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Veolia Environmental Services Pty Ltd
Woodlawn Bioreactor (SSD MP 10_0012)
Independent Audit 2023
Leachate and Water Management System

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We declare that:
The report contains all available information that is relevant to the assessment of the Site and proposed development, activity or infrastructure to which the report relates, and the information contained in the report is neither false nor misleading.

Report version	Authors	Date	Reviewer	Approved for issue	Date
Draft (V1)	Dr M. Jackson, M. Liebman, A. Parsons	22/05/2023	A. Parsons	A. Parsons	23/05/2023
Final (V2)	Dr M. Jackson, M. Liebman, A. Parsons	25/05/2023	A. Parsons	A. Parsons	26/05/2023
Final (V3)	Dr M. Jackson, M. Liebman, A. Parsons	04/072023	A. Parsons	A. Parsons	04/072023

Executive Summary

This report presents the findings of an Independent Environmental Audit (the Audit) that was conducted to assess the environmental performance of Veolia Environmental Services Australia's water and leachate management system associated with the Woodlawn Bioreactor Landfill, located at Collector Rd, Tarago.

The Audit was conducted by Jackson Environment and Planning Pty Ltd and was commissioned on 16th February 2023, 12 months since the last audit. The Audit covers the period from 16th March 2022 until 15th March 2023. The scope of the Audit included an assessment of compliance with Condition 18R of Schedule 2 of Project Approval MP 10_0012.

The Audit also included an assessment of compliance with management plans in place, and a comparison of predictions in the original Environmental Impact Statement and subsequent modifications to actual performance.

An assessment of the actions recommended in the 2022 Independent Environmental Audit conducted by Jackson Environment and Planning Pty Ltd found that progress towards resolving the four (4) non-compliances has been made, though recommendations are yet to be fully completed.

The 2023 Independent Environmental Audit found a total of one (1) new non-compliance under Project Approval MP 10_0012, with four (being NC1 through to NC4 inclusive) being carry-over non-compliances from the 2022 Audit. The non-compliance relates to:

- NC5: The revised water balance has not been completed within the Audit period, though the Auditors understand that additional time was required to appoint a specialist to conduct this work that was acceptable to the Department of Planning and Environment.

The number of complaints received during the audit period continues to be elevated, though they dropped slightly from 384 (in 2022) to 332 (in 2023). The Audit found that the complaints related to the continuing high rainfall experienced during the 2023 Audit period, which has affected the performance of the leachate treatment plant. The Auditors note that the improvement and optimisation of leachate treatment capacity, together with the third ultrafiltration membrane train now installed will help to minimise odour from the leachate management system in the medium to long-term.

During the Audit period, one Development Control Order, one Prevention Notice and one Show Cause Notice was received. Action taken to address the requirement of these orders / notices is provided in the report.

A series of recommendations have been proposed to address the one new and four ongoing non-compliances. These focus on the need to develop contingency strategies should extreme rainfall events continue, and the development of a revised water balance to address more extreme climatic conditions which were not predicted as part of the original environmental assessment.

As noted in the 2022 Audit report, any future water balance model and further site modifications should be considered in a modification to the consent to enable the site to operate its leachate and water management system sustainably with minimal risk to the environment.

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1. Introduction

1.1. Background to the Project

Veolia Australia and New Zealand (Veolia) owns and operates the Woodlawn Bioreactor (the Bioreactor) that forms part of the 6,000-hectare Woodlawn Eco-precinct.

The Bioreactor was the first stage of the Eco Precinct developed by Veolia and has been in operation since September 2004. The Bioreactor is approved to accept a maximum input of 1.13 million tonnes of waste per annum (tpa).

Waste is deposited into the void of a remnant open cut mine, approximately 33 million cubic metres (m^3) in capacity. With the use of optimal moisture and temperature conditions, the Bioreactor achieves enhanced degradation to produce landfill gas, collected through an extensive network of gas collection infrastructure within the landfill.

The Woodlawn Leachate Treatment Plant (LTP), which commenced operations in 2018, treats leachate from the Bioreactor using an ultrafiltration membrane bioreactor. Treated leachate is then transferred to the ED1 Coffer Dam located within the Eco Precinct. The LTP facilitates an improvement in environmental and operational performance by:

- Allowing the extraction and treatment of greater volumes of leachate from the landfill void;
- Helping reduce the generation of odour from untreated leachate, and
- Enabling more efficient gas extraction to maximise the waste to energy benefits of the Power Station.

The Department of Planning and Environment (DPE) approved Project Approval (10_0012) on 16 March 2012 to increase the landfill capacity and input limit from 500,000 tonnes per annum (TPA) to 1,130,000 TPA. DPE has granted a number of modifications (MODs) including the following:

- PA 10_0012 MOD1: Modification for changing the site water and leachate management to allow the use of ED2 for the main storm water storage and ED3S for treated leachate storage;
- PA 10_0012 MOD2: To alter surface water and leachate management in December 2017. This modification includes requirements for an LTP, Coffer Dam and future volumes of existing Dams (ED1 and ED3N);
- PA 10_0012 MOD3: Modification to enable the construction and operation of a Solid Recovered Fuel (SRF) processing area within the Woodlawn Eco Precinct; and
- PA 10_0012 MOD4: In regard to bushfire impacted waste acceptance.

1.2. Audit Team

Jackson Environment and Planning Pty Ltd (JEP) has been engaged by Veolia Environmental Services (Australia) Pty Ltd (Veolia) to undertake an Independent Leachate and Water Management System (LWMS) Audit (the Audit) associated with the Woodlawn Bioreactor Landfill (the Site), located at Collector Rd, Tarago.

DPE approved the audit team on 16th February 2023 (see Appendix D).

Members of the audit team are outlined in Table 1.1. Mr Mark Liebman from Sustainability Workshop Pty Ltd supported the audit team and performed the role of the civil engineering and water management specialist. The qualifications and experience of the audit team are summarised in Table 1.1.

Table 1.1. Audit team members.

Name	Audit Role	Qualifications	Experience
Dr Mark Jackson	Auditor (waste infrastructure planning and compliance specialist)	B.Sc (Hons), PhD, Grad. Cert. Mgmt., Exec. Masters Public Admin., Certified Environmental Practitioner CEnvP (1542), Impact Assessment Specialist (IA11071), NSW Registered Environmental Assessment Practitioner REAP (R80020).	Mark is a waste management specialist and has 29 years' experience in the field. Mark has supported the environmental planning, approvals and licensing of some of the largest waste and recycling infrastructure projects in NSW as Director of Jackson Environment and Planning Pty Ltd for the past 7 years. He is also an experienced environmental auditor. For 12 years he has held senior management positions in the NSW Environment Protection Authority, leading some of the largest behaviour change, industry development and infrastructure investment programs in the country's history to assist households and businesses reduce waste and increase recycling. Mark for five years led the EPA's Waste and Recycling Infrastructure and Resource Recovery teams. He has also played a key role in assessing waste and recycling infrastructure developments in Government. He is a specialist in waste facility planning, environmental compliance and regulatory approvals. Mark has also been responsible for Annual Reports and Independent Audits for State Significant Development projects for sites operated by Veolia Environmental Services (Camellia Resource Recovery Facility, Clyde Waste Transfer Terminal and Banksmeadow Waste Transfer Terminal), Cleanaway (Erskine Park Waste Transfer Station), J.J. Richards & Sons (Glendenning Liquid Waste Facility), Bingo Industries (Kembla Grange and Mortdale Resource Recovery Facilities), and regularly conducts planning and environmental compliance audits for owners and operators of waste and recycling facilities in NSW.
Mr Mark Liebman	Auditor (civil engineer and water management specialist)	Bachelor of Economics, Bachelor of Civil and Environmental Engineering (Hons), Chartered Professional Engineer, MIEAust.	Mark is a Chartered Professional Engineer, is a founding Director of Sustainability Workshop with degrees in Civil and Environmental Engineering (1st Hons) (UTS) and Economics (Syd). He has developed a strong standing in the industry and is a thought leader and innovator in the water & environment arena. Mark has over 25 years' experience which has seen him working on projects in the Republic of Georgia, China, UK, Japan and Australia. Mark has helped to pioneer water sensitive urban design in Australia with specific fields of expertise in water quality management, hydrological and water balance modelling and design of treatment systems. Mark also specialises in industrial surface water quality management with recent projects including water cycle management for two SSDs – Borgs

