Annual Environmental Management Report - Banksmeadow Transfer Terminal 2021 - 2022

Name of operation	Banksmeadow Transfer Terminal
Name of operator	Veolia Environmental Services (Australia) Pty Ltd
Development consent / project approval #	SSD 5585
Name of holder of development consent / project approval	Veolia Environmental Services (Australia) Pty Ltd
Mining lease #	N/A
Name of holder of mining lease	N/A
Water licence #	N/A
Name of holder of the water licence	N/A
MOP/RMP start date	N/A
MOP/RMP end date	N/A
Annual Review start date	29th of April 2021
Annual Review end date	28th of April 2022

I, Anae Ressos, certify that this audit report is a true and accurate record of the compliance status of Banksmeadow Transfer Terminal for the period 2021-2022 and that I am authorised to make this statement on behalf of Veolia.

Note:

a) *The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.*

b) *The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).*

Name of authorised reporting officer	Anae Ressos
Title of authorised reporting officer	Environmental Coordinator
Signature of authorised reporting officer	
Date	28/6/2022

Quality Information

Details:	Prepared by:	Reviewed By:	Authorised by:
Name/ Position:	Mary Wong *BEnvSc* Environmental Officer	Anae Ressos *BEnv* Environmental Coordinator Nicole Boukarim *BEnvFor* Environmental Compliance Advisor (NSW/ACT)	Bob Manevski Facilities Manager Banksmeadow / Port Botany
Signature			

Company:	Veolia Environmental Services (Australia) Pty Ltd
ABN:	20 051 316 584
Line of Business:	Resource Recovery
Facility:	Banksmeadow Transfer Terminal
Corporate Office Address:	Level 4 65 Pirrama Road, Pyrmont NSW 2009

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Rev	Revision Details	Issued to	Date
0.1	First draft for internal review	• Sydney Resource Recovery Facilities Team • ANZ Environmental Compliance Team	June 2022
0.2	Second draft for internal review	• ANZ Environmental Compliance Team	June 2022
0.3	Final	• NSW Department of Planning and Environment	June 2022

Contents

Executive Summary

This Annual Environmental Management Report (AEMR) 2021 - 2022 is the 7th report prepared to detail the environmental performance of the Banksmeadow Transfer Terminal (the Terminal), owned and operated by Veolia Australia and New Zealand (Veolia). This AEMR covers the period of 29 April 2021 to 28 April 2022 (2021 - 2022 reporting period).

Veolia has prepared this AEMR in accordance with Schedule 4, Condition 8 of the State Significant Development Consent (SSD) 5585 (the Consent) for the Terminal, as well as relevant legislative requirements and industry best practices.

This AEMR provides a summary of environmental monitoring conducted at the Terminal, if any non-compliances or other findings have been identified against the Conditions of Consent (Consent) during the 2021-2022 reporting period, and the corrective actions assigned.

No non-compliances were identified against the Consent during this reporting period. A 3 yearly Independent Environment Audit (IEA) was carried out in this reporting period to verify compliance against the Consent, as well as the Environment Protection Licence (EPL) 20581 for the Terminal. Further details are provided in Section 3 of this AEMR.

Section 1 - Introduction

1.1 Site Background

The Terminal is located at 14 Beauchamp Road and 34-36 McPherson Street, Banksmeadow and is identified as Lots: A & B, DP 366725 and Lot 1, DP 435497 owned by Keith Engineering (34-36 McPherson Street); and part of Lot 2, DP 100686 (14 Beauchamp Road) owned by Asciano (Pacific National). A site layout and location plan is provided in **Appendix A**.

The Terminal was granted approval under Section 89E of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 28 April 2015 as a SSD, and is approved under the Consent to receive up to 500,000 tonnes per annum (TPA) of waste from the Sydney Metropolitan Area.

The Terminal commenced operations in September 2016, accepting putrescible waste from the Sydney Metropolitan Area, which is containerised and loaded onto rail wagons for transportation to the Woodlawn Eco Precinct (owned and operated by Veolia) in the Southern Tablelands (approximately 250 kilometres southwest of Sydney) for treatment, recycling and energy recovery. During this reporting period, the Terminal received a total of 315,545 tonnes per annum (TPA) of General Solid Waste (Putrescible) and General Solid Waste (Non Putrescible) as classified in the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW Environment Protection Authority, November 2015). This equated to approximately 145 waste collection truck movements per day.

1.2 Legislative Requirements

The key legislative requirements governing the environmental performance and activities undertaken at the Terminal include the *EP&A Act*, regulated by the NSW Department of Planning and Environment (DPE), and the *Protection of the Environment Operations Act 1997* (POEO Act) regulated by the NSW Environment Protection Authority (EPA), as well as their respective associated regulations.

Consent Conditions stipulate the requirements that need to be addressed to maintain compliance at the Terminal as detailed in **Appendix B**. This AEMR has been prepared in accordance with the requirements of Schedule 4, Condition 8, as shown in Table 1.1.

In addition to the Consent, the Terminal also operates under the requirements of Environment Protection Licence (EPL) 20581, issued by the EPA under the POEO Act.

Table 1.1 - Consent Condition for the preparation of the AEMR

Relevant Condition	Requirement
SCHEDULE 4 - ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING	
Annual Review	
8	Within one (1) year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must: (a) Describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; (b) Include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against; • The relevant statutory requirements, limits or performance measures/criteria • The monitoring results of previous years; and • The relevant predictions in the EIS; (c) Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) Identify any trends in the monitoring data over the life of the development (e) Identify any discrepancies between predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) Describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

1.3 Responsibilities

- Environmental monitoring during the operational stage of the Terminal was undertaken and/or supervised by Sydney Resource Recovery Facilities technical support personnel - Mary Wong, Environmental Officer;
- Analyses of samples were performed at a NATA accredited laboratory, Australian Laboratory Services PTY LTD (ALS);
- The Odour Unit PTY LTD (TOU) was appointed to conduct odour audits for the Terminal;
- Jackson Environment and Planning was appointed to conduct the Independent Environmental Audit (IEA) for the Terminal.

Section 2 - Environmental Monitoring & Management

2.1 Terminal Monitoring Requirements

The following sections detail the monitoring undertaken throughout the reporting period in accordance with the Environmental Monitoring Program as detailed within the *Operational Environmental Management Plan* (OEMP, 2016) for the Terminal.

The Environmental Monitoring Program provides details on all monitoring requirements of the Consent and other appropriate regulations to measure and assess the continuing suitability, adequacy and effectiveness of on-site environmental management measures.

Table 2.1 summarises the environmental monitoring conducted at the Terminal as per the Environmental Monitoring Program.

Table 2.1 - Operational Monitoring Requirements

Reference	Type of Monitoring	Frequency	Commentary
Schedule 3 Conditions 36, 38, 40, 41	Meteorological Monitoring	Continuous	Ongoing basis
Air Quality Management Plan (AQMP)	Meteorological Monitoring - Wind	Continuous	Ongoing basis
Schedule 3 Condition 36	Visual Dust Monitoring	Daily or as required	Ongoing basis
AQMP	Odour - Site Inspections	Daily or as required	Ongoing basis
Schedule 3 Condition 34	Odour Audits	Six monthly	Audits completed on: 25 November 2021 1 June 2022
Soil, Water and Leachate	Stormwater Discharge Monitoring	Daily during any discharge	Ongoing

Management Plan (SWLMP)			
Schedule 3 Condition 10	Groundwater Monitoring	Six monthly	Monitoring completed on: 15 December 2021 21 April 2022
Schedule 3 Condition 10	Leachate Monitoring	As required	Not triggered in this reporting period .
Schedule 3 Condition 27	Waste Volume Monitoring	Daily	Ongoing basis
Schedule 3 Condition 27	Traffic Monitoring (Traffic flow and congestions)	As required	Ongoing basis
Schedule 3 Condition 27	Traffic Spot Monitoring (On-site truck routes and driver management)	Weekly	Ongoing basis
Schedule 3 Condition 38	Visual Site Inspection and Housekeeping	Weekly	Ongoing basis
Schedule 3 Condition 21	Pest and Vermin Inspections and Placement of bait stations	Quarterly	Ongoing basis

2.1.1 Meteorology

Monitoring meteorological data during this reporting period provided an understanding of the ambient air (such as dust and odour) and rainfall conditions at the Terminal, and was utilised to manage environmental performance, as well as investigate potential impact to nearby sensitive receivers.

Meteorological data is downloaded from the public weather station situated at the Bureau of Meteorology (BoM) Sydney Airport site (Station ID:066037), provided in 30-minute intervals. During this reporting period, meteorological conditions such as wind speed, wind direction and rainfall were monitored on an ongoing basis and/or when any odour complaints were received.

A summary of daily wind speeds and wind directions at 9AM and 3PM at the nearby BoM weather station is presented in Figures 2.1 and 2.2.

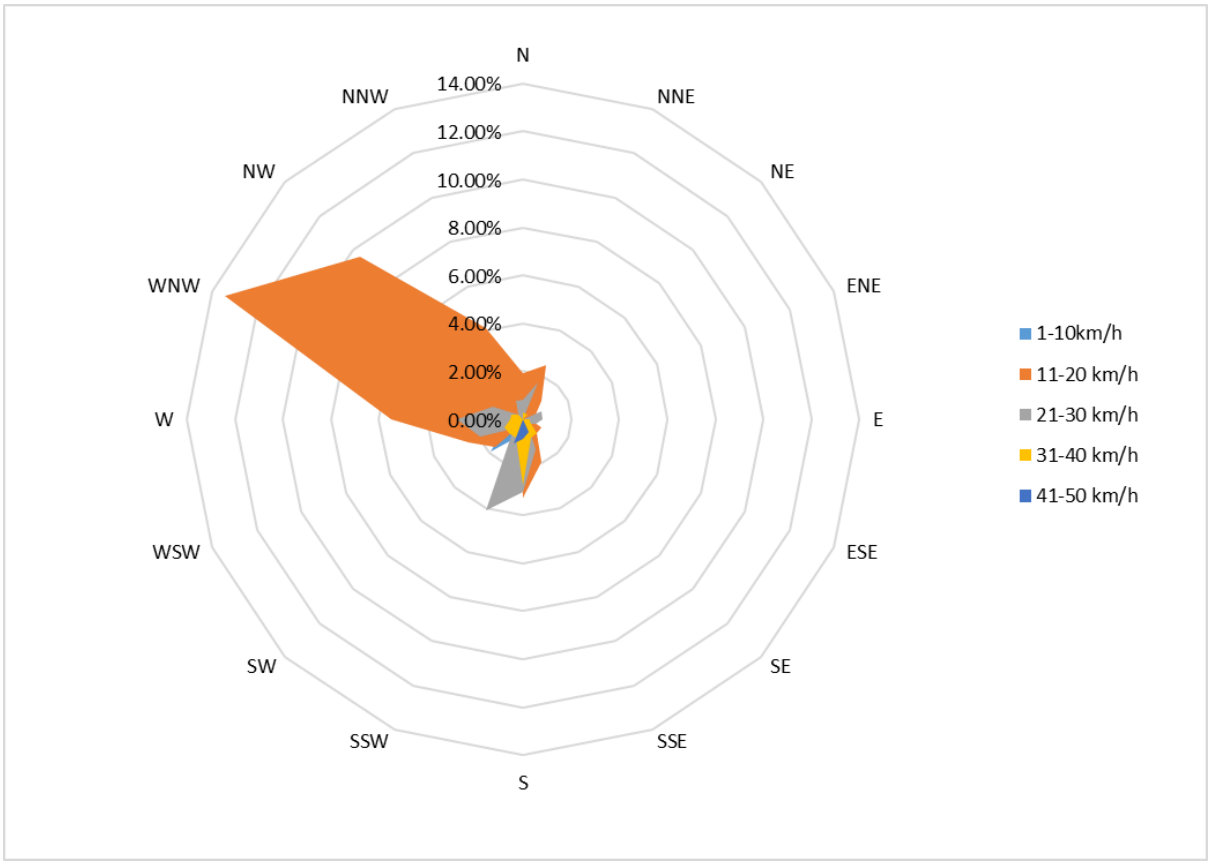


Figure 2.1 - Wind direction and speed data by percentage for 9AM this reporting period

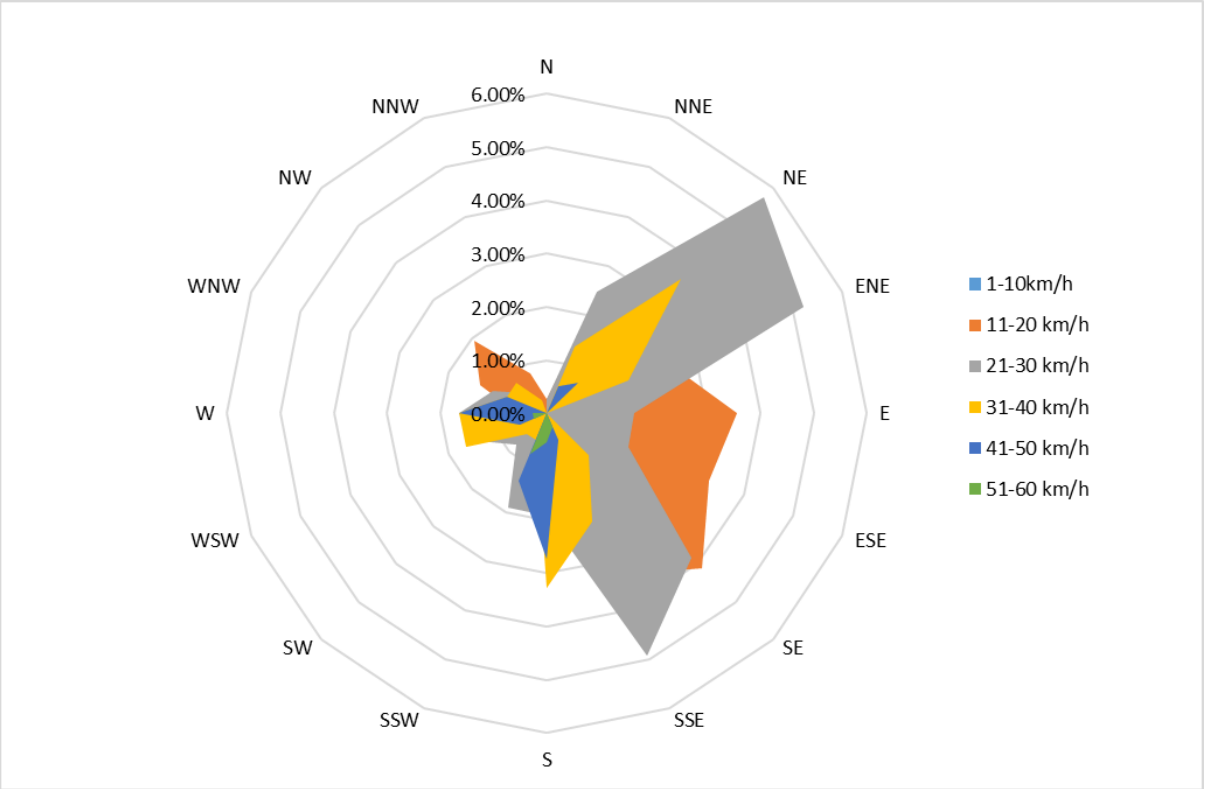


Figure 2.2 - Wind direction and speed data by percentage for 3PM this reporting period

During this reporting period, between 9AM and 3PM the prevailing wind directions were West-North Westerly and North-Easterly. Wind speeds at 9AM were most frequent (approximately 13.42%) within the 11-20 km/hr range, whereas wind speeds at 3PM were most frequent (approximately 5.75%) within the 21-30 km/hr range.

Wind speed and wind direction data was used to investigate and respond to odour complaints in this reporting period (refer to **Section 2.8**) by determining the source and spread of potential odours travelling off-site, if generated from the Terminal.

Ongoing rainfall data was monitored to supplement stormwater system operation and collection of samples from the discharge point, as well as for general housekeeping management such as inspection and maintenance for stormwater pits. This is to ensure the operation of the Terminal is not causing any off-site impacts.

A summary of rainfall data at the Terminal during the reporting period is presented in **Figure 2.3** Overall, the average rainfall for the Terminal during the reporting was approximately 144.4mm per month.

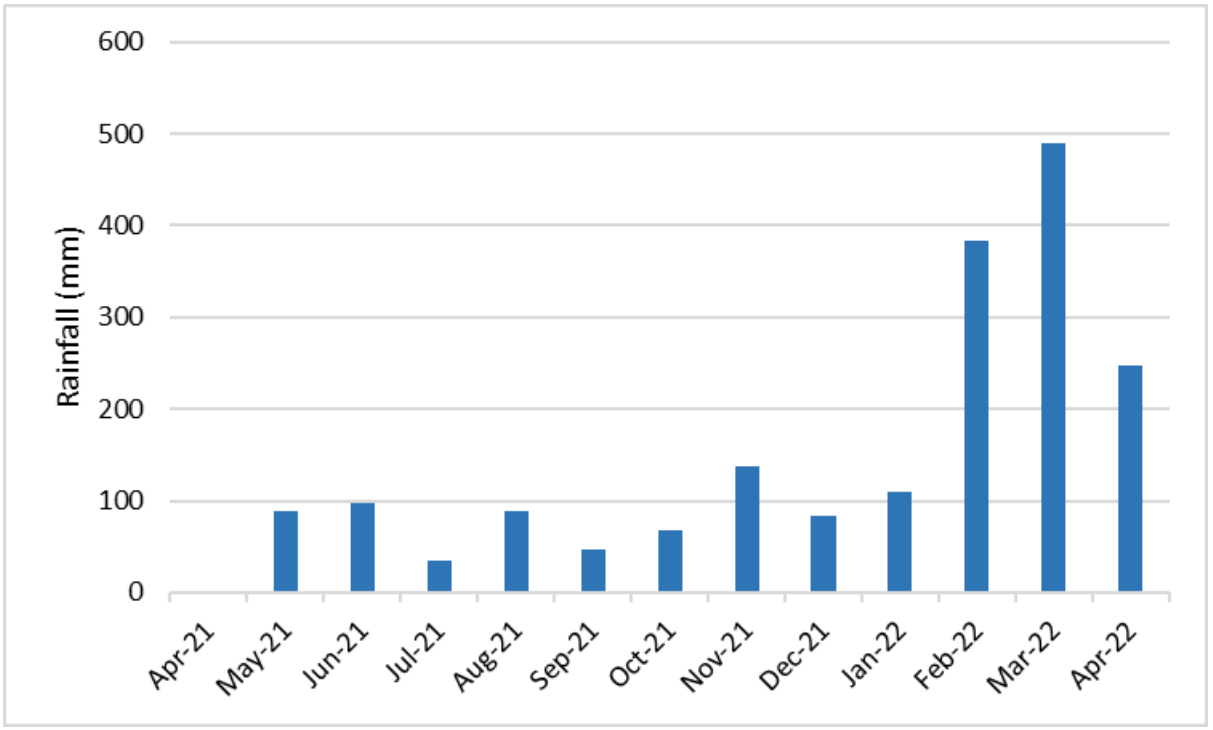


Figure 2.3 - Monthly rainfall data during the reporting period 2021/2022

2.2 Air Quality

In accordance with the Consent, the Terminal has adopted performance criteria pertaining to dust and odour emissions which are summarised in Section 2.2.1 and Section 2.2.2 respectively.

Air quality monitoring was carried out as required to determine whether activities conducted at the Terminal impacted ambient air quality. Further details regarding air quality monitoring and management practices undertaken at the Terminal are provided in the following sections.

2.2.1 Dust

Potential dust impacts arising from operations at the Terminal were assessed against the EPA air quality dust emissions criteria which were identified in the *Banksmeadow Transfer Terminal Environmental Impact Statement* (EIS) prepared by Hyder Consulting Environmental (Hyder, 2014).

The EIS concluded that the key potential impact from dust associated with operations at the Terminal would likely be due to the emissions of small diameter particulate matter (PM10).

Despite this, the EIS found that there would be negligible impact of PM10 particulates (i.e dust) at any off-site receivers, provided that reasonable dust controls are implemented.

To facilitate this, the Terminal has a dust suppression system within the transfer building to minimise the emissions of dust. Dust is also controlled through the operation of a street sweeper on hardstand areas around the site. In addition, visual inspections of dust generating activities at the Terminal are also carried out on a regular basis, augmented by monitoring of weather conditions.

No dust complaints or issues noted in this reporting period.

Long Term Trends

- This result is consistent with findings in previous years
- Dust emissions continue to be adequately managed on-site and off-site, no impacts have been detected since the commencement of operations in 2016

2.2.2 Odour

The potential for odour emissions from the Terminal were also assessed in the EIS (Hyder, 2014). Results of the EIS indicated that when the implemented odour mitigation and management measures were in operation, odour emissions from the Terminal's operation would be below the odour emission criteria presented in Table 2.2. It was also found that odour impacts would likely not exceed these levels at any residential receptor.

Table 2.2 - Odour Emission Criteria

Pollutant	Receptor	Criterion
Odour	Residential Receptors	2 Odour Units

To achieve the odour emission criteria, the Terminal operates an air extraction system within the terminal building which was designed to both ventilate the building, and capture and disperse odour emissions from within the building. In addition, containers used for the transportation of waste are fitted with activated carbon filtration systems on air exhaust vents.

Routine odour monitoring is carried out in the form of weekly odour assessments along the Terminal's site boundaries which are conducted by on-site personnel, the results of which are recorded on weekly housekeeping checklists.

During this reporting period, two (2) odour audits were completed in relation to the Terminal by TOU, refer to **Appendix C** for odour reports:

1. Banksmeadow Waste Transfer Terminal Facility Odour Audit November 2021
2. Banksmeadow Waste Transfer Terminal Facility Odour Audit June 2022

Odour Audits

TOU's odour audit reports found the roof discharge stack to be operating at a favourable odour performance level. The June 2022 Odour Report (**Appendix C**) found that all required maintenance works on the building ventilation air extraction system at the Terminal since the previous November 2021 Odour Report had been adequately undertaken, and the system is operating in a satisfactory condition, aside from the discharge stack velocity sensor which requires further optimisation.

The Terminal continues to implement an active service and maintenance program for waste containers and continues to follow odour mitigation and management practices.

Localised odour within the Terminal detected during the Field Ambient Odour Assessment survey is not expected to be problematic at nearby, off-site downwind locations.

Based on the results and findings documented in the odour audit reports from this reporting period, the Odour Reports concluded that the Terminal is operating in a manner that is unlikely to adversely impact the local amenity from an odour viewpoint under the measured and current operating circumstances. As part of Veolia's commitment to continuous improvement, the recommendations outlined in the reports will be implemented to maintain this low-risk rating.

Long Term Trends

The odour performance of the Terminal was mostly consistent with the previous reporting period;

- Results of odour sampling collected during this reporting period indicate the odour performance of the roof discharge stack remains consistent with original design performance documented in the *Air Quality Impact Assessment* (Wilkinson Murray, 2014).
- Smoke testing results conducted throughout this reporting period have consistently indicated that there are no other potential fugitive emission release pathways from the waste shed area, apart from the entrance doorway.
- The Terminal received an increase in odour complaints compared to the previous reporting period. See **Section 2.8** for further details.

2.3 Water Monitoring

2.3.1 Groundwater Monitoring

Following the commencement of the Terminal's operations, the groundwater quality was tested in April 2017. These results are referred to as baseline levels which are provided in Table 2.3. In accordance with the Consent, biannual groundwater monitoring is conducted to assess potential impacts of operations on the groundwater quality.

Table 2.3 - Groundwater Monitoring Program

Monitoring Locations	Parameters	Range of Baseline levels	Frequency	Sampling Method
GW1, GW2, GW3	Electrical Conductivity (EC)	578 - 1150 µS/cm	Six monthly	Grab sample
	pH	7.27 - 7.31pH		
	Total Dissolved Solids (TDS)	424 - 800 mg/L		
	Nitrogen (Ammonia)	0.33 - 1.37 mg/L		
	Biochemical Oxygen Demand (BOD)	<2 - 8 mg/L		
	Water Levels (Depth to Water & Depth to Base)	Metres (m)		

Groundwater monitoring was conducted at three wells (GW1, GW2, GW3) in December 2021 and April 2022, this data was compared to baseline levels from GW1, GW2, and GW3, please refer to Figures 2.4-2.9 below for monitoring results.

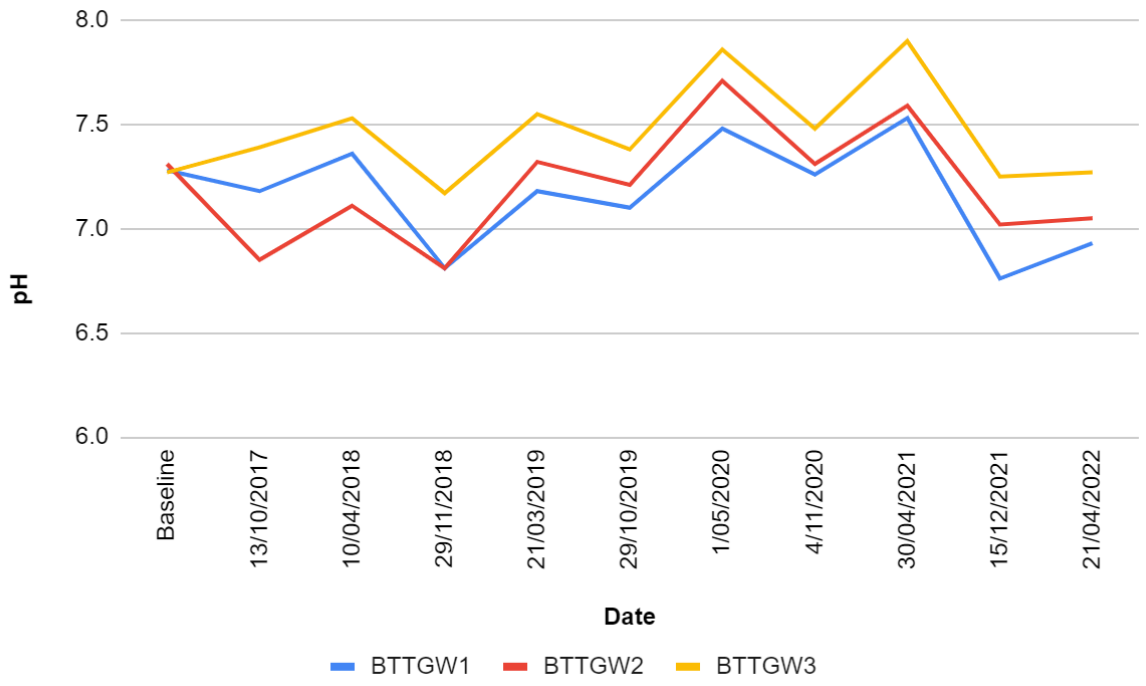


Figure 2.4 - pH trends in groundwater

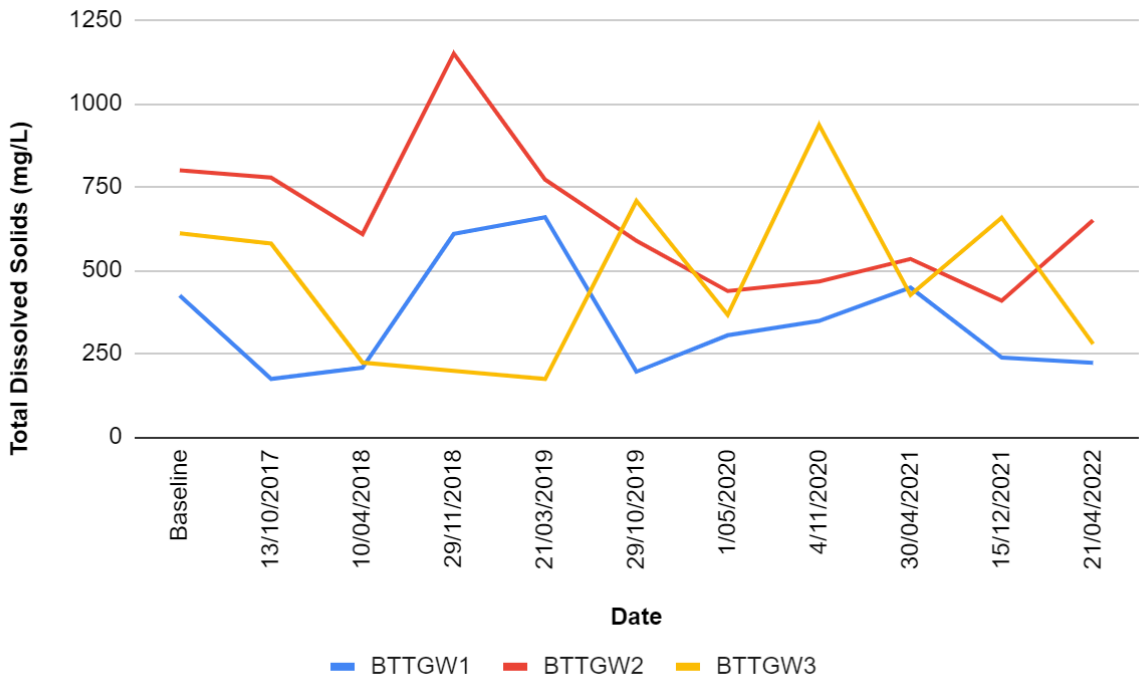


Figure 2.5 - Total Dissolved Solids trends in groundwater

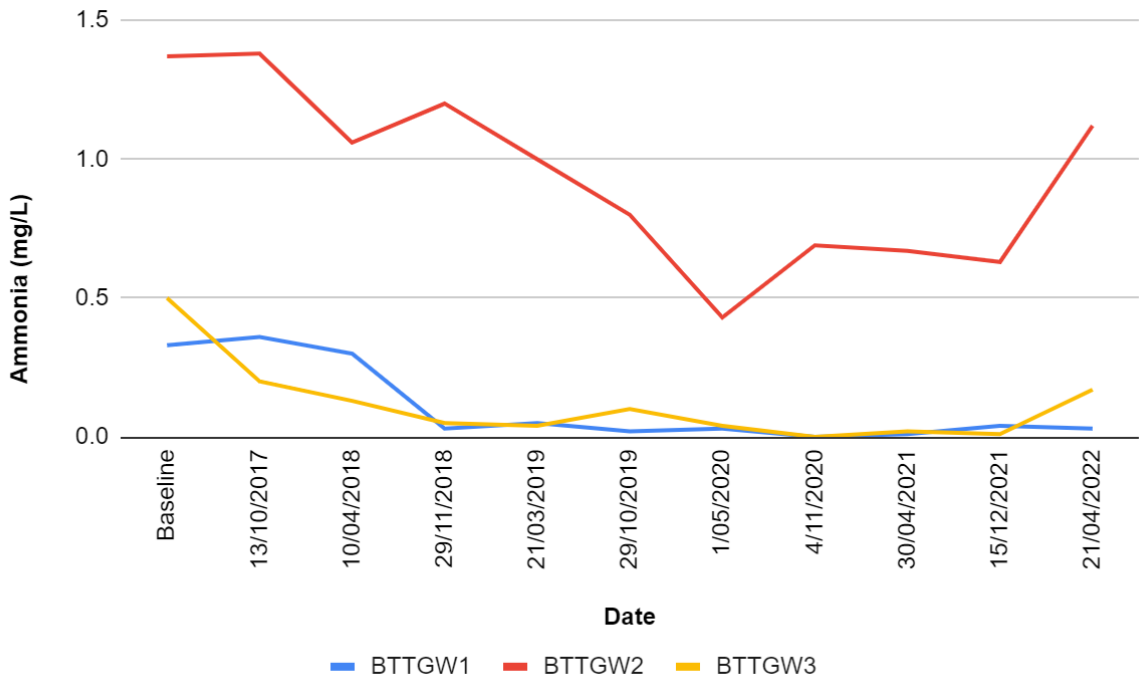


Figure 2.6 - Ammonia trends in groundwater

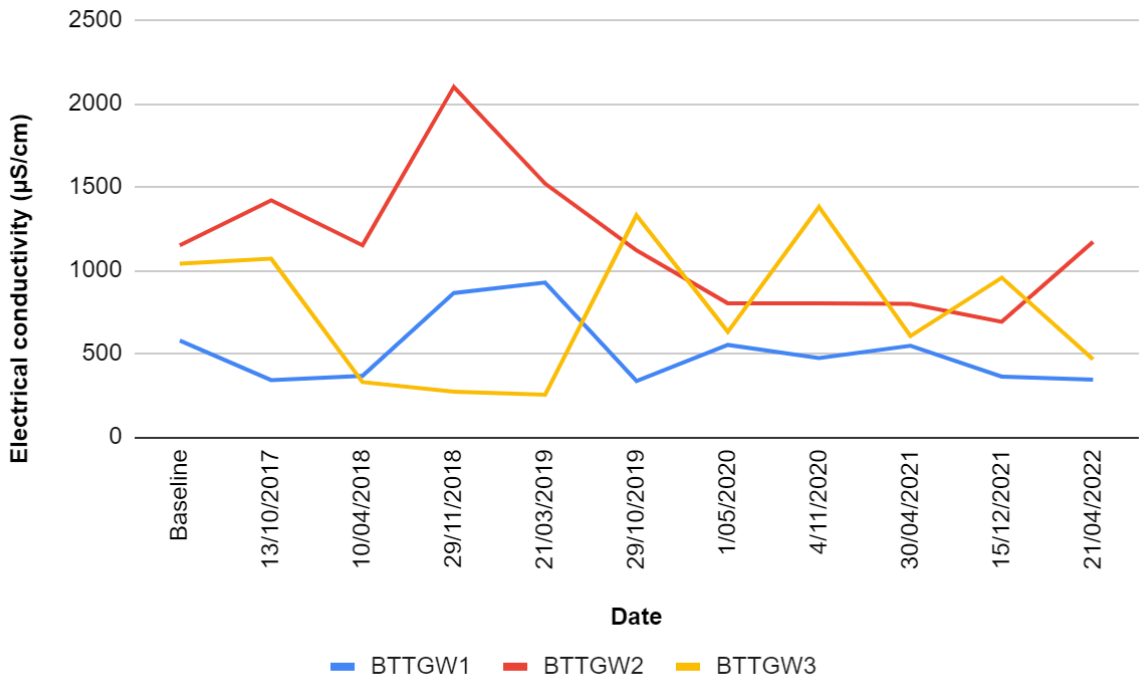


Figure 2.7 - Electrical Conductivity trends in groundwater

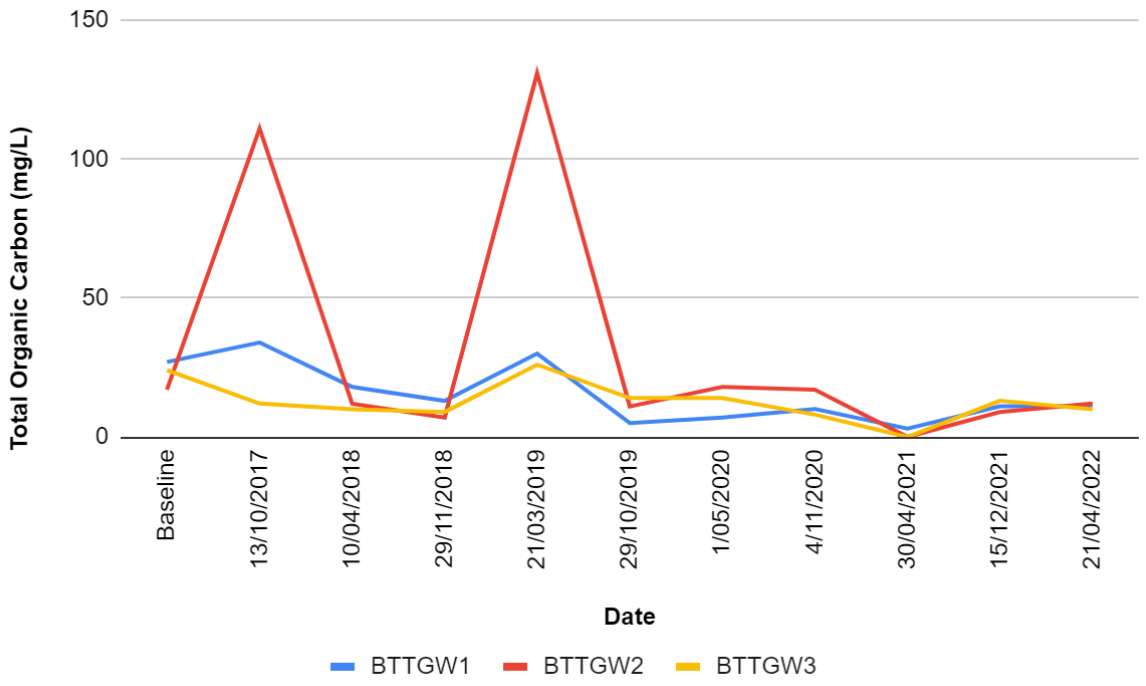


Figure 2.8 -Total Organic Carbon trends in groundwater

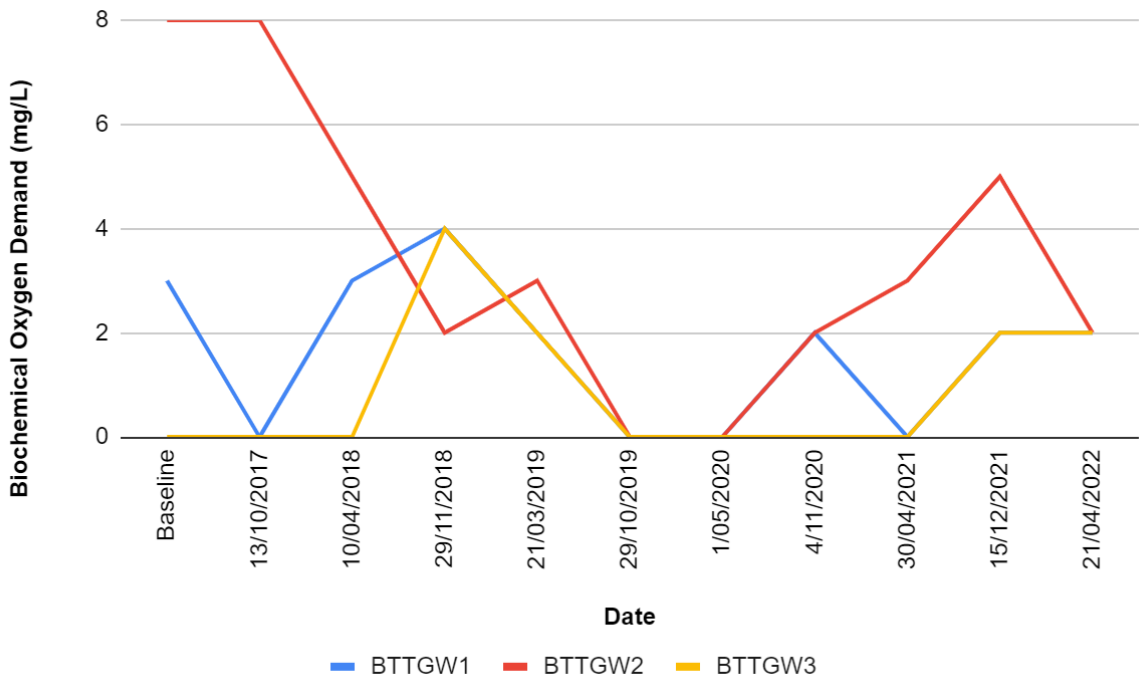


Figure 2.9 - Biochemical Oxygen Demand trends in groundwater

Groundwater levels were between 1.16 m and 2.41 m (depth to water) indicative of the shallow water table at the site. Ammonia and BOD concentrations were relatively low and within baseline levels in all wells this reporting period and ranged between <0.01 to 1.12 mg/L and <2 to 5 mg/L, respectively.

pH in all three wells (GW1, GW2, GW3) demonstrate a decreasing trend compared to the previous reporting period. GW1 and GW2 pH levels were slightly lower than baseline levels, however this will continue to be monitored in the next reporting period. The lowest pH level of 6.76 is not consistent with leachate quality tested onsite (pH= 4-5), therefore this trend does not indicate the migration of leachate on site.

In GW1, GW2 and GW3, the majority of the parameters (TDS, ammonia, EC, TOC and BOD have remained consistent and remained below baseline levels. Within GW2, BOD and ammonia increased slightly but remained below baseline levels this reporting period.

Groundwater results indicate that there have been no off-site impacts from site operations, which indicates that ongoing housekeeping and maintenance of the Terminal are effective.

Long Term Trends

- Groundwater quality in GW1, GW2 and GW3 wells remain fairly consistent with historical trends and baseline levels.

