Bibra Lake Resource Recovery Park
Annual Environment Report
Jan 2025 - Dec 2025

Contents

1. Introduction

Bibra Lake Resource Recovery Park (BLRRP) is a waste facility operated by Veolia Recycling & Recovery (Perth) Pty Ltd (Veolia) under DWER Environmental Licence L8798/2013/1. This Annual Environmental Report (AER) has been prepared by Veolia in accordance with Condition 35 of Licence L8798/2013/1. This condition was reinstated as part of the licence amendment dated 17 March 2025, following a Ministerial determination on a third-party appeal (Appeal 029 of 2023) concerning odour emissions from the facility.

This report provides information on the environmental performance of the BLRRP for the reporting period covering 1 January to 31 December 2025, including details of operations, waste inputs and outputs, odour management actions, monitoring results, compliance status, and complaints received.

1.1. Premise Location and Details

BLRRP is located at 65 Howson Way, Bibra Lake, approximately 15km south of the Perth CBD. The facility is situated on Lot 27 on Plan 3699 (Certificate of Title Volume 1168 Folio 380) within an established industrial area under the jurisdiction of the City of Cockburn. The premises is surrounded by industrial and commercial businesses, with the nearest residential receptors located approximately 1 km to the north-west and south-east.

The facility operates under Licence L8798/2013/1 as a prescribed premises under Schedule 1 of the *Environmental Protection Regulations 1987*, for the following approved categories:

- Category 57: Used tyre storage (200 tyres per annual period)
- Category 62: Solid waste depot (320,000 tonnes per annual period)

1.2. Facility Overview and Operational History

The Bibra Lake Resource Recovery Park was previously operated by SUEZ Recycling & Recovery (Perth) Pty Ltd until 2022, when SUEZ was acquired by Veolia.

Over the past five years, the facility has undergone various regulatory and operational changes as summarised in Table 3.1 below:

Table 1 - Recent Licence History

Date	Description/Summary of Changes
29/01/2021	Amendment to increase permitted waste throughput from 120,000 to 270,000 tonnes per annum, and update conditions to reflect the existing material recovery activities occurring onsite. Enhanced regulatory conditions introduced for dust management, odour management, drainage infrastructure management, and firefighting requirements.
24/11/2021	Works Approval W6539/2021/1 granted for construction of Food Organics and Garden Organics **(FOGO)** building extension to facilitate receival and transfer of up to 50,000 tonnes per annum of FOGO and Garden Organics material.
26/07/2022	Works Approval W6539/2021/1 amended to give effect to Minister for Environment's determination on Appeal 55 of 2021, incorporating additional conditions relating to door management, recording of FOGO waste volumes, and odour monitoring requirements.

Date	Description/Summary of Changes
21/07/2023	Amendment to increase permitted waste throughput to 320,000 tonnes per annum and permit acceptance of FOGO material.
17/03/2025	Amendment to give effect to the Minister for Environment's determination on Appeal 029 of 2023. The appeal related to odour emissions from FOGO waste and municipal solid waste (MSW). Additional conditions incorporated include: development and implementation of a comprehensive Odour Management Plan; requirement for an operational odour analysis; additional controls for rapid closing doors; enhanced odour monitoring including short-term monitoring; reinstatement of annual environmental reporting; and quarterly updates to DWER on odour emission management for two years.

1.3. Information Required

In accordance with Table 6 from Licence *L8798/2013/1,* the table below lists information required and references to relevant sections and Appendices contained within this report.

Table 2 – Information required in the Annual Environmental Report

Condition or Table	Information Required	Evidence
N/A	Details of operations at the premises for the reporting period, including any operational trends or changes.	Section 2
N/A	Details of odour management actions taken during the reporting period.	Section 3
22	Outcomes obtained through the findings of the Odour Management Plan (OMP) specified in condition 22, actions taken in accordance with the OMP and details of any odour mitigation measures undertaken during the reporting period.	Section 3 Appendix 1
25	Odour monitoring conducted in accordance with the Odour monitoring plan specified in condition 24(i) for the reporting period, including any trends identified.	Section 3 Appendix 1
27	Waste inputs and waste outputs as specified by the parameters in Table 4.	Section 4 Appendix 2
31	Annual Audit Compliance Report (AACR)	Appendix 3
32	A summary of complaints received, including the information required to be recorded by condition 32.	Section 5 Appendix 4

2. Operational Summary

BLRRP operates as an integrated waste management facility with following primary operational areas:

- Materials Recovery Facility (MRF)
- Commercial & Industrial (C&I) MRF
- Waste Transfer Station (WTS)
- FOGO transfer facility

All incoming and outgoing waste is weighed via an on-site weighbridge, with movements tracked through Veolia's internal weighbridge software system enabling recording and reporting of waste quantities by category. All waste processing activities are conducted within purpose-built enclosed buildings with sealed concrete hardstand with all trafficable outdoor roads and surfaces across the site sealed with either bitumen or concrete.

This section provides details of operations at the premises for each facility during the reporting period, including any operational trends or changes.

2.1. Materials Recovery Facility (MRF)

During the 2025 reporting period, the Materials Recovery Facility continued to receive, sort and process recyclable materials from kerbside collection services and commercial sources. The majority of material received through the MRF was commingled recyclables from both council kerbside collection services and commercial sources along with source-separated cardboard also representing a significant incoming waste stream.

The MRF recovers recyclables through a series of automated sorting stages including size screening, magnetic separation, optical sensors, and air jets to separate different material types. Once sorted, materials are baled and/or prepared for transfer to respective end markets for reprocessing. During the reporting period, the facility recovered and separated significant quantities of recyclable materials including cardboard, mixed paper, mixed glass, various plastics (HDPE, PET and mixed plastics), and metals (aluminium, steel cans, mixed ferrous metals, brass, copper and stainless steel).

Contamination in incoming recyclable loads is typically 25%, representing an ongoing challenge for the resource recovery industry. Residual contamination is transferred to the Waste Transfer Station and consolidated for disposal to landfill. In September 2025, Veolia introduced an AI-powered robotic sorting arm in the MRF. The system can sort seven different types of plastic with 95% accuracy and process materials 2-3 times faster than traditional methods. The addition of the robotic sorter has improved sorting line efficiency and the site's capacity to recover valuable materials and manage contamination.

2.2. Bulk Waste Sorting Facility (C&I MRF)

The Bulk Waste Sorting Facility is located within the Waste Transfer Shed to the West of the premises. This facility continued to receive and process bulk waste from domestic, commercial and industrial sources during the 2025 reporting period. The facility received approximately 40,000 tonnes of bulk waste materials, which largely consisted of hard waste from council collections (approximately 35,000 tonnes) and commercial and industrial hardwaste (approximately 5,500 tonnes), along with smaller quantities of timber, aluminium, glass, tyres and mattresses.

Incoming waste is currently subject to manual sorting and segregation. Recoverable materials are consolidated for transfer to appropriate reprocessing facilities, while non-recyclable materials are directed to the adjacent Waste Transfer Station for disposal to landfill.

2.3. Waste Transfer Station

The Waste Transfer Station (WTS) operates within the enclosed western shed shared with the Bulk Waste Sorting Facility. During the 2025 reporting period the WTS received mixed waste from domestic, commercial and industrial collections for transfer offsite to a licenced disposal facility. Waste volumes decreased by 8% compared to 2024, a reduction achieved through greater diversion to the new waste-to-energy facility.

During 2025, the facility commenced implementation of odour management actions within the building as per recommendations from the Odour Management Plan, as detailed in Section 3 of this report. These operational changes contributed to reduction in odour complaints at the facility toward the end of the reporting period.

2.4. FOGO Transfer Facility

The FOGO transfer facility is located within the purpose-built extension to the western building. During the 2025 reporting period, the facility received approximately 40,000 tonnes of organic waste materials, including food organics and garden organics (FOGO) waste and garden organics (GO) from council collections and commercial sources.

As per current licence conditions, trucks delivering FOGO/GO waste enter the FOGO shed through a rapid-closing entry door and unload waste onto the tipping floor. To manage odour emissions, accumulated FOGO/GO waste is loaded into bulk transfer trucks within 24 hours of receival (48 hours if a public holiday). Bulk transfer trailers are covered with retractable tarps before exiting the building via rapid-closing doors. The waste is then transported to the North Bannister Resource Recovery Park (NBRRP) organics processing facility for composting.

3. Odour Management

3.1. Odour Management Plan

As required by Condition 22 of Licence L8798/2013/1, Veolia engaged OPAM Consulting, an independent and appropriately qualified odour consultant, to develop an Odour Management Plan (OMP) for BLRRP. The OMP was developed in alignment with the DWER Guideline: Odour Emissions and was formally submitted to the Department via the DWER Environment Online portal on 30 October 2025. The OMP outlines a hierarchy of controls to eliminate, prevent, or minimise potential odour emissions from the premises. These mitigation measures include engineered controls, non-engineered controls (operational controls) and administrative measures.

3.1.1. Engineered Controls

The Operational Odour Analysis in section 4 of the OMP outlines key engineering controls in place at the facility. Both the WTS building and FOGO shed operate as enclosed systems, serving as the primary means of odour control. Fast-acting doors (Doors 2-7) minimise fugitive emissions by opening and closing in approximately five seconds and the bulk transfer vehicle entry door (Door 1) has a longer 2.5-minute open period due to the door size and for safety reasons. An interlock system is operational in the FOGO shed for Doors 2, 3, 4, and 5 to prevent simultaneous openings and flushing events.

Fumigation testing completed to inform the OMP assessed the effectiveness of roof-mounted whirlybirds installed in the WTS. The testing confirmed plumes are directed upward into the atmosphere and do not contribute to short-distance odour impacts. At the time of fumigation testing, whirlybirds were more effective in the FOGO shed due to their newer design and higher density compared to the older units in the WTS building.

During fumigation testing, roof and wall seals were observed to be more effective in the newer FOGO shed compared to the WTS building in preventing fugitive emissions. The testing identified some gaps around Door 1 and an older inactive door on the southern façade with recommendations to address this included in the recommendations outlined in section 3.2.

3.1.2. Operational Controls

Operational controls noted in the OMP to reduce odour emissions from the FOGO and WTS buildings include:

- Waste segregation: General Waste in WTS building only; Food Organics Garden Organics and Green Organics in FOGO shed only
- Housekeeping and cleaning: regular floor cleaning, spillage cleanup, drainage maintenance, and cleaning of walkways, weighbridge, and roadways
- Regular plant equipment maintenance to ensure optimal operation
- Regular toolbox meetings with documented odour-related actions
- Abnormally odorous loads refused at weighbridge or promptly removed from site

3.1.3. Administrative Controls

The OMP establishes administrative controls to support odour management which is to be reviewed every two years and updated as required. The plan outlines specific training to be provided to relevant staff on Environmental Licence conditions relating to Odour Management, including prevention of accidental emissions and complaint handling procedures. A complaint form specifically for odour complaints has been implemented, with procedures for investigation, resolution and reporting to complainants and DWER. All employees are instructed to immediately report malfunctioning engineering odour controls or abnormally odorous waste loads to the Site Manager.

