	313	311	326	334	333	341	390	395	387
Boron	µg/L	3560	4380	4190	4330	4520	4690	4590	4340	5140	5040	5200
Calcium	mg/L	56.5	56	53.7	58.5	51.6	50.9	47.2	37.4	29.4	32.4	26.7
Iron	mg/L	0.86	1.08	0.99	1.01	1.05	1.19	1.08	1.14	1.14	1.24	1.31
Magnesium	mg/L	21.3	22.6	22.3	22.4	21.6	24.9	23.8	21.1	21.2	24	23.9
Potassium	mg/L	561	665	686	689	691	709	776	652	697	777	877
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	88	88	88	86	90	105	102	92	106	126	134
Copper	µg/L	<10	23	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	µg/L	85	85	84	80	86	107	108	100	110	118	125
Zinc	µg/L	59	76	52	46	48	56	54	61	61	54	56

		12 Mar 22	13 Mar 22	14 Mar 22	15 Mar 22	16 Mar 22	17 Mar 22	18 Mar 22	19 Mar 22	20 Mar 22	21 Mar 22	22 Mar 22	23 Mar 22
On-site Measurements													
Temperature	°C	29.3	30.9	31.7	29.7	28.9	31.9	31.9	29.1	25.8	29.9	29.7	25.1
pH Value	pH Unit	8.5	8.4	8.4	8.5	8.4	8.5	8.5	8.4	8.4	8.5	8.5	8.5
Volume Discharged	m^3	730	665	366	764	1143	1141	1125	1178	793	357	1033	1341
Laboratory Analysis													
Suspended Solids (SS)	mg/L	23.4	84.8	10.7	14.6	20.4	21.8	31.6	12.5	14.7	19.5	19.2	20.2
Alkalinity	mg/L	2300	2310	2310	2100	1750	1860	2020	1950	2040	2320	2170	2230
Ammoniacal-nitrogen	mg/L	0.34	0.31	1.39	0.59	0.33	0.37	0.33	0.32	0.34	0.39	0.36	0.35
Chloride	mg/L	1970	2060	2080	1800	1570	1650	1720	1690	1740	2150	1910	1950
Nitrite-nitrogen	mg/L	0.19	0.23	1.12	1.18	0.14	0.16	0.18	0.18	0.18	0.29	0.18	0.18
Phosphate	mg/L	10.2	9.97	10.4	9.55	8.23	8.3	8.5	8.1	7.89	9.96	8.53	8.43
Sulphate	mg/L	121	118	116	140	177	170	152	153	139	114	133	130
Total Nitrogen	mg/L	112	120	112	104	78	83.9	102	96.7	94.4	107	106.0	110.0
Nitrate-nitrogen	mg/L	57.3	61.1	60.8	55	37.8	39.2	45.7	47.7	45.6	51.5	53.8	55.4
Total Inorganic Nitrogen	mg/L	57.8	61.6	63.3	56.8	38.3	39.7	46.2	48.2	46.1	52.2	54.3	55.9
Biochemical Oxygen Demand (BOD)	mg/L	7	12	8	8	11	9	12	8	7	8	7	10
Chemical Oxygen Demand (COD)	mg/L	516	590	982	1010	892	964	903	1050	1090	1130	993	1050
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	488	418	410	350	332	355	394	372	418	497	412	404
Boron	µg/L	5370	5530	5320	5170	3830	4390	4900	4950	4930	5530	5480	5570
Calcium	mg/L	26	24.6	22.9	23.9	26.3	22.9	21.8	21.5	20.3	18.9	19.5	20.4
Iron	mg/L	1	1.42	1.27	1.28	1.18	1.19	1.4	1.33	1.46	1.46	1.54	1.63
Magnesium	mg/L	24	24.4	23.2	24	24.2	22.6	23.9	24.7	24.5	26.9	25.9	27.6
Potassium	mg/L	882	888	900	820	622	707	784	735	774	922	836	874
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	140	143	141	127	104	107	121	109	112	126	123	134
Copper	µg/L	<10	23	<10	<10	<10	<10	15	<10	<10	<10	<10	<10
Nickel	µg/L	130	130	127	119	98	103	112	101	107	122	115	119
Zinc	µg/L	62	100	67	73	97	102	113	106	104	69	99	102

		1 Apr 22	2 Apr 22	3 Apr 22	4 Apr 22	5 Apr 22	6 Apr 22	7 Apr 22	8 Apr 22	9 Apr 22	10 Apr 22	11 Apr 22
On-site Measurements												
Temperature	°C	28.7	21.2	22.6	27.8	26.7	28.6	29.9	32	26.8	27.4	30.9
pH Value	pH Unit	8.6	8.7	8.7	8.6	8.7	8.6	8.6	8.7	8.6	8.6	8.6
Volume Discharged	m^3	952	1109	865	438	869	374	1285	695	88	299	443
Laboratory Analysis												
Suspended Solids (SS)	mg/L	30.6	56.4	52.6	21.8	37.3	20.4	26.4	23.5	19.1	53.6	32.7
Alkalinity	mg/L	2220	2180	2120	2230	2190	2340	2280	2280	2400	2350	2320
Ammoniacal-nitrogen	mg/L	0.3	0.26	0.3	0.52	0.3	0.47	0.31	0.31	0.39	0.94	0.58
Chloride	mg/L	2210	2070	1850	1930	1910	2010	2350	2380	2210	2560	2480
Nitrite-nitrogen	mg/L	0.17	0.19	0.14	0.45	0.21	0.45	0.21	0.19	0.38	0.26	0.47
Phosphate	mg/L	9.6	8.84	8.41	9.35	7.83	9.53	8.08	9.5	10.2	9.6	9.28
Sulphate	mg/L	151	147	123	123	133	121	150	152	144	152	155
Total Nitrogen	mg/L	103	116	127	119	113	93.9	103	98.4	91.7	108	99.2
Nitrate-nitrogen	mg/L	51	57.3	72.1	64.6	57.9	41.7	48.6	45.1	42.8	47.9	45.4
Total Inorganic Nitrogen	mg/L	51.47	57.75	72.54	65.57	58.41	42.62	49.12	45.6	43.57	49.1	46.45
Biochemical Oxygen Demand (BOD)	mg/L	14	14	33	9	15	9	10	10	6	12	9
Chemical Oxygen Demand (COD)	mg/L	1200	1140	1180	1180	1010	1040	1160	1230	1200	1350	1160
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	428	484	362	475	349	350	453	449	466	445	439
Boron	µg/L	5160	5030	5040	5150	5460	5650	5640	5540	5790	5790	5410
Calcium	mg/L	28.2	33.1	27.3	25.2	30.3	26.6	32.1	28.5	27.3	26	25.9
Iron	mg/L	1.71	1.77	1.6	1.63	1.68	1.79	2.11	2.09	2.04	2	2.05
Magnesium	mg/L	30	30.7	25.3	26.4	28	26.5	31.4	31	31.3	28.6	29.6
Potassium	mg/L	898	955	785	846	836	816	932	921	947	885	892
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	131	135	137	136	120	129	132	135	132	134	134
Copper	µg/L	<10	<10	44	<10	<10	<10	<10	<10	<10	24	<10
Nickel	µg/L	120	122	121	122	118	126	124	129	127	130	128
Zinc	µg/L	75	88	111	69	88	70	81	80	71	95	82

		12 Apr 22	13 Apr 22	14 Apr 22	15 Apr 22	16 Apr 22	17 Apr 22	18 Apr 22	19 Apr 22	20 Apr 22	21 Apr 22	22 Apr 22	23 Apr 22
On-site Measurements													
Temperature	°C	32.4	30.3	31.5	27.3	27.7	27.3	26.7	26.5	29.2	29	32	29.4
pH Value	pH Unit	8.6	8.5	8.6	8.5	8.5	8.6	8.6	8.6	8.7	8.6	9	8.5
Volume Discharged	m^3	580	227	242	1225	1064	648	368	1001	265	337	815	1137
Laboratory Analysis													
Suspended Solids (SS)	mg/L	39.6	17.6	16.5	18.9	23.7	19.9	30.2	11.7	15.4	12.7	36.1	41
Alkalinity	mg/L	2320	2350	2430	2320	2360	2320	2360	2440	2440	2400	2410	2390
Ammoniacal-nitrogen	mg/L	0.34	0.82	0.46	0.38	0.4	0.31	0.37	0.34	0.35	0.51	0.24	0.2
Chloride	mg/L	2120	2110	2120	2150	2190	2160	2190	2160	2220	2170	2620	2510
Nitrite-nitrogen	mg/L	0.18	0.61	0.55	0.22	0.23	0.23	0.32	0.21	0.21	0.46	0.17	0.17
Phosphate	mg/L	8.93	9.23	9.9	8.98	8.87	8.94	8.92	8.85	8.98	9.02	9.58	9.21
Sulphate	mg/L	161	157	144	164	154	144	144	136	140	130	140	142
Total Nitrogen	mg/L	101	96.4	84.6	95	97.8	110	105	87.4	83.1	79	85.1	89.2
Nitrate-nitrogen	mg/L	45.1	42.8	34.8	42.7	46.8	55	53.7	36.6	32.7	31.1	33.1	34.5
Total Inorganic Nitrogen	mg/L	45.62	44.23	35.81	43.3	47.43	55.54	54.39	37.15	33.26	32.07	33.51	34.87
Biochemical Oxygen Demand (BOD)	mg/L	14	5	6	12	10	10	8	7	6	10	5	5
Chemical Oxygen Demand (COD)	mg/L	1210	1090	1070	1230	1150	1120	1070	1070	1040	1120	1160	1150
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	457	420	553	426	431	409	530	441	425	438	439	391
Boron	µg/L	5940	6110	5640	5660	5900	5980	6080	6080	5830	5700	5630	5700
Calcium	mg/L	25	26.1	22.2	24.5	22.8	21.5	20.6	19.9	21.5	21.8	23	23.3
Iron	mg/L	2	2.29	2.05	2.29	2.21	2.04	1.92	2.05	1.95	1.92	2.06	2.19
Magnesium	mg/L	32	32.9	31.1	32.8	33.8	33.3	33.8	32.6	31.6	32.2	31.6	34.6
Potassium	mg/L	911	920	916	908	926	936	954	922	908	914	891	970
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	138	134	140	139	139	140	139	141	140	137	136	140
Copper	µg/L	40	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	47
Nickel	µg/L	131	133	136	132	133	136	134	139	128	126	127	132
Zinc	µg/L	97	84	79	93	91	91	80	86	80	80	74	96

		24 Apr 22	25 Apr 22	26 Apr 22	27 Apr 22	28 Apr 22	29 Apr 22	30 Apr 22
On-site Measurements								
Temperature	°C	32.1	33.6	35.3	35.2	33.9	33.6	29.9
pH Value	pH Unit	8.6	8.5	8.5	8.4	8.4	8.4	8.4
Volume Discharged	m^3	627	244	757	216	277	218	806
Laboratory Analysis								
Suspended Solids (SS)	mg/L	52.8	12	30.7	16	16.3	14.6	27.5
Alkalinity	mg/L	2400	2450	2430	2400	2400	2380	2410
Ammoniacal-nitrogen	mg/L	0.29	0.54	0.34	0.36	0.56	0.5	0.22
Chloride	mg/L	2480	2390	2200	2230	2080	2180	2300
Nitrite-nitrogen	mg/L	0.19	0.4	0.18	0.19	0.63	0.49	0.3
Phosphate	mg/L	9.32	9.44	9.07	9.14	8.73	9.06	9.35
Sulphate	mg/L	153	139	145	149	143	146	150
Total Nitrogen	mg/L	96.1	90.5	92.4	92.5	90.9	97.3	96.4
Nitrate-nitrogen	mg/L	39.2	37.3	39.8	40.9	41.4	44.3	44.4
Total Inorganic Nitrogen	mg/L	39.68	38.24	40.32	41.45	42.59	45.29	44.92
Biochemical Oxygen Demand (BOD)	mg/L	10	4	7	8	6	9	10
Chemical Oxygen Demand (COD)	mg/L	1040	1150	1200	1150	1110	1070	1080
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	466	382	356	382	394	396	374
Boron	µg/L	5520	5680	5980	5650	5620	5860	5850
Calcium	mg/L	21.2	22.5	23.7	24.1	23.4	23.4	22.8
Iron	mg/L	1.95	1.81	1.91	1.81	1.84	1.86	1.8
Magnesium	mg/L	32.5	31.6	35.2	33.6	32.3	33.4	33.2
Potassium	mg/L	914	924	1000	958	924	949	942
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	137	130	134	135	134	132	130
Copper	µg/L	53	<10	<10	<10	19	<10	<10
Nickel	µg/L	131	123	131	125	124	124	122
Zinc	µg/L	105	69	76	77	86	76	77

		1 May 22	2 May 22	3 May 22	4 May 22	5 May 22	6 May 22	7 May 22	8 May 22	9 May 22	10 May 22	11 May 22
On-site Measurements												
Temperature	°C	27.1	21.5	27.8	29.4	30.2	27.7	27.7	31.0	30.2	29.3	27.2
pH Value	pH Unit	8.4	8.4	8.4	8.3	8.2	8.3	8.3	8.3	8.3	8.3	8.2
Volume Discharged	m^3	970	948	665	196	130	235	976	1,219	456	390	767
Laboratory Analysis												
Suspended Solids (SS)	mg/L	26.6	52.0	49.8	14.5	11.1	10.9	11.5	26.8	17.0	10.5	14.8
Alkalinity	mg/L	2490	2390	2230	2250	2240	2260	2210	2320	2310	2320	2330
Ammoniacal-nitrogen	mg/L	0.27	0.26	0.33	0.29	0.34	0.28	0.30	0.27	0.23	0.30	0.44
Chloride	mg/L	2440	2380	2150	2070	2020	2140	2200	2140	2420	2300	1980
Nitrite-nitrogen	mg/L	0.19	0.15	0.23	0.21	0.28	0.26	0.28	0.16	0.17	0.28	0.21
Phosphate	mg/L	8.91	8.73	8.28	8.11	7.95	8.30	8.43	8.38	7.73	7.87	7.84
Sulphate	mg/L	143	151	143	143	144	124	142	131	127	131	150
Total Nitrogen	mg/L	80.1	89.1	94.9	95.1	87.2	97.6	88.0	71.2	81.1	80.4	76.0
Nitrate-nitrogen	mg/L	30.0	36.4	43.4	45.8	40.3	40.4	37.8	19.3	28.6	27.0	27.2
Total Inorganic Nitrogen	mg/L	30.46	36.81	43.96	46.30	40.92	40.94	38.38	19.73	29.00	27.58	27.85
Biochemical Oxygen Demand (BOD)	mg/L	9	11	7	11	4	5	8	8	9	10	5
Chemical Oxygen Demand (COD)	mg/L	1130	1100	978	971	863	935	989	836	980	941	1030
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	381	384	353	340	385	379	464	404	4340	407	405
Boron	µg/L	5790	5660	5940	5240	5090	5240	5170	5460	5660	5820	5540
Calcium	mg/L	23.3	22.0	24.3	27.9	30.0	28.3	28.1	28.3	27.5	27.1	25.3
Iron	mg/L	1.92	1.86	1.72	1.72	1.66	1.78	1.75	1.94	1.88	1.87	1.77
Magnesium	mg/L	35.0	31.1	30.9	30.1	31.6	34.5	34.5	35.6	38.2	37.3	32.1
Potassium	mg/L	951	874	851	824	860	842	826	838	902	880	882
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	133	133	124	123	118	123	121	138	137	137	130
Copper	µg/L	<10	40	40	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	µg/L	127	124	114	111	107	111	108	124	129	126	122
Zinc	µg/L	79	100	129	88	84	83	81	75	72	72	68

		12 May 22	13 May 22	14 May 22	15 May 22	16 May 22	17 May 22	18 May 22	19 May 22	20 May 22	21 May 22	22 May 22	23 May 22
On-site Measurements													
Temperature	°C	30.4	33.0	29.0	22.8	28.1	33.5	33.5	34.9	32.4	32.1	28.4	34.4
pH Value	pH Unit	8.3	8.1	8.0	8.0	8.1	7.9	7.8	8.0	7.8	8.0	7.9	7.9
Volume Discharged	m^3	1,479	1,496	1,495	1,495	1,496	1,492	1,496	1,496	1,495	1,490	1,495	1,496
Laboratory Analysis													
Suspended Solids (SS)	mg/L	22.8	17.3	14.7	47.8	4.2	18.0	20.7	24.1	23.2	22.7	30.2	53.4
Alkalinity	mg/L	1950	1610	1270	1060	937	856	766	767	784	783	816	962
Ammoniacal-nitrogen	mg/L	0.54	0.36	0.39	0.35	0.36	0.61	0.58	0.64	0.47	0.57	0.01	0.40
Chloride	mg/L	1760	1510	1190	1190	1100	863	857	925	924	889	1270	1160
Nitrite-nitrogen	mg/L	0.13	0.13	0.26	0.07	0.09	0.06	0.08	0.05	0.04	<0.10	<0.10	<0.10
Phosphate	mg/L	6.56	4.69	2.90	1.61	0.79	0.47	0.20	0.57	0.92	0.99	1.02	1.95
Sulphate	mg/L	181	230	320	429	455	492	604	634	632	650	627	548
Total Nitrogen	mg/L	70.8	88.0	95.5	136.0	100.0	110.0	108.0	105.0	100.0	96.1	107.0	127.0
Nitrate-nitrogen	mg/L	25.2	39.8	48.4	53.9	61.0	64.4	64.9	62.6	59.7	57.4	68.4	81.8
Total Inorganic Nitrogen	mg/L	25.87	40.29	49.05	54.32	61.45	65.07	65.56	63.29	60.21	58.07	68.51	82.30
Biochemical Oxygen Demand (BOD)	mg/L	7	13	14	12	9	4	8	8	8	8	9	11
Chemical Oxygen Demand (COD)	mg/L	802	762	629	576	516	436	424	410	427	444	495	615
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	335	297	272	229	211	182	163	177	151	171	192	220
Boron	µg/L	4540	4140	3550	3180	2880	2570	2580	2600	2840	2680	2740	3190
Calcium	mg/L	44.1	61.6	96.8	133.0	158.0	183.0	182.0	188.0	200.0	176.0	156.0	135.0
Iron	mg/L	1.53	1.20	1.49	0.81	0.61	0.63	0.50	0.49	0.52	0.47	0.58	0.87
Magnesium	mg/L	26.3	26.6	26.0	30.0	32.9	36.8	35.8	37.3	39.4	35.8	35.7	35.1
Potassium	mg/L	679	603	505	465	423	417	365	384	395	359	402	471
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	114	96	78	68	59	57	51	53	50	48	56	65
Copper	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	11
Nickel	µg/L	104	88	70	58	50	45	38	37	36	34	47	56
Zinc	µg/L	79	81	71	66	62	63	56	56	56	55	72	93

		24 May 22	25 May 22	26 May 22	27 May 22	28 May 22	29 May 22	30 May 22	31 May 22
On-site Measurements									
Temperature	°C	29.1	28.6	31.5	30.5	32.6	31.5	33.6	32.5
pH Value	pH Unit	8.0	8.1	8.3	8.2	8.2	8.3	8.3	8.4
Volume Discharged	m^3	1,434	1,275	1,186	798	569	1,046	1,035	1,160
Laboratory Analysis									
Suspended Solids (SS)	mg/L	37.5	35.2	44	44	79.8	67.2	40.2	34.6
Alkalinity	mg/L	1130	1270	1360	1430	1490	1490	1660	1750
Ammoniacal-nitrogen	mg/L	0.43	0.38	0.37	0.3	0.75	0.24	0.22	0.59
Chloride	mg/L	1200	1300	1400	1500	1570	1750	1880	1730
Nitrite-nitrogen	mg/L	0.10	0.13	0.07	0.13	0.31	0.12	0.12	0.11
Phosphate	mg/L	2.53	2.56	2.83	3.13	4.93	5.05	5.23	5.75
Sulphate	mg/L	527	508	400	377	338	342	290	275
Total Nitrogen	mg/L	117.0	102.0	90.9	98.9	104.0	96.8	98.1	101.0
Nitrate-nitrogen	mg/L	67.5	46.2	41.5	43.6	52.7	45.6	48.7	51.5
Total Inorganic Nitrogen	mg/L	68.03	46.71	41.94	44.03	53.76	45.96	49.04	52.20
Biochemical Oxygen Demand (BOD)	mg/L	9	10	9	9	17	13	10	10
Chemical Oxygen Demand (COD)	mg/L	632	748	682	825	856	790	883	922
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	247	278	271	298	298	315	329	336
Boron	µg/L	3320	3770	3670	3810	4160	3800	4460	4600
Calcium	mg/L	118.0	121.0	109	98.6	87.2	81.2	65.4	57.8
Iron	mg/L	0.96	1.20	1.28	1.43	1.41	1.34	1.32	1.28
Magnesium	mg/L	32.3	35.5	34.5	34.4	33.5	29.2	27.8	27
Potassium	mg/L	499	576	591	647	674	644	693	712
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	68	76	79	80	86	88	89	94
Copper	µg/L	<10	<10	11	14	23	17	13	11
Nickel	µg/L	61	70	73	77	81	88	96	101
Zinc	µg/L	98	102	105	129	168	116	104	99

