Annual Environmental Management Report - Banksmeadow Transfer Terminal 2019 - 2020

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 2019
Annual Review end date	28th of April 2020

I, Mary Wong, certify that this audit report is a true and accurate record of the compliance status of Banksmeadow Transfer Terminal for the period 2019-2020 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	Mary Wong
Title of authorised reporting officer	Graduate Environmental Engineer
Signature of authorised reporting officer	
Date	23/10/2020

Quality Information

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0	Draft for internal review	• Veolia NSW Resource Recovery Team • Veolia NSW SHEQ Team	June 2020
0	Final	• NSW Department of Planning, Industry and Environment	June 2020
1	Final	• NSW Department of Planning, Industry and Environment	October 2020

Contents

Executive Summary

This Annual Environmental Management Report (AEMR) 2019 - 2020 is the 5th 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 2019 to 28 April 2020 (2019 - 2020 reporting period).

Veolia has prepared this AEMR in accordance with Schedule 4, Condition 8 of the 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 Consent during the 2019-2020 reporting period, and the corrective actions assigned.

No non-compliances were identified against the Conditions of Consent (Consent Conditions) during this reporting period. 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 State Significant Development (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 Project Site (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 312,078 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 156 waste collection vehicle movements per day.

1.2 Legislative Requirements

The key legal legislation governing the environmental performance and activities undertaken at the Terminal include the *EP&A Act*, regulated by the NSW Department of Planning, Industry and Environment (DPIE), 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 requirement 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 NSW Solid Waste Treatment technical support personnel - Mary Wong (Graduate Environmental Engineer) and Sara Maddison (Operations Project Manager).
- 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.

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: 19 November 2019 6 May 2020
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: 29 October 2019 1 May 2020
Schedule 3 Condition 10	Leachate Monitoring	As required	Leachate monitoring is to ensure requirements of the disposal facility are met. Not triggered as it was not required by the disposal facility
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, which 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 15 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.

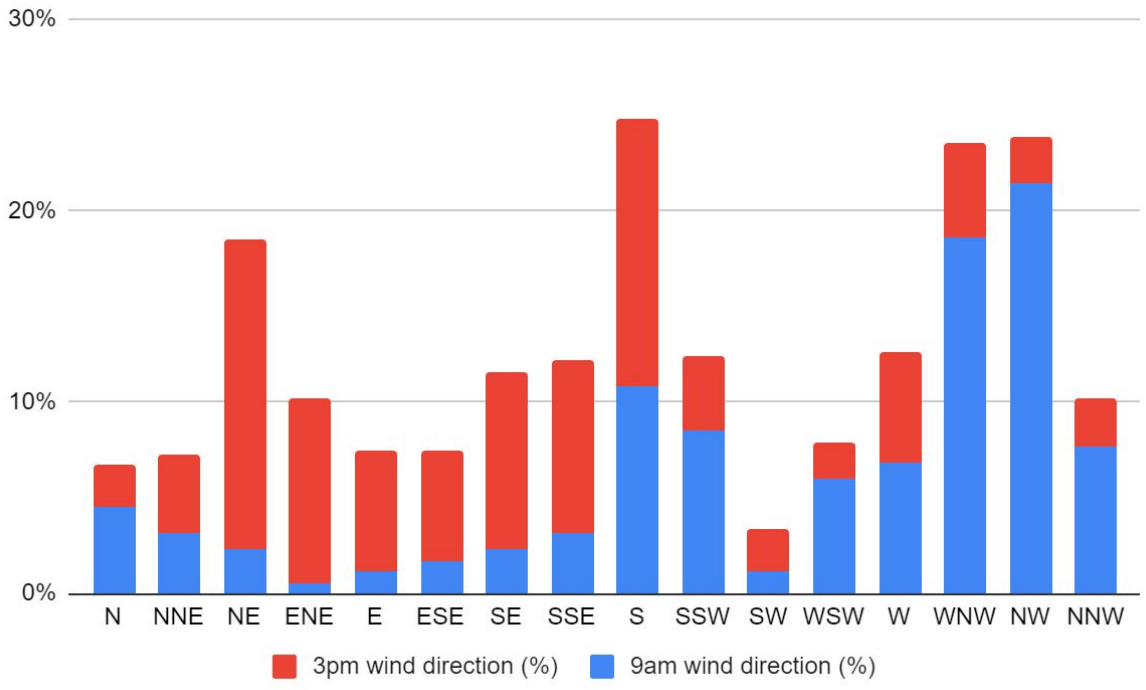


Figure 2.1 - Wind direction data for 9AM & 3PM for this reporting period

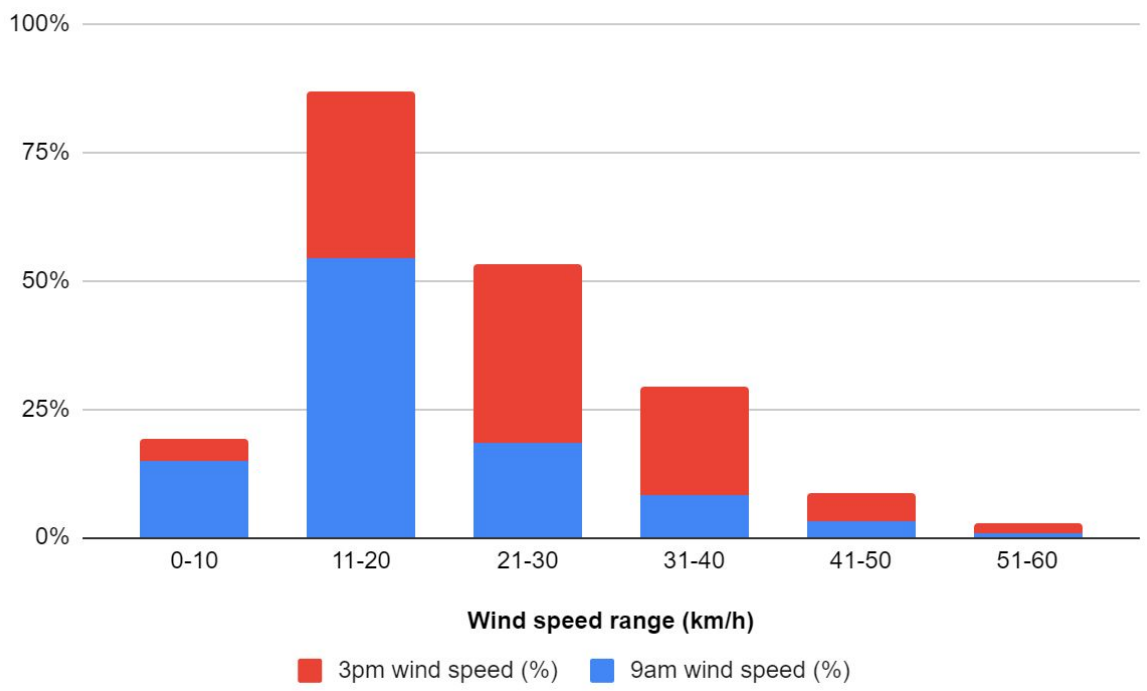


Figure 2.2 - Wind speed data at 9AM & 3PM for this reporting period

During this reporting period, between 9AM and 3PM the prevailing wind directions were north-westerly and north-easterly. Wind speeds at 9AM were most frequently (approximately 55%) within the 11-20 km/hr range, whereas wind speeds at 3PM were most frequently (approximately 35%) 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 generating 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 75.7 mm per month.

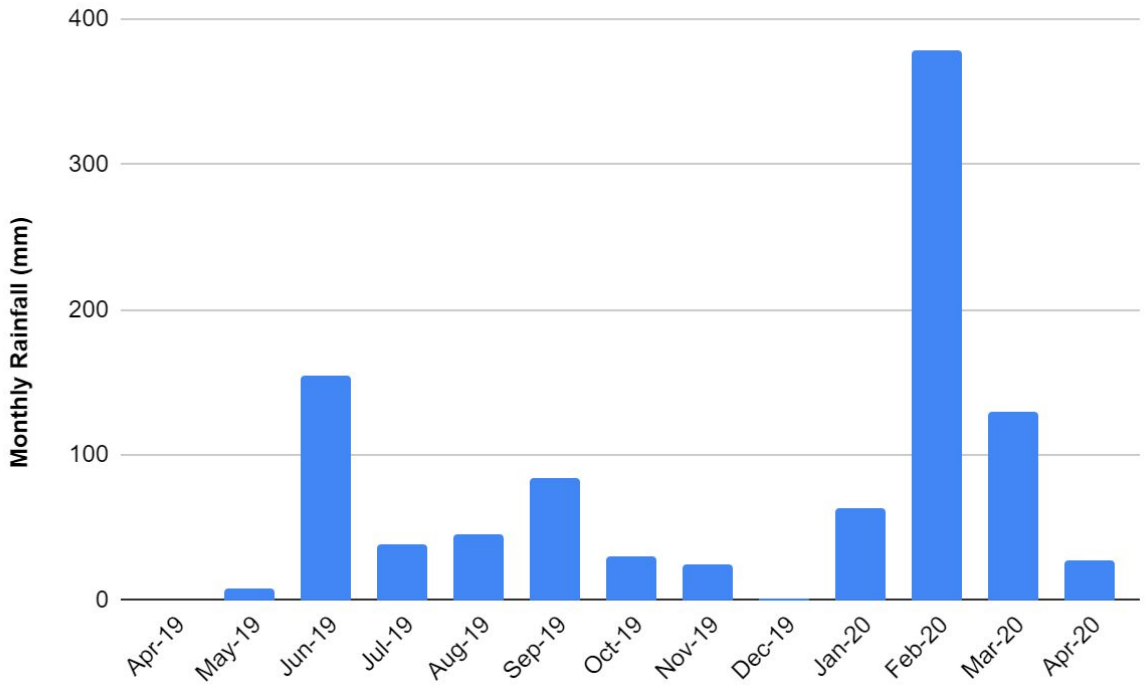


Figure 2.3 - Monthly rainfall data during the reporting period 2019/2020

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 operates 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 previous AEMR reporting periods, the following improvement actions were achieved and continue to meet standards :

- An increase in airflow extraction and optimisation of system performance to achieve a stack exit velocity of greater than 20 metres per second (m/s);
- Improvements to the airflow dynamics in the waste shed building via the construction of a wall interface between the waste shed floor and compactor pit area, allowing an

enhanced level of airflow extraction control whilst minimising undesirable building wind effects against the waste shed building.

During this reporting period, two (2) odour investigations/audits were completed at the Terminal, refer to **Appendix C** for odour reports:

1. Banksmeadow Waste Transfer Terminal Facility Odour Audit October 2019
2. Banksmeadow Waste Transfer Terminal Facility Odour Audit May 2020

TOU's odour audit reports found the roof discharge stack to be operating at a favourable odour performance level. 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. This is consistent with the near absence of odour complaints since the previous October 2019 Report.

Based on the positive results and findings documented in the recent odour audit reports, TOU is of the view that the Terminal is operating in a manner that is very unlikely to adversely impact the local amenity from an odour viewpoint under the current operating and maintenance practices.

Long Term Trends

The odour performance of the Terminal has significantly improved in this reporting period compared to previous reporting periods.

- Results of odour sampling collected during this reporting period indicate the odour emission rate compared to the results from the previous reporting period.
- 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 number of odour complaints received at the Terminal has continued to reduce significantly since improvement actions were completed during the previous reporting period (refer to Section 2.8 for further details). This positive result further validates the effectiveness of these actions and that improvements continue to be maintained.