Groundwater results are made publicly available and can be accessed via Veolia's website in the following link: https://www.veolia.com/anz/media/media/reports?publication_type=36

2.3.2 Surface Water Monitoring

Stormwater discharge monitoring is conducted at the Terminal to monitor the effectiveness of all environmental measures to manage stormwater quality and infrastructure on-site. Stormwater monitoring is also undertaken to assess the performance of the on-site stormwater treatment system and whether stormwater flowing off-site could be contaminated as a result of operations at the Terminal.

The results of stormwater monitoring are assessed against discharge limits stipulated within the EPL 20581 which are described in Table 2.4 below.

Table 2.4 - Stormwater Discharge Limits

Parameter	Concentration Limit (100 percentile limit)	Frequency	Sampling method
pH	6-8.5 units	Daily, during any discharge event	Grab sample *
TSS (Total Suspended Solids)	50 mg/L		
Ammonia as N	1 mg/L		
BOD (Biochemical Oxygen Demand)	10 mg/L		
Oil & Grease	10 mg/L		

*Please note that condition M2.2 of the EPL was varied in November 2021 to amend sampling method to "Grab Sample", replacing "auto-sampler" as the sampling method.

There were a number of rainfall events during the reporting period, which triggered the requirement to conduct stormwater monitoring. Figures 2.10-2.14

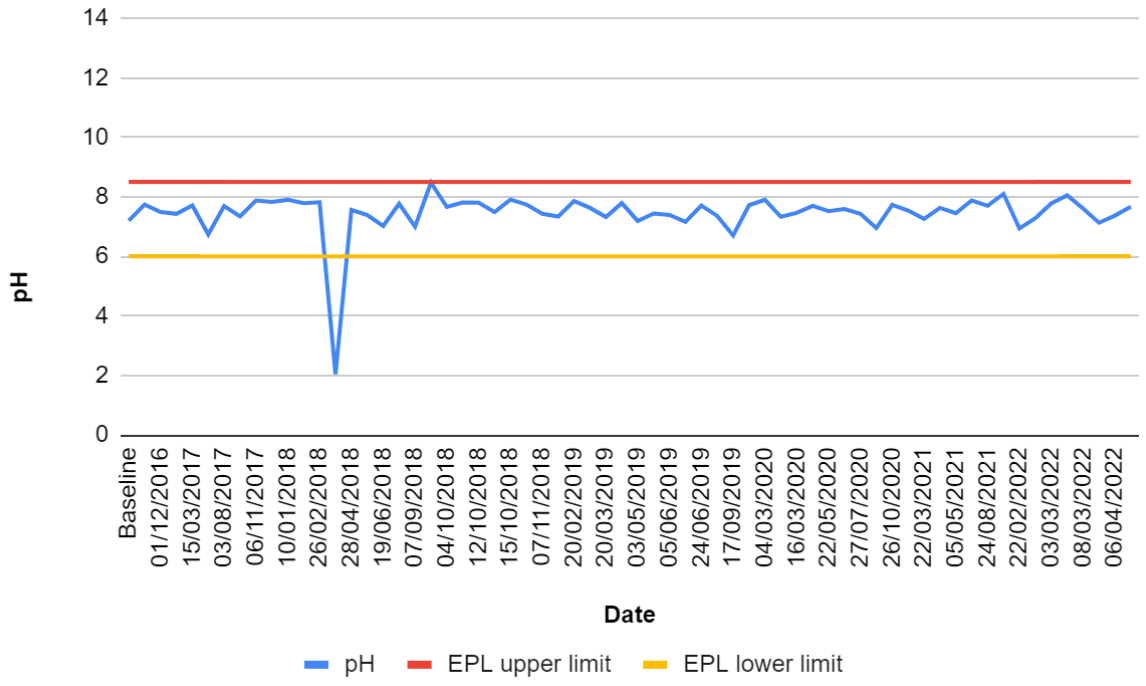


Figure 2.10 - pH trends in stormwater discharge

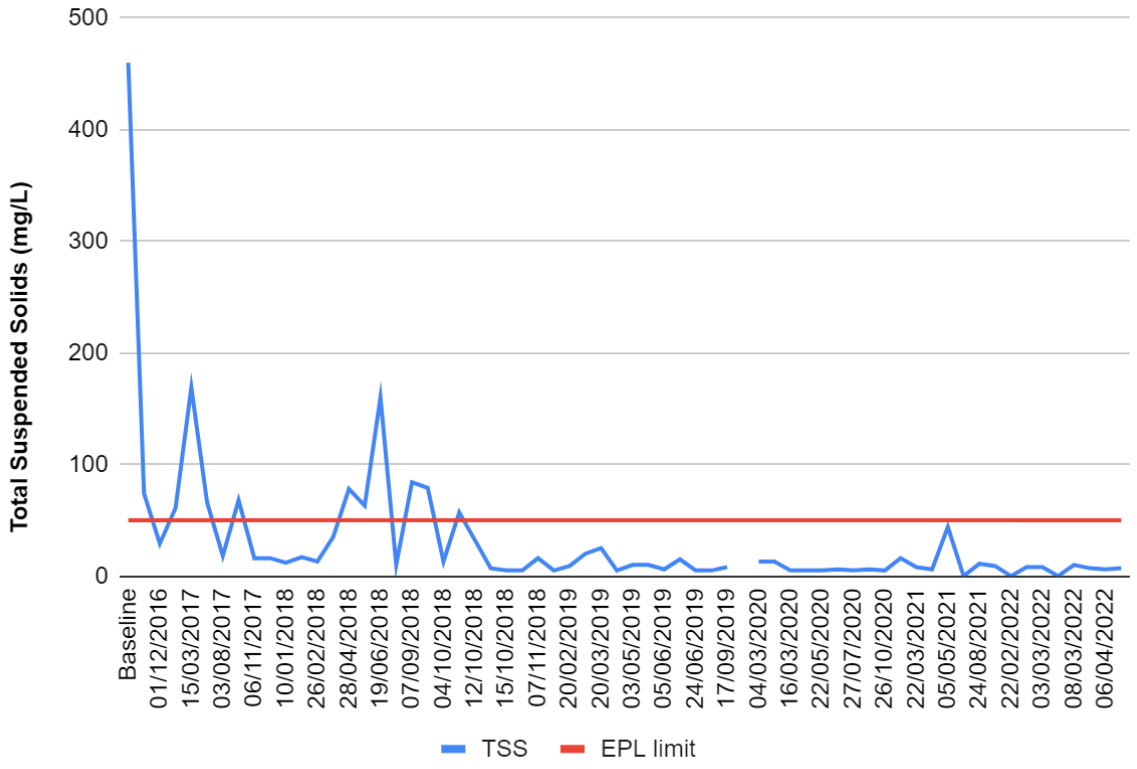


Figure 2.11 - TSS trends in stormwater discharge

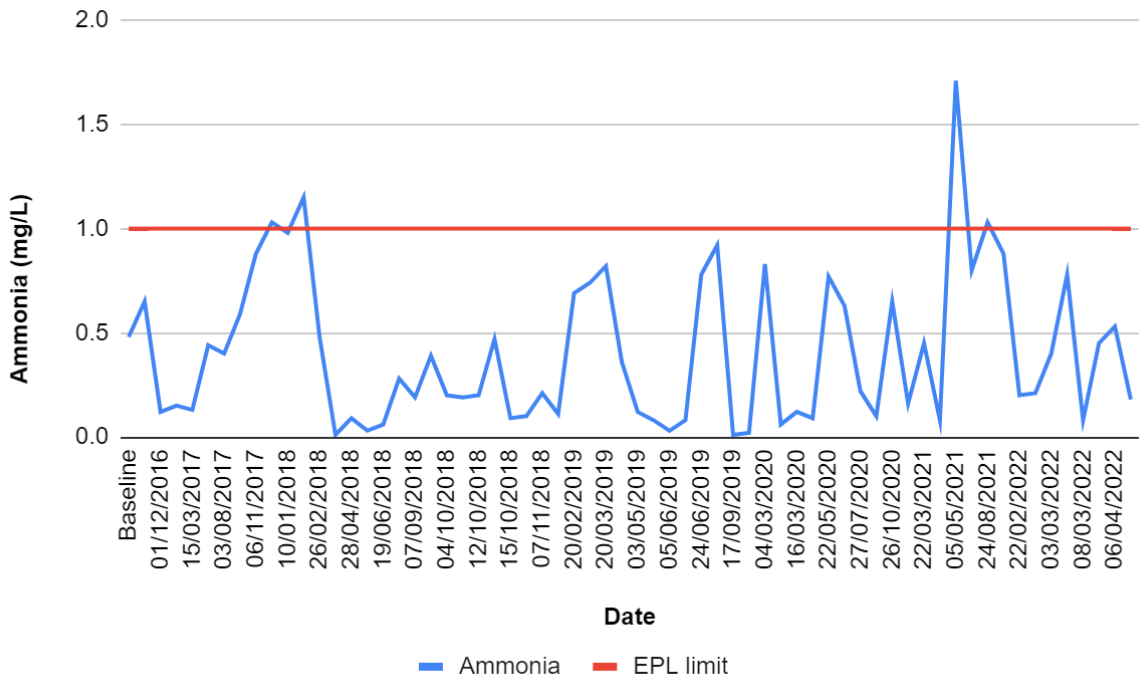


Figure 2.12 - Ammonia trends in stormwater discharge

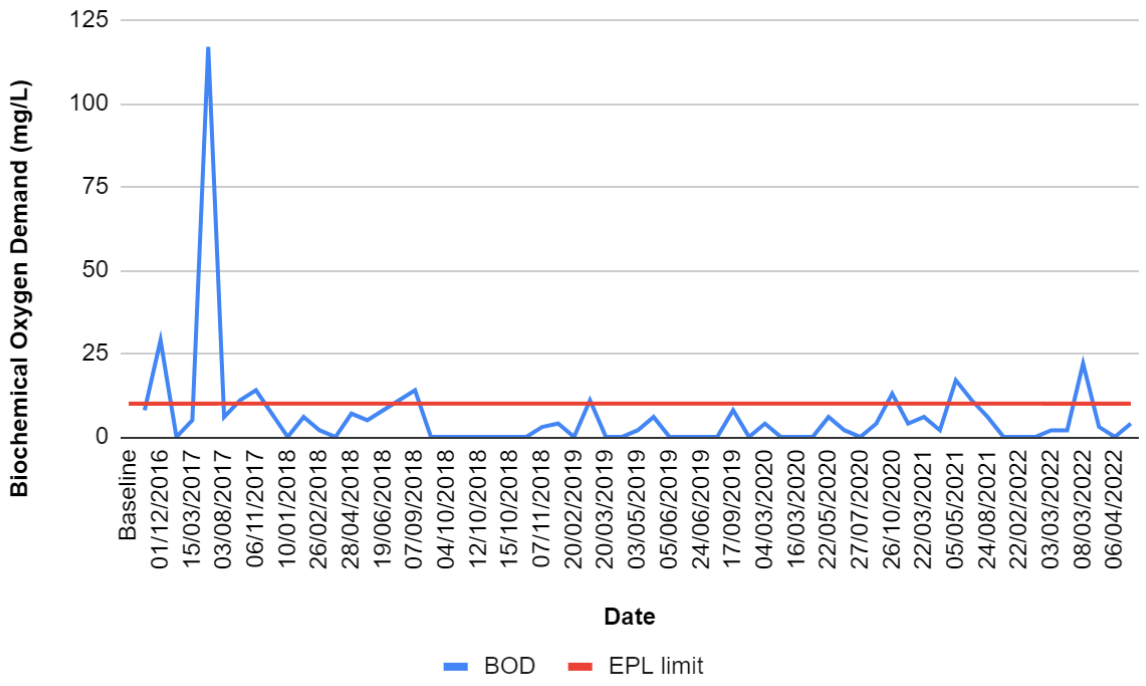


Figure 2.13 - BOD trends in stormwater discharge

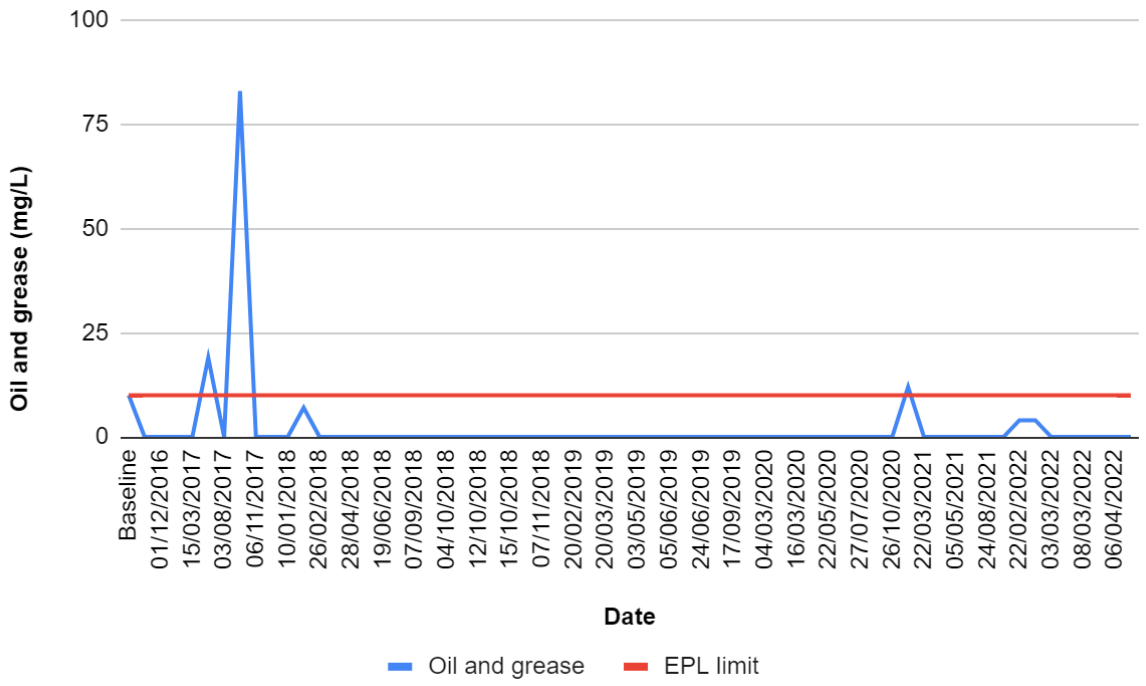


Figure 2.14 - Oils & Grease trends in stormwater discharge

During this reporting period, the stormwater discharge quality exceeded the concentration limits as stipulated in the EPL 20581 on five occasions. In May 2021, two parameters exceeded the EPL limits, ammonia exceeded the 1 mg/L limit with a reading of 1.71 mg/L, and BOD with a limit of 10 mg/L with a reading of 17 mg/L and 11 mg/L the following day.

In August 2021, ammonia slightly exceeded the same limit by 0.3 mg/L. In March 2022, BOD exceeded the 10 mg/L limit with a reading of 22 mg/L.

Stormwater results indicate that further investigation to identify the cause of the exceedances need to be undertaken, and will be reported in the next AEMR.

Inspections of onsite infrastructure and processes were undertaken to investigate the exceedances. While it was determined that there were no likely adverse effects of the recorded exceedances corrective actions were undertaken.

BOD exceedances were attributed to the presence of iron algae growth identified at the monitoring location: EPA identification point 1. Therefore, a contractor was engaged to clean the Premises¶drains and stormwater lines.

Review of stormwater system and maintenance schedule was undertaken to determine the cause of the ammonia exceedances, and trends will continue to be observed. Veolia will follow internal investigation and reporting processes to ensure any future exceedances are escalated and resolved as soon as possible.

Long Term Trends

- In 2018, following the recommencement of sampling from EPL Monitoring Point 1 after rectification works were completed in the discharge pit, stormwater quality results have significantly improved in all parameters (pH, BOD, ammonia, oils and grease and TSS).
- Stormwater system maintenance, frequency and effectiveness has been reviewed to further improve the system.

Surface water results are made publicly available and can be accessed via Veolia's website in the following link: https://www.veolia.com/anz/media/media/reports?publication_type=36

2.3.3 Leachate Monitoring

Leachate is defined as any water which comes into contact with waste or waste processing areas. Through the management of waste, leachate is released within the waste shed when waste is delivered to the Terminal. All leachate from the tipping floor and compactor areas, as well as wash down water are collected into two 32 kilolitre (kL) leachate storage tanks for off-site disposal.

Leachate levels within the storage tanks are monitored by using a reference point on the containers, this determines when it is required to be pumped out and disposed of.

During this reporting period the off-site disposal facility did not require leachate quality data to be provided, therefore this monitoring requirement was not triggered as mentioned in Table 2.1.

2.4 Noise and Vibration

2.4.1 Noise and Vibration Monitoring

Operational activities such as truck operations, plant and equipment at the Terminal act as potential sources of noise emissions which may impact nearby receivers. Noise modelling was undertaken as part of the EIS (Hyder, 2014) which predicted that the operational noise emissions from the Terminal would not generate noise emissions which would impact local amenities.

Despite this, a number of noise and vibration mitigation controls were implemented at the Terminal to manage potential impacts, such as: low speed limits on-site, scheduling of trains, minimising container movements, use of quiet/minimal noise plant and equipment, and driver

induction program, these are further detailed in the Noise and Vibration Management Plan (NVMP).

Based on the noise modelling by the EIS, the following operational noise goals were adopted for the Terminal which are provided in Table 2.5.

Table 2.5 Operational Amenity Noise Goals

Receptor Location	Amenity Criterion (LAeq, 15 min, dB(A)		
	Day	Evening	Night
Residential Receivers	50	40	37
Industrial Receivers	65	65	65
Commercial Receivers	70	70	70

An ambient noise assessment was conducted in August 2017 which indicated off-site noise emissions comply with the noise criteria.

In the event a noise complaint is received at the Terminal, the site will carry out noise monitoring if required, and liaise with the complainant until resolved. No noise complaints were received in this reporting period, therefore the Consent Condition for monitoring was not triggered.

Long Term Trends

- Noise emissions have not caused off-site impacts, this has remained consistent since the commencement of operations in 2016
- Noise emissions continue to be adequately managed on-site through the implementation of mitigation controls outlined in the NVMP

2.4.2 Vibration Monitoring

Vibration impacts during operation of the Terminal were assessed in the EIS to be negligible and to pose no potential impact on sensitive receivers, buildings or the environment.

A vibration assessment was conducted in August 2017 which indicated vibration levels at residential receivers comply with the vibration criteria.

Noise and vibration mitigation measures have been discussed in Section 2.4.1. No vibration complaints were received for the Terminal during this reporting period therefore not triggering the requirements for additional vibration monitoring.

Long Term Trends

- Vibration emissions have not been identified as causing offsite impacts as no complaints have been received since the commencement of operations in 2016.
- Similarly to noise emissions, vibration emissions continue to be adequately managed on-site through the implementation of mitigation controls outlined in the NVMP

2.5 Traffic

A Traffic Impact Assessment (TIA) was undertaken as part of the EIS (Hyder, 2014) to assess the potential impact of the Terminal on traffic and transport during its operation.

The TIA found that the Terminal would see up to 355 trucks per day for the delivery of mixed waste, and that there was a potential for nearby roads to be affected due to these truck movements. A number of mitigation measures were implemented at the Terminal to manage these potential impacts as detailed in the Traffic Management Plan and are provided below in Table 2.6.

Table 2.6 Traffic Control Measures

Traffic issue	Control	Monitoring	Effective
Traffic Congestion	-Site has adequate room for queuing on-site - If the above control fails then vehicles will be directed away from the site. Facility Manager will then advise to cease further deliveries to the site until problem has been resolved	Traffic Spot Monitoring (Onsite truck routes and Driver management)	Yes, no complaints have been made of trucks obstructing traffic movements of neighbouring businesses
On-site Truck routes	-Abide to speed limit onsite -No turns to/from Perry street at any time -No right turn from Beauchamp Rd between 6AM-8PM	Traffic Monitoring (Traffic flow and Congestions)	Yes, no complaints from surrounding businesses or residents
Driver management	- The induction informs customers of	Traffic Spot Monitoring (Onsite	Yes, there have not been any major

	the site rules, weighbridge usage and site transport management procedures. Furthermore, clients must adhere to Veolia's standards of: professional conduct, workplace safety, drivers licence requirements, drug and alcohol policy.	truck routes and Driver management)	incidents since the program has been implemented

Monitoring activities conducted at the Terminal assist in measuring the effectiveness of these traffic control measures. No vehicles were observed using any unauthorised roads as stipulated within Schedule 3, Condition 29 of the Consent.

A total of 53,090 (truck) movements occurred during the operation reporting period which is equivalent to approximately 145 trucks per day. This is in line with the predicted truck movements of 355 trucks per day as described in the EIS. A breakdown of truck movements per month is provided in Table 2.7.

Table 2.7 Truck Movements during the 2020/2021 and 2021/2022 reporting periods

Monitoring Period	Truck Movements 2020/2021	Truck Movements 2021/2022
29 to 30 April 2020/2021	331	416
May	3726	5107
June	4071	4981
July	4199	4284
August	4100	3715
September	4111	3809
October	4141	3930
November	3835	4307

December	4391	4983
January	4023	4599
February	3883	4377
March	4483	3846
1 to 28 April 2021/2022	4218	4736
Total	**49,512**	**53,090**

Long Term Trends

- Truck movements have not been found to have resulted in off-site or on-site impacts since the commencement of operations in 2016.
- Potential traffic impacts have continued to be adequately managed on-site through the implementation of traffic control measures outlined in Table 2.6 and Traffic Management Plan.

2.6 Waste

A Waste Management Plan (WMP) was prepared which details the control strategies and mechanisms for the effective monitoring and recording of waste at the Terminal as shown in Table 2.8.

Table 2.8 - Waste Monitoring Schedule

Waste Monitoring	Type of Monitoring	Frequency
Waste volume processing • Storage on site	Waste on floor	Daily
Waste volume processing • Annual limit	Tonnage data review	Ongoing
Waste Recording	Incoming Waste Processing	Ongoing

2.6.1 Waste Monitoring

All waste received at the Terminal was recorded in the Paperless Weighbridge System (PWS) and the Systems, Applications and Products in Data Processing (SAP) software. SAP records vehicle registrations, the date and time of delivery, the gross and tare weight of the vehicle, as well as the nature and origin of the waste delivered by each contractor.

Visual assessments of incoming waste are conducted by weighbridge operators and assisted by close circuit television. These visual assessments were conducted to identify, reject and/or separate non-conforming waste upon its arrival to the Terminal. Waste is also inspected as it is tipped/unloaded onto the tipping floor.

Schedule 2, Condition 5 of the Consent stipulates that the Terminal must not receive or process more than 400,000 tonnes per annum (TPA) of putrescible waste and 100,000 TPA of non-putrescible waste. Veolia utilises the data provided by SAP to track and monitor the amount of incoming waste in accordance with the limits of the Consent. Refer to Table 2.9 for a breakdown of the classification of waste material received and processed at the Terminal during this reporting period and the previous reporting period. As noted in the table, all waste received at the Terminal is containerised for transfer to the Woodlawn Eco-Precinct.

Table 2.9 - Received and processed waste for 2020 and 2021 calendar years

Waste classification	Approved Limits (tonnes per annum)	Waste tonnes (2020)	Waste tonnes (2021)
General Solid Waste (Putrescible)	400,000	291,600	305,468
General Solid Waste (Non Putrescible)	100,000	696	10,077

As shown in Table 2.9, The Terminal did not receive or process more than 400,000 tonnes per annum (TPA) of putrescible waste and 100,000 TPA of non-putrescible waste. No incoming non-conforming waste was recorded during this period.

Long Term Trends

- Since the commencement of operations the Terminal has continued to operate within annual waste limits.

2.7 Pests and Vermin

The management of pest and vermin at the Terminal was maintained through preventative and responsive mitigation measures as per the Landscape and Vegetation Management Plan appended to the Terminal's OEMP. Such measures included;

- Routine inspections of site by a registered pest controller
- Weekly Site Inspection Checklist completed to record site conditions such as evidence of vermin and pests
- Placement of rodent bait stations at various locations around the site

Pest control was undertaken by an external contractor (Expert Judgement Pest Management PTY LTD) during this reporting period. In total four (4) pest control service reports were completed during the reporting period, refer to **Appendix D.** Routine pest control service usually involves an initial inspection of the Terminal buildings (site office, weighbridge office and waste shed), followed by any necessary treatment for rodents, cockroaches and spiders.

No pest and/or vermin complaints or management issues were reported during the operation of the Terminal during the reporting period.

Long Term Trends

- This result is consistent with findings in previous years
- Vermin and pests continue to be adequately managed on site since the commencement of operations in 2016.

2.8 Complaints

A total of 12 complaints as shown in **Figure 2.15** was issued to the Terminal in regards to odour emissions during this reporting period, of which 11 are attributed to the Terminal. The odour complaints were received directly from IXOM who are located north-east of the Terminal. This is an increase compared to the previous reporting period in which the Terminal received one odour complaint

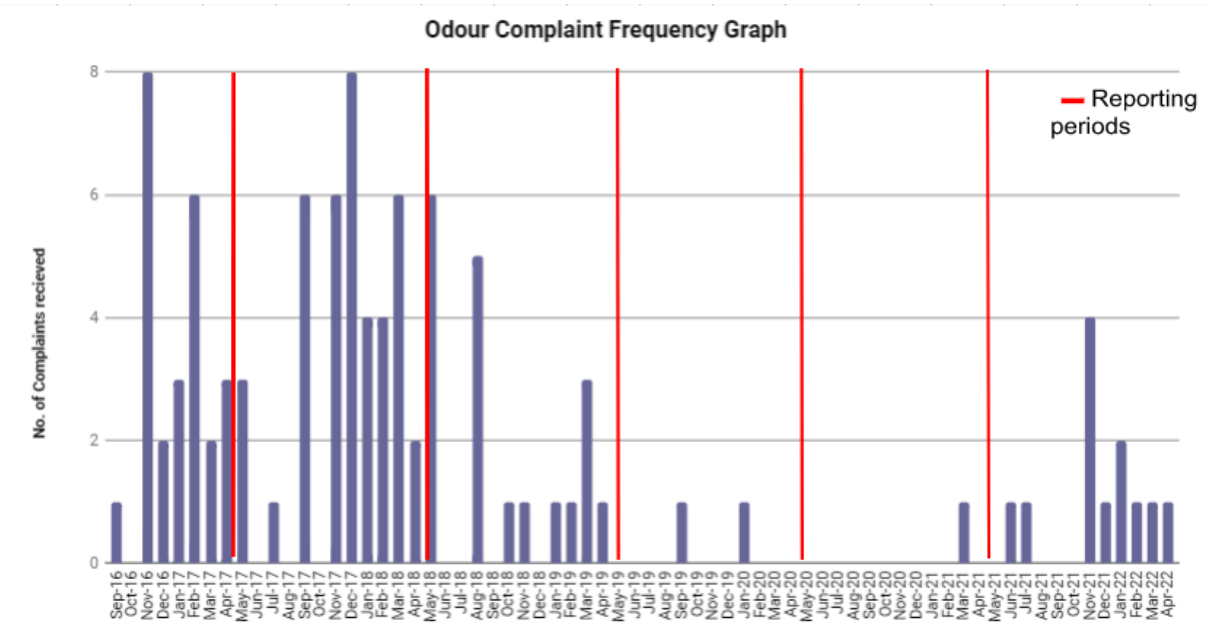


Figure 2.15 - Number of odour complaints received each month at the Terminal

As shown in **Figure 2.15**, there has been an increase of odour complaints received since the last reporting period. In response, Veolia commissioned the Odour Unit to conduct an additional site audit to investigate the potential causes (refer to **Appendix C**, report dated 31 May 2021). Veolia undertook several corrective actions based on the recommendations of these investigations. One of these corrective actions included replacement of the exhaust velocity sensor in March 2022, which was found to be faulty. Veolia will continue to monitor its effectiveness and include inspection and testing of this sensor as part of scheduled maintenance of the odour system to prevent any recurrence of this issue. (**Appendix C**).

The odour complaint received on 11 March 2020 was due to an off-site railway incident which occured on 7 March 2022. The incident resulted in inability to remove waste on site, causing an uncommon amount of waste being stockpiled at the site. These circumstances were proactively communicated to the NSW EPA and neighbouring sites.

The odour complaint received on April 2020 was attributed to a neighbouring property and not the Terminal following an investigation by Veolia.

Based on meteorological data in **Section 2.1.1**, the prevailing wind directions were west-north westerly and north-easterly. As IXOM is located north-east of the Terminal, wind directions are not consistent with odours coming from the Terminal at the time that complaints were received.

Following the receipt of the odour complaints received:

1. The Terminal implements corrective actions if necessary, to reduce odour emissions such as adjustment of fan extraction system speed setting;

2. The Site Manager communicates any corrective actions taken on the site with the complainant;
3. Meteorological wind data is downloaded from the BoM website;
4. Details of the complaint and wind data are logged in the BTT Complaints Register (**Appendix E**).

Section 3 - Environmental Performance

The environmental performance of the Terminal is assessed through the results of environmental monitoring, inspections and audits, both internal and external. Corrective actions are then assigned for any non-compliances or other findings identified against the Consent Conditions in this reporting period.

- Groundwater quality has remained fairly consistent and within respective limits, with the exception of seasonal fluctuations.
- Stormwater exceedances will undergo further investigation to identify the cause, this will be monitored and reported in the next AEMR.
- Air quality, with regards to dust continues to be well-managed with no onsite or offsite impacts or dust-related complaints received by the Terminal. Odour complaints have increased during this reporting period from previous years, following an identified fault in the exhaust stack velocity sensor and an off-site railway incident which impacted normal operations at the site. Odour audit findings have concluded that overall, the Terminal is operating in a manner that is unlikely to adversely impact the local amenity from an odour viewpoint under the measured and current operating circumstances.
- General Solid Waste (Putrescible and Non-Putrescible) volumes have not exceeded annual waste tonnage limits.
- No complaints have been made in relation to noise and vibrations, and traffic which indicates implemented mitigation controls are effective.
- Pests and vermin are adequately controlled, no major issues have been identified since the commencement of operations in 2016.

An Independent Environmental Audit (IEA) of the Terminal's activities was undertaken on 13 May 2022 by Jackson Environmental. The objective of this IEA was to assess the environmental performance of the Terminal and identify any non-compliances as required by Conditions 6 and 7 (Schedule 4) of the Consent. The status of each condition of the Consent can be found in the Conditions of Consent Compliance table provided in **Appendix B.**

A discussion of the non-compliances against the Consent and EPL identified by the IEA, as well as the corrective actions to be implemented, is provided within this section of the AEMR. The

non-compliances and corrective actions of the previous IEA are also included to present any changes to the environmental performance of the Terminal.

3.1 Previous Non-Compliances

No non-compliances were identified against the Consent Conditions or EPL in the previous IEA (2019).

3.2 Current Non-Compliances

No non-compliances were identified against the Consent Conditions during this reporting period. Two non-compliances were identified against the EPL and are detailed in **Table 3.1** below, the status of corrective actions to resolve/manage the non-compliance is also provided.

Table 3.1 Non-compliances against the Licence in the 2022 reporting period

Licence Condition	Non-compliance	Corrective Action and Evidence	Status	Person/Team Responsible
L2.1 / L2.4	Exceedances of water quality concentrations limits. • There were 7 exceedances of water quality concentrations limits. Prior to the IEA, Veolia had identified potential causes of these exceedances and implemented corrective actions, including improved maintenance of the on-site detention system to avoid stormwater pollution from the site.	Veolia to review maintenance of on-site detention system	This will be completed within the next reporting period	Facility Manager - NSW Resource Recovery
L4.1	Potentially offensive odour emission. • Three odour complaints were received between January 2022 and February 2022. In response, Veolia undertook several corrective actions as part of Veolia's continuous improvement and management of complaints. One of these	Veolia to ensure velocity sensor is checked during scheduled fan maintenance	This has been implemented and will continue to be undertaken as part of scheduled maintenance	Facility Manager - NSW Resource Recovery

	corrective actions included replacement of the exhaust stack velocity sensor which was found to be faulty. It has been recommended that the exhaust velocity sensor is checked at the same time as maintenance is done on ducting to ensure that any faults are detected sooner. • The odour complaint received on 11 March 2022 was due to an off-site railway incident which occurred on 7 March 2022. This incident resulted in inability to remove waste from the site, causing an uncommon amount of waste being stockpiled at the site. These circumstances were proactively communicated to the NSW EPA and neighbouring sites. • The odour complaint received in April 2022 was attributed to a neighbouring property and not the Banksmeadow Transfer Terminal following an investigation by Veolia.			

Note: There were 12 complaints in total this reporting period. Table 3.2 above is extracted from the 2022 IEA which specifies the complaints received within 2022.

3.3 Previous Opportunities for Improvement

A total of nine opportunities for improvement were identified during the 2019 IEA. The opportunities for improvement are detailed in **Table 3.2** below.

Table 3.2 Recommendations for Opportunities for Improvements for the 2019 reporting period

Condition	Recommendation	Corrective Actions	Status	Person/Team Responsible
Consent Condition 21	It is recommended that weed management, in accordance with the Landscape and Vegetation	A new landscape contractor was engaged in May	Complete	Facility Manager - NSW Resource Recovery

	Management Plan, is resumed to avoid the continued growth and potential spread of weed within, and properties adjacent to the site.	2019 and ongoing landscape maintenance has improved. This was confirmed during the Site Inspection on 13 May 2022.		
Schedule 3 - Environmental Performance Conditions - Condition 9 and Condition 10	Increase the frequency of drain cleaning in the main tipping building and include regular inspections to ensure that the leachate is not accumulating and potentially causing odour which could migrate outside of the processing shed.	More frequent drain cleaning is carried out in the waste receival hall to minimise odour internally. This was confirmed during the Site Inspection on 13 May 2022.	Complete	Facility Manager - NSW Resource Recovery

3.4 Opportunities for Improvement

A total of 4 recommendations were identified during the 2022 IEA. The opportunities for improvement are detailed in **Table 3.3** below.

Table 3.3 Recommendations for Opportunities for Improvements for the 2021 reporting period

Consent Condition	Recommendation	Proposed Actions	Status	Person/Team Responsible
Consent Condition 10	A minor leak in the leachate transfer line causing pooling leachate on the floor, with the potential for odour emissions.	Repair the leachate transfer line and clean up leachate spill.	Completed 1 June 2022	Facility Manager - NSW Resource Recovery
Consent Condition 15 EPL Conditions O5.4	The outdoor diesel storage area with ponding rainwater within the bunding, reducing its effective capacity in the event of a spill during refuelling.	Veolia to include on the weekly checklist an inspection of the outdoor diesel storage area inspections for podning rainwater which can then be pumped out if necessary	This will be implemented in the next reporting period	Facility Manager - NSW Resource Recovery
Consent Condition 9, 10	The cleaning schedule for stormwater pts and the OSD system should be reviewed to avoid build-up of sediment and	Increase the frequency of pit and OSD cleaning and include more	This will be implemented in the next reporting	Facility Manager - NSW Resource Recovery

	deis (eg. leaf litter or vegetative matter).	frequent inspections to ensure that the sediment and debris are not accumulating and impacting water quality. A maintenance schedule will be included in SAP project management software.	period	
Consent Condition 21	Some failed landscaping was present on the site. Repairs are needed to avoid the transfer of sediment into stormwater.	Revegetate the affected areas.	This will be implemented in the next reporting period	Facility Manager - NSW Resource Recovery

3.5 Conclusion

In this reporting period, the environmental monitoring results and audits have demonstrated that implemented mitigation controls are generally effective in managing potential environmental impacts associated with air quality, noise and vibration, water quality, traffic, and pest and vermin.

Feedback from neighbouring businesses and monitoring quality results indicate that Veolia continues to implement, maintain, monitor and assess environmental initiatives at the Terminal to improve its environmental performance.

Continual improvement is important to Veolia to ensure its business is operating effectively and efficiently. Veolia is committed to correcting non-compliances and acting on recommendations made by auditors as opportunities for improvement, particularly around odour management and changes in water quality.

Terms and Definitions

Term	Definition
AEMR	Annual Environmental Management Report
ALS	Australian Laboratory Services PTY LTD
AQMP	Air Quality Management Plan
BTT	Banksmeadow Transfer Terminal
Consent	Development Consent SSD 5585
DPE	NSW Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act1979 (and associated Regulations)
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
IEA	Independent Environmental Audit
NVMP	Noise and Vibration Management Plan
OEMP	Operational Environmental Management Plan
POEA Act	Protection of the Environment Act 1997 (and associated Regulations)
SAP	Systems, Applications and Products in Data Processing
SWLMP	Soil, Water and Leachate Management Plan
TMP	Traffic Management Plan
TOU	The Odour Unit PTY LTD
Terminal	Banksmeadow Transfer Terminal
TPA	Tonnes per annum
Veolia	Veolia Australia and New Zealand

WMP	Waste Management Plan

References

1. EPA (2015), Waste Classification Guidelines Part 1: Classifying waste, NSW Environment Protection Agency, November 2015.
2. Hyder (2014), Banksmeadow Transfer Terminal Environmental Impact Statement, Hyder Consulting, July 2016.
3. Veolia (2019/2020), Banksmeadow Transfer Terminal Annual Environmental Management Report, Veolia, June 2020.
4. SLR Consulting (2017), Noise and Vibration Assessment, August 2017.
5. Jackson (2019), Independent Environmental Audit Veolia Environmental Services Australia, Banksmeadow Transfer Terminal, May 2019.
6. Jackson (2022), Independent Environmental Audit Veolia Environmental Services Australia, Banksmeadow Transfer Terminal, June 2022.
7. Wilkinson Murray (2014), Air Quality Impact Assessment, Wilkinson Murray Pty Ltd, April 2014

Appendices

Appendix A - Site Plan

Appendix B - Conditions of Consent Compliance Table

Appendix C - Odour Audit Reports

Appendix D - Pest and Vermin Control Reports

Appendix E - Complaints register

Annual Environmental Management Report - Banksmeadow Transfer Terminal 2021 - 2022

Name of operation	Banksmeadow Transfer Terminal
Name of operator	Veolia Environmental Services (Australia) Pty Ltd
Development consent / project approval #	SSD 5585
Name of holder of development consent / project approval	Veolia Environmental Services (Australia) Pty Ltd
Mining lease #	N/A
Name of holder of mining lease	N/A
Water licence #	N/A
Name of holder of the water licence	N/A
MOP/RMP start date	N/A
MOP/RMP end date	N/A
Annual Review start date	29th of April 2021
Annual Review end date	28th of April 2022

I, Anae Ressos, certify that this audit report is a true and accurate record of the compliance status of Banksmeadow Transfer Terminal for the period 2021-2022 and that I am authorised to make this statement on behalf of Veolia.

Note:

a) *The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.*

b) *The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).*

Name of authorised reporting officer	Anae Ressos
Title of authorised reporting officer	Environmental Coordinator
Signature of authorised reporting officer	
Date	28/6/2022

Quality Information

Details:	Prepared by:	Reviewed By:	Authorised by:
Name/ Position:	Mary Wong *BEnvSc* Environmental Officer	Anae Ressos *BEnv* Environmental Coordinator Nicole Boukarim *BEnvFor* Environmental Compliance Advisor (NSW/ACT)	Bob Manevski Facilities Manager Banksmeadow / Port Botany
Signature			

Company:	Veolia Environmental Services (Australia) Pty Ltd
ABN:	20 051 316 584
Line of Business:	Resource Recovery
Facility:	Banksmeadow Transfer Terminal
Corporate Office Address:	Level 4 65 Pirrama Road, Pyrmont NSW 2009

Document Revision and Distribution Register:

Rev	Revision Details	Issued to	Date
0.1	First draft for internal review	• Sydney Resource Recovery Facilities Team • ANZ Environmental Compliance Team	June 2022
0.2	Second draft for internal review	• ANZ Environmental Compliance Team	June 2022
0.3	Final	• NSW Department of Planning and Environment	June 2022

Contents

Executive Summary

This Annual Environmental Management Report (AEMR) 2021 - 2022 is the 7th report prepared to detail the environmental performance of the Banksmeadow Transfer Terminal (the Terminal), owned and operated by Veolia Australia and New Zealand (Veolia). This AEMR covers the period of 29 April 2021 to 28 April 2022 (2021 - 2022 reporting period).

Veolia has prepared this AEMR in accordance with Schedule 4, Condition 8 of the State Significant Development Consent (SSD) 5585 (the Consent) for the Terminal, as well as relevant legislative requirements and industry best practices.

This AEMR provides a summary of environmental monitoring conducted at the Terminal, if any non-compliances or other findings have been identified against the Conditions of Consent (Consent) during the 2021-2022 reporting period, and the corrective actions assigned.

No non-compliances were identified against the Consent during this reporting period. A 3 yearly Independent Environment Audit (IEA) was carried out in this reporting period to verify compliance against the Consent, as well as the Environment Protection Licence (EPL) 20581 for the Terminal. Further details are provided in Section 3 of this AEMR.