		1 Jun 22	2 Jun 22	3 Jun 22	4 Jun 22	5 Jun 22	6 Jun 22	7 Jun 22	8 Jun 22	9 Jun 22	10 Jun 22	11 Jun 22
On-site Measurements												
Temperature	°C	34.8	34.3	34.2	36.6	33.1	31.1	33.8	31.2	29.4	29.4	29.4
pH Value	pH Unit	8.4	8.4	8.4	8.4	8.5	8.5	8.4	8.4	8.3	8.3	8.3
Volume Discharged	m^3	1,048	1,027	990	1,200	1,136	1,133	1,091	1,496	1,495	1,496	1,495
Laboratory Analysis												
Suspended Solids (SS)	mg/L	39.9	30.1	23.3	109.0	14.1	16.2	19.2	28.0	33.7	307.0	23.7
Alkalinity	mg/L	1760	1810	1820	1900	2010	2010	2050	1970	1550	1610	1260
Ammoniacal-nitrogen	mg/L	0.45	0.33	0.41	0.48	0.42	0.35	0.28	0.31	0.25	0.43	0.40
Chloride	mg/L	1830	1970	1910	1940	1950	1900	1830	1700	1650	1710	1360
Nitrite-nitrogen	mg/L	0.13	0.14	0.14	0.13	0.14	0.15	0.16	0.14	0.12	0.13	0.08
Phosphate	mg/L	5.93	5.79	5.92	6.14	6.71	6.85	7.05	5.88	5.49	4.76	2.89
Sulphate	mg/L	228	228	227	198	194	177	174	156	208	214	321
Total Nitrogen	mg/L	111.0	115.0	118.0	110.0	74.7	127.0	126.0	101.0	112.0	136.0	102.0
Nitrate-nitrogen	mg/L	57	65.2	64.7	52.7	59.2	68.6	69.6	57.9	64.6	68.7	55.6
Total Inorganic Nitrogen	mg/L	57.58	65.67	65.25	53.31	59.76	69.10	70.04	58.35	64.97	69.26	56.08
Biochemical Oxygen Demand (BOD)	mg/L	6	7	8	24	10	9	7	9	7	38	8
Chemical Oxygen Demand (COD)	mg/L	910	930	906	1010	966	1080	934	957	836	1020	689
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	329	345	355	414	388	390	400	400	314	329	258
Boron	µg/L	3980	4430	4430	5060	5170	4960	5010	5030	3480	3720	3230
Calcium	mg/L	47.5	44.4	43.8	38.7	41.3	39.1	32.8	31.8	43.0	43.8	59.4
Iron	mg/L	1.40	1.40	1.38	1.66	1.49	1.58	1.59	1.61	1.33	1.76	1.03
Magnesium	mg/L	25.6	24.6	25.3	25.0	25.4	25.0	23.5	22.4	22.2	23.2	23.8
Potassium	mg/L	703	712	725	788	828	846	816	790	689	709	587
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	102	103	104	119	126	124	126	113	92	113	81
Copper	µg/L	11	11	11	10	<10	10	<10	<10	<10	50	<10
Nickel	µg/L	103	105	105	114	121	118	118	109	87	97	74
Zinc	µg/L	102	102	100	112	98	94	87	108	86	161	79

		12 Jun 22	13 Jun 22	14 Jun 22	15 Jun 22	16 Jun 22	17 Jun 22	18 Jun 22	19 Jun 22	20 Jun 22	21 Jun 22	22 Jun 22	23 Jun 22
On-site Measurements													
Temperature	°C	35.0	31.7	32.4	35.1	33.0	34.6	29.0	31.9	34.1	35.7	35.1	37.7
pH Value	pH Unit	8.2	8.3	8.2	8.1	8.1	8.1	8.5	8.2	8.2	8.2	8.3	8.3
Volume Discharged	m^3	1,495	1,496	1,495	1,495	1,347	1,033	1,108	1,152	1,177	1,107	1,048	1,043
Laboratory Analysis													
Suspended Solids (SS)	mg/L	19.0	11.2	16.7	18.7	20.6	21.6	11.2	24.0	12.8	20.5	18.6	15.3
Alkalinity	mg/L	917	847	706	626	680	676	765	911	545	1210	1430	1510
Ammoniacal-nitrogen	mg/L	0.26	0.42	0.46	0.50	0.77	0.53	0.31	0.49	0.31	0.40	0.39	0.25
Chloride	mg/L	1070	999	930	941	831	863	975	1170	633	1380	1500	1570
Nitrite-nitrogen	mg/L	0.09	0.07	0.11	0.14	0.10	0.08	0.05	0.08	0.12	0.11	0.11	0.11
Phosphate	mg/L	1.80	1.48	1.34	1.21	1.25	1.38	1.40	1.60	1.28	2.49	2.21	2.70
Sulphate	mg/L	394	419	472	478	491	477	517	412	219	336	322	313
Total Nitrogen	mg/L	90.1	87.3	98.7	103.0	109.0	108.0	119.0	132.0	74.8	133.0	114.0	113.0
Nitrate-nitrogen	mg/L	52.7	51.5	65.4	67.9	72.9	76.1	76.8	94.4	51.1	89.6	69.8	67.6
Total Inorganic Nitrogen	mg/L	53.05	51.99	65.97	68.54	73.77	76.71	77.16	94.97	51.53	90.11	70.30	67.96
Biochemical Oxygen Demand (BOD)	mg/L	7	6	7	6	7	7	7	9	6	12	10	7
Chemical Oxygen Demand (COD)	mg/L	509	427	464	431	537	463	524	563	316	774	761	774
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	198	201	166	163	192	203	222	256	129	306	328	310
Boron	µg/L	2420	2320	2430	2250	2810	2910	3050	3370	2000	4110	4290	4480
Calcium	mg/L	86.6	91.8	80.7	78.8	69.2	72.5	66.6	57.3	40.5	48.2	45.5	42.1
Iron	mg/L	0.71	0.58	0.55	0.60	0.67	0.73	0.80	1.04	0.66	1.44	1.50	1.53
Magnesium	mg/L	28.7	29.3	27.6	28.0	26.2	28.8	28.3	25.8	15.2	26.0	26.4	23.7
Potassium	mg/L	483	450	418	403	427	436	458	487	311	624	664	677
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	59	54	51	51	56	57	58	72	41	87	89	97
Copper	µg/L	19	15	<10	<10	<10	15	<10	19	21	<10	<10	<10
Nickel	µg/L	51	46	43	41	45	48	51	66	40	82	85	92
Zinc	µg/L	85	59	55	55	66	91	77	109	48	89	88	87

		24 Jun 22	25 Jun 22	26 Jun 22	27 Jun 22	28 Jun 22	29 Jun 22	30 Jun 22
On-site Measurements								
Temperature	°C	35.0	34.4	35.1	36.1	31.9	34.6	30.2
pH Value	pH Unit	8.2	8.4	8.3	8.3	8.4	8.3	8.4
Volume Discharged	m^3	1,098	677	34	44	44	49	708
Laboratory Analysis								
Suspended Solids (SS)	mg/L	16.1	50.2	13.4	6.5	15.2	12.2	22.5
Alkalinity	mg/L	1540	1720	1670	1790	1760	1800	1790
Ammoniacal-nitrogen	mg/L	0.36	0.33	0.28	1.04	0.51	0.98	0.75
Chloride	mg/L	1610	1650	1640	1750	1710	1770	1670
Nitrite-nitrogen	mg/L	0.13	0.12	0.12	0.56	1.05	0.97	0.7
Phosphate	mg/L	2.75	3.53	2.92	3.58	3.69	3.52	4.24
Sulphate	mg/L	335	337	284	318	305	291	291
Total Nitrogen	mg/L	111.0	109.0	114.0	96.8	99.4	98.8	99.4
Nitrate-nitrogen	mg/L	67.8	57.7	64.2	48.5	47.6	46	46.8
Total Inorganic Nitrogen	mg/L	68.29	58.15	64.60	50.10	49.16	47.95	48.25
Biochemical Oxygen Demand (BOD)	mg/L	6	14	12	12	6	8	8
Chemical Oxygen Demand (COD)	mg/L	942	1040	983	955	839	876	847
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	322	327	335	347	558	340	342
Boron	µg/L	4370	4970	4370	4480	4480	4600	4810
Calcium	mg/L	42.2	38.5	40.9	40.6	40.8	40.8	38.8
Iron	mg/L	1.45	1.65	1.62	1.72	1.82	1.95	1.76
Magnesium	mg/L	24.7	24.3	25.4	26.5	26.9	27.3	24.1
Potassium	mg/L	706	734	751	787	786	836	760
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	98	110	109	107	107	106	104
Copper	µg/L	<10	17	<10	<10	<10	<10	<10
Nickel	µg/L	91	101	99	99	104	103	96
Zinc	µg/L	89	112	84	82	84	92	93

		1 Jul 22	3 Jul 22	4 Jul 22	5 Jul 22	6 Jul 22	7 Jul 22	8 Jul 22	9 Jul 22	11 Jul 22	12 Jul 22	13 Jul 22
On-site Measurements												
Temperature	°C	30.8	30.3	25.0	34.3	33.0	35.3	34.3	34.8	31.2	34.6	32.5
pH Value	pH Unit	8.4	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.6	8.4	8.2
Volume Discharged	m^3	1,227	1,552	1,051	905	1,059	1,073	926	793	364	41	46
Laboratory Analysis												
Suspended Solids (SS)	mg/L	17.9	61.8	15.6	20.8	21.4	27.1	20.3	38.9	7.6	17.0	15.2
Alkalinity	mg/L	1790	1260	1080	1300	1360	1470	1500	1600	1700	1720	1730
Ammoniacal-nitrogen	mg/L	1.05	0.31	0.42	0.45	0.37	0.16	0.26	0.29	0.29	0.33	0.53
Chloride	mg/L	1730	1450	1210	1490	1500	1580	1660	1740	1820	1620	1600
Nitrite-nitrogen	mg/L	1.23	0.08	0.16	0.08	0.10	0.08	0.09	0.15	0.28	0.34	0.32
Phosphate	mg/L	4.04	4.18	2.47	1.96	2.49	2.50	3.22	3.23	2.87	3.00	4.44
Sulphate	mg/L	290	281	340	470	459	458	390	339	315	276	282
Total Nitrogen	mg/L	101.0	110.0	103.0	88.0	90.7	93.0	105.0	91.1	95.1	105.0	108.0
Nitrate-nitrogen	mg/L	45.1	68.5	60.7	46.4	61.6	46.9	62.1	49.5	53.3	61.4	59.6
Total Inorganic Nitrogen	mg/L	47.38	68.89	61.28	46.93	62.07	47.14	62.45	49.94	53.87	62.07	60.45
Biochemical Oxygen Demand (BOD)	mg/L	5	10	9	7	6	9	5	7	8	8	11
Chemical Oxygen Demand (COD)	mg/L	861	739	608	671	639	702	709	674	758	779	739
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	344	280	252	186	284	290	286	317	309	254	260
Boron	µg/L	4820	3930	3500	3770	3880	3840	3860	4060	4440	4610	4580
Calcium	mg/L	39.6	46.0	64.0	60.8	57.6	53.9	49.6	47.1	43.4	43.0	43.1
Iron	mg/L	1.72	1.28	1.04	1.06	1.17	1.27	1.30	1.37	1.24	1.39	1.37
Magnesium	mg/L	25.0	25.8	24.6	25.3	26.3	26.9	26.8	26.3	25.1	26.2	26.2
Potassium	mg/L	782	624	524	589	634	639	665	682	714	737	737
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	103	79	67	75	80	86	88	91	93	90	89
Copper	µg/L	<10	<10	<10	<10	<10	<10	<10	21	<10	20	11
Nickel	µg/L	96	71	62	74	84	84	88	91	95	100	102
Zinc	µg/L	79	79	62	65	72	70	68	94	70	104	104

		14 Jul 22	15 Jul 22	16 Jul 22	17 Jul 22	18 Jul 22	19 Jul 22	20 Jul 22	21 Jul 22	22 Jul 22	23 Jul 22	24 Jul 22	25 Jul 22
On-site Measurements													
Temperature	°C	33.8	33.7	35.0	35.0	34.0	32.0	36.5	36.9	30.8	30.4	30.4	38.1
pH Value	pH Unit	8.3	8.3	8.2	8.2	8.3	8.3	8.3	8.3	8.5	8.6	8.6	8.5
Volume Discharged	m^3	108	1,197	1,176	1,126	830	789	1,077	1,303	1,309	1,312	1,316	1,192
Laboratory Analysis													
Suspended Solids (SS)	mg/L	7.8	26.0	26.8	95.2	18.3	24.1	24.4	18.8	25.8	14.5	61.0	19.5
Alkalinity	mg/L	1730	1700	1800	1820	1940	2000	2100	2050	2150	2120	2110	2230
Ammoniacal-nitrogen	mg/L	0.52	0.42	0.29	0.70	0.26	0.25	0.34	0.65	0.32	0.33	0.34	0.50
Chloride	mg/L	1640	1680	1800	1870	1870	1700	1760	1870	2000	2030	1950	2020
Nitrite-nitrogen	mg/L	0.47	0.12	0.12	0.13	0.14	0.11	0.11	0.12	0.14	0.16	0.12	0.16
Phosphate	mg/L	4.54	4.72	4.94	5.14	5.41	5.46	5.58	5.83	5.11	5.40	5.33	5.44
Sulphate	mg/L	303	283	258	274	220	162	172	202	186	198	176	182
Total Nitrogen	mg/L	97.2	90.6	92.2	99.4	98.0	92.1	95.0	97.4	109.0	106.0	111.0	111.0
Nitrate-nitrogen	mg/L	53.2	47.7	45.8	46.4	49.1	46.4	43.2	49.5	54.7	50.7	52.6	54.1
Total Inorganic Nitrogen	mg/L	54.19	48.24	46.21	47.23	49.50	46.76	43.65	50.27	55.16	51.19	53.06	54.76
Biochemical Oxygen Demand (BOD)	mg/L	11	11	12	8	6	9	8	3	6	4	13	7
Chemical Oxygen Demand (COD)	mg/L	641	739	770	746	840	832	899	837	887	940	953	997
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	304	309	320	359	354	348	380	374	366	380	394	401
Boron	µg/L	4620	4620	4680	4530	4920	4790	5040	5160	5570	5220	5970	6020
Calcium	mg/L	41.0	44.3	40.5	39.2	32.2	36.1	33.5	36.5	29.0	30.6	33.0	29.6
Iron	mg/L	1.24	1.46	1.39	1.60	1.40	1.57	1.55	1.52	1.56	1.67	1.74	1.79
Magnesium	mg/L	23.8	29.4	30.5	30.4	27.7	27.8	29.1	30.1	26.1	27.5	29.4	27.4
Potassium	mg/L	711	738	739	734	740	789	829	849	786	828	858	923
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	89	92	97	104	106	104	105	106	114	123	122	133
Copper	µg/L	<10	<10	11	<10	<10	<10	<10	<10	17	63	64	<10
Nickel	µg/L	98	96	104	103	108	104	105	107	114	120	119	127
Zinc	µg/L	70	72	82	88	73	76	69	74	81	105	108	78

		26 Jul 22	27 Jul 22	28 Jul 22	29 Jul 22	30 Jul 22	31 Jul 22	1 Aug 22	2 Aug 22	3 Aug 22	7 Sep 22
On-site Measurements											
Temperature	°C	38.1	37.8	35.7	35.5	34.9	32.5	37.0	37.0	36.7	32.9
pH Value	pH Unit	8.2	8.2	8.4	8.4	8.5	8.5	8.3	8.4	8.3	8.4
Volume Discharged	m^3	1,192	1,010	1,074	1,273	1,086	1,127	831	918	1,202	1,251
Laboratory Analysis											
Suspended Solids (SS)	mg/L	33.5	45.5	40.5	41.6	37.9	40.8	27.0	24.5	26.8	25.4
Alkalinity	mg/L	2220	2310	2320	2310	2270	2310	2460	2470	2280	1980
Ammoniacal-nitrogen	mg/L	0.54	0.49	0.35	0.59	0.49	0.55	0.30	0.44	0.32	0.29
Chloride	mg/L	1920	2070	2000	1990	2000	2000	2060	2090	2000	1730
Nitrite-nitrogen	mg/L	0.16	0.13	0.14	0.14	0.16	0.16	0.16	0.14	0.16	0.11
Phosphate	mg/L	5.7	5.41	5.74	6.4	6.53	5.72	6.47	6.55	7.28	5.73
Sulphate	mg/L	157	165	174	171	197	186	193	167	163	149
Total Nitrogen	mg/L	104.0	103	100.0	103.0	107.0	110.0	92.6	94.2	99.5	86.5
Nitrate-nitrogen	mg/L	55	56.8	47.5	48.1	49.2	48.9	37.8	36.6	48.1	45.7
Total Inorganic Nitrogen	mg/L	55.70	57.42	47.99	48.83	49.85	49.61	38.26	37.18	48.58	46.10
Biochemical Oxygen Demand (BOD)	mg/L	9	10	10	8	7	8	10	10	8	8
Chemical Oxygen Demand (COD)	mg/L	990	1040	963	973	978	953	921	1030	1000	1110
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	382	434	424	395	394	412	426	410	340	273
Boron	µg/L	5570	5260	5100	5560	5550	5620	5900	5880	5500	4850
Calcium	mg/L	28.1	23.8	27.3	26.6	27.4	26.4	25.7	25.7	24.9	29.2
Iron	mg/L	1.93	1.7	1.77	1.85	1.82	1.83	1.92	1.95	1.80	1.38
Magnesium	mg/L	29.8	23.4	26.3	25.8	26.6	26.4	27.8	28.1	26.6	19.5
Potassium	mg/L	871	794	904	877	900	890	968	983	919	785
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	129	124	115	122	126	127	134	129	115	109
Copper	µg/L	<10	15	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	µg/L	126	114	109	113	116	118	124	118	106	108
Zinc	µg/L	84	84	64	68	66	69	71	67	59	58

		7 Oct 22	8 Nov 22	6 Dec 22
On-site Measurements				
Temperature	°C	35.3	30.6	20.4
pH Value	pH Unit	8.2	8.1	8.3
Volume Discharged	m^3	1,124	1,374	1,995
Laboratory Analysis				
Suspended Solids (SS)	mg/L	49.0	25.8	51.2
Alkalinity	mg/L	1070	1650	1540
Ammoniacal-nitrogen	mg/L	0.44	0.33	0.16
Chloride	mg/L	1220	1390	2200
Nitrite-nitrogen	mg/L	0.07	0.09	0.32
Phosphate	mg/L	2.45	2.94	12.70
Sulphate	mg/L	385	179	97
Total Nitrogen	mg/L	101.0	70.2	128.0
Nitrate-nitrogen	mg/L	65.4	33.3	41.0
Total Inorganic Nitrogen	mg/L	65.91	33.72	41.48
Biochemical Oxygen Demand (BOD)	mg/L	8	9	25
Chemical Oxygen Demand (COD)	mg/L	484	676	1600
Oil & Grease	mg/L	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	205	226	622
Boron	µg/L	3400	3880	4380
Calcium	mg/L	66.0	59.3	33.6
Iron	mg/L	0.73	1.20	3.33
Magnesium	mg/L	26.4	23.7	33.5
Potassium	mg/L	529	670	1020
Cadmium	µg/L	<1.0	<1.0	<1.0
Chromium	µg/L	74	88	343
Copper	µg/L	<10	<10	29
Nickel	µg/L	74	92	163
Zinc	µg/L	100	66	234

Annex F5

Groundwater Monitoring Results

Table F5.1 Groundwater Monitoring Results (January 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.61	2.72	2.7	2.61	2.58	2.51	2.48	2.37	2.68	2.66	2.98	6.29	35.86	43.21
Bicarbonate Alkalinity as $CaCO_3$	mg/L	134	301	161	<1	<1	<1	50	<1	74	163	146	59	15	10
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	91	75	94	15	79	16	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	134	301	161	144	106	211	65	110	90	163	146	59	15	10
pH Value	pH Unit	7.7	7.8	7.8	10.9	10.6	11.1	8.8	10.3	8.7	7.7	8	6.6	5.4	5.5
Electrical Conductivity @ 25Â°C	µS/cm	752	786	1060	1220	1210	1400	2770	3070	2330	1150	374	311	95	92
Ammonia as N	mg/L	0.17	<0.01	1.07	7.6	1.9	3.83	6.26	13.3	6.42	<0.01	0.11	<0.01	0.02	<0.01
Chloride	mg/L	118	30	181	270	215	183	889	983	658	231	26	23	16	18
Nitrite as N	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.03	0.04	0.02	0.04	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	59	85	95	55	158	96	45	43	152	82	7	54	3	3
Sulphide as S_2-	mg/L	<0.1	<0.1	<0.1	6.4	3.3	11	1	10.9	0.5	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.2	0.1	1.2	7.8	2	4.3	6.6	14	6.5	<0.1	0.2	0.1	<0.1	0.1
Nitrate as N	mg/L	0.05	0.29	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.1	0.12
Total Nitrogen as N	mg/L	0.3	0.4	1.2	7.8	2	4.3	6.6	14	6.5	<0.1	0.2	0.2	0.2	0.2
Boron	µg/L	120	200	170	160	180	170	630	530	500	100	50	20	10	10
Calcium	mg/L	56.5	59.3	84.2	55.4	32	33.5	34.6	67.5	39	86.4	46.8	27.1	0.87	0.86
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	5.68	52.4	5.58	<0.05	<0.05	<0.05	8.86	0.05	12.6	11.4	2.97	4.18	0.98	0.74
Sodium	mg/L	92.4	36.9	102	144	172	166	484	439	352	133	29.4	25.4	14	13.6
Iron	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.14	0.59	<0.04	<0.04
Potassium	mg/L	20.3	10.5	26.2	37.1	58.8	59.3	54.3	45.8	43.5	11.2	7.15	2.95	4	3.51
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	554	142	974	<1	<1	<1	4	<1	9	2550	567	770	28	7
Nickel	µg/L	<1	<1	<1	2	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	2930	<10	<10	<10	<10	27	<10	<10	<10	<10	14	11	<10
Biochemical Oxygen Demand	mg/L	<2	<2	<2	4	4	9	<2	5	2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	9	<2	15	34	25	44	15	20	26	20	2	7	<2	<2
Total Organic Carbon	mg/L	4	2	10	13	8	12	6	10	11	6	3	2	2	1

Table F5.2 Groundwater Monitoring Results (February 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.59	2.66	2.62	2.54	2.53	2.34	2.18	2.23	2.33	2.2	2.71	6.11	35.31	41
Bicarbonate Alkalinity as $CaCO_3$	mg/L	152	307	92	<1	<1	<1	66	<1	78	160	166	62	15	11
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	91	54	147	10	89	8	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	152	307	92	141	64	201	76	121	87	160	166	62	15	11
pH Value	pH Unit	7.8	7.8	7.9	10.7	10.3	11.2	8.6	10.7	8.5	7.7	7.8	6.5	5.5	5.4
Electrical Conductivity @ 25Â°C	µS/cm	851	800	1010	1250	1510	1230	2900	3160	1200	1280	406	307	95	97
Ammonia as N	mg/L	0.34	<0.01	1.25	7.29	2.39	3.86	5.7	14.2	5.14	0.03	0.12	<0.01	<0.01	<0.01
Chloride	mg/L	136	31	209	277	366	192	917	1010	287	282	25	23	16	19
Nitrite as N	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.01	0.02	0.04	0.02	0.04	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	65	92	82	52	110	79	42	39	78	88	5	46	3	4
Sulphide as S_2-	mg/L	<0.1	<0.1	0.2	7.8	2.8	9	0.8	6.9	0.8	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.3	<0.1	1.5	8.4	2.8	4.8	6.3	15	5.3	<0.1	0.2	0.2	<0.1	<0.1
Nitrate as N	mg/L	0.07	0.27	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	0.07
Total Nitrogen as N	mg/L	0.4	0.3	1.5	8.4	2.8	4.8	6.3	15	5.3	<0.1	0.2	0.2	0.1	0.1
Boron	µg/L	140	210	190	170	180	180	680	560	390	110	60	20	10	10
Calcium	mg/L	43.4	58.9	68.3	60	26.3	33.2	30.3	71	22.9	88.8	46.5	28.2	0.95	1.23
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	7.35	48.1	3.5	<0.05	0.06	<0.05	12.6	<0.05	6.58	11.5	3.38	4.09	1.04	0.99
Sodium	mg/L	91.8	35	125	160	215	153	477	525	182	156	29.6	27.2	15.4	17.2
Iron	mg/L	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.41	<0.04	<0.04
Potassium	mg/L	18.8	10.7	26	39	54.1	53.9	47.4	54.5	29.5	10.7	6.8	2.78	3.91	3.9
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	952	144	564	<1	<1	<1	8	<1	10	3130	371	718	18	9
Nickel	µg/L	<1	<1	<1	2	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	50	<10	<10	<10	<10	<10	<10	<10	<10	<10	11	<10	<10
Biochemical Oxygen Demand	mg/L	<2	<2	<2	<2	<2	2	<2	2	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	10	4	16	43	24	50	14	45	18	10	2	4	5	4
Total Organic Carbon	mg/L	4	6	7	12	5	9	4	8	6	6	6	<1	1	1