Name	Audit Role	Qualifications	Experience
			Panels site, and Kariong Sand and Soil (Recycling Facility). Mark also recently helped Sydney Recycling Park assess alternative leachate management strategies. Mark is part of a team that carries out the annual audit of the Sydney Intermodel Terminal development at Moorebank. Mark's role is to audit the water cycle management infrastructure. Mark is also leading a $3 million research project into biofiltration for Blacktown City Council and assisting Sydney Water in the development and design of the Mamre and Aerotropolis Precincts integrated water cycle management plans. Mark's degree in Economics is frequently used while working with Councils and developers on integrated water cycle projects, economic analysis of projects and development of responsive, scientifically sound policies and implementation tools.
Mr Alan Parsons	Lead auditor	Higher Cert Metallurgy, Lead Auditor Environmental Management & Systems, Occupational Health, Safety, and Quality Management Systems.	Alan has extensive experience over the past 30 years in the business improvement solutions for private sector heavy and light manufacturing, logistics, maritime and service industries. Specific management experience in the development and audit of risk-based management systems for quality, safety and environmental management systems including the integration of management systems designed around core company process requirements. Initial employment was with BHP (29 years) initially in the manufacturing, technical process management, port management and stevedoring areas. During the latter years responsible of internal and 3rd party certification for BHP Transport, prior to the division being disbanded in 2001. Post 2001 was appointed to the national role (on contract) responsible for management systems compliance for the BlueScope Steel Processing and Logistics Division for 15 years. This included management/advising on 3rd party certification, OHS self-insurance programs and Environmental legislative compliance. This responsibility extended to the provision of advice on the implementation of risk assessment protocols for operations, project management, and OHS&E program requirements. During this period Alan was contracted to other companies to provide advice and internal audit and lead auditor services on an 'as needs' basis for Safety, Environmental and Quality aspects including compliance to legislative/regulatory aspects. The use of business improvement tools to develop business systems for legislative compliance (including work cover self-insurance and EPA license

Name	Audit Role	Qualifications	Experience
			compliance), second and third-party certification. Experience in environmental management and audit for industry has also been a deliverable over this period. Alan was an Exemplar Global certified lead auditor (20 years) in quality, occupational health & safety, environmental management systems and environmental management (Registration Number 14045). More recently the registration was transferred to DNVGL. Alan has extensive knowledge of the requirements for compliance to ISO 9001: 2015, ISO 14001: 2015 and ISO 45001: 2018, ISO 27001: 2013 management systems standards as examples. Alan has been a qualified Lead Auditor throughout this period with these organisations.

1.3. Audit Objectives

The objective of the Annual Independent LWMS Audit (the Audit) is to assess its environmental performance against the assumptions and predictions in the 2017 project water balance, determine whether the leachate and water management system is achieving its intended objectives, and outline any relevant measures to improve performance.

The Audit has been prepared in accordance with the NSW Department of Planning, Industry and Environment's *Independent Audit Post Approval Requirements* (2020). The Audit covers the period from 16th March 2022 until 15th March 2023.

In accordance with Condition 18R of Schedule 2 of Project Approval MP 10_0012 (as modified), Veolia is to engage a suitably qualified consultant to undertake the Annual Leachate and Water Management System Audit (LWMS) at the Woodlawn Bioreactor:

Condition 18R

"Within six months of commissioning the LTP and annually thereafter, unless otherwise agreed to by the Planning Secretary, the Proponent shall commission and pay the full cost of an independent assessment of the leachate and water management system. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Planning Secretary. During the audit, this expert must:

a) consult with the EPA, Water NSW and the Planning Secretary;
b) assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include:
  i. actual versus predicted inputs and outputs into and out of each dam;
  ii. actual versus predicted mechanical evaporation from each dam;
  iii. actual versus predicted rainfall and evaporation; and
  iv. the actual versus predicted volume of water or treated leachate stored in each dam.
c) assess actual versus predicted performance of the LTP. This must include:
  i. actual versus target effluent quality; and

ii. actual versus target throughput.

d) determine whether the leachate and water management system are achieving its intended objectives; and

e) outline all reasonable and feasible measures that may be required to improve water and leachate management at the site."

1.4. Audit Scope

The scope of the Audit included an assessment of the following matters in accordance with the requirements of Condition 18R of Schedule 2 of Project Approval MP 10_0012:

- The conditions of all relevant approvals;
- Management plan requirements;
- The requirements of relevant regulatory agencies;
- The status of the operation;
- The key regulatory risks, including past or future risks;
- The predictions of environmental impact assessments;
- The performance of the operation;
- Results from previous audits;
- Any incidents or community complaints;
- Feedback received from other regulatory agencies on the performance of the operation;
- Feedback received from the community / community consultative committee on the performance of the operation; and
- Agency policy or other focus areas.

An overview of the stormwater and leachate streams associated with the Woodlawn Eco-Precinct is shown in Figure 1.1. It is noted that the scope of the audit has included the management of stormwater, leachate, leachate treatment plant operations and the evaporation dams in place to manage treated leachate generated from the premises.

A flow chart showing the management of water inputs and outputs from the Woodlawn Eco-Precinct is shown in Figure 1.2.

1.5. Temporal Period Covered by the Audit

This Independent Audit is the fifth audit to be conducted against Condition 18R of Schedule 2 of Project Approval MP 10_0012. The last audit was completed by Jackson Environment and Planning Pty Ltd on 19th July 2022 for the audit period 16th March 2021 to 15th March 2022.

This Audit was commissioned by Veolia on 16th February 2023, approximately 12 months since the last audit.

The Audit covers the period from 16th March 2022 until 15th March 2023.

Figure 1.1. Overview of the stormwater and leachate streams associated with the Woodlawn Eco-Precinct (Courtesy, Veolia Environmental Services Pty Ltd).