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 sampler
	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 October 2019 and May 2020, this data was compared to baseline levels from GW1, GW2, and GW3, please refer to Figures 2.4-2.9 below for monitoring results.

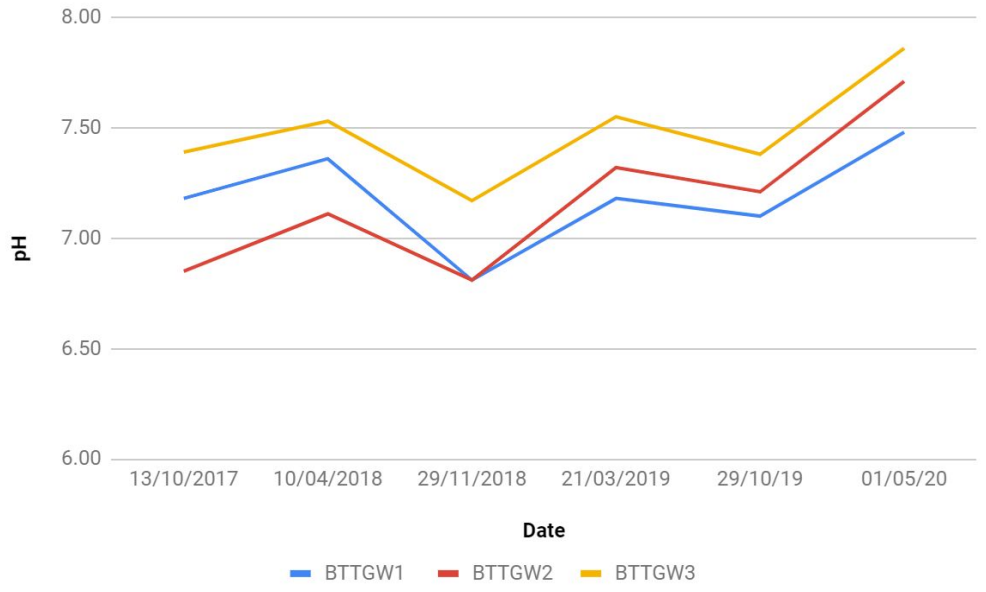


Figure 2.4 - pH trends in groundwater

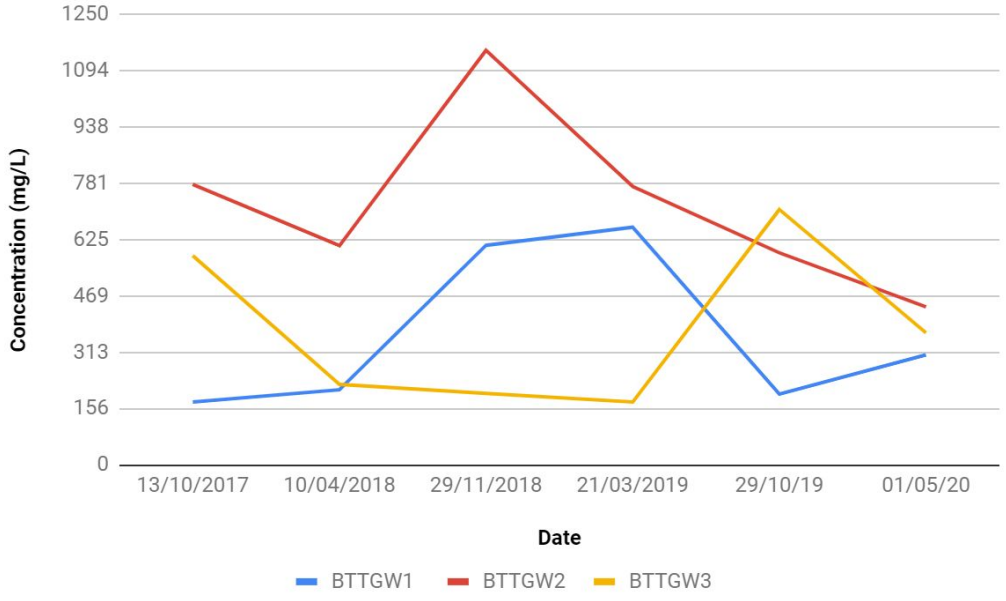


Figure 2.5 - TDS trends in groundwater

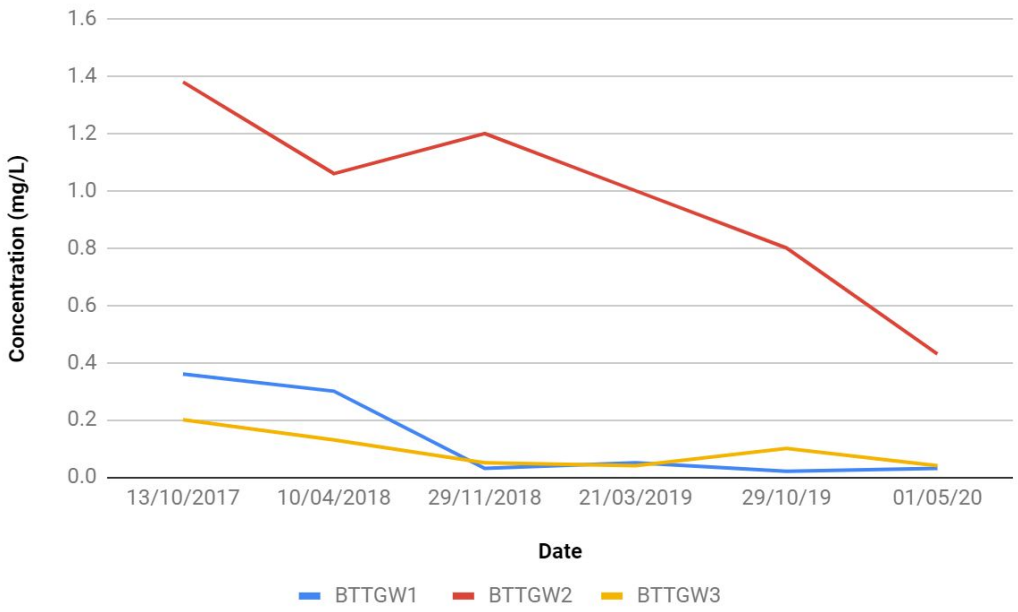


Figure 2.6 - Ammonia trends in groundwater

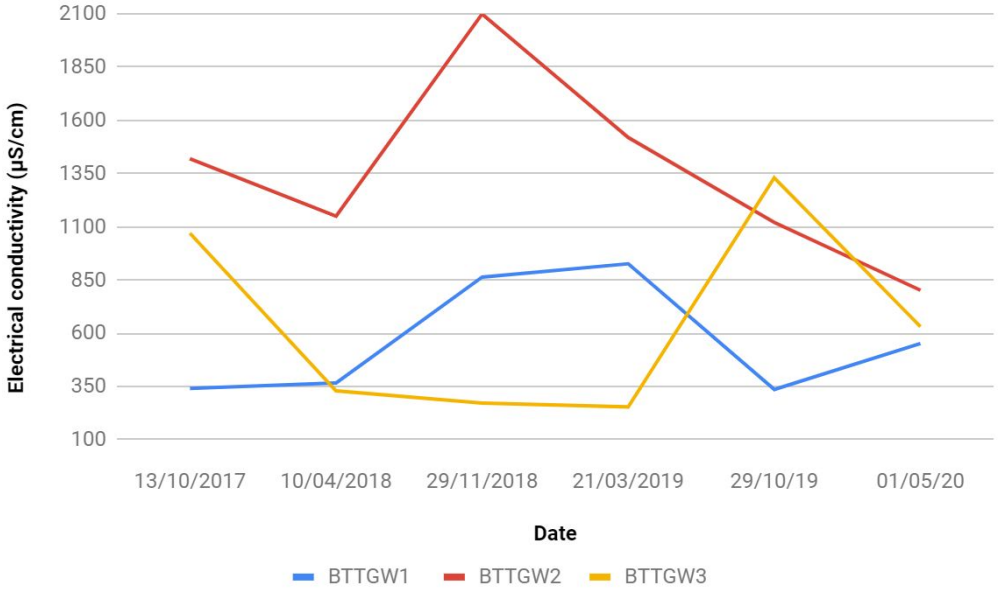


Figure 2.7 - EC trends in groundwater

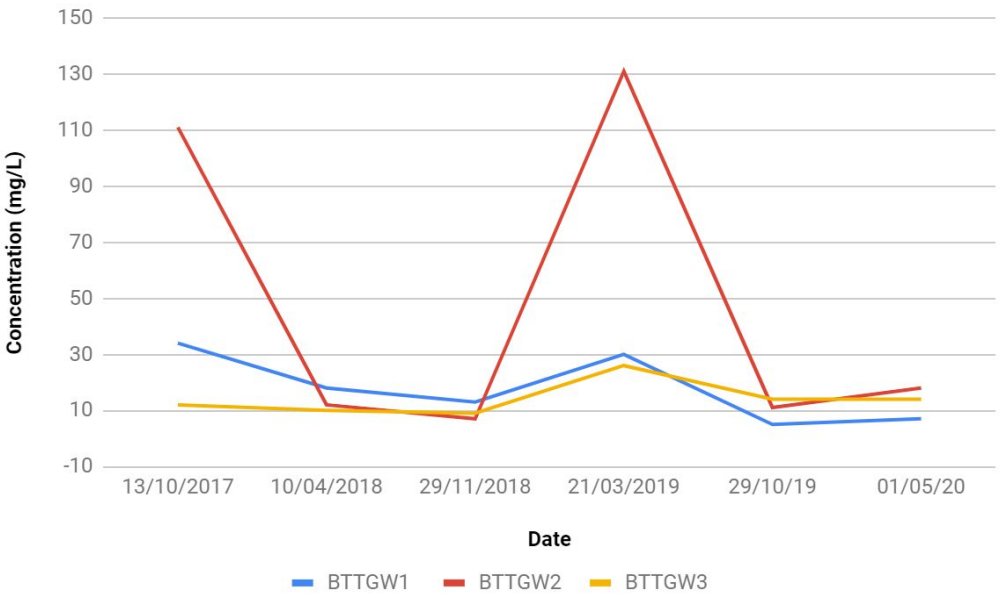


Figure 2.8 -TOC trends in groundwater

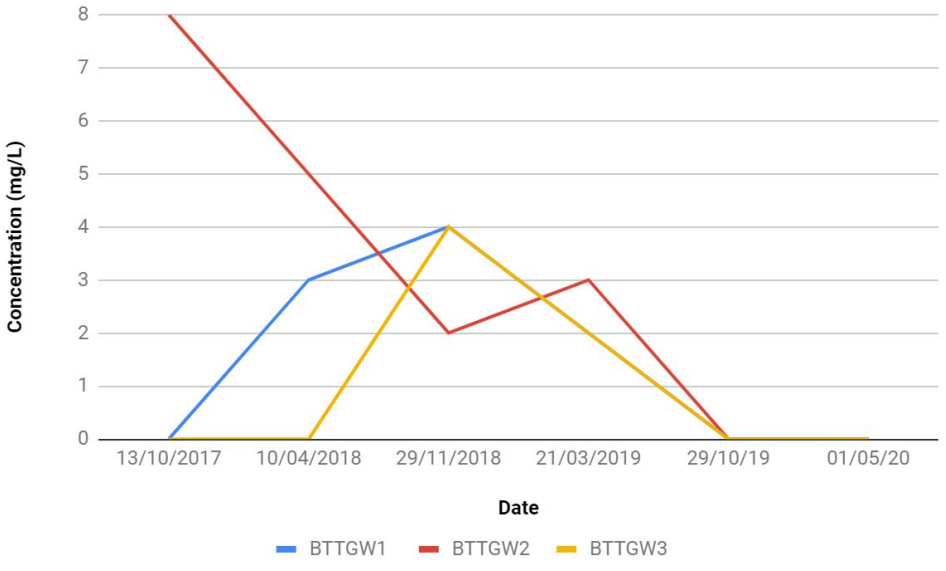


Figure 2.9 -BOD trends in groundwater

Groundwater levels were between 1.22 m and 2.80 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 0.02 to 0.80 mg/L and < 2 mg/L, respectively.

pH in all three wells (GW1, GW2, GW3) have slightly increased above baseline levels but will continue to be monitored in the next reporting period. Alkaline pH levels are not consistent with leachate quality tested onsite (pH= 4-5), therefore this trend does not indicate the migration of leachate on site.