Table F5.3 Groundwater Monitoring Results (March 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.27	2.41	2.3	2.36	2.34	2.43	2.12	2.21	2.36	2.43	2.66	6.19	35.2	40.94
Bicarbonate Alkalinity as $CaCO_3$	mg/L	136	333	138	<1	<1	<1	61	<1	85	187	81	59	15	11
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	81	87	128	12	67	2	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	136	333	138	155	163	217	72	104	87	187	81	59	15	11
pH Value	pH Unit	8	7.8	8.1	11.2	11.2	11.3	8.7	10.5	8.4	7.6	8.1	6.8	5.5	5.3
Electrical Conductivity @ 25Â°C	µS/cm	939	920	945	1160	1330	1310	2900	2720	1460	1700	395	306	95	99
Ammonia as N	mg/L	0.17	0.02	1.45	5.91	3.8	3.95	6.18	11.8	3.29	0.02	0.06	<0.01	0.11	<0.01
Chloride	mg/L	172	34	212	220	211	192	828	697	296	312	33	23	15	18
Nitrite as N	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.01	0.02	0.01	0.04	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	65	120	81	52	119	80	41	73	178	216	56	53	3	4
Sulphide as S_2-	mg/L	<0.1	<0.1	<0.1	6.6	4.6	9.9	0.6	6.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.3	0.1	1.7	6.8	4.4	5	6.4	12.3	3.8	0.2	0.2	<0.1	0.2	<0.1
Nitrate as N	mg/L	<0.01	0.88	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	<0.01	<0.01	<0.01	<0.01	0.1	0.08
Total Nitrogen as N	mg/L	0.3	1	1.7	6.8	4.4	5	6.4	12.9	3.8	0.2	0.2	<0.1	0.2	0.2
Boron	µg/L	140	220	200	170	180	180	690	470	320	160	70	20	20	20
Calcium	mg/L	48.2	43.8	61.1	51.8	44.5	31.9	31.3	42.1	63.8	124	38	22.4	0.7	0.91
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	8.33	41.9	3.8	<0.05	<0.05	<0.05	14.3	0.05	6.43	11.6	2.23	3.78	0.84	0.9
Sodium	mg/L	119	35	116	140	159	167	513	378	206	192	31.1	23	12.9	14.5
Iron	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	<0.04	0.29	0.11	<0.04
Potassium	mg/L	21.3	9	26.9	36.3	56.6	58.3	50.5	47	36.5	14.5	8.72	2.41	3.32	3.7
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	804	355	777	1	<1	<1	10	<1	35	1850	207	764	122	8
Nickel	µg/L	<1	<1	<1	1	1	2	<1	1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	192	<10	<10	<10	<10	<10	<10	<10	<10	168	<10	18	<10
Biochemical Oxygen Demand	mg/L	<2	<2	<2	<2	<2	<2	<2	5	<2	<2	<2	2	<2	<2
Chemical Oxygen Demand	mg/L	4	<2	17	38	28	46	11	29	17	9	8	5	5	3
Total Organic Carbon	mg/L	4	4	11	11	9	12	4	11	9	7	4	3	3	3

Table F5.4 Groundwater Monitoring Results (April 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.41	2.53	2.49	2.52	2.51	2.48	2.24	2.37	2.45	2.36	2.72	6.16	35.09	40.74
Bicarbonate Alkalinity as $CaCO_3$	mg/L	152	328	123	<1	<1	<1	70	<1	89	204	239	57	15	11
Carbonate Alkalinity as $CaCO_3$	mg/L	7.8	<1	<1	93	101	157	4	109	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	851	328	123	121	129	189	74	120	89	204	239	57	15	11
pH Value	pH Unit	0.34	8.1	8	11	11.1	11.3	8.4	10.7	8.1	7.9	8.1	7.1	5.5	5.3
Electrical Conductivity @ 25Â°C	µS/cm	136	972	1150	1010	1330	1240	3030	1700	1590	1890	977	326	98	104
Ammonia as N	mg/L	<0.01	<0.01	1.45	5.2	4.71	4.14	6.32	7.74	1.89	0.02	0.16	<0.01	0.01	<0.01
Chloride	mg/L	<0.01	35	197	190	214	173	798	331	300	292	88	21	14	17
Nitrite as N	mg/L	65	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.01	0.01	0.01	0.05	0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	0.3	135	90	58	131	92	42	179	210	287	114	59	3	5
Sulphide as S_2-	mg/L	0.07	<0.1	<0.1	7.3	8.7	9.1	0.7	4.9	0.2	<0.1	0.1	0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.4	0.1	1.7	5.8	4.9	5	6.4	8.1	2.1	0.2	0.3	<0.1	<0.1	<0.1
Nitrate as N	mg/L	140	0.68	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	0.07
Total Nitrogen as N	mg/L	43.4	0.8	1.7	5.8	4.9	5	6.4	8.1	2.1	0.2	0.3	<0.1	0.2	0.1
Boron	µg/L	<0.20	220	200	170	180	180	670	170	290	210	70	20	10	10
Calcium	mg/L	7.35	69.8	73	49.9	47.2	35	31	30.5	82	144	117	28.1	0.8	1.07
Mercury	µg/L	91.8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	<0.04	58.6	4.13	<0.05	<0.05	<0.05	14.5	<0.05	6.12	11.3	8.17	4.16	0.86	0.8
Sodium	mg/L	18.8	42.7	126	125	174	173	477	260	235	244	63.6	28	13.9	13.8
Iron	mg/L	<0.2	<0.04	0.18	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.45	<0.04	<0.04
Potassium	mg/L	<1	11.6	27.3	32.7	57.8	57.5	47.5	63.8	34.7	17.3	12.1	3.34	4.24	3.7
Cadmium	µg/L	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	952	2	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	2	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	<10	359	895	<1	<1	<1	9	<1	41	985	814	764	38	14
Nickel	µg/L	<2	<1	<1	1	2	2	<1	4	<1	<1	<1	<1	<1	<1
Zinc	µg/L	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1070	68	18
Biochemical Oxygen Demand	mg/L	4	<2	2	2	3	6	<2	2	2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	0	4	15	40	43	60	10	36	16	12	6	5	12	<2
Total Organic Carbon	mg/L	0	5	12	9	10	12	5	12	7	8	5	3	5	2

Table F5.5 Groundwater Monitoring Results (May 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.38	3.32	3.59	3.63	3.7	2.36	2.27	2.37	2.46	4.72	4.77	5.96	35.15	40.87
Bicarbonate Alkalinity as $CaCO_3$	mg/L	95	147	163	<1	34	<1	70	<1	52	202	138	56	15	12
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	86	<1	98	6	73	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	95	147	163	123	69	209	76	110	52	202	138	56	15	12
pH Value	pH Unit	8	7.9	7.8	11	9.6	11.4	8.5	10.7	7.8	7.5	7.7	6.7	5.7	5.6
Electrical Conductivity @ 25Â°C	µS/cm	459	12600	1070	907	941	1510	3060	1850	2840	1580	566	339	101	106
Ammonia as N	mg/L	0.06	3.46	0.91	2.59	0.7	3.82	5.83	7.41	0.59	0.01	<0.01	0.01	0.03	0.06
Chloride	mg/L	50	4140	144	126	125	185	740	342	486	250	45	22	15	17
Nitrite as N	mg/L	<0.01	<0.01	<0.01	<0.01	0.33	<0.01	<0.01	<0.01	1.36	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	0.03	0.02	0.08	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.02	<0.01	0.04	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	36	433	102	65	127	89	41	170	558	168	54	58	3	5
Sulphide as S_2-	mg/L	<0.1	<0.1	<0.1	4.4	0.9	8.2	1.4	3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.2	3.5	1	2.7	1	5.4	6.7	8.7	<10.0	0.1	0.1	0.1	0.1	<0.1
Nitrate as N	mg/L	0.07	0.01	0.77	0.01	0.38	<0.01	<0.01	<0.01	21.6	0.02	0.36	<0.01	0.09	0.05
Total Nitrogen as N	mg/L	0.2	3.6	1.8	2.7	1.7	5.4	6.7	8.7	26.4	0.2	0.5	0.1	0.2	0.1
Boron	µg/L	70	1460	240	200	200	170	710	180	340	310	100	30	20	20
Calcium	mg/L	25.4	144	80	36.6	20.9	54.5	30.5	29.9	200	102	58.6	27	0.77	1.19
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	3.25	178	4.29	0.11	0.36	<0.05	14.8	<0.05	3.39	8.13	3.46	4.25	0.93	0.84
Sodium	mg/L	46	2110	100	103	117	161	457	266	316	174	35.3	24.7	13.4	14.2
Iron	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.5	<0.04	<0.04
Potassium	mg/L	12.7	79.9	24.5	27.7	47.6	57.4	46.4	68.7	58.4	17.2	7.9	2.84	3.79	3.64
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	2	<1	<1	<1	2	1	1	<1	2	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	334	609	731	2	2	<1	11	<1	66	405	8	771	18	8
Nickel	µg/L	<1	<1	<1	<1	<1	2	<1	4	1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	<10	<10	<10	<10	28	12	<10	<10	20	56	14
Biochemical Oxygen Demand	mg/L	<2	<2	<2	6	<2	3	<2	<2	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	5	<20	12	24	15	44	10	35	32	17	4	<2	<2	<2
Total Organic Carbon	mg/L	4	<10	7	8	8	14	6	13	15	6	6	2	3	3

Table F5.6 Groundwater Monitoring Results (June 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.63	3.70	3.86	3.87	3.95	4.05	3.47	3.68	4.73	4.87	4.91	6.73	37.29	45.18
Bicarbonate Alkalinity as $CaCO_3$	mg/L	95	192	172	<1	52	<1	16	<1	175	180	123	55	14	8
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	71	14	110	47	79	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	95	192	172	93	66	160	63	106	175	180	123	55	14	8
pH Value	pH Unit	7.9	8	7.9	10.9	8.9	11.2	9.7	10.6	8.2	7.7	7.6	6.3	5.4	5.2
Electrical Conductivity @ 25Â°C	µS/cm	466	6860	1140	992	826	1310	2280	3100	14600	1440	411	341	100	107
Ammonia as N	mg/L	0.13	2.16	1.32	2.2	0.32	3.35	5.76	13	0.37	0.02	<0.01	0.02	0.01	<0.01
Chloride	mg/L	55	2160	184	180	119	212	714	1010	5260	252	33	22	15	19
Nitrite as N	mg/L	<0.01	0.02	<0.01	0.16	0.43	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.02	0.01	0.06	0.02	<0.01	0.05	0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	42	269	125	116	131	131	66	37	911	192	36	61	2	2
Sulphide as S_2-	mg/L	<0.1	<0.1	<0.1	2.9	<0.1	4.3	1.8	14.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.2	2.2	1.8	2.5	0.8	4.1	6.4	13.8	0.5	0.1	0.2	<0.1	<0.1	<0.1
Nitrate as N	mg/L	0.01	0.14	0.02	0.02	1.02	0.13	<0.01	<0.01	0.01	<0.01	0.31	<0.01	0.12	0.11
Total Nitrogen as N	mg/L	0.2	2.4	1.8	2.7	2.2	4.2	6.4	13.8	0.5	0.1	0.5	<0.1	0.2	0.1
Boron	µg/L	80	900	160	190	190	180	470	490	2940	210	70	20	10	10
Calcium	mg/L	32.2	97.8	86.3	39.7	18.6	31.8	27.2	63.9	94.4	101	43.7	27.7	0.88	1.01
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	3.63	107	5.96	0.9	0.38	<0.05	1.37	0.25	233	9.66	2.69	4.21	0.94	0.94
Sodium	mg/L	47.3	1160	109	124	110	158	394	540	2540	158	26.3	27	13	13.2
Iron	mg/L	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.41	<0.04	<0.04
Potassium	mg/L	13.6	52.8	26.9	29.9	46.1	57.1	60.1	56.9	124	13.7	6.39	2.9	3.87	3.82
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	1	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	419	511	1000	1	<1	<1	<1	<1	238	310	7	791	18	8
Nickel	µg/L	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	162	<10	<10	<10	<10	11	<10	<10	<10	<10	609	<10	10
Biochemical Oxygen Demand	mg/L	<2	2	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	4	29	19	18	16	29	24	47	68	8	<2	3	5	2
Total Organic Carbon	mg/L	4	7	10	7	7	12	7	11	7	7	4	4	5	4

Table F5.7 Groundwater Monitoring Results (July 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.5	3.63	3.7	3.73	3.76	3.76	3.37	3.62	4.59	4.74	4.73	7.17	38.35	46.08
Bicarbonate Alkalinity as $CaCO_3$	mg/L	107	276	163	<1	36	<1	<1	<1	171	173	122	56	16	11
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	61	22	103	91	82	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	107	276	163	68	58	170	141	116	171	173	122	56	16	11
pH Value	pH Unit	8	7.9	7.8	10.3	9.4	11.3	11.1	10.7	8.1	7.6	7.6	6.9	5.7	5.3
Electrical Conductivity @ 25Â°C	µS/cm	702	2060	1080	681	883	1300	1300	3140	14600	1380	433	319	92	120
Ammonia as N	mg/L	0.26	0.21	1.12	2	0.55	3.25	4.85	14	0.63	<0.01	0.02	0.01	<0.01	<0.01
Chloride	mg/L	101	338	154	108	127	169	195	1020	4130	228	36	18	14	22
Nitrite as N	mg/L	<0.01	0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	<0.01	0.07	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.02	<0.01	0.03	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	70	209	132	81	135	132	138	42	795	154	45	68	3	4
Sulphide as S_2-	mg/L	0.1	<0.1	<0.1	3.4	<0.1	3.6	5.1	13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.4	0.4	1.3	2	0.9	3.7	5.1	14.2	0.9	0.1	0.1	<0.1	<0.1	<0.1
Nitrate as N	mg/L	<0.01	0.78	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	0.17	<0.01	0.13	0.18
Total Nitrogen as N	mg/L	0.4	1.2	1.4	2	0.9	3.7	5.1	14.2	1	0.1	0.3	<0.1	0.2	0.2
Boron	µg/L	110	290	190	220	220	200	220	540	2690	160	90	20	20	20
Calcium	mg/L	42.8	78.4	91.3	18.5	18.2	36.4	23.9	71.3	111	104	45.7	28.6	0.92	1.4
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	4.95	75.2	6.42	1.32	0.31	<0.05	<0.05	0.13	228	11.1	2.54	4.58	1	1.2
Sodium	mg/L	73	224	106	92.1	123	161	186	582	2460	156	33.2	24	13	16.2
Iron	mg/L	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.32	<0.04	<0.04
Potassium	mg/L	17.1	22.6	27.1	27.4	47.8	62.4	53.1	4.06	11.8	12.4	7.43	2.93	3.81	4.16
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	2	<1	<1	<1	<1	1	2	<1	<1	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	517	366	936	2	3	<1	<1	<1	229	1490	9	738	17	16
Nickel	µg/L	<1	<1	<1	<1	<1	1	2	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	13	10	12
Biochemical Oxygen Demand	mg/L	<2	<2	2	<2	<2	3	<2	13	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	26	6	15	16	12	32	35	42	60	15	9	<2	<2	6
Total Organic Carbon	mg/L	6	2	9	7	8	11	14	12	6	6	5	1	1	4

Table F5.8 Groundwater Monitoring Results (August 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.58	3.69	3.79	3.87	3.95	3.83	3.31	3.61	4.36	4.38	5.46	7.28	38.57	45.07
Bicarbonate Alkalinity as $CaCO_3$	mg/L	95	210	178	<1	49	<1	<1	<1	60	182	143	59	18	12
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	76	22	134	111	82	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	95	210	178	100	71	200	152	109	60	182	143	59	18	12
pH Value	pH Unit	8.2	8	7.9	10.8	9.4	11.4	11	10.7	8.2	7.7	7.9	7	6.1	5.8
Electrical Conductivity @ 25Â°C	µS/cm	536	6390	1120	834	828	1360	1380	2480	2400	1280	408	325	96	122
Ammonia as N	mg/L	0.2	1.38	1.29	1.91	0.55	2.79	5.63	9.22	0.97	0.01	0.01	<0.01	0.03	<0.01
Chloride	mg/L	81	1950	176	133	117	197	274	636	520	221	28	21	15	24
Nitrite as N	mg/L	<0.01	0.34	0.01	0.01	<0.01	<0.01	<0.01	0.32	0.16	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.02	<0.01	0.04	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	42	310	123	91	135	112	97	116	388	151	30	65	3	5
Sulphide as S_2-	mg/L	0.1	<0.1	<0.1	5.6	0.4	11.3	14.2	9.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.4	1.5	1.6	2.3	1	3.6	6.5	10.2	1.6	0.2	<0.1	<0.1	<0.1	<0.1
Nitrate as N	mg/L	<0.01	0.17	<0.01	<0.01	<0.01	<0.01	0.01	0.07	2.3	<0.01	0.1	<0.01	0.13	0.17
Total Nitrogen as N	mg/L	0.4	2	1.6	2.3	1	3.6	6.6	10.6	4	0.2	0.2	<0.1	0.2	0.2
Boron	µg/L	100	970	220	210	240	180	250	410	640	230	80	30	20	20
Calcium	mg/L	28.1	90	85.3	32.1	14.1	39.7	22.2	42.1	82.6	90.8	46.9	28.5	0.84	1.19
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	4.49	106	5.64	0.28	0.19	<0.05	<0.05	0.09	25.5	9.43	2.58	4.33	0.96	1.2
Sodium	mg/L	53.9	1060	105	104	113	162	196	320	407	133	24.6	23.8	12.6	15.2
Iron	mg/L	0.05	<0.04	0.07	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.53	<0.04	<0.04
Potassium	mg/L	12.7	48.7	27.2	28.5	45.8	62.5	51.9	49.4	46.5	11.4	6.76	2.92	3.78	4.25
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	1	<1	<1	2	<1	<1	<1	2	<1	<1	<1	2	4
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	336	130	854	3	2	<1	<1	<1	50	986	13	778	35	11
Nickel	µg/L	<1	<1	<1	<1	<1	1	2	2	1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	12	<10	<10	<10	<10	<10	<10	<10	11	11	14
Biochemical Oxygen Demand	mg/L	<2	<2	2	<2	<2	6	3	<2	<2	<2	<2	2	<2	<2
Chemical Oxygen Demand	mg/L	10	17	19	21	20	30	43	29	28	8	7	6	6	5
Total Organic Carbon	mg/L	2	<1	6	6	7	9	12	11	8	1	2	1	1	<1

Table F5.9 Groundwater Monitoring Results (September 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.09	3.3	3.21	3.32	3.38	3.3	2.88	3.14	3.65	3.81	4.01	6.99	37.41	45.7
Bicarbonate Alkalinity as $CaCO_3$	mg/L	108	269	155	<1	20	<1	<1	<1	108	173	132	58	18	12
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	92	38	145	122	102	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	108	269	155	118	57	185	155	123	108	173	132	58	18	12
pH Value	pH Unit	8.2	8.2	8.2	11.2	9.8	11.3	11.2	11.1	8.2	7.9	7.3	7.2	6	5.6
Electrical Conductivity @ 25Â°C	µS/cm	1570	989	1240	833	1000	1250	1200	1620	8450	1220	335	315	91	117
Ammonia as N	mg/L	0.59	0.04	1.78	2.88	1.48	3.54	5.04	5.74	1.68	<0.01	<0.01	<0.01	0.03	<0.01
Chloride	mg/L	373	53	205	132	173	193	185	297	2510	214	20	21	14	25
Nitrite as N	mg/L	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.15	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	0.02	0.01	0.01	<0.01	<0.01	0.01	0.01	<0.01	0.03	0.03	0.01	0.04	0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	77	179	132	75	133	109	127	177	567	124	12	64	3	4
Sulphide as S_2-	mg/L	0.2	<0.1	0.1	5.4	2	9.2	7.5	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	0.7	0.2	1.9	3	1.7	3.9	5.4	6.1	1.8	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate as N	mg/L	<0.01	0.71	<0.01	<0.01	<0.01	<0.01	0.01	0.02	1.6	<0.01	0.05	<0.01	0.12	0.17
Total Nitrogen as N	mg/L	0.7	0.9	1.9	3	1.7	3.9	5.4	6.2	3.5	<0.1	<0.1	<0.1	0.2	0.2
Boron	µg/L	200	190	210	190	210	190	200	180	560	150	40	20	20	10
Calcium	mg/L	57.4	62	80.6	36.2	16.2	32.9	27.1	40.8	141	93.4	41.9	29.2	0.97	1.12
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	13.3	56.4	5.59	<0.05	0.17	<0.05	<0.05	0.06	31.5	10.2	2.38	4.53	1.08	1.25
Sodium	mg/L	185	61.3	117	90.8	145	152	153	209	525	140	21	25.3	13.8	16.7
Iron	mg/L	0.1	<0.04	0.15	<0.04	0.24	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.62	0.15	<0.04
Potassium	mg/L	19.8	13.6	28.2	28.3	50.1	57.1	47.8	64.9	63.2	11.4	6.25	3.35	4.28	4.75
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	2	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	1	2
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	806	174	1060	<1	1	<1	<1	<1	64	1690	15	797	32	12
Nickel	µg/L	<1	<1	<1	<1	1	1	2	3	1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	11	10
Biochemical Oxygen Demand	mg/L	<2	<2	<2	<2	<2	<2	4	<2	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	15	5	21	26	24	44	42	27	29	5	3	<2	<2	<2
Total Organic Carbon	mg/L	3	<1	7	6	7	10	10	11	12	1	1	1	<1	<1