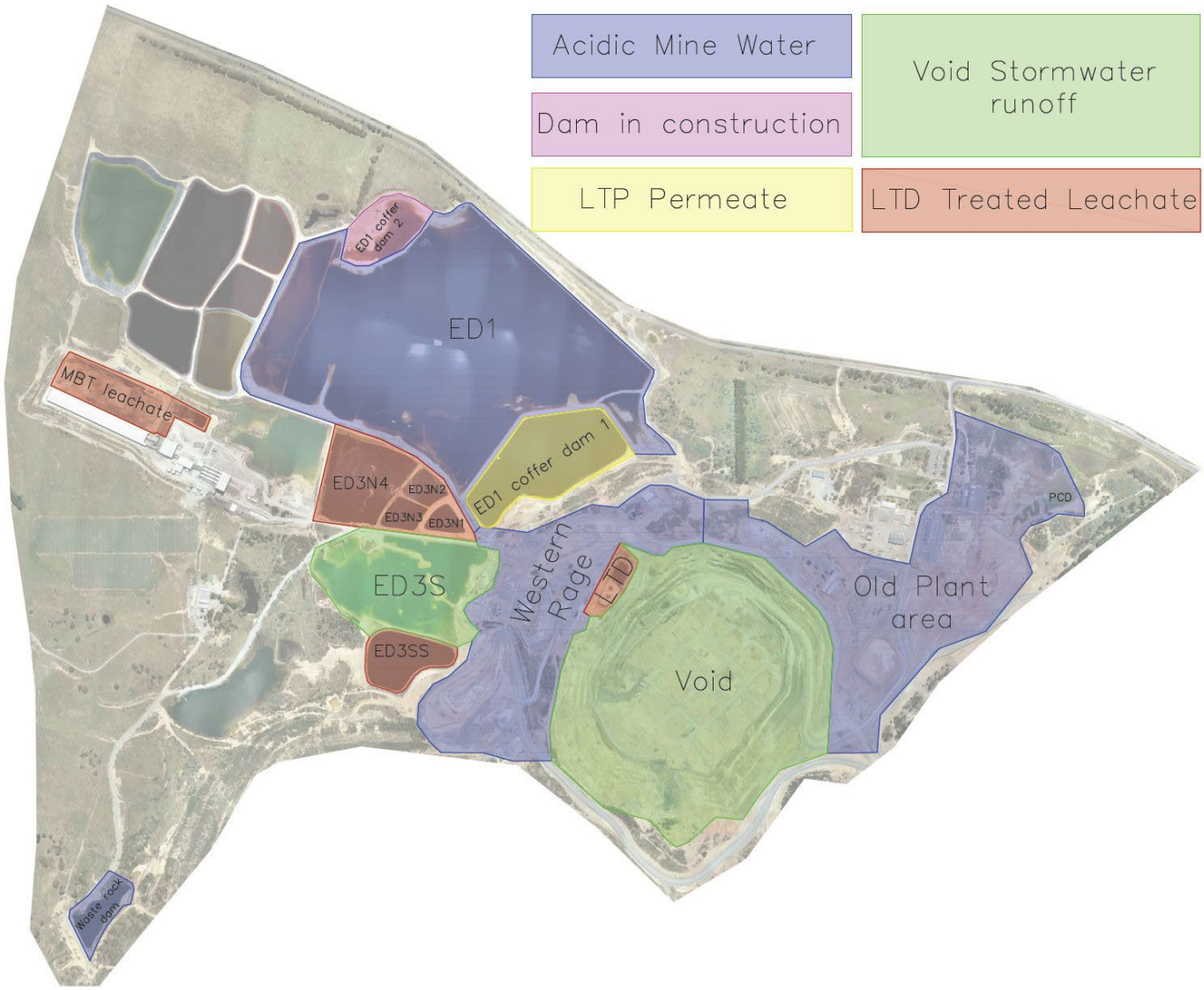
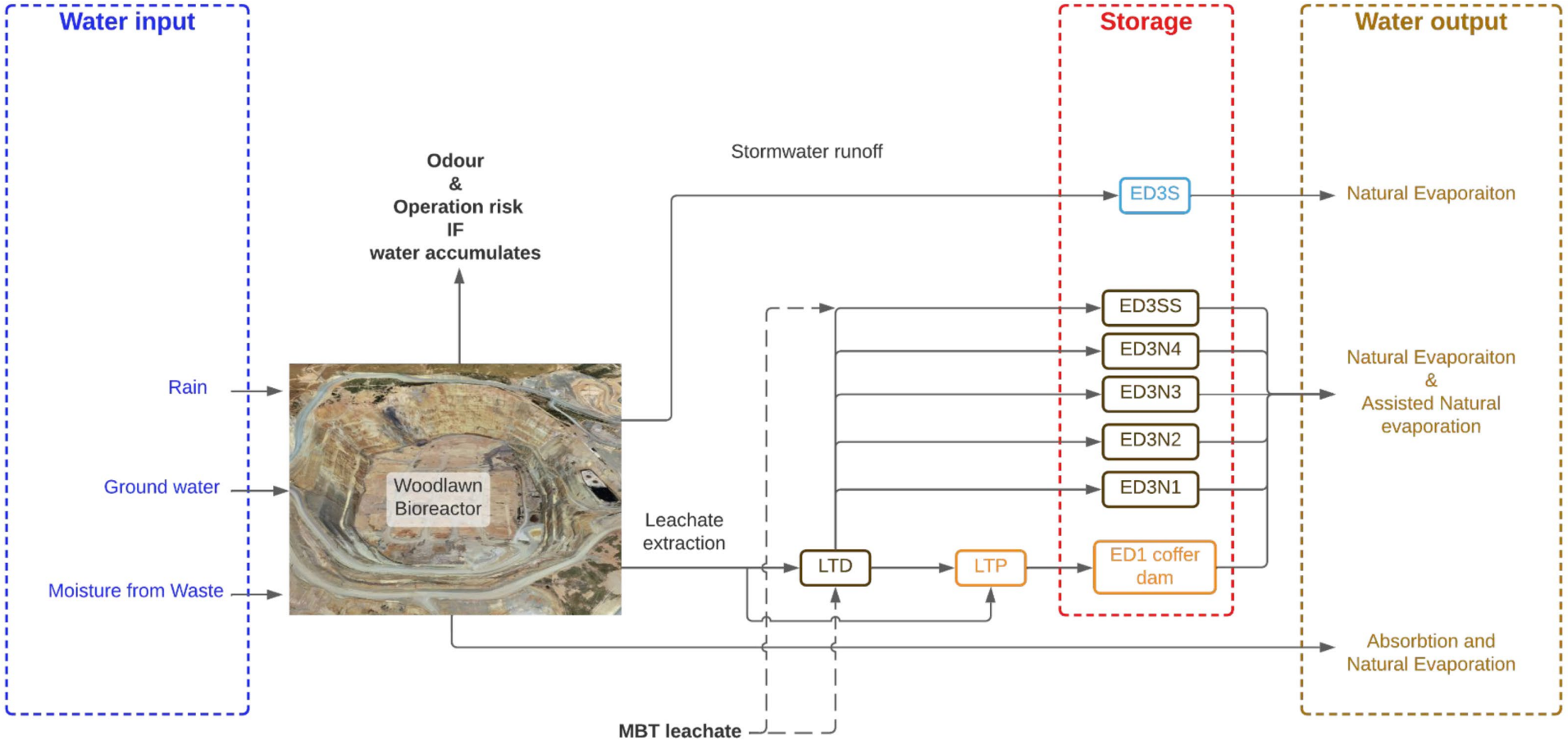


Figure 1.2. Flow chart showing how water inputs and outputs from the Woodlawn Eco-Precinct are managed under Project Approval MP10_0012 (Courtesy, Veolia Environmental Services Pty Ltd).