Section 1 - Introduction

1.1 Site Background

The Terminal is located at 14 Beauchamp Road and 34-36 McPherson Street, Banksmeadow and is identified as Lots: A & B, DP 366725 and Lot 1, DP 435497 owned by Keith Engineering (34-36 McPherson Street); and part of Lot 2, DP 100686 (14 Beauchamp Road) owned by Asciano (Pacific National). A site layout and location plan is provided in **Appendix A**.

The Terminal was granted approval under Section 89E of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 28 April 2015 as a SSD, and is approved under the Consent to receive up to 500,000 tonnes per annum (TPA) of waste from the Sydney Metropolitan Area.

The Terminal commenced operations in September 2016, accepting putrescible waste from the Sydney Metropolitan Area, which is containerised and loaded onto rail wagons for transportation to the Woodlawn Eco Precinct (owned and operated by Veolia) in the Southern Tablelands (approximately 250 kilometres southwest of Sydney) for treatment, recycling and energy recovery. During this reporting period, the Terminal received a total of 315,545 tonnes per annum (TPA) of General Solid Waste (Putrescible) and General Solid Waste (Non Putrescible) as classified in the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW Environment Protection Authority, November 2015). This equated to approximately 145 waste collection truck movements per day.

1.2 Legislative Requirements

The key legislative requirements governing the environmental performance and activities undertaken at the Terminal include the *EP&A Act*, regulated by the NSW Department of Planning and Environment (DPE), and the *Protection of the Environment Operations Act 1997* (POEO Act) regulated by the NSW Environment Protection Authority (EPA), as well as their respective associated regulations.

Consent Conditions stipulate the requirements that need to be addressed to maintain compliance at the Terminal as detailed in **Appendix B**. This AEMR has been prepared in accordance with the requirements of Schedule 4, Condition 8, as shown in Table 1.1.

In addition to the Consent, the Terminal also operates under the requirements of Environment Protection Licence (EPL) 20581, issued by the EPA under the POEO Act.

Table 1.1 - Consent Condition for the preparation of the AEMR

Relevant Condition	Requirement
SCHEDULE 4 - ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING	
Annual Review	
8	Within one (1) year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must: (a) Describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; (b) Include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against; • The relevant statutory requirements, limits or performance measures/criteria • The monitoring results of previous years; and • The relevant predictions in the EIS; (c) Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) Identify any trends in the monitoring data over the life of the development (e) Identify any discrepancies between predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) Describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

1.3 Responsibilities

- Environmental monitoring during the operational stage of the Terminal was undertaken and/or supervised by Sydney Resource Recovery Facilities technical support personnel - Mary Wong, Environmental Officer;
- Analyses of samples were performed at a NATA accredited laboratory, Australian Laboratory Services PTY LTD (ALS);
- The Odour Unit PTY LTD (TOU) was appointed to conduct odour audits for the Terminal;
- Jackson Environment and Planning was appointed to conduct the Independent Environmental Audit (IEA) for the Terminal.

Section 2 - Environmental Monitoring & Management

2.1 Terminal Monitoring Requirements

The following sections detail the monitoring undertaken throughout the reporting period in accordance with the Environmental Monitoring Program as detailed within the *Operational Environmental Management Plan* (OEMP, 2016) for the Terminal.

The Environmental Monitoring Program provides details on all monitoring requirements of the Consent and other appropriate regulations to measure and assess the continuing suitability, adequacy and effectiveness of on-site environmental management measures.

Table 2.1 summarises the environmental monitoring conducted at the Terminal as per the Environmental Monitoring Program.

Table 2.1 - Operational Monitoring Requirements

Reference	Type of Monitoring	Frequency	Commentary
Schedule 3 Conditions 36, 38, 40, 41	Meteorological Monitoring	Continuous	Ongoing basis
Air Quality Management Plan (AQMP)	Meteorological Monitoring - Wind	Continuous	Ongoing basis
Schedule 3 Condition 36	Visual Dust Monitoring	Daily or as required	Ongoing basis
AQMP	Odour - Site Inspections	Daily or as required	Ongoing basis
Schedule 3 Condition 34	Odour Audits	Six monthly	Audits completed on: 25 November 2021 1 June 2022
Soil, Water and Leachate	Stormwater Discharge Monitoring	Daily during any discharge	Ongoing

Management Plan (SWLMP)			
Schedule 3 Condition 10	Groundwater Monitoring	Six monthly	Monitoring completed on: 15 December 2021 21 April 2022
Schedule 3 Condition 10	Leachate Monitoring	As required	Not triggered in this reporting period .
Schedule 3 Condition 27	Waste Volume Monitoring	Daily	Ongoing basis
Schedule 3 Condition 27	Traffic Monitoring (Traffic flow and congestions)	As required	Ongoing basis
Schedule 3 Condition 27	Traffic Spot Monitoring (On-site truck routes and driver management)	Weekly	Ongoing basis
Schedule 3 Condition 38	Visual Site Inspection and Housekeeping	Weekly	Ongoing basis
Schedule 3 Condition 21	Pest and Vermin Inspections and Placement of bait stations	Quarterly	Ongoing basis

2.1.1 Meteorology

Monitoring meteorological data during this reporting period provided an understanding of the ambient air (such as dust and odour) and rainfall conditions at the Terminal, and was utilised to manage environmental performance, as well as investigate potential impact to nearby sensitive receivers.

Meteorological data is downloaded from the public weather station situated at the Bureau of Meteorology (BoM) Sydney Airport site (Station ID:066037), provided in 30-minute intervals. During this reporting period, meteorological conditions such as wind speed, wind direction and rainfall were monitored on an ongoing basis and/or when any odour complaints were received.

A summary of daily wind speeds and wind directions at 9AM and 3PM at the nearby BoM weather station is presented in Figures 2.1 and 2.2.

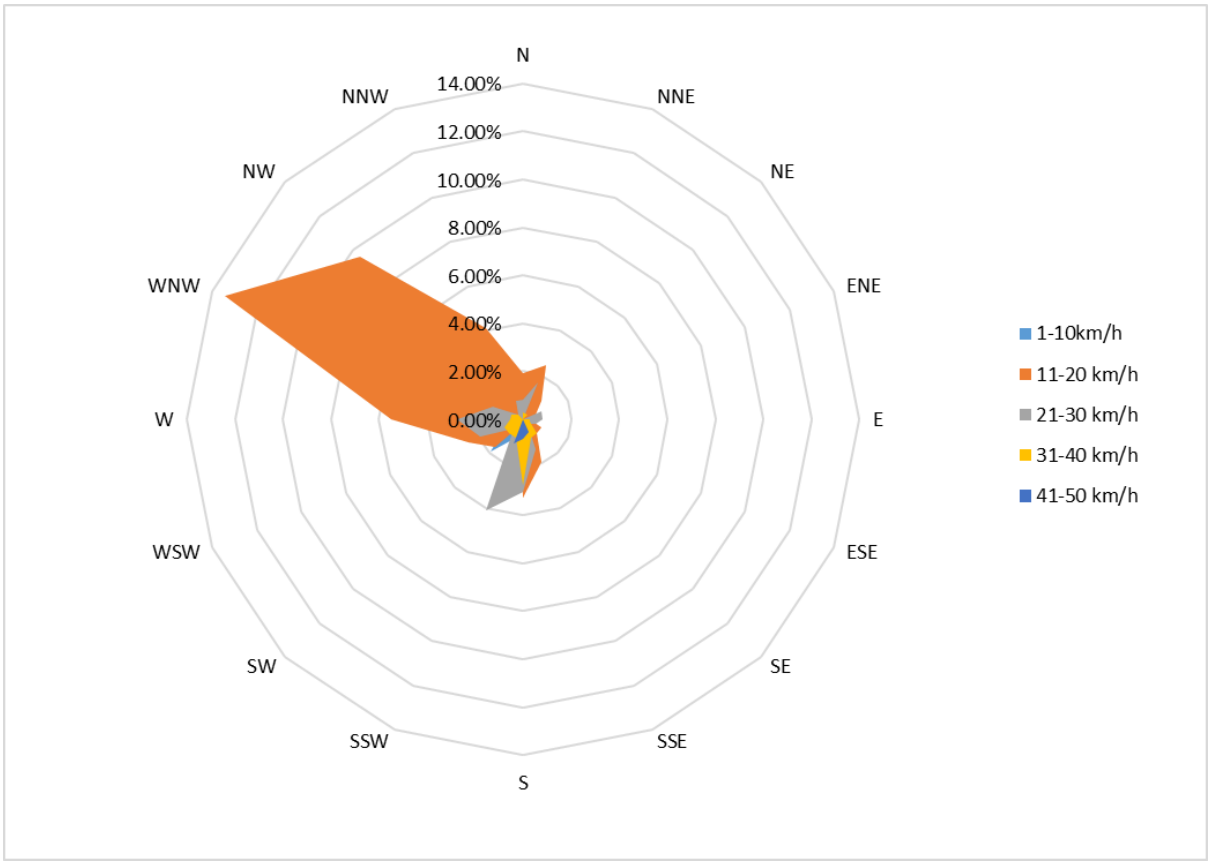


Figure 2.1 - Wind direction and speed data by percentage for 9AM this reporting period

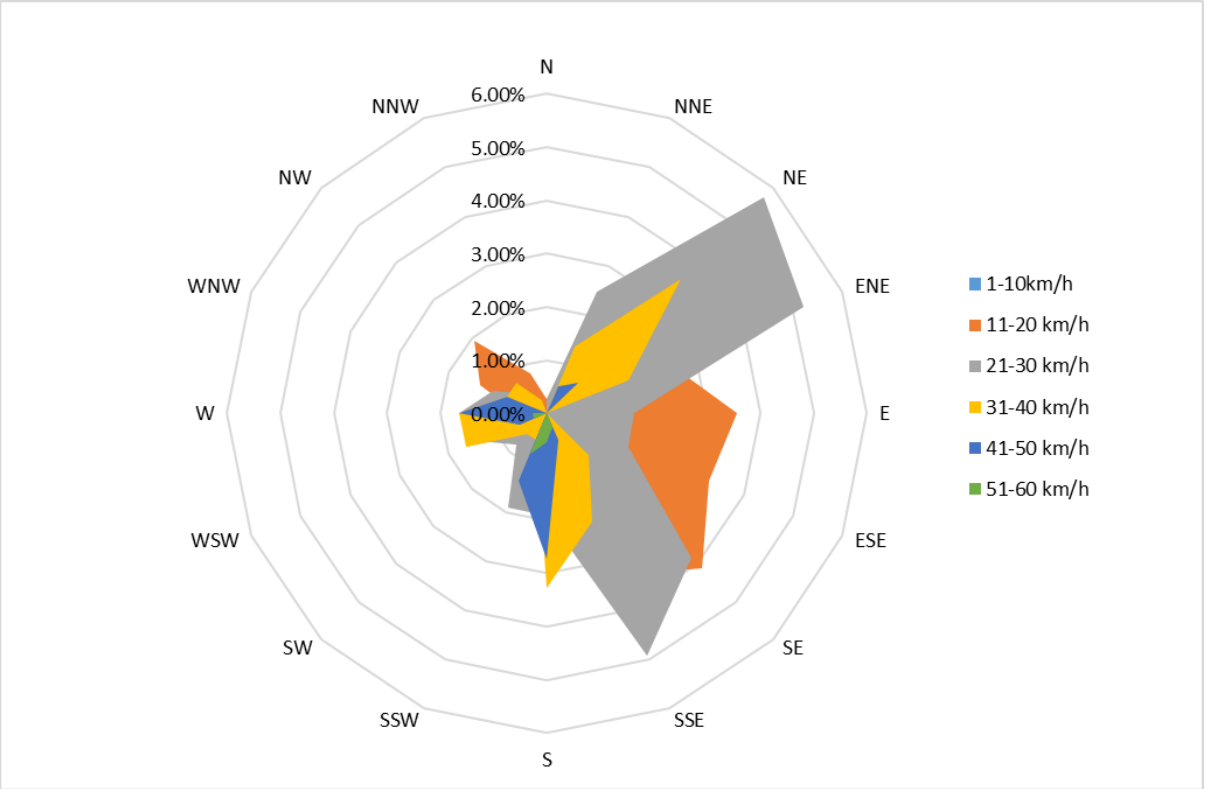


Figure 2.2 - Wind direction and speed data by percentage for 3PM this reporting period

During this reporting period, between 9AM and 3PM the prevailing wind directions were West-North Westerly and North-Easterly. Wind speeds at 9AM were most frequent (approximately 13.42%) within the 11-20 km/hr range, whereas wind speeds at 3PM were most frequent (approximately 5.75%) within the 21-30 km/hr range.

Wind speed and wind direction data was used to investigate and respond to odour complaints in this reporting period (refer to **Section 2.8**) by determining the source and spread of potential odours travelling off-site, if generated from the Terminal.

Ongoing rainfall data was monitored to supplement stormwater system operation and collection of samples from the discharge point, as well as for general housekeeping management such as inspection and maintenance for stormwater pits. This is to ensure the operation of the Terminal is not causing any off-site impacts.

A summary of rainfall data at the Terminal during the reporting period is presented in **Figure 2.3** Overall, the average rainfall for the Terminal during the reporting was approximately 144.4mm per month.

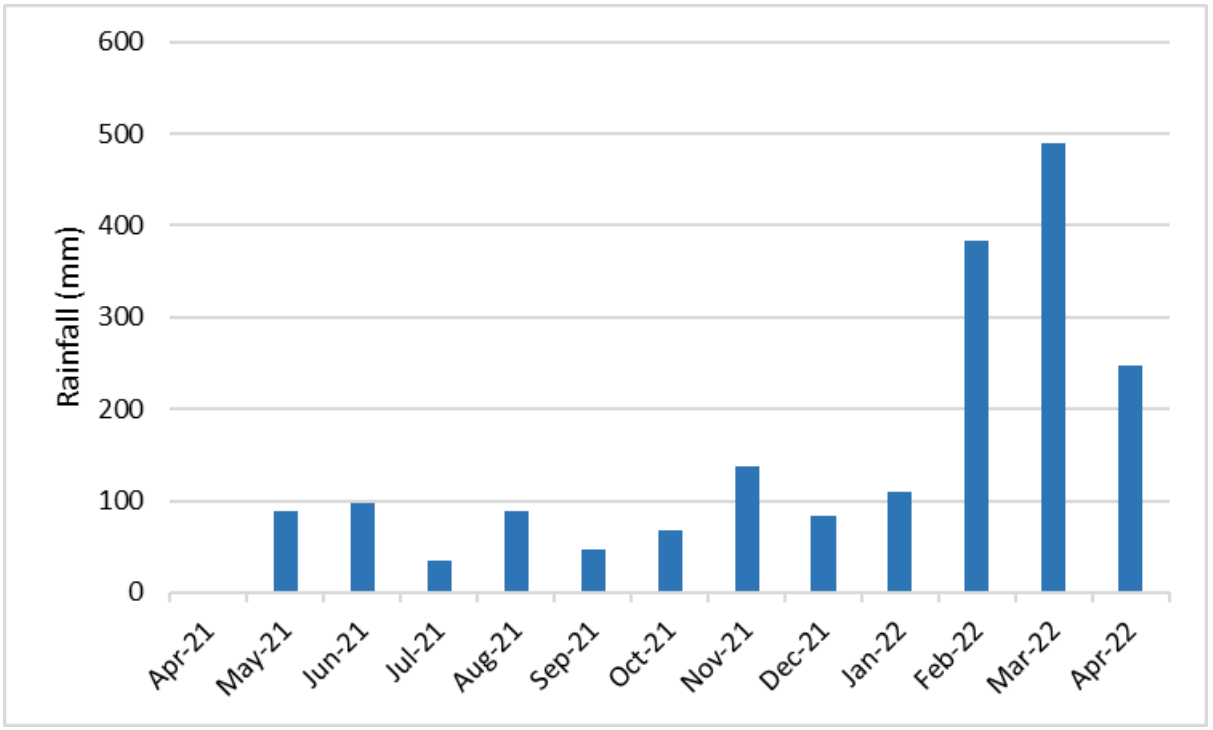


Figure 2.3 - Monthly rainfall data during the reporting period 2021/2022

2.2 Air Quality

In accordance with the Consent, the Terminal has adopted performance criteria pertaining to dust and odour emissions which are summarised in Section 2.2.1 and Section 2.2.2 respectively.

Air quality monitoring was carried out as required to determine whether activities conducted at the Terminal impacted ambient air quality. Further details regarding air quality monitoring and management practices undertaken at the Terminal are provided in the following sections.

2.2.1 Dust

Potential dust impacts arising from operations at the Terminal were assessed against the EPA air quality dust emissions criteria which were identified in the *Banksmeadow Transfer Terminal Environmental Impact Statement* (EIS) prepared by Hyder Consulting Environmental (Hyder, 2014).

The EIS concluded that the key potential impact from dust associated with operations at the Terminal would likely be due to the emissions of small diameter particulate matter (PM10).

Despite this, the EIS found that there would be negligible impact of PM10 particulates (i.e dust) at any off-site receivers, provided that reasonable dust controls are implemented.

To facilitate this, the Terminal has a dust suppression system within the transfer building to minimise the emissions of dust. Dust is also controlled through the operation of a street sweeper on hardstand areas around the site. In addition, visual inspections of dust generating activities at the Terminal are also carried out on a regular basis, augmented by monitoring of weather conditions.

No dust complaints or issues noted in this reporting period.

Long Term Trends

- This result is consistent with findings in previous years
- Dust emissions continue to be adequately managed on-site and off-site, no impacts have been detected since the commencement of operations in 2016

2.2.2 Odour

The potential for odour emissions from the Terminal were also assessed in the EIS (Hyder, 2014). Results of the EIS indicated that when the implemented odour mitigation and management measures were in operation, odour emissions from the Terminal's operation would be below the odour emission criteria presented in Table 2.2. It was also found that odour impacts would likely not exceed these levels at any residential receptor.

Table 2.2 - Odour Emission Criteria

Pollutant	Receptor	Criterion
Odour	Residential Receptors	2 Odour Units

To achieve the odour emission criteria, the Terminal operates an air extraction system within the terminal building which was designed to both ventilate the building, and capture and disperse odour emissions from within the building. In addition, containers used for the transportation of waste are fitted with activated carbon filtration systems on air exhaust vents.

Routine odour monitoring is carried out in the form of weekly odour assessments along the Terminal's site boundaries which are conducted by on-site personnel, the results of which are recorded on weekly housekeeping checklists.

During this reporting period, two (2) odour audits were completed in relation to the Terminal by TOU, refer to **Appendix C** for odour reports:

1. Banksmeadow Waste Transfer Terminal Facility Odour Audit November 2021
2. Banksmeadow Waste Transfer Terminal Facility Odour Audit June 2022

Odour Audits

TOU's odour audit reports found the roof discharge stack to be operating at a favourable odour performance level. The June 2022 Odour Report (**Appendix C**) found that all required maintenance works on the building ventilation air extraction system at the Terminal since the previous November 2021 Odour Report had been adequately undertaken, and the system is operating in a satisfactory condition, aside from the discharge stack velocity sensor which requires further optimisation.

The Terminal continues to implement an active service and maintenance program for waste containers and continues to follow odour mitigation and management practices.

Localised odour within the Terminal detected during the Field Ambient Odour Assessment survey is not expected to be problematic at nearby, off-site downwind locations.

Based on the results and findings documented in the odour audit reports from this reporting period, the Odour Reports concluded that the Terminal is operating in a manner that is unlikely to adversely impact the local amenity from an odour viewpoint under the measured and current operating circumstances. As part of Veolia's commitment to continuous improvement, the recommendations outlined in the reports will be implemented to maintain this low-risk rating.

Long Term Trends

The odour performance of the Terminal was mostly consistent with the previous reporting period;

- Results of odour sampling collected during this reporting period indicate the odour performance of the roof discharge stack remains consistent with original design performance documented in the *Air Quality Impact Assessment* (Wilkinson Murray, 2014).
- Smoke testing results conducted throughout this reporting period have consistently indicated that there are no other potential fugitive emission release pathways from the waste shed area, apart from the entrance doorway.
- The Terminal received an increase in odour complaints compared to the previous reporting period. See **Section 2.8** for further details.

2.3 Water Monitoring

2.3.1 Groundwater Monitoring

Following the commencement of the Terminal's operations, the groundwater quality was tested in April 2017. These results are referred to as baseline levels which are provided in Table 2.3. In accordance with the Consent, biannual groundwater monitoring is conducted to assess potential impacts of operations on the groundwater quality.

Table 2.3 - Groundwater Monitoring Program

Monitoring Locations	Parameters	Range of Baseline levels	Frequency	Sampling Method
GW1, GW2, GW3	Electrical Conductivity (EC)	578 - 1150 µS/cm	Six monthly	Grab sample
	pH	7.27 - 7.31pH		
	Total Dissolved Solids (TDS)	424 - 800 mg/L		
	Nitrogen (Ammonia)	0.33 - 1.37 mg/L		
	Biochemical Oxygen Demand (BOD)	<2 - 8 mg/L		
	Water Levels (Depth to Water & Depth to Base)	Metres (m)		

Groundwater monitoring was conducted at three wells (GW1, GW2, GW3) in December 2021 and April 2022, this data was compared to baseline levels from GW1, GW2, and GW3, please refer to Figures 2.4-2.9 below for monitoring results.

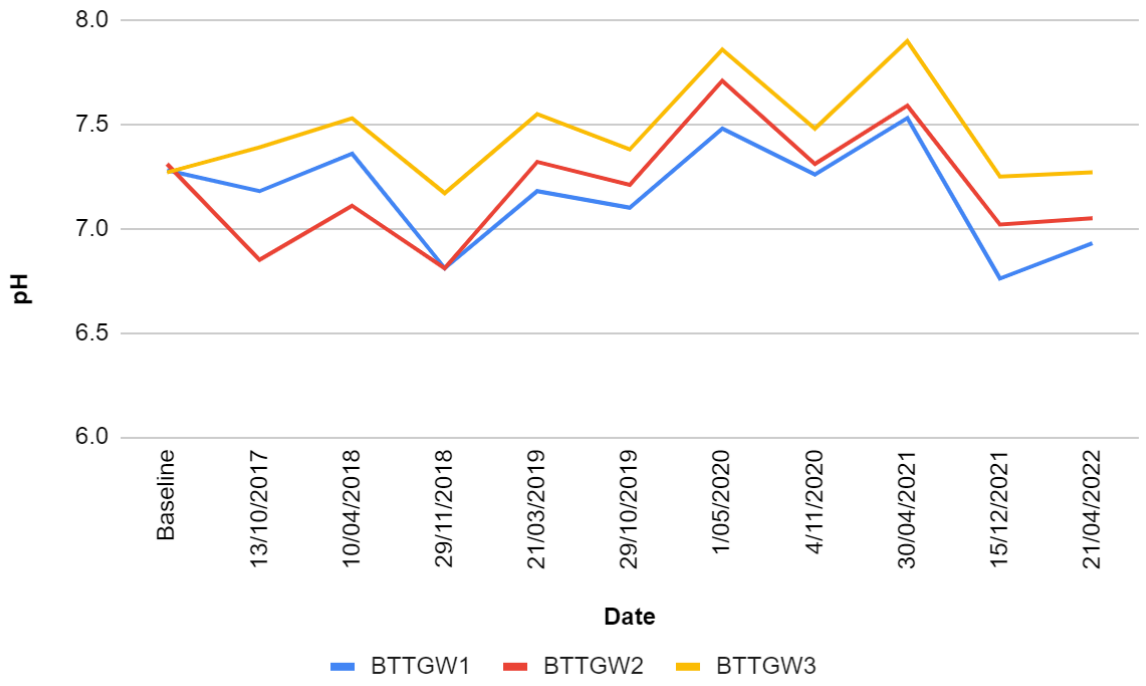


Figure 2.4 - pH trends in groundwater

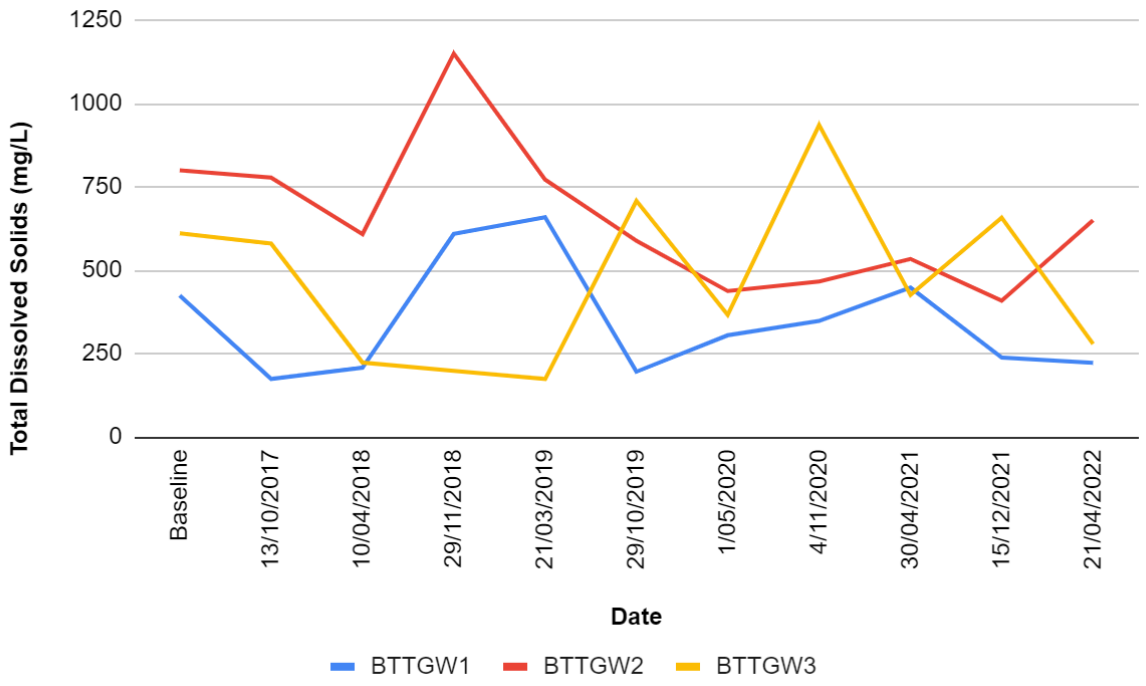


Figure 2.5 - Total Dissolved Solids trends in groundwater

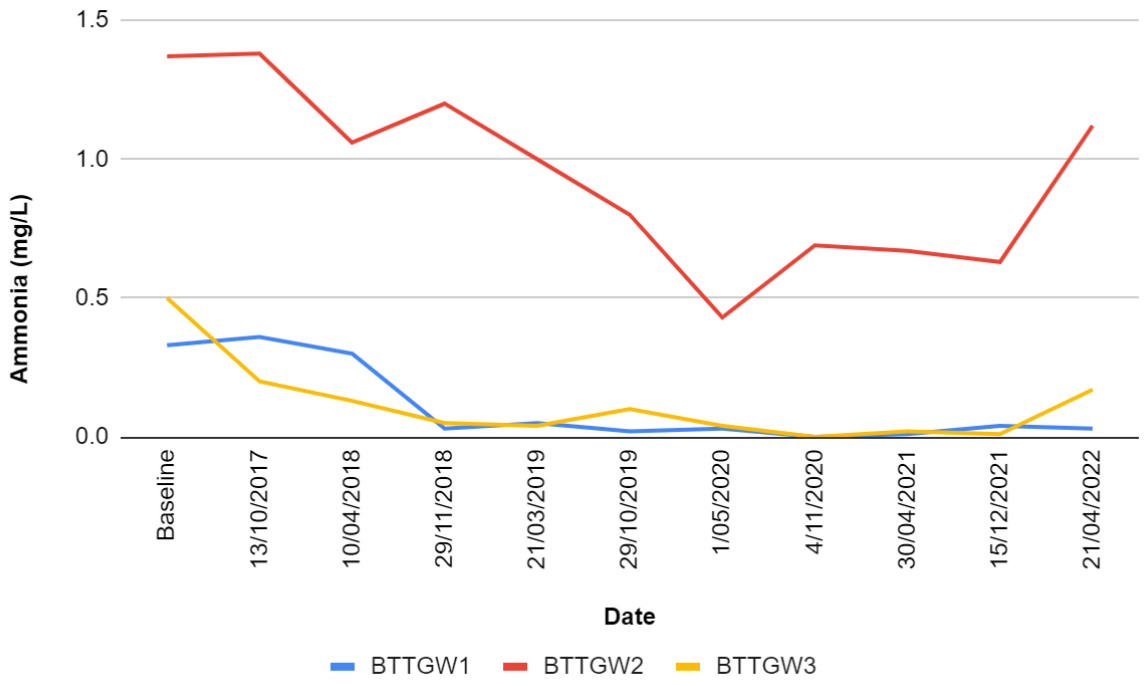


Figure 2.6 - Ammonia trends in groundwater

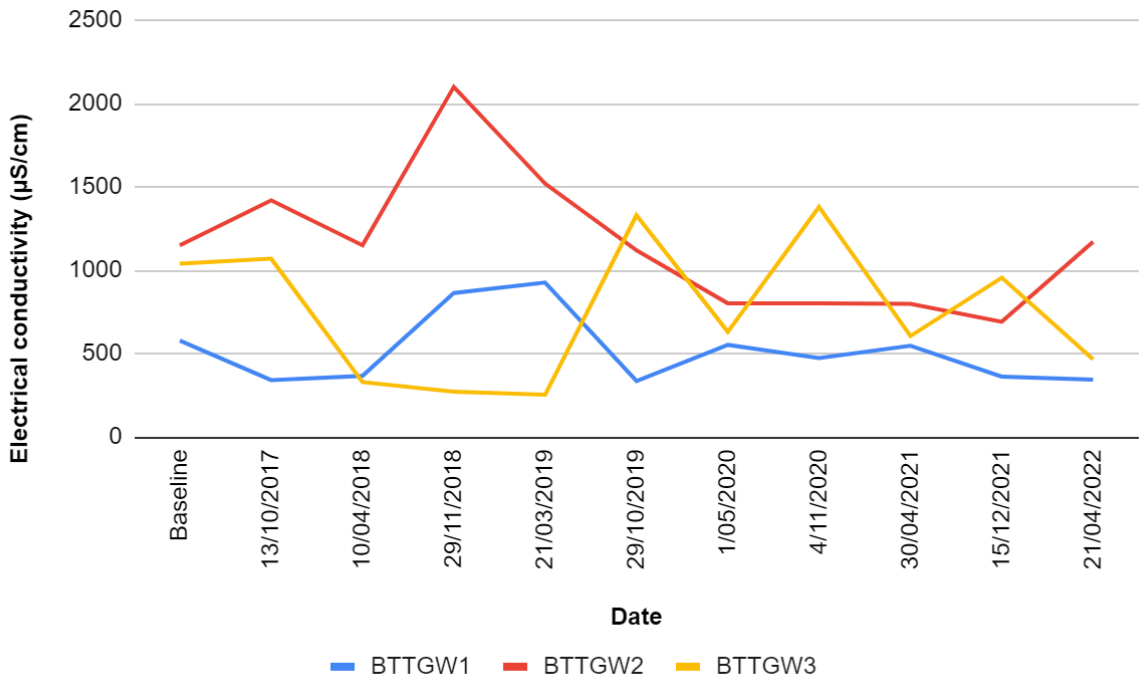


Figure 2.7 - Electrical Conductivity trends in groundwater

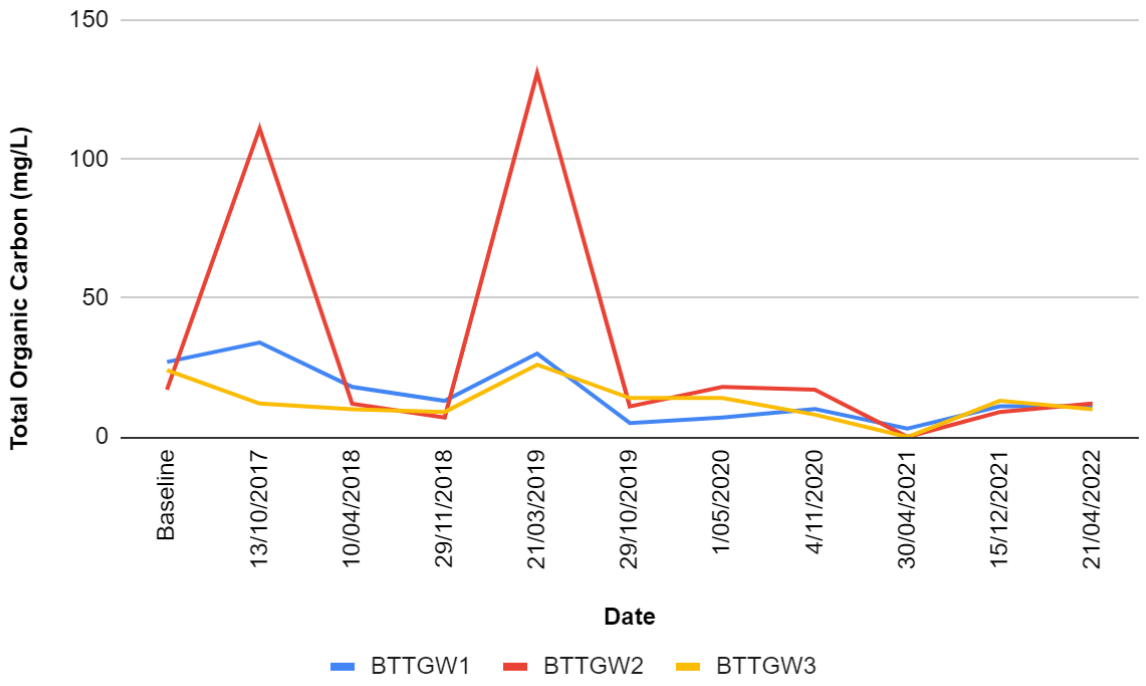


Figure 2.8 -Total Organic Carbon trends in groundwater

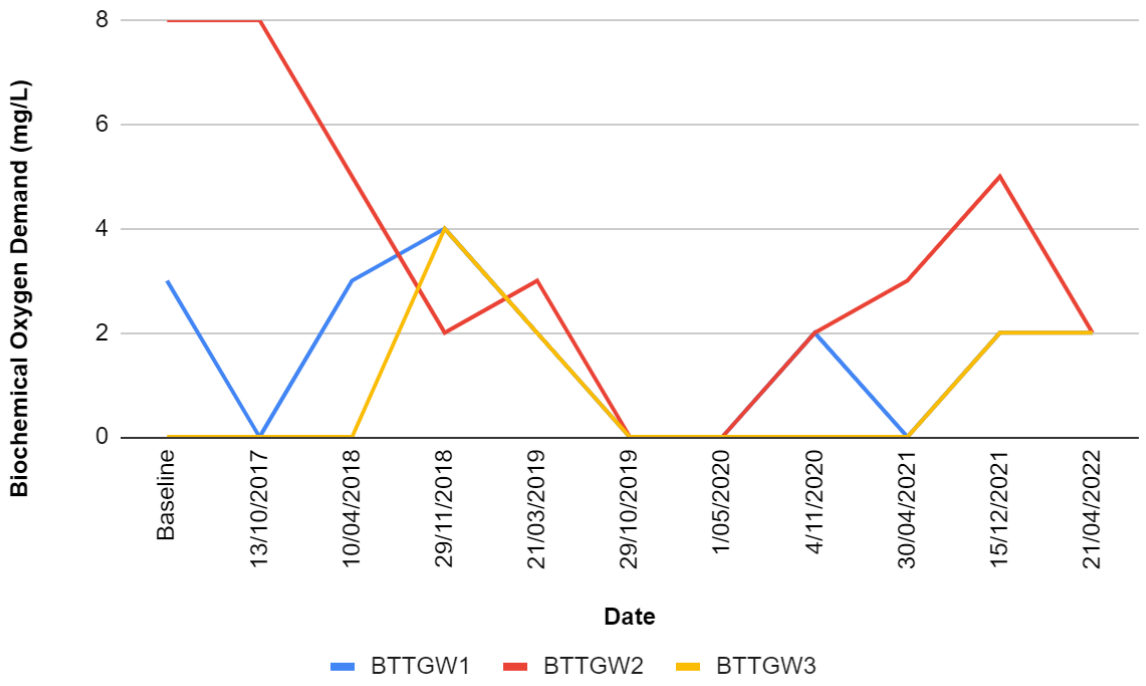


Figure 2.9 - Biochemical Oxygen Demand trends in groundwater

Groundwater levels were between 1.16 m and 2.41 m (depth to water) indicative of the shallow water table at the site. Ammonia and BOD concentrations were relatively low and within baseline levels in all wells this reporting period and ranged between <0.01 to 1.12 mg/L and <2 to 5 mg/L, respectively.

pH in all three wells (GW1, GW2, GW3) demonstrate a decreasing trend compared to the previous reporting period. GW1 and GW2 pH levels were slightly lower than baseline levels, however this will continue to be monitored in the next reporting period. The lowest pH level of 6.76 is not consistent with leachate quality tested onsite (pH= 4-5), therefore this trend does not indicate the migration of leachate on site.

In GW1, GW2 and GW3, the majority of the parameters (TDS, ammonia, EC, TOC and BOD have remained consistent and remained below baseline levels. Within GW2, BOD and ammonia increased slightly but remained below baseline levels this reporting period.

Groundwater results indicate that there have been no off-site impacts from site operations, which indicates that ongoing housekeeping and maintenance of the Terminal are effective.

Long Term Trends

- Groundwater quality in GW1, GW2 and GW3 wells remain fairly consistent with historical trends and baseline levels.

Groundwater results are made publicly available and can be accessed via Veolia's website in the following link: https://www.veolia.com/anz/media/media/reports?publication_type=36

2.3.2 Surface Water Monitoring

Stormwater discharge monitoring is conducted at the Terminal to monitor the effectiveness of all environmental measures to manage stormwater quality and infrastructure on-site. Stormwater monitoring is also undertaken to assess the performance of the on-site stormwater treatment system and whether stormwater flowing off-site could be contaminated as a result of operations at the Terminal.

The results of stormwater monitoring are assessed against discharge limits stipulated within the EPL 20581 which are described in Table 2.4 below.

Table 2.4 - Stormwater Discharge Limits

Parameter	Concentration Limit (100 percentile limit)	Frequency	Sampling method
pH	6-8.5 units	Daily, during any discharge event	Grab sample *
TSS (Total Suspended Solids)	50 mg/L		
Ammonia as N	1 mg/L		
BOD (Biochemical Oxygen Demand)	10 mg/L		
Oil & Grease	10 mg/L		

*Please note that condition M2.2 of the EPL was varied in November 2021 to amend sampling method to "Grab Sample", replacing "auto-sampler" as the sampling method.