Table F5.10 Groundwater Monitoring Results (October 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.92	3.06	3.03	3.1	3.38	3.05	2.88	3.06	3.49	3.41	3.53	6.73	36.54	45.13
Bicarbonate Alkalinity as $CaCO_3$	mg/L	90	251	186	<1	2	<1	<1	<1	53	189	167	54	16	11
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	76	66	125	72	91	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	90	251	186	127	68	197	85	133	53	189	167	54	16	11
pH Value	pH Unit	8	8	7.9	11.2	10.2	11.3	10.6	11.1	8.1	7.7	8	6.9	5.7	5.5
Electrical Conductivity @ 25Â°C	µS/cm	2080	953	1140	912	1020	1330	2110	1810	2060	1170	461	314	92	97
Ammonia as N	mg/L	1.23	0.02	1.47	2.49	1.28	3.1	5.23	4.97	0.43	<0.01	<0.01	<0.01	<0.01	<0.01
Chloride	mg/L	534	46	182	139	173	205	601	344	388	178	30	22	15	19
Nitrite as N	mg/L	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.04	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	83	187	112	71	137	98	70	218	371	130	30	60	3	2
Sulphide as S_2-	mg/L	0.2	<0.1	0.1	4.7	1.5	10.1	4	2.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	1.4	0.1	1.6	3.1	1.8	4.3	6.1	6.3	1	0.1	<0.1	0.2	<0.1	<0.1
Nitrate as N	mg/L	<0.01	0.64	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	1.2	0.1	<0.01	<0.01	0.1	0.11
Total Nitrogen as N	mg/L	1.4	0.8	1.6	3.1	1.8	4.3	6.1	6.3	2.3	0.2	<0.1	0.2	0.1	0.1
Boron	µg/L	240	190	210	200	240	200	480	190	380	240	70	20	20	10
Calcium	mg/L	60.7	62.3	82.7	40.6	16.8	34.4	32.5	56.6	120	95.7	62.7	27.2	0.92	0.9
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	23	52.4	6.44	<0.05	0.08	<0.05	<0.05	<0.05	4.12	8.96	3.27	4.55	1	1.02
Sodium	mg/L	293	50.9	112	95.5	140	161	309	238	266	128	25.9	23.9	11.4	12.2
Iron	mg/L	<0.04	<0.04	0.16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.58	<0.04	<0.04
Potassium	mg/L	23.1	11.5	25.3	27.9	46.4	55.3	53.7	69.4	43.4	12.3	6.66	2.71	3.4	3.37
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	1	2	<1	<1	<1	1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	800	152	1000	2	<1	<1	<1	<1	33	209	58	809	31	8
Nickel	µg/L	<1	<1	<1	<1	<1	2	<1	3	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	491	<10	<10
Biochemical Oxygen Demand	mg/L	<2	<2	<2	3	<2	8	2	2	2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	12	4	14	19	22	39	22	34	27	8	4	4	4	3
Total Organic Carbon	mg/L	3	2	5	4	7	8	4	10	8	3	1	<1	<1	<1

Table F5.11 Groundwater Monitoring Results (November 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.07	3.1	3.15	3.27	3.23	3.09	2.91	3.07	3.46	3.34	3.46	6.8	36.3	44.87
Bicarbonate Alkalinity as $CaCO_3$	mg/L	88	223	188	<1	<1	<1	12	<1	102	183	170	54	16	12
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	90	64	141	51	92	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	88	223	188	108	68	184	63	125	102	183	170	54	16	12
pH Value	pH Unit	8.1	8	7.9	10.9	10.6	11.3	10	11.1	8	7.9	8.1	7	5.7	5.6
Electrical Conductivity @ 25Â°C	µS/cm	1440	2340	946	848	1170	1230	2330	1760	1520	876	583	309	92	95
Ammonia as N	mg/L	1.4	0.35	0.61	2.98	1.94	3.33	5.73	5.82	0.02	<0.01	0.02	0.02	<0.01	0.03
Chloride	mg/L	326	514	119	150	198	199	642	342	234	97	50	21	14	18
Nitrite as N	mg/L	<0.01	<0.01	0.02	0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	0.02	0.01	0.02	<0.01	<0.01	0.01	0.01	<0.01	<0.01	0.02	0.01	0.04	0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	66	162	96	75	154	87	48	184	278	106	54	58	3	3
Sulphide as S_2-	mg/L	0.2	<0.1	<0.1	4.4	0.7	5.7	1.6	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	1.4	0.4	0.8	3.5	2.4	3.9	6.1	7	0.5	0.1	0.1	0.2	0.1	<0.1
Nitrate as N	mg/L	<0.01	0.04	0.19	<0.01	<0.01	<0.01	<0.01	0.02	1.37	<0.01	<0.01	<0.01	0.09	0.12
Total Nitrogen as N	mg/L	1.4	0.5	1	3.5	2.4	3.9	6.1	7	1.8	0.1	0.1	0.2	0.2	0.2
Boron	µg/L	130	380	180	190	240	160	560	190	270	220	110	20	20	10
Calcium	mg/L	51.2	64.4	84	39.4	25.6	35.5	25.4	53.9	117	73.2	64.4	25.7	0.81	0.85
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	11.8	56.7	5.69	0.59	<0.05	<0.05	0.72	<0.05	4.44	5.49	3.37	1.06	0.96	0.88
Sodium	mg/L	191	315	85.2	106	165	160	384	246	168	95.3	45.2	23.5	13	13.6
Iron	mg/L	0.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.52	<0.04	<0.04
Potassium	mg/L	22	21.4	25.8	31.4	58.8	61.7	60.2	73.5	36.7	13.2	9.17	3.09	4.13	3.94
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	1	<1	<1	<1	5	1	<1	<1	<1	<1
Lead	µg/L	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	610	34	690	1	<1	<1	<1	<1	28	5	319	789	21	8
Nickel	µg/L	<1	<1	<1	<1	1	1	<1	3	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Biochemical Oxygen Demand	mg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	10	7	14	22	27	39	18	34	24	9	8	7	6	7
Total Organic Carbon	mg/L	4	2	8	6	8	8	4	11	10	7	6	2	3	2

Table F5.12 Groundwater Monitoring Results (December 2022)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.85	2.97	2.94	2.94	2.96	2.88	2.52	2.68	2.86	2.85	3.1	6.69	35.9	41.66
Bicarbonate Alkalinity as $CaCO_3$	mg/L	88	253	142	3	8	<1	23	<1	105	213	214	54	17	12
Carbonate Alkalinity as $CaCO_3$	mg/L	<1	<1	<1	54	63	144	41	103	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$	mg/L	88	253	142	57	72	172	64	120	105	213	214	54	17	12
pH Value	pH Unit	8.2	8.2	8.1	10.3	10.4	11.3	9.8	11.1	8.2	8	8.1	7.2	5.7	5.8
Electrical Conductivity @ 25Â°C	µS/cm	1280	930	1120	960	980	1200	2340	1680	1540	1310	687	310	93	97
Ammonia as N	mg/L	1.24	0.01	1.49	3.5	1.66	3.54	5.98	6.19	0.46	<0.01	0.07	<0.01	<0.01	<0.01
Chloride	mg/L	294	39	192	166	153	187	728	318	268	157	55	21	15	19
Nitrite as N	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Reactive Phosphorus as P	mg/L	0.01	0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	0.02	0.03	0.08	<0.01	<0.01
Sulphate as SO_4 - Turbidimetric	mg/L	64	177	93	79	115	92	42	180	220	176	66	59	3	4
Sulphide as S_2-	mg/L	0.1	<0.1	<0.1	4.1	1.6	15	2.2	6.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen as N	mg/L	1.3	0.2	1.8	4	2.1	4.7	6.9	8.4	1	0.2	0.3	0.1	<0.1	<0.1
Nitrate as N	mg/L	<0.01	0.57	<0.01	<0.01	<0.01	0.01	<0.01	0.01	0.38	<0.01	<0.01	<0.01	0.09	0.1
Total Nitrogen as N	mg/L	1.3	0.8	1.8	4	2.1	4.7	6.9	8.4	1.4	0.2	0.3	0.1	0.2	0.1
Boron	µg/L	120	180	200	200	220	180	630	190	290	400	90	20	20	10
Calcium	mg/L	54.3	57.2	72.9	30.4	12.8	34.2	23.1	46.7	89	87.3	78.3	24	0.8	0.89
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	8.2	55.6	5.02	0.62	<0.05	<0.05	1.28	<0.05	5.74	7.14	5.12	4.13	0.88	0.74
Sodium	mg/L	150	47.9	116	118	136	153	369	230	172	146	43.6	23.9	13.2	13.2
Iron	mg/L	0.07	<0.04	0.09	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.34	<0.04	<0.04
Potassium	mg/L	18.7	11.6	26.7	28	51.3	58.2	52.7	68	32.8	17.5	9.52	3.12	3.99	3.65
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	644	149	923	1	<1	<1	<1	<1	52	135	604	654	21	8
Nickel	µg/L	<1	<1	<1	<1	1	2	<1	4	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Biochemical Oxygen Demand	mg/L	<2	<2	4	4	<2	7	<2	4	4	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	6	<2	18	20	27	37	14	35	20	18	12	5	8	8
Total Organic Carbon	mg/L	2	<1	10	14	16	20	8	22	7	10	8	3	5	5

Figure F5.1 Graphical Presentation for Groundwater Monitoring (MWX-1)

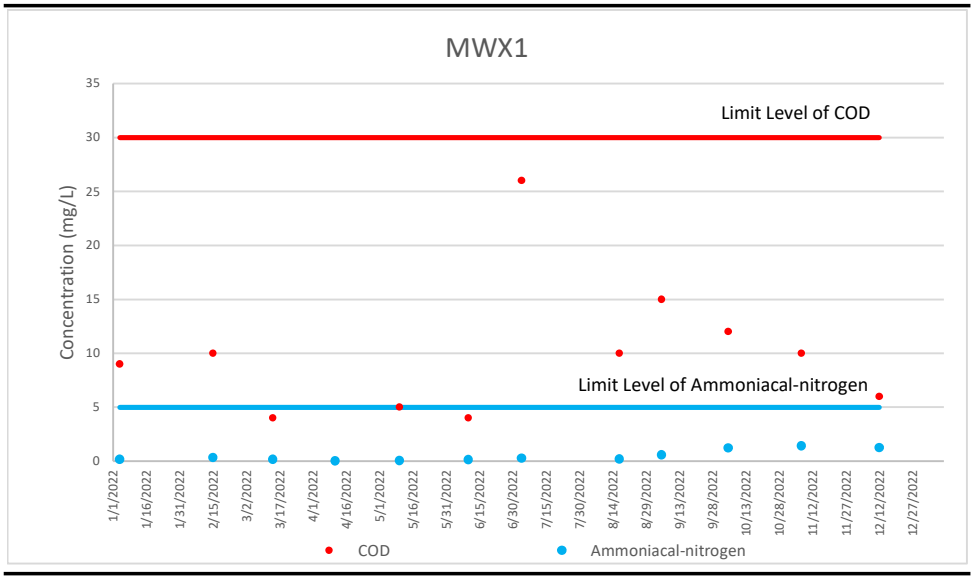


Figure F5.2 Graphical Presentation for Groundwater Monitoring (MWX-2)

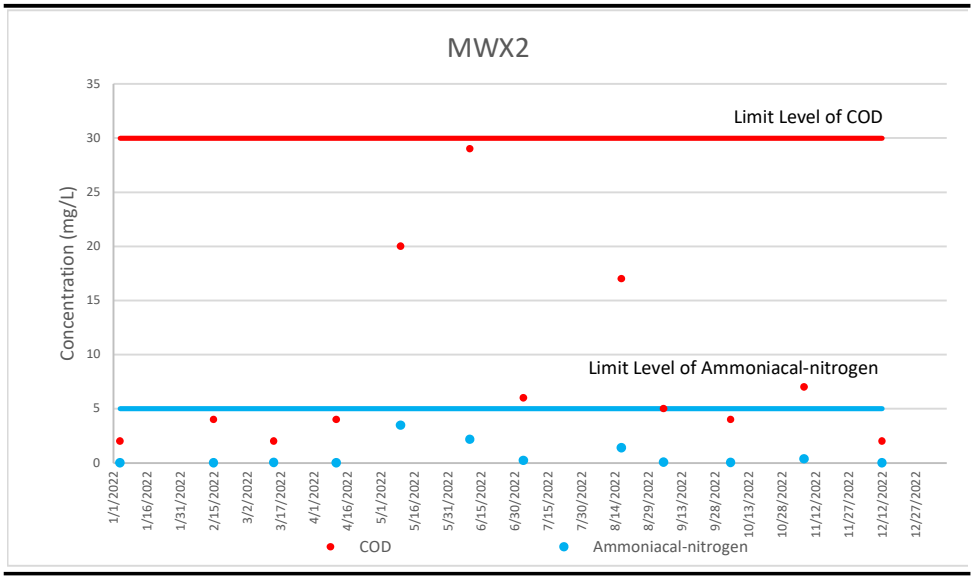


Figure F5.3 Graphical Presentation for Groundwater Monitoring (MWX-3)

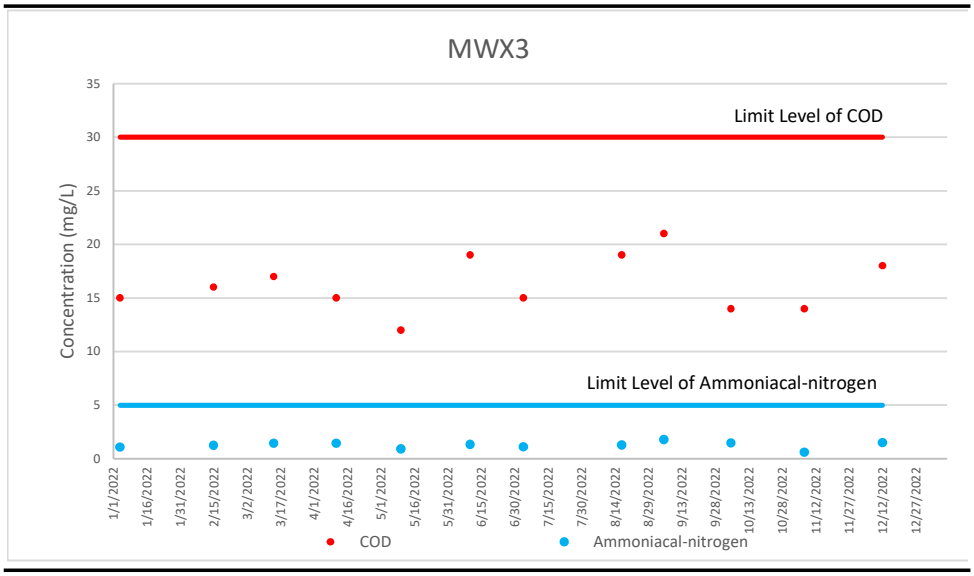


Figure F5.4 Graphical Presentation for Groundwater Monitoring (MWX-4)

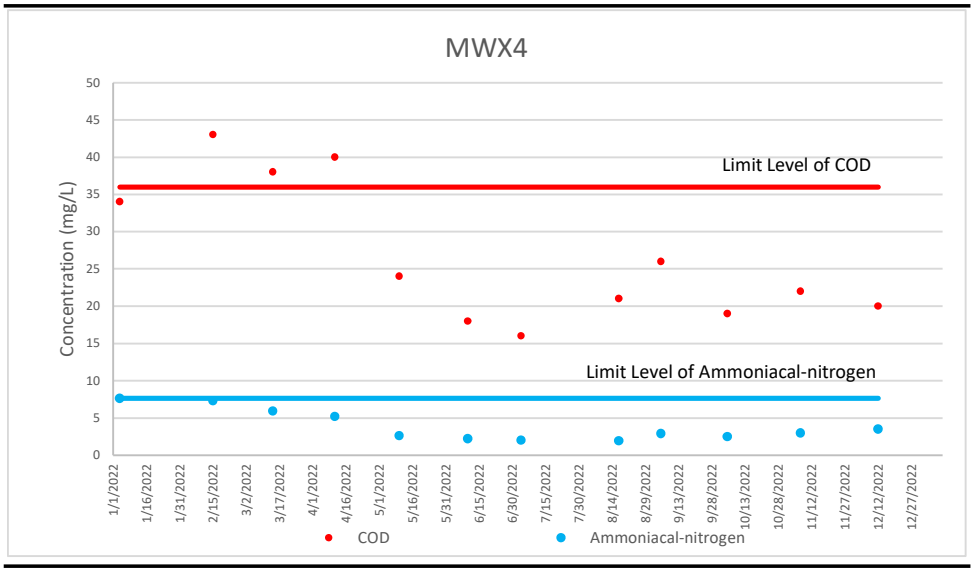


Figure F5.5 Graphical Presentation for Groundwater Monitoring (MWX-5)

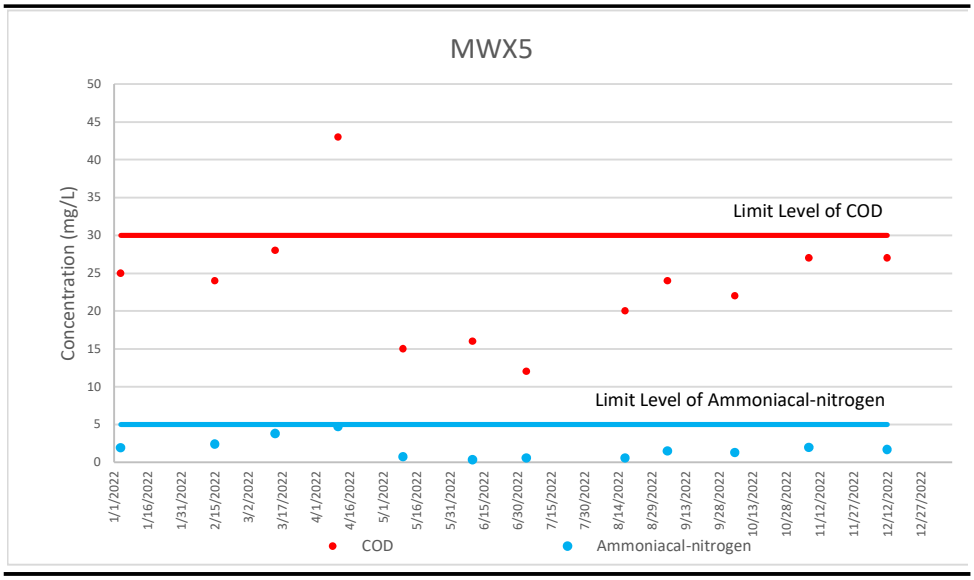


Figure F5.6 Graphical Presentation for Groundwater Monitoring (MWX-6)

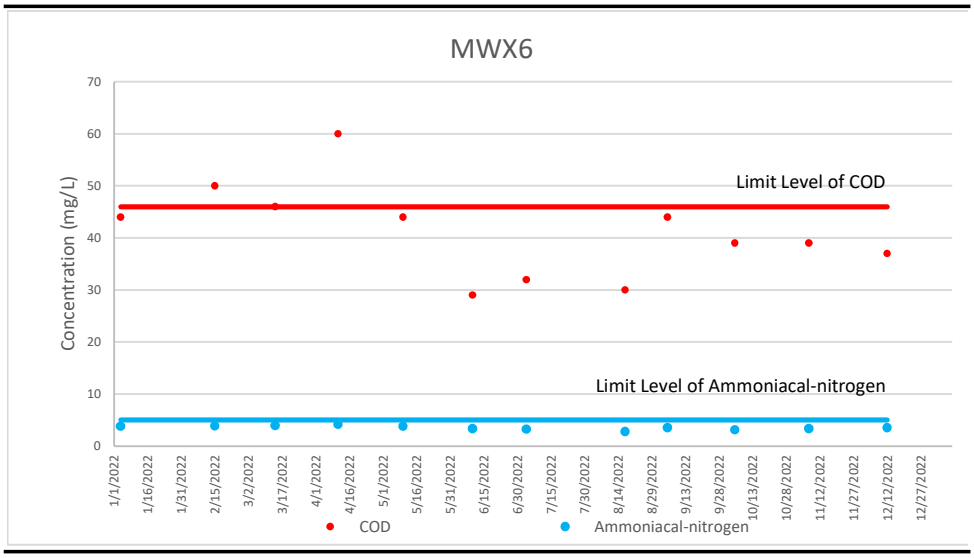


Figure F5.7 Graphical Presentation for Groundwater Monitoring (MWX-7)

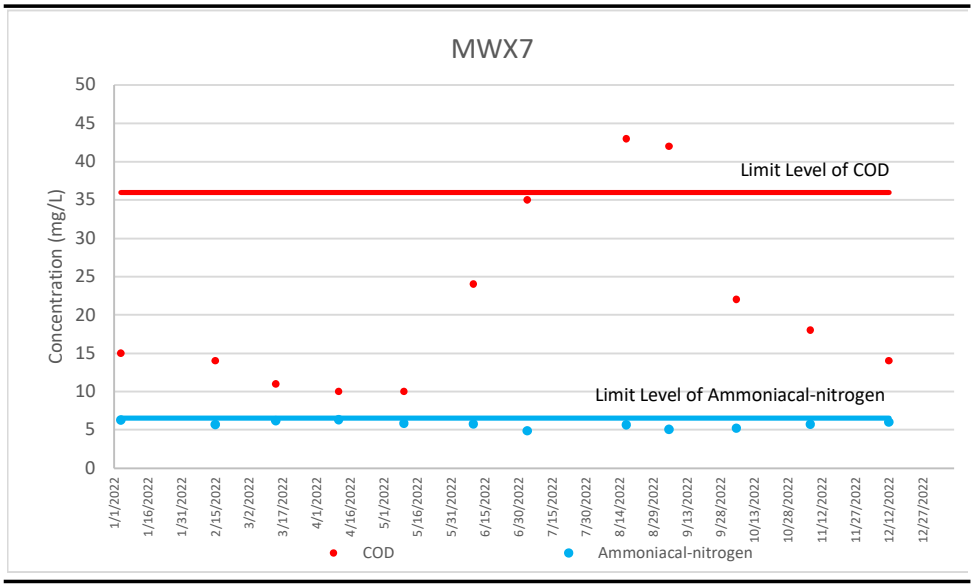


Figure F5.8 Graphical Presentation for Groundwater Monitoring (MWX-8)