3.2. Odour Management Actions

Section 4 of the OMP prepared by OPAM Consulting includes an Operational Odour Analysis (OOA) summarising key odour sources, existing controls, and corrective and contingency measures for Veolia's operations within the WTS and FOGO shed. The OOA details operations monitoring, triggers for corrective actions, and specific action details, including an evaluation of corrective actions and contingency measures to mitigate odour emissions at the BLRRP facility.

3.2.1. Odour Mitigation Action Plan (OMP)

Following the review of processes, controls, corrective and contingency actions, and findings from odour field assessments and fumigation tests conducted between May and August 2025, the OMP established a mitigation action plan with targeted completion dates.

Table 3 - Odour Mitigation Action Plan (OMP)

Action	Targeted Period
Installation of the interlock system for the fast-acting doors and Door 1 of the WTS building	30 April 2026
Mitigation of odour emissions through the gap on the top of Door 1	31 December 2025
Repair southern façade gaps and cracks and clad over former large entry door	31 December 2025
Upgrade the WTS building whirlybirds	30 March 2026
Installation of neutraliser sprays over Door 1	30 March 2026

3.2.2. Implementation Status

While the OMP was under departmental review for approval at the end of the reporting period, Veolia proactively implemented several measures to reduce potential odour impacts during the 2025 reporting period including additional measures beyond what was recommended in the OMP. The status of odour management actions is summarised in Table 4.

Table 4 - Odour Mitigation Measures Completed in 2025

Action	Status	Completed Date / Status
Diversion of waste stream from Kwinana Desalination Plant to alternate facility	Completed	April 2025
Diversion of City of Fremantle MSW waste directly to Waste to Energy plant	Completed	August 2025
Trial of deodoriser/mister systems	Completed	September 2025
Installation of rubber barrier to mitigate odour emissions through gap above Door 1	Completed	December 2025
Maintenance of existing whirlybirds and installation of additional 10 whirlybirds in MSW shed	Completed	December 2025
Repair southern façade gaps and cracks and clad over former large entry door	TBC	In progress - scheduled for March 2026
Installation of two additional 90m misting lines over Door 1 and C&I stockpile area	TBC	In progress - scheduled for March 2026
Installation of interlock system for fast-acting doors and Door 1 of WTS building	TBC	Investigation underway

Site staff have reported noticeable improvements in odour levels and air extraction within the MSW shed following these interventions, particularly since the installation of additional whirlybirds. The effectiveness of these measures will be assessed through the proposed quarterly monitoring program outlined in section 3.3.

3.3. Odour Monitoring

This section covers odour monitoring completed in 2025 through Odour Field Assessments (OFAs) and outlines the proposed monitoring program identified in the Odour Management Plan. The proposed quarterly OFA program will commence once the Department has confirmed that OMP requirements have been met.

3.3.1. Summary of Odour Monitoring completed (2025)

Licence condition 20 required Veolia to complete a minimum of three Odour Field Assessments (OFAs) over a six-month period, with the final OFA to be undertaken prior to 31 September 2025. Veolia engaged odour consultant OPAM Consulting to undertake the required OFAs. A total of four OFAs were successfully completed during the previous reporting periods, with a copy of the OFA report submitted to the Department in October 2025 as an appendix in the Odour Management Plan.

The 2025 OFA campaign identified key findings regarding odour emissions and pathways from the facility.

FOGO/GW odour was not detected offsite beyond 150m, with limited fugitive emissions expected from the FOGO shed due to the operational interlock system and fumigation tests confirming no leaks along wall and roof sealings. MSW odour impact remained intermittent and was mostly at a subtle intensity level, representing an improvement compared to 2021 which had numerous occurrences at obvious levels. Odour impacts beyond 150m were generally of subtle to occasional obvious intensity, occurred infrequently, and were of short duration (less than 20 seconds). Impacts beyond 150m are considered unlikely to result in odour annoyance or nuisance, consistent with the absence of complaints from these areas.

Most odour impacts within 150m, primarily at the Perdon, WA Premix, and WA Limestone yards, were associated with fugitive emissions from the WTS building. The critical pathways identified include opening of Door 1 (a significant release pathway), opening of Doors 6 or 7 (which pressurises the building), the combination of open doors causing a tunnel/flushing effect, and fugitive emissions through the gap at the top of Door 1 and gaps along the southern façade. Fumigation tests confirmed that plumes emitted from the whirlybirds are pushed vertically upwards into the atmosphere and do not contribute to odour plumes affecting nearby sensitive receptors.

3.3.2. Odour Monitoring Plan (OMoP)

In accordance with Condition 25 of Licence L8798/2013/1, section 6 of the OMP includes an Odour Monitoring Plan (OMoP) which fulfils the requirements set out in that condition.

The Odour Monitoring Plan includes:

- A weekly site inspection checklist with referral to the OOA to implement appropriate corrective actions/ contingency measures if required.
- Odour Complaint Verification (OCV) patrols (where an odour complaint is received within 15 minutes of the reported odour event)
- Quarterly Odour Field Assessments (OFA) campaigns conducted by qualified odour specialist with reports that include assessment of the effectiveness of current/future odour controls and management actions

4. Waste Input and Output Data

Waste input and output data is recorded at BLRRP via an on-site weighbridge and linked Mandalay software system for every load arriving at or leaving the premises. The Mandalay system provides comprehensive tracking and reporting of waste movements, with totals calculated for each waste category.

A summary of the input and output quantities for each licensed waste category during the reporting period is included in Appendix 2. The annual totals for all waste categories were below their respective licensed limits for the current reporting period, which include 200 tyres for Category 57 and 320,000 tonnes for solid waste depot.

The variance between incoming waste (260,281.8 tonnes) and outgoing waste (257,580.5 tonnes) results in approximately 2,701.3 tonnes attributed to moisture loss, particularly from organic materials during temporary storage, and stockpiles on hand at the end of the reporting period.

5. Complaints Register

BLRRP uses an internal incident management system (IMS) for managing complaints. All complaints that are received to the premises (whether received directly from a complainant or forwarded to them by the Department or another party) are recorded, and resultant actions tracked through this system. There were 7 complaints recorded in the IMS during the reporting period from the neighboring premises to the West of the premises. A summary of the information provided is included in Appendix 3.

Appendix 1 - Odour Management Plan

OPAM Consulting
Odour Process
Audit Management

Veolia Recycling & Recovery (Perth) Pty Ltd
Bibra Lake Recycling and Recovery Park

Odour Management Plan
Licence L8798/2013/1 - Conditions 24 & 25

Prepared by: OPAM Consulting
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[redacted]

DISCLAIMER

This document is the ODOUR MANAGEMENT PLAN for the VEOLIA AUSTRALIA AND NEW ZEALAND Resource and Recovery Park (BLRRP) located at 65 Howson Way, Bibra Lake, Western Australia. It may only be used for the purpose for which it was commissioned. This document should not be used or copied without written authorisation from Veolia BLRRP.

This document is **Commercial in Confidence.**

OMP REVISION HISTORY

Report Title:	Veolia Recycling & Recovery (Perth) Pty Ltd Bibra Lake Recycling and Recovery Park Odour Management Plan		
OMP Version	**Date**	**Description**	**Endorsed by:**
Version 1.0	31/10/25	Original OMP version	[redacted]

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1 Introduction

This Odour Management Plan (**OMP**) has been prepared for the Veolia Recycling & Recovery (Perth) Pty Ltd (**Veolia**) Bibra Lake Resource and Recovery Park (**BLRRP**) located at 65 Howson Way, Bibra Lake.

1.1 Relevant Background and Context

The BLRRP operates under Licence L8798/2013/1 issued by the Department of Water and Environmental Regulation of Western Australia (**DWER**).

The BLRRP consists of a Waste Transfer Station and Material Recovery Facility (MRF) accepting mixed waste (**MW**), Commercial & Industrial (**C&I**) waste, Food Organics Garden Organics (**FOGO**), Green Organics (**GO**) and recyclables from domestic, commercial, and industrial collections.

As depicted in **Figure 1**, the eastern shed houses the MRF for receival and processing recyclable wastes. Mixed waste and C&I waste are received into the MSW shed (**WTS building**), and FOGO/GO is received into the purpose built shed extension (**FOGO shed**) that became operational in December 2022.

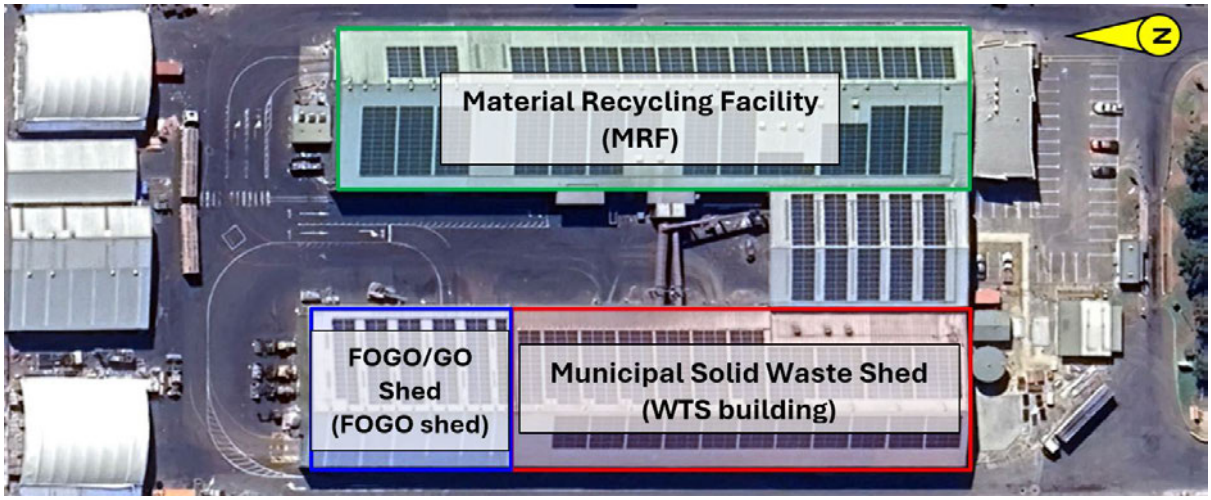

Figure 1: MRF, MSW shed and FOGO shed

In 2021, Veolia applied for a works approval to build a new shed (**FOGO shed**) at the northern end of the waste transfer station (**WTS** or **TS**) building to receive Food Organics Garden Organics (**FOGO**) and Green Organics (**GO**). The FOGO/GO is then loaded in bulk transfer trailers to transfer the material to the Veolia site at North Bannister (Veolia composting and landfill site).