There were a number of rainfall events during the reporting period, which triggered the requirement to conduct stormwater monitoring. Figures 2.10-2.14

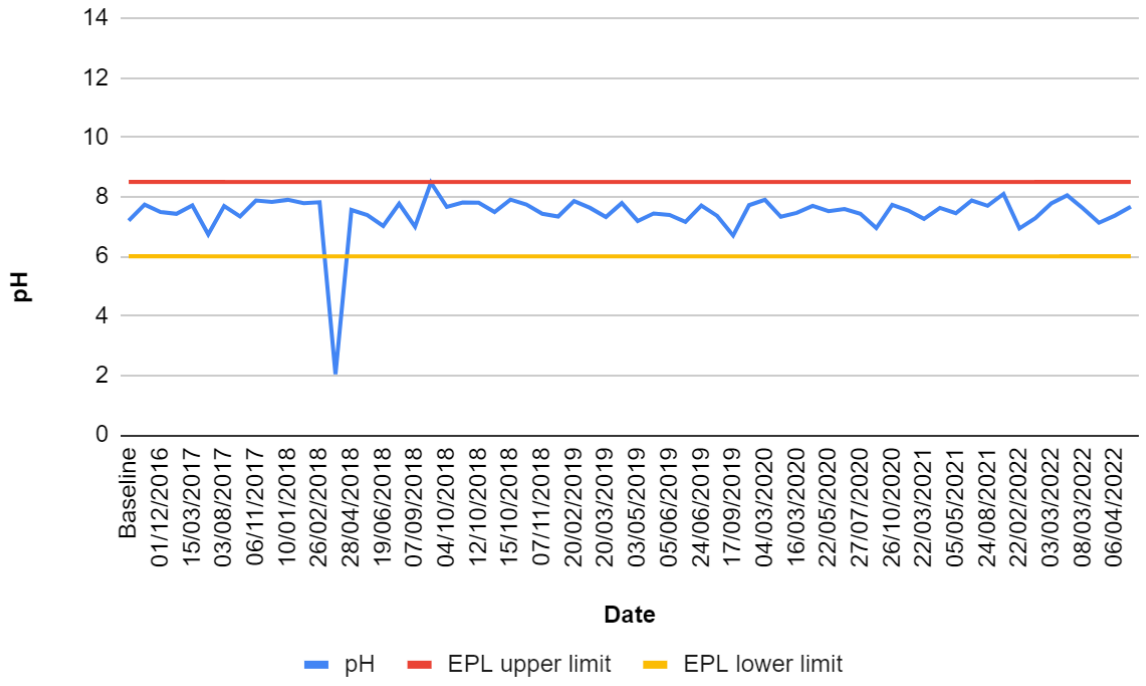


Figure 2.10 - pH trends in stormwater discharge

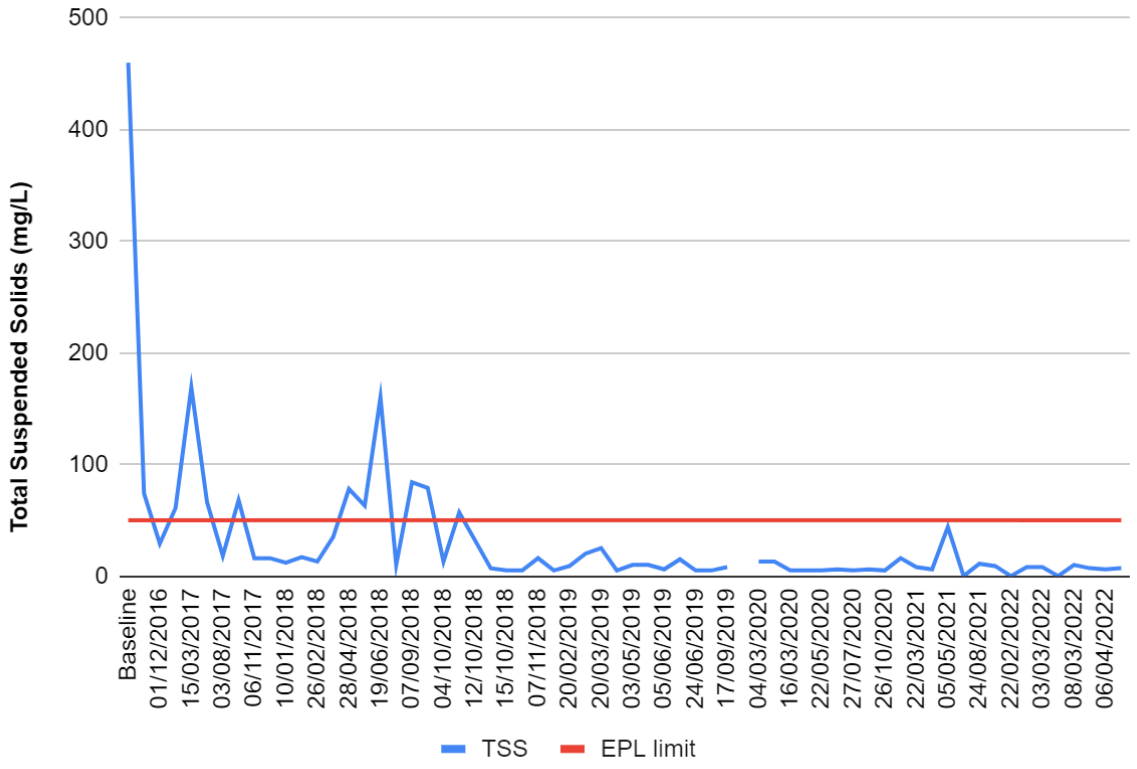


Figure 2.11 - TSS trends in stormwater discharge

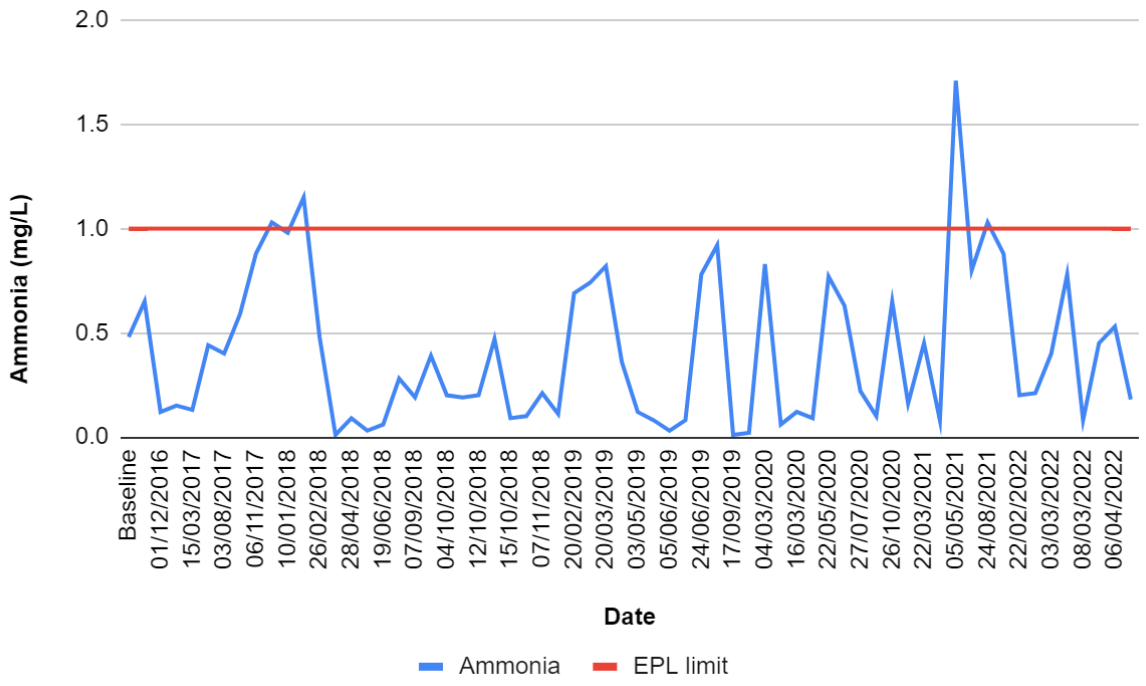


Figure 2.12 - Ammonia trends in stormwater discharge

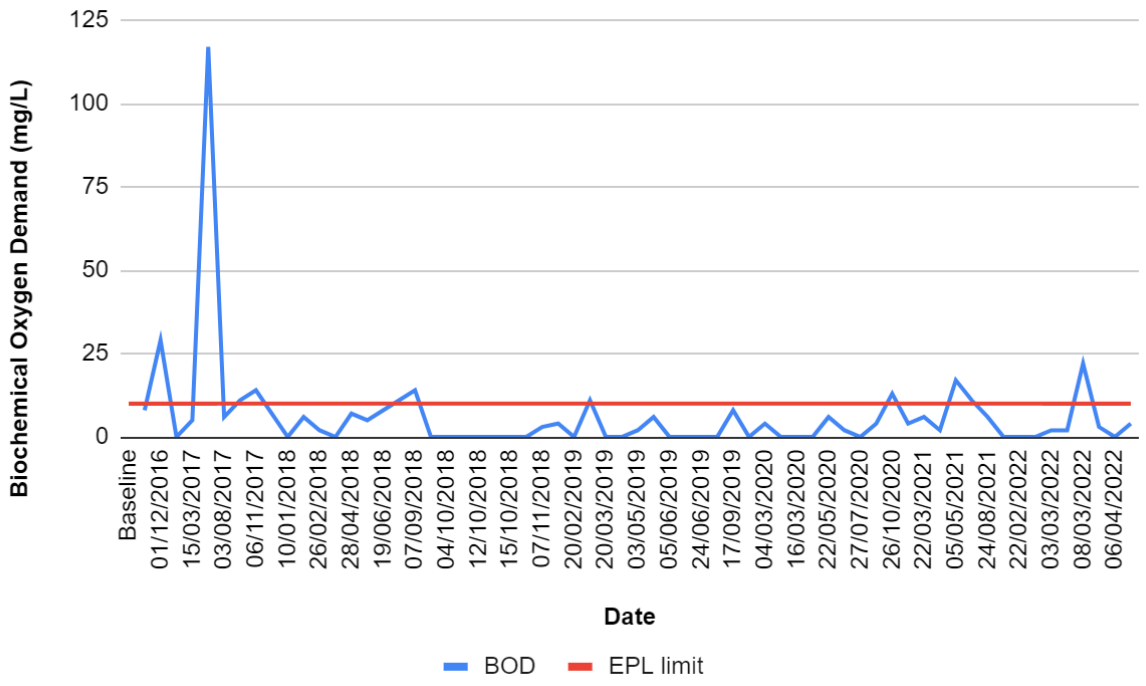


Figure 2.13 - BOD trends in stormwater discharge

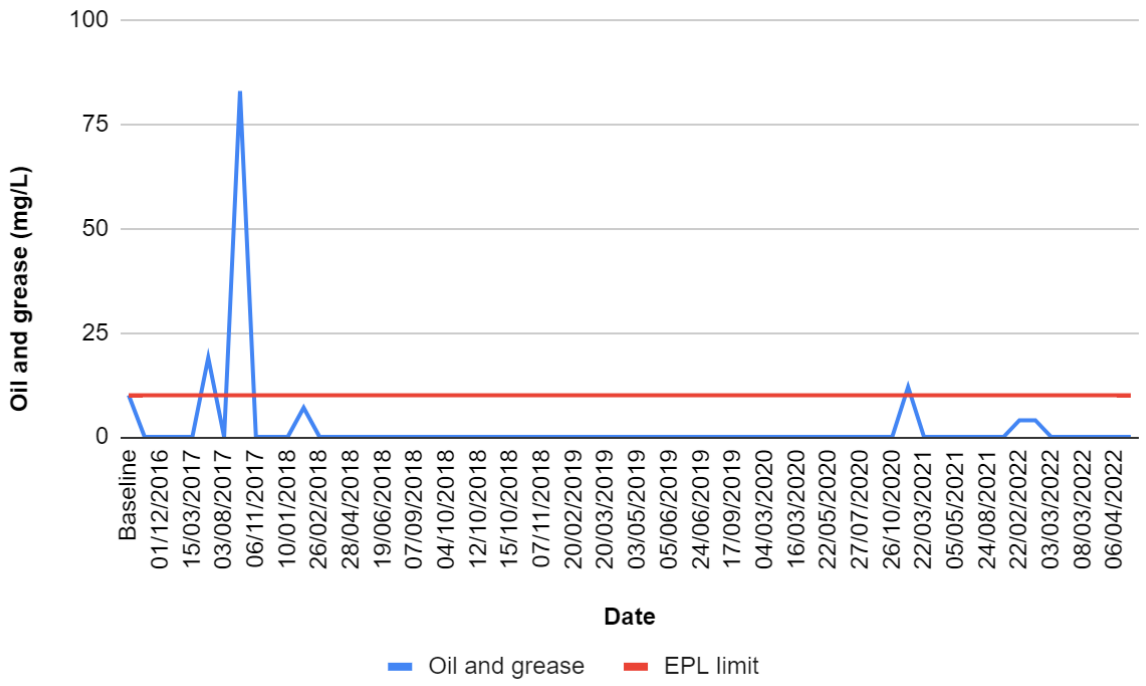


Figure 2.14 - Oils & Grease trends in stormwater discharge

During this reporting period, the stormwater discharge quality exceeded the concentration limits as stipulated in the EPL 20581 on five occasions. In May 2021, two parameters exceeded the EPL limits, ammonia exceeded the 1 mg/L limit with a reading of 1.71 mg/L, and BOD with a limit of 10 mg/L with a reading of 17 mg/L and 11 mg/L the following day.

In August 2021, ammonia slightly exceeded the same limit by 0.3 mg/L. In March 2022, BOD exceeded the 10 mg/L limit with a reading of 22 mg/L.

Stormwater results indicate that further investigation to identify the cause of the exceedances need to be undertaken, and will be reported in the next AEMR.

Inspections of onsite infrastructure and processes were undertaken to investigate the exceedances. While it was determined that there were no likely adverse effects of the recorded exceedances corrective actions were undertaken.

BOD exceedances were attributed to the presence of iron algae growth identified at the monitoring location: EPA identification point 1. Therefore, a contractor was engaged to clean the Premises¶drains and stormwater lines.

Review of stormwater system and maintenance schedule was undertaken to determine the cause of the ammonia exceedances, and trends will continue to be observed. Veolia will follow internal investigation and reporting processes to ensure any future exceedances are escalated and resolved as soon as possible.

Long Term Trends

- In 2018, following the recommencement of sampling from EPL Monitoring Point 1 after rectification works were completed in the discharge pit, stormwater quality results have significantly improved in all parameters (pH, BOD, ammonia, oils and grease and TSS).
- Stormwater system maintenance, frequency and effectiveness has been reviewed to further improve the system.

Surface water results are made publicly available and can be accessed via Veolia's website in the following link: https://www.veolia.com/anz/media/media/reports?publication_type=36

2.3.3 Leachate Monitoring

Leachate is defined as any water which comes into contact with waste or waste processing areas. Through the management of waste, leachate is released within the waste shed when waste is delivered to the Terminal. All leachate from the tipping floor and compactor areas, as well as wash down water are collected into two 32 kilolitre (kL) leachate storage tanks for off-site disposal.

Leachate levels within the storage tanks are monitored by using a reference point on the containers, this determines when it is required to be pumped out and disposed of.

During this reporting period the off-site disposal facility did not require leachate quality data to be provided, therefore this monitoring requirement was not triggered as mentioned in Table 2.1.

2.4 Noise and Vibration

2.4.1 Noise and Vibration Monitoring

Operational activities such as truck operations, plant and equipment at the Terminal act as potential sources of noise emissions which may impact nearby receivers. Noise modelling was undertaken as part of the EIS (Hyder, 2014) which predicted that the operational noise emissions from the Terminal would not generate noise emissions which would impact local amenities.

Despite this, a number of noise and vibration mitigation controls were implemented at the Terminal to manage potential impacts, such as: low speed limits on-site, scheduling of trains, minimising container movements, use of quiet/minimal noise plant and equipment, and driver

induction program, these are further detailed in the Noise and Vibration Management Plan (NVMP).

Based on the noise modelling by the EIS, the following operational noise goals were adopted for the Terminal which are provided in Table 2.5.

Table 2.5 Operational Amenity Noise Goals

Receptor Location	Amenity Criterion (LAeq, 15 min, dB(A)		
	Day	Evening	Night
Residential Receivers	50	40	37
Industrial Receivers	65	65	65
Commercial Receivers	70	70	70

An ambient noise assessment was conducted in August 2017 which indicated off-site noise emissions comply with the noise criteria.

In the event a noise complaint is received at the Terminal, the site will carry out noise monitoring if required, and liaise with the complainant until resolved. No noise complaints were received in this reporting period, therefore the Consent Condition for monitoring was not triggered.

Long Term Trends

- Noise emissions have not caused off-site impacts, this has remained consistent since the commencement of operations in 2016
- Noise emissions continue to be adequately managed on-site through the implementation of mitigation controls outlined in the NVMP

2.4.2 Vibration Monitoring

Vibration impacts during operation of the Terminal were assessed in the EIS to be negligible and to pose no potential impact on sensitive receivers, buildings or the environment.

A vibration assessment was conducted in August 2017 which indicated vibration levels at residential receivers comply with the vibration criteria.

Noise and vibration mitigation measures have been discussed in Section 2.4.1. No vibration complaints were received for the Terminal during this reporting period therefore not triggering the requirements for additional vibration monitoring.

Long Term Trends

- Vibration emissions have not been identified as causing offsite impacts as no complaints have been received since the commencement of operations in 2016.
- Similarly to noise emissions, vibration emissions continue to be adequately managed on-site through the implementation of mitigation controls outlined in the NVMP

2.5 Traffic

A Traffic Impact Assessment (TIA) was undertaken as part of the EIS (Hyder, 2014) to assess the potential impact of the Terminal on traffic and transport during its operation.

The TIA found that the Terminal would see up to 355 trucks per day for the delivery of mixed waste, and that there was a potential for nearby roads to be affected due to these truck movements. A number of mitigation measures were implemented at the Terminal to manage these potential impacts as detailed in the Traffic Management Plan and are provided below in Table 2.6.

Table 2.6 Traffic Control Measures

Traffic issue	Control	Monitoring	Effective
Traffic Congestion	-Site has adequate room for queuing on-site - If the above control fails then vehicles will be directed away from the site. Facility Manager will then advise to cease further deliveries to the site until problem has been resolved	Traffic Spot Monitoring (Onsite truck routes and Driver management)	Yes, no complaints have been made of trucks obstructing traffic movements of neighbouring businesses
On-site Truck routes	-Abide to speed limit onsite -No turns to/from Perry street at any time -No right turn from Beauchamp Rd between 6AM-8PM	Traffic Monitoring (Traffic flow and Congestions)	Yes, no complaints from surrounding businesses or residents
Driver management	- The induction informs customers of	Traffic Spot Monitoring (Onsite	Yes, there have not been any major

	the site rules, weighbridge usage and site transport management procedures. Furthermore, clients must adhere to Veolia's standards of: professional conduct, workplace safety, drivers licence requirements, drug and alcohol policy.	truck routes and Driver management)	incidents since the program has been implemented

Monitoring activities conducted at the Terminal assist in measuring the effectiveness of these traffic control measures. No vehicles were observed using any unauthorised roads as stipulated within Schedule 3, Condition 29 of the Consent.

A total of 53,090 (truck) movements occurred during the operation reporting period which is equivalent to approximately 145 trucks per day. This is in line with the predicted truck movements of 355 trucks per day as described in the EIS. A breakdown of truck movements per month is provided in Table 2.7.

Table 2.7 Truck Movements during the 2020/2021 and 2021/2022 reporting periods

Monitoring Period	Truck Movements 2020/2021	Truck Movements 2021/2022
29 to 30 April 2020/2021	331	416
May	3726	5107
June	4071	4981
July	4199	4284
August	4100	3715
September	4111	3809
October	4141	3930
November	3835	4307

December	4391	4983
January	4023	4599
February	3883	4377
March	4483	3846
1 to 28 April 2021/2022	4218	4736
Total	**49,512**	**53,090**

Long Term Trends

- Truck movements have not been found to have resulted in off-site or on-site impacts since the commencement of operations in 2016.
- Potential traffic impacts have continued to be adequately managed on-site through the implementation of traffic control measures outlined in Table 2.6 and Traffic Management Plan.

2.6 Waste

A Waste Management Plan (WMP) was prepared which details the control strategies and mechanisms for the effective monitoring and recording of waste at the Terminal as shown in Table 2.8.

Table 2.8 - Waste Monitoring Schedule

Waste Monitoring	Type of Monitoring	Frequency
Waste volume processing • Storage on site	Waste on floor	Daily
Waste volume processing • Annual limit	Tonnage data review	Ongoing
Waste Recording	Incoming Waste Processing	Ongoing

2.6.1 Waste Monitoring

All waste received at the Terminal was recorded in the Paperless Weighbridge System (PWS) and the Systems, Applications and Products in Data Processing (SAP) software. SAP records vehicle registrations, the date and time of delivery, the gross and tare weight of the vehicle, as well as the nature and origin of the waste delivered by each contractor.

Visual assessments of incoming waste are conducted by weighbridge operators and assisted by close circuit television. These visual assessments were conducted to identify, reject and/or separate non-conforming waste upon its arrival to the Terminal. Waste is also inspected as it is tipped/unloaded onto the tipping floor.

Schedule 2, Condition 5 of the Consent stipulates that the Terminal must not receive or process more than 400,000 tonnes per annum (TPA) of putrescible waste and 100,000 TPA of non-putrescible waste. Veolia utilises the data provided by SAP to track and monitor the amount of incoming waste in accordance with the limits of the Consent. Refer to Table 2.9 for a breakdown of the classification of waste material received and processed at the Terminal during this reporting period and the previous reporting period. As noted in the table, all waste received at the Terminal is containerised for transfer to the Woodlawn Eco-Precinct.

Table 2.9 - Received and processed waste for 2020 and 2021 calendar years

Waste classification	Approved Limits (tonnes per annum)	Waste tonnes (2020)	Waste tonnes (2021)
General Solid Waste (Putrescible)	400,000	291,600	305,468
General Solid Waste (Non Putrescible)	100,000	696	10,077

As shown in Table 2.9, The Terminal did not receive or process more than 400,000 tonnes per annum (TPA) of putrescible waste and 100,000 TPA of non-putrescible waste. No incoming non-conforming waste was recorded during this period.

Long Term Trends

- Since the commencement of operations the Terminal has continued to operate within annual waste limits.

2.7 Pests and Vermin

The management of pest and vermin at the Terminal was maintained through preventative and responsive mitigation measures as per the Landscape and Vegetation Management Plan appended to the Terminal's OEMP. Such measures included;

- Routine inspections of site by a registered pest controller
- Weekly Site Inspection Checklist completed to record site conditions such as evidence of vermin and pests
- Placement of rodent bait stations at various locations around the site

Pest control was undertaken by an external contractor (Expert Judgement Pest Management PTY LTD) during this reporting period. In total four (4) pest control service reports were completed during the reporting period, refer to **Appendix D.** Routine pest control service usually involves an initial inspection of the Terminal buildings (site office, weighbridge office and waste shed), followed by any necessary treatment for rodents, cockroaches and spiders.

No pest and/or vermin complaints or management issues were reported during the operation of the Terminal during the reporting period.

Long Term Trends

- This result is consistent with findings in previous years
- Vermin and pests continue to be adequately managed on site since the commencement of operations in 2016.

2.8 Complaints

A total of 12 complaints as shown in **Figure 2.15** was issued to the Terminal in regards to odour emissions during this reporting period, of which 11 are attributed to the Terminal. The odour complaints were received directly from IXOM who are located north-east of the Terminal. This is an increase compared to the previous reporting period in which the Terminal received one odour complaint

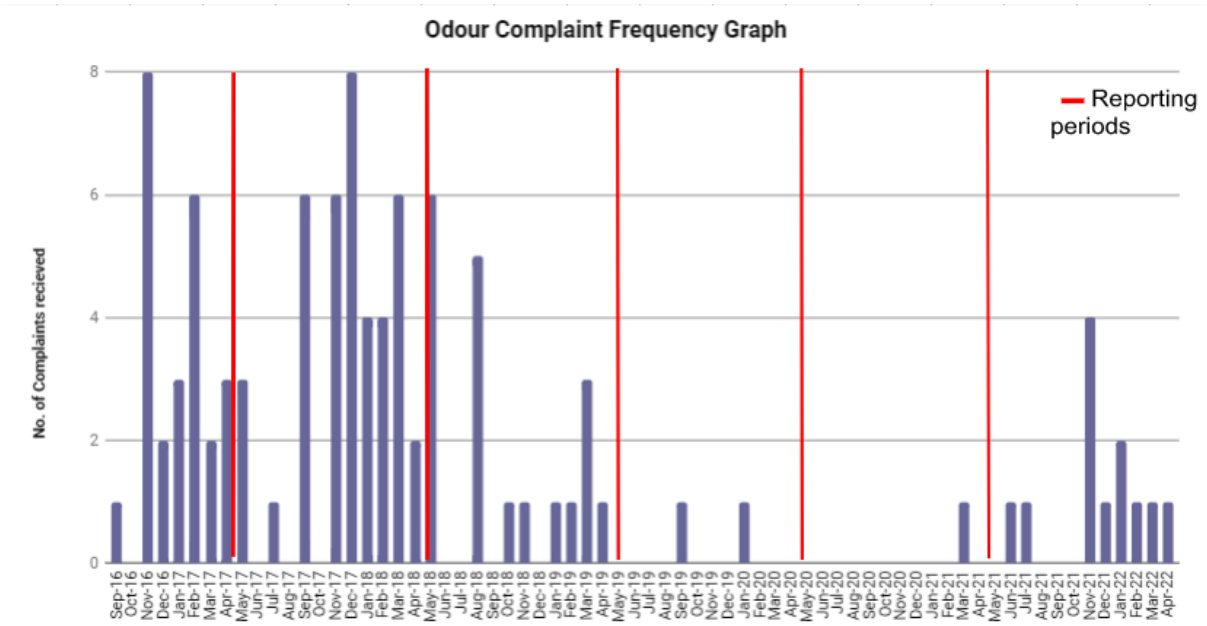


Figure 2.15 - Number of odour complaints received each month at the Terminal

As shown in **Figure 2.15**, there has been an increase of odour complaints received since the last reporting period. In response, Veolia commissioned the Odour Unit to conduct an additional site audit to investigate the potential causes (refer to **Appendix C**, report dated 31 May 2021). Veolia undertook several corrective actions based on the recommendations of these investigations. One of these corrective actions included replacement of the exhaust velocity sensor in March 2022, which was found to be faulty. Veolia will continue to monitor its effectiveness and include inspection and testing of this sensor as part of scheduled maintenance of the odour system to prevent any recurrence of this issue. (**Appendix C**).

The odour complaint received on 11 March 2020 was due to an off-site railway incident which occured on 7 March 2022. The incident resulted in inability to remove waste on site, causing an uncommon amount of waste being stockpiled at the site. These circumstances were proactively communicated to the NSW EPA and neighbouring sites.

The odour complaint received on April 2020 was attributed to a neighbouring property and not the Terminal following an investigation by Veolia.

Based on meteorological data in **Section 2.1.1**, the prevailing wind directions were west-north westerly and north-easterly. As IXOM is located north-east of the Terminal, wind directions are not consistent with odours coming from the Terminal at the time that complaints were received.

Following the receipt of the odour complaints received:

1. The Terminal implements corrective actions if necessary, to reduce odour emissions such as adjustment of fan extraction system speed setting;

2. The Site Manager communicates any corrective actions taken on the site with the complainant;
3. Meteorological wind data is downloaded from the BoM website;
4. Details of the complaint and wind data are logged in the BTT Complaints Register (**Appendix E**).

Section 3 - Environmental Performance

The environmental performance of the Terminal is assessed through the results of environmental monitoring, inspections and audits, both internal and external. Corrective actions are then assigned for any non-compliances or other findings identified against the Consent Conditions in this reporting period.

- Groundwater quality has remained fairly consistent and within respective limits, with the exception of seasonal fluctuations.
- Stormwater exceedances will undergo further investigation to identify the cause, this will be monitored and reported in the next AEMR.
- Air quality, with regards to dust continues to be well-managed with no onsite or offsite impacts or dust-related complaints received by the Terminal. Odour complaints have increased during this reporting period from previous years, following an identified fault in the exhaust stack velocity sensor and an off-site railway incident which impacted normal operations at the site. Odour audit findings have concluded that overall, the Terminal is operating in a manner that is unlikely to adversely impact the local amenity from an odour viewpoint under the measured and current operating circumstances.
- General Solid Waste (Putrescible and Non-Putrescible) volumes have not exceeded annual waste tonnage limits.
- No complaints have been made in relation to noise and vibrations, and traffic which indicates implemented mitigation controls are effective.
- Pests and vermin are adequately controlled, no major issues have been identified since the commencement of operations in 2016.

An Independent Environmental Audit (IEA) of the Terminal's activities was undertaken on 13 May 2022 by Jackson Environmental. The objective of this IEA was to assess the environmental performance of the Terminal and identify any non-compliances as required by Conditions 6 and 7 (Schedule 4) of the Consent. The status of each condition of the Consent can be found in the Conditions of Consent Compliance table provided in **Appendix B.**

A discussion of the non-compliances against the Consent and EPL identified by the IEA, as well as the corrective actions to be implemented, is provided within this section of the AEMR. The

non-compliances and corrective actions of the previous IEA are also included to present any changes to the environmental performance of the Terminal.

3.1 Previous Non-Compliances

No non-compliances were identified against the Consent Conditions or EPL in the previous IEA (2019).

3.2 Current Non-Compliances

No non-compliances were identified against the Consent Conditions during this reporting period. Two non-compliances were identified against the EPL and are detailed in **Table 3.1** below, the status of corrective actions to resolve/manage the non-compliance is also provided.

Table 3.1 Non-compliances against the Licence in the 2022 reporting period

Licence Condition	Non-compliance	Corrective Action and Evidence	Status	Person/Team Responsible
L2.1 / L2.4	Exceedances of water quality concentrations limits. • There were 7 exceedances of water quality concentrations limits. Prior to the IEA, Veolia had identified potential causes of these exceedances and implemented corrective actions, including improved maintenance of the on-site detention system to avoid stormwater pollution from the site.	Veolia to review maintenance of on-site detention system	This will be completed within the next reporting period	Facility Manager - NSW Resource Recovery
L4.1	Potentially offensive odour emission. • Three odour complaints were received between January 2022 and February 2022. In response, Veolia undertook several corrective actions as part of Veolia's continuous improvement and management of complaints. One of these	Veolia to ensure velocity sensor is checked during scheduled fan maintenance	This has been implemented and will continue to be undertaken as part of scheduled maintenance	Facility Manager - NSW Resource Recovery

	corrective actions included replacement of the exhaust stack velocity sensor which was found to be faulty. It has been recommended that the exhaust velocity sensor is checked at the same time as maintenance is done on ducting to ensure that any faults are detected sooner. • The odour complaint received on 11 March 2022 was due to an off-site railway incident which occurred on 7 March 2022. This incident resulted in inability to remove waste from the site, causing an uncommon amount of waste being stockpiled at the site. These circumstances were proactively communicated to the NSW EPA and neighbouring sites. • The odour complaint received in April 2022 was attributed to a neighbouring property and not the Banksmeadow Transfer Terminal following an investigation by Veolia.			

Note: There were 12 complaints in total this reporting period. Table 3.2 above is extracted from the 2022 IEA which specifies the complaints received within 2022.

3.3 Previous Opportunities for Improvement

A total of nine opportunities for improvement were identified during the 2019 IEA. The opportunities for improvement are detailed in **Table 3.2** below.

Table 3.2 Recommendations for Opportunities for Improvements for the 2019 reporting period

Condition	Recommendation	Corrective Actions	Status	Person/Team Responsible
Consent Condition 21	It is recommended that weed management, in accordance with the Landscape and Vegetation	A new landscape contractor was engaged in May	Complete	Facility Manager - NSW Resource Recovery

	Management Plan, is resumed to avoid the continued growth and potential spread of weed within, and properties adjacent to the site.	2019 and ongoing landscape maintenance has improved. This was confirmed during the Site Inspection on 13 May 2022.		
Schedule 3 - Environmental Performance Conditions - Condition 9 and Condition 10	Increase the frequency of drain cleaning in the main tipping building and include regular inspections to ensure that the leachate is not accumulating and potentially causing odour which could migrate outside of the processing shed.	More frequent drain cleaning is carried out in the waste receival hall to minimise odour internally. This was confirmed during the Site Inspection on 13 May 2022.	Complete	Facility Manager - NSW Resource Recovery

3.4 Opportunities for Improvement

A total of 4 recommendations were identified during the 2022 IEA. The opportunities for improvement are detailed in **Table 3.3** below.

Table 3.3 Recommendations for Opportunities for Improvements for the 2021 reporting period

Consent Condition	Recommendation	Proposed Actions	Status	Person/Team Responsible
Consent Condition 10	A minor leak in the leachate transfer line causing pooling leachate on the floor, with the potential for odour emissions.	Repair the leachate transfer line and clean up leachate spill.	Completed 1 June 2022	Facility Manager - NSW Resource Recovery
Consent Condition 15 EPL Conditions O5.4	The outdoor diesel storage area with ponding rainwater within the bunding, reducing its effective capacity in the event of a spill during refuelling.	Veolia to include on the weekly checklist an inspection of the outdoor diesel storage area inspections for podning rainwater which can then be pumped out if necessary	This will be implemented in the next reporting period	Facility Manager - NSW Resource Recovery
Consent Condition 9, 10	The cleaning schedule for stormwater pts and the OSD system should be reviewed to avoid build-up of sediment and	Increase the frequency of pit and OSD cleaning and include more	This will be implemented in the next reporting	Facility Manager - NSW Resource Recovery

	deis (eg. leaf litter or vegetative matter).	frequent inspections to ensure that the sediment and debris are not accumulating and impacting water quality. A maintenance schedule will be included in SAP project management software.	period	
Consent Condition 21	Some failed landscaping was present on the site. Repairs are needed to avoid the transfer of sediment into stormwater.	Revegetate the affected areas.	This will be implemented in the next reporting period	Facility Manager - NSW Resource Recovery

3.5 Conclusion

In this reporting period, the environmental monitoring results and audits have demonstrated that implemented mitigation controls are generally effective in managing potential environmental impacts associated with air quality, noise and vibration, water quality, traffic, and pest and vermin.

Feedback from neighbouring businesses and monitoring quality results indicate that Veolia continues to implement, maintain, monitor and assess environmental initiatives at the Terminal to improve its environmental performance.

Continual improvement is important to Veolia to ensure its business is operating effectively and efficiently. Veolia is committed to correcting non-compliances and acting on recommendations made by auditors as opportunities for improvement, particularly around odour management and changes in water quality.

Terms and Definitions

Term	Definition
AEMR	Annual Environmental Management Report
ALS	Australian Laboratory Services PTY LTD
AQMP	Air Quality Management Plan
BTT	Banksmeadow Transfer Terminal
Consent	Development Consent SSD 5585
DPE	NSW Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act1979 (and associated Regulations)
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
IEA	Independent Environmental Audit
NVMP	Noise and Vibration Management Plan
OEMP	Operational Environmental Management Plan
POEA Act	Protection of the Environment Act 1997 (and associated Regulations)
SAP	Systems, Applications and Products in Data Processing
SWLMP	Soil, Water and Leachate Management Plan
TMP	Traffic Management Plan
TOU	The Odour Unit PTY LTD
Terminal	Banksmeadow Transfer Terminal
TPA	Tonnes per annum
Veolia	Veolia Australia and New Zealand

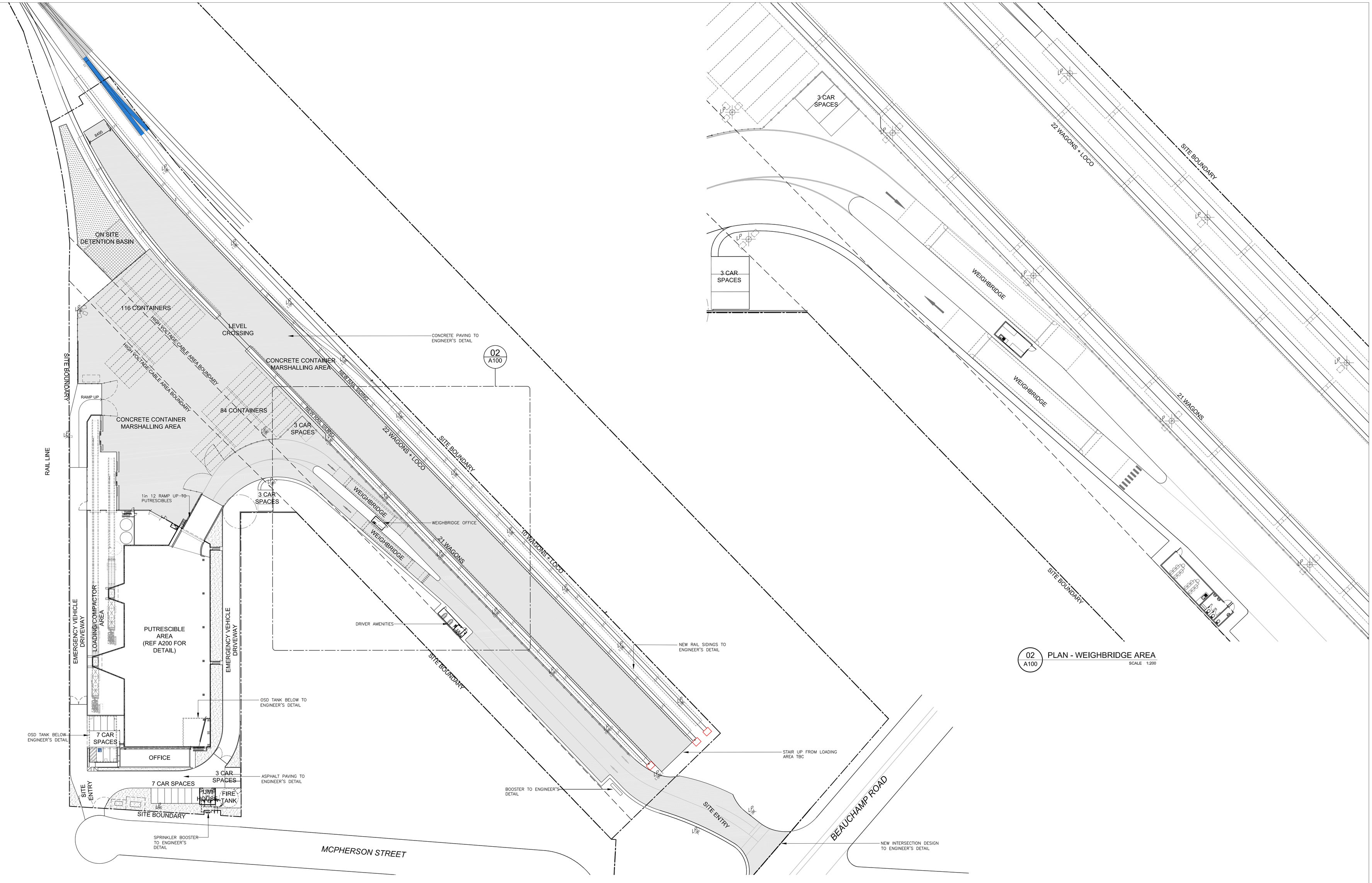
WMP	Waste Management Plan

References

1. EPA (2015), Waste Classification Guidelines Part 1: Classifying waste, NSW Environment Protection Agency, November 2015.
2. Hyder (2014), Banksmeadow Transfer Terminal Environmental Impact Statement, Hyder Consulting, July 2016.
3. Veolia (2019/2020), Banksmeadow Transfer Terminal Annual Environmental Management Report, Veolia, June 2020.
4. SLR Consulting (2017), Noise and Vibration Assessment, August 2017.
5. Jackson (2019), Independent Environmental Audit Veolia Environmental Services Australia, Banksmeadow Transfer Terminal, May 2019.
6. Jackson (2022), Independent Environmental Audit Veolia Environmental Services Australia, Banksmeadow Transfer Terminal, June 2022.
7. Wilkinson Murray (2014), Air Quality Impact Assessment, Wilkinson Murray Pty Ltd, April 2014

Appendices

Appendix A - Site Plan



01 A100 PLAN
SCALE 1:500

02 A100 PLAN - WEIGHBRIDGE AREA
SCALE 1:200

REV:	DETAILS:	DATE:	BY:
P1	PRELIMINARY CLIENT REVIEW	10/6/15	AD
P2	REVISIONS AS CLOUDED	11/6/15	AD
P3	REVISIONS AS CLOUDED	17/6/15	AD
P4	COMPACTOR LOCATIONS, RAMP REVISED	23/6/15	AD
P5	MAIN RAMP REVISED	26/6/15	AD
P6	CONSTRUCTION CERTIFICATE ISSUE	3/8/15	AD
P7	PARKING REVISED	6/8/15	AD
P8	PUMP HOUSE, PARKING, EAST DRIVEWAY STAIRS NR RAMP, EAST STAIRS DEL	7/08/15	AD
C1	CONSTRUCTION ISSUE	2/12/15	MC

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS, FOLLOW WRITTEN DIMENSIONS ONLY
2. ALL WORKS TO BE IN ACCORDANCE WITH BUILDING CODE OF AUSTRALIA (2015)
3. ALL DOORS IN THE PATH OF TRAVEL TO AN EXIT TO BE FITTED WITH LOCKS WHICH CAN BE OPENED AT ALL TIMES BY PERSON SEEKING EGRESS BY USE OF DOWNWARD ACTION ON LEVER LOCATED BETWEEN 900mm AND 1100mm ABOVE FLOOR
4. WALKWAY AND LANDING HANDRAILS/GUARDRAILS TO BE 1050 MIN ABOVE FFL.
5. ALL STAIR TREADS TO BE WEBFORGE HOT DIP GALVANISED GRATED STEEL STAIR TREADS. TREAD TYPE TO BE T5 OR T6, GRATING PATTERN TO BE TYPE A. SIZES TO BE AS MARKED ON DRAWINGS. NO SITE WELDS PERMITTED. NO WELDS PERMITTED AFTER HOT DIP GALVANISING TAKES PLACE.
6. ALL INTERNAL AND EXTERNAL STEEL TO BE HOT DIP GALVANISED. AFTER HOT DIP GALVANISING PROCESS, STEEL MUST NOT BE WELDED, GROUND, CUT, OR SUBJECT TO ANY OTHER PROCESS WHICH MAY COMPROMISE THE GALVANISING LAYER. IF THE GALVANISING LAYER IS COMPROMISED, THEN THE ELEMENT(S) MUST BE HOT DIP GALVANISED AGAIN BEFORE INSTALLATION.
7. ALL GLAZING TO BE TO AS1288
8. REFER TO DRAWING A800 FOR LEGEND OF ALL DRAWING TAGS AND ABBREVIATIONS