In GW1 and GW3 ammonia, TOC, and BOD are relatively consistent with baselines levels. EC and TDS were fluctuating in both wells this reporting period, however this is consistent with historical trends. Overall, these results indicate there was no leachate migration from the site.

During this reporting period GW2 has shown a decreasing trend for the majority of parameters (TDS, Ammonia, EC, TOC, and BOD).

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

Long Term Trends

- Groundwater quality in GW1 and GW3 wells remains fairly consistent with historical trends and baseline levels. .
- Groundwater quality in GW2 has shown a continuously decreasing trend in ammonia and BOD since monitoring commenced in 2017. However the remaining parameters are 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 sampler
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		

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

All stormwater sampling results collected during the reporting period are provided in Figures 2.10- 2.14.

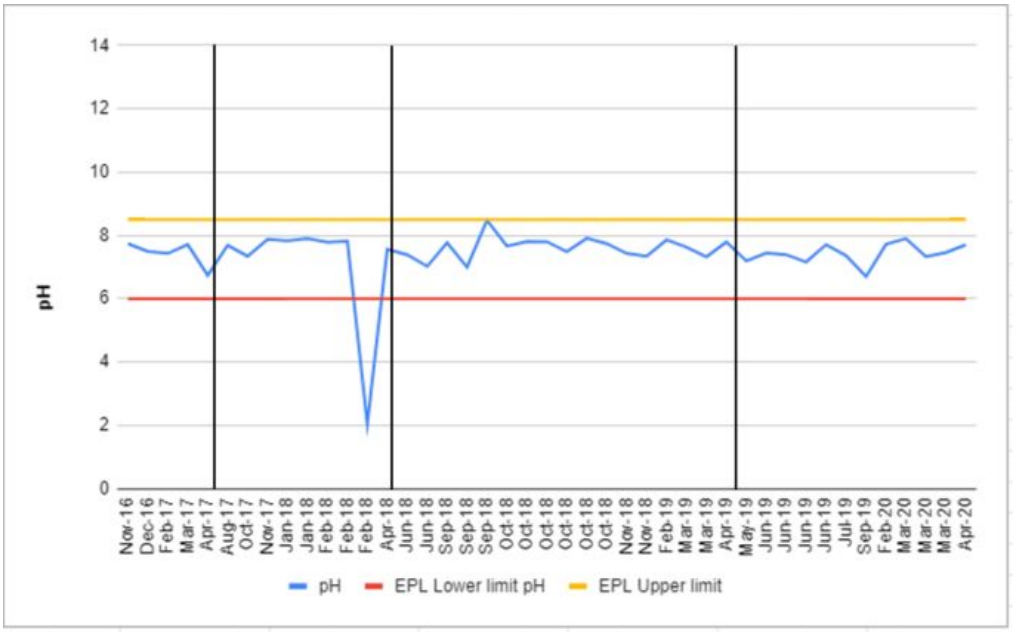


Figure 2.10 -pH trends in stormwater discharge

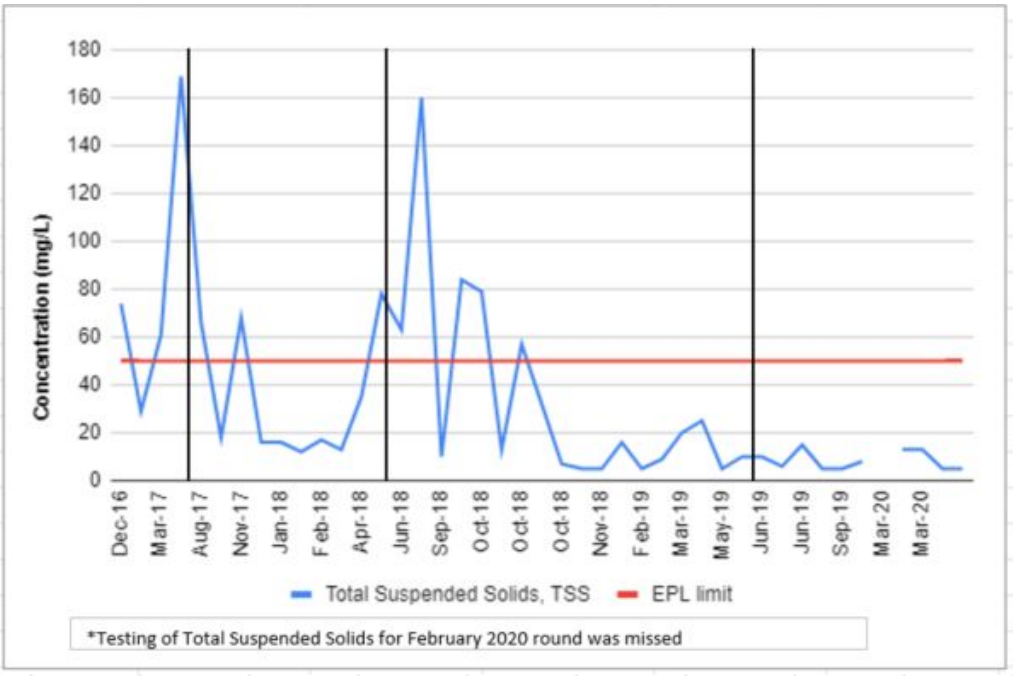


Figure 2.11 -TSS trends in stormwater discharge

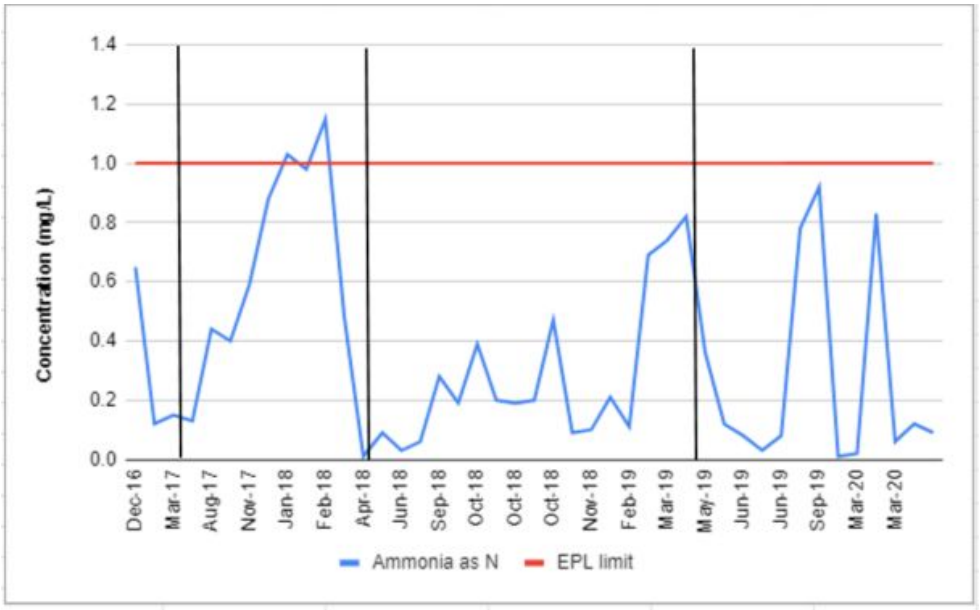


Figure 2.12 - Ammonia trends in stormwater discharge

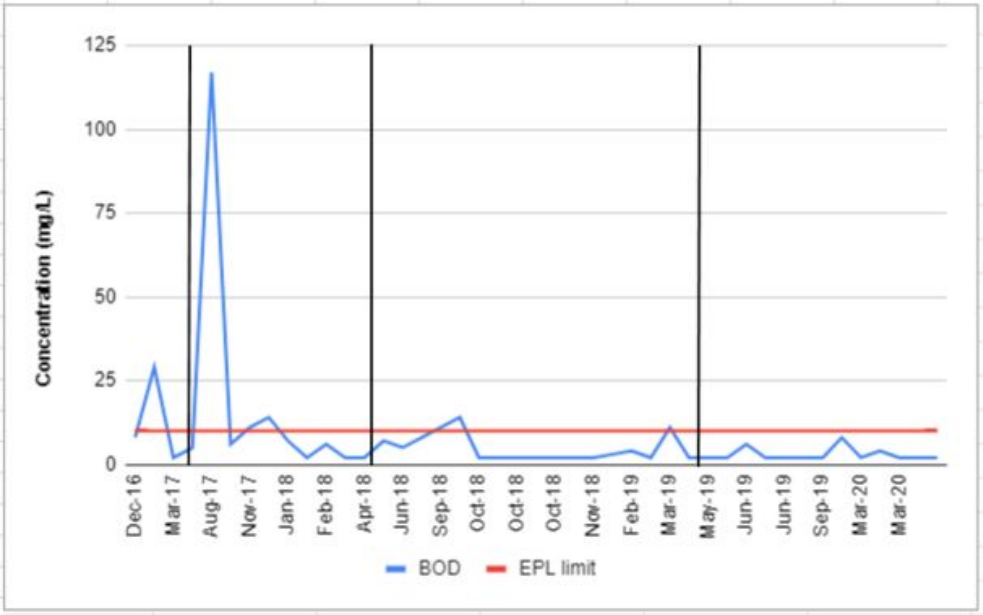


Figure 2.13 - BOD trends in stormwater discharge

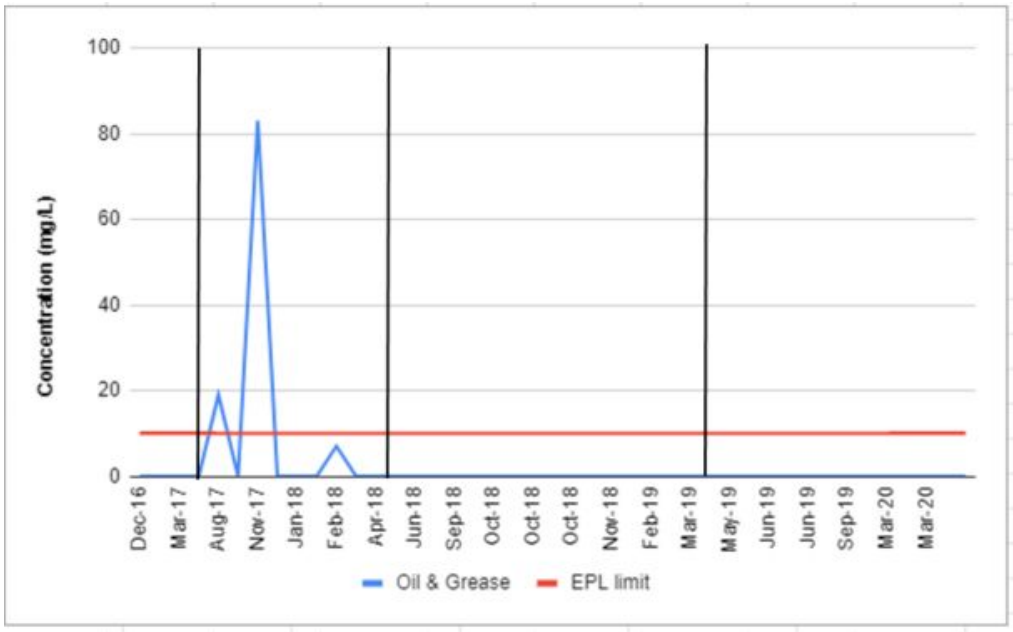


Figure 2.14 - Oils & Grease trends in stormwater discharge

During the reporting period, stormwater discharge quality from the EPL Monitoring Point 1 has vastly improved in all parameters compared to the last two reporting periods based on corrective actions implemented to rectify off-site cross contamination issues at Monitoring Point 1. The rectification works included modification of the stormwater discharge pit to prevent backflow of stormwater from the downstream council drain into Monitoring Point 1. During this reporting period the stormwater discharge quality was within the concentration limits stipulated in the EPL 20581.