The works approval W6539/2021/1 was granted in November 2021. An appeal was lodged against some conditions of the works approval in relation to odour emissions and litter.

Veolia committed to install new automatic fast-acting doors for kerbside collection trucks at the WTS building. The very large door (Door 1) had to be replaced also by an automatic door.

The works approval was amended in July 2022, and Veolia started building the new FOGO shed which was finalised by end of 2022.

A licence amendment was issued on 21 July 2023.

On 16 October 2024, the Minister for Environment made a determination on a third party appeal (Appeal number 029 of 2023) against the licence amendment. The appellant's key concern related to odour emissions from the FOGO shed and the WTS building.

An amended licence (L8798/2013/1) was then granted on 17 March 2025 with additional conditions in relation to odour emissions, control and management. The requirement for the OMP originated from conditions 22 to 25 of the licence.

1.2 Purpose of the OMP

The purpose of the Odour Management Plan (OMP) is to eliminate, prevent, or minimise the potential for odour generation and release at the Bibra Lake Resource Recovery Park (BLRRP) through the implementation of a hierarchy of controls. These controls encompass, but are not limited to, engineered solutions, administrative measures, and operational management practices.

The OMP aims to achieve a practical balance between maintaining efficient and compliant operational performance at the BLRRP and effectively controlling odour generation and emission to the surrounding environment.

1.3 Objectives and Scope of the OMP

The OMP documents the operational management system for the BLRRP to:

- Minimise the release of odours generated at the BLRRP to the environment under any meteorological conditions;
- Meet the DWER Licence L8798/2013/1 requirements of managing odour impact beyond the BLRRP boundary;
- Implement best management practices; and
- Minimise impacts on the neighbouring activities during operations.

The OMP includes:

- Information about the monitoring and control protocols required to assist in the management of odour;
- An outline of the reporting requirements with respect to odour; and,
- An odour complaints handling procedure.

1.4 OMP Control Protocol

This is Version 1 of the OMP.

The OMP should be regarded as a 'live' manual that is changed as required, to reflect the current practices and odour controls prevalent at the BLRRP. All updates/modifications to the OMP should be recorded in the OMP Revision History table on the second page of this document and approved by Veolia.

1.5 Standard and Guidance

This OMP is a live working document intended to serve as a day-to-day reference for operational staff. Veolia will implement the OMP to ensure that all reasonable and practicable measures are taken to prevent or minimise odour emissions. In the event of an adverse odour impact, prompt action will be undertaken to identify the source and implement appropriate corrective measures.

The OMP sets out a schedule of actions designed to minimise odour impacts and defines the procedures for the effective management and monitoring of odour at the site.

The OMP has been developed in accordance with the *DWER Guideline: Odour Emissions* and adopts a Source–Pathway–Receptor framework. Emphasis is placed on implementing effective and robust odour abatement controls at the earliest possible stage — at the source. The guidance recognises that the assessment and control of odour can be challenging due to its dispersive behaviour and episodic nature.

This document also includes an Operational Odour Analysis (OOA), summarising the key odour sources, existing physical and management controls, and the corrective and contingency measures that characterise Veolia's operations within the WTS and the FOGO shed.

Monitoring and reporting systems associated with odour management are outlined in the following sections.

2 Description of the Waste Operations at the BLRRP

2.1 General overview

The BLRRP is licensed to receive a combined total of approximately 320,000 tonnes of waste per annum for acceptance, sorting, and storage, which includes a sub-limit of 50,000 tonnes per year of FOGO and GO.

Over the two last reporting periods, the total waste accepted at BLRRP was approximately 236,000 t in 2024 and 252,000 t in 2023 with half of the waste accepted made up of recyclables and harwaste.

The eastern building of the facility houses the Material Recovery Facility (MRF). The MRF is not included within the scope of this OMP, as it is not considered to be an odorous operation.

The western building comprises two operational sections:

- The southern section, which accommodates the WTS building, receiving and processing bulk Commercial and Industrial (**C&I**) waste as well as General Waste (**GW**) from residential collection; and
- The northern section, which contains the newly constructed FOGO shed, designated for the receipt and processing of FOGO and GO waste.

The entire building is equipped with automatic access doors, most of which are fast acting, opening and closing within approximately five seconds to allow vehicle movement. Door 1, due to its larger size, is not fast-acting and consists of two panels (north and south).

A detailed layout showing the door numbering and configuration is provided in **Figure 2**.

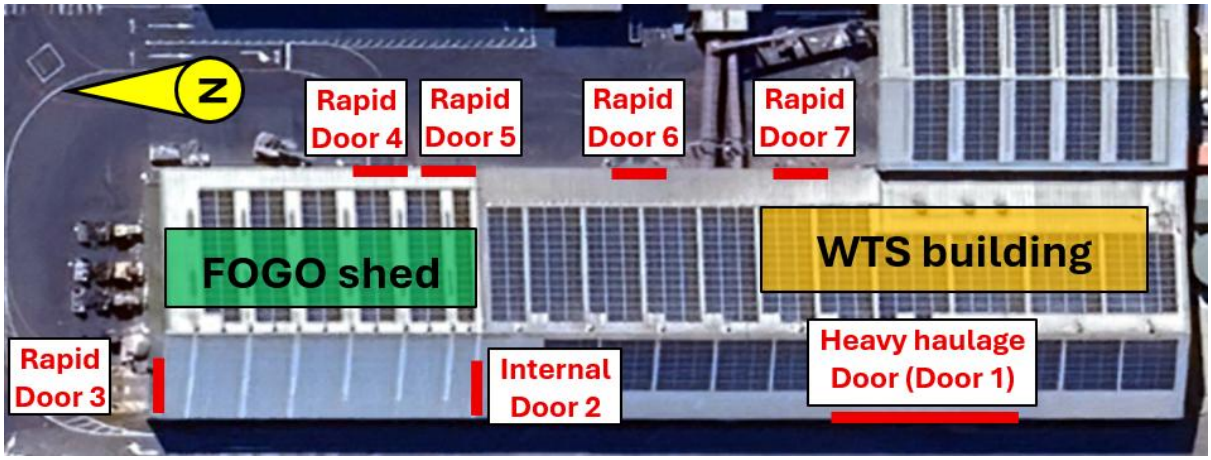

Figure 2: Door numbering for the WTS building and the FOGO shed

2.2 WTS building operations

C&I waste is stored in dedicated bunkers located in the southern section of the WTS building.

General waste is received from kerbside collection trucks, which enter through Door 6 and exit through Door 7, both situated on the eastern façade of the building (refer to **Figure 1**). These trucks typically unload material in the northern section of the WTS building.

Bulk transfer trailers access the facility via the automatic Door 1 on the western side. Door 1 is programmed to close automatically approximately 2.5 minutes after no truck movement is detected.

Once inside, the bulk transfer trailer parks along the western wall between Doors 1 and 2 within the WTS building. The Front-End Loader (**FEL**) operator commences loading only after Door 1 is fully closed. When loading is complete, the trailer passes through Door 2 into the FOGO shed, closes the top of the trailer with the tarpaulin, and exits the site via Door 3 located at the northern end.

A characteristic sweet odour, typical of municipal solid waste (**MSW**) containing organic and putrescible material, can be recognised within the WTS building. Odour intensity is low when there are no operations but increases notably during FEL loading of bulk transfer trailers.

2.3 FOGO shed operations

The FOGO and GO waste is stored in 3 bunkers along the northern wall of the shed.

The shed is equipped with fast-acting access doors, including Doors 4 and 5 located on the eastern façade, and Door 3 located on the northern façade, which serve as truck entry and exit points. Door 2 provides internal connectivity between the FOGO shed and the WTS building (refer to **Figure 1**).

Kerbside collection trucks enter the FOGO shed via Doors 4 and exit via Door 5.

Upon arrival at the site, bulk transfer trailers enter through Door 1 and park along the western wall of the WTS building between Doors 1 and 2. Once Door 1 is fully closed, the trailer activates Door 2 to access the FOGO shed, where it parks along the western wall between Doors 2 and 3. After Door 2 is secured, the FEL operator commences loading operations. When loading is complete, the trailer is covered with a tarpaulin and exits the shed through Door 3.

3 Source – Pathway – Receptors characterisation

3.1 Odour sources

3.1.1 WTS building

Within the WTS building, the primary source of odour originates from the stored general waste (GW) pile and, by extension, the building itself, due to fugitive emissions to the surrounding environment.

Peak odour emissions typically occur during activities that disturb the waste pile, including:

- When the front-end loader (FEL) repositions or compacts waste to create additional floor space;
- During loading of bulk transfer trailers; and
- When collection trucks unload waste within the building.

A characteristic sweet odour, typical of municipal solid waste (**MSW**) containing organic and putrescible material, can be recognised within the WTS building.

Odour intensity is low when there are no operations but increases notably during loading operations of bulk transfer trailers.

3.1.2 FOGO shed

Within the FOGO shed, the primary source of odour originates from the stored GO and FOGO piles in the bunkers and, by extension, the building itself, due to fugitive emissions to the surrounding environment.

Peak odour emissions typically occur during activities that disturb the waste pile, including:

- When the front-end loader (FEL) repositions or compacts waste to create additional floor space;
- During loading of bulk transfer trailers; and
- When collection trucks unload waste within the building.

The fresh green-waste or “minty” odour is characteristic of the indoor environment within the FOGO shed. Intensity of this odour increases when a bulk trailer is loaded with a FEL.

3.2 Source related Pathway

The pathway that an odorous emission takes from a site may depend on the specific source configuration and/or location it arises from. The nature of the source related pathway could also influence the scale of the resulting impact on a sensitive receptor.

3.2.1 WTS building

The WTS building provides a fully enclosed environment for indoor waste handling operations. All access doors remain closed except when vehicles are entering or exiting.

The automatic doors are functioning as intended, with opening and closing times of less than five seconds, significantly reducing fugitive odour emissions through these pathways.

Door 1, due to its large size and the presence of two heavy sliding panels, operates more slowly. For safety reasons, this door remains open for approximately 2.5 minutes after no vehicle movement is detected. This extended open period represents a key pathway for fugitive odour emissions. Veolia investigates solutions to reduce the opening time of Door 1. Veolia can commit to reviewing this time to shorten where possible, however, the risk of damage or impact to Door 1 must be managed as a priority to ensure that Door 1 remains operational.