2. Audit Methodology

2.1. Audit team approval

Veolia Environmental Services Pty Ltd wrote to the Department of Planning and Environment with details, qualifications and experience of the Audit team in February 2023. The Audit team was approved by the NSW Department of Planning and Environment in a letter dated 16th February 2023 (see Appendix D).

2.2. How the audit scope was developed

The scope of the audit as outlined in Section 1.4 was informed through an assessment of the compliance requirements of Condition 18R of Schedule 2 of Project Approval MP 10_0012.

Environmental compliance matters relating to the operational phase of the development were considered. Any matters relating to the construction phase of the project was considered out of scope.

The audit plan focused on the compliance requirements relating to the management of the leachate and water management system for the Woodlawn Eco-Precinct only. The audit also considered key environmental compliance matters raised by the Department of Planning and Environment, Water NSW and the NSW EPA.

An audit plan was prepared in consultation with Veolia and this is provided in Appendix E.

2.3. Audit process and compliance assessment

The audit process outlined in *ISO 19011 Guidelines for Auditing Management Systems* (2018) has been used to inform the development of the audit plan. The Audit plan including the audit methodology is summarised in Table 2.1. The full Audit Plan is provided in Appendix E.

Three considerations relevant to the scope of this Independent Audit include that of:

- Project implementation phase;
- Documentation; and
- Spatial Scope.

A site audit meeting and inspection was held at the facility on 27th March 2023. Photographs from the site inspection are provided in Appendix B. A closeout meeting and presentation of the Audit findings was held on 25th May 2023.

Table 2.1. Summary of the audit methodology and the audit plan.

No.	Audit plan task
1	**Letter seeking audit team approval** – In accordance with the NSW Department of Planning, Industry and Environment's *Independent Audit Post Approval Requirements* (2020), a letter was prepared seeking DPE approval for the audit team.
2	**Develop the Audit Plan** – An audit plan was developed outlining what will be audited, who will do the auditing, when it will happen and who will be audited, and how much time will be dedicated to each process in the audit. Work will also be assigned to auditors. The audit working papers were also prepared to identify what the auditors wants to verify, what questions to ask, and what they expect as evidence. The Audit Plan included the audit sequence. Consultation with relevant agencies, including EPA, Water NSW and the Planning Secretary of DPE in accordance with your consent and the *Independent Audit Post Approval Requirements*.
3	**Conduct the opening meeting** – The onsite audit begins with an opening meeting. This is to introduce the auditors, confirm the scope and extent of the audit and discuss the schedule. Site audit meeting and inspection held on 27 April 2022

No.	Audit plan task
	Review documents – After the meeting, any documents immediately presented by Veolia was reviewed to gather relevant information that might not have been available before.
	Carry out the audit – The auditors commenced the audit by interviews and collecting the records and observations that will demonstrate if the processes meet the Development Consent conditions and EPL requirements. Write to EPA, Water NSW and DPE and seek any feedback on the environmental performance of the development.
	Generate findings and conclusions – Generate the audit findings and prepare any audit conclusions to be presented at the closing meeting.
	Conduct the closing meeting – The onsite audit finishes with a closing meeting to present the audit findings and provide Veolia with the opportunity to discuss and ask questions about the audit and findings.
4	**Formalise audit findings in a report** – The final findings formally written and distributed in an audit report.

To help assess the compliance status under each part of Condition 18R of Condition 18R of Schedule 2 of Project Approval MP 10_0012, an evidence-based evaluation approach was used. Relevant evidence was discussed during the audit meeting and site inspection to help inform the view of the Auditors as to whether the site was operating in a compliant or non-compliant manner. Evidence assessed as part of the Audit included:

- Relevant records, documents and reports (including details such as any relevant document reference, the date of the document, revision number and author);
- Interviews of relevant site personnel;
- Photographs (including the date the photograph was taken);
- GIS figures and associated shapefiles (as relevant and available);
- Site inspections of relevant locations, activities and processes;
- Monitoring data and analysis including the period covered by the monitoring data; and
- Delivery records, invoices and receipts including the record date and reference number.

2.4. Site personnel interviewed

We thank Veolia for providing a broad range of management and technical staff to support the audit interview and site inspection. These personnel, including names and position titles are noted in Table 2.3 below.

Table 2.3. Veolia Environmental Services Pty Ltd representatives supporting the Audit.

Name	Position	Organisation
Dr Ark Du	Woodlawn Eco-Precinct Engineering Manager	Veolia Environmental Services Pty Ltd
Mr Kevin Xie	Landfill Engineer	Veolia Environmental Services Pty Ltd
Mr Callum Simpson	Woodlawn LTP Operations Supervisor	Veolia Environmental Services Pty Ltd

2.5. Site inspection undertaken

Following the audit meeting on 27th March 2023, an inspection of the leachate and water management operations of the Woodlawn Eco-Precinct was undertaken. This involved a bus tour and site inspection of the following critical elements of the site's leachate and water management system:

- Woodlawn landfill void (from the north western viewing location at the top of the void);
- Leachate Treatment Dam;
- Dams used for the collection, storage and evaporation of stormwater (ED3S and ED3SS);
- Leachate Treatment Plant, including plant controls and physical operations;

- Treated leachate evaporation dams (ED3N1, ED3N2, ED3N3 and ED3N4);
- Leachate Treatment Plant Permeate storage dam (ED1 Coffer Dam 1); and
- Acidic Mine Water Storage Dam (ED1).

Photographs taken during the site inspection are provided in Appendix B.

2.6. Consultation undertaken

Consultation was undertaken in accordance with the requirements of Condition 18R(a). Consultation letters were prepared and issued to agencies on 20th February 2023 to seek feedback on key environmental matters relating to the audit.

Consultation was performed with Water NSW, DPE and NSW EPA. Copies of letters issued are provided in Appendix G. Feedback from agencies was requested by 6th March 2023.

2.7. Compliance status descriptions

The compliance assessment criteria as outlined by the Department of Planning and Environment in the *Independent Audit Post Approval Requirements* (2020) has been used in this Audit (see Table 2.2 below).

Please note that the compliance status of relevant conditions of consent assessed in this Audit is presented in Appendix A.

Table 2.2. Compliance assessment criteria as per DPE (2020) *Independent Audit Post Approval Requirements*.

Assessment	Criteria
Compliant	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
Non-compliant	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.
Not triggered	A requirement has an activation or timing trigger that has not been met during the temporal scope of the audit being undertaken (may be a retrospective or future requirement), therefore an assessment of compliance is not relevant.

3. Audit Findings

This section provides the main findings of the Audit to address all the requirements of Condition 18R of Schedule 2 of Project Approval MP 10_0012 (as modified).

Appendix A includes tables of findings of this Audit, the compliance status of each condition audited and recommendations.

3.1. Approvals and documents audited

Key documentation reviewed as part of the Audit includes the following documents. Specific items of evidence used to assess compliance to the conditions of consent under Condition 18R of Schedule 2 of Project Approval MP 10_0012 (as modified) is outlined in the compliance audit tables in Appendix A, and also noted below.