This result indicates the operation and ongoing maintenance of the on-site stormwater treatment system remains effective in managing stormwater quality generated on site.

Long Term Trends

- Following the recommencement of sampling from EPL Monitoring Point 1 after rectification in the discharge pit last reporting period, stormwater quality results have significantly improved in all parameters (pH, BOD, ammonia, oils and grease and TSS) since rectification. Sampling results have remained within the EPL limits.

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 has 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 has not caused offsite impacts, this has remained consistent 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 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 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.	Traffic Spot Monitoring (Onsite truck routes and Driver management)	Yes, there have not been any major 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 57,688 (truck) movements occurred during the operation reporting period which is equivalent to 158 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 2018/2019 and 2019/2020 reporting periods

Monitoring Period	Truck Movements 2018/2019	Truck Movements 2019/2020
29 to 30 April 2019	280	382
May	4925	4956
June	4661	4411
July	4800	4946
August	4936	4700
September	4492	4803
October	4964	4999
November	4784	4927
December	4785	5153
January	4734	5131
February	4378	4843
March	4693	4966
1 to 28 April 2020	4385	3471
Total	**56,817**	**57,688**

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 2.8 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 2018 and 2019 calendar years

Waste classification	Approved Limit (tonnes per annum)	Waste tonnes (2018)	Waste tonnes (2019)
General Solid Waste (Putrescible)	400,000	311,489	313,514
General Solid Waste (Non Putrescible)	100,000	589	1,673

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 five (5) pest control service reports were completed during the reporting period**.** 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 three complaints as shown in Figure 2.15 were issued to the Terminal during this reporting period, all of which related to odour emissions. Two of the odour complaints were received directly from IXOM who are located north-east of the Terminal. The remaining one complaint was made anonymously to Bayside Council and then reported to the EPA. There has been a significant reduction of odour complaints compared to last reporting year with a total of 18.

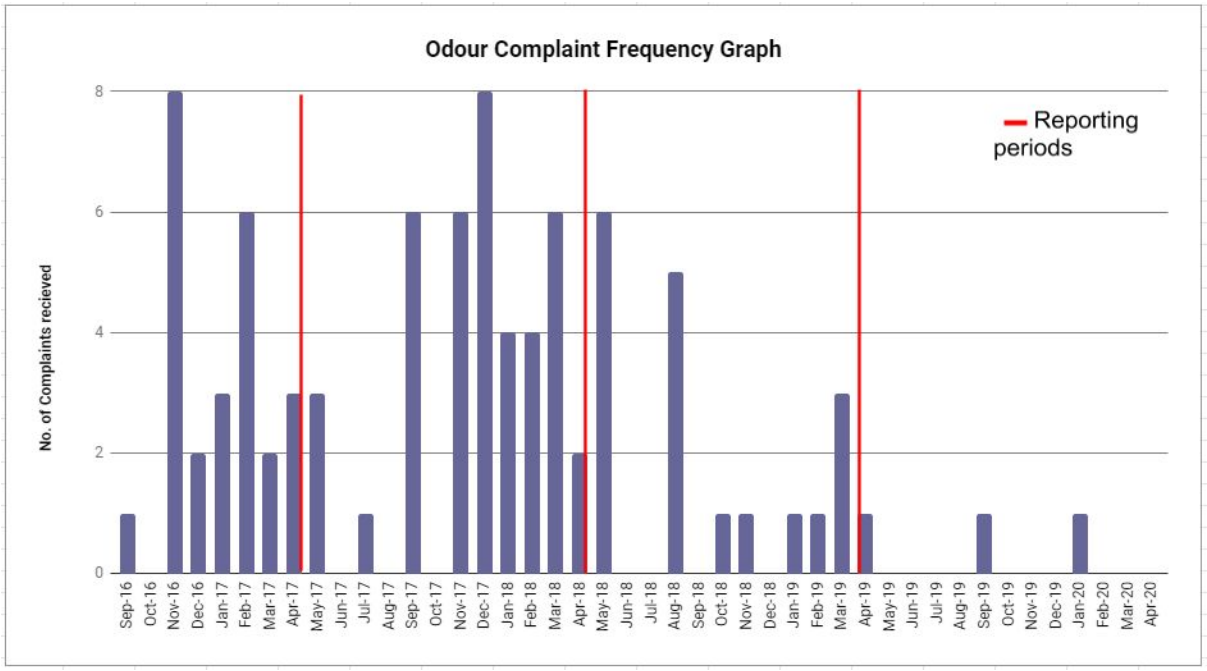


Figure 2.15 - Number of odour complaints received each month at the Terminal

Two of the odour complaints were received between the hours of 7-11am with south-west, south-south-west wind directions and upset operational conditions were occurring on-site. The other complaint was received during south-west wind conditions when extreme weather conditions were occuring. This event resulted in waste containers being stored longer onsite due to a train cancellation.

Based on meteorological data in Figure 2.1 and 2.2, prevailing winds from both south-west and south-south-west occurred approximately 10% of the year, where odour complaints are more likely to occur. Given the relatively small number of odour complaints received in this reporting period, the odour control system and other mitigation measures have been found to be effective.

Following the receipt of each odour complaint:

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 D**).

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 conditions of Consent in this reporting period.

- Groundwater and surface water quality have remained fairly consistent and within respective limits, with the exception of seasonal fluctuations.
- Air quality has shown positive results with no dust and the lowest number of odour complaints this reporting period, this is also supported by TOU audit.
- 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 vermins are adequately controlled, no issues have been identified since the commencement of operations in 2016.

No non-compliances against monitoring or inspection requirements were identified against the Conditions of Consent during this reporting period.

An Independent Environmental Audit (IEA) of the Terminal's environmental performance was carried out in March 2019 by Jackson Environment and Planning. The objective of this IEA was to assess the compliance of the Terminal's operations against the conditions of Consent as per condition 6 and 7 (Schedule 4). The audit findings against each condition is provided in **Appendix B.**

The IEA report (Jackson, 2019) demonstrated that there were no non-compliances, however recommendations by the auditors were actioned as improvement opportunities. The progress of which are provided in Table 3.1.

In addition to the above, continual improvement is important to Veolia to ensure its business is operating effectively and efficiently. Veolia has proposed an initiative whereby compliance and monitoring requirements are currently captured in the OEMP and the Environmental Monitoring Program, this will be tracked in an automated system for compliance tracking and performance measurement.

3.1 Previous Findings

Findings identified during the 2018/2019 reporting period are detailed in Table 3.1 below to show that corrective actions were taken to resolve/manage these findings, these were implemented and completed in this reporting period.

Table 3.1 - Findings and Corrective Actions in the 2018/2019 reporting period

Relevant Condition	Observations	Corrective Actions	Person/Team Responsible	Status
Schedule 3, Condition 21	Weed management - It is recommended that weed management, in accordance with the Landscape and Vegetation Management Plan, is resumed to avoid the continued growth and potential spread of weed within, and properties adjacent to the site.	Veolia has engaged new landscape contractors for the ongoing weed management on the site in accordance with the Landscape and Vegetation Management Plan. Periodic inspections at the Terminal will be undertaken to avoid any potential spread of weeds.	Facility Manager - NSW Resource Recovery Team	Completed May 2019, Ongoing inspections
Schedule 3, Condition 9 and 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.	Drain is inspected daily as part of the Terminal's operations. The frequency of cleaning the drains in the main tipping building is increased from once to twice per day.	Facility Manager - NSW Resource Recovery Team	Completed May 2019, Ongoing housekeeping

3.2 Conclusion

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

Furthermore, in the previous reporting period there were a number of improvements and corrective actions to the stormwater and odour management at the Terminal. These improvements have continued to be maintained in this reporting period and is reflected by the significant reduction in the number of odour complaints and continuous stable stormwater quality results.

A review of the non-compliances between the 2018 and 2019 reporting periods by the IEA along with recent feedback from neighbouring businesses and monitoring quality results, indicates the Terminal has had an immense improvement in the overall environmental performance. Veolia will continue to maintain, monitor and assess the Terminal's environmental performance through to the next reporting period.