Four fumigation tests were conducted under varying wind conditions, including SE/S/SW, W/SW/S, E/NE, and E/NE/N/NW wind directions, ranging from calm conditions to average speeds of 2.5 m/s, with gusts reaching up to 5 m/s.

Under such conditions, it has been observed that:

- Doors 6 and 7 can serve as pathways for either air egress from the building or air ingress into it. The direction and magnitude of airflow are primarily influenced by wind speed, wind direction, and the downwash effects generated by the cavity formed above the building and its grounding on the leeward side.

  Although Doors 6 and 7 are partially shielded by the adjacent southern and eastern buildings, easterly (E), north-easterly (NE), and, to a lesser extent, south-easterly (SE) winds can drive external air into the WTS building. The fast-acting doors, however, minimise the duration of such occurrences and therefore limit the extent of overpressure within the building — a factor that could otherwise contribute to fugitive odour emissions through existing gaps and cracks.

- Under southerly (S), south-easterly (SE), easterly (E), and north-easterly (NE) winds, and when no doors are open, the internal smoke plume moves slowly but noticeably within the WTS building.

  Under SE wind conditions, the plume drifts toward the north-western section of the building.

  Under E and NE winds, the plume drifts toward the western and south-western sections of the building, which can result in fugitive emissions escaping through the gap at the top of Door 1. Although the air velocity and emission volume are low, they may still be sufficient to cause odour impacts at short distances.

- Under north-easterly (NE), easterly (E), and south-easterly (SE) wind conditions, when either Door 6 or Door 7 is open while Door 1 remains closed, air can be driven into the building, leading to increased internal pressurisation. This pressurisation may in turn elevate the volume of odorous air escaping through the gap at the top of Door 1. This was observed with a lag time from the opening of Door 6 or Door 7. However, as indicated above, the fast-acting Doors 6 and 7 minimise the duration of such occurrences and therefore limit the extent of overpressure within the building.

- Under similar S/SE, E and NE wind conditions, if Door 1 is opened and:

  - Doors 6 or 7 are closed, fresh air can enter the WTS building through the lower section of Door 1, while indoor air exits through the upper section due to the downwash effect and the cascading cavity formed at the lee of the building.

- Either Door 6 or Door 7 is open, a tunnel or “flushing” effect may occur, potentially driving large volumes of odorous air out of the WTS building through a significant portion of Door 1.

  However, due to the distance between the doors and the rapid operation of the doors, this phenomenon is unlikely to occur or would be limited in magnitude.

  In addition, Veolia is investigating the installation of an interlock system linking Doors 1, 2, 6 and 7. An interlock system is already operational in the FOGO shed for Doors 2, 3, 4 and 5.

  Veolia has encountered several technical challenges integrating the interlock system for Doors 1, 2, 6 and 7 into the Supervisory control and data acquisition (**SCADA**) system. Trials are currently in progress, and Veolia has designated this action as a priority.

While the WTS building was filled with smoke:

- The seals between the eastern and western walls and the roof were closely inspected, and no leaks were detected.
- Likewise, no smoke was observed escaping from the roof of the WTS building, confirming the absence of gaps or cracks through which fugitive emissions could occur.
- Under N/NW wind conditions, significant smoke plumes were observed along the southern façade of the WTS building:
  - At the junction between the wall and the roof, particularly on the western side of the building above the former large entry Door.
  - At the former large entry door itself, where large gaps were visible along the top of the door.

The WTS building is fitted with ten roof-mounted whirlybirds along the roof apex to provide natural ventilation and assist in dispersing fugitive odorous emissions.

A dedicated fumigation test was conducted to assess plumes’ behaviour through the whirlybirds.

Under NE and subsequently NW wind conditions, it was observed that the plumes emitted from several whirlybirds were carried upward into the atmosphere and not captured within the cavity formed over the roof.

This confirms that emissions from the whirlybirds do not contribute to odour impacts at short distances from the WTS building.

The plumes emitted from each whirlybird are subject to significant dilution due to the limited airflow they release. Consequently, these emissions are not expected to travel or be recognised several hundred metres from the WTS building.

3.2.2 FOGO shed

The FOGO shed provides a fully enclosed environment for indoor waste handling operations. All access doors remain closed except when vehicles are entering or exiting.

The automatic doors are functioning as intended, with opening and closing times of less than five seconds, significantly reducing fugitive odour emissions through these pathways.

The shed is naturally ventilated and fitted with 12 roof-mounted whirlybirds positioned along the apex to facilitate air exchange.

Three fumigation tests were also conducted under the same wind conditions as the WTS building.

Under such conditions, it has been observed that:

- Under these conditions, all three Doors (3, 4 and 5) can serve as pathways for either air egress from the building or air ingress into it. The direction and magnitude of airflow are primarily influenced by wind speed, wind direction, and the downwash effects generated by the cavity formed above the building and its grounding on the leeward side.
- Although Doors 4 and 5 are partially shielded by the adjacent eastern building, north-easterly (NE), easterly (E), and, to a lesser extent, south-easterly (SE) winds can drive external air into the FOGO shed. The fast-acting doors, however, minimise the duration of such occurrences and therefore limit the extent of overpressure within the shed — a factor that could otherwise contribute to fugitive odour emissions.
- At Door 3, small volumes of indoor air may escape through sections of the door due to the downwash effect under SW, S, and SE winds, or as a result of the Venturi effect when winds blow parallel to the door plane (W and E winds). However, the fast-acting doors significantly reduce the duration of these occurrences.
- A tunnel or “flushing” event within the FOGO shed is not possible, as the interlock system prevents more than one door from being opened at the same time.

While the FOGO shed was filled with smoke:

- The sealing between the eastern, northern, and western walls and the roof was thoroughly inspected, and no leaks were detected.
- No smoke was observed escaping from the roof of the FOGO shed, confirming the absence of gaps or cracks through which fugitive emissions could occur.
- No fumigation was carried out at the whirlybirds of the FOGO shed, as it was assumed that these newer units function similarly to those on the WTS building,

with emitted plumes directed upward into the atmosphere and not drawn into the roof cavity by downwash effects.

- The smoke within the shed moved very little, consistent with the high level of sealing and the resulting low air exchange rate within the building.
- This also explains the absence of detectable odours from this shed in the surrounding environment beyond approximately 100 metres (**OPAM, 2025**).
- Any odours detected on the lot directly west of the FOGO shed likely originate from minor fugitive emissions or brief door openings.

3.2.3 Location review

A. Siting

Figure 2 presents an aerial map outlining other operations with possible odour emissions in the vicinity of the BLRRP.

The BLRRP facility is located at 65 Howson Way, Bibra Lake, approximately 18 km south of the Perth Central Business District, within the City of Cockburn local government area.

It is situated in the Bibra Lake industrial precinct, an area predominantly occupied by manufacturing, construction, transport, and warehousing businesses.

There are no other facilities in the vicinity that operate similar processes or produce odours of a similar character to those generated at the BLRRP.

The surrounding topography is gently undulating and is not expected to influence the dispersion of low-level plumes emitted from the facility.

However, a slight depression at the corner of Wellard Street and Quarimor Road, to the northwest of the WTS building, may contribute to the temporary accumulation of cooler, odorous air during night-time periods under stable atmospheric conditions and low wind speeds.

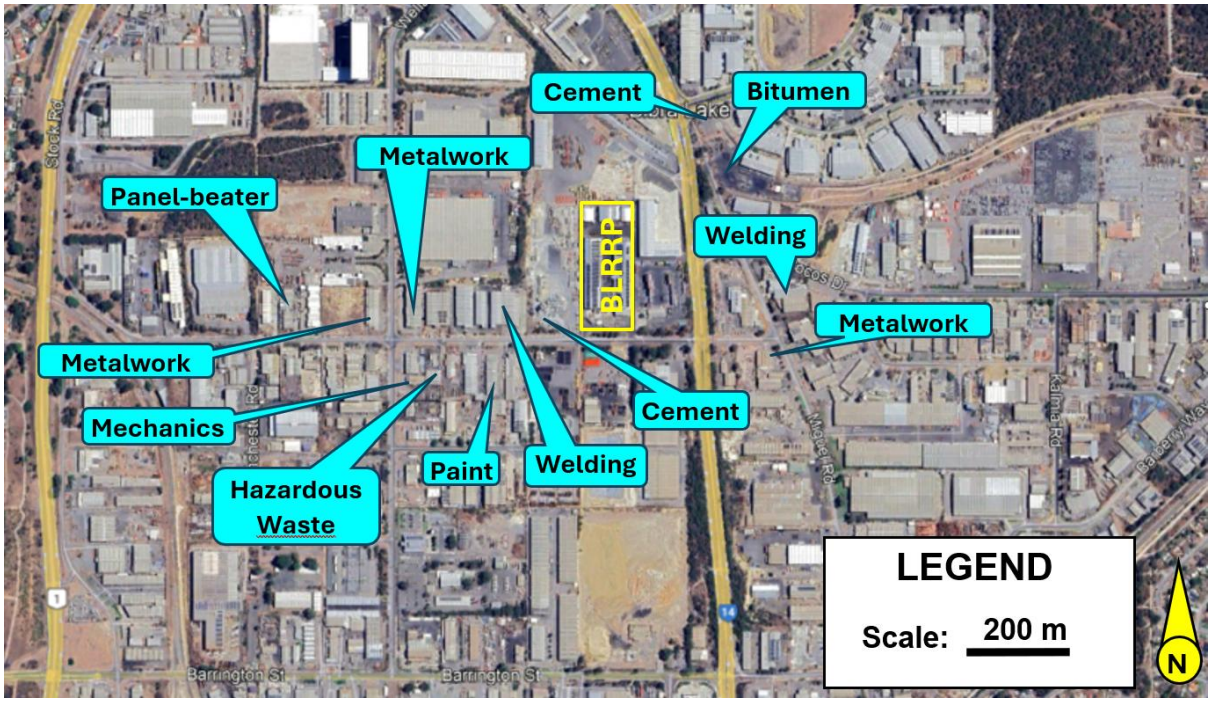

Figure 3: Major operations with odour emissions in the vicinity of the BLRRP

B. Land-uses

Under both current and future configurations, emissions from the facility are limited to low-level fugitive sources near ground level. The surrounding area, characterised by numerous large sheds and warehouses, promotes significant dispersion and dilution of any emitted plumes. As a result, odorous emissions from the WTS building cannot reach or impact residential areas located one kilometre or more from the facility.