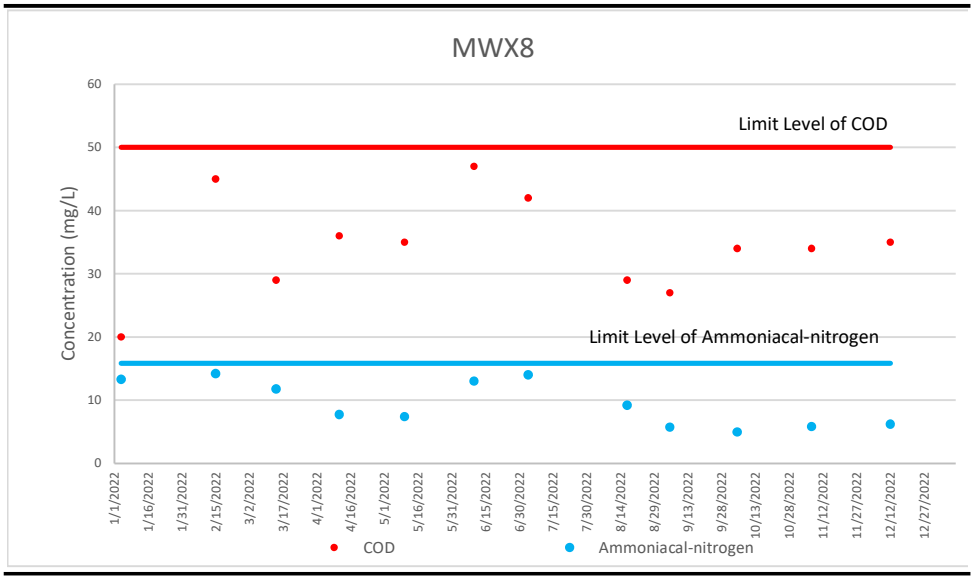


Figure F5.9 Graphical Presentation for Groundwater Monitoring (MWX-9)

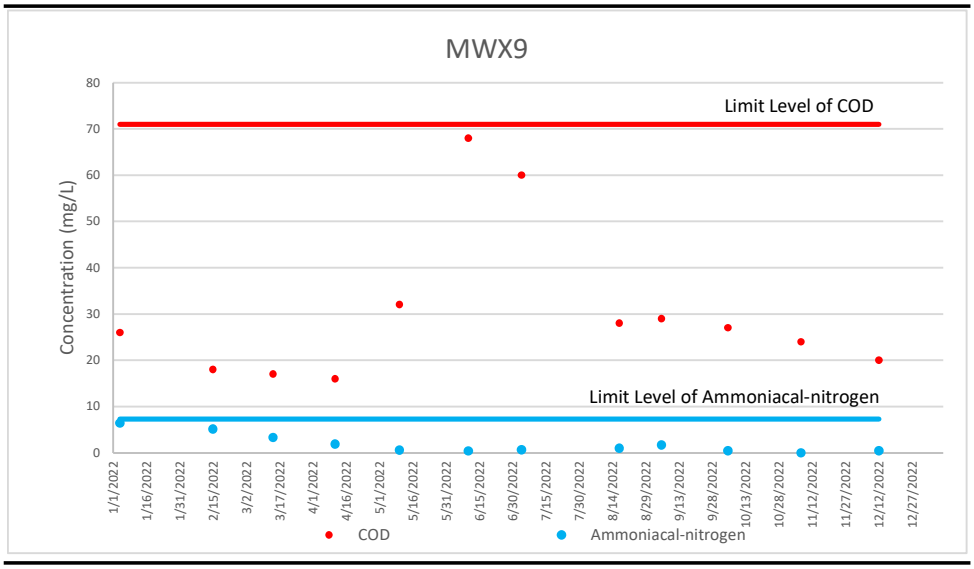


Figure F5.10 Graphical Presentation for Groundwater Monitoring (MWX-10)

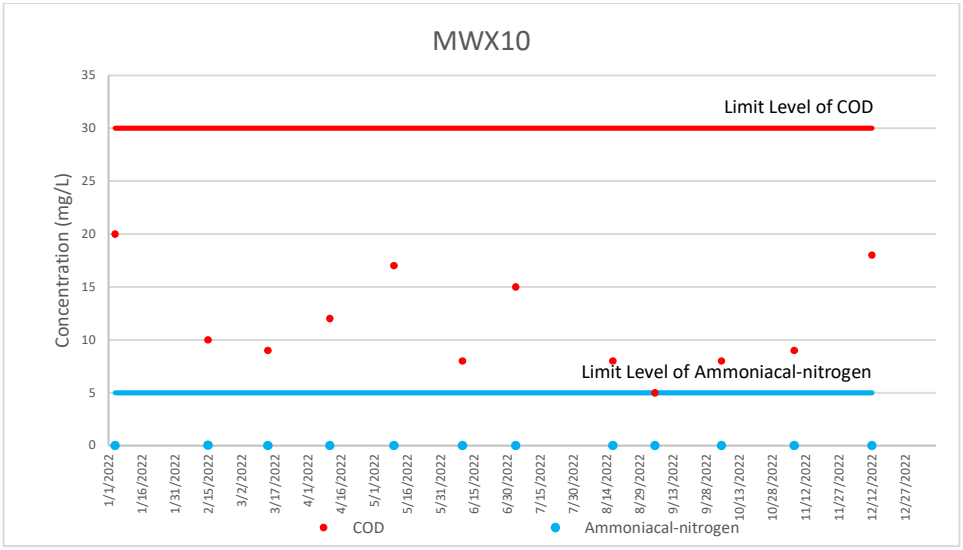


Figure F5.11 Graphical Presentation for Groundwater Monitoring (MWX-11)

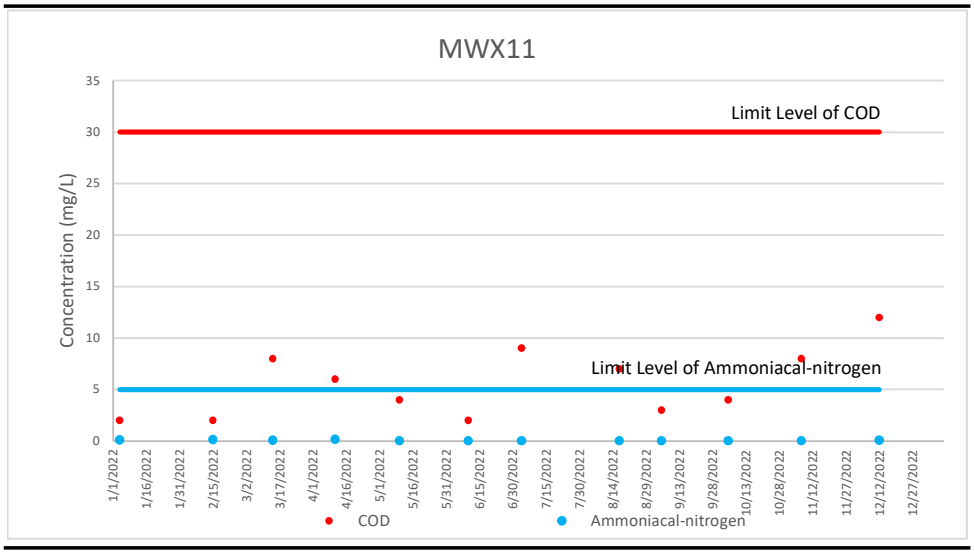


Figure F5.12 Graphical Presentation for Groundwater Monitoring (MWX-12)

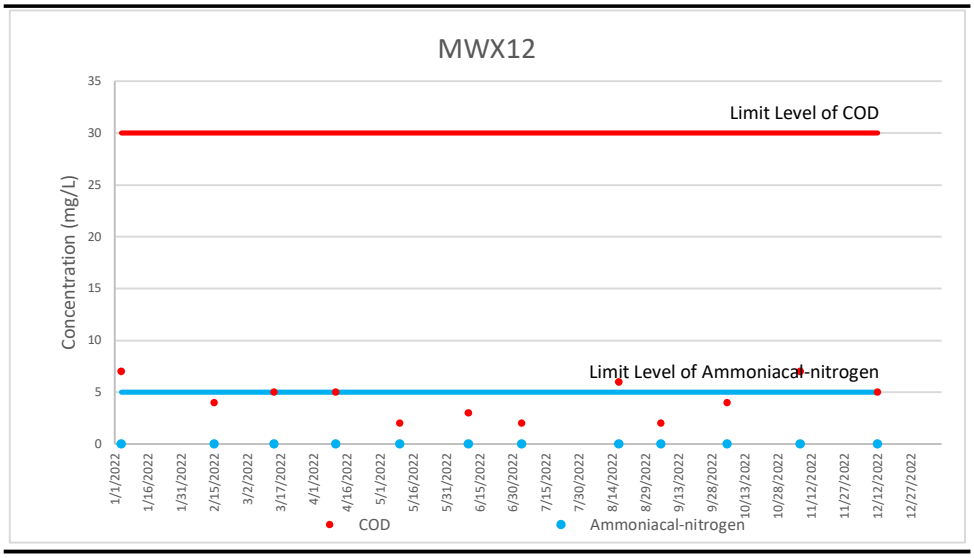


Figure F5.13 Graphical Presentation for Groundwater Monitoring (MWX-13)

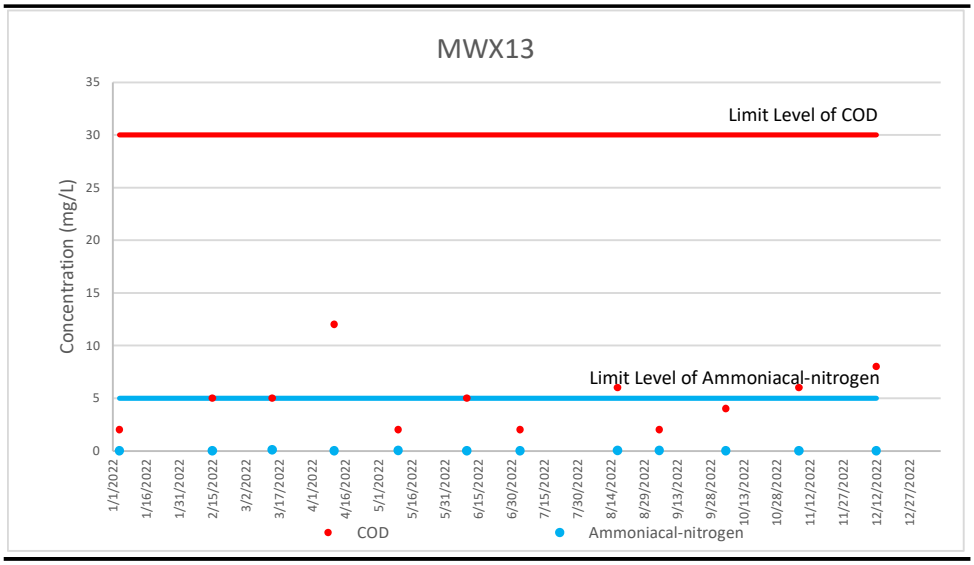
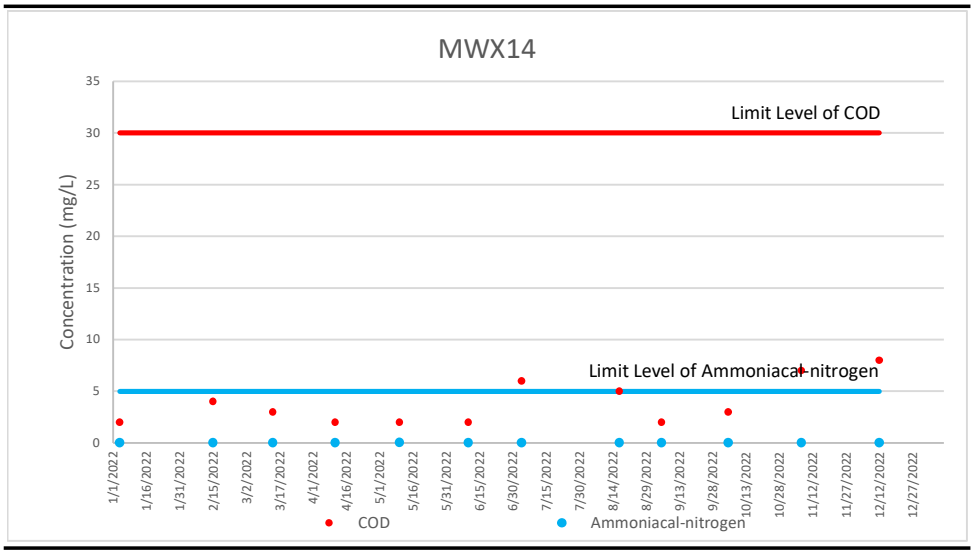


Figure F5.14 Graphical Presentation for Groundwater Monitoring (MWX-14)



Annex F6

Investigation Reports of Environmental Quality Limit Exceedance

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	15 February 2022
Time	MWX-4: 14:30 MWX-6: 11:29
Monitoring Location	MWX-4, MWX-6
Parameter	Chemical Oxygen Demand (COD)
Limit Levels	MWX-4: >36 mg /L MWX-6: >46 mg /L
Measured Level	MWX-4: 43 mg /L MWX-6: 50 mg /L
Possible reason	Groundwater contaminated with leachate is commonly characterized by high COD and ammoniacal-nitrogen levels as a result of degradation of organic matters in the waste. The groundwater quality (ammoniacal-nitrogen) monitoring results at MWX-4 (7.29 mg/L) and MWX-6 (3.86 mg/L) and groundwater quality (COD) monitoring results of the groundwater monitoring wells adjacent to MWX-4 and MWX-6 (MWX-3: 16 mg/L, MWX-5: 24 mg/L and MWX-7: 14 mg/L) are well within the respective limit levels. Hence, there is a low possibility of the elevation of COD levels at MWX-4 and MWX-6 are due to leachate contamination from SENTX operation or at least it is not conclusive to base on these results to demonstrate exceedances were due to leachate contamination. In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 15 March 2022 to confirm findings. Exceedance of COD Limit Level was recorded at MWX-4 (38 mg/L) but no exceedance of COD concentration at MWX-6 (46 mg/L) was measured during the sampling event. MWX-4 show consecutive exceedance of the groundwater quality limit. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated COD concentration measured at MWX-4 (with detection of elevated levels of methane (up to 11.6% v/v)) and MWX-6 (with detection of elevated levels of methane (up to 12.2% v/v) and in close proximity to LFG13, which shows elevated methane levels continuous) on 15 February 2022 could be due to localised organic matters within or around the monitoring wells.

	Due to the presence of influencing factor from non-project source and the COD levels at all other groundwater monitoring wells are within the respective limit level, there is no adequate evidence showing that the COD level exceedances measured at MWX-4 and MWX-6 on 15 February 2022 were deemed to Project-related activities.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the groundwater quality monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 21 April 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	15 March 2022
Time	13:04
Monitoring Location	MWX-4
Parameter	Chemical Oxygen Demand (COD)
Limit Levels	>36 mg /L
Measured Level	38 mg /L
Possible reason	Groundwater contaminated with leachate is commonly characterized by high COD and ammoniacal-nitrogen levels as a result of degradation of organic matters in the waste. The groundwater quality (ammoniacal-nitrogen) monitoring result at MWX-4 (5.91 mg/L) and groundwater quality (COD) monitoring results of the groundwater monitoring wells adjacent to MWX-4 (MWX-3: 17 mg/L and MWX-5: 28 mg/L) are well within the respective limit levels. Hence, there is a low possibility of the elevation of COD level at MWX-4 is due to leachate contamination from SENTX operation or at least it is not conclusive to base on these results to demonstrate exceedance was due to leachate contamination. In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 11 April 2022 to confirm findings. Exceedance of COD Limit Level was recorded at MWX-4 (40 mg/L) during the sampling event. MWX-4 showed consecutive exceedance of the groundwater quality limit. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated COD concentration measured at MWX-4 (with detection of elevated levels of methane (up to 11.6% v/v)) on 15 March 2022 could be due to localised organic matters within or around the monitoring wells and background fluctuation. Due to the presence of influencing factor from non-project source and the COD levels at all other groundwater monitoring wells are within the respective limit level, there is no adequate evidence showing that the COD level exceedance measured at MWX-4 on 15 March 2022 was deemed to Project-related activities. It should also be noted that although the COD level exceeded the limit level of the EM&A programme, it is still well within the

	WPCO effluent discharge limit of COD (80 mg/L) and the standard for effluents discharged into the inshore waters of the Junk Bay Water Control Zone as stipulated under Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (80 mg/L). The slight exceedance of COD at MWX-4 on 15 March 2022 will not cause adverse water quality impact to the Junk Bay Water Control Zone.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the groundwater quality monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 17 May 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	11 April 2022
Time	MWX-4: 14:52 MWX-5: 14:30 MWX-6: 10:02
Monitoring Location	MWX-4, MWX-5, MWX-6
Parameter	Chemical Oxygen Demand (COD)
Limit Levels	MWX-4: >36 mg /L MWX-5: >30 mg /L MWX-6: >46 mg /L
Measured Level	MWX-4: 40 mg /L MWX-5: 43 mg /L MWX-6: 60 mg /L
Possible reason	Groundwater contaminated with leachate is commonly characterized by high COD and ammoniacal-nitrogen levels as a result of degradation of organic matters in the waste. The groundwater quality (ammoniacal-nitrogen) monitoring results at MWX-4 (5.20 mg/L), MWX-5 (4.71 mg/L) and MWX-6 (4.14 mg/L) are well within the respective limit levels (MWX-4: 7.63 mg/L, MWX-5: 5.00 mg/L, MWX-6: 5.00 mg/L). Hence, there is a low possibility that the elevation of COD level at MWX-4, MWX-5 and MWX-6 are due to leachate contamination from SENTX operation or at least it is not conclusive to base on these results to demonstrate exceedances were due to leachate contamination. In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 11 and 18 May 2022 to confirm findings. COD concentrations of 24 mg/L, 15 mg/L and 44 mg/L (below the respective Limit Level) were measured at MWX-4, MWX-5 and MWX-6, respectively during the sampling event, which demonstrate no consecutive groundwater quality impact at the monitoring locations. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated COD concentrations measured at MWX-4 (with detection of elevated levels of methane (up to 11.6% v/v)), MWX-5 (with detection of elevated levels of methane (up to 2.5% v/v)) and MWX-6 (with detection of elevated levels of methane (up to 12.2% v/v) and in close proximity to LFG13, which shows elevated methane levels continuously) on 11 April 2022

	could be due to localised organic matters within or around the monitoring wells and background fluctuation. Due to the presence of influencing factor from non-project source and the subsequent month monitoring results at MWX-4, MWX-5 and MWX-6 did not show any exceedances, there is no adequate evidence showing that the COD level exceedances measured at MWX-4, MWX-5 and MWX-6 on 11 April 2022 were deemed to Project-related activities. It should also be noted that although the COD level exceeded the limit level of the EM&A programme, it is still well within the WPCO effluent discharge limit of COD (80 mg/L) and the standard for effluents discharged into the inshore waters of the Junk Bay Water Control Zone as stipulated under Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (80 mg/L). The slight exceedances of COD at MWX-4, MWX-5 and MWX-6 on 11 April 2022 will not cause adverse water quality impact to the Junk Bay Water Control Zone.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the groundwater quality monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 7 June 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	25 May 2022
Time	14:46 and 14:58 (Duplicate)
Monitoring Location	DP4
Parameter	Surface Water (Suspended Solids (SS))
Limit Level	>20 mg/L
Measured Level	DP4: 31.8 mg /L DP4 (Duplicate): 30.9 mg /L
Possible reason	From the on-site rainfall record of May 2022, heavy rainfall events were recorded on 22 to 24 May 2022 before the sampling event. No works which may lead to potential SS increase (e.g. active stockpiling and excavation works) was conducted in the vicinity of surface water channel leading to DP4 on the sampling day based on on-site observations and construction activities described by the Contractor. Site surface runoff at DP4 channel was treated by the Wetsep prior to discharge. Yet during the weekly site inspection in the morning and the sampling event, it was observed that the Wetsep was not functioning properly with reference to the on-site checking of the treated water at the outlet of the processing chamber of the Wetsep. During the sampling event, no raining was recorded and no other sources (e.g. Clearwater Bay Country Park, other project sites) was identified in the vicinity of surface water channel leading to DP4T which might cause the SS exceedance at DP4. Contaminated runoff from the unpaved areas during the previous rainfall events could also be the potential source of SS contributing to the exceedance. The SS exceedance at DP4 was therefore deemed to Project-related activities.
Action Taken / Action to be Taken	The monitoring frequency shall be increased to weekly in accordance with Table 4.5b of the updated EM&A Manual until no exceedance of Limit Level. Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. In addition, the Contractor shall review the efficiency of the Wetsep near sediment trap and monitor the Wetsep operation regularly to ensure it is functioning properly at all times.

Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 20 June 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	30 June 2022
Time	11:15
Monitoring Location	DP4
Parameter	Surface Water (Suspended Solids (SS))
Limit Level	>20 mg/L
Measured Level	28.2 mg /L
Possible reason	From the on-site rainfall record of June 2022, heavy rainfall events were recorded on 29 and 30 June 2022 before the sampling event. No works which may lead to potential SS increase (e.g. active stockpiling and excavation works) was conducted in the vicinity of surface water channel leading to DP4 on the sampling day based on on-site observations and construction activities described by the Contractor. Site surface runoff at DP4 channel was treated by the Wetsep prior to discharge. During the sampling event, no raining was recorded and no other sources (e.g. other project sites) was identified in the vicinity of surface water channel leading to DP4 which might cause the SS exceedance at DP4. Contaminated runoff from the unpaved areas during the previous rainfall events could be the potential source of SS contributing to the exceedance. The SS exceedance at DP4 was therefore deemed to Project-related activities. It should be noted that although the measured SS level exceeded the limit level of the EM&A programme, it is still within the WPCO effluent discharge limit of SS for the Junk Bay Water Control Zone (30 mg/L). The discharge of surface water with this SS level from DP4 will not cause adverse water quality impact to the Junk Bay Water Control Zone.
Action Taken / Action to be Taken	Weekly surface water quality monitoring (SS) shall be continued at DP4 until no exceedance of Limit Level in accordance with Table 4.5b of the updated EM&A Manual. Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. In addition, the Contractor shall review the efficiency of the Wetsep near sediment trap and monitor the Wetsep operation regularly to ensure it is functioning properly at all times.

Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 19 July 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	8 July 2022
Time	10:45
Monitoring Location	DP4
Parameter	Surface Water (Suspended Solids (SS))
Limit Level	>20 mg/L
Measured Level	26.3 mg /L
Possible reason	From the on-site rainfall record of July 2022, heavy rainfall events were recorded on 1, 2 and 6 July 2022 before the sampling event. Amber rainstorm warning signal was also issued by the Hong Kong Observatory on 1 July 2022. No works which may lead to potential SS increase (e.g. active stockpiling and excavation works) was conducted in the vicinity of surface water channel leading to DP4 on the sampling day based on on-site observations and construction activities described by the Contractor. Site surface runoff at DP4 channel was treated by the Wetsep prior to discharge. During the sampling event, no raining was recorded and no other sources (e.g. other project sites) was identified in the vicinity of surface water channel leading to DP4 which might cause the SS exceedance at DP4. Contaminated runoff from the unpaved areas during the previous rainfall events could be the potential source of SS contributing to the exceedance. The SS exceedance at DP4 was therefore deemed to Project-related activities. It should be noted that although the measured SS level exceeded the limit level of the EM&A programme, it is still within the WPCO effluent discharge limit of SS for the Junk Bay Water Control Zone (30 mg/L). The discharge of surface water with this SS level from DP4 will not cause adverse water quality impact to the Junk Bay Water Control Zone.
Action Taken / Action to be Taken	Weekly surface water quality monitoring (SS) shall be continued at DP4 until no exceedance of Limit Level in accordance with Table 4.5b of the updated EM&A Manual. Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. In addition, the Contractor shall review the efficiency of the Wetsep near sediment trap and monitor the Wetsep operation regularly to

	ensure it is functioning properly at all times.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 19 July 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	12 August 2022 – 20 August 2022
Monitoring Location	Pump Station No. 4X (Cell 4X)
Parameter	Leachate level
Limit Levels	> 186 cm
Measured Level	<u>Average of Meter No. X-7 and No. X-8</u> 12 Aug 2022: 308 cm 13 Aug 2022: 330 cm 14 Aug 2022: 307 cm 15 Aug 2022: 307 cm 16 Aug 2022: 294 cm 17 Aug 2022: 278 cm 18 Aug 2022: 262 cm 19 Aug 2022: 244 cm 20 Aug 2022: 216 cm
Possible reason	As confirmed by the Contractor, the leachate collection system and leachate treatment plant were under normal operating conditions during the reporting period. From the on-site rainfall record of August 2022, heavy rainfall events (up to 63 mm per day) were recorded from 2 to 12 August 2022, before the commencement of Cell 4X operation. Amber rainstorm warning signal was also issued by the Hong Kong Observatory on 3, 5 and 12 August 2022. Light rainfall events (up to 7mm per day) were recorded from 13 August to 20 August 2022. Upon the commencement of Cell 4X operation (on 12 August 2022), the ET site representative observed the accumulation of surface water at Cell 4X basin, at a distance from the actual tipping area, which could contribute to the exceedances. Based on this observation, the leachate level exceedances at Pump Station No. 4X were deemed to Project-related activities. It is understood that the large volume of leachate (contaminated surface runoff) accumulated at Cell 4X has exceeded the leachate treatment capacity (average daily effluent discharge volume of 1,941 m^3 recorded from 12 to 20 August 2022, with daily effluent discharge limit of 2,000 m^3 as stipulated in the WPCO license).
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The ET requested the Contractor to notify the ET, IEC, IC and the Employer immediately if there is an exceedance of the leachate level. The ET site representative will conduct more frequently inspections of the

	leachate level meter during the routine inspection. The Contractor is reminded to closely monitor the operating conditions of the leachate collection system (e.g. set alarm when the leachate level reach about 80% of the Limit Level) and pump out the leachate for treatment to avoid any exceedance of the Limit Level.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 19 September 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	18 August 2022
Time	11:25
Monitoring Location	MWX-7
Parameter	Chemical Oxygen Demand (COD)
Limit Levels	>36 mg /L
Measured Level	43 mg /L
Possible reason	Groundwater contaminated with leachate is commonly characterized by high COD and ammoniacal-nitrogen levels as a result of degradation of organic matters in the waste. The ammoniacal-nitrogen monitoring result at groundwater monitoring well MWX-7 (5.63 mg/L) and the COD monitoring results of the groundwater monitoring wells adjacent to MWX-7 (MWX-6: 30 mg/L and MWX-8: 29 mg/L) are well within the respective limit levels. Hence, there is a low possibility of the elevation of COD level at MWX-7 is due to leachate contamination from SENTX operation or at least it is not conclusive to base on these results to demonstrate exceedance was due to leachate contamination. In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 6 September 2022 to confirm findings. Exceedance of COD Limit Level was recorded at MWX-7 (42 mg/L) during the sampling event. MWX-7 showed consecutive exceedance of the groundwater quality limit. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated COD concentration measured at MWX-7 (with detection of elevated levels of methane (up to 4.2% v/v)) on 18 August 2022 could be due to localised organic matters within or around the monitoring wells and background fluctuation. Due to the presence of influencing factor from non-project source and the COD levels at all other groundwater monitoring wells are within the respective limit level, there is no adequate evidence showing that the COD level exceedance measured at MWX-7 on 18 August 2022 was deemed to Project-related activities. It should also be noted that although the COD level exceeded the limit level of the EM&A programme, it is still well within the range

	of the groundwater baseline monitoring results (49 mg/L), WPCO effluent discharge limit of COD (80 mg/L) and the standard for effluents discharged into the inshore waters of the Junk Bay Water Control Zone as stipulated under Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (80 mg/L). The slight exceedance of COD at MWX-7 on 18 August 2022 will not cause adverse water quality impact to the Junk Bay Water Control Zone.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the groundwater quality monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 30 September 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	6 September 2022
Time	13:32
Monitoring Location	MWX-7
Parameter	Chemical Oxygen Demand (COD)
Limit Levels	>36 mg /L
Measured Level	42 mg /L
Possible reason	Groundwater contaminated with leachate is commonly characterized by high COD and ammoniacal-nitrogen levels as a result of degradation of organic matters in the waste. The ammoniacal-nitrogen monitoring result at groundwater monitoring well MWX-7 (5.04 mg/L) and the COD monitoring results of the groundwater monitoring wells adjacent to MWX-7 (MWX-6: 44 mg/L and MWX-8: 27 mg/L) are well within the respective limit levels. Hence, there is a low possibility of the elevation of COD level at MWX-7 is due to leachate contamination from SENTX operation or at least it is not conclusive to base on these results to demonstrate exceedance was due to leachate contamination. In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 11 October 2022 to confirm findings. COD concentration of 22 mg/L (below the Limit Level) was measured at MWX-7 during the sampling event, which demonstrate no consecutive groundwater quality impact at the monitoring location. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated COD concentration measured at MWX-7 (with detection of elevated levels of methane (up to 4.2% v/v)) on 18 August 2022 could be due to localised organic matters within or around the monitoring wells and background fluctuation. Due to the presence of influencing factor from non-project source and the subsequent month monitoring result at MWX-7 did not show any exceedance, there is no adequate evidence showing that the COD level exceedance measured at MWX-7 on 6 September 2022 was deemed to Project-related activities. It should also be noted that although the COD level exceeded the

	limit level of the EM&A programme, it is still well within the range of the groundwater baseline monitoring results (49 mg/L), WPCO effluent discharge limit of COD (80 mg/L) and the standard for effluents discharged into the inshore waters of the Junk Bay Water Control Zone as stipulated under Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (80 mg/L). The slight exceedance of COD at MWX-7 on 6 September 2022 will not cause adverse water quality impact to the Junk Bay Water Control Zone.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the groundwater quality monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 23 November 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	30 September 2022 – 3 October 2022
Monitoring Location	Pump Station No. 4X (Cell 4X)
Parameter	Leachate level
Limit Levels	> 186 cm
Measured Level	Average of Meter No. X-7 and No. X-8 30 Sep 2022: 246 cm 1 Oct 2022: 254 cm 2 Oct 2022: 234 cm 3 Oct 2022: 212 cm
Possible reason	As confirmed by the Contractor, the leachate collection system and leachate treatment plant were under normal operating conditions during the reporting period. From the on-site rainfall record of September and October 2022, heavy rainfall events (up to 98 mm per day) were recorded from 30 September to 3 October 2022. Amber rainstorm warning signal was also issued by the Hong Kong Observatory on 30 September 2022. Accumulation of surface water at Cell 4X basin was observed during the reporting period, which could contribute to the leachate level exceedances. Based on this observation, the leachate level exceedances at Pump Station No. 4X were deemed to Project-related activities. It is understood that the large volume of leachate (contaminated surface runoff) accumulated at Cell 4X has exceeded the leachate treatment capacity (daily maximum effluent discharge volume of 1,964 m^3 recorded from 30 September to 3 October 2022, with daily effluent discharge limit of 2,000 m^3 as stipulated in the WPCO license).
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to closely monitor the operating conditions of the leachate collection system (e.g. set alarm when the leachate level reach about 80% of the Limit Level) and pump out the leachate for treatment to avoid any exceedance of the Limit Level.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 23 November 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	3 November 2022 (Pump Station No. 3X) 3 - 4 November 2022 (Pump Station No. 4X)
Monitoring Location	Pump Station No. 3X (Cell 3X) and No. 4X (Cell 4X)
Parameter	Leachate level
Limit Levels	Pump Station No. 3X: > 175 cm Pump Station No. 4X: > 186 cm
Measured Level	<u>Pump Station No. 3X (Average of Meter No. X-5 and No. X-6)</u> 3 Nov 2022: 182 cm <u>Pump Station No. 4X (Average of Meter No. X-7 and No. X-8)</u> 3 Nov 2022: 235 cm 4 Nov 2022: 195 cm
Possible reason	From the on-site rainfall record of November 2022, heavy rainfall events (up to 39 mm per day) were recorded from 1 to 4 November 2022. Amber rainstorm warning signal was also issued by the Hong Kong Observatory on 3 November 2022. As confirmed by the Contractor, the leachate collection system and leachate treatment plant were under normal operating conditions during the reporting period. However, effluent discharge pipe relocation works were conducted from 31 October to 2 November 2022 (before the monitoring event) and effluent could not be discharged during the period, which could contribute to the leachate level exceedances. Based on the above, the leachate level exceedances at Pump Station No. 3X and 4X were deemed to Project-related activities. It is understood that the large volume of leachate (contaminated surface runoff) accumulated at Cell 3X and 4X has exceeded the leachate treatment capacity (daily maximum effluent discharge volume of 1,996 m^3 recorded from 3 to 4 November 2022, with daily effluent discharge limit of 2,000 m^3 as stipulated in the WPCO license).
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to closely monitor the operating conditions of the leachate collection system (e.g. set alarm when the leachate level reach about 80% of the Limit Level) and pump out the leachate for treatment to avoid any exceedance of the Limit Level. The Contractor is also reminded to schedule LTP-related maintenance works during the dry season to ensure full operation of the LTP during rainy days.

Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 27 December 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	6 December 2022
Time	14:10
Monitoring Location	Effluent discharged from Leachate Treatment Plant
Parameter	Chromium
Limit Levels	>300 µg/L
Measured Level	343 µg/L
Possible reason	As confirmed by the Contractor, the Leachate Treatment Plant (LTP) was under normal operating conditions before and during the sampling event. The other leachate quality monitoring results at LTP on 6 December 2022 were well within the respective limit levels. It is possible that the slight exceedance of chromium limit level measured on 6 December 2022 could be due to treatment instability (e.g. short retention time or fluctuation of pH/ temperature during the treatment process) which limit the chromium removal efficiency. Hence, the chromium exceedance at LTP on 6 December 2022 is considered to be Project related. In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 4 January 2023 to confirm findings. Chromium concentration of 133 µg/L (below the Limit Level) was measured during the sampling event, which demonstrate no consecutive leachate quality impact at the LTP.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the leachate quality monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

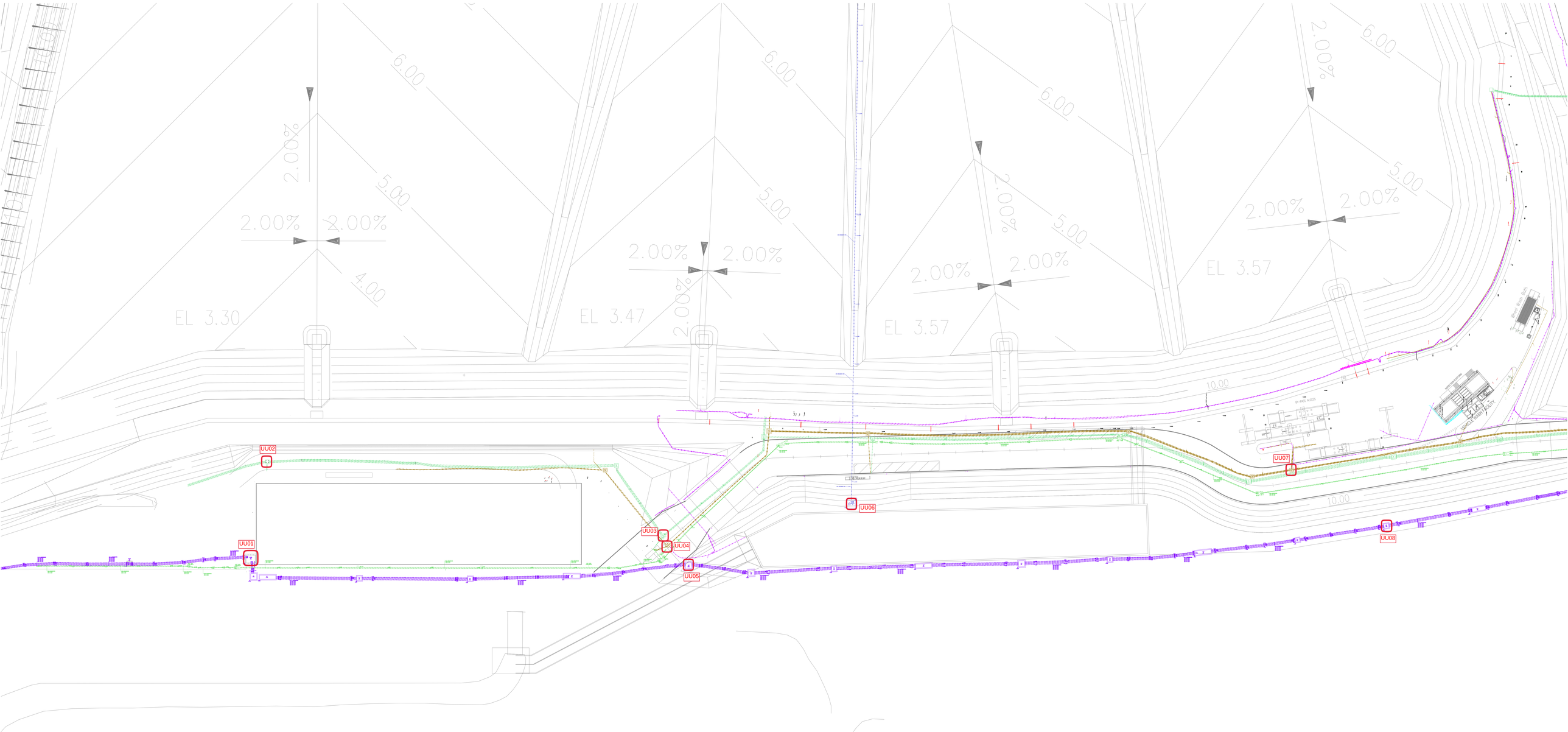
Prepared by: Abbey Lau
Designation: Environmental Team
Date: 20 February 2023

Annex G

Landfill Gas

Annex G1

Landfill Gas Monitoring Locations for Service Voids, Utilities and Manholes along the Site Boundary and Within the SENTX Site


6.00
5.00
4.00
2.00%
EL 3.30
EL 3.47
EL 3.57
EL 3.57
10.00
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UU01
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UU19
UU20
UU21
UU22
UU23
HARD STANDING
EPD BUILDING
CIVIL BUILDING
CAR PARK
LABORATORY BUILDING
MAINTENANCE BUILDING
EQUIPMENT STORAGE AREA (SOFT STANDING)
VEHICLE WASH FACILITY
INSPECTION PLATFORM
Wheel Wash Bath
LANDFILL GAS CONTROL ROOM & SWITCHROOM
DIESEL FUEL TANKS
PETROLEUM STORE
BIOPLANT BUILDING
EPD CONFERENCE ROOM
CAR PARK SHELTER
WATER TANK

Annex G2

Landfill Gas Monitoring Results

Table G2.1 Landfill Gas Monitoring Results at Perimeter LFG Monitoring Wells

January 2022				
Location	**Water Level (mPD)**	**Methane (% (v/v))**	**Carbon Dioxide (% (v/v))**	**Oxygen (% (v/v))**
LFG1	2.33	0.0	0.0	20.4
LFG2	2.22	0.0	0.0	20.4
LFG3	2.38	0.0	0.1	20.2
LFG4	2.2	0.0	0.0	20.2
LFG5	2.49	0.0	0.2	10.9
LFG6	2.16	0.0	0.0	20.3
LFG7	2.29	0.0	0.0	20.2
LFG8	2.25	0.0	0.0	20.2
LFG9	2.22	0.0	0.0	20.3
LFG10	1.94	0.0	0.0	20.3
LFG11	2.06	0.0	0.3	11.8
LFG12	2.02	0.0	0.0	20.0
LFG13	1.86	17.4	0.3	0.4
LFG14	1.63	0.0	0.0	19.8
LFG15	1.87	0.0	0.1	19.5
LFG16	1.9	0.0	0.1	19.6
LFG17	2.08	0.0	0.0	20.1
LFG18	2.21	0.0	0.1	20.1
LFG19	2.27	0.0	0.0	20.1
LFG20	2.37	0.0	2.5	13.6
LFG21	2.53	0.0	2.3	12.5
LFG22	2.21	0.0	1.4	15.6
LFG23	11.65	0.0	2.1	18.3
LFG24	5.99	0.0	0.7	19.4
GP1	Probe bent	0.0	0.1	19.9
GP2 (shallow)	Probe bent	0.1	0.1	20.0
GP2 (deep)	Probe bent	0.1	0.1	20.0
GP3 (shallow)	Probe bent	0.0	0.1	20.1
GP3 (deep)	Probe bent	0.0	0.1	20.1
GP4 (shallow)	Probe bent	0.0	0.2	20.2
GP4 (deep)	Probe bent	0.0	0.1	20.2
GP5 (shallow)	Probe bent	0.0	0.1	20.2
GP5 (deep)	37.47	0.0	0.1	20.2
GP6	36.70	0.0	6.5	14.4
GP7	35.48	0.0	0.1	20.1
GP12	Dry	0.0	0.6	19.4
GP15	2.28	0.0	0.0	20.4
P7	2.26	0.0	0.0	20.3
P8	2.38	0.0	0.0	20.4
P9	2.25	0.0	0.0	20.4
February 2022				
Location	**Water Level (mPD)**	**Methane (% (v/v))**	**Carbon Dioxide (% (v/v))**	**Oxygen (% (v/v))**
LFG1	2.33	0.0	0.1	20.9
LFG2	2.27	0.0	0.1	20.9
LFG3	2.31	0.0	0.9	19.6
LFG4	2.23	0.0	0.1	20.9
LFG5	2.49	0.0	0.3	11.9
LFG6	2.18	0.0	0.1	20.8
LFG7	2.30	0.0	0.1	20.9
LFG8	2.24	0.0	0.1	21.0
LFG9	2.24	0.0	0.1	20.9
LFG10	1.97	0.0	0.1	20.7
LFG11	1.97	0.0	0.2	13.9

LFG12	1.86	0.0	0.1	20.1
LFG13	1.90	6.2	0.9	0.9
LFG14	1.67	0.0	0.1	20.6
LFG15	1.93	0.0	0.3	18.9
LFG16	1.98	0.0	0.1	20.5
LFG17	2.04	0.0	0.1	20.9
LFG18	3.13	0.0	0.1	20.6
LFG19	3.15	0.0	0.1	20.8
LFG20	2.05	0.0	0.7	19.2
LFG21	2.24	0.0	2.1	13.3
LFG22	2.15	0.0	1.8	12.6
LFG23	12.41	0.0	0.9	20.0
LFG24	5.76	0.0	0.8	19.8
GP1	Probe bent	0.0	0.1	20.5
GP2 (shallow)	Probe bent	0.0	0.1	20.6
GP2 (deep)	Probe bent	0.0	0.1	20.6
GP3 (shallow)	Probe bent	0.0	0.1	20.7
GP3 (deep)	Probe bent	0.0	0.7	19.4
GP4 (shallow)	Probe bent	0.0	0.2	20.7
GP4 (deep)	Probe bent	0.0	0.1	20.7
GP5 (shallow)	Probe bent	0.0	0.1	20.8
GP5 (deep)	38.03	0.0	0.1	20.8
GP6	35.98	0.0	6.7	15.2
GP7	35.86	0.0	0.2	20.9
GP12	1.60	0.0	0.2	20.9
GP15	2.34	0.0	0.1	20.9
P7	2.18	0.0	0.1	20.9
P8	2.37	0.0	0.1	20.9
P9	**2.24**	**0.0**	**0.1**	**20.9**

March 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	2.05	0.0	0.1	19.1
LFG2	1.96	0.0	0.4	19.3
LFG3	2.1	0.0	0.0	20.5
LFG4	2.06	0.0	0.0	20.6
LFG5	2.45	0.0	0.0	20.5
LFG6	1.96	0.0	0.0	20.4
LFG7	2.38	0.0	0.0	20.4
LFG8	2.24	0.0	0.0	20.5
LFG9	2.17	0.0	0.0	20.4
LFG10	1.93	0.0	0.0	20.4
LFG11	2.25	0.0	0.0	20.3
LFG12	2.19	0.0	0.0	20.2
LFG13	2.05	0.0	0.0	19.7
LFG14	1.81	0.0	0.0	20.1
LFG15	2	0.0	0.0	20.2
LFG16	2.1	0.0	0.0	20.0
LFG17	2.28	0.0	0.0	20.0
LFG18	2.45	0.0	0.1	19.2
LFG19	2.52	0.0	0.0	19.7
LFG20	2.54	0.0	0.4	18.5
LFG21	2.69	0.0	2.0	7.5
LFG22	2.38	0.0	0.5	18.2
LFG23	12.53	0.0	1.4	18.4
LFG24	5.96	0.0	0.8	18.4
GP1	Probe bent	0.0	3.1	15.8
GP2 (shallow)	Probe bent	0.0	0.1	20.2
GP2 (deep)	Probe bent	0.0	0.1	20.2
GP3 (shallow)	Probe bent	0.0	3.3	17.3