Terms and Definitions

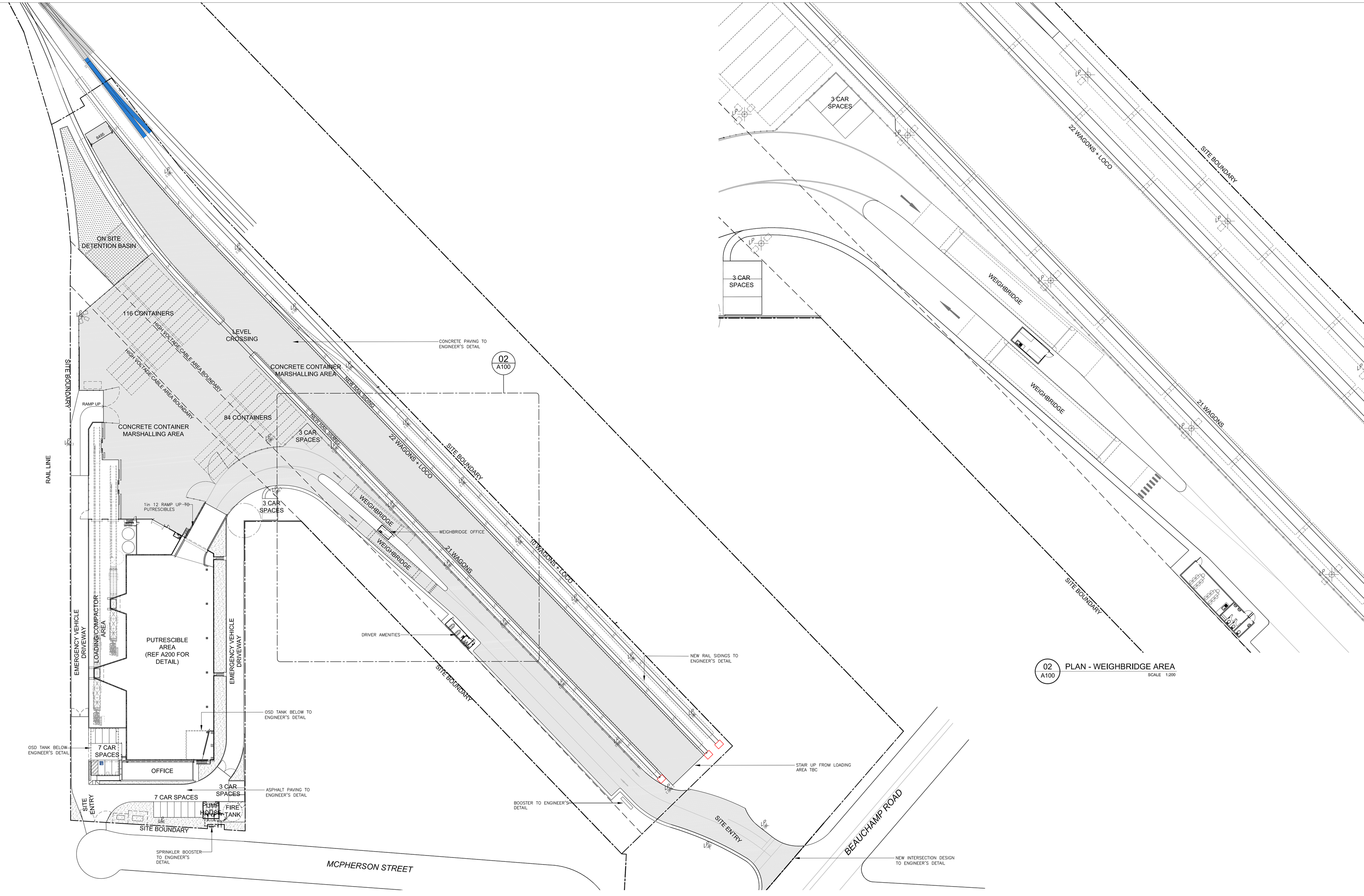
Term	Definition
AEMR	Annual Environmental Management Report
ALS	Australian Laboratory Services PTY LTD
AQMP	Air Quality Management Plan
BMS	Veolia's Business Management Systems
BTT	Banksmeadow Transfer Terminal
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A	Environmental Planning and Assessment (Act and 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
SWLMP	Soil, Water Leachate Management Plan
The Consent	Development Consent SSD 5585
TMP	Traffic Management Plan
TOU	The Odour Unit PTY LTD
The Terminal	Banksmeadow Transfer Terminal
TPA	Tonnes per annum
Veolia	Veolia Australia and New Zealand
WMP	Waste Management Plan

References

1. DEC (2006) "*Technical framework: assessment and management of odour from stationary sources in NSW*", Department of Environment and Conservation, November 2006.
2. EPA (2014), *"Waste Classification Guidelines Part 1: Classifying waste"*, NSW Environment Protection Agency, November 2014.
3. Hyder (2014), Banksmeadow Transfer Terminal Environmental Impact Statement, Hyder Consulting, July 2016.
4. Veolia (2017/2018), Banksmeadow Transfer Terminal Annual Environmental Management Report, Veolia, April 2018.
5. Veolia (2018/2019), Banksmeadow Transfer Terminal Annual Environmental Management Report, Veolia, June 2019.
6. SLR Consulting (2017), Noise and Vibration Assessment, August 2017.
7. Jackson (2019), Independent Environmental Audit Veolia Environmental Services Australia, Banksmeadow Transfer Terminal, May 2019.

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.	The Auditors sighted an email dated 18th August 2016 from the City of Botany Bay Council (now Bayside Council) acknowledging payment.	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			

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	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
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.	The Auditors sighted Civil Engineering Report Prepared by: Costin Roe Consulting Pty Ltd dated 1 June 2015 (Rev B).	None	Compliant
	Soil, Water and Leachate 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**
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: o 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; o 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 exceedances of the respective trigger levels; and	The Auditors sighted the *Soil, Water and Leachate Management Plan* (Document Code: PLA-NSW-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**
	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.	The Auditors sighted the Section 73 Compliance Certificate dated 19 April 2016	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
	Bunding			

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**
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).	The auditors observed a small quantity of chemicals associated with the operation. These chemicals were appropriately stored on bunded pallets. chemicals will be stored. 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.	None	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.	Site visit	None	Compliant
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: PLA-NSW-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

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**
	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: PLA-NSW-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: PLA-NSW-XXX-XXX-1) dated 23 June 2016.	None	Compliant
	Pest, Vermin & Noxious Weed Management			

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**
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.	The Auditors observed weeds during the site visit. It is understood that the current contractor for weed management is under review (due to performance issues). Weed management is currently undertaken quarterly with the last inspection undertaken on 22nd February 2019.	Compliant
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 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

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**
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			
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: PLA-NSW-XXX-XXX-1) dated 23 June 2016. The Auditors sighted the following documents: • 2016 Annual Environment Management Report – BTT AEMR 2015-2016 (dated 28 June 2016). • 2017 Annual Environment Management Report – BTTAEMR2017 (dated 30 June 2017). • 2018 Annual Environment Management Report – BTTAEMR2018 (dated 28 June 2018)	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 maneuverability 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	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	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: PLA-NSW-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) <u>Fire Safety Study</u> 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) <u>Hazard and Operability Study</u> 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	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 (Document Code: MAN-5174-1) dated 7th August 2018	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	Refer to Section 3.5 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	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>None</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

The Auditors also sighted the Noise and Vibration Management Plan (Document Code: PLA-NSW-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: PLA-NSW-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			

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**
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.	Complaints Summary	Assumed to be compliant based on issuing of the Occupation Certificate. The Site visit was conducted during the day, therefore could not be assessed, however, the Auditors have no reason to believe the condition has not been complied with No complaints have been received regarding lighting at the Site.	Compliant
	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			

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**
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.	Audit interview	None	Not Triggered
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 and audit interview	None	Compliant
SCHEDULE 4 – ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING				
Environmental Management				
	Construction 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**
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: PLA-NSW-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: PLA-NSW-XXX-XXX-1) dated 23 June 2016 and relevant sub-plans	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.	Audit interview	None	Not Triggered
	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 on the Veolia website: • 2016 Annual Environment Management Report – BTT AEMR 2015-2016 (dated 28 June 2016). • 2017 Annual Environment Management Report – BTTAEMR2017 (dated 30 June 2017). • 2018 Annual Environment Management Report – BTTAEMR2018 (dated 28 June 2018)	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.	The Auditors sighted the 2016 Independent Environmental Audit conducted by Ramboll Australia Pty Ltd (report dated 28 July 2016). This audit satisfies the first audit required 3 years after the first audit.	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.	This audit report	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: • 2016 Annual Environment Management Report – BTT AEMR 2015-2016 (dated 28 June 2016). • 2017 Annual Environment Management Report – BTTAEMR2017 (dated 30 June 2017). • 2018 Annual Environment Management Report – BTTAEMR2018 (dated 28 June 2018)	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

TO: **CONSTANCE GEORGIOU**

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

FROM: **MICHAEL ASSAL**

DATE: **10 MAY 2019**

JOB NO: **N1906L.03**

SUBJECT: **BANKSMEADOW WASTE TRANSFER TERMINAL FACILITY – ON-GOING ODOUR AUDIT PROGRAM: APRIL 2019**

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 a visit conducted by a TOU Senior Engineer & Consultant at the BTT Facility on 10 April 2019. Specifically, the memoradum 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; and

3. 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, 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**); and

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**).

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 (5)-minute intervals, with discrete measurement readings collected every 10 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 **Figure 4**.

3.4 Smoke Testing

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

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 summaries the key results from the sampling and testing conducted at the BTT Facility on 10 April 2019. 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 10 April 2019 is presented in **Figure 2**.

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 building enclosure as occurred on 10 April 2019 is shown in **Photo 2**. 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 gradually dissipate over time. 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 10 April 2019 is provided in **Figure 3**.

4.4 Field Ambient Odour Assessment Survey

The FAOA survey results as occurred on 10 April 2019 is provided in **Figure 4** and **Table 2**.

Table 1 – Comparison of stack odour emission results and recorded waste tonnage on the floor between January 2018 and 10 April 2019

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 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 **Appendix A**
2	Wednesday, 10 April 2019	1207 hrs	91	150	115	10,500	70	

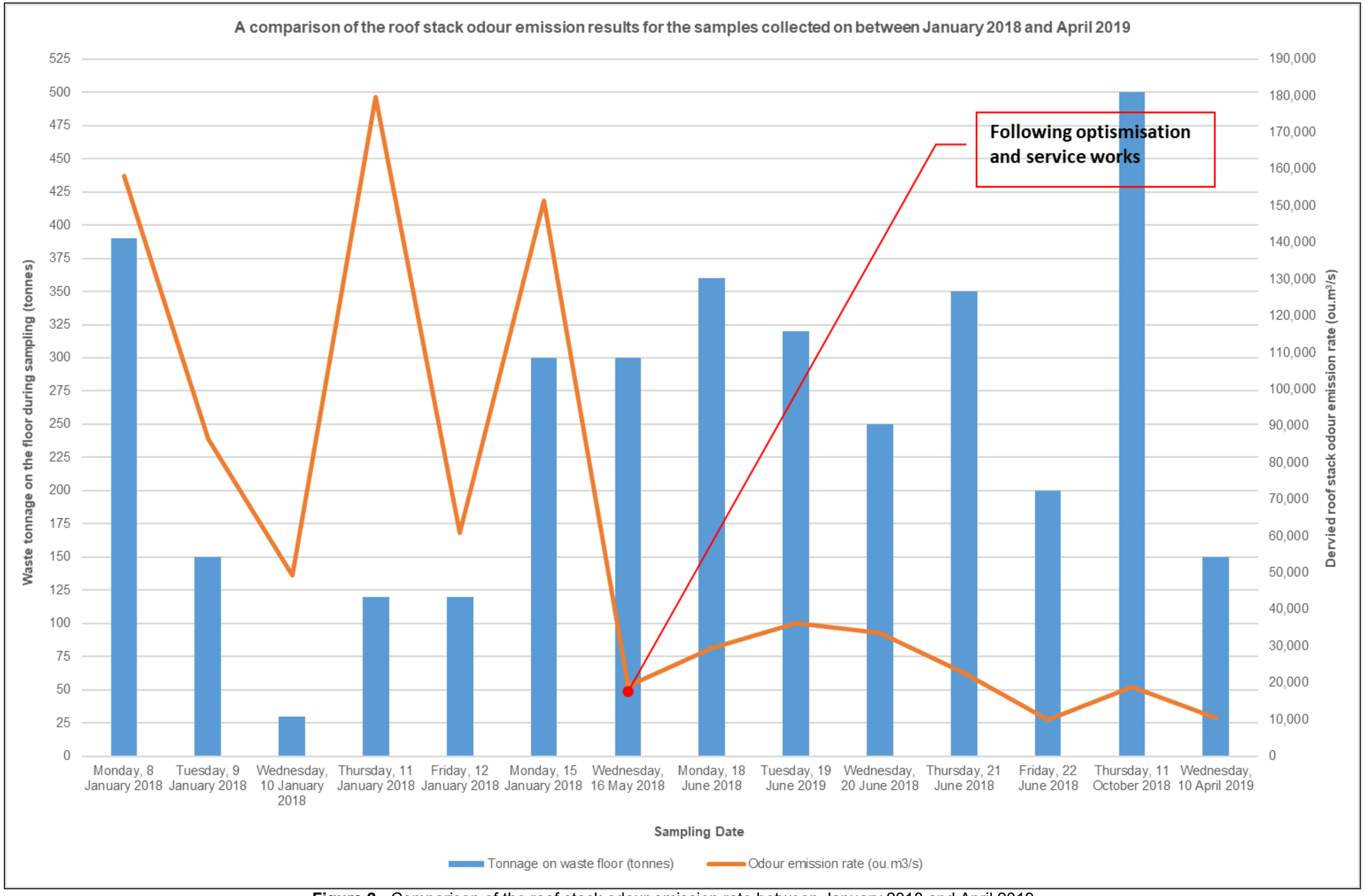


Figure 2 - Comparison of the roof stack odour emission rate between January 2018 and April 2019