C. Meteorological conditions

Once odour emissions occur and the plume exits the building, ambient meteorological conditions become the primary factor influencing the plume's dispersion and potential impact on receptors. Wind direction determines which receptors may be affected and the frequency of potential odour events.

Figure 3 presents wind roses for 9:00 am and 3:00 pm between 1989 and 2025, as well as an all-hour wind rose for the 2020–2025 period, based on data from Jandakot Airport, located approximately 7 km east-northeast of the BLRRP.

Although the wind roses cover different timeframes, the prevailing wind pattern remains consistent—generally easterly in the morning and shifting to southerly or westerly in the afternoon.

During early morning and late afternoon or evening, atmospheric conditions are often more stable, resulting in poorer dispersion and a greater likelihood of ground-level odour impacts. Thermal inversions, which trap cooler air near the surface, can further exacerbate this effect—conditions more commonly observed during spring and autumn.

This can lead to temporary “pooling” of odorous, cool air in local depressions, such as at the corner of Wellard Street and Quarimor Road, northwest of the WTS building, as observed during odour field assessments conducted between May and August 2025 (**OPAM, 2025**). These pooled odours typically dissipate quickly as sunlight warms the air and wind speeds increase.

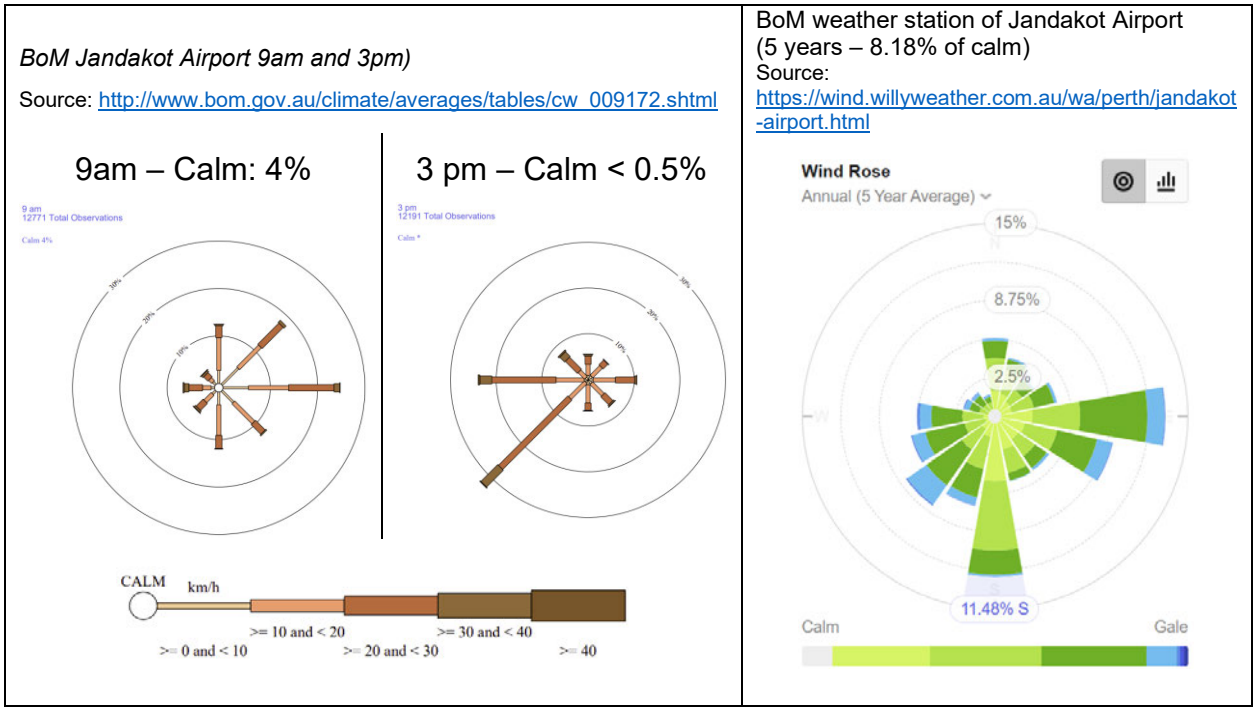

Figure 4: Wind roses (BoM Jandakot Airport)

3.3 Sensitive receptors characterisation

According to the DWER Odour Emissions Guideline, the definition of sensitive receptors/sensitive land use is:

“Places where people live or regularly spend time, and which are therefore sensitive to emissions from industry with implications for human health or amenity. They include, but are not limited to, residences, health care establishments, places of accommodation, places of study, childcare facilities, shopping centres, places of recreation, and some public buildings.

Commercial, industrial and institutional land uses that require high levels of amenity, or are sensitive to particular emissions, may also be considered sensitive land uses..”

Nearby commercial and industrial operations have been considered as potential sensitive receptors.

Figure 4 illustrates the location and distance of these receptors, including food premises and residential areas in the vicinity of the BLRRP.

The closest residential areas are located approximately 1 kilometre or more from the BLRRP site.

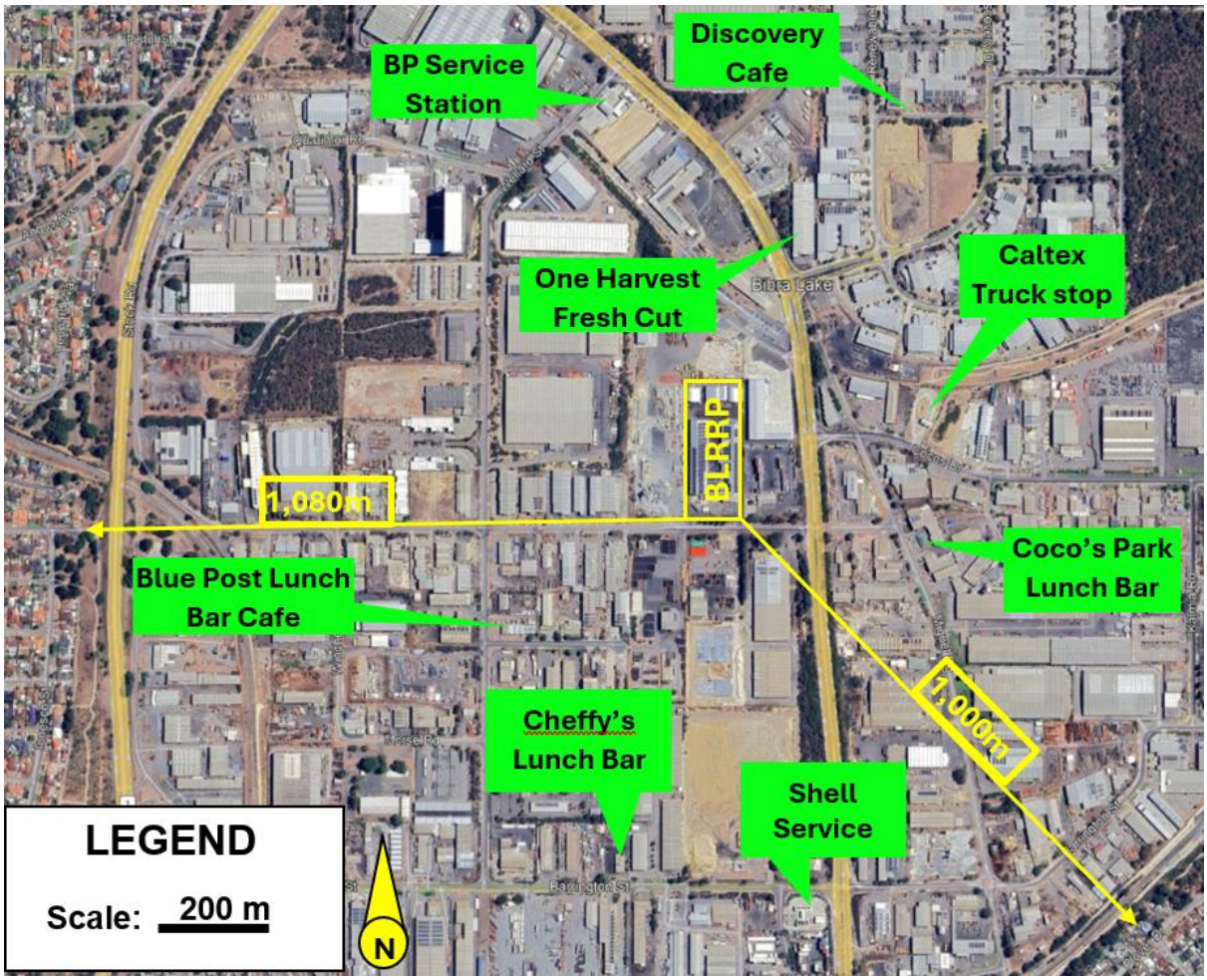

Figure 5: Locations of main sensitive receptors

4 Operational Odour Analysis (OOA)

The Operational Odour Analysis (OOA) is a priority tool recommended in the DWER Odour Emissions Guideline.

As indicated in the previous sections:

- The interlock system for the FOGO shed is operational and only one door among Doors 2, 3 , 4 and 5 can be open at one time;
- The interlock system between Doors 1, 2, 6 and 7 has not been installed yet as Veolia has encountered several technical challenges integrating the interlock system for Doors 1, 2, 6 and 7 into the SCADA system. Trials are currently in progress, and Veolia has designated this action as a priority;

- Door 1 remains open for 2 ½ minutes after a truck was detected. Veolia is currently investigating options to shorten this delay; however, achieving a safe and operationally practical solution has not yet been confirmed.

The OOA provides information about the operations and their monitoring, the triggers for corrective actions and specific details of these actions. An evaluation of these corrective actions is also provided as well as the contingency actions to be implemented at the BLRRP facility to mitigate odour emissions.

Table 1 provides the information regarding the Operational Odour Analysis (OOA) for both the WTS building and the FOGO shed. General controls, triggers and corrective or contingency actions are similar in nature, hence the decision to cover both buildings into the one table.

Some items or actions may be relevant to the WTS building or the FOGO shed only and will be identified as so in the table.

Table 1: Operational Odour Analysis for the WTS building and the FOGO shed

Odour emission operations review		Operational Condition
WTS building & FOGO shed		**Normal - Abnormal**
Odour sources and emissions	Fugitive emissions may occur from both building. Waste is either immediately loaded into a waiting bulk transfer trailer or temporarily stockpiled until the next trailer becomes available. Odour emissions are generated during waste disturbance activities, including unloading, pushing, and loading operations. The type of waste received remains relatively consistent over time. The facility experiences higher truck traffic during mid to late morning and early afternoon, when atmospheric conditions typically promote stronger vertical dispersion, reducing the likelihood of ground-level impacts nearby. When operations are inactive, the volume of stored waste and the exposed surface area of the stockpile primarily determine the odour level within the building. **For the WTS building:** Door 1 is a significant emission pathway, remaining open for approximately 2½ minutes after truck movement ceases. A large gap is also present at the top of the door, and Veolia is investigating practical measures to seal or substantially reduce odour release through this opening. Roof and wall seals are generally effective, except along the southern façade, where Veolia has identified the need for further sealing improvements and repairs to the former large entry door.	