GP3 (deep)	Probe bent	0.0	0.1	20.3
GP4 (shallow)	Probe bent	0.0	0.2	20.3
GP4 (deep)	Probe bent	0.0	0.1	21.5
GP5 (shallow)	Probe bent	0.0	0.1	20.4
GP5 (deep)	38	0.0	0.1	20.4
GP6	36.15	0.0	0.4	19.9
GP7	35.89	0.0	0.1	19.9
GP12	1.48	0.0	0.6	18.7
GP15	2.03	0.0	0.0	20.5
P7	1.99	0.0	0.0	20.4
P8	2.11	0.0	0.0	20.4
P9	1.99	0.0	0.0	20.5

April 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	2.19	0.0	0.1	19.3
LFG2	2.12	0.0	0.4	18.7
LFG3	2.25	0.0	1.3	17.9
LFG4	2.08	0.0	0.0	19.8
LFG5	2.39	0.0	0.1	9.5
LFG6	2.08	0.0	0.0	20.0
LFG7	2.38	0.0	0.0	20.0
LFG8	2.29	0.0	0.0	20.2
LFG9	2.23	0.0	0.1	10.8
LFG10	1.97	0.0	0.0	16.5
LFG11	2.19	0.0	0.1	8.6
LFG12	2.12	0.0	0.0	20.2
LFG13	2.11	5.1	0.1	1.8
LFG14	1.86	0.0	0.0	15.9
LFG15	2.06	0.0	0.3	16.8
LFG16	2.18	0.0	0.0	19.8
LFG17	2.25	0.1	0.5	12.1
LFG18	2.35	0.0	0.0	20.0
LFG19	2.43	0.0	0.0	20.0
LFG20	2.38	0.0	0.3	19.2
LFG21	2.53	0.0	2.1	11.0
LFG22	2.30	0.0	0.0	20.0
LFG23	12.52	0.0	1.3	18.3
LFG24	5.92	0.0	0.8	18.4
GP1	Probe bent	0.0	0.1	20.5
GP2 (shallow)	Probe bent	0.0	0.1	20.5
GP2 (deep)	Probe bent	0.0	0.0	20.5
GP3 (shallow)	Probe bent	0.0	2.1	18.9
GP3 (deep)	Probe bent	0.0	0.1	20.4
GP4 (shallow)	Probe bent	0.0	0.1	20.2
GP4 (deep)	Probe bent	0.0	0.1	20.2
GP5 (shallow)	Probe bent	0.0	0.1	20.1
GP5 (deep)	37.86	0.0	0.0	20.2
GP6	36.00	0.0	6.1	14.5
GP7	35.78	0.0	0.0	19.8
GP12	1.63	0.0	0.3	19.2
GP15	2.17	0.0	0.0	20.5
P7	2.13	0.0	0.0	20.4
P8	2.25	0.0	0.0	20.4
P9	2.13	0.0	0.0	20.5

May 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	3.16	0.0	0.1	19.6
LFG2	3.05	0.0	0.7	16.6

LFG3	3.19	0.0	0.0	20.1
LFG4	2.82	0.0	0.3	8.0
LFG5	2.9	0.0	0.2	3.3
LFG6	3.13	1.8	2.1	0.2
LFG7	3.29	0.0	0.0	18.8
LFG8	3.34	8.9	0.0	3.2
LFG9	3.22	1.5	0.0	13.5
LFG10	3.05	2.9	0.1	0.2
LFG11	3.61	0.8	0.0	18.7
LFG12	3.24	0.0	0.0	19.8
LFG13	3.05	0.0	0.0	19.7
LFG14	2.71	2.4	0.0	13.0
LFG15	2.86	4.1	0.0	12.3
LFG16	3.26	0.0	0.0	19.7
LFG17	2.83	15.9	0.1	0.2
LFG18	4.41	0.0	0.0	20.8
LFG19	5.02	0.0	0.0	19.9
LFG20	4.89	0.0	0.0	19.9
LFG21	4.78	0.0	0.0	20.1
LFG22	4.39	0.0	0.0	19.7
LFG23	12.9	0.0	3.0	16.2
LFG24	6.13	0.0	1.0	18.2
GP1	Probe bent	0.0	0.1	20.3
GP2 (shallow)	Probe bent	0.0	0.1	20.2
GP2 (deep)	Probe bent	0.0	0.0	20.2
GP3 (shallow)	Probe bent	0.0	2.1	15.2
GP3 (deep)	Probe bent	0.0	0.1	20.1
GP4 (shallow)	Probe bent	0.0	0.1	20.1
GP4 (deep)	Probe bent	0.0	0.4	19.4
GP5 (shallow)	Probe bent	0.0	3.8	14.9
GP5 (deep)	44.82	0.0	0.1	20.0
GP6	43.03	0.0	5.4	14.6
GP7	37.11	0.0	0.6	18.3
GP12	2.59	0.0	0.1	20.0
GP15	4.15	0.0	0.0	20.2
P7	3.08	0.0	0.0	20.1
P8	3.16	0.0	0.0	20.0
P9	3.14	0.0	0.0	20.4

June 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	3.37	0.0	0.3	17.3
LFG2	3.25	0.0	0.0	20.1
LFG3	3.36	0.0	0.0	20.0
LFG4	3.21	0.0	0.7	5.8
LFG5	3.47	0.0	0.2	1.0
LFG6	3.43	0.0	0.5	13.1
LFG7	3.63	0.0	0.0	19.4
LFG8	3.6	3.3	0.5	8.6
LFG9	3.46	1.0	0.0	12.9
LFG10	3.37	2.6	0.1	1.6
LFG11	3.93	0.0	0.0	18.1
LFG12	3.61	0.0	0.0	19.7
LFG13	3.24	0.0	0.0	17.3
LFG14	2.93	0.3	0.0	19.1
LFG15	3.09	1.9	0.0	15.7
LFG16	3.47	0.0	0.0	19.6
LFG17	3.38	1.3	0.0	16.5
LFG18	4.67	0.0	0.0	19.8
LFG19	5.28	0.0	0.0	19.8

LFG20	5.02	0.0	0.1	19.3
LFG21	4.99	0.0	0.0	19.9
LFG22	4.62	0.0	0.0	19.8
LFG23	13.08	0.0	4.2	13.7
LFG24	6.71	0.0	0.8	18.6
GP1	Probe bent	0.0	0.1	18.8
GP2 (shallow)	Probe bent	0.0	0.0	20.0
GP2 (deep)	Probe bent	0.0	0.2	19.9
GP3 (shallow)	Probe bent	0.0	0.1	19.8
GP3 (deep)	Probe bent	0.0	1.0	19.1
GP4 (shallow)	Probe bent	0.0	0.1	19.8
GP4 (deep)	Probe bent	0.0	0.1	19.8
GP5 (shallow)	Probe bent	0.0	3.2	13.9
GP5 (deep)	45.76	0.0	0.1	19.8
GP6	44.68	0.0	0.1	19.8
GP7	37.23	0.0	0.4	18.2
GP12	2.81	0.0	0.3	19.6
GP15	3.35	0.0	0.1	20.0
P7	3.31	0.0	0.0	20.0
P8	3.43	0.0	0.1	20.1
P9	3.31	0.0	0.1	20.0

July 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	2.95	0.0	0.5	17.2
LFG2	2.86	0.0	0.6	17.9
LFG3	3.03	0.0	0.0	19.3
LFG4	2.97	0.0	0.2	18.7
LFG5	3.38	0.0	0.0	19.2
LFG6	2.9	0.0	0.0	19.3
LFG7	3.3	0.0	0.0	19.2
LFG8	3.19	0.0	0.0	19.4
LFG9	3.07	0.0	0.0	19.4
LFG10	2.99	0.0	0.0	19.4
LFG11	3.27	0.0	0.0	19.5
LFG12	3.16	0.0	0.0	19.5
LFG13	2.8	0.0	0.0	19.4
LFG14	2.64	0.0	0.0	19.3
LFG15	2.98	0.0	0.0	19.4
LFG16	3.07	0.0	0.0	19.3
LFG17	3.04	0.0	0.0	19.1
LFG18	3.82	0.0	0.0	19.1
LFG19	4.21	0.0	0.0	19.1
LFG20	4.03	0.0	0.0	19.0
LFG21	4.05	0.0	0.0	19.0
LFG22	3.65	0.0	0.0	19.0
LFG23	12.76	0.0	0.4	18.4
LFG24	6.65	0.0	0.0	18.8
GP1	Probe bent	0.2	3.4	12.5
GP2 (shallow)	Probe bent	0.1	0.0	19.6
GP2 (deep)	Probe bent	0.3	0.1	19.5
GP3 (shallow)	Probe bent	0.0	0.4	18.8
GP3 (deep)	Probe bent	0.0	0.5	19.5
GP4 (shallow)	Probe bent	0.0	0.5	18.7
GP4 (deep)	Probe bent	0.0	0.2	19.1
GP5 (shallow)	Probe bent	0.0	5.0	12.8
GP5 (deep)	42.78	0.0	0.1	18.9
GP6	39.99	0.0	1.5	17.3
GP7	36.95	0.0	1.4	15.7
GP12	2.38	0.0	0.0	19.4

GP15	2.97	0.0	0.0	19.6
P7	2.89	0.0	0.0	19.4
P8	3.01	0.0	0.0	19.5
P9	2.89	0.0	0.0	19.6

August 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	3.36	0.0	0.4	13.9
LFG2	3.27	0.0	1.0	17.4
LFG3	3.43	0.0	0.0	19.7
LFG4	3.22	0.0	0.5	6.0
LFG5	3.48	0.0	0.2	1.3
LFG6	3.4	0.0	2.1	9.4
LFG7	3.68	0.0	0.0	17.2
LFG8	3.66	0.0	0.0	20.1
LFG9	3.52	0.2	0.0	13.3
LFG10	3.36	1.3	0.1	2.4
LFG11	3.74	0.0	0.0	19.5
LFG12	3.50	0.0	0.0	20.6
LFG13	3.14	0.0	0.0	20.5
LFG14	2.89	0.2	0.0	19.8
LFG15	3.06	3.3	0.0	13.1
LFG16	3.45	0.0	0.0	20.4
LFG17	3.38	0.0	0.0	19.3
LFG18	4.48	0.0	0.0	19.5
LFG19	3.95	0.0	0.0	19.6
LFG20	4.71	0.0	0.0	19.5
LFG21	4.63	0.0	0.0	19.9
LFG22	5.27	0.0	0.0	19.4
LFG23	12.89	0.0	2.6	15.8
LFG24	7	0.0	0.0	19.9
GP1	Probe bent	0.0	6.9	7.7
GP2 (shallow)	Probe bent	0.0	0.1	19.5
GP2 (deep)	Probe bent	0.0	0.0	19.7
GP3 (shallow)	Probe bent	0.0	0.1	19.6
GP3 (deep)	Probe bent	0.0	0.2	19.4
GP4 (shallow)	Probe bent	0.0	0.2	19.5
GP4 (deep)	Probe bent	0.0	0.1	19.6
GP5 (shallow)	Probe bent	0.0	5.0	13.2
GP5 (deep)	45.07	0.0	0.1	19.8
GP6	42.63	0.0	5.8	12.9
GP7	37.05	0.0	0.0	19.8
GP12	2.79	0.0	0.0	19.7
GP15	3.34	0.0	0.0	19.9
P7	3.31	0.0	0.0	20.0
P8	3.42	0.0	0.0	19.9
P9	3.3	0.1	0.0	20.0

September 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	2.64	0.0	1.5	16.8
LFG2	2.54	0.0	2.4	16.2
LFG3	2.71	0.0	1.0	17.0
LFG4	2.65	0.0	0.0	20.4
LFG5	3.04	0.0	0.0	20.3
LFG6	2.56	0.0	0.0	20.2
LFG7	2.86	0.0	0.0	19.8
LFG8	2.76	0.0	0.0	19.5
LFG9	2.70	0.0	0.0	20.0
LFG10	2.5	0.0	0.0	20.1

LFG11	2.73	0.0	0.0	20.0
LFG12	2.64	0.0	0.0	20.0
LFG13	2.33	0.0	0.0	19.9
LFG14	2.22	0.0	0.0	19.9
LFG15	2.37	0.0	0.0	19.9
LFG16	2.66	0.0	0.0	19.8
LFG17	2.65	0.0	0.0	19.6
LFG18	3.2	0.0	0.0	19.5
LFG19	3.42	0.0	0.1	19.6
LFG20	3.52	0.0	0.2	19.1
LFG21	3.63	0.0	0.0	19.8
LFG22	3.19	0.0	0.0	19.8
LFG23	12.61	0.0	0.6	19.0
LFG24	6.58	0.0	0.0	19.7
GP1	Probe bent	0.1	8.5	7.3
GP2 (shallow)	Probe bent		Unmeasurable due to broken probe	
GP2 (deep)	Probe bent		Unmeasurable due to broken probe	
GP3 (shallow)	Probe bent	0.0	0.4	19.6
GP3 (deep)	Probe bent	0.0	0.1	20.0
GP4 (shallow)	Probe bent	0.0	0.1	19.9
GP4 (deep)	Probe bent	0.0	0.4	19.7
GP5 (shallow)	Probe bent	0.0	8.4	14.6
GP5 (deep)	39.73	0.0	0.0	20.0
GP6	38.29	0.0	6.1	12.6
GP7	36.53	0.0	0.0	19.8
GP12	2.07	0.0	0.0	20.3
GP15	2.61	0.0	0.0	20.1
P7	2.55	0.0	0.0	20.4
P8	2.70	0.0	0.0	20.2
P9	2.58	0.0	0.0	20.2

October 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	4.69	0.0	1.0	14.8
LFG2	3.77	0.0	2.1	15.1
LFG3	3.62	0.0	1.8	13.5
LFG4	3.77	0.0	0.0	18.8
LFG5	3.49	0.0	0.2	8.3
LFG6	3.81	0.0	0.9	13.2
LFG7	3.38	0.0	0.0	17.7
LFG8	3.46	0.0	0.0	19.6
LFG9	3.60	0.0	0.2	8.7
LFG10	3.80	0.0	0.0	19.4
LFG11	3.47	0.0	0.2	9.4
LFG12	3.60	0.0	0.0	19.7
LFG13	4.10	24.1	0.0	3.9
LFG14	5.10	0.0	0.1	19.5
LFG15	4.97	0.0	0.0	17.1
LFG16	4.55	0.0	0.0	18.6
LFG17	4.82	0.0	0.0	17.5
LFG18	3.90	0.0	0.0	18.9
LFG19	3.76	0.0	0.0	18.8
LFG20	3.95	0.0	0.0	19.1
LFG21	5.39	0.0	0.0	19.7
LFG22	6.72	0.0	0.0	19.3
LFG23	14.65	0.0	4.0	15.0
LFG24	25.97	0.0	0.0	18.1
GP1	Probe bent	0.0	7.1	10.2
GP2 (shallow)	Probe broken		Unmeasurable due to broken probe	
GP2 (deep)	Probe broken		Unmeasurable due to broken probe	
GP3 (shallow)	Probe bent	0.0	0.4	18.8

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
GP3 (deep)	Probe bent	0.0	0.1	19.3
GP4 (shallow)	Probe bent	0.0	0.2	19.1
GP4 (deep)	Probe bent	0.0	0.1	19.2
GP5 (shallow)	Probe bent	0.0	7.6	14.0
GP5 (deep)	12.92	0.0	0.0	19.2
GP6	10.03	0.0	6.0	12.0
GP7	2.40	0.0	0.3	18.3
GP12	Probe bent	0.1	0.1	19.3
GP15	3.67	0.2	0.0	19.8
P7	3.21	0.1	0.0	19.5
P8	2.89	0.2	0.0	19.8
P9	2.88	0.2	0.0	20.1

November 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
LFG1	2.58	0.0	0.4	19.1
LFG2	2.47	0.0	1.2	19.1
LFG3	2.54	0.1	0.1	21.2
LFG4	2.5	0.0	0.1	21.2
LFG5	3.44	0.0	0.3	9.3
LFG6	2.49	0.0	0.1	21.1
LFG7	2.77	0.0	0.0	18.5
LFG8	2.7	0.0	0.1	21.3
LFG9	2.75	0.0	0.3	7.4
LFG10	2.41	0.0	0.0	21.4
LFG11	2.11	0.0	0.5	2.8
LFG12	2.56	0.0	0.0	21.4
LFG13	2.27	10.6	0.0	12.2
LFG14	2.06	0.0	0.2	12.8
LFG15	4.46	0.1	0.1	19.7
LFG16	2.62	0.1	0.1	20.9
LFG17	2.96	0.0	0.1	20.5
LFG18	2.95	0.0	0.1	20.4
LFG19	3.07	0.0	0.2	8.3
LFG20	2.99	0.0	0.8	19.6
LFG21	3.1	0.0	3.0	14.5
LFG22	2.77	0.0	2.3	12.3
LFG23	12.52	0.0	1.9	19.6
LFG24	6.36	0.0	0.5	20.1
GP1	Probe bent	0.0	6.4	13.4
GP2 (shallow)	Probe bent	0.0	0.5	19.6
GP2 (deep)	Probe bent	0.0	5.3	13.6
GP3 (shallow)	Probe bent	0.0	0.3	20.5
GP3 (deep)	Probe bent	0.0	0.2	20.6
GP4 (shallow)	Probe bent	0.0	0.2	20.6
GP4 (deep)	Probe bent	0.0	0.1	20.6
GP5 (shallow)	Probe bent	0.0	7.1	16.2
GP5 (deep)	38.81	0.0	0.0	20.7
GP6	36.18	0.0	2.8	17.5
GP7	36.24	0.0	0.0	20.8
GP12	2.01	0.0	0.1	21.1
GP15	2.55	0.0	0.1	21.0
P7	2.51	0.0	0.1	20.8
P8	2.64	0.0	0.1	21.0
P9	2.5	0.0	0.3	20.8

December 2022

Location	Water Level (mPD)	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))

LFG1	2.58	0.0	0.0	20.6
LFG2	2.47	0.0	0.0	20.6
LFG3	2.54	0.0	0.0	20.7
LFG4	2.5	0.0	0.0	20.6
LFG5	3.44	0.0	0.2	13.6
LFG6	2.49	0.0	0.0	20.6
LFG7	2.77	0.0	0.0	20.6
LFG8	2.7	0.0	0.0	20.6
LFG9	2.75	0.0	0.0	20.5
LFG10	2.41	0.0	0.0	20.4
LFG11	2.11	0.0	0.1	10.6
LFG12	2.56	0.0	0.0	20.4
LFG13	2.27	1.6	0.1	16.6
LFG14	2.06	0.0	0.0	20.1
LFG15	4.46	0.0	0.1	19.7
LFG16	2.62	0.0	0.1	20.3
LFG17	2.96	0.0	0.1	20.3
LFG18	2.95	0.0	0.1	20.4
LFG19	3.07	0.0	0.1	20.2
LFG20	2.99	0.0	0.1	20.4
LFG21	3.1	0.0	0.1	20.4
LFG22	2.77	0.0	0.1	20.6
LFG23	12.52	0.0	4.7	15.1
LFG24	6.36	0.0	0.2	20.3
GP1	Probe bent	0.2	6.0	14.6
GP2 (shallow)	Probe bent	0.1	1.2	17.8
GP2 (deep)	Probe bent	0.1	8.0	9.6
GP3 (shallow)	Probe bent	0.1	0.6	19.7
GP3 (deep)	Probe bent	0.0	0.3	20.3
GP4 (shallow)	Probe bent	0.0	1.1	19.5
GP4 (deep)	Probe bent	0.1	0.1	20.5
GP5 (shallow)	Probe bent	0.0	5.5	16.8
GP5 (deep)	38.81	0.0	0.1	20.6
GP6	36.18	0.0	6.5	13.1
GP7	36.24	0.0	0.1	20.7
GP12	2.01	0.0	0.0	20.6
GP15	2.55	0.0	0.1	20.7
P7	2.51	0.0	0.0	20.6
P8	2.64	0.0	0.0	20.6
P9	2.5	0.0	0.1	20.6

Table G2.2 Landfill Gas Monitoring Results at Service Voids, Utilities Pits and Manholes

January 2022			
Location	**Methane (% (v/v))**	**Carbon Dioxide (% (v/v))**	**Oxygen (% (v/v))**
UU01	0.1	0.0	20.6
UU02	0.1	0.0	20.7
UU03	0.2	0.0	20.6
UU04	0.2	0.0	20.3
UU05	0.2	0.0	20.2
UU06	0.2	0.0	20.1
UU07	0.1	0.0	20.7
UU08	0.3	0.0	20.2
UU09	0.0	0.0	20.6
UU10	0.0	0.0	20.7
UU11	0.0	0.0	20.6
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	20.4
UU14	0.0	0.0	20.5
UU15	0.0	0.0	20.3
UU16	0.0	0.0	20.0
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.0	20.0
UU19	0.1	0.0	20.6
UU20	0.0	0.0	20.0
UU21	0.0	0.0	19.2
UU22	0.0	0.1	19.9
UU23	0.0	0.1	19.5
UU24	0.0	0.0	19.6
UU25	0.0	0.0	19.7
UU26	Inaccessible due to on-going construction work		
UU27	0.1	0.0	20.3
UU28	0.0	0.0	19.9
February 2022			
Location	**Methane (% (v/v))**	**Carbon Dioxide (% (v/v))**	**Oxygen (% (v/v))**
UU01	0.0	0.0	21.0
UU02	0.0	0.0	20.9
UU03	0.0	0.0	21.2
UU04	0.0	0.0	21.3
UU05	0.1	0.0	20.8
UU06	0.1	0.0	20.8
UU07	0.0	0.0	21.1
UU08	0.1	0.0	20.9
UU09	0.0	0.0	20.4
UU10	0.0	0.0	20.5
UU11	0.0	0.0	20.8
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	19.9
UU14	0.0	0.0	20.4
UU15	0.0	0.0	20.9
UU16	0.0	0.0	20.3
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.0	21.0
UU19	0.0	0.0	21.2
UU20	0.0	0.1	20.4
UU21	0.0	0.1	20.4
UU22	0.0	0.1	20.4
UU23	0.0	0.1	20.1