LIPMAN the obvious choice

VEOLIA

PROJECT NORTH

TRUE NORTH

PROJECT: BANKSMEADOW TERMINAL
PROJECT NUMBER: 1414
DRAWING NUMBER: A100
REVISION: C1
CLIENT: LIPMAN PTY LTD
DRAWING NAME: SITE PLAN
DRAWING STATUS: CONSTRUCTION ISSUE
SCALE: 1:500 @B1 1:1250 @A3
DATE: 6/15
DRAWN: AD

davidson architecture
2/70 Kerr Street Fitzroy 3065
0415 12 57 56
abn 186 626 099 374

Appendix B - Conditions of Consent Compliance Table

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
SCHEDULE 2 – ADMINISTRATIVE CONDITIONS				
Obligation to Minimise Harm to The Environment				
1	The Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the development.	The findings from this audit	None	Compliant
Terms of Consent				
2	The Applicant shall carry out the development generally in accordance with the: (a) EIS; (b) RAP; (c) RTS; (d) management and mitigation measures (Appendix A); (e) site layout plans and drawings in the EIS (see Appendix B); and (f) conditions of this Consent.	The findings from this audit	None	Compliant
3	If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this Consent shall prevail to the extent of any inconsistency.	None	None	Not Triggered
4	The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this Consent; and (b) the implementation of any actions or measures	None	None	Not Triggered
Limits of Consent				
5	The Applicant shall not receive or process more than: (a) 400,000 tonnes per annum of putrescible material; and (b) 100,000 tonnes per annum of non-putrescible material at the site.	Waste summary reports	None	Compliant
6	The Applicant shall only receive, store, handle or dispose of General Solid Waste or other classes of waste that are authorised for receipt on site by an EPL.	Waste summary reports	None	Compliant
Statutory Requirements				

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
7	The Applicant shall ensure that all licences, permits and approval/consents are obtained as required by law and maintained as required throughout the life of the development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approval/consents.	The findings from this audit	Veolia has obtained the relevant licences, permits and approvals required to undertake the operational activities, including: - Environment Protection Licence (EPL 20581). - Approval of the Operational Environmental Management Plan and sub-plans	Compliant
Structural Adequacy				
8	The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the BCA. Notes: Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.	None	This condition is not relevant to the current Audit period.	Not Triggered
Demolition				
9	The Applicant shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601:2001: The Demolition of Structures*, or its latest version.	None	This condition is not relevant to the current Audit period.	Not Triggered
Operation of Plant and Equipment				
10	The Applicant shall ensure that all plant and equipment used for the development is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	The Auditors observed plant and equipment operated and maintained in a proper and efficient manner as far as could be practically reviewed during the Audit.	None	Compliant
Staged Submission of Plans or Programs				

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
11	With the approval of the Secretary, the Applicant may: (a) submit any strategy, plan or program required by this consent on a progressive basis; and/or (b) combine any strategy, plan or program required by this consent.	None	None	Not Triggered
12	Until they are replaced by an equivalent strategy, plan or program approved under this consent, the Applicant shall continue to implement existing strategies, plans or programs for operations on site that have been approved by previous consents or approvals. Notes: • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program shall clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages and the trigger for updating the strategy, plan or program; and • There must be a clear relationship between the strategy, plan or program that are to be combined.	None	None	Not Triggered
13	The Applicant shall submit detailed design plans of the terminal building that are generally in accordance with the plans in the EIS (Appendix B) to the Secretary for approval prior to the issue of a construction certificate.	None	This condition is not relevant to the current Audit period.	Not Triggered
Protection of Public Infrastructure				
14	The Applicant shall: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.	None	None	Not Triggered
Dispute Resolution				
15	In the event that a dispute arises between the Applicant and a public authority other than the Department, in relation to a specification or requirement applicable under this approval, the matter shall be referred by either party to the Secretary, or if not resolved, to the Minister, whose determination of the dispute shall be final and binding to all parties. For the purposes of this condition, 'public authority' has the same meaning as provided under Section 4 of the EP&A Act.	None	None	Not Triggered
Development Contribution				

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
16	Prior to the commencement of operation of the development, the Applicant shall pay development contributions to the City of Botany Bay Council of $495,992.00, or an amount otherwise agreed with Council. Note: This contribution is subject to indexation to reflect quarterly variations in the Consumer Price Index All Group Index Number for Sydney, as published by the Australian Bureau of Statistics.	Evidence of compliance was documented in the 2019 Independent Environmental Audit.	None	Compliant
SCHEDULE 3 – ENVIRONMENTAL PERFORMANCE CONDITIONS				
Remediation				
	Remedial Action Plan			
1	The Applicant shall remediate the site in accordance with the approved RAP prior to the commencement of operation. Amendments to the approved RAP required as a result of further site investigations must be prepared by a suitably qualified and experienced expert and approved by the site auditor.	None	This condition is not relevant to the current Audit period.	Not Triggered
2	Prior to the commencement of remediation, the Applicant shall demonstrate to the satisfaction of the Secretary that the RAP has been certified by an accredited site auditor.	None	This condition is not relevant to the current Audit period.	Not Triggered
3	Prior to the commencement of any construction or remediation works, the Proponent shall engage a Site Auditor accredited by the EPA under Part 4 of the *Contaminated Land Management Act* 1997 to provide advice and statutory site audits throughout the remediation project and on completion of the project	None	This condition is not relevant to the current Audit period.	Not Triggered
4	Contaminated material encountered during construction work intended for off-site disposal at an appropriate EPA licensed facility shall be segregated and stored in a dedicated area on site until removal, to the satisfaction of the EPA.	None	This condition is not relevant to the current Audit period.	Not Triggered
	Completion of Work			
5	Upon completion of remediation works, the Applicant shall demonstrate to the satisfaction of the Secretary that the accredited site auditor has prepared a site audit statement and a site audit report which demonstrate that the site is suitable for its intended use(s).	None	This condition is not relevant to the current Audit period.	Not Triggered

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
6	Within 3 months of the completion of the reinstatement of the site the Applicant shall prepare, in consultation with the EPA, and submit a Site Validation Report, to the satisfaction of the Secretary. The report shall be prepared in accordance with the NSW EPA (1997) Guidelines for Consultants Reporting on Contaminated Sites and include but not be limited to: (a) comments on the extent and nature of the remediation undertaken; (b) sampling and analysis plan and sampling methodology; (c) results/interpretation and discussion of results; (d) results of any validation sampling, compared to relevant guidelines; (e) discussion of the suitability the remediated areas for intended land use;	None	This condition is not relevant to the current Audit period.	Not Triggered
Contamination				
	Groundwater Treatment			
7	The Applicant shall prepare and implement a Groundwater Monitoring and Treatment Program for the project, to be approved by the Secretary and Site Auditor prior to the commencement of construction. This plan must: (a) be prepared in consultation with the EPA and NOW; (b) detail baseline data on groundwater levels and quality; (c) include: • groundwater treatment criteria; • a program to monitor groundwater levels, flows and quality; • maintenance program for the facility to ensure the on-going effectiveness of the groundwater treatment process; • a protocol for the investigation, notification and mitigation of identified exceedances of the groundwater treatment criteria; • contingency measures to address exceedances and issues with groundwater treatment, including an investigation of alternative remediation treatment options; and • mechanisms to report results to relevant agencies.	None	This condition is not relevant to the current Audit period.	Not Triggered
	Human Health			
8	The Proponent shall ensure that all works are carried out in accordance with *NSW Work Health and Safety Regulation* 2011 and the requirements of WorkCover NSW.	This condition is not relevant to the Audit scope however the Auditors observed staff operating in a safe and proper manner as far as could be practically reviewed during the Audit.	None	Not Triggered

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
Soil, Water and Leachate				
	Stormwater Management			
9	The Applicant shall: (a) design and install the stormwater management and collection system in consultation with the City of Botany Bay Council, generally in accordance with the conceptual design in the EIS and applicable Australian Standards and to the satisfaction of the Secretary; (b) ensure that the system capacity has been designed in accordance with the Blue Book Volumes 1 and 2B; (c) divert existing clean surface water around operational areas of the site; (d) direct all sediment laden water in overland flow away from the leachate management system; and (e) prevent cross-contamination of clean and sediment or leachate laden water.	Evidence of compliance was documented in the 2019 Independent Environmental Audit.	None	Compliant
	Soil, Water and Leachate Management Plan			

10	The Applicant shall prepare and implement a Soil, Water and Leachate Management Plan for the development in consultation with the City of Botany Bay Council, NOW and the EPA and to the satisfaction of the Secretary. This plan must be prepared and implemented by a suitably qualified and experienced person and be submitted for approval prior to commencement of construction. The plan must include: (a) a site water balance that: • identifies the source of all water collected or stored on site, including rainfall, stormwater and groundwater; • includes details of all water use on site and any discharges; and • describes the measures that will be implemented to minimise water use on site. (b) an erosion and sediment control plan that: • is consistent with the requirements in the latest version of the Blue Book Volume 1 and Volume 2B; • identifies the activities on site that could cause soil erosion and generate sediment; and • describe the measures that will be implemented to: ○ minimise soil erosion and the transport of sediment to downstream waters, including the location, function and capacity of any erosion and sediment control structures and maintain these structures over time; ○ ensure that any topsoil stockpiles on site are suitably managed to ensure that the topsoil in these stockpiles can be beneficially used in the proposed revegetation and rehabilitation of the site. (c) a leachate management plan that: • includes final detailed design specifications of the leachate management and collection system on site. (d) a stormwater management plan that: • is consistent with the guidance in the latest version of the Blue Book Volume 1 and Volume 2B; • includes final detailed design specifications for the stormwater management and collection system; and • demonstrates how the requirements of Condition 9 of this schedule has been addressed. (e) a surface water, groundwater and leachate monitoring program that includes: • baseline data; • details of the proposed monitoring network; and • the parameters for testing and respective trigger levels for action under the surface water, groundwater and leachate response plan (f) a surface water, groundwater and leachate response plan that: • includes a protocol for the investigation, notification and mitigation of any	The Auditors sighted the *Soil, Water and Leachate Management Plan* (Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016.	None	Compliant

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
	exceedances of the respective trigger levels; and • describes the measures that could be implemented to respond to any surface or groundwater contamination that may be caused by any development.			
	Water			
11	A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water prior to the commencement of construction.	Evidence of compliance was documented in the 2019 Independent Environmental Audit.	None	Compliant
	Discharge of Water			
12	The development shall comply with Section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.	The table contained in Appendix B summarises the audit results against the requirements of the EPL.	None	Compliant
	Groundwater Interception and Extraction			
13	The Applicant shall obtain the necessary water related approvals from NOW in the event that groundwater is likely to be intercepted or extracted during construction.	None	This condition is not relevant to the current Audit period.	Not Triggered
	Acid Sulphate Soils Management Plan			
14	Prior to the commencement of any site preparation or construction works on the site, the Applicant shall prepare and implement an Acid Sulfate Soils Management Plan for the development to the satisfaction of the Secretary. This Plan must: (a) be prepared in consultation with the EPA and NOW by a suitably qualified and experienced expert; (b) be approved by the Secretary prior to the commencement of any site preparation or construction works; (c) outline the preliminary investigations that have be undertaken to test for the presence of ASS in accordance the NSW State Government's Acid Sulphate Soils Manual (ASSMAC 1998); (d) detail the protocols to be put in place and followed in the event that ASS is encountered; (e) detail how the ASS will be tested, handled and stockpiled; (f) detail measures to prevent erosion and sedimentation of ASS; and, if necessary (g) outline how the ASS will be disposed of off-site (e.g. at a licensed facility).	None	This condition is not relevant to the current Audit period.	Not Triggered

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
	Bunding			
15	The Applicant shall store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or the *Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin* (Environment Protection Authority, 1997).	A double skinned above ground tank for bulk diesel storage was also observed by the Auditors. The equipment refueling and tanker unloading area had adequate containment / spill controls as observed during the site visit. The auditors observed a small quantity of rainwater ponding within the bunded area due to recent rainfall (refer to Figure F3 and F4 in Appendix F). Although the bulk diesel storage tank is double skinned, the bunding is intended for spill containment. The presence of this rainwater reduces the capacity of the bunding and increases the likelihood of rainwater entering the stormwater system.	Refer to Table 3.5 for recommended actions	Compliant
Waste				
	Waste Storage and Processing			
16	All uncontainerised waste shall be stored within the building at the premises and all waste processing activities shall be conducted within the building at all times.	During the site visit, the Auditors sighted that all uncontainerised waste was stored within the building and all waste processing activities were conducted within the building at all times.	None	Compliant

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
17	To prevent unmanageable waste storage, the Applicant shall ensure that: (a) the storage of waste within the building shall not exceed more than 1,500 tonnes at any one time; (b) waste stockpiles within the building shall not exceed 4.5m in height; and (c) the container stacking height shall not exceed 3 loaded containers.	The Auditors sighted the *Waste Management Plan* (Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016. Waste stockpiles and container stacking heights were observed during the site visit.	The Operational Contingency Control Measures note the limit on the amount of waste permitted on the premises and includes measures, such as diverting waste to other facilities, in the event that the site cannot process waste and remain under the limit (e.g. due to an interruption to rail services).	Compliant
	Restrictions of the Receipt, Storage, Handling and Disposal of Waste			
18	The development shall ensure that any waste generated on the site during construction is classified in accordance with the EPA's *Waste Classification Guidelines* and disposed of to a facility that may lawfully accept the waste.	None	This condition is not relevant to the current Audit period.	Not Triggered
	Waste Management			
19	The Applicant shall prepare and implement a Waste Monitoring Program for the development to the satisfaction of Secretary. This program must: (a) be prepared in consultation with EPA by a suitably qualified and experienced expert; and (b) include a suitable program to monitor the: • quantity, type and source of waste received on site; and • quantity, type and quality of the outputs produced on site. (c) ensure that: • all waste that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and • staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos	The Auditors sighted the *Waste Monitoring Program* within the *Waste Management Plan* (Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016.	None	Compliant

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
20	The Applicant shall prepare and implement a Waste Management Plan for the development, in consultation with the EPA and to the satisfaction of the Secretary. The plan shall: (a) be prepared by a suitably qualified and experienced expert; (b) be submitted for approval by the Secretary prior to the commencement of construction; (c) include an asbestos risk assessment for demolition work prior to the removal of any asbestos from the site; (d) include final details of the waste management system implemented at the site; (e) ensure that appropriate waste storage facilities are included in the final design of the waste management system; (f) detail the type and quantity of waste to be generated by the construction and operation of the development; (g) detail the quality of waste to be received on site; (h) detail the materials to be reused or recycled, either on or off site; (i) detail the procedures for handling, storage, collection of recycling and disposal of all waste in accordance with best practice industry standards and guidelines; (j) detail the procedures for the management of waste material, excluding recyclable waste, to ensure: • the waste material is regularly removed from the site to an appropriately licensed facility; and • any stockpiles of waste material are stored on sealed areas. (k) if deemed necessary, outline reasonable and feasible measures that may be required to improve waste management at the site and prioritise recommendations for implementation.	The Auditors sighted the *Waste Management Plan* (Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016.	None	Compliant
	Pest, Vermin & Noxious Weed Management			
21	The Applicant shall: (a) implement suitable measures to manage pests, vermin and declared noxious weeds on site; and (b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on-site insufficient numbers to pose an environmental hazard or cause the loss of amenity in surrounding area. Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the *Noxious Weed Act* 1993.	The Auditors sighted *Landscape and Vegetation Management Plan* (Document Code: PLA-NSW-XXX-XXX-1) dated 23 June 2016. Pests and vermin were not observed during the site visit.	None	Compliant

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
Traffic and Access				
	Access and Road Upgrade Work			
22	Prior to the commencement of operations, the Applicant must obtain approval for rail access from the Australian Rail Track Corporation.	None	This condition is not relevant to the current Audit period.	Not Triggered
23	Within six months of the commencement of limited operations in accordance with Condition 234 the Applicant must complete the road upgrade works at the intersection of Beauchamp Road and Perry Street and the left turn deceleration lane into the site, in consultation with City of Botany Bay Council and Randwick City Council, and to the satisfaction of RMS and the Secretary.	None	This condition is not relevant to the current Audit period.	Not Triggered
23A	The Applicant may commence operations prior to the completion of the road upgrade works referred to in Condition 23 above provided the Applicant does not receive or process more than 18,000 tonnes per month in the period prior to the completion of the road works upgrades.	None	This condition is not relevant to the current Audit period.	Not Triggered
23B	During the reduced operation phase specified in condition 23A above, records of hourly truck numbers and their capacity shall be kept and provided to the City of Botany Bay Council when requested.	None	This condition is not relevant to the current Audit period.	Not Triggered
24	Detail design plans for the intersection works referred to in condition 23 above, including Traffic Control Signal plans, must be prepared by a suitably qualified person in consultation with City of Botany Bay Council and Randwick City Council and submitted to the RMS for review and endorsement prior to the commencement of construction of the road upgrade works. The Applicant will be required to enter into a Works Authorisation Deed (WAD) with RMS for the works. The WAD will need to be executed prior to the RMS's assessment of the detailed design plans.	None	This condition is not relevant to the current Audit period.	Not Triggered
25	The Applicant must be responsible for all public utility adjustment/relocation works, necessitated by the above work and as required by the various public utility authorities and/or their agents	None	This condition is not relevant to the current Audit period.	Not Triggered
26	All works/regulatory signposting associated with the development are to be at no cost to the RMS.	None	This condition is not relevant to the current Audit period.	Not Triggered
	Traffic Monitoring			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
27	The Applicant shall: (a) keep accurate records of the volume of waste transported to the site; (b) nominate a haulage route to be used by heavy vehicles accessing the site; and (c) make these records available in its Annual Review	The Auditors sighted the Traffic Management Plan (Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016. The Auditors sighted the following documents: - Annual Environment Management Report – BTT 2018-2019 (dated 16 August 2019). - Annual Environment Management Report – BTT 2019-2020 (dated 23 October 2020). - Annual Environment Management Report – BTT 2020-2021 (dated 28 June 2021).	None	Compliant
	Operating Conditions			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
28	The Applicant shall ensure that: (a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest versions of AS 2890.1 and AS 2890.2; (b) the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with AUSTROADS Guide to Road Design; (c) the development does not result in any vehicles queuing on the public road network; (d) a right turn restriction into the site from Beauchamp Road shall be implemented between 6am – 8pm; (e) heavy vehicles do not use Perry Street to travel to/from the site; (f) heavy vehicles and bins associated with the development do not park or stand on local roads or footpaths in the vicinity of the site; (g) all vehicles are wholly contained on site before being required to stop; (h) all loading and unloading of materials is carried out on site; (i) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times; (j) all trucks entering or leaving the site with loads have their loads covered; and (k) all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.	Site visit on 13 May 2022	None	Compliant
	Waste Transportation			
28A	The Applicant shall ensure that all waste containers are designed, constructed and maintained to prevent the emission of offensive odour and be water-tight to prevent the leakage of leachate during transport and handling activities.	Site visit on 13 May 2022	None	Compliant
	Traffic Management Plan			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
29	The Applicant shall prepare and implement a Traffic Management Plan for the development, to the satisfaction of the Secretary. The Plan must: (a) be prepared by a suitably qualified and experienced expert in consultation with RMS, City of Botany Bay Council and Randwick City Council; (b) be approved by the Secretary prior to the commencement of construction; (c) include construction traffic management measures detailing: • access and parking arrangements for the site during construction; • measures to ensure that the local road network is not utilised by vehicles during construction; • measures to control traffic movements from site during construction; • procedures for notifying residents of construction traffic routes and potential disruptions to routes and access; and • the impact of the development on the road network, where temporary road closures are required during construction. (d) include a plan showing the designated haulage route/s to be used by heavy vehicles during operation; (e) include a driver's code of conduct; (f) describe the measures that will be implemented to ensure: • the nominated haulage routes are used; • drivers adhere to the right turn restriction into the site from Beauchamp • Road between 6am-10am and 3pm-7pm, as required by Condition 28(d); • conflicts with other road users are minimised; • drivers adhere to the code of conduct including; • road noise impacts are minimised through measures such as limiting truck • compression braking; and • compliance with the relevant conditions of this consent. (g) include a program to monitor the effectiveness of these measures.	The Auditors sighted the *Traffic Management Plan* (Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016.	None	Compliant
Hazard and Risk				

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
30	At least one month prior to the commencement of construction of the proposed development (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as the Secretary may agree, the Applicant shall prepare and submit a Fire Safety Study and a Hazard and Operability Study to the Secretary. (a) Fire Safety Study A Fire Safety Study for the proposed development. This study shall cover the relevant aspects of the Department of Planning's Hazardous Industry Planning Advisory Paper No. 2, 'Fire Safety Study Guidelines' and the New South Wales Government's 'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'. The study shall be prepared in consultation with Fire and Rescue NSW and submitted to the Secretary. (b) Hazard and Operability Study A Hazard and Operability Study for the proposed development, chaired by a qualified person, independent of the development, whose appointment has been endorsed by the Secretary prior to the commencement of the study. The study shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 8, 'HAZOP Guidelines'. The study report must be accompanied by a program for the implementation of all recommendations made in the report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.	None	This condition is not relevant to the current Audit period.	Not Triggered
31	Dangerous Goods, as defined by the Australian Dangerous Goods Code, shall be stored and handled strictly in accordance with: (a) all relevant Australian Standards; (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and (c) the *Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin* (Environment Protection Authority, 1997). In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of the inconsistency.	Site visit on 13 May 2022.	None	Compliant
	Emergency Response			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
32	The Applicant shall maintain and implement an emergency response plan for the site. The emergency response plan shall: (a) be submitted to the Secretary prior to the commencement of operation; (b) be kept on-site at all times; (c) include a risk assessment of likely incidents that could occur on-site (e.g. spills, explosion, fire) based on the activities being undertaken, site risks and consequence to the receiving environment; and (d) document the systems and procedures to deal with the types of incidents identified including relevant incident notification procedures.	The Auditors sighted the Site Emergency Response Plan - Banksmeadow Transfer Terminal (incorporating the Pollution Incident Response Management Plan) (Document Code: MAN-5174-1) dated 4 June 2021.	None.	Compliant
Air Quality				
	Odour			
33	The Applicant shall ensure the development does not cause or permit the emission of any offensive odour (as defined by the POEO Act).	Complaints summary. Site visit on 13 May 2022.	Refer to Section 3.10 of body of report.	Compliant
	Odour Management Plan			
34	The Applicant shall prepare and implement an Odour Management Plan to the satisfaction of the Secretary. This plan must: (a) be prepared by a suitably qualified and experienced expert in consultation with the EPA and City of Botany Bay Council; (b) be approved by the Secretary prior to the commencement of operations; (c) describe the measures that would be implemented on site to minimise the odour impacts of the development; (d) identify triggers for contingency action; and (e) include a program for monitoring the odour impacts of the development.	The Auditors sighted the *Air Quality Management Plan* (Document Code: PLA-NSW-XXX-XXX-1) dated 23 June 2016.	None.	Compliant
	Dust Management			
35	The premises shall be maintained in a condition which minimises or prevents the emission of dust from the premises	Site visit on 13 May 2022.	None.	Compliant

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
36	The Applicant shall: (a) implement best management practice, including all reasonable and feasible dust and odour mitigation measures to prevent and minimise dust emissions from operations; (b) prevent and minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events; (c) regularly assess air quality monitoring data and relocate, modify, and/or stop operations to ensure compliance with the relevant conditions of this consent; (d) minimise any visible off-site air pollution; and (e) minimise surface disturbance of the site, other than as permitted under this consent.	The Auditors sighted the *Air Quality Management Plan* (Document Code: PLA-NSW-XXX-XXX-1) dated 23 June 2016.	None.	Compliant
37	During construction, the Applicant shall ensure that: (a) all vehicles on site do not exceed a speed limit of 30 kilometres per hour; (b) all loaded vehicles entering or leaving the site have their loads covered; and (c) all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.	None.	This condition is not relevant to the current Audit period.	Not Triggered
	Air Quality Management Plan			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
38	The Applicant shall prepare and implement an Air Quality Management Plan for the development to the satisfaction of the Secretary. The Plan must: (a) be prepared by a suitably qualified and experienced expert in consultation with the EPA, (b) be approved by the Secretary prior to the commencement of construction; (c) describe the measures that would be implemented to: • minimise the fugitive emissions from excavating, handling and treating contamination hot spots including details on methods for dealing with soil contamination variability; • include well-defined triggers for additional air quality measures for excessive fugitive emissions including stop-work during adverse weather; • ensure all reasonable and feasible dust and odour mitigation measures are employed to prevent and minimise dust and odour emissions from construction and operation of the development; • ensure compliance with the relevant conditions of this consent and the EPL; and • prevent and minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events; (d) include a cleaning protocol which: • details the procedures to be undertaken to routinely manage, maintain and clean the internal surfaces of the premises to ensure operating conditions inside the facility minimise the potential to generate odour, dust and the carriage of waste outside the facility; and • describes how all external surfaces would be routinely managed and maintained so as to be kept free of dust, waste material and other contaminants; and (e) include a protocol for determining any exceedances of the relevant conditions of approval and criteria in the EPL and responding to complaints.	The Auditors sighted the *Air Quality Management Plan* (Document Code: PLA-NSW-XXX-XXX-1) dated 23 June 2016.	None.	Compliant
Noise				

<table>
<tr><th colspan="5">Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal</th></tr>
<tr><th>Consent Condition</th><th>Requirement</th><th>Evidence collected</th><th>Independent Audit Findings and Recommendations</th><th>Compliance Status</th></tr>
<tr><td>39</td><td>The Applicant shall comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Secretary.

Table 1: Operating Hours
<table><tr><th>Activity</th><th>Day</th><th>Hours</th></tr><tr><td rowspan="3">Construction</td><td>Monday - Friday</td><td>7:00am – 6:00pm</td></tr><tr><td>Saturday</td><td>8:00am – 1:00pm</td></tr><tr><td>Sunday & Public Holidays</td><td>Nil</td></tr><tr><td>Operations</td><td colspan="2">24 hours</td></tr></table></td><td>Site visit on 13 May 2022.</td><td>None.</td><td>Compliant</td></tr>
<tr><td></td><td>Operating Conditions</td><td></td><td></td><td></td></tr>
<tr><td>40</td><td>The Applicant shall:
(a) implement best management practice, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the development;
(b) minimise the noise impacts of the development during adverse meteorological conditions when noise criteria do not apply;
(c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and
(d) regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent</td><td>Site visit on 13 May 2022

The Auditors also sighted the Noise and Vibration Management Plan Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016.</td><td>None.</td><td>Compliant</td></tr>
<tr><td></td><td>Noise and Vibration Management Plan</td><td></td><td></td><td></td></tr>
</table>

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
41	The Applicant shall prepare and implement a Noise and Vibration Management Plan for the development in consultation with the EPA and to the satisfaction of the Secretary. The plan must: (a) be prepared and implemented by a suitably qualified and experienced person in consultation with the City of Botany Bay Council, Randwick City Council and the EPA; (b) be approved by the Secretary prior to the commencement of construction; (c) describe the measures that will be implemented to ensure: • best management practice is being employed on site; and • the noise and vibration impacts of the development are minimised during any meteorological conditions; and • compliance with the relevant conditions of this consent. (d) describe the noise management system; (e) include a noise and vibration monitoring program that: • is capable of evaluating the performance of the development; • includes a protocol for determining compliance with the predictions in the EIS and RTS; • adequately supports the noise management system; and • evaluates and reports on the effectiveness of the noise management system; and (f) include details of short term vibration trials of construction equipment that are conducted in consultation with the surrounding landowners.	The Auditors sighted the *Noise and Vibration Management Plan* (Document Code: PLANSW-XXX-XXX-1) dated 23 June 2016.	None.	Compliant
Energy Efficiency				
42	The Applicant shall: (a) implement all reasonable and feasible measures to minimise energy use and greenhouse gas emissions during construction and operation; and (b) ensure the development will continue to operate at industry best practice over time.	None.	None.	Compliant
Visual Amenity				
	Lighting			
43	The Applicant shall ensure that the lighting associated with the development: (a) complies with the latest version of AS 4282(INT) - *Control of Obtrusive Effects of Outdoor Lighting*; and (b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.	The auditors sighted the Complaints Register.	No complaints have been received regarding lighting at the Site.	Compliant

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
	Signage			
44	The Applicant shall install all signs in consultation with City of Botany Bay Council. Note: This condition does not apply to any signage identified as exempt or complying development in *State Environmental Planning Policy (Exempt and Complying Development Codes)* 2008	None.	This condition is not relevant to the current Audit period.	Not Triggered
	Landscaping and Vegetation Management			
45	The Applicant shall prepare and implement a Landscaping and Vegetation Management Plan for the development in consultation with City of Botany Council and to the satisfaction of the Secretary. The plan shall: (a) be approved by the Secretary prior to the commencement of construction; (b) detail any trees that are proposed to be removed, ringbarked, cut, topped or lopped; (c) detail any revegetation works at the site, with particular attention to minimizing the visibility of the site from residences and public vantage points, minimizing bushfire risk and the use of indigenous species; (d) ensure that any clearing or trimming of vegetation on the western side of McPherson Street, at the intersection with Beauchamp Road, is undertaken in consultation with City of Botany Bay Council; and (e) describe the on-going measures (e.g. weed control and regular pruning) that would be implemented to maintain landscaping and vegetation on the site for the life of the development.	The Auditors sighted the *Landscaping and Vegetation Management Plan* (Document Code: PLA-NSW-XXX-XXX-1) dated 23 June 2016.	None.	Compliant
Aviation Safety				
46	At least 35 days prior to the commencement of construction of the project, the Applicant must obtain all necessary approvals from the Sydney Airports Corporation for the erection of any temporary structure or construction equipment.	None.	This condition is not relevant to the current Audit period.	Not Triggered
Heritage				
47	The development shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered onsite. The NSW Police, the Aboriginal Community and the OEH are to be notified. Works shall not resume in the designated area until approval in writing from the NSW Police and/or the OEH has been obtained.	Site visit on 13 May 2022.	None.	Compliant
Security				
48	The Applicant shall ensure that: (a) the site is secured by a perimeter fence and security gates; and (b) the security gates on site are patrolled at all times.	Site visit on 13 May 2022.	None.	Compliant

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
SCHEDULE 4 – ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING				
Environmental Management				
	Construction Environmental Management Plan			
1	The Applicant shall prepare and implement a Construction Environmental Management Plan for the development to the satisfaction of the Secretary. The Plan must: (a) be submitted to the Secretary for approval no later than two weeks prior to the commencement of construction or demolition or within such period otherwise agreed by the Secretary; (b) identify the statutory approvals that apply to the development; (c) consolidate all relevant management plans and monitoring programs required in the conditions of this Consent; (d) outline all environmental management practices and procedures to be followed during construction and demolition works associated with the development; (e) describe all activities to be undertaken on the site during construction of the development, including a clear indication of construction stages; (f) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts; (g) describe the roles and responsibilities for all relevant employees involved in construction and demolition works associated with the development; (h) include arrangements for community consultation and complaints handling procedures during construction and demolition; and (i) include copies of the various strategies and plans that are required under the conditions of this Consent once they have been approved. Note: 1. Construction of the Development shall not commence until written approval of this plan has been received from the Secretary. 2. The City of Botany Bay Council shall be provided with a copy of the approved Construction Environmental Management Plan within 7 days of the date of its approval.	None.	This condition is not relevant to the current Audit period.	Not Triggered
	Operational Environmental Management Plan			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
2	The Applicant shall prepare and implement an Operational Environmental Management Plan to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval prior to commencement of operations; (b) be prepared by a suitably qualified and experienced expert; (c) provide the strategic framework for environmental management of the development; (d) identify the statutory requirements that apply to the development; (e) consolidate all relevant environmental management plans and monitoring programs required in the conditions of this consent and committed to in the EIS; (f) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development. (g) describe in general how the environmental performance of the development would be monitored and managed; and (h) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the development; • respond to any non-compliances; and • respond to emergencies.	The Auditors sighted the Operational Environmental Management Plan (Document Code: PLANSW- XXX-XXX-1) dated 23 June 2016.	None.	Compliant
	Management Plan Requirements			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
3	The Applicant shall ensure that the Management Plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; and • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; (c) a description of the measures that will be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the development; and • effectiveness of any management measures (see (c) above); (e) a contingency plan to manage any unpredicted impacts and their consequences; (f) a program to investigate and implement ways to improve the environmental performance of the development over time; (g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans	The Auditors sighted the Operational Environmental Management Plan (Document Code: PLANSW- XXX-XXX-1) dated 23 June 2016.	None.	Compliant
Reporting				
	Incident Reporting			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
4	The Applicant shall notify the Secretary, City of Botany Bay Council and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of this incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident.	Site visit on 13 May 2022.	None.	Compliant
	Regular Reporting			
5	The Applicant shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.	The Auditors sighted the following documents: - Annual Environment Management Report – BTT 2018-2019 (dated 16 August 2019). - Annual Environment Management Report – BTT 2019-2020 (dated 23 October 2020). - Annual Environment Management Report – BTT 2020-2021 (dated 28 June 2021).	None.	Compliant
Independent Environmental Audit				

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
6	Within one (1) year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL and/or Water License (including any assessment, plan or program required under these approvals); (d) review the adequacy of any approved strategy, plan or program required under these approvals; and (e) recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals. Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.	Evidence of compliance was sighted in the 2019 Independent Environmental Audit. The 2019 IEA prepared by Jackson Environment and Planning satisfied the first audit required 3 years after the first audit (2016 Independent Environmental Audit conducted by Ramboll Australia Pty Ltd report dated 28 July 2016). This audit satisfies the requirement to conduct an audit every 3 years thereafter.	None.	Compliant
7	Within 3 months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Site visit on 13 May 2022.	None.	Compliant
	Annual Review			

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
8	Within one (1) year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must: (a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against: • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the EIS; (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the development; (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.	The Auditors sighted the following documents: - Annual Environment Management Report – BTT 2018-2019 (dated 16 August 2019). - Annual Environment Management Report – BTT 2019-2020 (dated 23 October 2020). - Annual Environment Management Report – BTT 2020-2021 (dated 28 June 2021).	None.	Compliant
	Revision of Strategies, Plans & Programs			
9	Within 3 months of the submission of an: (a) annual review under Condition D8 of this schedule; (b) incident report under Condition D4 of this schedule; (c) audit report under Condition D6 of this schedule; and (d) any modifications to this consent, the Applicant shall review, and if necessary, revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary. Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.	None	None	Not Triggered
Access to Information				

Conditions of Development Consent – SSD 5855 (incorporating MOD 1) - Banksmeadow Waste Transfer Terminal				
Consent Condition	**Requirement**	**Evidence collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**
10	The Applicant shall: (a) make the following information publicly available on its website: • the EIS; • current statutory approvals for the development; • approved strategies, environmental management plans or programs; • a summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; • a complaints register, updated on a quarterly basis; • copies of any annual reviews (over the last 5 years); • any independent environmental audit, and the Applicant's response to the recommendations in any audit; and • any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	The Auditors sighted the required documents on the Veolia website.	None.	Compliant

Appendix C - Odour Audit Reports

Date	Time	Method	Person Details	Nature of the Complaint	Action taken by Veolia	Follow-up contact	Further Action taken by Veolia *(if not, then explanation why added to commentary)*
15/06/21	13:30	Email	Nick Brazil (IXOM) nick.brazil@ixom.com Chlorine Plant Control Room	Odour Complaint - Rubbish odour detected in the Chlorine Plant Control Room	Fans were turned off from around 8am - 2pm for scheduled monthly maintenance. Wind direction was mostly NW, W in the morning and gradually moved to SW and S in the afternoon according to BOM data. Wind speed at time of complaint: **15km/h** Wind direction at time of complaint: **South**	Responded to Nick's email to say his report has been logged and explained that the fans were turned off during the time of the complaint but are now fully operational again.	Added the report to the complaints register. No further issues at this time.
05/07/21	08:45	Email	Nick Brazil (IXOM) nick.brazil@ixom.com Chlorine Plant Control Room	Odour Complaint - Rubbish odour detected in the Chlorine Plant Control Room	Operations on site were normal. Odour details: rubbish smell Wind speed at time of complaint: **20km/h** Wind direction at time of complaint: **South-West**	Responded to Nick's email to say his report has been logged.	Added the report to the complaints register. No further issues at this time.
07/11/21	07:30	Email	Nick Brazil (IXOM) nick.brazil@ixom.com Chlorine Plant Control Room	Odour Complaint - Rubbish odour detected in the Chlorine Plant Control Room	Operations on site were normal. Odour details: rubbish smell Wind speed at time of complaint: **20km/h** Wind direction at time of complaint: **South-West**	Responded to Nick's email to say his report has been logged.	Added the report to the complaints register. No further issues at this time.
15/11/21	09:05	Email	Benedick Pagarigan (IXOM) benedick.pagarigan@ixom.com	Odour Complaint - Rubbish bin odour	Operations on site were normal and fans operating normally. Odour details: rubbish smell Wind speed at time of complaint: **24km/h (BOM)** Wind direction at time of complaint: **South-West**	Responded to Benedick's email to say his report has been logged.	Added the report to the complaints register. No further issues at this time.
28/11/21	07:00	Email	Nick Brazil (IXOM) nick.brazil@ixom.com	Odour Complaint - Rubbish	Received email on 29/11/21 Operations on site were normal and fans operating normally. Odour Details: rubbish smell Wind speed at time of complaint: **30km/h** Wind direction at time of complaint: **South-East**	Responded to Nick's email to say his report has been logged. Veolia has contacted the Odour Unit to investigate	Added the report to the complaints register and engaged with The Odour Unit to help investigate the odour issues.
29/11/21	05:30	Email	Nick Brazil (IXOM) nick.brazil@ixom.com	Odour Complaint - Rubbish (strong)	Operations on site were normal and fans operating normally. Odour Details: rubbish smell Wind speed at time of complaint: **15km/h** Wind direction at time of complaint: **South**	Responded to Nick's email to say his report has been logged. Veolia has contacted the Odour Unit to investigate	Added the report to the complaints register and engaged with The Odour Unit to help investigate the odour issues.
29/12/21	07:00	Email	Nick Brazil (IXOM) nick.brazil@ixom.com	Odour Complaint - Very strong rubbish smell and making operators feel sick	Operations on site were normal and fans operating normally. Odour Details: rubbish smell Wind speed at time of complaint: **17km/h** Wind direction at time of complaint: **South**	Responded to Nick's email to say his report has been logged and explained that we are expecting a visit from The Odour Unit in January after the Christmas break to investigate.	Added the report to the complaints register and in communication with The Odour Unit for advise and to arrange a site inspection.
16/01/22	16:00	Email	Nick Brazil (IXOM) nick.brazil@ixom.com	Odour Complaint - Very sickly rubbish smell	Received email on 17/01/22 Operations on site were normal and fans operating normally. Odour Details: rubbish smell Wind speed at time of complaint: **30km/h** Wind direction at time of complaint: **South-East**	Responded to Nick's email to say his report has been logged. Veolia has contacted the Odour Unit to investigate	Added the report to the complaints register and engaged with The Odour Unit to help investigate the odour issues.
17/01/22	09:00	Email	Nick Brazil (IXOM) nick.brazil@ixom.com	Odour Complaint - Rubbish smell very strong and penetrating buildings	Operations on site were normal and fans operatring normally. Odour Details: rubbish smell Wind speed at the time of complaint: **4km/h** (very low wind speed) Wind direction at time of complaint: **West-South-West**	Responded to Nick's email to say his report has been logged and Veolia is awaiting The Odour Unit to return to business within the week and awaiting their odour report from the last odour audit.	Added the report to the complaints register and will update IXOM with odour audit findings. Based on reccommendations from the odour audit, Veolia has fixed the fans and the truck flaps at the entrance of the shed. A new velocity sensor is booked in on 24/02/22

21/02/22	07:00	Email	Nick Brazil (IXOM) nick.brazil@ixom.com	Odour Complaint - Strong rubbish smell and making IXOM operators feel sick	Operations on site were normal and fans operatring normally. Odour Details: rubbish smell Wind speed at the time of complaint: **15km/h** Wind direction at time of complaint: **West**	The Odour Unit spoke to IXOM via phone call regarding the investigation. Veolia sent an email following from the phone conversation.	After receiving a follow up email from IXOM, BTT's Facility Manager had a phone conversation with IXOM explaining the results of the odour audit in more detail as well as the follow up actions that have completed and what is left to be completed. Veolia is completing the final odour management strategies to the site this week. Veolia has invited IXOM to visit the site to report on the actions completed and to review the effectiveness of the current communications process between IXOM and Veolia.
11/03/22	09:00	Email	Nick Brazil (IXOM) nick.brazil@ixom.com	Odour Complaint - Strong rubbish odour	Operations on site disrupted due to severe weather. Rail line impacted with a land slide, causing some back log of waste stockpiles in the shed. Fans are operating. Odour Details : rubbish smell Wind speed at the time of complaint: **15km/h** Wind direction at time of complaint: **South**	Responded to Nick's email to explain the current situation on site. IXOM were given updates in the following days.	Veolia self-reported to the EPA to notify of the disruption and contacted the Odour Unit to assist in the short term. The track was repaired and re-oponed on the 16th March. A new flow meter sensor was also installed and calibrated on the 18th March and a follow up email sent to IXOM to provide an update.
20/04/22	09:00	Email	Ian Parker (IXOM) ian.parker2@ixom.com	Odour Complaint - hydrogen sulfide smell	Some backlog of waste containers, however all other operations on site were normal and fans operating correctly. however, Veolia operators had been reporting a strong hydrogen sulfide smell eminating from a neighbouring facility over the last few days Odour Details: hydrogen sulfide smell Wind speed at the time of complaint: **20km/h** Wind direction at time of complaint: **South West**	After investigating the issue, Veolia responded to Ian's email with the results and asked IXOM to describe the characteristics of the odour, if it is a more sweet municipal waste smell or a hydrogen sulfide smell. IXOM confirmed it was a hydrogen sulfide smell. Based on previous odour investigations and reports, operations at Veolia Banksmeadow do not generate a hydrogen sulfide smell. This smell likely comes from a neighbouring facility.	Added the report to the complaints register. No further issues at this time.