- Project Approval MP 10_0012, as modified;
- Woodlawn Annual Reports;
- Monitoring data including:
    - Generated leachate and treated leachate volumes between 16/03/22 to 15/03/23;
    - Bioreactor waste mass moisture content;
    - Rainfall data;
    - Water monitoring and water balance monitoring; and
    - Independent Odour Audit #9 (The Odour Unit, dated August 2021);
    - Water Balance Presentation (Veolia, dated 26/04/22);
- Monthly Reports for the Leachate Treatment Plant for EPA for months of March 2022 to February 2023 (inclusive) (LTP);
- Environmental Management Plans, including:
    - Soil and Water Management Plan;
    - Bioreactor Landfill Environmental Management Plan;
    - Bioreactor Soil and Water Management Plan;
    - Leachate Management Plan;
    - Operations and maintenance plans for the LWMS;
    - Eco-Precinct Emergency Response Plan;
    - Site inspection checklists;
    - DPE approvals for management plans;
    - Surface Water Management Plan (Land Team, dated 13/04/2016);
- Previous Independent Leachate and Water Management System Audits (2019, 2020, 2021 and 2022);
- Status report on recommendations from the 2022 Independent Leachate and Water Management System Audit;
- Woodlawn Bioreactor Facility Water Balance Performance Review (WSP, dated 09/04/22);
- Woodlawn Bioreactor Emergency Stormwater Management – DA31-02-99 and MP10_0012 (Veolia correspondence with DPE dated 05/01/2022);
- Woodlawn Leachate Treatment Plant October 2020 – Audit Report;
- Short to Medium Term and Long-Term Leachate and Water Management Strategies (Engeny, 2023);
- Monthly Groundwater Monitoring Reports – March 2023 (CES, 2023);
- Incident reports;
- Training register;
- Leachate Treatment Plant Training and Procedures;
- Position description for the Leachate Treatment Plant Supervisor;

- Position description for the Landfill Engineer;
- Position description for the Woodlawn Eco-Precinct Engineering Manager;
- Register of discharges;
- Veolia Assessment Management System (VAMS); and
- Complaints Register.

3.2. Summary of the compliance assessment

This section provides a summary of the assessment of the actual performance during the Audit period against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. A comparison is also made to the 2022 audit report in Table 3.1 below.

It is noted that continuing wet weather periods and lower than predicted rates of evaporation has resulted in storage levels in dams exceeding predictions. This has in turn made it difficult for the site to resolve non-compliances from the 2022 Audit. Two new aspects of non-compliance were found in Condition 18R(d), though part of this condition was already found to be in non-compliance in 2023, so a new non-compliance has not been created. One new non-compliance was found as a result of the 2023 Audit relating to Condition 18(R)(e).

Further details in relation to recommended actions to address the non-compliances are provided in Table 3.3 and further elaborated on in Appendix A.

Table 3.1. Summary of the compliance assessment conducted as part of the 2023 Audit. A comparison to the results of the 2022 Audit is provided to help in understanding trends in compliance (tick, compliant; cross, non-compliant).

Consent condition	Condition reference no.	2022 Compliance Status	2023 Compliance Status
18R **Within six months of commissioning the LTP and annually thereafter, unless otherwise agreed to by the Secretary, the Proponent shall commission and pay the full cost of an independent assessment of the leachate and water management system. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary. During the audit, this expert must:**	18R	✓	✓
18R(a) **Consult with the EPA, Water NSW and the Secretary.**	18R(a)	✓	✓
18R(b)(i) **Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted inputs and outputs into and out of each dam.**	18R(b)(i)	✗ (1)	✗ (1)
Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted mechanical evaporation from each dam.	18R(b)(ii)	✗ (2)	✗ (2)
Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted rainfall and evaporation.	18R(b)(iii)	✗ (3)	✗ (3)
Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: the actual versus predicted volume of water or treated leachate stored in each dam.	18R(b)(iv)	✗ (4)	✗ (4)

Consent condition	Condition reference no.	2022 Compliance Status	2023 Compliance Status
Assess actual versus predicted performance of the LTP. This must include: actual versus target effluent quality	18R(c)(i)	✗	✗
Assess actual versus predicted performance of the LTP. This must include: actual versus target throughput.	18R(c)(ii)	✗	✗
Determine whether the leachate and water management system is achieving its intended objectives. 1. Construction of a suitably sized and lined coffer dam (referred to as ED1 Coffer Dam) to store and evaporate treated leachate from its leachate treatment plant from September 2018 for 4- year period without filling.	18R(d)	✗	✗
2. In accordance with Condition 18S of the Project Approval (MP 10_0012), as modified, the volume of mine water stored in ED1 must be no more than 10 ML by 31 December 2023.	18R(d)	Not triggered	Not triggered
3. In accordance with Condition 18T of the Project Approval (MP 10_0012), as modified, ED3N must be emptied of effluent from the existing leachate system by 31 December 2022.	18R(d)	Not triggered	✗
4. Install floating evaporators in ED3N1, ED3N2, ED3N3, ED3N4 and ED3SS to manage leachate from September 2017 through to December 2019.	18R(d)	✓	✓
5. Operate effectively without adversely impacting on the surrounding community.	18R(d)	✓	✓
6. Minimise leachate production.	18R(d)	✓	✓
7. Effectively separate all classes of water.	18R(d)	✓	✗
Outline all reasonable and feasible measures that may be required to improve water and leachate management at the site.	18R(e)	✓	✗

[1] It is noted that continuing wet climatic conditions have not made it possible to comply with this requirement; [2] Condition based on an inadequate water balance. In addition to mechanical methods, Veolia continues to implement multiple methods to improve evaporation where possible. In addition, the climatic conditions have not made it possible to meet this requirement; [3] Condition based on an inadequate water balance. As a result of high rainfall and low evaporation, this condition could not have been met; [4] Condition based on an inadequate water balance. Meeting this condition has been hampered again by excessively wet conditions.

3.3. Notices, orders, penalty notices or prosecutions issued during the audit period

During the Audit period, one Development Control Order was received from the Department of Planning and Environment on 1st April 2022. This Order was issued to Veolia to remedy a breach of the Consent and requires Veolia to develop short, medium, and long-term leachate and water management strategies. Engeny Water Management (Engeny) is the consultant engaged by Veolia to prepare a Leachate and Water Management Strategy for the facility.

On 24th October 2022, the NSW EPA issued Veolia with a Prevention Notice in response to a notification from Veolia on 27th September 2022 that a small section of HDPE liner of Coffer Dam 1 had failed. Veolia in response pumped water from Coffer Dam 1 to the outer ED1 Dam to enable repairs to the Coffer Dam 1 liner. EPA required monthly monitoring and reporting of selected groundwater monitoring bores downgradient and upgradient to ED1 Dam. In addition, EPA required a Trigger Action Response Plan be prepared.

An overview of the Order and Notice, and progress made to date in addressing the requirements of the Order and Notice is provided in Table 3.2.

Table 3.2. Overview of notices, orders, penalty notices or prosecutions issued during the Audit period and action taken to comply.