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU24	0.0	0.1	20.0
UU25	0.0	0.0	20.0
UU26	0.2	0.0	21.0
UU27	0.0	0.0	20.1
UU28	0.0	0.0	19.9
March 2022			
Location	**Methane (% (v/v))**	**Carbon Dioxide (% (v/v))**	**Oxygen (% (v/v))**
UU01	0.0	0.0	20.7
UU02	0.0	0.0	20.9
UU03	0.1	0.0	20.2
UU04	0.1	0.0	20.2
UU05	0.0	0.0	20.8
UU06	0.0	0.0	20.9
UU07	0.3	0.0	20.7
UU08	0.0	0.0	20.3
UU09	0.0	0.0	20.6
UU10	0.0	0.0	20.3
UU11	0.0	0.0	20.2
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	20.0
UU14	0.0	0.0	19.6
UU15	0.0	0.0	19.8
UU16	0.0	0.0	19.7
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.0	20.4
UU19	0.2	0.0	20.4
UU20	0.0	0.0	19.8
UU21	0.0	0.0	19.7
UU22	0.0	0.1	19.8
UU23	0.0	0.1	20.0
UU24	0.0	0.0	20.3
UU25	0.0	0.0	20.2
UU26	0.0	0.0	19.7
UU27	0.0	0.0	19.4
UU28	0.0	0.0	19.5
April 2022			
Location	**Methane (% (v/v))**	**Carbon Dioxide (% (v/v))**	**Oxygen (% (v/v))**
UU01	0.0	0.0	20.5
UU02	0.0	0.0	20.6
UU03	0.0	0.0	20.3
UU04	0.0	0.0	20.1
UU05	0.0	0.0	20.1
UU06	0.0	0.0	20.4
UU07	0.0	0.0	21.1
UU08	0.0	0.0	20.6
UU09	Inaccessible due to on-going construction work		
UU10	0.0	0.0	20.0
UU11	0.0	0.0	19.9
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	20.9
UU14	0.0	0.0	21.3
UU15	0.0	0.0	20.4
UU16	0.0	0.0	19.2
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.0	19.3
UU19	0.0	0.0	21.9
UU20	0.1	0.0	20.4

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU21	0.0	0.0	20.1
UU22	0.1	0.1	20.3
UU23	0.1	0.1	19.7
UU24	0.0	0.0	19.3
UU25	0.0	0.0	19.5
UU26	0.0	0.0	19.3
UU27	0.0	0.0	19.8
UU28	0.0	0.0	20.0

May 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	0.0	0.0	21.0
UU02	0.0	0.0	21.0
UU03	0.1	0.0	20.4
UU04	0.0	0.0	21.0
UU05	Unmeasurable due to overflow of water		
UU06	0.0	0.0	21.1
UU07	0.1	0.0	21.1
UU08	Unmeasurable due to overflow of water		
UU09	Inaccessible due to on-going construction work		
UU10	0.0	0.0	21.1
UU11	0.0	0.1	21.1
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.1	21.1
UU14	0.0	0.1	21.1
UU15	0.0	0.1	21.1
UU16	0.0	0.0	21.1
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.1	21.0
UU19	0.1	0.0	21.2
UU20	0.1	0.0	20.9
UU21	0.0	0.0	20.9
UU22	0.0	0.1	20.8
UU23	0.0	0.1	20.7
UU24	0.0	0.1	21.0
UU25	0.0	0.1	21.1
UU26	0.0	0.1	21.1
UU27	0.0	0.1	20.5
UU28	0.0	0.1	21.0

June 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	0.0	0.0	19.8
UU02	0.0	0.0	19.6
UU03	0.0	0.0	19.5
UU04	0.0	0.0	19.6
UU05	Unmeasurable due to overflow of water		
UU06	0.0	0.0	19.8
UU07	0.0	0.0	19.9
UU08	0.0	0.0	19.8
UU09	Inaccessible due to on-going construction work		
UU10	0.0	0.0	20.5
UU11	0.0	0.0	19.9
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	20.1
UU14	0.0	0.0	20.2
UU15	0.0	0.0	20.4
UU16	0.0	0.0	20.4
UU17	Voided due to latest site programme and on-going operation work		

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU18	0.0	0.0	20.4
UU19	0.0	0.0	20.1
UU20	0.0	0.0	20.1
UU21	0.0	0.0	19.8
UU22	0.0	0.0	19.8
UU23	0.0	0.0	19.8
UU24	0.0	0.0	20.0
UU25	0.0	0.0	20.0
UU26	0.0	0.0	20.3
UU27	0.0	0.0	20.0
UU28	0.0	0.0	20.0

July 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	0.0	0.0	19.8
UU02	0.0	0.0	20.1
UU03	0.0	0.0	20.2
UU04	0.0	0.0	19.8
UU05	0.0	0.0	19.8
UU06	0.0	0.0	20.0
UU07	0.0	0.0	19.7
UU08	0.0	0.0	20.4
UU09	0.0	0.0	19.4
UU10	0.0	0.0	19.0
UU11	0.0	0.0	20.7
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	20.9
UU14	0.0	0.0	21.0
UU15	0.0	0.0	19.5
UU16	0.0	0.0	18.5
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.1	0.0	20.9
UU19	0.0	0.0	19.8
UU20	0.0	0.0	18.2
UU21	0.0	0.0	18.4
UU22	0.0	0.0	19.0
UU23	0.0	0.0	19.5
UU24	0.0	0.0	20.1
UU25	0.0	0.0	20.3
UU26	0.0	0.0	18.6
UU27	0.0	0.0	20.4
UU28	0.0	0.0	20.8

August 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	Unmeasurable due to overflow of water		
UU02	0.1	0.0	20.8
UU03	0.1	0.0	19.0
UU04	0.1	0.0	20.6
UU05	Unmeasurable due to overflow of water		
UU06	0.1	0.0	20.6
UU07	0.1	0.0	20.9
UU08	Unmeasurable due to overflow of water		
UU09	0.0	0.0	19.6
UU10	0.0	0.0	19.6
UU11	0.0	0.0	19.2
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	19.1
UU14	0.0	0.0	19.2

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU15	0.0	0.0	19.9
UU16	0.0	0.0	19.8
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.0	19.9
UU19	0.1	0.0	20.6
UU20	0.0	0.0	19.7
UU21	0.0	0.0	19.3
UU22	0.0	0.0	19.5
UU23	0.0	0.0	19.8
UU24	0.0	0.0	19.6
UU25	0.0	0.0	19.8
UU26	0.0	0.0	19.4
UU27	0.0	0.0	19.4
UU28	0.0	0.0	19.5

September 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	0.0	0.0	20.8
UU02	0.0	0.0	20.4
UU03	0.0	0.0	20.0
UU04	0.0	0.0	19.7
UU05	0.0	0.0	20.5
UU06	0.0	0.0	20.3
UU07	0.0	0.0	20.1
UU08	0.0	0.0	20.0
UU09	0.0	0.0	20.7
UU10	0.0	0.0	20.6
UU11	0.0	0.0	18.9
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	20.4
UU14	0.0	0.0	20.1
UU15	0.0	0.0	20.6
UU16	0.0	0.0	18.7
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.0	20.8
UU19	0.0	0.0	20.2
UU20	0.0	0.0	18.6
UU21	0.0	0.0	18.5
UU22	0.0	0.0	19.9
UU23	0.0	0.0	19.1
UU24	0.0	0.0	19.4
UU25	0.0	0.0	19.4
UU26	0.0	0.0	19.5
UU27	0.0	0.0	18.8
UU28	0.0	0.0	19.3

October 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	0.0	0.0	19.6
UU02	0.0	0.0	19.6
UU03	0.0	0.0	19.6
UU04	0.0	0.0	19.5
UU05	0.0	0.0	19.4
UU06	0.0	0.0	19.4
UU07	0.1	0.0	19.9
UU08	0.0	0.0	19.8
UU09	0.0	0.0	19.6
UU10	0.0	0.0	19.4
UU11	0.0	0.0	18.3

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	19.8
UU14	0.0	0.0	19.8
UU15	0.0	0.0	19.8
UU16	0.0	0.0	19.9
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	0.0	20.1
UU19	0.1	0.0	19.4
UU20	0.0	0.0	18.6
UU21	0.0	0.0	18.8
UU22	0.0	0.0	19.3
UU23	0.0	0.0	19.7
UU24	0.0	0.0	19.1
UU25	0.0	0.0	19.2
UU26	0.0	0.0	19.4
UU27	0.0	0.0	18.7
UU28	0.0	0.0	19.1

November 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	0.0	0.0	20.9
UU02	0.0	0.0	20.9
UU03	0.1	0.0	20.8
UU04	0.1	0.0	20.8
UU05	Unmeasurable due to overflow of water		
UU06	0.2	0.0	20.6
UU07	0.1	0.0	20.9
UU08	0.2	0.0	20.6
UU09	Inaccessible due to on-going construction work		
UU10	0.0	0.0	20.3
UU11	0.0	0.0	20.6
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	20.3	79.7
UU14	0.0	20.4	79.5
UU15	0.0	20.4	79.6
UU16	0.0	20.3	79.7
UU17	Voided due to latest site programme and on-going operation work		
UU18	0.0	20.3	79.6
UU19	0.0	20.9	79.0
UU20	0.0	20.6	79.4
UU21	0.0	20.6	79.4
UU22	0.0	20.5	79.5
UU23	0.0	20.5	79.5
UU24	0.0	20.1	79.8
UU25	0.0	20.1	79.8
UU26	Inaccessible due to on-going construction work		
UU27	0.0	20.6	79.4
UU28	0.0	20.5	79.4

December 2022

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU01	0.0	0.0	20.2
UU02	0.0	0.0	20.2
UU03	0.0	0.0	20.1
UU04	0.0	0.0	20.2
UU05	0.0	0.0	20.4
UU06	0.0	0.0	20.3
UU07	0.0	0.0	20.0
UU08	0.0	0.0	20.2

Location	Methane (% (v/v))	Carbon Dioxide (% (v/v))	Oxygen (% (v/v))
UU09	0.0	0.0	19.9
UU10	0.0	0.0	19.9
UU11	0.0	0.0	20.0
UU12	Voided due to latest site programme and on-going operation work		
UU13	0.0	0.0	20.0
UU14	0.0	0.0	19.9
UU15	0.0	0.0	19.9
UU16	0.0	0.1	20.2
UU17	Voided due to latest site programme and on-going operation work		
UU18	Inaccessible due to on-going construction work		
UU19	0.0	0.0	20.0
UU20	0.0	0.1	20.2
UU21	0.0	0.1	20.1
UU22	0.0	0.1	20.1
UU23	0.0	0.1	20.1
UU24	0.1	0.1	20.4
UU25	0.1	0.1	20.5
UU26	0.1	0.1	20.3
UU27	0.2	0.1	20.6
UU28	0.1	0.1	20.5

Table G2.3 Landfill Gas Bulk Gas Sampling Monitoring Results

February 2022		
Parameters	**LFG14**	**LFG15**
Methane (% (v/v))	0.0	0.0
Carbon Dioxide (% (v/v))	0.119	0.110
Oxygen (% (v/v))	10.2	20.1
Nitrogen (% (v/v))	90.5	80.3
Carbon Monoxide (% (v/v))	<0.020	<0.020
Hydrogen (% (v/v))	<0.020	<0.020
Ethane (ppmv)	<1.0	<1.0
Propane (ppmv)	<1.0	<1.0
Butane (ppmv)	<1.0	<1.0
May 2022		
Parameters	**LFG12**	**LFG24**
Methane (% (v/v))	0.415	<0.020
Carbon Dioxide (% (v/v))	0.038	1.03
Oxygen (% (v/v))	19.9	19.6
Nitrogen (% (v/v))	78.7	79.0
Carbon Monoxide (% (v/v))	<0.020	<0.020
Hydrogen (% (v/v))	<0.020	<0.020
Ethane (ppmv)	<1.0	<1.0
Propane (ppmv)	<1.0	<1.0
Butane (ppmv)	<1.0	<1.0
August 2022		
Parameters	**LFG20**	**LFG23**
Methane (% (v/v))	<0.020	<0.020
Carbon Dioxide (% (v/v))	0.059	0.062
Oxygen (% (v/v))	20.6	20.7
Nitrogen (% (v/v))	77.5	77.3
Carbon Monoxide (% (v/v))	<0.020	<0.020
Hydrogen (% (v/v))	<0.020	<0.020
Ethane (ppmv)	<1.0	<1.0
Propane (ppmv)	<1.0	<1.0
Butane (ppmv)	<1.0	<1.0
November 2022		
Parameters	**LFG1**	**LFG8**
Methane (% (v/v))	<0.0200	<0.020
Carbon Dioxide (% (v/v))	0.419	0.138
Oxygen (% (v/v))	15.6	17.2
Nitrogen (% (v/v))	80.6	79.2
Carbon Monoxide (% (v/v))	<0.020	<0.020
Hydrogen (% (v/v))	<0.020	<0.020
Ethane (ppmv)	<1.0	<1.0
Propane (ppmv)	<1.0	<1.0
Butane (ppmv)	<1.0	<1.0

Table G2.4 Flammable Gas Surface Emission Monitoring Results (February 2022)

February 2022							
Time	**GPS Coordinates Latitude (N)**	**Longitude (E)**	**Weather Condition**	**Temperature (°C)**	**Wind Direction (Deg)**	**Wind Speed (m/s)**	**Monitoring Results (ppm)**
14:40	22°16′36″	114°16′36″	Sunny	18.8	161	3.6	3
14:50	22°16′24″	114°16′36″	Sunny	21.0	155	3.6	6
May 2022							
Time	**GPS Coordinates Latitude (N)**	**Longitude (E)**	**Weather Condition**	**Temperature (°C)**	**Wind Direction (Deg)**	**Wind Speed (m/s)**	**Monitoring Results (ppm)**
10:55	22°16′33″	114°16′17″	Fine	26.4	040	4.5	3
11:12	22°16′16″	114°27′78″	Fine	27.5	300	2.7	6
11:28	22°16′15″	114°16′33″	Fine	25.8	317	3.1	12
11:36	22°16′14″	114°16′28″	Fine	26.9	275	2.5	8
11:50	22°16′23″	114°16′26″	Fine	29.3	309	1.1	8
11:58	22°16′30″	114°16′26″	Fine	28.5	316	1.1	21
12:13	22°16′37″	114°16′27″	Fine	29.7	313	1.5	15
12:30	22°16′37″	114°16′31″	Fine	27.2	305	0.6	12
August 2022							
Time	**GPS Coordinates Latitude (N)**	**Longitude (E)**	**Weather Condition**	**Temperature (°C)**	**Wind Direction (Deg)**	**Wind Speed (m/s)**	**Monitoring Results (ppm)**
14:51	22°16′31″	114°16′17″	Sunny	32.8	190	2.1	8
15:16	22°16′53″	114°16′17″	Sunny	33.6	143	0.8	5
November 2022							
Time	**GPS Coordinates Latitude (N)**	**Longitude (E)**	**Weather Condition**	**Temperature (°C)**	**Wind Direction (Deg)**	**Wind Speed (m/s)**	**Monitoring Results (ppm)**
14:54	22°16′26″	114°16′35″	Sunny	26.4	146	0.9	25
16:01	22°16′26″	114°16′34″	Sunny	25.8	185	1.7	11

Annex G3

Event and Action Plan for Landfill Gas Monitoring

Annex G3 Event and Action Plan for Landfill Gas Monitoring

Event	Action		
	ET	**IEC**	**Contractor**
Limit Level being exceeded for field monitoring at the perimeter monitoring wells	• Investigate the cause(s) of exceedance • Prepare the Notification of Exceedance within 24 hours • Check monitoring data, all plant, equipment and the Contractor's working methods • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented • Increase the monitoring frequency to daily if exceedance is due to the Project for monitoring wells in the areas where there is development within 250m of the SENTX Site Boundary and to weekly for other monitoring wells, until no exceedance of limit level	• Verify the Notification of Exceedance • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Repeat field measurement to confirm findings • Check the performance of landfill gas management system • Rectify unacceptable practice • Discuss with the ET and IEC and submit proposals for remedial measures to IEC • Implement the agreed proposals • Amend proposal if appropriate
Limit Level being exceeded for the bulk gas sampling at the perimeter monitoring wells	• Check and compare the results of field monitoring and laboratory analyse of bulk samples • If the results of field monitoring also show exceedance, the action(s) for limit level being exceeded for field monitoring would have been triggered • If the results of field monitoring does not show exceedance, the sampling procedures should be checked and if deems necessary, to repeat the monitoring and recalibrate the portable monitoring instruments • Notify the above findings to Contractor and IEC	• Verify the findings by ET	• Nil

Event	Action		
	ET	IEC	Contractor
Limit Level being exceeded at the permanent gas monitoring system	• Investigate the cause(s) of exceedance • Prepare the Notification of Exceedance within 24 hours • Check the methane gas level at the perimeter monitoring wells, manholes or utilities duct • Check monitoring data, all plant, equipment and the Contractor's working methods • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented	• Verify the Notification of Exceedance • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Evacuate all staff in the concerned building • Open the doors and window of all rooms on the ground floor • Do not allow staff to go back to the room if methane level is higher than 1% gas • Check the performance of the landfill gas management system • Rectify unacceptable practice • Consider changes of working methods • Discuss with the ET and IEC and submit proposals for remedial measures to IEC • Implement the agreed proposals • Amend proposal if appropriate
Limit Level being exceeded during surface emission monitoring	• Repeat the measurement to confirm findings • Investigate the cause(s) of exceedance • Prepare the Notification of Exceedance within 24 hours • Check monitoring data, all plant, equipment and the Contractor's working methods • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented • Increase the monitoring frequency to monthly if exceedance is due to the Project until no exceedance of limit level	• Verify the Notification of Exceedance • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • Audit the effectiveness of the implemented remedial measures	• Check landfill gas management system • Rectify unacceptable practice • Consider changes of working methods • Discuss with the ET and IEC and submit proposals for remedial measures to IEC • Implement the agreed proposals • Amend proposal if appropriate

Event	Action		
	ET	IEC	Contractor
Limit Level being exceeded at the service voids, utilities pits, manholes and location of vegetation stress	• Repeat the measurement to confirm findings • Investigate the cause(s) of exceedance • Prepare the Notification of Exceedance within 24 hours • Check monitoring data, all plant, equipment and the Contractor's working methods • Inform Contractor, IEC, Project Proponent and EPD (EIAO Authority) whether the cause of exceedance is due to the Project • Discuss with Contractor and IEC for remedial measures required • Ensure remedial measures are properly implemented • Increase the monitoring frequency to weekly if exceedance is due to the Project until no exceedance of limit level	• Verify the Notification of Exceedance • Discuss with ET and Contractor on proposed remedial measures • Review proposals on remedial measures • Audit the implementation of the remedial measures • the effectiveness of the implemented remedial measures	• Check landfill gas management system • Rectify unacceptable practice • Discuss with the ET and IEC and submit proposals for remedial measures to IEC • Implement the agreed proposals • Amend proposal if appropriate

Annex G4

Investigation Reports of Environmental Quality Limit Exceedance

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	17 May 2022
Time	14:51
Monitoring Location	LFG6
Parameter	Methane
Limit Levels	1.0 %
Measured Level	1.8%
Possible reason	During the landfill gas monitoring event, methane was not detected at the landfill gas monitoring wells adjacent to LFG6 (LFG5 and LFG7: 0%). In addition, no exceedance of Limit Levels for landfill gas monitoring at service voids, utilities pits and manholes (conducted on 17 May 2022) and flammable gas surface emission monitoring (conducted on 18 May 2022) was recorded in the reporting period. Hence, there is a low possibility that the elevation of methane level at LFG6 is due to landfill gas migration from SENTX operation or at least it is not conclusive to base on these results to demonstrate that the exceedance was due to landfill gas migration. Repeat measurement was conducted on 1 and 2 June 2022 to confirm findings. Methane was not detected at LFG6 and its adjacent monitoring wells (LFG5 and LFG7) during the sampling events, which demonstrate no consecutive landfill gas hazard at the monitoring locations. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated level of methane detected at LFG6 on 17 May 2022 could be due to localised organic matters within or around the monitoring wells and background fluctuation with relevance to the installation of liner system at nearly Cell 4X which avoid the escape of methane gas into the atmosphere. Due to the presence of influencing factor from non-project source and the subsequent monitoring results at LFG6 did not show any exceedances, there is no adequate evidence showing that the methane exceedance measured at LFG6 on 17 May 2022 was deemed to Project-related activities.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation

	measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the landfill gas monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 21 June 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	3 October 2022
Time	14:51
Monitoring Location	LFG13
Parameter	Methane
Limit Levels	22.5 %
Measured Level	24.1 %
Possible reason	During the landfill gas monitoring event, methane was not detected at the landfill gas monitoring wells adjacent to LFG13 (LFG12 and LFG14: 0%). In addition, no exceedance of Limit Levels for landfill gas monitoring at service voids, utilities pits and manholes (conducted on 5 October 2022) was recorded in the reporting period. Hence, there is a low possibility that the elevation of methane level at LFG13 is due to landfill gas migration from SENTX operation or at least it is not conclusive to base on these results to demonstrate that the exceedance was due to landfill gas migration. Repeat measurement was conducted from 4 to 7 October 2022 to confirm findings. Methane (ranged from 10.7% to 19.3%) was detected at LFG13 on these additional daily sampling events, but the measured levels were below the limit level. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated level of methane detected at LFG13 on 3 October 2022 could be due to localised organic matters within or around the monitoring wells and background fluctuation with relevance to the installation of liner system at Cell 4X which avoid the escape of methane gas into the atmosphere. Due to the presence of influencing factor from non-project source, there is no adequate evidence showing that the methane exceedance measured at LFG13 on 3 October 2022 was deemed to Project-related activities.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels.

	ET will continue to closely monitor the landfill gas monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 23 November 2022

Annex H

Cumulative Statistics on Exceedances, Environmental Complaints, Notification of Summons and Status of Prosecutions

Table H1.1 Cumulative Statistics on Exceedances

		Total No. recorded in this reporting period	Total No. recorded since project commencement
Air Quality (Dust)	Action	0	0
	Limit	2	3
Air Quality (Odour)	Action	0	0
	Limit	0	0
Air Quality (Emissions of Thermal Oxidiser)	Limit	0	0
Air Quality (Emissions of Landfill Gas Flare)	Limit	3	4
Air Quality (Emissions of Landfill Gas Generator)	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Water Quality (Surface Water)	Limit	3	60
Water Quality (Leachate)	Limit	1	1
Water Quality (Leachate level)	Limit	16	16
Water Quality (Groundwater)	Limit	8	9
Landfill Gas (Perimeter Landfill Gas Monitoring Wells)	Limit	2	2
Landfill Gas (Service Void, Utilities and Manholes)	Limit	0	0
Landfill Gas (Permanent Gas Monitoring System)	Limit	0	0

Table H1.2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Prosecutions
This Reporting Period (1 Jan 2022 – 31 Dec 2022)	0	0	0
Total no. received since project commencement	1	0	0