Appendix D - Pest and Vermin Control Reports

SERVICE REPORT

17/11/2021

Service Performed by:

EXPERT JUDGEMENT

PEST MANAGEMENT PTY LTD

PO Box A25, ENFIELD SOUTH NSW 2133
enquiries@expertjudgementpest.com.au
Telephone: (02) 9715 5270
ABN 63 081 548 861

Property Detail:

Veolia Environmental Services (Australia) Pty Ltd
Banksmeadow Transfer Terminal
34-36 Mcpherson St
BANKSMEADOW NSW 2019

Service Details:

A routine pest control service to offices, staff room, shed, compactor and external area for cockroaches, ants, spiders and rodents.

Inspected and treated all areas including shed area, pitt area and external areas by using Cislin 25 spray, Coopex dust spot spray and Roban rodent bait.

Inspected and treated kitchen, office and toilets by using Goliath cockroach gel.

Rodent activity found in shed and pit areas and treated by using Roban rodent bait.

Removed one deceased rodent from pit area.

SERVICE REPORT

5/08/2021

Service Performed by:

EXPERT JUDGEMENT

PEST MANAGEMENT PTY LTD

PO Box A25, ENFIELD SOUTH NSW 2133
enquiries@expertjudgementpest.com.au
Telephone: (02) 9715 5270
ABN 63 081 548 861

Property Detail:

Veolia Environmental Services (Australia) Pty Ltd
Banksmeadow Transfer Terminal
34-36 Mcpherson St
BANKSMEADOW NSW 2019

Service Details:

A routine pest control service to offices, staff room, shed, compactor and external area for cockroaches, ants, spiders and rodents.

Inspected and treated all areas including shed area, pitt area and external areas by using Cislin 25 spray and Talon rodent bait.

Inspected and treated kitchen, office and toilets by using Goliath cockroach gel.

SERVICE REPORT

14/05/2021

Service Performed by:

EXPERT JUDGEMENT

PEST MANAGEMENT PTY LTD

PO Box A25, ENFIELD SOUTH NSW 2133
enquiries@expertjudgementpest.com.au
Telephone: (02) 9715 5270
ABN 63 081 548 861

Property Detail:

Veolia Environmental Services (Australia) Pty Ltd
Banksmeadow Transfer Terminal
34-36 Mcpherson St
BANKSMEADOW NSW 2019

Service Details:

A routine pest control service to offices, staff room, shed, compactor and external area for cockroaches, ants, spiders and rodents.

Inspected and treated all areas including shed area, pitt area and external areas by using Cislin 25 spray, Coopex dust spot spray and Talon rodent bait.

Inspected and treated kitchen, office and toilets by using Goliath cockroach gel.

Rodent activity found in shed area and treated by using Talon rodent bait.

SERVICE REPORT

9/02/2022

Service Performed by:

EXPERT JUDGEMENT

PEST MANAGEMENT PTY LTD

PO Box A25, ENFIELD SOUTH NSW 2133
enquiries@expertjudgementpest.com.au
Telephone: (02) 9715 5270
ABN 63 081 548 861

Property Detail:

Veolia Environmental Services (Australia) Pty Ltd
Banksmeadow Transfer Terminal
34-36 Mcpherson St
BANKSMEADOW NSW 2019

Service Details:

A routine pest control service to offices, staff room, shed, compactor and external area for cockroaches, ants, spiders and rodents.

Inspected and treated all areas including shed area, pitt area and external areas by using Cislin 25 spray, Coopex dust spot spray and Roban rodent bait.

Inspected and treated kitchen, office and toilets by using Goliath cockroach gel.

Appendix E - Complaints register

TO: **MARY WONG**

COMPANY: **VEOLIA (AUSTRALIA) PTY LTD**

FROM: **MICHAEL ASSAL**

DATE: **10 MARCH 2021**

JOB NO: **N1906L.03**

SUBJECT: **BANKSMEADOW WASTE TRANSFER TERMINAL FACILITY – ON-GOING ODOUR AUDIT PROGRAM: NOVEMBER 2021**

1. Introduction

The following technical memorandum documents the findings and recommendations from an on-going, six-monthly odour audit program (the **Audit**) being conducted by The Odour Unit Pty Ltd (**TOU**) at the Veolia (Australia) Pty Ltd (**Veolia**) Waste Transfer Terminal Facility, 34/36 McPherson St, Banksmeadow, New South Wales (**BTT Facility**). The Audit documented in this memorandum report covers the outcomes from the visit conducted by TOU at the BTT Facility on 25 November 2021.

This memorandum report documents the following:

1. The results and findings from odour sampling and testing of the main collection duct as found during the Audit visit;

2. Documentation of field observations made during the visit that are relevant to odour management as well as the outcomes from smoke testing;

3. A review of the relevant documentation, including the service logs for the preventative maintenance works undertaken on the building ventilation air extraction system and logged odour complaints between October 2020 and May 2021; and

4. The results from the field ambient odour assessment (**FAOA**) survey undertaken within the BTT Facility at both downwind and upwind locations.

2. Relevant Background

The BTT Facility was completed in June 2016 and is designed, at full capacity, to receive up to 400,000 tonnes per annum of putrescible waste, consisting of mixed waste, including food from the municipal and commercial sectors. All received waste is delivered to the BTT Facility in enclosed waste collection trucks before being compacted and placed in sealed containers for rail transport to Veolia's site at Woodlawn for subsequent treatment, recycling, energy recovery, and disposal where required. The BTT Facility is also approved to receive up to 100,000 tonnes per annum of non-putrescible (dry) waste from the municipal, commercial, and industrial sectors for transfer to a new material recycling facility currently being scoped in Camellia.

The following report should be read in conjunction with previously issued documents relating to the BTT Facility, where applicable, including:

1. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – Odour Audit Final Report* dated 26 May 2017 (the **May 2017 Report**);

2. An email-based summary report titled *Banksmeadow On-going Odour Investigation - 2 August 2017 Summary* dated 21 September 2017 documenting the works undertaken on 2 August 2017 at the BTT Facility (the **August 2017 Report**);

3. A TOU Report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: January/February 2018* issued on 23 February 2018 (the **February 2018 Report**);

4. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: March to May 2018 (Rev 3)* issued on 31 May 2018 (the **March/May 2018 Report**);

5. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: June 2018* issued on 28 June 2018 (the **June 2018 Report**);

6. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2018* issued on 13 November 2018 (the **November 2018 Report**);

7. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: April 2019* issued on 10 May 2019 (the **May 2019 Report**);

8. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2019* issued on 19 November 2019 (the **October 2019 Report**);

9. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: May 2020* issued on 22 June 2020 (the **June 2020 Report**);

10. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2020* issued on 23 December 2020 (the **December 2020 Report**); and

11. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: May 2021* issued on 31 May 2021 (the **May 2021 Report**).

3. Odour Audit Methodology

3.1 Odour Sampling and Testing

The odour sampling and laboratory analysis methodology are well documented in the May 2017 Report. As such, it is not reproduced in this memorandum report.

The point source sampling method was utilised to collect samples from a 10-millimetre (**mm**) tap point created in the common plenum chamber of the two fan modules servicing the building ventilation extraction system at the BTT Facility. An illustration of the location and sampling technique is presented in **Photo 1**.

3.2 Odour Audit Logsheet

An extract of the logsheet utilised as part of the Audit visit is provided in **Figure 1**, which was developed in previous audits conducted at the BTT Facility.

3.3 Field Ambient Odour Assessment Survey

The methodology followed for the FAOA survey is well documented in the February 2018 Report. As such, it is not reproduced in this memorandum report. For the Audit, TOU extended the FAOA survey measurement period to five-minute intervals, with discrete measurement readings collected every ten seconds (i.e. 30 'sniffs' per measurement location point). The product of this measurement methodology is an intensity frequency pie graph. The odour impact criterion (i.e. the threshold that would be considered as increasing the likelihood in odour annoyance at downwind receptors) is set to an odour intensity of greater than 2 (Weak) and at a frequency of 10% per measurement cycle per location. This criterion is considered suitable given the industrial context of the BTT Facility. This detail is outlined in the FAOA map plot in **Section 4** - **Figure 4**.

3.4 Smoke Testing

The methodology for smoke testing is documented in the May 2018 Report. As such, it is not reproduced in this memorandum report.

3.5 Review of relevant documentation

As part of the Audit, the following documentation was reviewed:

- Fan maintenance reports between June 2021 and November 2021; and
- Odour complaints register between June 2021 and November 2021.

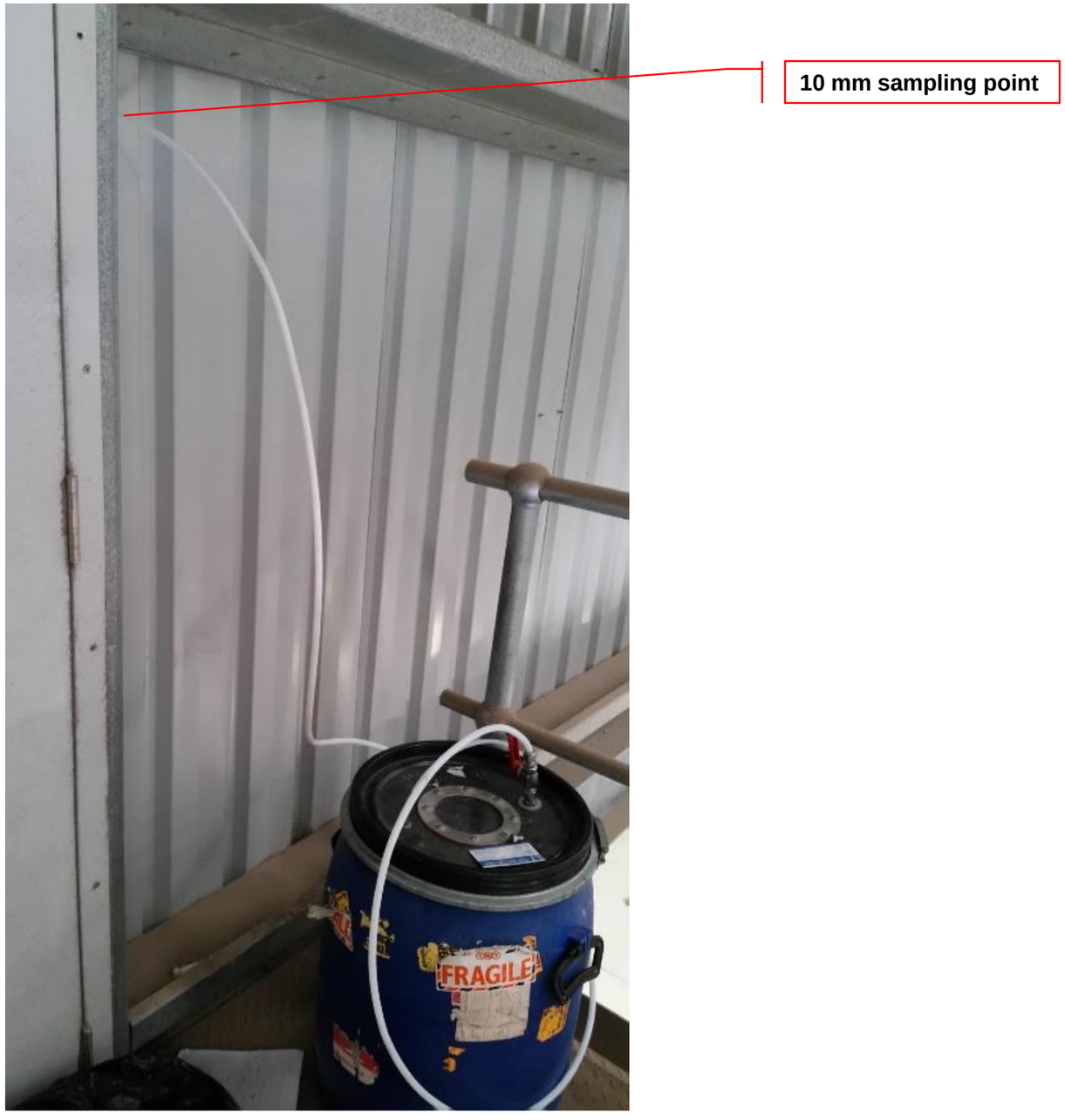


Photo 1 – An example of the roof discharge stack odour sampling point at the BTT Facility

Date		
Stack samples collected		
Waste tonnage on floor		
Observed local wind conditions		
Fan setting	**EF-01** **_____Hz** **_____Amps**	**EF-02** **_____Hz** **_____Amps**
Other comments		

Figure 1 – Odour audit logsheet showing the logging of key operational parameters and weather conditions

4. Results

The following section summarises the results from the sampling and testing conducted at the BTT Facility on 25 November 2021. The odour laboratory results report is enclosed in **Appendix A**.

4.1 Roof Discharge Stack Odour Emission Results

The roof discharge stack odour emission results are presented in **Table 1**. The historical trend between waste tonnage on the floor and the stack odour emission rate at the BTT Facility until 25 November 2021 is presented in **Figure 2**. Note: the velocity readings recorded on 25 November 2021 is erroneous given the readings (31.9 m/s) are greater than the capacity of the fan system (refer to **Section 6**).

4.2 Smoke Testing Results

Several smoke release points were undertaken to evaluate airflow patterns and fugitive emission release within the BTT Facility building enclosure. The smoke release points included the northern, middle and southern areas of the BTT Facility building enclosure. A photo of a smoke testing point at the truck entry point of the BTT Facility, as occurred on 25 November 2021, is shown in **Photo 2.** A photo of the smoke testing within the BTT Facility building enclosure is shown in **Photo 3**. The observations made during smoke testing are as follows:

- No smoke was found to be emanating from the sealed breezeways around the perimeter of the BTT Facility building;
- The released smoke was found to be well-contained with the BTT Facility building enclosure, suggesting that odour release at ground level is minimal; and
- The released smoke was found to dissipate over time gradually. This indicates that there is a very good level of air exchange turnover within the BTT Facility building enclosure.

4.3 Odour Audit Logsheet

The outcomes from the completion of the audit logsheet on 25 November 2021 is provided in **Figure 3**.

4.4 Field Ambient Odour Assessment Survey

The FAOA survey results, as occurred on 14 May 2021, is provided in **Figure 4** and **Table 2**.

4.5 General Observations

A photo of the storage container area as found on 14 May 2021 is shown in **Photo 5** and **Photo 6**. This area was found to be relatively well maintained. The truck entrance plastics strips were found to be missing a few panels (refer to **Photo 4**).

Table 1 – Comparison of stack odour emission results and recorded waste tonnage on the floor between January 2018 and May 2021

Sample No.	Sampling Date	Sampling Time (hrs)	Measured stack odour concentration (ou)	Tonnage on waste floor (tonnes)	Stack design discharge airflow (m^3/s)	Calculated stack odour emission rate ($ou.m^3/s$)	Calculated stack odour emission rate per tonne of waste on the floor ($ou.m^3/s$)	Relevant comments
1	Monday, 8 January 2018	0930 hrs	1,450	390	109	158,100	405	--
2		1040 hrs	1,450			158,100	405	--
3	Tuesday, 9 January 2018	0940 hrs	1,720		55	94,080	627	Single fan operating
4		1002 hrs	1,450	150		79,320	529	
5	Wednesday, 10 January 2018	0942 hrs	861	30	55	47,100	1,570	Single fan operating
6		1015 hrs	939			51,360	1,710	
7	Thursday, 11 January 2018	0930 hrs	1,580	120	109	172,200	1,440	--
8		1029 hrs	1,720			187,500	1,560	--
9	Friday, 12 January 2018	0950 hrs	790	120	109	86,110	718	--
10		1032 hrs	395			43,060	359	--
11	Monday, 15 January 2018	0950 hrs	1,330	300	109	145,000	483	--
12		1100 hrs	1,450			158,100	527	--
Post-fan optimisation and service works								
13	Wednesday, 16 May 2018	1030 hrs	152	300	109	16,600	55	--
14		1035 hrs	197			21,470	72	--
Odour sampling campaign: June 2018								
1	Monday, 18 June 2018	0945 hrs	181	360	109	19,800	55	Refer to the June 2018 Report
2		1025 hrs	362			39,500	110	
3	Tuesday, 19 June 2019	0930 hrs	332	320		36,200	113	
4		0955 hrs	332			36,200	113	
5	Wednesday, 20 June 2018	0910 hrs	362	250		39,500	158	
6		0940 hrs	256			27,900	112	
7	Thursday, 21 June 2018	0925 hrs	181	350		19,700	56	
8		0950 hrs	235			25,600	73	
9	Friday, 22 June 2018	0925 hrs	91	200		9,920	50	
10		0950 hrs	91			9,920	50	
Odour audit as conducted on 11 October 2018								
1	Thursday, 11 October 2018	1145 hrs	152	500	114	17,300	35	Refer to the November 2018 Report
2		1325 hrs	181			20,600	41	
Odour audit as conducted on 10 April 2019								
1	Wednesday, 10 April 2019	1051 hrs	91	150	115	10,500	70	Refer to the May 2019 Report
2		1207 hrs	91	150	115	10,500	70	
Odour audit as conducted on 2 October 2019								
1	Wednesday, 2 October 2019	1405 hrs	157	180	104	16,400	91	Refer to the October 2019 Report
2		1500 hrs	91	100	104	9,460	95	
Odour audit as conducted on 6 May 2020								
1	Wednesday, 6 May 2020	1018 hrs	304	120	113	34,400	286	Refer to the May 2020 Report
2		1110 hrs	235	120	113	26,600	221	
Odour audit as conducted on 1 October 2020								
1	Tuesday, 1 October 2020	1024 hrs	416	270	117	48,700	180	Refer to October 2020 Report
2		1145 hrs	362	270	117	42,400	157	
Odour audit as conducted on 28 April 2021								
1	Wednesday, 28 April 2021	0830 hrs	332	180	55	18,200	101	Refer to **Appendix A**
Odour audit as conducted on 14 May 2021								
2	Friday, 14 May 2021	0915 hrs	197	150	143	28,200	188	Refer to **Appendix A**
Odour audit as conducted on 25 November 2021								
1	Thursday, 25 November 2021	0925 hrs	724	100	176* (design 110)	127,000*	1,270*	Refer to **Appendix A**
2	Thursday, 25 November 2021	0930 hrs	724	100	176* (design 110)	127,000*	1,270*	Refer to **Appendix A**

* erroneous measurement, refer to **Section 4.1**

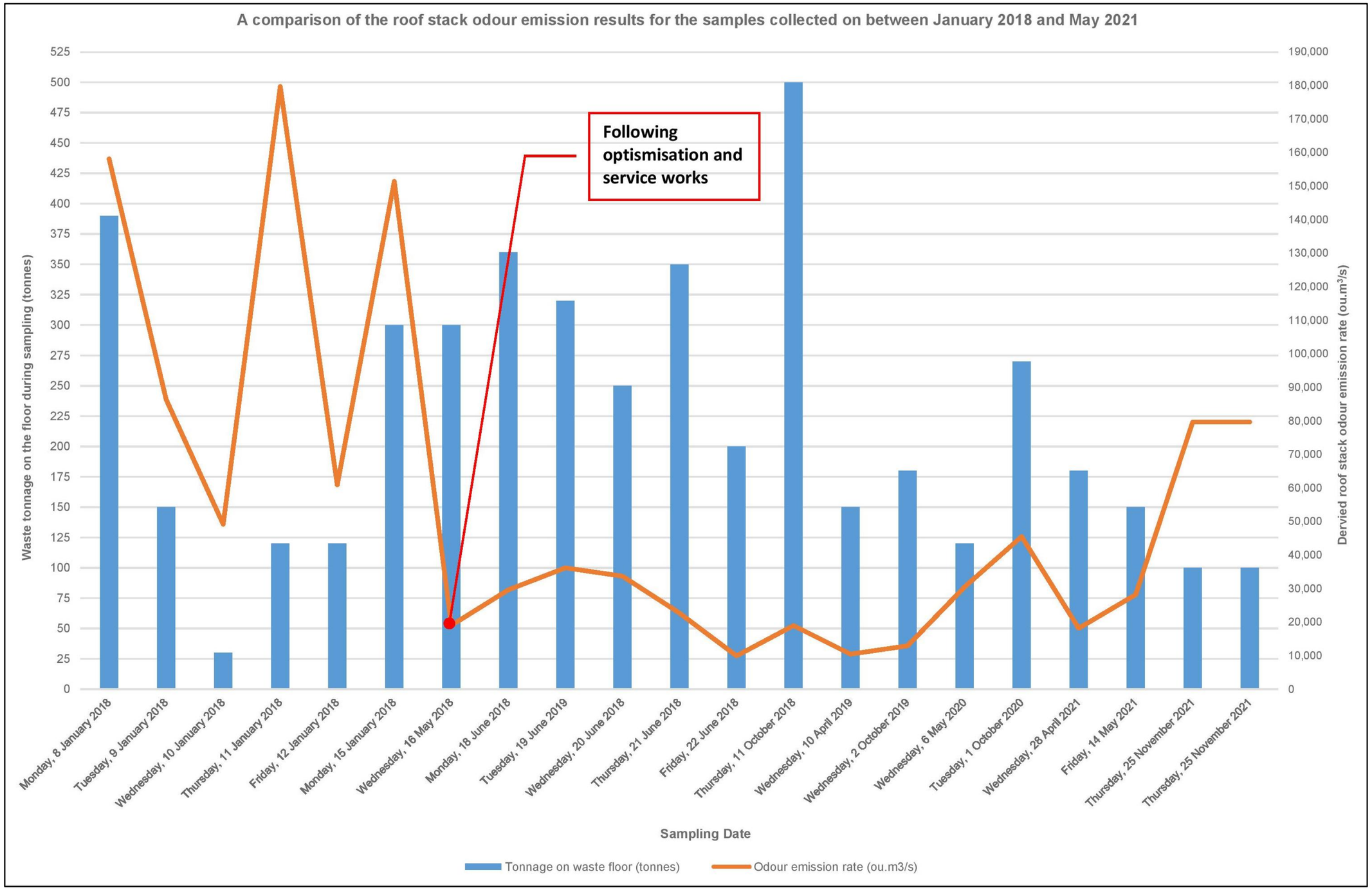


Figure 2 - Comparison of the roof stack odour emission rate between January 2018 and May 2021

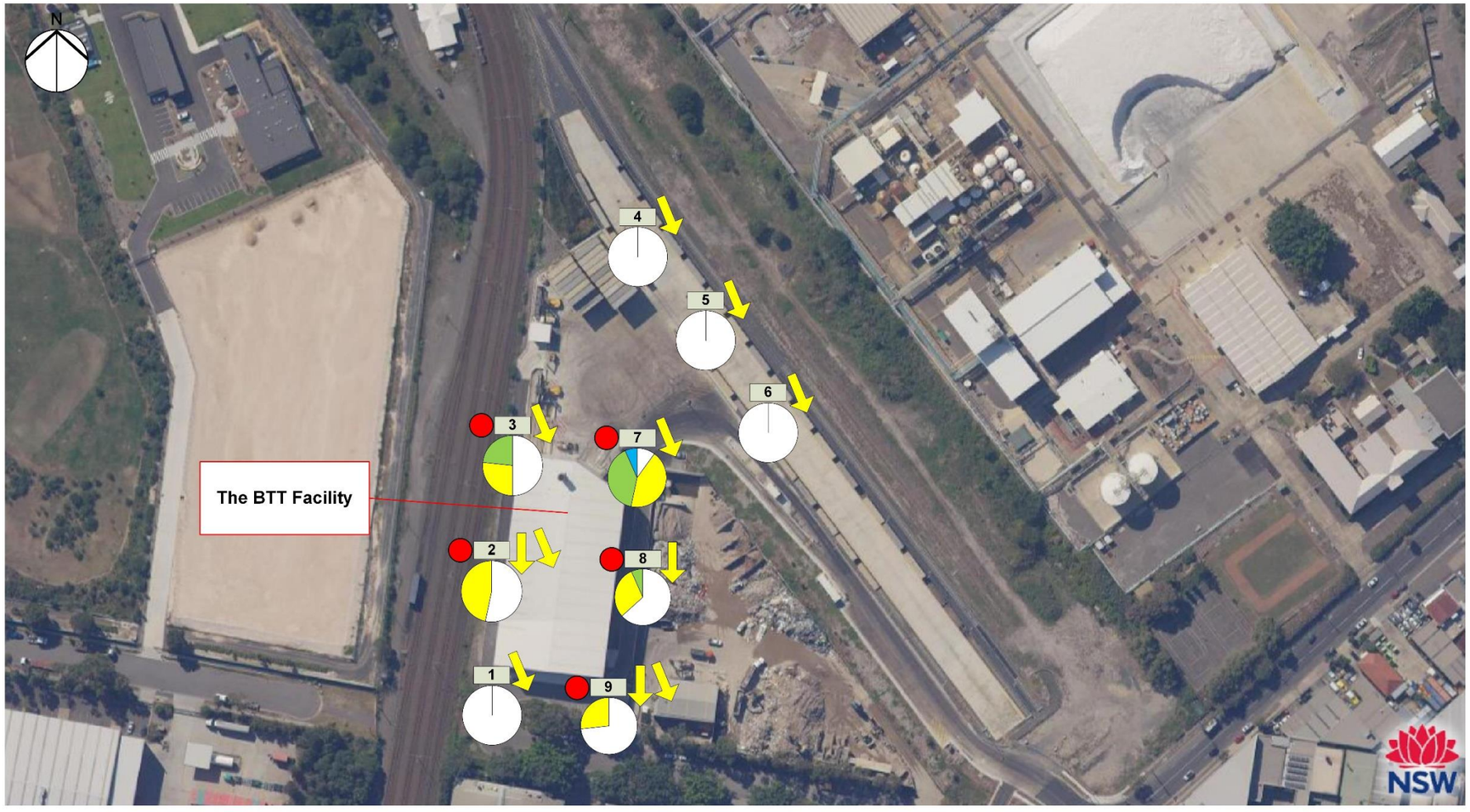
Photo 2 – Smoke testing at the truck entry point of the BTT Facility building enclosure on 25 November 2021 at 0953 hrs

Photo 3 – A picture of the BTT Facility waste floor area during smoke testing on 25 November 2021 at 0951 hrs

Photo 4 – A view of the truck entry point to the BTT Facility building: 25 November 2021 (Note: The truck entrance plastics strips were found to be missing some panels)

Figure 3 – Completed audit logsheet as occurred on 28 April 2021 & 14 May 2021		
Date	25 November 2021	
Stack samples collected	Stack Discharge 1 of 2 collected at 0925 hrs Stack Discharge 2 of 2 collected at 0930 hrs	
Waste tonnage on floor	Approximately 100 tonnes at 0930 hrs	
Observed local wind conditions	Overcast skies. Calm (< 0.5 m/s) to light (0.5 – 2.0 m/s) northerly to north-north-easterly winds. Local ambient temperature was approximately 18°C.	
Fan setting	**EF-01** ____30.0_____Hz ____32.2_____Amps	**EF-02** ____40.0_____Hz ____42.4_____Amps
Other comments	▪ EF-1 discharge stack reading = 31.9 m/s. ▪ EF-2 discharge stack reading = 31.9 m/s ▪ Suction pressure reading at sampling point = -86 Pascals (**Pa**). ▪ 64 empty waste containers and 24 filled waste containers were present on the concrete pad at approximately 0930 hrs. ▪ Breezeways permanently sealed around BTT Facility building. ▪ Good housekeeping observed across the BTT Facility (refer to **Photo 5**). ▪ Noted build-up of stains/slime/deposited particulate matter within the internal walls of the BTT Facility building.	

Photo 5 – A picture of the BTT Facility concrete pad facing south on 25 November 2021 at 1019 hrs



VDI 3882.1 Intensity	
0	Not detectable
1	Very weak
2	Weak
3	Distinct
4	Strong
5	Very Strong
6	Extremely Strong

Odour Character

- A – bin juice, sour
- B – other non-waste odours

Legend

- 99 – Measurement location
- Intensity Frequency Pie Graph
- Local Wind Direction

Prevailing Local Wind Conditions

Overcast skies.

Calm (< 0.5 m/s) to light (0.5 – 2.0 m/s) northerly to north-north-easterly winds.

Local ambient temperature was approximately 18°C.

THE ODOUR UNIT

Veolia – Banksmeadow, NSW
Field Ambient Odour Assessment – Survey 1
Odour Impact Map

Field Ambient Odour Assessment Survey
Session Date: 25.11.2020 Session Time: 1000 hrs – 1057 hrs
Area: 1 Odour Impact Criterion: Intensity ≥ 2, Frequency ≥ 10%
Drawn By: I. Farrugia Revision: A Date: 02.12.2021

Figure 4 - FAOA survey odour impact map as conducted on 25 November 2021 between 1000 hrs and 1057 hrs (refer to **Table 2** for details)

Table 2 - FAOA survey logsheet: 25 November 2021 between 1000 hrs and 1057 hrs

Grid Reference Position	Time (hrs)	Wind Direction	Wind speed (m/s)	Odour Present (Y / N)	Odour character	VDI 3940 Intensity Scale 0-6 Range Detected	Is odour intensity ≥ 2 (Weak) and frequency of detection ≥ 10%	Comments
1	1000 – 1005	NNE	0.5	N	nil detection	0	N	--
2	1007 – 1012	N / NNE	0.5	Y	bin juice, sour	0 – 1	N	▪ Localised odour within the BTT Facility boundary
3	1014 – 1019	NNE	< 0.5	Y	bin juice, sour	0 – 2	Y	▪ Localised odour within the BTT Facility boundary
4	1021 – 1026	NNE	0.5 – 1.0	N	nil detection	0	N	--
5	1027 – 1032	NNE	0.5 – 1.0	N	nil detection	0	N	--
6	1033 – 1038	NNE	0.5 – 1.0	N	nil detection	0	N	--
7	1040 – 1045	NNE	0.5 – 1.0	Y	bin juice, sour	0 – 3	Y	▪ Localised odour within the BTT Facility boundary ▪ Likely source was from waste vehicle activity at the time
8	1046 – 1051	N	0.5 – 1.0	Y	bin juice, sour	0 – 3	N	▪ Localised odour within the BTT Facility boundary
9	1052 – 1057	N / NNE	0.5	Y	bin juice, sour	0 – 1	N	▪ Localised odour within the BTT Facility boundary

5. Odour Audit Findings

Based on the results and observations documented in **Section 4** of this memorandum report, the following findings are made:

- At the time of the Audit, based on the the roof discharge stack performance, downwind odour impacts were of medium risk. This represents a change in the risk profile from the May 2021 Audit (i.e. low risk). This reflects the uncertainty in the velocity sensor readings and the lowered fan setting (EF-01/EF-02 at 30/40 Hz, respectively) at the time. This operating setting is likely leading to a lower airflow extraction rate from the BTT Facility Building and stack discharge velocity;

- With the above in mind, it is noted that the fan discharge velocity readings require cross-checking given the erroneous values (31.9 m/s) compared to historical records (approximately 20 m/s) and fan design specification;

- A localised very weak to distinct odour was detectable within the boundary of the BTT Facility at several measurement location points (refer to **Figure 4**) during the FAOA survey. The odour character was 'bin juice, sour' and the likely source was the activities at the BTT Facility occurring at the time;

- It is understood that the BTT Facility continues to implement an active service and maintenance program for the waste containers (refer to the *NSW Resource Recovery – Container Maintenance*). It is also understood that the road sweeper is utilised twice daily. As such, given the current odour mitigation and management practices and stack testing results as found in the Audit, the localised odour within the BTT Facility detected during the FAOA survey may be problematical at nearby, off-site downwind locations;

- The smoke testing conducted within the BTT Facility building during the assessment enclosure indicated positive results and suggested that the building ventilation air extraction system at the BTT Facility is operating in good condition;

- Four formal odour complaints were logged in 2021 since the May 2021 Report; which were received on 15 June, 5 July, 7 November and 15 November 2021. IXOM was the complainant for each of these complaints. In response, the BTT Facility engaged TOU further to investigate the OCS to determine what actions should be taken to reduce risk of off-site odour emissions. The findings from this screening session are documented separately from the Audit, but indicated that the BTT Facility was likely the odour source triggering the recent odour complaints;

- The service logs (from July 2021 until November 2021) indicate that all required maintenance works on the building ventilation air extraction system at the BTT Facility since the previous May 2021 Report have been adequately undertaken, and the system is operating in a mechanically satisfactory condition; and

- The few plastic panels at the truck entry point of the BTT Facility building enclosure were found to be missing. This was a similar finding in the May 2021 Report and now requires immediate action.

6. Follow-up Recommendations

Based on the findings documented in **Section 5**, the following recommendations are made:

- The plastic panels at the truck entry point require rectification as soon as practicable; and
- The stack velocity sensor requires cross-checking to validate the accuracy of the readings;
- Upon completion of the cross-checking process, rectify the velocity sensor and ensure it is reading accurately. Once this is completed, the fan settings should be adjusted until a minimum reading of 20.0 m/s is achieved; and
- Undertake a clean of the internal walls of the BTT Facility Building to remove build-up of stains/slime/deposited particulate matter.

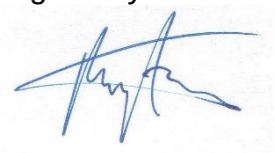
7. Concluding Remark

Given the results and findings as documented in this memorandum report, TOU is of the view that the BTT Facility is operating in a manner that presents a medium risk of odour impact to the local amenity from an odour viewpoint under the measured and current operating circumstances as found in the Audit. Upon implementation of all follow-up recommendationsm, this risk rating will return to low, which is in-line with the historical performance of the BTT Facility Building under normal opeating conditions. Given the logged complaints, these follow-up recommendations should be implemented as soon as practicable.

The next odour audit is due in **May 2022**.

The Odour Unit Pty Ltd

Signed by:



Michael Assal MEngSc, B. Eng (Hon)/B.Sc, AMIChemE, MIEAust, CAQP
Operations Manager

Attachments:

- **Appendix A –** Odour Laboratory Results Reports: 26 November 2021.

THE ODOUR UNIT

APPENDIX A -

ODOUR LABORATORY RESULTS REPORTS: 26 NOVEMBER 2021

THE ODOUR UNIT PTY LTD

THE ODOUR UNIT

Level 3 Suite 12
56 Church Avenue
MASCOT NSW 2020

Phone: +61 2 9209 4420
Email: info@odourunit.com.au
Internet: www.odourunit.com.au
ABN: 53 091 163 061

NATA
Accreditation Number: 14974

Odour Concentration Measurement Report

The measurement was commissioned by:

Organisation	Veolia Environmental Services	Telephone	+61 417 862 293
Contact	M. Wong	Facsimile	--
Sampling Site	Banksmeadow Transfer Facility	Email	mary.wong1@veolia.com
Sampling Method	Drum & pump, AS4323.3	Sampling Team	TOU (JS, IF)

Order details:

Order requested by	M. Wong	Order accepted by	M. Assal
Date of order	Refer to correspondence	TOU Project #	N1906L
Order number	Refer to correspondence	Project Manager	M. Assal
Signed by	M. Wong	Panel Operator	A. Schulz

Investigated Item
Odour concentration in odour units 'ou', determined by sensory odour concentration measurements, of an odour sample supplied in a sampling bag.

Identification
The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification), sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.

Method
The odour concentration measurements were performed using dynamic olfactometry according to the Australian/New Zealand Standard: Stationary source emissions – *Part 3*: '*Determination of odour concentration by dynamic olfactometry* (AS/NZS4323.3). The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.

Measuring Range
The measuring range of the olfactometer is $2^2 \leq \chi \leq 2^{18}$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted. The machine is not calibrated beyond dilution setting 2^{17}. This is specifically mentioned with the results.

Environment
The measurements were performed in an air- and odour-conditioned room. The room temperature is maintained at 22 °C ±3 °C.

Measuring Dates
The date of each measurement is specified with the results.

Instrument Used
The olfactometer used during this testing session was:
TOU-OLF-004.

Instrumental Precision
The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.477$ in accordance with the AS/NZS 4323.3.
$r = 0.280$ Compliance – Yes

Instrumental Accuracy
The accuracy of this instrument for a sensory calibration must be $A \leq 0.217$ in accordance with the AS/NZS 4323.3.
$A = 0.076$ Compliance – Yes

Lower Detection Limit (LDL)
The LDL for the olfactometer has been determined to be 16 ou, which is 4 times the lowest dilution setting.

Traceability
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. The assessors are individually selected to comply with fixed criteria and are monitored in time to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen. Note Disclaimers on last page of this document.

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced, except in full.

Date: 2nd December 2021

Panel Roster Number: SYD20211126_107

A. Schulz
Authorised Signatory

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Sample Measurement Results
Panel Roster Number: SYD20211126_107

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Sample Odour Concentration (ou)
Sample #1 – Receivals hall ventilation (1 of 2)	SC21792	25.11.2021 0925 hrs	26.11.2021 1008 hrs	4	8	724
Sample #2 – Receivals hall ventilation (2 of 2)	SC21793	25.11.2021 0930 hrs	26.11.2021 1038 hrs	4	8	724

Samples Received in Laboratory – From: TOU Date: 25.11.2021 Time: 1300 hrs

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd:

1. The collection of samples by the methods of AS/NZS 4323.4 and the calculation of Specific Odour Emission Rate (SOER).
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd have performed the dilution of samples.

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Panel Calibration Results

Reference Odorant	Reference Odorant Panel Roster Number	Concentration of Reference gas (ppb)	Panel Target Range for n-butanol (ppb)	Measured Concentration (ou)	Measured Panel Threshold (ppb)	Does this panel calibration measurement comply with AS/NZS 4323.3 (Yes / No)
n-butanol	SYD20211126_107	51,000	$20 \leq \chi \leq 80$	742	69	Yes

Comments

Odour characters (non-NATA accredited) as determined by odour laboratory panel:

SC21792 garbage
SC21793 garbage

Disclaimers

1. Parties, other than The Odour Unit Pty Ltd, responsible for collecting odour samples have advised that they have voluntarily furnished these odour samples, appropriately collected and labelled, to The Odour Unit Pty Ltd for the purpose of odour testing.
2. The collection of odour samples by parties other than The Odour Unit Pty Ltd relinquishes The Odour Unit Pty Ltd from all responsibility for the sample collection and any effects or actions that the results from the test(s) may have.
3. Any comments included in, or attachments to, this Report are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd.
4. This report shall not be reproduced, except in full, without written approval of The Odour Unit Pty Ltd.

Report Status

Status	Version	Date	Prepared by	Checked by	Change	Reason
Draft	0.1	02.12.2021	AS	IF	-	-
Final	1.0	09.03.2022	IF	MA	-	-
Revised	-	-	-	-	-	-

END OF DOCUMENT

TO: **MARY WONG**

COMPANY: **VEOLIA (AUSTRALIA) PTY LTD**

FROM: **ISAAC FARRUGIA & MICHAEL ASSAL**

DATE: **21 JUNE 2022**

JOB NO: **N1906L.03**

SUBJECT: **BANKSMEADOW WASTE TRANSFER TERMINAL FACILITY – ON-GOING ODOUR AUDIT PROGRAM: JUNE 2022**

1. Introduction

The following technical memorandum documents the findings and recommendations from an on-going, six-monthly odour audit program (the **Audit**) being conducted by The Odour Unit Pty Ltd (**TOU**) at the Veolia (Australia) Pty Ltd (**Veolia**) Waste Transfer Terminal Facility, 34/36 McPherson Street, Banksmeadow, New South Wales (**BTT Facility**). The Audit documented in this memorandum report covers the outcome of two visits conducted by TOU at the BTT Facility on 1 & 3 June 2022.