No.	Notices, orders, penalty notices or prosecution type	Issuing authority	Date of issue	Basis for notice, order, penalty or prosecution	Required action(s)	Summary of action taken to date	Compliant?
1	Development Control Order	DPE	1st April 2023		1. Veolia must comply with the terms of this Order as follows: a. Engage an independent, suitably qualified and experienced specialist(s) (the specialist(s)) with expertise in the area(s) of water and leachate management, and submit to the Planning Secretary for endorsement. b. Following endorsement by the Planning Secretary, the specialist(s), in consultation with the Environment Protection Authority and the Department of Planning and Environment (the Department), is to develop: i. A short to medium term leachate and water management strategy (short to medium term strategy) for the Premises; and ii. A long term leachate and water management strategy (long term strategy) for the Premises. c. Submit to the Planning Secretary for approval, the short to medium term and long term strategies referred to in Term 1 b i and ii above. d. Following the Planning Secretary's approval, implement	Veolia has implemented actions to comply with the Order. This includes: + Engeny Water Management Engaged by Veolia on 6th May 2022 to advise on water and leachate management. + Engeny Water Management endorsed by DPE on 24th May 2022. + A presentation on draft short to medium term strategies for DPE and EPA done on 13th December 2022. + A presentation on draft long term strategies for DPE and EPA done on 16th February 2023. + A report titled 'Short to Medium Term and Long Term Leachate and Water Management Strategies' by Engenie dated 28th February 2023 has been prepared and submitted to DPE for approval on 16th December 2022.	Yes
2	Prevention Notice	NSW EPA	24th October 2022	On 27th September 2022 Veolia notified EPA that a small section of HDPE liner of Coffer Dam 1 had failed. Veolia in response	1. Immediately from the date of this Notice and until a date agreed upon by the EPA commence monthly monitoring of groundwater monitoring bores MB10, MB10S, MB2, MB28, and MW-FRC1	Monthly sampling and testing of groundwater has been conducted by CES on 11th January, 14th February and 14th March 2023. Results are documented by CES in their report	Yes

No.	Notices, orders, penalty notices or prosecution type	Issuing authority	Date of issue	Basis for notice, order, penalty or prosecution	Required action(s)	Summary of action taken to date	Compliant?
				pumped water from Coffer Dam 1 to the outer ED1 Dam to enable repairs to the Coffer Dam 1 liner.	downgradient of ED1, and MB-3 upgradient of ED1. This monitoring should include the following contaminants of concern (CoC): i. Alkalinity (as calcium carbonate), electrical conductivity, pH, standing water level; ii. Aluminium, arsenic, barium, benzene, cadmium, calcium, chloride, chromium (hexavalent), chromium (total), cobalt, copper, ethyl benzene, fluoride, lead, magnesium, manganese, mercury, nitrate, nitrite, nitrogen (ammonia), potassium, sodium, sulfate, toluene, xylene, zinc; and iii. Total dissolved solids, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons, total phenolics, total organic carbon, organochlorine pesticides, organophosphate pesticides. Where there has been no results above the of level of reporting for 6 consecutive months for the following list of CoCs, then then they will be removed from the list of CoCs that will be required for the further monthly monitoring: polycyclic aromatic hydrocarbons, total petroleum hydrocarbons/ benzene, toluene, ethylbenzene, xylene, and total phenolics, organochlorine pesticides, organophosphate pesticides.	titled 'Monthly Groundwater Monitoring Reports – March 2023' dated 3rd April 2023.	
					2. By the date which is four weeks from the date of this Notice, establish and provide to the Manager Regulatory	A TARP was prepared by GHD for Veolia dated 13th January 2023. This report was submitted to EPA on 13th	Yes

No.	Notices, orders, penalty notices or prosecution type	Issuing authority	Date of issue	Basis for notice, order, penalty or prosecution	Required action(s)	Summary of action taken to date	Compliant?
					Operations Regional South via info@epa.nsw.gov.au a Trigger Action Response Plan (TARP) for instances where the CoC's listed in Point 1 are elevated above the 85%ile default trigger values contained within the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018). Where Veolia can adequately justify that the 85th%ile default trigger values are not appropriate, the TARP should be activated when CoC levels are elevated above the upgradient sample.	Janurary 2023. It is noted that Veolia did not comply with the timeframe for completing the TARP. The Auditors consider that whilst the timeframe was not complied with, the requirement under the Prevention Notice in essence has been complied with. Therefore, it is considered that Veolia has complied with this requirement.	
					3. Commencing 25 October 2022, provide a monthly update of the results of the monitoring program and activation of the relevant TARP to the Manager Regulatory Operations Regional South via info@epa.nsw.gov.au.	The first monthly report was supplied on 13th January 2023 for the November 2022 reporting month.	Yes
					4. Within the date which is one week after the date of the Notice a. Engage a suitably qualified person with relevant experience in leachate management approved by the EPA to undertake an assessment of the management of Coffer Dam 1. The assessment must include, but need not be limited to: i. An assessment of the integrity of the liner in Coffer Dam 1, to the extent practicable while Coffer Dam 1 continues to contain water;	Earth2Water Pty Ltd (E2W) engaged to assist with the investigation. A report was prepared by Earth2Water Pty Ltd dated 30th December 2022 and was issued to EPA on 30th December 2022. The findings from this investigation are provided below: + Site inspections were undertaken on 29th September 2022 and 13th October 2022 to assess dam safety and geotechnical conditions. + Site inspection was conducted on 9 December 2022 to assess the liner	Yes

No.	Notices, orders, penalty notices or prosecution type	Issuing authority	Date of issue	Basis for notice, order, penalty or prosecution	Required action(s)	Summary of action taken to date	Compliant?
						integrity. + Leachate levels have been lowered to below tears/holes in HDPE liner (Completed in November 2022). + Veolia has stopped discharges of treated leachate into ED1c, and misting, spraying of leachate is conducted to enhance evaporation and further lower the levels (ongoing). + Dam is geotechnically safe and stable. Further investigation will be required to determine remedial works to repair liner punctures, clay liner, anchor trench on north wall and erosion on the external wall. This assessment will be carried out when liquid volume reaches 80% (i.e. RL 789.30, expected to be 31st March 2023, weather dependent).	
					ii. An assessment of equipment, systems, procedures, practices and training relating to management and maintenance of Coffer Dam 1. This must include consideration of maintaining appropriate capacity in Coffer Dam 1 to prevent pollution of waters and protect the integrity of the liner	+ The study found that while Veolia has equipment, systems and procedures in place, some further improvement to systems and procedures is required.	
					iii. An assessment of incident response procedures relating to Coffer Dam 1, including any contingencies that are in place to manage excess leachate in a	+ An assessment of incident response measures has been completed. + Additional evaporation systems have been installed to continue to	

No.	Notices, orders, penalty notices or prosecution type	Issuing authority	Date of issue	Basis for notice, order, penalty or prosecution	Required action(s)	Summary of action taken to date	Compliant?
					manner that prevents pollution of waters	reduce liquid levels. + Leachate levels are currently below freeboard and dropping further due to favourable weather conditions and additional evaporation capacity.	
					iv. Provision of recommendations (short, medium and long term) to address any gaps identified in the assessment undertaken in compliance with points i-iii above, including appropriate timeframes for implementation.	+ A series of short term, medium term and long-term measures are recommended in Table 1 of the E2W report. The short-term recommendations all coincide with the Audit period and action taken to date includes: + Increase frequency of ED1c site inspections of dam levels, HDPE liner and outer wall erosion, particularly after high rainfall. + Stopped discharges of treated leachate into ED1c (completed on 16th September 2022). + Continue to increase evaporation to further lower the liquid levels via evaporation systems (ongoing). + Relocate the effluent pipe (ring main for the evaporation system) away from the HDPE liner to enable the liner assessment and repair. (31st March 2023). + Maintain levels below the 0.5m freeboard via natural and mechanical evaporation methods (ongoing). + Construction ED1 coffer dam 2 (ED1c2). (Completed in late	