	For the FOGO shed: Roof and wall seals are effective and in good conditions with no leaks detected around the building.
Process controls	**ENGINEERED CONTROLS** Both buildings operate as an enclosed system, which serves as the primary means of odour control. Operationally, Veolia maintains a highly efficient system designed to minimise the size of the waste pile. Waste delivered by kerbside collection trucks is promptly loaded into transfer (bulk) trailers, reducing the time waste remains exposed within the building. Fast-acting doors minimise the duration that large openings are exposed, thereby limiting both the escape of odorous air and the entry of external air that could increase internal pressure. All fast-acting doors are on a 12-monthly service schedule. The ridge vent provides natural ventilation, and verification confirmed that plumes emitted by the whirlybirds are directed upward into the atmosphere rather than being caught in the downwash cavity over the roof. All whirlybirds are on a 6-monthly service schedule. Routine monitoring and maintenance of all waste handling equipment is in place to limit breakdowns. **NON-ENGINEERED CONTROLS** Good housekeeping practices are always maintained, including but not limited to: • All GW handling operations take place within the WTS building and GW waste is only stored within the WTS building; • All GO and FOGO handling operations take place within the FOGO shed and FOGO/GO waste is only stored within the FOGO shed; • Regular cleaning of spillages within the WTS building and the FOGO shed; • Regular maintenance of plant equipment to ensure that they are operating in an optimum state at all times. • Regular floor cleaning, using brooming or high-pressure washing, further reduces the build-up of floor waste exposed to the air, helping to maintain low odour levels within the building. • Regular toolbox meetings are held to discuss environmental management and performance at the BLRRP. Any follow-up actions from the toolbox relating to odour should be documented and implemented, as required. • All drainage systems on-site are regularly maintained to

	ensure they are free of detritus; • Areas around the WTS building and the FOGO shed including but not limited to: o Plant walkways – to be cleaned as required o Sweeping undertaken regularly with particular focus on high use areas such as the weighbridge; o Roadways – to be inspected regularly and cleaned as required. **ADMINISTRATIVE CONTROL** The OMP is reviewed every two years and updated as required. In addition to general environmental awareness training, specific training on Environmental Licence conditions relating to Odour Management will be provided to relevant staff, which include: • Potential environmental impacts which may be caused by the WTS and FOGO activities, plant equipment under their control during normal and abnormal circumstances • Prevention of accidental emissions and actions to be taken when accidental emissions occur; and • Procedures for compliant handling, investigation, resolution and reporting back to the complainant and DWER All employees are instructed to immediately report to the Site Manager any malfunctioning engineering odour controls (e.g. doors not closing correctly, damage to shed cladding) or any abnormally odorous waste loads received to the WTS building or FOGO shed.
Triggers and corrective actions	Triggers for management action are linked to: • the recognition of excessive odour—whether in intensity, duration, or frequency—by external stakeholders or internal staff in relation to specific loads or building conditions. • The anticipation of situations that will be the source of excessive odour. **Breakdown of waste handling equipment:** It includes FEL and any equipment used to load waste into trucks. Critical spares will be stored on site. Veolia maintains multiple FELs on site and will adjust loading operations to minimise stockpile growth. If the issue arises from a shortage of transfer trailers, Veolia will arrange additional trailers from other sites or divert waste receiving trucks to alternative facilities to reduce the stockpile as quickly as possible.

Breakdown of a whirlybird:

If it is identified that a whirlybird is not operating as expected, replacement with a new whirlybird will be organised by Veolia as soon as possible.

Abnormally odorous load:

- If detected at the weighbridge, Veolia may refuse the load.
- If identified once unloaded on the WTS building or FOGO shed floor, the waste should be promptly loaded into a transfer trailer and removed from site as soon as possible.
- If a transfer trailer cannot be arranged promptly, the odorous material will be temporarily covered with less odorous waste and still prioritised for removal once a trailer becomes available.

Abnormally odorous stockpile:

- This situation can occur during periods of high temperature, which accelerate organic material degradation. In such cases, the operator will arrange additional transfer trailers to remove the affected waste mass from the site without delay.

Abnormally odorous building despite limited waste volume:

- This may indicate waste build-up on the floor. The operator will arrange immediate cleaning of the floor, with the recovered material stockpiled and prioritised for loading into the next available transfer trailer.
- If a transfer trailer cannot be arranged promptly, the recovered material will be temporarily covered with less odorous waste and still prioritised for removal once a trailer becomes available.

Abnormally large volume of waste (oversized stockpile within the building):

Given that the number of collection trucks and daily waste deliveries is relatively consistent, an unusually large stockpile indicates that the transfer trailer loading rate has slowed. This may be due to reduced availability of FELs or transfer trailers. Veolia maintains multiple FELs on site and will adjust loading operations to minimise stockpile growth. If the issue arises from a shortage of transfer trailers, Veolia will arrange additional bulk transfer trailers from other sites or divert waste receiving trucks to alternative facilities to reduce the stockpile as quickly as possible.

Door blocked in open position:

For the WTS building

	For Doors 6 and 7, Veolia has installed secondary containment doors manually operated inside the building. If either door becomes stuck in the open position, operators will manually close it each time a truck enters or exits. If a panel of Door 1 is damaged or blocked by a vehicle, Veolia has spare northern and southern panels available for replacement within 24–72 hours. Spare door motors are also kept on site for rapid repair or replacement. **For the FOGO shed:** For Doors 3, 4 and 5, two full complete spare roller fast acting doors are stored onsite, and any damaged door can be promptly replaced. Spare door motors are also kept on site for rapid repair or replacement. **Odour complaints under normal operating conditions** **Issue 1: Higher than expected fugitive emissions (doors closed)** This would indicate that the building is not fully airtight and that odorous air is escaping through unintended pathways. *Corrective action – Issue 1:* The building will be inspected to identify any weak points in sealing or confinement. If a visual inspection does not reveal any obvious source of air leakage, Veolia will engage a specialist to perform fumigation tests to locate the escape points. Once identified, Veolia will implement corrective measures to restore proper containment. **Issue 2: Higher than expected fugitive emissions with door(s) open** If any door is operating too slowly, Veolia will inspect and service its mechanical and electronic components to ensure that opening and closing times meet standard operational settings. **For the WTS building** This could result from doors taking longer than usual to open or close, or from two doors being open simultaneously, creating flushing or over-pressurisation that drives odorous air out of the building due to longer than usual opening time. *Corrective action – Issue 2* The installation of an interlock system at the WTS building remains a high priority for Veolia once technical issues are resolved. **For the FOGO shed**

	The interlock system is in place at the FOGO shed and only one door can be opened. If two doors can open simultaneously, an inspection of the interlock system will be immediately implemented.
Corrective action evaluation	Most operational scenarios that could result in higher-than-expected odour emissions have established corrective actions designed to promptly eliminate the issue. As a result, any associated ground-level odour impacts should also dissipate, and it will generally not be necessary to assess the effectiveness of these corrective measures. If an issue leads to potential offsite odour impacts, Veolia staff will conduct odour patrols in public access areas to verify the presence or absence of odour in the surrounding environment. Details about the recommended protocol are provided in the Complaint Management System section of the OMP. However, if it is not feasible or practical for Veolia to perform the odour verification protocol, an odour specialist will be engaged to assist in confirming the presence or absence of odour impacts and in auditing site operations to identify potential sources.
Contingency actions	**<u>Loss of the building confinement</u>** If a section of wall is missing, the building's confinement would be compromised. In such cases, Veolia will source and install replacement panels as soon as possible. If repairs cannot be completed within 24 hours to restore building confinement, collection trucks will be redirected to an alternative licensed facility within the Perth area for unloading. **<u>Power outage</u>** The receipt of waste material can be temporarily halted. Veolia has been investigating backup power options including battery system charged off solar system for door controls or backup generators for odour controls.

Residual odour impact potential			
Operation / odour source	**Consequence**	**Likelihood**	**Impact potential**
WTS building & FOGO shed	Slight	Unlikely	Low

In condition 24 (h) of the licence, it is indicated that the "*OMP should detail conceptual design specifications, including configuration and air flow estimates, for negative pressure air extraction systems that could be installed individually and/ or across both the FOGO shed and the MSW shed*".

For the FOGO shed, multiple odour field assessments have confirmed that no GO/FOGO odour was detected offsite, except for a few occurrences at the WA Limestone/Perdon yard located west of the shed.

Although subtle and occasionally obvious MSW odour impacts were recognised up to approximately 400 m from the WTS building, these impacts have never resulted in odour complaints at those distances. Reported complaints have been limited to the directly adjacent facility west of the Veolia site, corresponding to impacts occurring between 20 m and approximately 100–150 m.

It is not considered appropriate to develop conceptual design specifications for negative pressure air extraction systems, either for individual buildings or for both the FOGO shed and the WTS building combined, for the following reasons:

- The FOGO shed does not generate offsite odour impacts under its current natural ventilation system, therefore installation of a negative pressure extraction system is not justified.
- The WTS building, being over 20 years old, contains multiple small structural gaps and cracks. Retrofitting the structure would be cost-prohibitive, with no guarantee that the required airtightness to maintain negative pressure (when doors are closed) could be achieved.
- Door 2, which connects the FOGO shed and the WTS building, is opened multiple times per day, reducing the effectiveness of any potential mechanically extracted ventilation system in the WTS building.
- Door 1, due to its large size, would continue to allow fugitive emissions even under negative pressure conditions, as multiple airflow zones and odour egress points would still occur when the door is open.

5 Odour Mitigation Action Plan

Following the review of the process, the controls, the corrective and contingency actions and findings during the odour field assessments and fumigation tests campaign between May and August 2025, Veolia has committed in implementing the actions listed in **Table 2**.