This memorandum report documents the following:

1. The results and findings from odour sampling and testing of the roof discharge stack as found during the Audit visit;

2. Documentation of field observations made during the visit that are relevant to odour management as well as the outcomes from smoke testing;

3. A review of the relevant documentation, including the service logs for the preventative maintenance works undertaken on the building ventilation air extraction system and logged odour complaints between November 2021 and May 2022; and

4. The field ambient odour assessment (**FAOA**) survey results were undertaken within the BTT Facility at both downwind and upwind locations.

2. Relevant Background

The BTT Facility was completed in June 2016 and is designed, at full capacity, to receive up to 400,000 tonnes per annum of putrescible waste, consisting of mixed waste, including food from the municipal and commercial sectors. All received waste is delivered to the BTT Facility in enclosed waste collection trucks before being compacted and placed in sealed containers for rail transport to Veolia's site at Woodlawn for subsequent treatment, recycling, energy recovery, and disposal where required. The BTT Facility is also approved to receive up to 100,000 tonnes per annum of non-putrescible (dry) waste from the municipal, commercial, and industrial sectors for transfer to a new material recycling facility currently being scoped in Camellia.

The following report should be read in conjunction with previously issued documents relating to the BTT Facility, where applicable, including:

1. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – Odour Audit Final Report* dated 26 May 2017 (the **May 2017 Report**);

2. An email-based summary report titled *Banksmeadow On-going Odour Investigation - 2 August 2017 Summary* dated 21 September 2017 documenting the works undertaken on 2 August 2017 at the BTT Facility (the **August 2017 Report**);

3. A TOU Report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: January/February 2018* issued on 23 February 2018 (the **February 2018 Report**);

4. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: March to May 2018 (Rev 3)* issued on 31 May 2018 (the **March/May 2018 Report**);

5. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: June 2018* issued on 28 June 2018 (the **June 2018 Report**);

6. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2018* issued on 13 November 2018 (the **November 2018 Report**);

7. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: April 2019* issued on 10 May 2019 (the **May 2019 Report**);

8. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2019* issued on 19 November 2019 (the **October 2019 Report**);

9. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: May 2020* issued on 22 June 2020 (the **June 2020 Report**);

10. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2020* issued on 23 December 2020 (the **December 2020 Report**);

11. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: May 2021* issued on 31 May 2021 (the **May 2021 Report**); and

12. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: November 2021* issued on 10 March 2022 (the **November 2021 Report**).

2.1 Additional Work to the Audit

In addition to the visits conducted as part of the Audit, a site visit was conducted by TOU staff on 10 February 2022 to verify the accuracy of the velocity sensor located on the roof discharge stack. This verification was necessary due to suspected erroneous readings in previous assessments (refer to the May 2021 Report and the November 2021 Report). The outcome of this visit was that the sensor was reading incorrectly and that a fan belt was slipping, preventing the fan from operating at its full design capacity (50 Hz). Subsequent to this visit, the velocity sensor was replaced by the responsible mechanical contractor and a follow-up visit was conducted on 18 March 2022 by TOU to validate the outcomes of this replacement. The methodology and results of these visits have been added to the Audit and are discussed in **Section 3.5** and **Section 4.2**, respectively.

3. Odour Audit Methodology

3.1 Odour Sampling and Testing

The odour sampling and laboratory analysis methodology are well documented in the May 2017 Report. As such, it is not reproduced in this memorandum report.

The point source sampling method was utilised to collect samples from a 10-millimetre (**mm**) tap point created in the common plenum chamber of the two fan modules servicing the building ventilation extraction system at the BTT Facility. An illustration of the location and sampling technique is presented in **Photo 1**.

3.2 Odour Audit Logsheet

An extract of the logsheet utilised as part of the Audit visit is provided in **Figure 1**, which was developed in previous audits conducted at the BTT Facility.

3.3 Field Ambient Odour Assessment Survey

The methodology followed for the FAOA survey is well documented in the February 2018 Report. As such, it is not reproduced in this memorandum report. For the Audit, TOU extended the FAOA survey measurement period to five-minute intervals, with discrete measurement readings collected every ten seconds (i.e. 30 'sniffs' per measurement location point). The product of this measurement methodology is an intensity frequency pie graph. The odour impact criterion (i.e. the threshold that would be considered as increasing the likelihood of odour annoyance at downwind receptors) is set to an odour intensity of greater than 2 (Weak) and at a frequency of 10% per measurement cycle per location. This criterion is considered suitable given the industrial context of the BTT Facility. This detail is outlined in the FAOA map plot in **Figure 5** of **Section 4.5**.

3.4 Smoke Testing

The methodology for smoke testing is documented in the May 2018 Report. As such, it is not reproduced in this memorandum report.

3.5 Roof Discharge Stack Airflow Sensor Performance Evaluation

The methodology used to measure the airflow from the roof discharge stack was via a hot-wire anemometer at four (4) pre-drilled measurement locations, as illustrated in **Figure 2**. Notably, measurement point A is the location of the velocity sensor probe. These measurements were compared against the airflow sensor readings to determine the accuracy of the airflow sensor (refer to **Table 2**).

3.6 Review of relevant documentation

As part of the Audit, the following documentation was reviewed:

- Fan maintenance reports between November 2021 and May 2022; and
- Odour complaints register between November 2021 and May 2022.

Photo 1 – An example of the roof discharge stack odour sampling point at the BTT Facility

Date		
Stack samples collected		
Waste tonnage on floor		
Observed local wind conditions		
Fan setting	**EF-01** **_____Hz** **_____Amps**	**EF-02** **_____Hz** **_____Amps**
Other comments		

Figure 1 – Odour audit logsheet showing the logging of key operational parameters and weather conditions

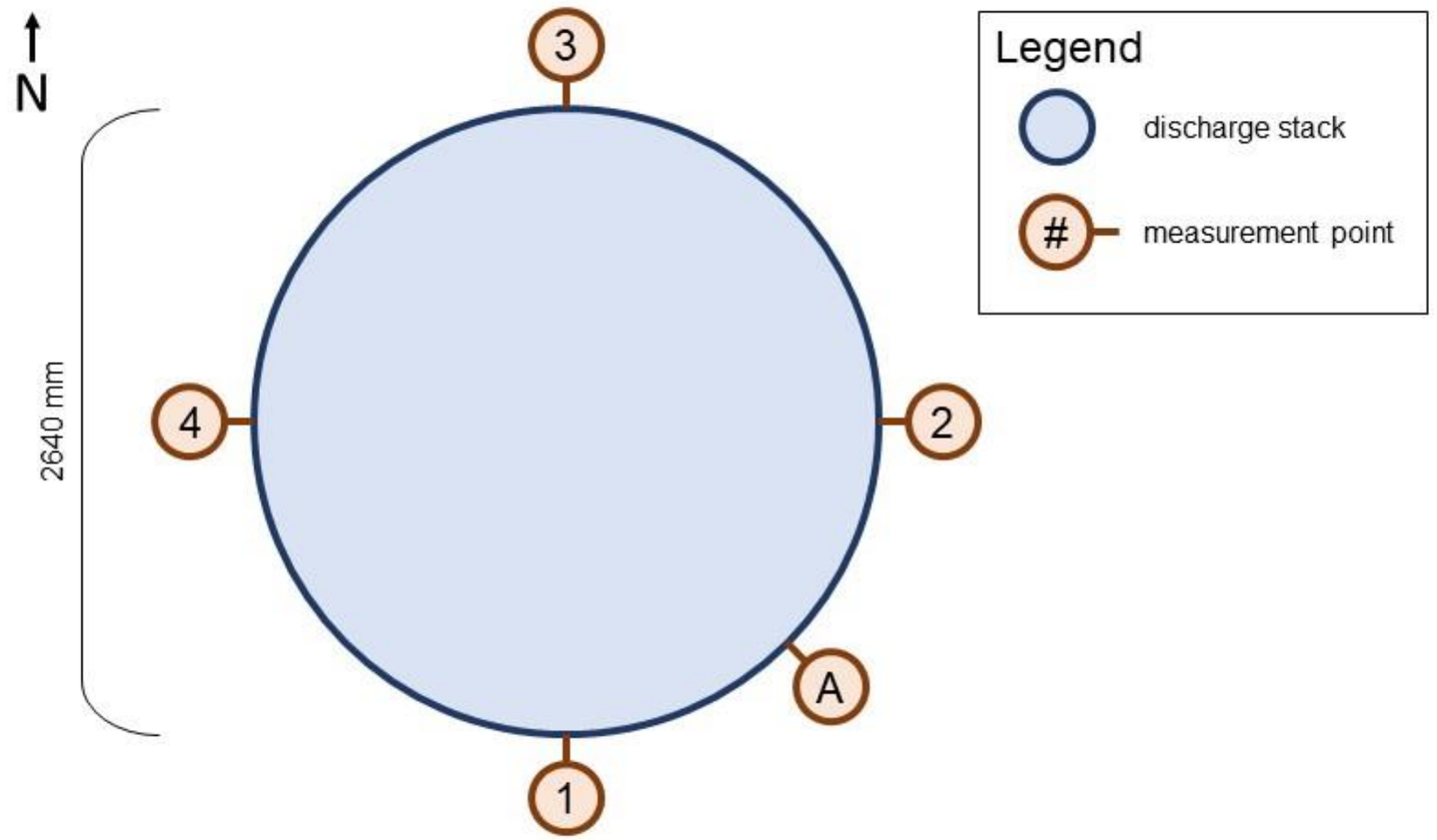


Figure 2 – Diagram displaying a cross-sectional view of the roof discharge stack and location of measurement points

4. Results

The following section summarises the results from the sampling and testing conducted at the BTT Facility on 1 & 3 June 2022. The odour laboratory results report is enclosed in **Appendix A**.

4.1 Roof Discharge Stack Odour Emission Results

The roof discharge stack odour emission results are presented in **Table 1**. The historical trend between waste tonnage on the floor and the stack odour emission rate at the BTT Facility until 1 June 2022 is presented in **Figure 3**.

4.2 Roof Discharge Stack Airflow Testing Results

As described in **Section 2**, the roof discharge stack airflow sensor's performance was assessed (and was consequently replaced) during a site visit conducted 10 February 2022, and the new sensor's performance was validated during a follow-up site visit conducted 18 March 2022. The design velocity through the discharge stack is 20 m/s. **Table 2** & **Table 3** display the results of the site visits conducted 10 February & 18 March 2022, respectively. **Table 2** shows the results of testing in locations across the discharge stack as in **Figure 2**, with the last set of data (indicated by the date and fan settings being in green) displaying the readings of the new sensor after replacement and subsequent correction. The fan settings for EF-01 and EF-02 were determined to be set at 50 Hz to achieve the target exit velocity of 20 m/s. A correction to the velocity sensor was completed by the mechanical contractor to ensure that the displayed reading was consistent with the independent measurements collected by TOU.

4.3 Smoke Testing Results

Several smoke release points were undertaken to evaluate airflow patterns and fugitive emission release within the BTT Facility building enclosure. The smoke release points included the northern, middle, and southern areas of the BTT Facility building enclosure. A photo of a smoke testing point at the truck entry point of the BTT Facility, as occurred on 1 June 2022, is shown in **Photo 2.** A photo of the smoke testing within the BTT Facility building enclosure is shown in **Photo 3**. The observations made during smoke testing are as follows:

- No smoke was found to be emanating from the sealed breezeways around the perimeter of the BTT Facility building;
- The released smoke was found to be well-contained with the BTT Facility building enclosure, suggesting that odour release at ground level is minimal; and
- The released smoke was found to dissipate over time gradually. This indicates that there is a very good level of air exchange turnover within the BTT Facility building enclosure.

4.4 Odour Audit Logsheet

The outcomes from the completion of the audit logsheet on 1 June 2022 are provided in **Figure 4**.

4.5 Field Ambient Odour Assessment Survey

The FAOA survey results, as occurred on 1 June 2022, are provided in **Figure 5** and **Table 4**.

4.6 General Observations

A photo of the storage container area as found on 1 June 2022 is shown in **Photo 5** and **Photo 6**. This area was found to be relatively well maintained. The truck entrance plastics strips were found to be missing a few panels (refer to **Photo 4**).

Table 1 – Comparison of stack odour emission results and recorded waste tonnage on the floor between January 2018 and June 2022

Sample No.	Sampling Date	Sampling Time (hrs)	Measured stack odour concentration (ou)	Tonnage on waste floor (tonnes)	Stack design discharge airflow (m^3/s)	Calculated stack odour emission rate ($ou.m^3/s$)	Calculated stack odour emission rate per tonne of waste on the floor ($ou.m^3/s$)	Relevant comments
1	Monday, 8 January 2018	0930	1,450	390	109	158,100	405	--
2		1040	1,450			158,100	405	--
3	Tuesday, 9 January 2018	0940	1,720	150	55	94,080	627	Single fan operating
4		1002	1,450			79,320	529	
5	Wednesday, 10 January 2018	0942	861	30	55	47,100	1,570	Single fan operating
6		1015	939			51,360	1,710	
7	Thursday, 11 January 2018	0930	1,580	120	109	172,200	1,440	--
8		1029	1,720			187,500	1,560	--
9	Friday, 12 January 2018	0950	790	120	109	86,110	718	--
10		1032	395			43,060	359	--
11	Monday, 15 January 2018	0950	1,330	300	109	145,000	483	--
12		1100	1,450			158,100	527	--
Post-fan optimisation and service works								
13	Wednesday, 16 May 2018	1030	152	300	109	16,600	55	--
14		1035	197			21,470	72	--
Odour sampling campaign: June 2018								
1	Monday, 18 June 2018	0945	181	360	109	19,800	55	Refer to the June 2018 Report
2		1025	362			39,500	110	
3	Tuesday, 19 June 2019	0930	332	320		36,200	113	
4		0955	332			36,200	113	
5	Wednesday, 20 June 2018	0910	362	250		39,500	158	
6		0940	256			27,900	112	
7	Thursday, 21 June 2018	0925	181	350		19,700	56	
8		0950	235			25,600	73	
9	Friday, 22 June 2018	0925	91	200		9,920	50	
10		0950	91			9,920	50	
Odour audit as conducted on 11 October 2018								
1	Thursday, 11 October 2018	1145	152	500	114	17,300	35	Refer to the November 2018 Report
2		1325	181			20,600	41	
Odour audit as conducted on 10 April 2019								
1	Wednesday, 10 April 2019	1051	91	150	115	10,500	70	Refer to the May 2019 Report
2		1207	91			10,500	70	
Odour audit as conducted on 2 October 2019								
1	Wednesday, 2 October 2019	1405	157	180	104	16,400	91	Refer to the October 2019 Report
2		1500	91	100		9,460	95	
Odour audit as conducted on 6 May 2020								
1	Wednesday, 6 May 2020	1018	304	120	113	34,400	286	Refer to the May 2020 Report
2		1110	235			26,600	221	
Odour audit as conducted on 1 October 2020								
1	Tuesday, 1 October 2020	1024	416	270	117	48,700	180	Refer to October 2020 Report
2		1145	362			42,400	157	
Odour audit as conducted on 28 April 2021								
1	Wednesday, 28 April 2021	0830	332	180	55	18,200	101	Refer to **Appendix A**
Odour audit as conducted on 14 May 2021								
2	Friday, 14 May 2021	0915	197	150	143	28,200	188	Refer to **Appendix A**
Odour audit as conducted on 1 June 2022								
1	Wednesday, 1 June 2022	1130	128	250	82	6,080	24	--
2		1305	74			10,500	42	--

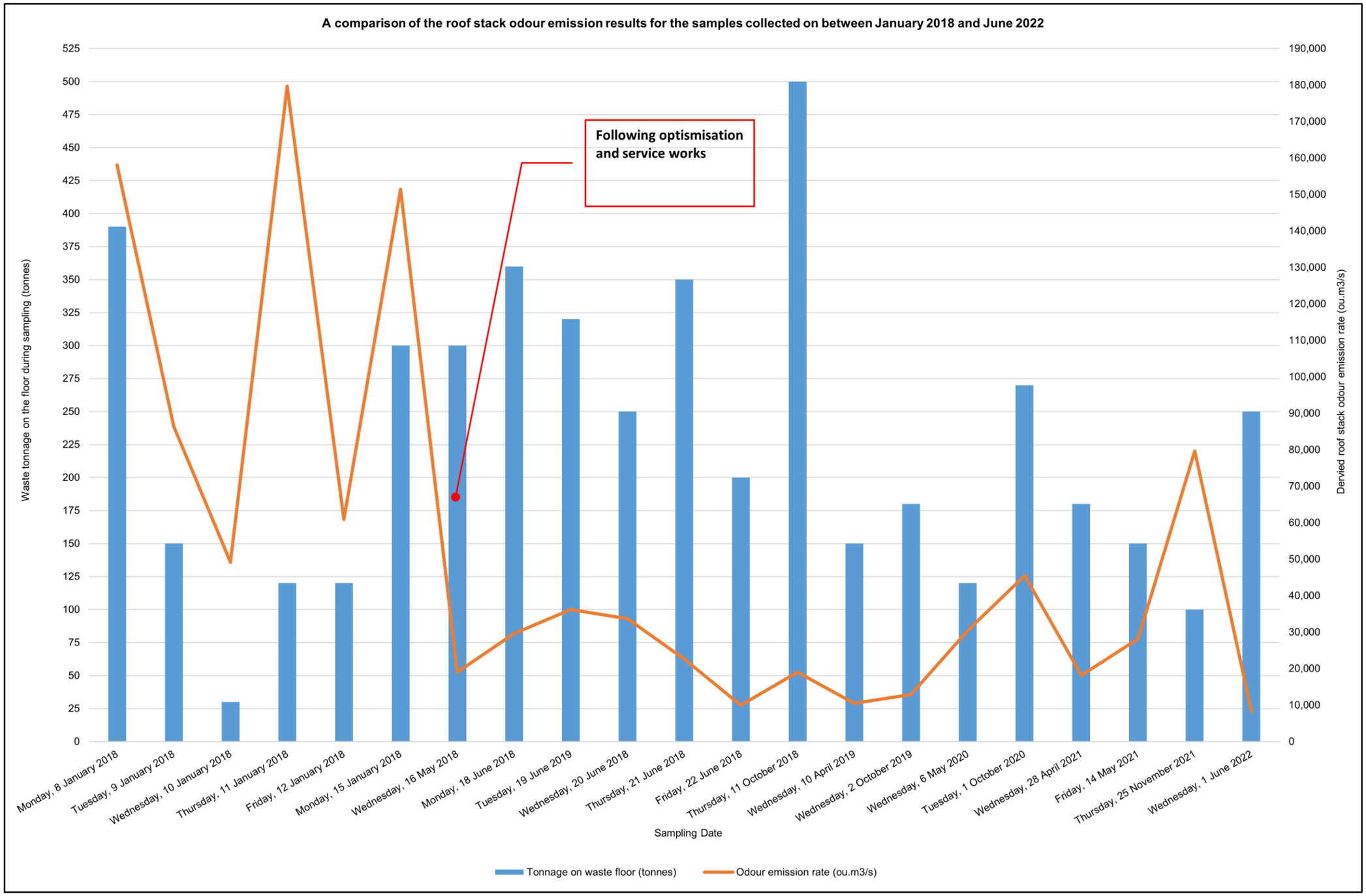


Figure 3 - Comparison of the roof stack odour emission rate between January 2018 and June 2022

Table 2 – Roof Discharge Stack Airflow Verification Results: 10 February 2022 & 18 March 2022				
Measurement point	**Sensor reading**		**Independent measurement**	
	Velocity (m/s)	**Airflow (m^3/hr)**	**Velocity (m/s)**	**Airflow (m^3/hr)**
10-Feb-22	**Fan settings: EF-01 25 Hz, EF-02 40 Hz**			
1			12.1	238,000
2			13.9	273,000
3			7.8	154,000
4			14.2	280,000
A	30.0	591,000		
Average	30.0	591,000	12.0	236,000
10-Feb-22	**Fan settings: EF-01 40 Hz, EF-02 40 Hz**			
1			11.5	227,000
2			15.9	313,000
3			13.1	258,000
4			15.8	311,000
A	30.0	591,000		
Average	30.0	591,000	14.1	277,000
18-Mar-22	**Fan settings: EF-01 45 Hz, EF-02 45 Hz**			
1			14.2	279,000
2			17.9	352,000
3			14.5	286,000
4			18.0	355,000
A	30.0	591,000	18.6	366,000
Average	30.0	591,000	16.6	328,000
18-Mar-22	**Fan settings: EF-01 50 Hz, EF-02 50 Hz**			
1			15.7	309,000
2			20.2	397,000
3			16.3	321,000
4			20.4	403,000
A	20.7	407,000	20.1	397,000
Average	20.7	407,000	18.5	365,000

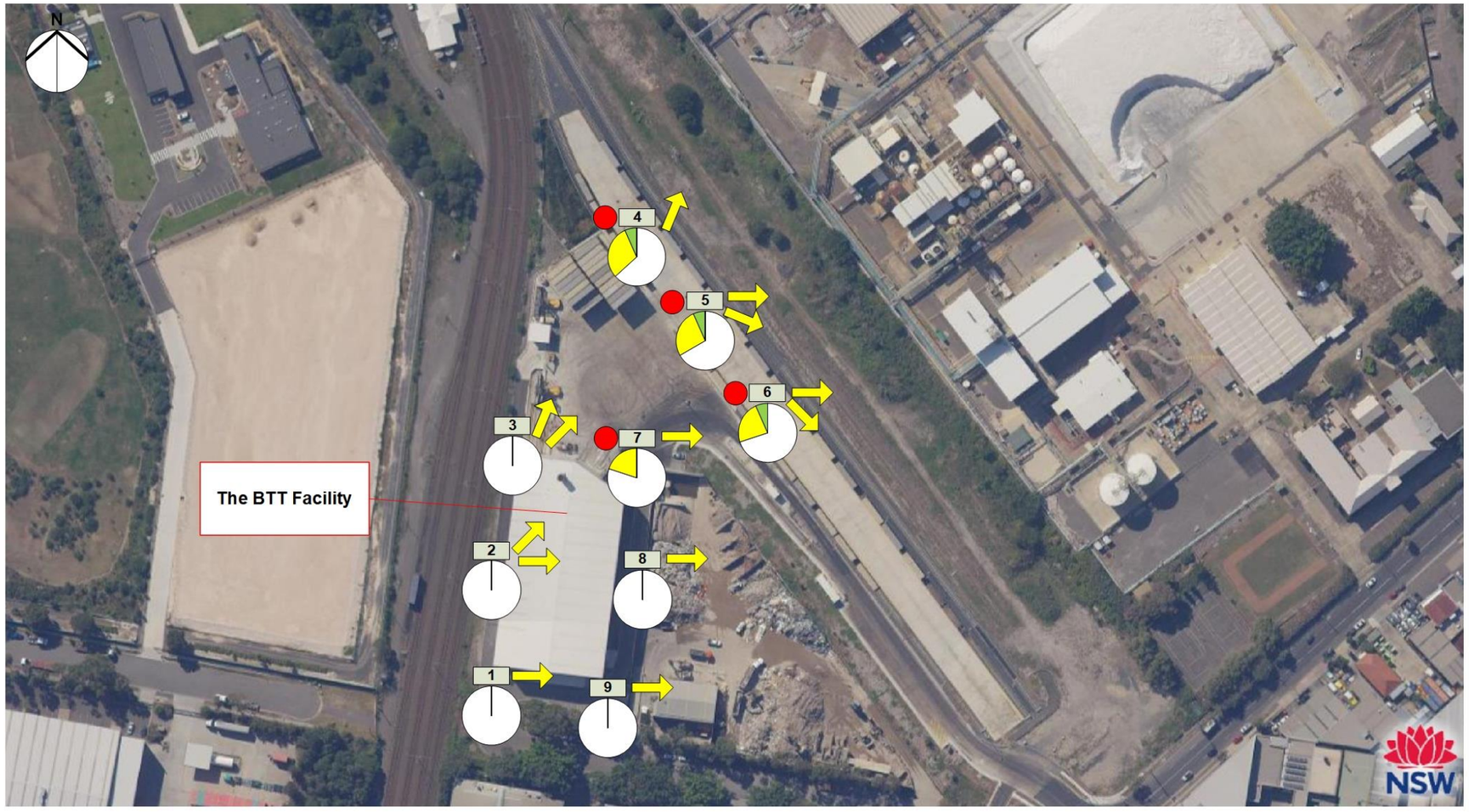
Table 3 – Roof Discharge Stack Airflow Calibration Screening Results: 18 March 2022				
Fan setting (Hz)	**Sensor reading**		**Independent measurement**	
	Velocity (m/s)	**Airflow (m^3/hr)**	**Velocity (m/s)**	**Airflow (m^3/hr)**
18-Mar-22	**Measurement point A**			
35	25.0	493,000	14.3	281,000
40	29.0	571,000	16.0	315,000
45	30.0	591,000	18.0	355,000
48	30.0	591,000	19.6	385,000
50	30.0	591,000	20.2	398,000

Photo 2 – Smoke testing at the truck entry point of the BTT Facility building enclosure on 1 June 2022

Photo 3 – A picture of the BTT Facility waste floor area during smoke testing on 1 June 2022 at 1144 hrs

Photo 4 – A view of the ventilation collection points: 1 June 2022 (Note: The collection grilles have an excessive build-up of particulate matter)

Figure 4 – Completed audit logsheet as occurred on 1 June 2022		
Date	**1 June 2022**	
Stack samples collected	Stack Discharge 1 of 2 collected at 1130 hrs on 1 June 2022 Stack Discharge 2 of 2 collected at 1305 hrs on 1 June 2022	
Waste tonnage on floor	Approximately 250 tonnes on 1 June 2022 as given by the client	
Observed local wind conditions	1 June 2022: Mostly clear skies, moderate (2 – 5 m/s) to heavy (5 - 10 m/s) wind speeds oscillating predominately between the south-westerly and north-westerly cardinal directions. The local ambient temperature was observed to be approximately 14 °C.	
Fan setting	**1 June 2022**	
	EF-01 ____50.0 ____Hz ____60.9____Amps	**EF-02** ____50.0_____Hz ____56.7_____Amps
Other comments	▪ EF-1 discharge stack reading = 21.0 m/s (per velocity sensor). ▪ EF-2 discharge stack reading = 21.0 m/s (per velocity sensor). ▪ Measured stack velocity at discharge point (duct dimensions) = 15.0 m/s (average) ▪ Twenty-three (23) empty waste containers and twenty-eight (28) filled waste containers were present on the concrete pad on 1 June 2022. ▪ Breezeways are permanently sealed around BTT Facility building. ▪ Fine particulate matter build-up on the receivals hall walls and grilles of the ventilation collection system (refer to **Photo 3** & **Photo 4**). ▪ The internal air extraction points from the BTT Facility building were observed to be due for a cleaning. This is part of the preventative maintenance works conducted by Equilibrium Air Conditioning Services Pty Ltd.	



VDI 3882.1 Intensity	
0	Not detectable
1	Very weak
2	Weak
3	Distinct
4	Strong
5	Very Strong
6	Extremely Strong

Odour Character

- A – bin juice, sour
- B – other non-waste odours

Legend

- 99 – Measurement location
- Intensity Frequency Pie Graph
- Local Wind Direction

Prevailing Local Wind Conditions

Slight cloud cover.

Moderate (2.0 – 5.0 m/s) to heavy (5.0 – 10.0 m/s) predominately south-westerly winds.

Local ambient temperature was approximately 14 °C.

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Veolia – Banksmeadow, NSW
Field Ambient Odour Assessment Survey
Odour Impact Map

Field Ambient Odour Assessment Survey
Session Date: 01.06.2022 Session Time: 1200 hrs – 1308 hrs
Area: 1 Odour Impact Criterion: Intensity ≥ 2, Frequency ≥ 10%
Drawn By: I. Farrugia Revision: A Date: 17.06.2022

Figure 5 – FAOA survey odour impact map as conducted on 1 June 2022 between 1200 hrs and 1308 hrs (refer to **Table 4** for details)

Table 4 – FAOA survey logsheet: 1 June 2022 between 1200 hrs and 1308 hrs

Grid Reference Position	Time (hrs)	Wind Direction	Wind speed (m/s)	Odour Present (Y / N)	Odour character	VDI 3940 Intensity Scale 0-6 Range Detected	Is odour intensity ≥ 2 (Weak) and frequency of detection ≥ 10%	Comments
1	1200-1205	W	2 - 6	N	nil detection	0	N	--
2	1207-1212	W-SW	8	N	nil detection	0	N	--
3	1215-1220	SW-SSW	4 - 8	N	nil detection	0	N	--
4	1222-1227	SSW	3 - 8	Y	bin juice, sour	0 – 2	N	▪ Localised odour within the BTT Facility boundary
5	1232-1237	W-WNW	2 - 7	Y	bin juice, sour	0 – 2	N	▪ Localised odour within the BTT Facility boundary
6	1240-1245	W-NW	3 - 7	Y	bin juice, sour	0 – 2	N	▪ Localised odour within the BTT Facility boundary
7	1247-1252	W	5 - 8	Y	bin juice, sour	0 – 1	N	▪ Localised odour within the BTT Facility boundary
8	1256-1301	W	4	N	nil detection	0	N	--
9	1303-1308	W	4 - 8	N	nil detection	0	N	--

5. Odour Audit Findings

Based on the results and observations documented in **Section 4** of this memorandum report, the following findings are made:

- The roof discharge stack was found to be operating at a favourable odour performance level. Specifically, the odour performance of the roof discharge stack continues to be broadly consistent with original design performance documented in the Wilkinson & Murray Air Quality Impact Assessment dated April 2014;

- At the current roof discharge stack performance, downwind odour impacts are very unlikely. The status quo is expected to be maintained under the current operating and maintenance practices at the BTT Facility;

- A localised very weak to weak odour was detectable within the boundary of the BTT Facility at several measurement location points (refer to **Figure 5**) during the FAOA survey. The odour character was 'bin juice, sour' and the likely source was the activities at the BTT Facility occurring at the time;

- It is understood that the BTT Facility continues to implement an active service and maintenance program for the waste containers (refer to the *NSW Resource Recovery – Container Maintenance*). It is also understood that the road sweeper is utilised twice daily. As such, given the current odour mitigation and management practices and stack testing results as found in the Audit, the localised odour within the BTT Facility detected during the FAOA survey is not expected to be problematical at nearby, off-site downwind locations;

- The smoke testing conducted within the BTT Facility building enclosure indicated positive results and suggested that the building ventilation air extraction system at the BTT Facility is operating in an effective manner. It was noted that the collection grilles for the ventilation collection system (refer to **Photo 4**) and internal building walls have fouled with particulate matter/dust;

- Eight (8) formal odour complaints were logged between November 2021 and the Audit. All complaints were logged by IXOM personnel;

- The service logs indicate that all required maintenance works on the building ventilation air extraction system at the BTT Facility since the previous November 2021 Report have been adequately undertaken, and the system is operating in a satisfactory condition, aside from the discharge stack velocity sensor requiring attention (see below and refer to **Section 6**);

- A difference in the airflow sensor reading (21 m/s) and independent measurements (15 m/s) was identified, despite the verification and validation visits conducted on 10 February and 18 March 2022, respectively. This indicates that the fan may require additional optimisation by the mechanical contractor (e.g., fan belts, etc.). Moreover, it appears that the velocity sensor cannot provide sustainably accurate real-time measurements and requires a higher frequency of maintenance and/or replacement with an alternative

sensor. If selected, the alternative sensor will need to provide a higher degree of reliability and accuracy, given that the exit velocity is a key performance metric; and

- The plastic panels at the truck entry point of the BTT Facility building enclosure were intact and in good condition.

6. Follow-up Recommendations

Based on the findings documented in **Section 5**, the following recommendations are made:

- The existing roof discharge stack velocity sensor should be included as part of the monthly preventative maintenance checks to ensure it is operating reliably. This includes a physical inspection of the velocity sensor probe and cross-reference with a calibrated portable instrument measured at the sensor probe location. If the existing velocity sensor probe is identified to be unable to provide consistently accurate measurement readings, an alternative sensor (e.g. pitot tube or annubar) should be considered; and

- The walls of the BTT Facility and ventilation air extraction grilles on the collection system require cleaning. This will assist with maintaining a good degree of housekeeping and minimise fouling effects within the BTT Facility building. This will have a positive impact from an odour management perspective.

7. Concluding Remark

Given the results and findings as documented in this memorandum report, TOU is of the view that the BTT Facility is operating in a manner that is unlikely to adversely impact the local amenity from an odour viewpoint under the measured and current operating circumstances as found in the Audit. Notwithstanding this, as part of good practice, the follow-up recommendations should be implemented as soon as practicable to maintain this low-risk rating.

The next odour audit is due in **December 2022**.

The Odour Unit Pty Ltd

Signed by:

Michael Assal MEngSc, B. Eng (Hon)/B.Sc, AMIChemE, MIEAust, CAQP
Operations Manager

Isaac Farrugia B. Eng (Chem.)
Consultant Engineer

Attachment:

- **Appendix A –** Odour Laboratory Results Reports: 2 June 2022.

THE ODOUR UNIT

APPENDIX A -

ODOUR LABORATORY RESULTS REPORT: 2 JUNE 2022

THE ODOUR UNIT PTY LTD

THE ODOUR UNIT

Level 3 Suite 12
56 Church Avenue
MASCOT NSW 2020

Phone: +61 2 9209 4420
Email: info@odourunit.com.au
Internet: www.odourunit.com.au
ABN: 53 091 163 061

NATA
Accreditation Number: 14974

Odour Concentration Measurement Report

The measurement was commissioned by:

Organisation	Veolia Environmental Services	Telephone	+61 417 862 293
Contact	M. Wong	Facsimile	--
Sampling Site	Banksmeadow Transfer Facility	Email	mary.wong1@veolia.com
Sampling Method	Drum & pump, AS4323.3	Sampling Team	TOU (JS)

Order details:

Order requested by	M. Wong	Order accepted by	M. Assal
Date of order	Refer to correspondence	TOU Project #	N1906L
Order number	Refer to correspondence	Project Manager	M. Assal
Signed by	M. Wong	Panel Operator	A. Schulz

Investigated Item
Odour concentration in odour units 'ou', determined by sensory odour concentration measurements, of an odour sample supplied in a sampling bag.

Identification
The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification), sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.

Method
The odour concentration measurements were performed using dynamic olfactometry according to the Australian/New Zealand Standard: Stationary source emissions – *Part 3*: '*Determination of odour concentration by dynamic olfactometry* (AS/NZS4323.3). The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.

Measuring Range
The measuring range of the olfactometer is $2^2 \leq \chi \leq 2^{18}$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted. The machine is not calibrated beyond dilution setting 2^{17}. This is specifically mentioned with the results.

Environment
The measurements were performed in an air- and odour-conditioned room. The room temperature is maintained at 22 °C ±3 °C.

Measuring Dates
The date of each measurement is specified with the results.

Instrument Used
The olfactometer used during this testing session was:
TOU-OLF-004.

Instrumental Precision
The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.477$ in accordance with the AS/NZS 4323.3.
$r = 0.280$ Compliance – Yes

Instrumental Accuracy
The accuracy of this instrument for a sensory calibration must be $A \leq 0.217$ in accordance with the AS/NZS 4323.3.
$A = 0.076$ Compliance – Yes

Lower Detection Limit (LDL)
The LDL for the olfactometer has been determined to be 16 ou, which is 4 times the lowest dilution setting.

Traceability
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. The assessors are individually selected to comply with fixed criteria and are monitored in time to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen. Note Disclaimers on last page of this document.

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced, except in full.

Date: 17 June 2022

Panel Roster Number: SYD20220602_042

A. Schulz
Authorised Signatory

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Sample Measurement Results
Panel Roster Number: SYD20220602_042

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Sample Odour Concentration (ou)
Sample #1 – Receivals hall ventilation (2 of 2)	SC22340	01.06.2022 1305 hrs	02.06.2022 1111 hrs	5	10	74
Sample #2 – Receivals hall ventilation (1 of 2)	SC22341	01.06.2022 0930 hrs	02.06.2022 1148 hrs	5	10	128

Samples Received in Laboratory – From: TOU (J. Schulz) Date: 02.06.2022 Time: 0900 hrs

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd:

1. The collection of samples by the methods of AS/NZS 4323.4 and the calculation of Specific Odour Emission Rate (SOER).
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd have performed the dilution of samples.

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Panel Calibration Results

Reference Odorant	Reference Odorant Panel Roster Number	Concentration of Reference gas (ppb)	Panel Target Range for n-butanol (ppb)	Measured Concentration (ou)	Measured Panel Threshold (ppb)	Does this panel calibration measurement comply with AS/NZS 4323.3 (Yes / No)
n-butanol	SYD20220602_042	51,000	$20 \leq \chi \leq 80$	724	70	Yes

Comments

Odour characters (non-NATA accredited) as determined by odour laboratory panel:

SC22340 bin juice, sweet
SC22341 bin juice, sweet

Disclaimers

1. Parties, other than The Odour Unit Pty Ltd, responsible for collecting odour samples have advised that they have voluntarily furnished these odour samples, appropriately collected and labelled, to The Odour Unit Pty Ltd for the purpose of odour testing.
2. The collection of odour samples by parties other than The Odour Unit Pty Ltd relinquishes The Odour Unit Pty Ltd from all responsibility for the sample collection and any effects or actions that the results from the test(s) may have.
3. Any comments included in, or attachments to, this Report are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd.
4. This report shall not be reproduced, except in full, without written approval of The Odour Unit Pty Ltd.

Report Status

Status	Version	Date	Prepared by	Checked by	Change	Reason
Draft	0.1	17.06.2022	IF	AS	-	-
Final	1.0	17.06.2022	IF	MA	-	-
Revised	-	-	-	-	-	-

END OF DOCUMENT

TO: **MARY WONG**

COMPANY: **VEOLIA (AUSTRALIA) PTY LTD**

FROM: **MICHAEL ASSAL**

DATE: **31 MAY 2021**

JOB NO: **N1906L.03**

SUBJECT: **BANKSMEADOW WASTE TRANSFER TERMINAL FACILITY – ON-GOING ODOUR AUDIT PROGRAM: MAY 2021**

1. Introduction

The following technical memorandum documents the findings and recommendations from an on-going, six-monthly odour audit program (**the Audit**) being conducted by The Odour Unit Pty Ltd (**TOU**) at the Veolia (Australia) Pty Ltd (**Veolia**) Waste Transfer Terminal Facility, 34/36 McPherson St, Banksmeadow, New South Wales (**BTT Facility**). The Audit documented in this memorandum report covers the outcomes from two visits conducted by TOU at the BTT Facility on the following dates:

- Visit 1 - 28 April 2021; and
- Visit 2 - 14 May 2021.

The audit program normally consists of a single site visit. However, an additional visit was included as part of the Audit to investigate if any activity or source at the BTT Facility or otherwise could be responsible for the recent odour complaints from the adjacent neighbour, IXOM. Moreover, it enabled an odour screening session to be undertaken with IXOM employees that facilitated in identifying the prevalent odour type responsible for the recent complaints. The findings from this screening session are documented separately from the Audit.

This memorandum report documents the following:

1. The results and findings from odour sampling and testing of the roof discharge stack as found during the Audit visit;
2. Documentation of field observations made during the visit that are relevant to odour management as well as the outcomes from smoke testing;
3. A review of the relevant documentation, including the service logs for the preventative maintenance works undertaken on the building ventilation air extraction system and logged odour complaints between October 2020 and May 2021; and
4. The results from the field ambient odour assessment (**FAOA**) survey undertaken within the BTT Facility at both downwind and upwind locations.

2. Relevant Background

The BTT Facility was completed in June 2016 and is designed, at full capacity, to receive up to 400,000 tonnes per annum of putrescible waste, consisting of mixed waste, including food from the municipal and commercial sectors. All received waste is delivered to the BTT Facility in enclosed waste collection trucks before being compacted and placed in sealed containers for rail transport to Veolia's site at Woodlawn for subsequent treatment, recycling, energy recovery, and disposal where required. The BTT Facility is also approved to receive up to 100,000 tonnes per annum of non-putrescible (dry) waste from the municipal, commercial, and industrial sectors for transfer to a new material recycling facility currently being scoped in Camellia.