Photo 2 – Smoke testing at the truck entry point of the BTT Facility building enclosure as occurred on 10 April 2019

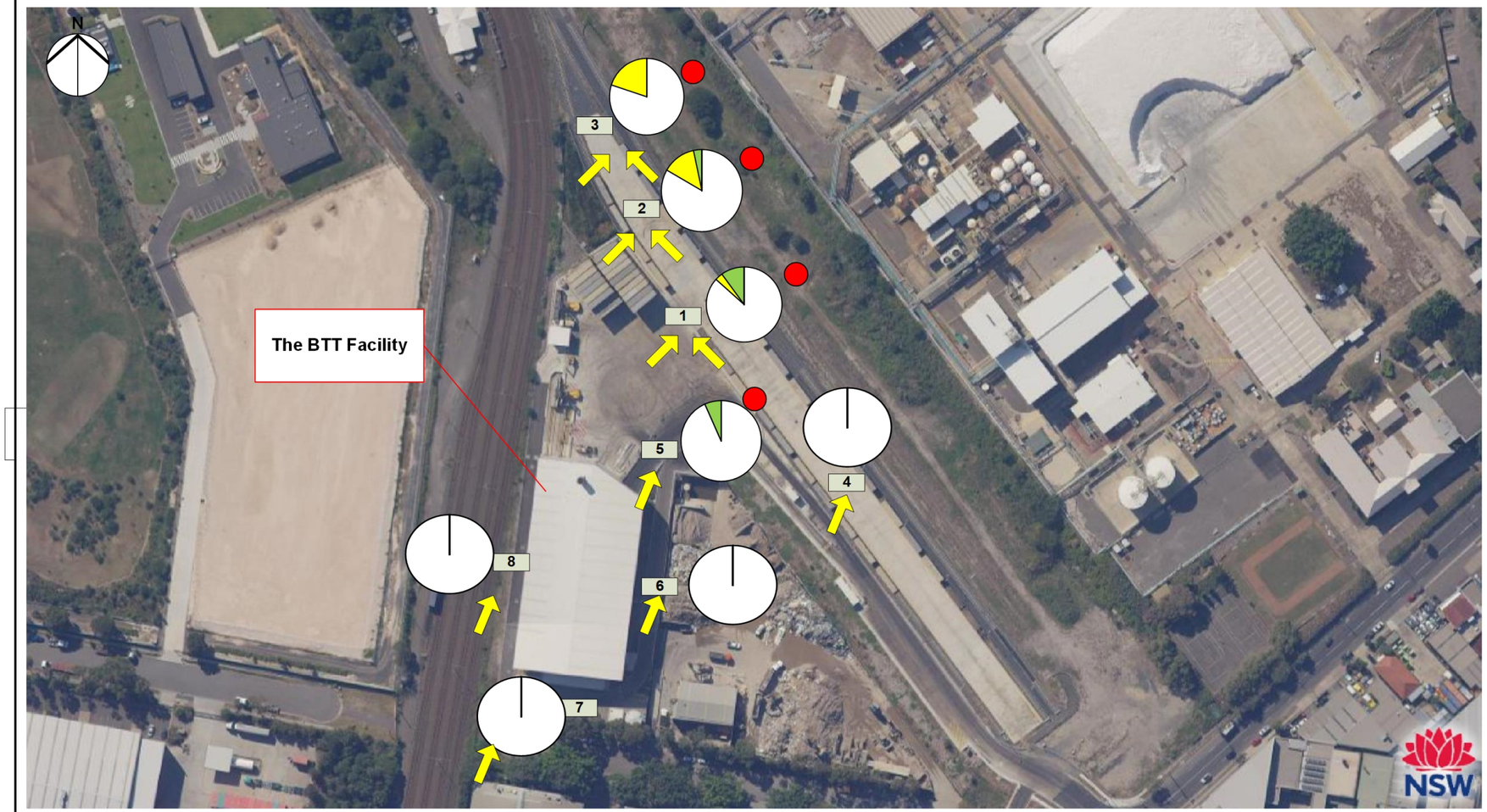
Figure 3 – Completed audit logsheet as occurred on 10 April 2019		
Date	10 April 2019	
Stack samples collected	Stack Discharge 1 of 2 collected at 1051 hrs Stack Discharge 2 of 2 collected at 1207 hrs	
Waste tonnage on floor	Approximately 150 tonnes	
Observed local wind conditions	Clear skies, moderate (2 m/s – 4 m/s) to strong (4 – 7 m/s) winds oscillating between the southeast and southwest cardinal direction. The local ambient temperature was observed to be approximately 17ºC – 19ºC	
Fan setting	**EF-01** ____50_____Hz ____57.2_____Amps	**EF-02** ____50_____Hz ____59.2_____Amps
Other comments	▪ EF-1 discharge stack reading = 21.0 m/s. ▪ EF-2 discharge stack reading = 21.0 m/s. ▪ Suction pressure reading at sampling point = -98 Pascals (**Pa**). ▪ Thirty-seven (37) filled waste containers present on concentre pad at approximately 1045 hrs. ▪ Breezeways permanently sealed around BTT Facility building. ▪ Good housekeeping observed across the BTT Facility (see **Photo 3, Photo 4, Photo 5** and **Photo 6**). ▪ Veolia advised that the air extraction plenum chamber was due to be completed in April/May 201.	

Photo 3 – The BTT Facility waste floor area as found on 10 April 2019

Photo 4 – A view of the BTT Facility compactor area as found on 10 April 2019

Photo 5 – A view of the BTT Facility truck entry point as found on 10 April 2019. Note: The truck entrance plastics strips were found to be in good condition.

Photo 6 – A view of the BTT Facility truck entry road as found on 10 May 2019



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:
Clear skies, moderate (2 m/s – 4 m/s) to strong (4 – 7 m/s) winds oscillating between the southeast and southwest. The ambient local temperature 17°C – 19°C

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

Field Ambient Odour Assessment Survey
Session Date: 10.04.2019 Session Time: 1107 hrs – 12:02 hrs
Area: 1 Odour Impact Criterion: Intensity ≥ 2, Frequency ≥ 10%
Drawn By: M. Assal Revision: A Date: 07.05.2019

Figure 4 - FAOA survey odour impact map as conducted on 10 April 2019 between 1107 hrs and 1202 hrs (see **Table 2** for details)

Table 2 - FAOA survey logsheet: 10 April 2019 between 1107 hrs and 1202 hrs

Grid Reference Position	Time (hrs)	Wind Direction	Wind speed (m/s)	Odour Present (Y / N)	Odour character	VDI 3940 Intensity Scale 0-6	Is odour intensity ≥ 2 (Weak) and frequency of detection ≥ 10%	Comments
1	1107 - 1112	SE ← → SW	3 – 6	Y	bin juice, sour	1-2	Yes	▪ Likely source was a combination of the waste shed truck entry road and waste storage containers.
2	1113 – 1118	SE ← → SW	4 – 7	Y	bin juice, sour	1-2	No	▪ Likely source was a combination of the waste shed truck entry road and waste storage containers.
3	1119 – 1124	SE ← → SW	4 – 6	Y	bin juice, sour	1	No	▪ Likely source was a combination of the waste shed truck entry road and waste storage containers.
4	1126 – 1131	SSW	3 -5	N	--	--	--	--
5	1134 – 1139	SSW	2 - 4	Y	bin juice, sour	2	No	▪ Likely source was due to the intermittent passing of empty waste trucks from the BTT Facility building
6	1142 – 1147	SSW	2 – 4	N	--	--	--	--
7	1150 – 155	SSW	2 – 4	N	--	--	--	--
8	1157 – 1202	SSW	2 – 4	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 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 (and recently updated) operating and maintenance practices at the BTT Facility;

- A very weak to weak odour was detectable within the boundary of the BTT Facility at measurement location points 1, 2 and 3 (see **Figure 4**). The likely odour source was determined to be a combination of the waste shed truck entry road and waste containers stored on the concrete pad at the time. The Audit noted that a total of approximately 37 waste containers was present on the concrete pad during the undertaking of the FAOA survey;

- It is understood that the BTT Facility has 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. In view of these current odour mitigation and management practices, and consideration for the intensity, frequency and likely diffusion rate of odour from the carbon filtered waste containers, the local odour within the BTT Facility detected during the FAOA survey is not expected to be problematical at nearby, off-site downwind locations. Nevertheless, as part of good housekeeping, the upkeep and cleanliness of the waste containers and waste shed truck entry road should be inspected, monitored and reviewed as part of daily operations;

- The FAOA survey also indicated that transient, local odour can be detectable from waste truck movement (see measurement location point 5 in **Figure 4**). This is not expected to be a significant contributor to the odour profile of the BTT Facility; and

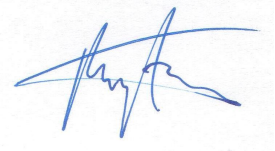
- The smoke testing conducted within the BTT Facility building enclosure indicated positive results and suggests that the building ventilation extraction system at the BTT Facility is operating in an optimum condition.

6. Concluding Remark

In view of 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.

The next odour audit is due **October/November 2019**.

The Odour Unit Pty Ltd



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

Attachments:

- **Appendix A –** Odour Laboratory Results Reports: 10 April 2019

THE ODOUR UNIT

APPENDIX A -

ODOUR LABORATORY RESULTS REPORT: 10 APRIL 2019

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 2 9841 2924
Contact	C. Georgiou	Facsimile	--
Sampling Site	Banksmeadow Transfer Facility	Email	constance.georgiou@veolia.com
Sampling Method	Drum & pump, AS4323.3	Sampling Team	TOU (M. Assal)

Order details:

Order requested by	C. Georgiou	Order accepted by	M. Assal
Date of order	04.04.2019	TOU Project #	N1906L
Order number	7100152867	Project Manager	M. Assal
Signed by	C. Georgiou	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 V04.
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 V04: $r = 0.101$ (January 2018) 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 V04: $A = 0.212$ (January 2018) 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: Wednesday, 17 April 2019

Panel Roster Number: SYD20190410_034

J. Schulz
NSW Laboratory Coordinator

A. Schulz
Authorised Signatory

Odour Sample Measurement Results
Panel Roster Number: SYD20190410_034

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 discharge (1 of 2)	SC19262	10.04.2019 1051 hrs	10.04.2019 1540 hrs	4	8	--	--	91	91	--
Stack discharge (2 of 2)	SC19263	10.04.2019 1207 hrs	10.04.2019 1606 hrs	4	8	--	--	91	91	--

Samples Received in Laboratory – From TOU Date: 10.04.2019 Time: 1400 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	SYD20190410_034	51,400	$20 \leq \chi \leq 80$	724	71	Yes

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

SC19262 sweet, musty
SC19263 sweet, 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

TO: **MARY WONG & SARA MADDISON**

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

FROM: **MICHAEL ASSAL**

DATE: **19 NOVEMBER 2019**

JOB NO: **N1906L.03**

SUBJECT: **BANKSMEADOW WASTE TRANSFER TERMINAL FACILITY – ON-GOING ODOUR AUDIT PROGRAM: OCTOBER 2019**

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 a visit conducted by a TOU Senior Engineer and TOU Consultant at the BTT Facility on 2 October 2019. Specifically, the memoradum 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 April 2019 and October 2019; 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, including:

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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**); and

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**)

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 **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; and
- Odour complaints register between April 2019 and October 2019.