Table 2: Odour mitigation action plan

Action	Targeted period
Installation of the interlock system for the fast-acting doors and Door 1 of the WTS building	30 April 2026
Mitigation of odour emissions through the gap on the top of Door 1	31 December 2025
Repair southern façade gaps and cracks and clad over former large entry door	31 December 2025
Upgrade the WTS building whirlybirds	30 March 2026
Installation of neutraliser sprays over Door 1	30 March 2026

6 Odour Monitoring Plan (OMoP)

6.1 Weekly check (FOGO shed and WTS building) operations

As part of the QA process followed by Veolia, the following key odour control elements will be checked during weekly site inspections:

- Proper operation of fast-acting doors (opening and closing times);
- Functionality of the interlock system for both buildings (once installed at the WTS building);
- Manual operation of secondary containment doors;
- Condition and functionality of the whirlybirds;
- Absence of damage to Door 1 and confirmation of its proper operation;
- Cleanliness of the buildings (no spillages present);
- Absence of waste build-up on the floors of each building;
- Clear and functional leachate collection points in each building;
- Clean pathways, weighbridge, and roadways (no waste accumulation).

If any abnormal conditions or operations are identified, the operator will refer to the OOA to implement the appropriate corrective actions and, if necessary, the required contingency measures.

6.2 Odour Complaint Management

In accordance with Condition 32 of the licence, Veolia must maintain records of:

- the name and contact details of the complainant, (if provided);
- the time and date of the complaint;
- the complete details of the complaint and any other concerns or other issues raised;
- the frequency and duration of external door opening times of the FOGO waste
- and MSW sheds during the complaint event;
- the best available information consistent with the FIDOL factors and German standard VDI 3940; and
- the complete details and dates of any action taken by the licence holder to
- investigations carried out in relation to an odour complaint; and
- corrective actions implemented to mitigate emissions if the complaint is verified.

For any complaint received directly by Veolia, the operator will attempt to collect all information detailed in the Odour Complaint Log Form provided in **Attachment 1**.

For complaints received via DWER or the City of Cockburn, Veolia will record the best available information supplied by these third parties.

If an odour complaint is received within 15 minutes of the reported odour event, Veolia will conduct an Odour Complaint Verification (OCV) patrol.

6.2.1 Odour Complaint Verification (OCV)

If Veolia receives a complaint or is informed by DWER or the City of Cockburn of an odour report within 15 minutes of the odour event, a trained Veolia staff member will attend the complaint location and surrounding area.

The staff member will change into clean workwear and bring an anemometer, a short piece of string for wind direction assessment, a compass, and the odour log form provided in **Attachment 2**.

Wind conditions will also be checked using data from the Department of Primary Industries and Regional Development (DPIRD) Wattleup weather station:

https://weather.agric.wa.gov.au/station/WT001

If the wind direction indicates that the complainant is likely downwind of the BLRRP, the Veolia staff member will travel to and around the complaint location following the procedure outlined during training.

The odour log form will be completed during a 15–30 minute patrol. If odour consistent with that from the BLRRP is detected, a review of site operations will be carried out, including:

- Truck movements and timing;
- Door opening and closing times; and
- An inspection of key odour mitigation features in each building to confirm proper operation.

If the likely source of odour emissions is identified, the operator will refer to the OOA to implement appropriate corrective and, if necessary, contingency actions.

6.3 Odour Field Assessment (OFA)

Following the odour surveys and fumigation tests conducted between May and August 2025, several operational and structural upgrades have been identified and scheduled by Veolia, as outlined in Section 5 of this OMP.

Each improvement requires sufficient time for implementation, installation, testing, and final approval by Veolia.

Veolia considers that independent odour assessments undertaken by a qualified odour specialist—through Odour Field Assessment (OFA) campaigns—offer greater reliability and value compared to in-house assessments.

A robust and reproducible assessment program will provide:

- Reliable data for comparison against the benchmark results from the May–August 2025 campaign;
- Information on potential seasonal variations in odour levels; and
- Trend data over time to evaluate the ongoing effectiveness of odour mitigation measures at the BLRRP.

Once this OMP is approved by DWER, Veolia proposes the following quarterly schedule for OFA campaigns:

- One OFA campaign between December 2025 and February 2026 (summer 2025–26);
- One OFA campaign between March 2026 and May 2026 (autumn 2026);
- One OFA campaign between June 2026 and August 2026 (winter 2026); and
- One OFA campaign between September 2026 and November 2026 (spring 2026).

Each campaign will be conducted at least one month apart and will include a minimum of three OFAs over a two- to three-week period.

A review of the overall findings will be undertaken at the end of the first year to determine whether the frequency or methodology should be adjusted.

These OFAs will follow the same methodology as the May–August 2025 odour field surveys, with the exception that the assessments will be conducted by a single odour specialist rather than two panellists.

The odour specialist will be required to complete an induction with WA Limestone to access the same measurement locations within the WA Premix, Perdon, and WA Limestone yards.

Each OFA will be conducted:

- Between 7:00 am and 11:00 am to capture stable atmospheric and potential thermal inversion conditions, as well as the BLRRP's peak delivery period;
- For a duration of at least 1.5 hours and no longer than 2.5 hours to avoid sensory fatigue; and
- Under NNE to E to SSE wind conditions, ranging from calm to 4–5 m/s.

Odour characterisation will use the following designations:

- **GRW** (green waste odours from the FOGO shed); and
- **MSW** (municipal solid waste odours from the WTS building).

Odour intensity will be assessed using the same three-point scale applied during the May–August 2025 campaign: no odour, subtle odour, and obvious odour, ensuring comparability with previous results.

An example of the OFA log form is provided in **Attachment 3**.

6.4 Odour Monitoring Report

An Odour Field Assessment (OFA) report will be prepared quarterly, within four weeks of completing each OFA campaign.

This report will be appended to the Quarterly Report required under Licence Condition 34.

The Quarterly Report will include:

- All odour complaints received during the reporting period;
- Details of the information collected for each complaint;
- Any Odour Complaint Verification (OCV) reports completed as part of field investigations; and
- The outcomes and corrective actions implemented, where applicable.

The OFA report will present all data collected during the campaign, including meteorological and operational conditions, as well as interpretations and conclusions drawn from the findings.

Each OFA will follow the same approach used during the May–August 2025 campaign to ensure data comparability and consistency in interpretation.

Given the nature of operations and the fact that no odour complaints have been lodged against the BLRRP (with the exception of those attributed to the neighbouring WA Limestone/Perdon site), establishing a definitive threshold for acceptable or unacceptable odour impacts based on the FIDOL factors— as required under Licence Condition 25(g)—is challenging.

Using the May–August 2025 campaign results as a benchmark, acceptable impacts are proposed to be defined as future OFAs demonstrating overall similar or lower odour intensity levels at comparable locations, or a reduced odour footprint.

Each OFA campaign report will also include an assessment of the effectiveness of current odour controls (in accordance with Condition 25(j)) and a discussion of any inconsistencies with previous decision-making (as required by Condition 25(i)).

7 OMP review

It is proposed that the OMP be reviewed and updated every two years.

This timeframe may be adjusted if significant operational, process, or management changes occur that require revisions to multiple sections of the OMP.

8 Bibliography

DWER, 2019: *Guideline: Odour Emissions, DWER WA*, Department of Water and Environmental Regulation, June 2019

OPAM, 2025: Veolia Australia and New Zealand, Bibra Lake Resource Recovery Park (BLRRP) – Odour Field Assessment, Licence L8798/2013/1 - Conditions 20 & 21 – October 2025

ATTACHMENTS

Attachment 1: Odour Complaint Log Form

Odour Complaint Log Form

Complainant Details:

Full Name:	
Organisation (if applicable):	
Address:	
Contact Number:	
Email:	

Details of the Odour Event

Odour first noticed	**Date:**	/ /	**Time:**	:
Odour last noticed	**Date:**	/ /	**Time:**	:
Odour Location *Where were you impacted by the odour?*				
Odour Intensity	☐ **Subtle** *You need to focus to recognise it but the odour will ULTIMATELY be recognised. The odour might not IMMEDIATELY be recognised, described and attributed to a source.*		☐ **Obvious** *You can easily smell it without any effort or focus on it. Odour is recognised, can be described and attributed to a source.*	
Odour Character *Please describe what the odour smelt like*				
Odour Source *Where do you think the odour was emitted from?*				
Impacts *How did this odour impact you?*				
Follow-up Requested	☐ **Yes**		☐ **No**	

Attachment 2: Odour Complaint Verification (OCV) Form

Name: **Date:**

Start Time: **End Time:**

OI: Odour Intensity	—: No odour	S: Subtle	O: Obvious

Point #	Time	OI	Type	WS	WD	Comment
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	:					
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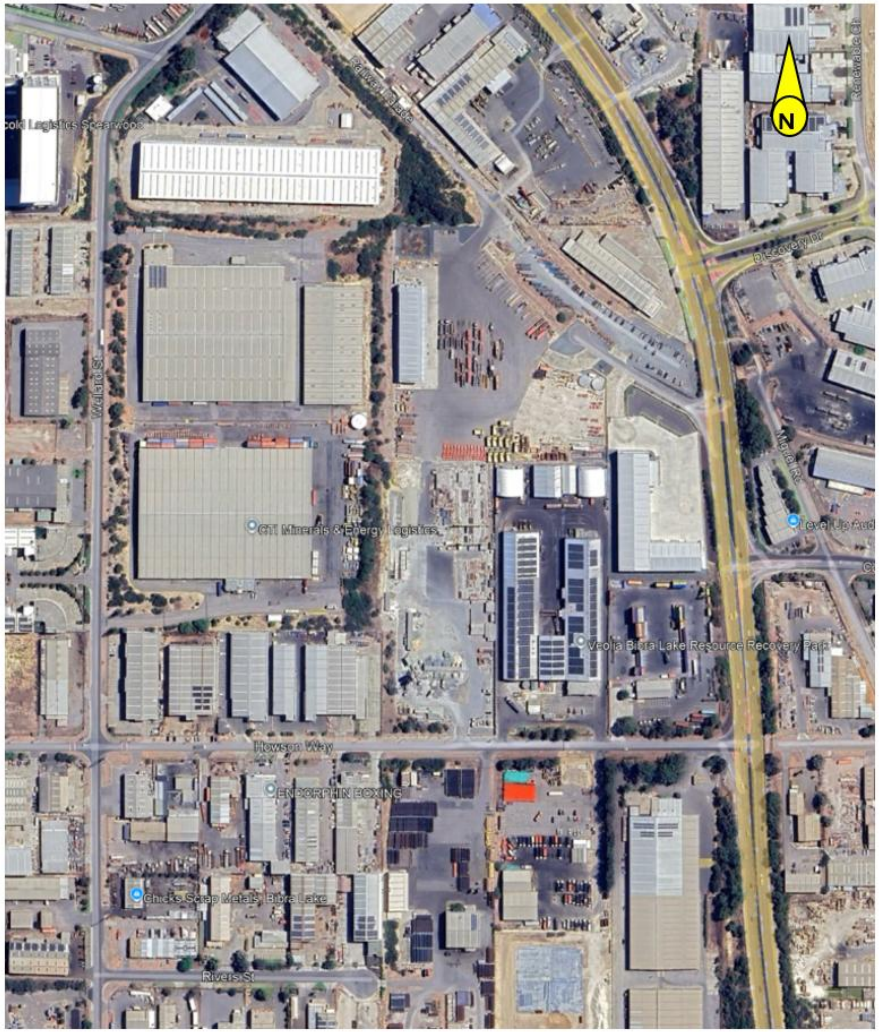