The following report should be read in conjunction with previously issued documents relating to the BTT Facility, where applicable, including:

1. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – Odour Audit Final Report* dated 26 May 2017 (**May 2017 Report**);

2. An email-based summary report titled *Banksmeadow On-going Odour Investigation - 2 August 2017 Summary* dated 21 September 2017 documenting the works undertaken on 2 August 2017 at the BTT Facility (**August 2017 Report**);

3. A TOU Report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: January/February 2018* issued on 23 February 2018 (**the February 2018 Report**);

4. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: March to May 2018 (Rev 3)* issued on 31 May 2018 (**the March/May 2018 Report**);

5. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: June 2018* issued on 28 June 2018 (**he June 2018 Report**);

6. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2018* issued on 13 November 2018 (**the November 2018 Report**);

7. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: April 2019* issued on 10 May 2019 (**the May 2019 Report**);

8. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2019* issued on 19 November 2019 (**the October 2019 Report**);

9. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: May 2020* issued on 22 June 2020 (**the June 2020 Report**); and

10. A TOU report titled *Banksmeadow Waste Transfer Terminal Facility – On-going odour audit and investigation progress update: October 2020* issued on 23 December 2020 (**the December 2020 Report**).

3. Odour Audit Methodology

3.1 Odour Sampling and Testing

The odour sampling and laboratory analysis methodology are well documented in the May 2017 Report. As such, it is not reproduced in this memorandum report.

The point source sampling method was utilised to collect samples from a 10-millimetre (**mm**) tap point created in the common plenum chamber of the two fan modules servicing the building ventilation extraction system at the BTT Facility. An illustration of the location and sampling technique is presented in **Photo 1**.

3.2 Odour Audit Logsheet

An extract of the logsheet utilised as part of the Audit visit is provided in **Figure 1**, which was developed in previous audits conducted at the BTT Facility.

3.3 Field Ambient Odour Assessment Survey

The methodology followed for the FAOA survey is well documented in the February 2018 Report. As such, it is not reproduced in this memorandum report. For the Audit, TOU extended the FAOA survey measurement period to five-minute intervals, with discrete measurement readings collected every ten seconds (i.e. 30 'sniffs' per measurement location point). The product of this measurement methodology is an intensity frequency pie graph. The odour impact criterion (i.e. the threshold that would be considered as increasing the likelihood in odour annoyance at downwind receptors) is set to an odour intensity of greater than 2 (Weak) and at a frequency of 10% per measurement cycle per location. This criterion is considered suitable given the industrial context of the BTT Facility. This detail is outlined in the FAOA map plot in **Section 4 - Figure 4**.

3.4 Smoke Testing

The methodology for smoke testing is documented in the May 2018 Report. As such, it is not reproduced in this memorandum report.

3.5 Review of relevant documentation

As part of the Audit, the following documentation was reviewed:

- Fan maintenance reports between October 2020 and May 2021; and
- Odour complaints register between October 2020 and May 2021.

Photo 1 – An example of the roof discharge stack odour sampling point at the BTT Facility

Date		
Stack samples collected		
Waste tonnage on floor		
Observed local wind conditions		
Fan setting	**EF-01** **_____Hz** **_____Amps**	**EF-02** **_____Hz** **_____Amps**
Other comments		

Figure 1 – Odour audit logsheet showing the logging of key operational parameters and weather conditions

4. Results

The following section summarises the results from the sampling and testing conducted at the BTT Facility on 28 April 2021 and 14 May 2021. The odour laboratory results report is enclosed in **Appendix A**.

4.1 Roof Discharge Stack Odour Emission Results

The roof discharge stack odour emission results are presented in **Table 1**. The historical trend between waste tonnage on the floor and the stack odour emission rate at the BTT Facility until 14 May 2021 is presented in **Figure 2**. Note: the velocity readings recorded on 14 May 2021 is suspected to be erroneous given the very high readings (refer to **Section 6**).

4.2 Smoke Testing Results

Several smoke release points were undertaken to evaluate airflow patterns and fugitive emission release within the BTT Facility building enclosure. The smoke release points included the northern, middle and southern areas of the BTT Facility building enclosure. A photo of a smoke testing point at the truck entry point of the BTT Facility, as occurred on 14 May 2021, is shown in **Photo 2.** A photo of the smoke testing within the BTT Facility building enclosure is shown in **Photo 3**. The observations made during smoke testing are as follows:

- No smoke was found to be emanating from the sealed breezeways around the perimeter of the BTT Facility building;
- The released smoke was found to be well-contained with the BTT Facility building enclosure, suggesting that odour release at ground level is minimal; and
- The released smoke was found to dissipate over time gradually. This indicates that there is a very good level of air exchange turnover within the BTT Facility building enclosure.

4.3 Odour Audit Logsheet

The outcomes from the completion of the audit logsheet on 14 May 2021 is provided in **Figure 3**.

4.4 Field Ambient Odour Assessment Survey

The FAOA survey results, as occurred on 14 May 2021, is provided in **Figure 4** and **Table 2**.

4.5 General Observations

A photo of the storage container area as found on 14 May 2021 is shown in **Photo 5** and **Photo 6**. This area was found to be relatively well maintained. The truck entrance plastics strips were found to be missing a few panels (refer to **Photo 4**).

Table 1 – Comparison of stack odour emission results and recorded waste tonnage on the floor between January 2018 and May 2021

Sample No.	Sampling Date	Sampling Time (hrs)	Measured stack odour concentration (ou)	Tonnage on waste floor (tonnes)	Stack design discharge airflow (m^3/s)	Calculated stack odour emission rate ($ou.m^3/s$)	Calculated stack odour emission rate per tonne of waste on the floor ($ou.m^3/s$)	Relevant comments
1	Monday, 8 January 2018	0930	1,450	390	109	158,100	405	--
2		1040	1,450			158,100	405	--
3	Tuesday, 9 January 2018	0940	1,720	150	55	94,080	627	Single fan operating
4		1002	1,450			79,320	529	
5	Wednesday, 10 January 2018	0942	861	30	55	47,100	1,570	Single fan operating
6		1015	939			51,360	1,710	
7	Thursday, 11 January 2018	0930	1,580	120	109	172,200	1,440	--
8		1029	1,720			187,500	1,560	--
9	Friday, 12 January 2018	0950	790	120	109	86,110	718	--
10		1032	395			43,060	359	--
11	Monday, 15 January 2018	0950	1,330	300	109	145,000	483	--
12		1100	1,450			158,100	527	--
Post-fan optimisation and service works								
13	Wednesday, 16 May 2018	1030	152	300	109	16,600	55	--
14		1035	197			21,470	72	--
Odour sampling campaign: June 2018								
1	Monday, 18 June 2018	0945	181	360	109	19,800	55	Refer to the June 2018 Report
2		1025	362			39,500	110	
3	Tuesday, 19 June 2019	0930	332	320		36,200	113	
4		0955	332			36,200	113	
5	Wednesday, 20 June 2018	0910	362	250		39,500	158	
6		0940	256			27,900	112	
7	Thursday, 21 June 2018	0925	181	350		19,700	56	
8		0950	235			25,600	73	
9	Friday, 22 June 2018	0925	91	200		9,920	50	
10		0950	91			9,920	50	
Odour audit as conducted on 11 October 2018								
1	Thursday, 11 October 2018	1145	152	500	114	17,300	35	Refer to the November 2018 Report
2		1325	181			20,600	41	
Odour audit as conducted on 10 April 2019								
1	Wednesday, 10 April 2019	1051	91	150	115	10,500	70	Refer to the May 2019 Report
2		1207	91	150	115	10,500	70	
Odour audit as conducted on 2 October 2019								
1	Wednesday, 2 October 2019	1405	157	180	104	16,400	91	Refer to the October 2019 Report
2		1500	91	100	104	9,460	95	
Odour audit as conducted on 6 May 2020								
1	Wednesday, 6 May 2020	1018	304	120	113	34,400	286	Refer to the May 2020 Report
2		1110	235	120	113	26,600	221	
Odour audit as conducted on 1 October 2020								
1	Tuesday, 1 October 2020	1024	416	270	117	48,700	180	Refer to October 2020 Report
2		1145	362	270	117	42,400	157	
Odour audit as conducted on 28 April 2021								
1	Wednesday, 28 April 2021	0830 hrs	332	180	55	18,200	101	Refer to **Appendix A**
Odour audit as conducted on 14 May 2021								
2	Friday, 14 May 2021	0915 hrs	197	150	143	28,200	188	Refer to **Appendix A**

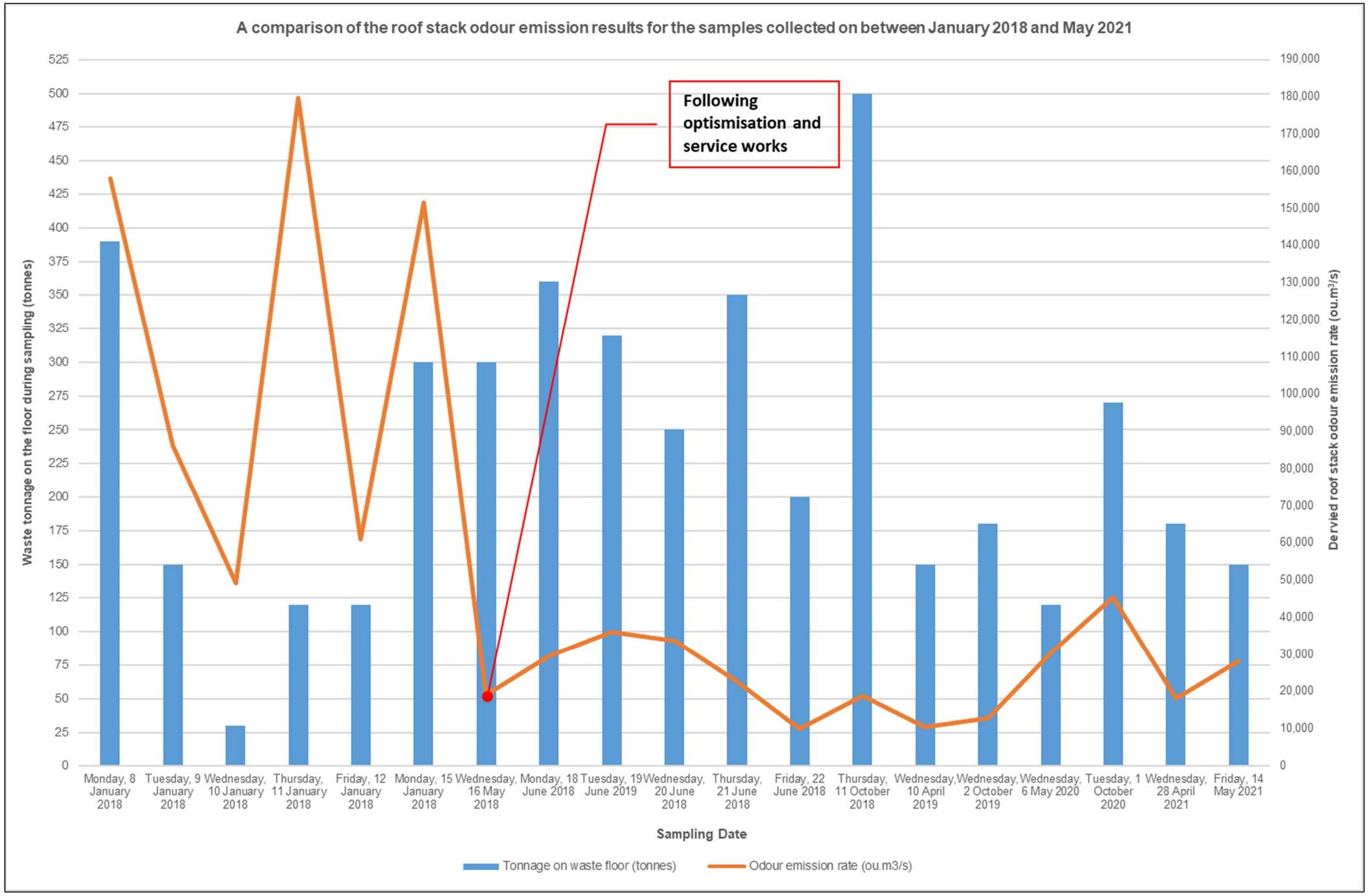


Figure 2 - Comparison of the roof stack odour emission rate between January 2018 and May 2021

Photo 2 – Smoke testing at the truck entry point of the BTT Facility building enclosure on 14 May 2021

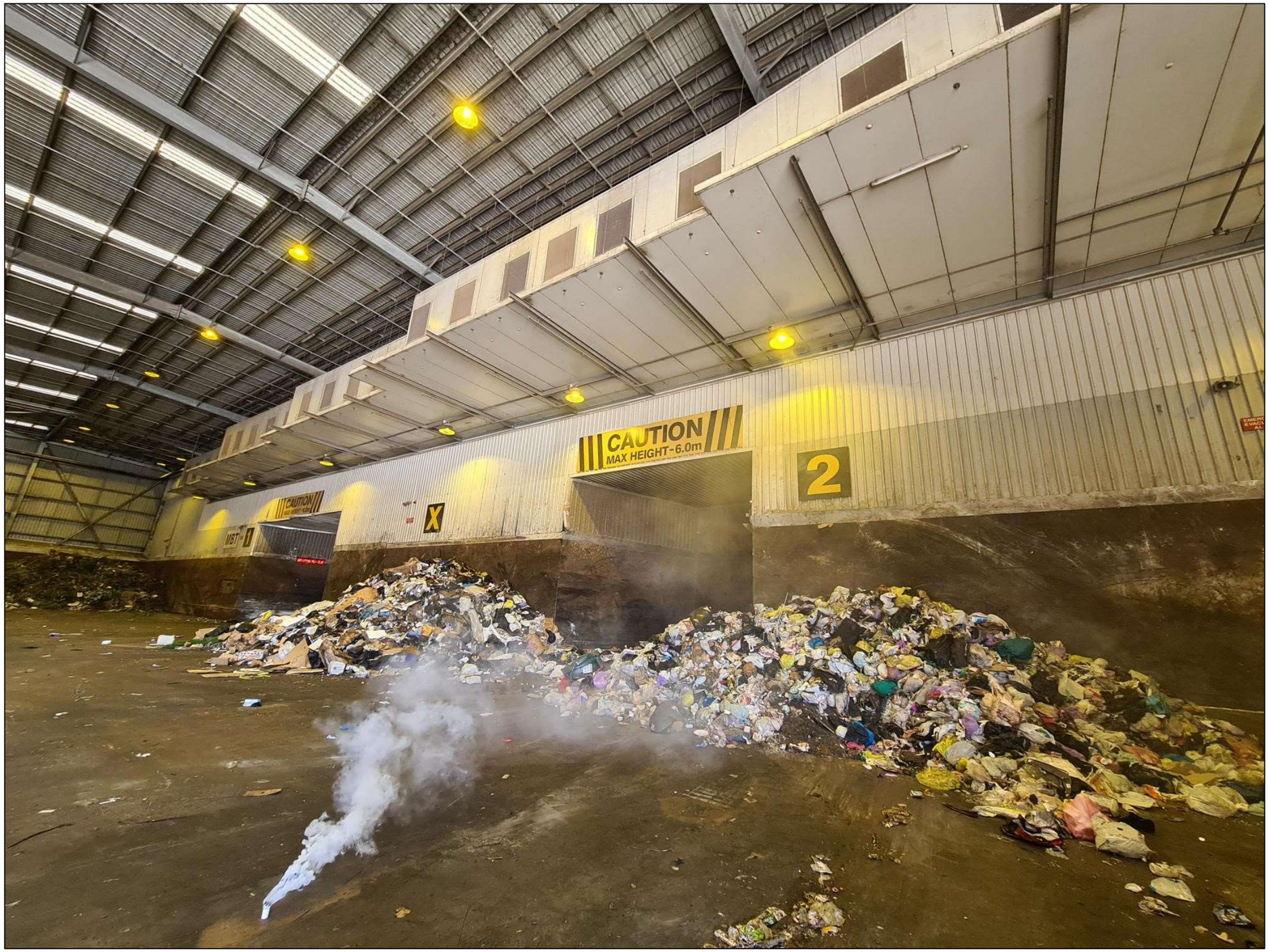


Photo 3 – A picture of the BTT Facility waste floor area during smoke testing on 14 May 2021 at 0925 hrs

Photo 4 – A view of the truck entry point to the BTT Facility building: 14 May 2021 (Note The truck entrance plastics strips were found to be missing a few panels)

<table>
<tr><th colspan="3">Figure 3 – Completed audit logsheet as occurred on 28 April 2021 & 14 May 2021</th></tr>
<tr><td>Date</td><td colspan="2">28 April 2021 & 14 May 2021</td></tr>
<tr><td>Stack samples collected</td><td colspan="2">Stack Discharge 1 of 2 collected at 0830 hrs on 28 April 2021
Stack Discharge 2 of 2 collected at 0915 hrs on 14 May 2021</td></tr>
<tr><td>Waste tonnage on floor</td><td colspan="2">Approximately 180 tonnes at 0830 hrs on 28 April 2021
Approximately 150 tonnes at 0915 hrs on 14 May 2021</td></tr>
<tr><td>Observed local wind conditions</td><td colspan="2">14 May 2021: Mostly clear skies, light (0.5 – 2 m/s) to moderate (2 - 5 m/s) wind speeds oscillating predominately between the southwesterly and northwesterly cardinal directions. The local ambient temperature was observed to be approximately 18ºC.</td></tr>
<tr><td rowspan="4">Fan setting</td><td colspan="2">28 April 2021</td></tr>
<tr><td>EF-01

____0_____Hz

____0_____Amps</td><td>EF-02

____45.0_____Hz

____46.9_____Amps</td></tr>
<tr><td colspan="2">14 May 2021</td></tr>
<tr><td>EF-01

____35.0_____Hz

____35.1_____Amps</td><td>EF-02

____50.0_____Hz

____57.7_____Amps</td></tr>
<tr><td>Other comments</td><td colspan="2">▪ EF-1 discharge stack reading = 26.2 m/s.
▪ EF-2 discharge stack reading = 26.1 m/s
▪ Suction pressure reading at sampling point = -89 Pascals (Pa).
▪ Fifty-six (56) empty waste containers and sixteen (16) filled waste containers were present on the concrete pad at approximately 0845 hrs.
▪ Breezeways permanently sealed around BTT Facility building.
▪ Good housekeeping observed across the BTT Facility (refer to Photo 5 & Photo 6)
▪ The internal air extraction points from the BTT Facility building were observed to be due for a cleaning. This is part of the preventative maintenance works conducted by Equilibrium Air Conditioning Services Pty Ltd.</td></tr>
</table>

Photo 5 – A picture of the BTT Facility concrete pad facing south-east on 14 May 2021 at 0830 hrs

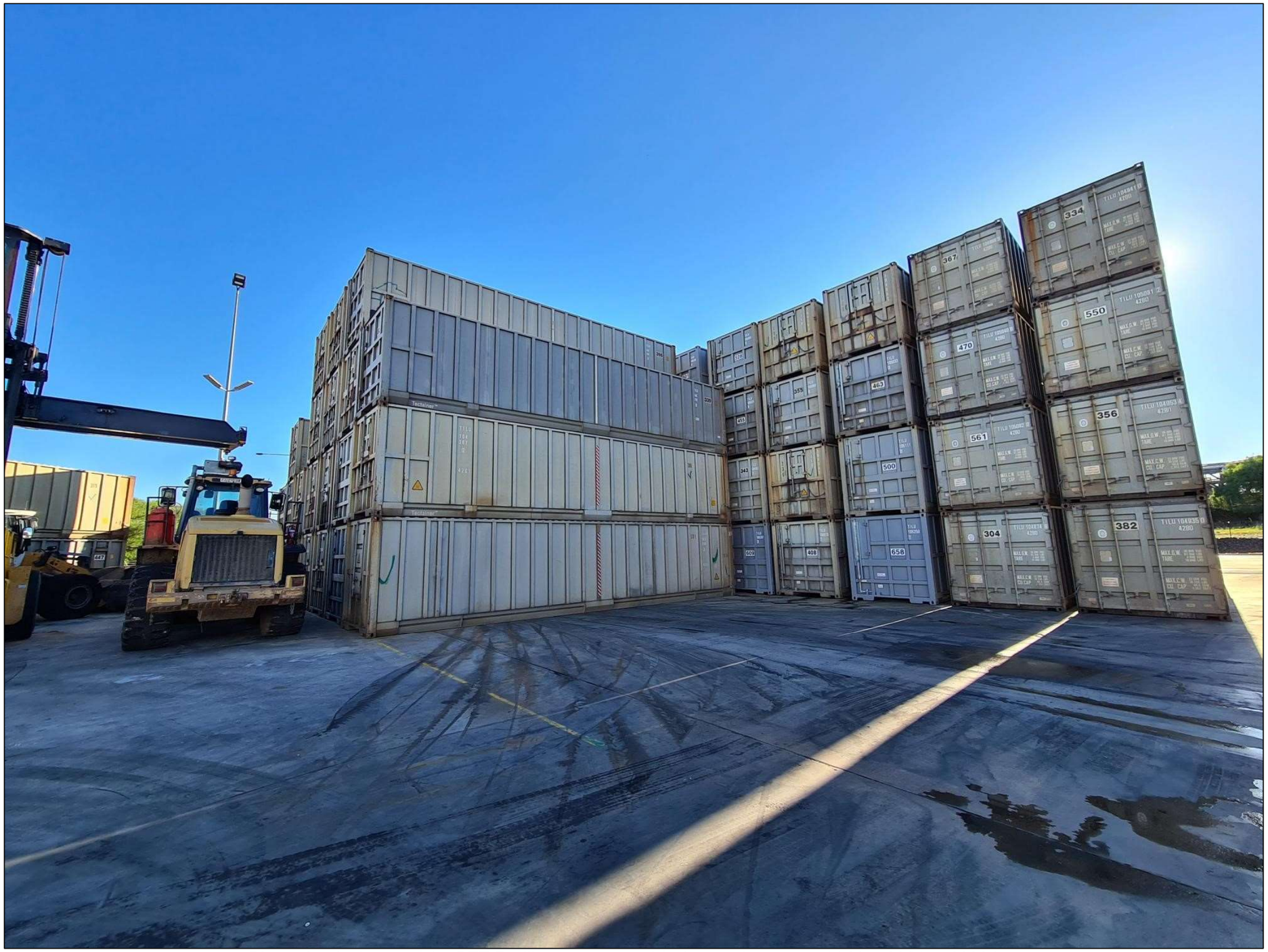
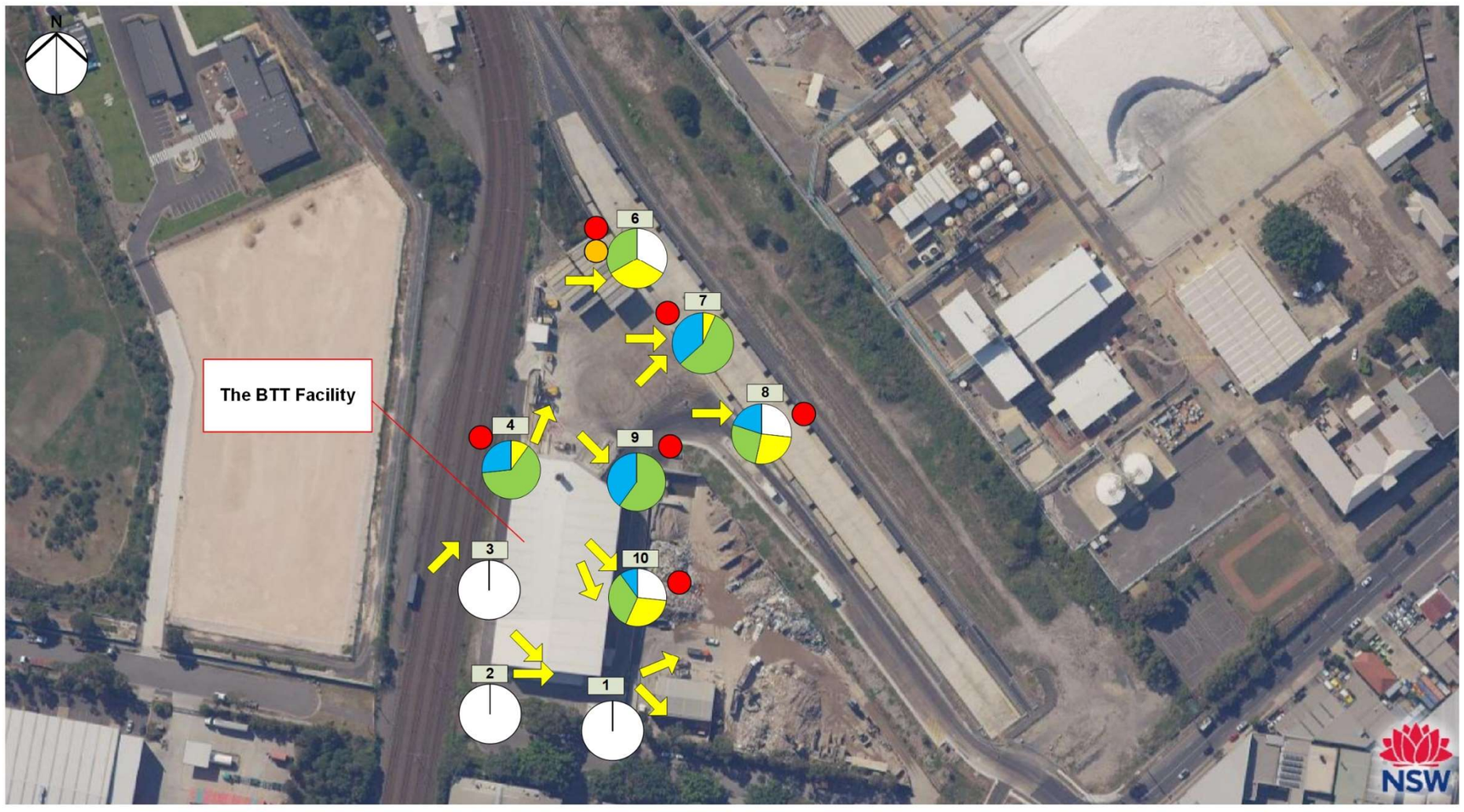


Photo 6 – A picture of the BTT Facility concrete pad facing north-west on 14 May 2021 at 0832 hrs



VDI 3882.1 Intensity	
0	Not detectable
1	Very weak
2	Weak
3	Distinct
4	Strong
5	Very Strong
6	Extremely Strong

Odour Character

- A – bin juice, sour
- B – other non-waste odours

Legend

- 10 — Measurement location
- Intensity Frequency Pie Graph
- Local Wind Direction

Prevailing Local Wind Conditions

Mostly clear skies, light (0.5 – 2 m/s) to moderate (2 – 5 m/s) winds oscillating between south-westerly and north-westerly wind direction. The ambient local temperature was approximately 18°C.

THE ODOUR UNIT

Veolia – Banksmeadow, NSW
Field Ambient Odour Assessment – Survey 1
Odour Impact Map

Field Ambient Odour Assessment Survey
Session Date: 14.05.2020 Session Time: 0805 hrs – 0910 hrs
Area: 1 Odour Impact Criterion: Intensity ≥ 2, Frequency ≥ 10%
Drawn By: J. Schulz Revision: A Date: 27.05.2021

Figure 4 - FAOA survey odour impact map as conducted on 14 May 2021 between 0805 hrs and 0910 hrs (refer to **Table 2** for details)

Table 2 - FAOA survey logsheet: 14 May 2021 between 0805 hrs and 0910 hrs

Grid Reference Position	Time (hrs)	Wind Direction	Wind speed (m/s)	Odour Present (Y / N)	Odour character	VDI 3940 Intensity Scale 0-6 Range Detected	Is odour intensity ≥ 2 (Weak) and frequency of detection ≥ 10%	Comments
1	0805 – 0810	NW-WSW	0.9 - 1.5	N	nil detection	0	N	--
2	0812 – 0817	W-NW	1.5 - 2	N	nil detection	0	N	▪
3	0820 - 0825	SW	05 - 2.5	N	nil detection	0	N	▪
4	0827 – 0832	SSW	1.5	Y	bin juice, sour	1 – 3	Y	▪ Localised odour within the BTT Facility boundary
6	0835 – 0840	W	2.7	Y	bin juice, sour burnt meat, render, rancid	0 – 2	Y	▪ Localised odour within the BTT Facility boundary ▪ Likely odour source for the 'burnt meat, render, rancid' character unknown and not related to the BTT Facility activities
7	0845 – 0850	W-SW	4	Y	bin juice, sour	0 – 3	Y	▪ Localised odour within the BTT Facility boundary
8	0850 – 0855	W	2 - 4	Y	bin juice, sour	0 – 3	Y	▪ Localised odour within the BTT Facility boundary
9	0858 – 0903	NW	2 - 3	Y	bin juice, sour	0 – 3	Y	▪ Localised odour within the BTT Facility boundary. Likely source was truck activity at the time.
10	0905 – 0910	NW-NNW	1 - 2.5	Y	bin juice, sour	0 – 3	Y	▪ Localised odour within the BTT Facility boundary

5. Odour Audit Findings

Based on the results and observations documented in **Section 4** of this memorandum report, the following findings are made:

- The roof discharge stack was found to be operating at a favourable odour performance level. Specifically, the odour performance of the roof discharge stack continues to be broadly consistent with original design performance documented in the Wilkinson & Murray Air Quality Impact Assessment dated April 2014;

- At the current roof discharge stack performance, downwind odour impacts are very unlikely. The status quo is expected to be maintained under the current operating and maintenance practices at the BTT Facility;

- A localised very weak to distinct odour was detectable within the boundary of the BTT Facility at several measurement location points (refer to **Figure 4**) during the FAOA survey. The odour character was 'bin juice, sour' and the likely source was the activities at the BTT Facility occurring at the time;

- It is noted that the fan discharge velocity readings require cross-checking given the high values (26 m/s) compared to historical records (approximately 20 m/s) and fan design specification;

- It is understood that the BTT Facility continues to implement an active service and maintenance program for the waste containers (refer to the *NSW Resource Recovery – Container Maintenance*). It is also understood that the road sweeper is utilised twice daily. As such, given the current odour mitigation and management practices and stack testing results as found in the Audit, the localised odour within the BTT Facility detected during the FAOA survey is not expected to be problematical at nearby, off-site downwind locations;

- The smoke testing conducted within the BTT Facility building enclosure indicated positive results and suggested that the building ventilation air extraction system at the BTT Facility is operating in an optimum condition;

- A formal odour complaint was logged late March 2021. In response, the BTT Facility conducted an odour screening session with the complainant, IXOM, that facilitated in identifying the prevalent odour type responsible. The findings from this screening session are documented separately from the Audit, but indicated that the BTT Facility was not likely the odour source triggering the recent odour complaints;

- The service logs indicate that all required maintenance works on the building ventilation air extraction system at the BTT Facility since the previous June 2020 Report have been adequately undertaken, and the system is operating in a satisfactory condition; and

- The few plastic panels at the truck entry point of the BTT Facility building enclosure were found to be missing. This was a similar finding in the December 2020 Report and now requires immediate action.

6. Follow-up Recommendations

Based on the findings documented in **Section 5**, the following recommendations are made:

- The plastic panels at the truck entry point require rectification as soon as practicable; and
- The stack velocity sensor requires cross-checking to validate the accuracy of the readings.

7. Concluding Remark

Given the results and findings as documented in this memorandum report, TOU is of the view that the BTT Facility is operating in a manner that is very unlikely to adversely impact the local amenity from an odour viewpoint under the measured and current operating circumstances as found in the Audit. Notwithstanding this, as part of good practice, the follow-up recommendations should be implemented as soon as practicable.

The next odour audit is due in **November 2021**.

The Odour Unit Pty Ltd

Signed by:

Michael Assal MEngSc, B. Eng (Hon)/B.Sc, AMIChemE, MIEAust, CAQP
Senior Engineer & Consultant

Attachments:

- **Appendix A –** Odour Laboratory Results Reports: 28 April 2021 & 14 May 2021.

THE ODOUR UNIT

APPENDIX A -

ODOUR LABORATORY RESULTS REPORTS: 28 APRIL 2021 & 14 MAY 2021

THE ODOUR UNIT PTY LTD

THE ODOUR UNIT

Level 3, Suite 12
56 Church Avenue
MASCOT NSW 2020

Phone: +61 2 9209 4420
Email: info@odourunit.com.au
Internet: www.odourunit.com.au
ABN: 53 091 163 061

NATA
Accreditation Number: 14974

Odour Concentration Measurement Report

The measurement was commissioned by:

Organisation	Veolia Environmental Services	Telephone	+61 417 862 293
Contact	M. Wong	Facsimile	--
Sampling Site	Banksmeadow Transfer Facility	Email	mary.wong1@veolia.com
Sampling Method	Drum & pump, AS4323.3	Sampling Team	TOU

Order details:

Order requested by	M. Wong	Order accepted by	M. Assal
Date of order	May 2021	TOU Project #	N1906L
Order number	Refer to correspondence	Project Manager	M. Assal
Signed by	M. Wong	Testing operator	A. Schulz

Investigated Item
Odour concentration in odour units 'ou', determined by sensory odour concentration measurements, of an odour sample supplied in a sampling bag.

Identification
The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification), sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.

Method
The odour concentration measurements were performed using dynamic olfactometry according to the Australian/New Zealand Standard: Stationary source emissions – Part 3: '*Determination of odour concentration by dynamic olfactometry* (**AS/NZS4323.3:2001**). The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.

Measuring Range
The measuring range of the olfactometer is $2^2 \leq \chi \leq 2^{18}$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted. The machine is not calibrated beyond dilution setting 2^{17}. This is specifically mentioned with the results.

Environment
The measurements were performed in an air - and odour - conditioned room. The room temperature is maintained at 22 °C ±3 °C.

Measuring Dates
The date of each measurement is specified with the results.

Instrument Used
The olfactometer used during this testing session was:
ODORMAT V01.

Instrumental Precision
The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.477$ in accordance with the AS/NZS4323.3:2001.
ODORMAT V01: $r = 0.280$ (October 2019) Compliance – Yes

Instrumental Accuracy
The accuracy of this instrument for a sensory calibration must be $A \leq 0.217$ in accordance with the AS/NZS4323.3:2001.
ODORMAT V01: $A = 0.076$ (October 2019) Compliance – Yes

Lower Detection Limit (LDL)
The LDL for the olfactometer has been determined to be 16 ou, which is 4 times the lowest dilution setting.

Traceability
The measurements have been performed using standards for which the traceability to the national standard has been demonstrated. The assessors are individually selected to comply with fixed criteria and are monitored in time to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen.

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced, except in full.

Date: Thursday, 29 April 2021

Panel Roster Number: SYD20210428_043

A. Schulz
NSW Laboratory Coordinator

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Sample Measurement Results
Panel Roster Number: SYD20210428_043

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution (Adjusted for Temperature)	Sample Odour Concentration (as received, in the bag) (ou)	Sample Odour Concentration (Final, allowing for dilution) (ou)	*Specific Odour Emission Rate ($ou.m^3/m^2/s$) (See Note:1)*
Stack Outlet (1 of 2)	SC21315	28.04.2021 0830 hrs	28.04.2021 1703 hrs	4	8	--	--	332	332	--

Samples Received in Laboratory – From TOU Date: 28.04.2021 Time: 1530 hrs

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd:

1. The collection of Isolation Flux Hood (**IFH**) samples and the calculation of the Specific Odour Emission Rate (**SOER**).
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd have performed the dilution of samples.

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Panel Calibration Results

Reference Odorant	Reference Odorant Panel Roster Number	Concentration of Reference gas (ppb)	Panel Target Range for n-butanol (ppb)	Measured Concentration (ou)	Measured Panel Threshold (ppb)	Does this panel calibration measurement comply with AS/NZS4323.3:2001 (Yes / No)
n-butanol	SYD20210428_043	51,400	$20 \leq \chi \leq 80$	861	60	Yes

Comments Odour characters (non-NATA accredited) as determined by odour laboratory panel:

SC21315 sweet, garbage, musty

Disclaimer

1. Parties, other than The Odour Unit Pty Ltd, responsible for collecting odour samples have advised that they have voluntarily furnished these odour samples, appropriately collected and labelled, to The Odour Unit Pty Ltd for the purpose of odour testing.
2. The collection of odour samples by parties other than The Odour Unit Pty Ltd relinquishes The Odour Unit Pty Ltd from all responsibility for the sample collection and any effects or actions that the results from the test(s) may have.
3. Any comments included in, or attachments to, this Report are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd.
4. This report shall not be reproduced, except in full, without written approval of The Odour Unit Pty Ltd.

END OF DOCUMENT

THE ODOUR UNIT PTY LTD

THE ODOUR UNIT

Level 3, Suite 12
56 Church Avenue
MASCOT NSW 2020

Phone: +61 2 9209 4420
Email: info@odourunit.com.au
Internet: www.odourunit.com.au
ABN: 53 091 163 061

NATA
Accreditation Number: 14974

Odour Concentration Measurement Report

The measurement was commissioned by:

Organisation	Veolia Environmental Services	Telephone	+61 417 862 293
Contact	M. Wong	Facsimile	--
Sampling Site	Banksmeadow Transfer Facility	Email	mary.wong1@veolia.com
Sampling Method	Drum & pump, AS4323.3	Sampling Team	TOU

Order details:

Order requested by	M. Wong	Order accepted by	M. Assal
Date of order	May 2021	TOU Project #	N1906L
Order number	Refer to correspondence	Project Manager	M. Assal
Signed by	M. Wong	Testing operator	A. Schulz

Investigated Item
Odour concentration in odour units 'ou', determined by sensory odour concentration measurements, of an odour sample supplied in a sampling bag.

Identification
The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification), sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.

Method
The odour concentration measurements were performed using dynamic olfactometry according to the Australian/New Zealand Standard: Stationary source emissions – Part 3: '*Determination of odour concentration by dynamic olfactometry* (**AS/NZS4323.3:2001**). The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.

Measuring Range
The measuring range of the olfactometer is $2^2 \leq \chi \leq 2^{18}$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted. The machine is not calibrated beyond dilution setting 2^{17}. This is specifically mentioned with the results.

Environment
The measurements were performed in an air - and odour - conditioned room. The room temperature is maintained at 22 °C ±3 °C.

Measuring Dates
The date of each measurement is specified with the results.

Instrument Used
The olfactometer used during this testing session was:
ODORMAT V01.

Instrumental Precision
The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.477$ in accordance with the AS/NZS4323.3:2001.
ODORMAT V01: $r = 0.280$ (October 2019) Compliance – Yes

Instrumental Accuracy
The accuracy of this instrument for a sensory calibration must be $A \leq 0.217$ in accordance with the AS/NZS4323.3:2001.
ODORMAT V01: $A = 0.076$ (October 2019) Compliance – Yes

Lower Detection Limit (LDL)
The LDL for the olfactometer has been determined to be 16 ou, which is 4 times the lowest dilution setting.

Traceability
The measurements have been performed using standards for which the traceability to the national standard has been demonstrated. The assessors are individually selected to comply with fixed criteria and are monitored in time to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen.

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced, except in full.

Date: Tuesday, 18 May 2021

Panel Roster Number: SYD20210514_051

A. Schulz
NSW Laboratory Coordinator

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Sample Measurement Results
Panel Roster Number: SYD20210514_051

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution (Adjusted for Temperature)	Sample Odour Concentration (as received, in the bag) (ou)	Sample Odour Concentration (Final, allowing for dilution) (ou)	*Specific Odour Emission Rate ($ou.m^3/m^2/s$) (See Note:1)*
Stack Outlet (2 of 2)	SC21377	14.05.2021 0915 hrs	14.05.2021 1616 hrs	4	8	--	--	197	197	--

Samples Received in Laboratory – From TOU Date: 14.05.2021 Time: 1300 hrs

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd:

1. The collection of Isolation Flux Hood (**IFH**) samples and the calculation of the Specific Odour Emission Rate (**SOER**).
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd have performed the dilution of samples.

THE ODOUR UNIT PTY LTD

Accreditation Number: 14974

Odour Panel Calibration Results

Reference Odorant	Reference Odorant Panel Roster Number	Concentration of Reference gas (ppb)	Panel Target Range for n-butanol (ppb)	Measured Concentration (ou)	Measured Panel Threshold (ppb)	Does this panel calibration measurement comply with AS/NZS4323.3:2001 (Yes / No)
n-butanol	SYD20210514_051	51,400	$20 \leq \chi \leq 80$	724	71	Yes

Comments Odour characters (non-NATA accredited) as determined by odour laboratory panel:

SC21377 sweet, garbage, musty

Disclaimer

1. Parties, other than The Odour Unit Pty Ltd, responsible for collecting odour samples have advised that they have voluntarily furnished these odour samples, appropriately collected and labelled, to The Odour Unit Pty Ltd for the purpose of odour testing.
2. The collection of odour samples by parties other than The Odour Unit Pty Ltd relinquishes The Odour Unit Pty Ltd from all responsibility for the sample collection and any effects or actions that the results from the test(s) may have.
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