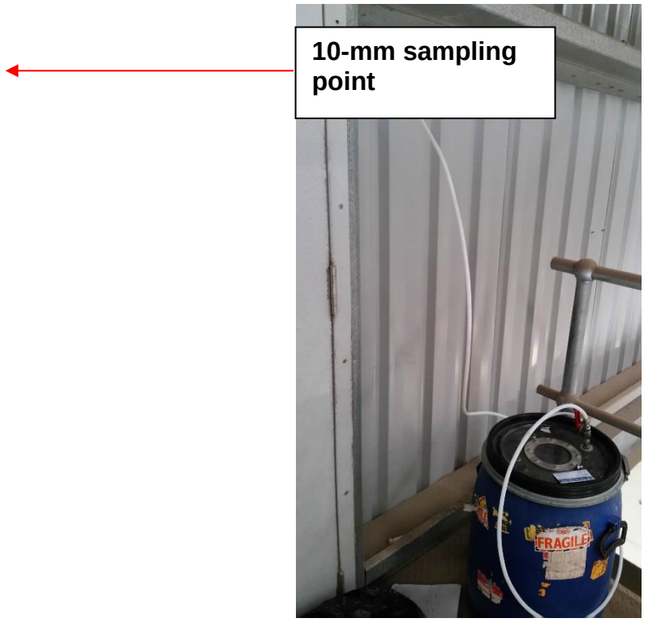


Photo 1 – An example of the roof discharge stack odour sampling point at the BTT Facility

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 summaries the results from the sampling and testing conducted at the BTT Facility on 2 October 2019. The odour laboratory results report is enclosed as **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 2 October 2019 is presented in **Figure 2**.

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 building enclosure as occurred on 2 October 2019 is shown in **Photo 2**. 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 gradually dissipate over time. 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 2 October 2019 is provided in **Figure 3**.

4.4 Field Ambient Odour Assessment Survey

The FAOA survey results as occurred on 2 October 2019 is provided in **Figure 4** and **Table 2**.

Table 1 – Comparison of stack odour emission results and recorded waste tonnage on the floor between January 2018 and 2 October 2019

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 **Appendix A**
2		1500	91	100	104	9,460	95	

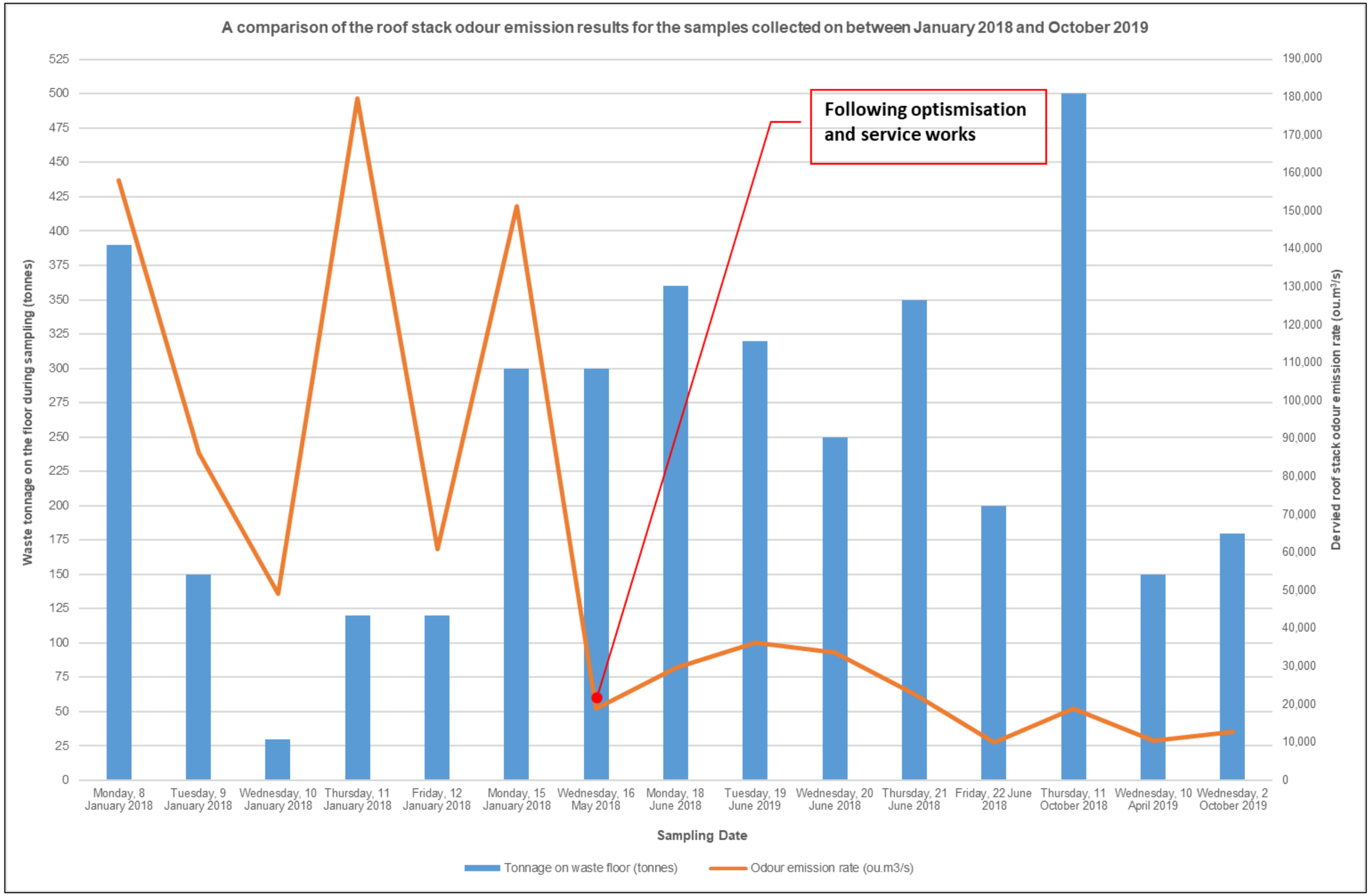


Figure 2 - Comparison of the roof stack odour emission rate between January 2018 and October 2019

Photo 2 – Smoke testing at the truck entry point of the BTT Facility building enclosure as occurred on 2 October 2019

Figure 3 – Completed audit logsheet as occurred on 2 October 2019		
Date	2 October 2019	
Stack samples collected	Stack Discharge 1 of 2 collected at 1405 hrs Stack Discharge 2 of 2 collected at 1500 hrs	
Waste tonnage on floor	Approximately 180 tonnes at 1405 hrs Approximately 100 tonnes at 1500 hrs	
Observed local wind conditions	Clear skies, light (0.5 – 2 m/s) to moderate (2 - 5 m/s) wind speeds oscillating between the westerly and easterly cardinal directions. The local ambient temperature was observed to be approximately 26ºC.	
Fan setting	**EF-01** ____54.6_____Hz ____68.3_____Amps	**EF-02** ____50.7_____Hz ____54.6_____Amps
Other comments	▪ EF-1 discharge stack reading = 19.0 m/s. ▪ EF-2 discharge stack reading = 19.0 m/s. ▪ Suction pressure reading at sampling point = -81 Pascals (**Pa**). ▪ Twenty-four (24) filled waste containers present on the concrete pad at approximately 1045 hrs. ▪ Breezeways permanently sealed around BTT Facility building. ▪ Good housekeeping observed across the BTT Facility (see **Photo 3, Photo 4, Photo 5** and **Photo 6**). ▪ Veolia advised that the air extraction plenum chamber was due to be completed in late-October 2019. At the time of writing, this should have been completed.	