No.	Notices, orders, penalty notices or prosecution type	Issuing authority	Date of issue	Basis for notice, order, penalty or prosecution	Required action(s)	Summary of action taken to date	Compliant?
						December 2022, with assurance items and documentation to be completed and approved in January 2023). + Veolia to continue the monitoring and management of the seep in ED1 (ongoing). + Woodlawn monthly planning meetings to include the outcomes and outstanding actions identified from routine inspections of all the dams including ED1c. (start from January 2023). + Implementation of medium and long-term recommendations of the E2W report will need to be assessed in next year's Audit.	
					5. From the date of this Notice being issued appropriate freeboard capacity must be maintained within Coffer Dam 1. Prevent Coffer Dam 1 from overtopping into ED1 by continuously maintaining freeboard capacity in Coffer Dam 1 by transporting any excess leachate as liquid waste to a facility that can lawfully receive it.	+ In the E2W report, Table 1 notes that Veolia continued to increase evaporation to further lower the liquid levels via evaporation systems. No leachate was tankered off-site. +Levels of leachate were yet to reach 0.5m below freeboard at the time of the site inspection on 27th March 2023.	No
					6. By 28 October 2022 provide documentary evidence to the EPA of the lawful disposal of all liquid waste (e.g. dockets or receipts from the receiving waste facility) and photographs showing the maintained capacity within Coffer Dam 1 to the Manager Regulatory Operations Regional South via	+ Leachate levels were reduced to below tear holes in November 2022. + A table showing surveyed volume from 4th October 2022 to 12th December 2022 was supplied by Veolia to the EPA.	Yes

No.	Notices, orders, penalty notices or prosecution type	Issuing authority	Date of issue	Basis for notice, order, penalty or prosecution	Required action(s)	Summary of action taken to date	Compliant?
					info@epa.nsw.gov.au.		
					7. By the date which is ten weeks after the date of the Notice, provide a report detailing completion of the assessment required under Point 5 above to the Manager Regulatory Operations Regional South via info@epa.nsw.gov.au.	+ The E2W report was provided to EPA on 30th December 2022.	Yes
3	Show Cause	NSW EPA	7th March 2023	EPA wrote to Veolia outlining alleged offences under the *Protection of the Environment Operations Act* 1997. These alleged offences relate to: 1) The alleged failure to comply with licence conditions is an offence under section 64. 2) The alleged failure to immediately notify the EPA of a pollution incident, being an offence under Part 5.7. 3. The alleged pollution of waters is an offence under section 120.	+ The Show Cause Notice provided an invitation to Veolia to respond. + Veolia accepted the invitation to respond.	+ Veolia provided a written response to the EPA Show Cause letter dated 24th March 2023 outlining why regulatory action should not be taken.	Yes

3.4. Summary of non-compliances

This section provides a summary of the non-compliances found during the 2023 Audit.

As noted in Section 3.2, continued wet weather periods and lower than predicted rates of evaporation has resulted in storage levels in dams exceeding predictions. This has in turn resulted in ongoing non-compliances as found in the 2022 Audit. The results are presented in Table 3.3.

Recommendations to address the non-compliances are summarised in Table 3.3 as well.

Table 3.3. Summary of non-compliances from the current audit, and recommended actions to address the non-compliances. Timeframes that Veolia has committed to in addressing these non-compliances is also given. Please also refer to footnotes in Table 3.1 in relation to difficulties Veolia have experienced in meeting the requirements of the water balance model, given continuing very wet climatic conditions during the Audit period.

Consent condition	Condition reference no.	Non-compliance identification no.	Details of the non-compliance	Auditor's recommended action to address non-compliance	Timeframe for resolving the non-compliance (agreed to by Veolia)
18R(b)(i) Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted inputs and outputs into and out of each dam	18R(b)(i)	NC1(a)	+ A liner tear in ED1 Coffer Dam 1 occurred on 10th May 2022 prompted Veolia to implement an unapproved emergency syphon of treated leachate to the unlined section of ED1. + As a result, the storage level in ED1 has increased by 582 ML while the storage in ED1 Coffer Dam 1 was reduced to ensure the leachate level remained below the liner tear which occurred near the top of the liner.	+ Continue to investigate a weather independent means of evaporating leachate from the storage dams. + Repair the liner in ED1 Coffer Dam 1 as a priority. + Lower the leachate level in ED1 Coffer Dam 1 to the target level (which is approximately 80% capacity) as a priority. + As the revised water balance has not yet been completed, all applicable recommendations made in the previous audit period for the water balance still apply though have not been repeated again in this audit report. + A series of specific modelling recommendations are provided in Appendix A.	23/12/2023
Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted mechanical	18R(b)(ii)	NC1(b)	+ Actual mechanical evaporation losses from each dam are substantially less than predicted in the 2017 water balance model due in part to overestimation of mechanical evaporation in combination with continuing unfavorable climatic conditions during the audit period 16 March 2022 to 15 March 2023.	+ The recommendation to address this non-compliance is addressed in NC1(a). + A series of specific modelling recommendations are provided in Appendix A.	23/12/2023

Consent condition	Condition reference no.	Non-compliance identification no.	Details of the non-compliance	Auditor's recommended action to address non-compliance	Timeframe for resolving the non-compliance (agreed to by Veolia)
evaporation from each dam					
Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted rainfall and evaporation	18R(b)(iii)	NC1(c)	+Actual rainfall was substantially higher and evaporation was substantially lower than the wettest year predictions in the 2017 water balance model, due to continuing unfavourable climatic conditions during the audit period 16 March 2022 to 15 March 2023.	+ The WSP water balance report done in 2017 shall be updated taking into consideration worst case scenarios rainfall and evaporatory conditions based on recent weather events. This modelling is recommended to occur as part of NC1 (a).	23/12/2023
Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: the actual versus predicted volume of water or treated leachate stored in each dam	18R(b)(iv)	NC1(d)	Actual inputs into the treated leachate dams have been substantially more than predicted in the 2017 water balance model due to excessive wet conditions during the audit period 16 March 2022 to 15 March 2023.	+ The recommendation to address this non-compliance is addressed in NC1(a).	23/12/2023
Assess actual versus predicted performance of the	18R(c)(i)	NC2	+ Effluent quality is considered to generally meet target effluent quality. However, on two occasions during the	+ It is recommended that if the lab detects an Ammonia exceedance that it retests to confirm the exceedance.	31/08/2023