Attachment 3: OFA log form

Name: **Date:**

Start Time: **End Time:**

OI: Odour Intensity	—: No odour	S: Subtle	O: Obvious

Point #	Time	OI	Type	WS	WD	Comment
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Appendix 2 - Waste Monitoring Data

Incoming Waste - Jan - Dec 2025 (BLRRP)

Month	FOGO/GO	Inert Waste Type 1	Putrescible Waste	Recyclable Solid Wastes	Grand Total
2025-Jan	2,973.2		9,285.9	9,618.4	**21,877.6**
2025-Feb	2,605.5		9,452.5	7,999.1	**20,057.1**
2025-Mar	2,686.3		9,463.8	8,188.6	**20,338.7**
2025-Apr	2,610.4		8,887.1	8,479.3	**19,976.8**
2025-May	2,332.2		9,283.1	8,640.6	**20,255.9**
2025-Jun	2,382.7		9,112.2	8,384.9	**19,879.7**
2025-Jul	3,293.3		10,149.9	9,577.9	**23,021.1**
2025-Aug	3,444.6		9,089.4	8,981.2	**21,515.2**
2025-Sep	4,451.7		9,091.7	9,332.1	**22,875.5**
2025-Oct	4,741.1		9,884.5	10,023.4	**24,648.9**
2025-Nov	4,022.9		8,607.7	8,869.5	**21,500.1**
2025-Dec	4,351.3	0.1	8,932.0	11,051.9	**24,335.2**
Grand Total	**39,895.1**	**0.1**	**111,239.9**	**109,146.9**	**260,281.8**

Outgoing Waste - Jan - Dec 2025 (BLRRP)

Month	FOGO/GO	Inert Waste Type 1	Putrescible	Recyclable Solid Wastes	Grand Total
2025-Jan	2,540.8	221.4	11,634.4	7,103.9	21,500.4
2025-Feb	2,671.6	273.4	10,932.5	5,933.8	19,811.4
2025-Mar	2,628.7	241.9	11,148.7	6,457.8	20,477.1
2025-Apr	2,710.5	238.7	10,724.0	6,212.8	19,886.0
2025-May	2,241.8	285.5	11,155.8	6,388.7	20,071.8
2025-Jun	2,297.7	205.7	10,528.9	6,352.4	19,384.8
2025-Jul	3,155.4	374.1	11,546.2	7,154.1	22,229.8
2025-Aug	3,394.3	376.2	10,861.3	6,844.2	21,476.0
2025-Sep	4,298.5	364.4	10,824.8	7,256.3	22,744.0
2025-Oct	4,090.9	390.1	12,482.9	7,622.2	24,586.0
2025-Nov	3,314.5	270.0	10,786.8	6,959.4	21,330.6
2025-Dec	4,251.9	291.7	11,238.3	8,300.7	24,082.6
Grand Total	**37,596.5**	**3,533.1**	**133,864.5**	**82,586.3**	**257,580.5**

Appendix 3 - Annual Audit Compliance Report (AACR)

Government of **Western Australia**
Department of **Water and Environmental Regulation**

Annual Audit Compliance Report Form

Environmental Protection Act 1986, Part V

Section A – Licence Details			
Licence number:	8798/2013/1	Licence file number:	2013/003909-1
Licence holder:	Veolia Recycling & Recovery (Perth) Pty Ltd		
Trading as:	Veolia Recycling & Recovery (Perth) Pty Ltd		
ACN:	118 828 872		
Registered address:	Level 4, 65 Pirrama Road, Pyrmont NSW 2009		
Reporting period:	01/01/2025 **to** 31/12/2025		

Section B – Statement of Compliance with Licence Conditions
Did you comply with all of your licence conditions during the reporting period? (please tick the appropriate box)
☒ Yes – please complete: • section C; • section D if required; and • sign the declaration in Section F.
☐ No – please complete: • section C; • section D if required; • section E; and • sign the declaration at Section F.

Section C – Statement of Actual Production	
Provide the actual production quantity for this reporting period. Supporting documentation is to be attached.	
Prescribed Premises Category	**Actual Production Quantity**
Category 57 Category 62	7 tyres 260,256.08 tonnes

Section D – Statement of Actual Part 2 Waste Discharge Quantity	
Provide the actual Part 2 waste discharge quantity for this reporting period. Supporting documentation is to be attached.	
Prescribed Premises Category	**Actual Part 2 Waste Discharge Quantity**
	NA

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:		Date(s) of non-compliance:	
Details of non-compliance:			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Cause (or suspected cause) of non-compliance:			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
Was this non-compliance previously reported to DWER?			
☐ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☐ Reported to DWER in writing		Date:	

Section F – Declaration

I/We declare that the information in this Annual Audit Compliance Report is true and correct and is not false or misleading in a material particular[1]. I/We consent to the Annual Audit Compliance Report being published on the Department of Water and Environmental Regulation's (DWER) website.

[redacted]

Seal (if signing under seal):	

[1] It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular.

[2] AACRs can only be signed by the licence holder or an authorised person with the legal authority to sign on behalf of the licence holder.

Appendix 4 – Complaints Summary

Table - Complaints Log Jan - Dec 2025

Date	Incident No	Title	Incident Description	Investigation Outcomes and Actions Taken
17/3/3025	Intelex #81985	Odour Complaint	Odour complaint received from neighboring premises (WA Limestone) via DWER. The complaint stated that an odour was present for several hours in the morning, but no specific timing details were provided.	1. Incoming waste streams and volumes reviewed from 15th - 17th March to identify potential odour sources. As no specific time was provided, CCTV footage for door times was not extracted
18/3/2025	Intelex #82012	Odour & Vermin Complaint	The neighboring premise (WA Limestone) complained about an increase in odor and vermin (rats and feral cats) in recent weeks. This is the second odor complaint within 24 hours. Rats and feral cats were reported near the shared boundary with WA Limestone (Perdon office area).	1. Engaged vertebrate pest management technician (Paul Pitaro) to manage feral cats and rats. 2. To manage potential odour sources, commenced trial of diverting seawater desalination sludge to Welshpool Transfer Station after reviewing waste streams from previous days. 3. As no specific time was provided, CCTV footage for door times was not extracted
27/3/2025	Intelex #82163	Odour & Vermin Complaint	The neighboring premise (WA Limestone) sent a complaint via email regarding strong odour and increase in deceased rats near the adjacent fenceline.	1. Initial investigation determined that increased baiting activities and a gap in the adjacent fence contributed to the rise in deceased rats. 2. To mitigate baited rats searching for a water source on adjacent premises, 20 additional liquid baiting stations were installed on site. 3. A board was installed to close the fence gap; however, this section remains incomplete pending action from neighbours. 4. Pest control increased with daily trap inspections/ collection on neighbours premises. 5. Opening and closing door times extracted from CCTV footage between 10-11am on 27/3/25 as per licence requirements. Refer to Appendix 1. 6. CCTV footage showed a heavy haulage truck parked along the

Date	Incident No	Title	Incident Description	Investigation Outcomes and Actions Taken
				fenceline from 10:26 AM to 11:08am, potentially contributing to odour. 7. CCTV footage also captured a heavy haulage FOGO truck exiting the West Gate at 10:57 AM (travelling west on Howson Way), identified as another possible source or contributor.
1/9/2025	25162529	Odour Complaint	**Complainant:** Martin Sweeney - Perdon **Address:** 57 Howson Way, Bibra Lake **Contact:** (08) 6154 3850 **Description:** Odour complaint logged with DWER. No further details or specifics were provided by the complainant.	1. In response, the site team conducted a review of CCTV footage to verify that Door 1 was operating correctly on 1 and 2 September. No abnormal conditions or issues were identified during this period. 2. As no specific time was provided, CCTV footage for door times was not extracted
2/9/2025	25162679	Odour Complaint	**Complainant:** Martin Sweeney - Perdon **Address:** 57 Howson Way, Bibra Lake **Contact:** (08) 6154 3850 **Description:** Odour complaint logged with DWER by Perdon (neighbors). No further details or specifics were provided by the complainant.	1. In response, the site team conducted a review of CCTV footage to verify that Door 1 was operating correctly on 1 and 2 September. No abnormal conditions or issues were identified during this period. 2. As no specific time was provided, CCTV footage for door times was not extracted
16/9/2025	25200219	Odour Complaint	**Complainant:** Roger Stephens - WA Limestone **Address:** 57 Howson Way, Bibra Lake **Contact:** (08) 9434 7777 **Email:** roger.s@walimestone.com An email was received from WA Limestone reporting that their site personnel observed strong odours with visible "clouds" being emitted from the	1. Investigation found that Door 1 sustained damage to a wind lock caused by heavy winds and was undergoing repairs that morning. 2. WA Limestone (Roger) was advised that the visible "clouds" were from the trial misting system operating around Door 1. 3. The concentration of the neutraliser in the misting system was increased to address the odour concerns.

Date	Incident No	Title	Incident Description	Investigation Outcomes and Actions Taken
			facility. WA Limestone advised that odour levels have been elevated over the past couple of weeks, with Martin (Perdon) reporting particularly severe odours on 1, 2, and 11 September. WA Limestone initially attributed the odours to construction works for the neutraliser; however, the odour issue appears to be continuing.	
25/9/2025 8-9am	25279603	Odour Complaint	**Complainant:** Roger Stephens - WA Limestone **Address:** 57 Howson Way, Bibra Lake **Contact:** (08) 9434 7777 **Email:** roger.s@walimestone.com Odour complaint received via email from WA Limestone stating "The odour is extremely bad this morning." The complainant further advised that "The odour issues seem to be increasing in frequency and intensity."	1. Site manager completed site inspection to investigate odour source as complaint was received during actual odour event. 2. Likely source of odour identified as originating from an overloaded bulk trailer containing organics that was waiting to re-enter the shed to reduce its load. 3. The odour was strong at the front of the site extending to the Perdon offices, emanating from the bulk trailer 4. Organics clearance and rotation prioritised and completed that day 5. CCTV footage of door opening times recorded from 8-9am.