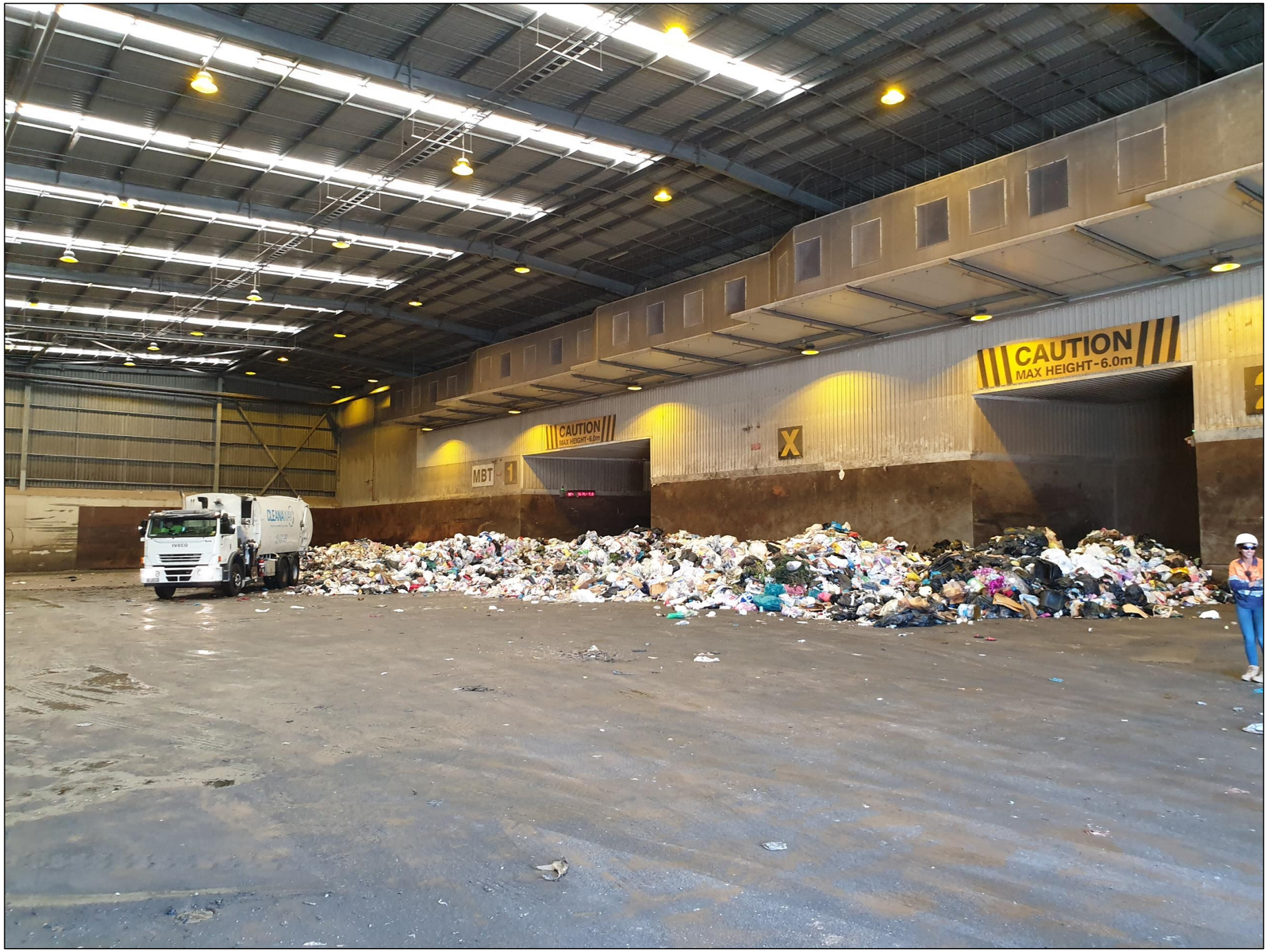
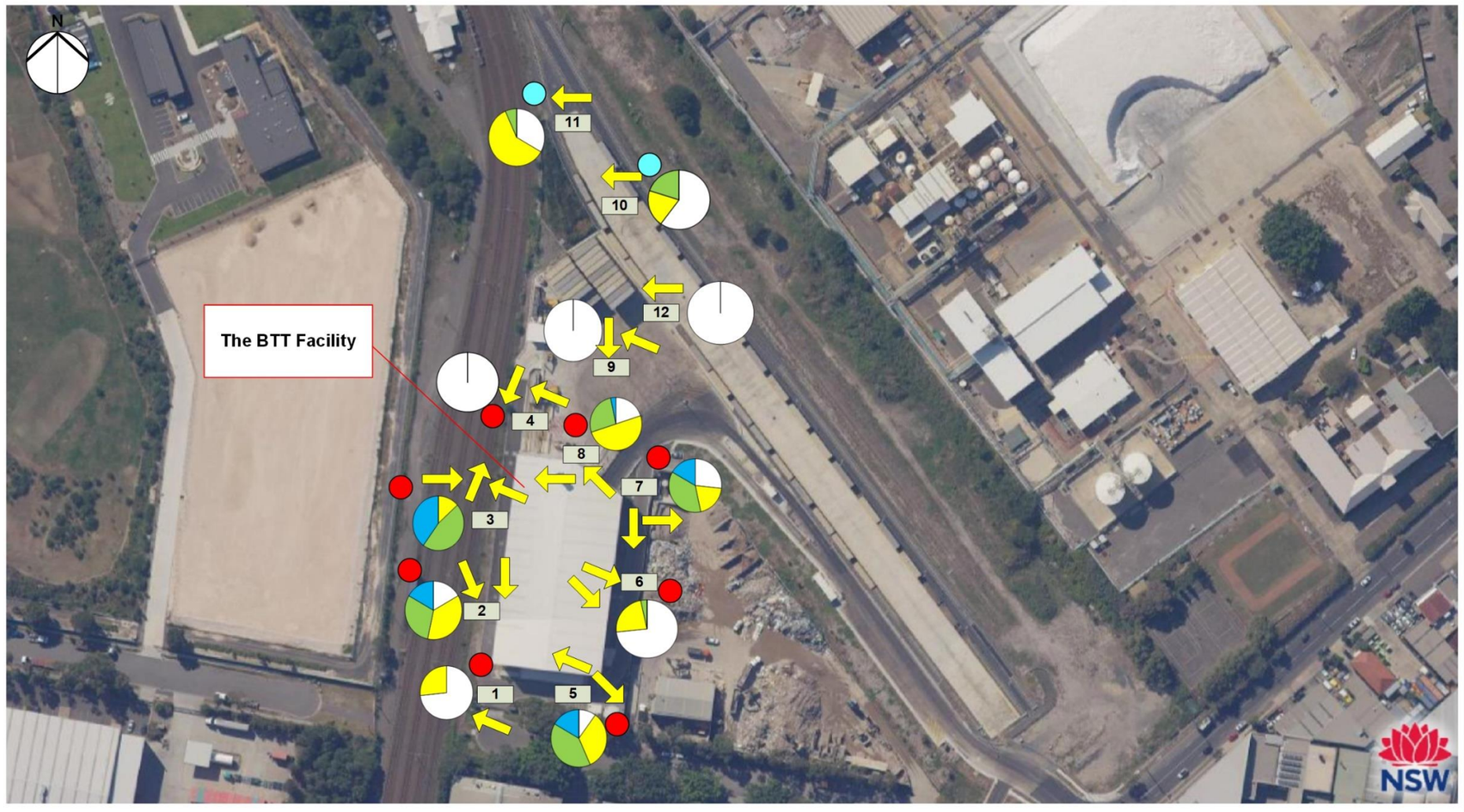


Photo 3 – A picture of the BTT Facility waste floor area as found on 2 October 2019 at 1424 hrs

Photo 4 – A picture of the BTT Facility concrete pad facing north-east on 2 October 2019 at 1507 hrs

Photo 5 – A picture of the BTT Facility concrete pad facing north-east on 2 October 2019 at 1507 hrs

Photo 6 – A picture of the BTT Facility truck entry point as found on 2 October 2019. Note: The truck entrance plastics strips were found to be in good condition



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
- C – chlorine, musty

Legend

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

Prevailing Local Wind Conditions

Clear skies, light (0.5 – 2 m/s) to moderate (2 – 5 m/s) winds oscillating between westerly and easterly wind direction. The ambient local temperature was approximately 26°C.

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

Field Ambient Odour Assessment Survey
Session Date: 02.10.2019 Session Time: 1345 hrs – 1505 hrs
Area: 1 Odour Impact Criterion: Intensity ≥ 2, Frequency ≥ 10%
Drawn By: M. Assal Revision: A Date: 01.11.2019

Figure 4 - FAOA survey odour impact map as conducted on 2 October 2019 between 1345 hrs and 1505 hrs (see **Table 2** for details)

Table 2 - FAOA survey logsheet: 2 October 2019 between 1345 hrs and 1505 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	1345 – 1350	ESE	0.5	Y	bin juice, sour	0-1	No	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate.
2	1352 – 1357	NNW – N	1-3	Y	bin juice, sour	0-3	Yes	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate.
3	1359 – 1404	SSW-SE-W	1-3	Y	bin juice, sour	1-3	Yes	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate.
4	1406 - 1411	NNE-ENE	1-5	N	no detection	0	No	▪ None
5	1415 - 1420	NW-ENE	1-5	Y	bin juice, sour	0-3	Yes	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate.
6	1421 - 1426	WNW-NW	3-5	Y	bin juice, sour	0-2	No	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate.
7	1427 - 1432	N-W	3-5	Y	bin juice, sour	0-3	Yes	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate
8	1433 – 1438	E-SE	2-3	Y	bin juice, sour	0-2	Yes	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate
9	1440 – 1445	N-ENE	3-5	N	no detection	0	No	▪ Localised odour from the activities at the BTT Facility, likely source indeterminate
10	1446 – 1451	E	3-5	Y	chlorine, musty	0-2	Yes	▪ Likely source was the nearby IXOM facility
11	1452 – 1457	E	3-5	Y	chlorine, musty	0-2	No	▪ Likely source was the nearby IXOM facility
12	1500 – 1505	E	3-5	N	no detection	0	No	▪ None

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 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 (and recently updated) 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 (see **Figure 4**) during the FAOA survey. The odour character was 'bin juice, sour' and the likely source indeterminate;

- A 'chlorine, musty' odour was intermittently detectable during the FAOA survey at measurement location points 10 and 11 (see **Figure 4**). The likely source was the nearby IXOM facility based on the prevailing wind conditions at the time of the FAOA survey;

- 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. This is consistent with the near absence of odour complaints since the previous May 2019 Report (see point below);

- There were two odour complaints recorded over the period of April 2019 and October 2019. One of the two odour complaints (10 September 2019) was related to an upset condition at the BTT Facility where there was a machinery breakdown that affected the standard workflow on that day. The circumstance pertaining to the 29 April 2019 complaint is unclear. No further odour complaints were logged between April 2019 and October 2019;

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

- The service logs indicate that all required maintenance works on the building ventilation air extraction system at the BTT Facility since the previous May 2019 Report have been adequately undertaken, and the system is operating in a satisfactory condition.

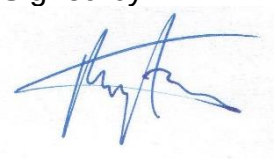
6. Concluding Remark

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.

The next odour audit is due in **April 2020**.

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: 3 October 2019

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APPENDIX A -

ODOUR LABORATORY RESULTS REPORT: 3 OCTOBER 2019

THE ODOUR UNIT PTY LTD

THE ODOUR UNIT

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ABN: 53 091 163 061

NATA
Accreditation Number: 14974

Odour Concentration Measurement Report

The measurement was commissioned by:

Organisation	Veolia Environmental Services	Telephone	+61 2 9841 2924
Contact	S. Maddison	Facsimile	--
Sampling Site	Banksmeadow Transfer Facility	Email	sara.maddison@veolia.com
Sampling Method	Drum & pump, AS4323.3	Sampling Team	TOU

Order details:

Order requested by	S. Maddison	Order accepted by	M. Assal
Date of order	13.09.2019	TOU Project #	N1906L
Order number	7100180366	Project Manager	M. Assal
Signed by	S. Maddison	Testing operator	J. 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 V04.
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 V04: $r = 0.154$ (February 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 V04: $A = 0.189$ (February 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: 4 October 2019

Panel Roster Number: SYD20191003_079

A. Schulz
NSW Laboratory Coordinator

J. Schulz
Authorised Signatory

Odour Sample Measurement Results
Panel Roster Number: SYD20191003_079

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)	SC19533	2.10.2019 1405 hrs	3.10.2019 1030 hrs	5	10	--	--	157	157	--
Stack Outlet (2 of 2)	SC19534	2.10.2019 1500 hrs	3.10.2019 1105 hrs	5	10	--	--	91	91	--

Samples Received in Laboratory – From TOU Date: 02.10.2019 Time: 1600 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.

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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	SYD20191003_079	51,400	$20 \leq \chi \leq 80$	724	71	Yes

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

SC19533 sweet, musty
SC19534 sweet, 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

Appendix D - Complaints Register

Date	Time	Method	Person Details	Nature of the Odour	Action taken by Veolia	Follow-up contact	Further Action taken by Veolia *(if not, then explanation why added to commentary)*
29/4/2019	11:30	Phone	Josh - Orica (IXOM) control room Steve.barclay@orica.com	Odour Complaint	The odour control system fan had been running at full speed (55Hz). The waste shed had approximately 200 tonnes of waste on the floor and approximately 35 waste filled containers at the site. Wind speed at time of complaint: 20 km/hr Wind direction at time of complaint:**South-South-West**	Complainant was requested to contact the site if the odour is detected again. No further contact was made. Fan extraction room scheduled for clean out.	The complaint was added to the Odour Feedback Register to assist in fine-tuning the plant and optimising parameters.
10/09/19	08:00	Phone	IXOM Control Room Operator Steve.barclay@orica.com	Odour complaint	Shed was full of waste as there was a forklift down, they had to wait until it was repaired. Wind speed at time of complaint: **33km/h** Wind direction at time of complaint: **South-South-West**	Complainant was requested to contact the site if the odour is detected again. No further contact was made.	No further issues at this point in time. Veolia BTT will continue to monitor and communicate with stakeholders.
01/01/20	07:00	Bayside council and EPA	Nicholas Kumar (EPA) Nicholas.Kumar@epa.nsw.gov.au	Odour complaint	Train was cancelled, leaving 35 full containers on the standing area. Odour was also detected on the 31/12/19 in the afternoon and in the early morning of the 1/1/20. Both extreme heat (40.3°C) and wind (41- 69km/h) were the main factors Wind direction at time of complaint: **South-West**	Complaint was made anonymously to Bayside Council and then reported to the EPA. EPA contacted Veolia BTT to determine cause of odour and closed the case once all information was given.	No further issues at this point in time. Veolia BTT will continue to monitor and communicate with stakeholders.