Consent condition	Condition reference no.	Non-compliance identification no.	Details of the non-compliance	Auditor's recommended action to address non-compliance	Timeframe for resolving the non-compliance (agreed to by Veolia)
LTP. This must include: actual versus target effluent quality			audit period ammonia exceed its target. On both occasions levels were compliant the next day. It is possible these are sampling errors. + Despite the two days on which ammonia did not comply the LTP is consistently exceeding its water quality objectives.		
Assess actual versus predicted performance of the LTP. This must include: actual versus target throughput.	18R(c)(ii)	NC3	+ The average annual LTP throughput during the Audit period was 4.2 L/sec, which exceeded the target throughput. However, the LTP throughput rate was found to be less than 4 L/sec for 81 days during the Audit period. + The LTP experienced sudden drops in temperature which resulted in the loss of heat exchange capacity as the outgoing effluent does not have enough heat to exchange to warm the influent. + Leachate treatment rates in the LTP, which are to be 4 L/sec, had some minor drops below 4 L/sec in April, with a greater number of drops in May and then a consistent nonconformance in June until the start of August.	+ Carefully monitor the LTP this coming winter to ensure there are no thermal shocks which it is hoped that the third membrane installation will overcome. If there are thermal shocks and drops in treatable flow rate additional measures to prevent thermal shock will need to be implemented. + Continue to improve and optimise the LTP operation with the assistance of suitably qualified experts (as required).	31/08/2023
Determine whether the leachate and water management system is achieving its intended objectives.	18R(d)(1)	NC4(i)	+The system is not achieving its objectives. The volume of water stored within the unlined ED3N dams has grown significantly instead of being drawn down. At the same time ED1 Coffer Dam is also nearly full. This will substantially delay the installation	+ The previous recommendation for NC1 will address this non-compliance.	31/08/2023

Consent condition	Condition reference no.	Non-compliance identification no.	Details of the non-compliance	Auditor's recommended action to address non-compliance	Timeframe for resolving the non-compliance (agreed to by Veolia)
1. Construction of a suitably sized and lined coffer dam (referred to as ED1 Coffer Dam) to store and evaporate treated leachate from its leachate treatment plant from September 2018 for 4- year period without filling.			of any new liners with ED3N dams. Dams are being operated above the 80% freeboard limit set. In addition, the tear in the liner of ED1 Coffer Dam 1 means that ED1 Coffer Dam 1 must have its operational headroom reduced to a level below the tear which is about 80% of its storage capacity.		
3. In accordance with Condition 18T of the Project Approval (MP 10_0012), as modified, ED3N must be emptied of effluent from the existing leachate system by 31 December 2022.	18R(d)(3)	NC4(ii)	+ This condition requires ED3N to be emptied of effluent from the existing leachate system by 31 December 2022. + This was not achieved and is therefore not compliant.	+ The previous recommendation for NC1(a) will address this.	23/12/2023
7. Effectively separate all classes of water.	18R(d)(7)	NC4(iii)	+ This condition requires the separation of all classes of water. + Acid mine drainage (AMD) water has now been mixed with leachate in ED1.	+ Once leachate storage levels can be reduced in all dams, the leachate and AMD mixture in ED1 will need to be managed. This will now need to be included in the revised long-term Leachate and water management strategy for the site.	23/12/2023
Outline all reasonable and feasible measures that may be	18R(e)	NC5	+ The revised water balance has not been completed within the Audit period, though the Auditors understand that additional time was	+ Urgently and within 6 months revise the water balance and as required develop alternative strategies for managing water and leachate on the site. + Refer to actions under NC1.	23/12/2023

Consent condition	Condition reference no.	Non-compliance identification no.	Details of the non-compliance	Auditor's recommended action to address non-compliance	Timeframe for resolving the non-compliance (agreed to by Veolia)
required to improve water and leachate management at the site.			required to appoint a specialist to conduct this work that was acceptable to the Department of Planning and Environment.		

3.5. Previous audit recommendations

Table 3.4 provides a summary of the recommendations from the 2022 Independent Leachate and Water Management System Audit. The table also summarises any actions that were implemented to ensure the non-compliances are satisfactorily resolved and/or whether the recommendation is yet unresolved. It is noted that all recommendations from the 2022 Independent Leachate and Water Management System Audit have been completed.

Table 3.4. Previous audit recommendations and current status.

Rec No.	2022 LWMS Audit Recommendation	Comment	Proposed Completion Date	Status
NC1(a)	+ The Auditors recommend the leachate and water management strategy as required under April 2022 Development Control Order be completed in 2022 as a priority, including a revised water balance model, with a development modification submitted to DPE seeking to implement the required changes to the water management system. This modification shall also seek to update the reference water balance model for future compliance assessments. + The development modification shall also include a revised and practical target date(s) for emptying of ED3N lagoons and replace their liners based on an updated water balance model. + A series of specific modelling recommendations are provided in Appendix A.	+ Veolia will seek to implement the leachate and water management strategy as required under the April 2022 Development Control Order to be completed in 2022 as a priority. This includes a revised water balance model, with a consent modification seeking to implement the required changes to the water management system, update of the reference water balance model for future compliance assessments, and revised and practical target date(s) for emptying of ED3N lagoons and ED1.	23/12/2022	Not yet complete
NC1(b)	+ The recommendation to address this non-compliance is addressed in NC1(a). + A series of specific modelling recommendations are provided in Appendix A.	+ Refer to NC1(a).	23/12/2022	Not yet complete
NC1(c)	+ The WSP water balance report done in 2017 shall be updated taking into consideration worst case scenarios rainfall and evaporatory conditions based on recent weather events. This modelling is recommended to occur as part of NC1 (a).	+ Refer to NC1(a).	23/12/2022	Not yet complete
NC1(d)	+ The recommendation to address this non-compliance is addressed in NC1(a).	+ Refer to NC1(a).	23/12/2022	Not yet complete
NC2	+ Continue to improve and optimize the LTP operation with the assistance of suitably qualified experts (as required). + Ensure that the LTP has additional membrane capacity installed as planned and that the additional capacity is	+ The third ultrafiltration membrane committed in May and June 2022. + On two occasions during the Audit period Ammonia exceed its target. On both	31/08/2022	Not yet complete

Rec No.	2022 LWMS Audit Recommendation	Comment	Proposed Completion Date	Status
	commissioned and operating successfully.	occasions levels were compliant the next day. It is possible these are sampling errors. + Despite the two days on which Ammonia did not comply the LTP is consistently exceeding its water quality objectives. + Plant optimization is ongoing.		
NC3	+ The LTP achieved an average throughput of 3.4 L/sec during the audit period, less than the target of 4 L/sec.	+ LTP did not meet 4 L/sec target for entire Audit period. + On the 8th February 2023 the LTP started treating leachate at a rate of over 6 L/sec which is 50% more than its target and this bodes well. + The LTD has also been upgraded with a new aerator improving oxygen levels and mixing and facilitating greater denitrification (removal of nitrogen). + Odour levels at the LTD were not high or offensive on the day of the audit (27/03/23). + Given ongoing optimization work on LTP throughput and the installation of the third Ultrafiltration Membrane, the auditors consider that this recommendation has been completed.	31/08/2022	Not yet complete
NC4	+ Veolia has optimized the mix of influent into the LTP to balance the flow of COD and nutrients into the plant. This balance requires the LTD to continue to operate and for leachate treated in the LTD to be stored in the ED3N or ED3SS lagoons for later ingestion into the LTP to help balance direct leachate feed. + Some problems with foaming have now been overcome through the use of antifoaming agents. + Effluent quality is considered to meet EPA license limits. There was a single minor exceedance of ammonia and TSS during the audit period. As a result, the	+ On two occasions during the audit period Ammonia exceed its target. On both occasions levels were compliant the next day. It is possible these are sampling errors. + Despite the two days on which Ammonia did not comply the LTP is consistently exceeding its water quality objectives.	31/08/2022	Not yet complete

Rec No.	2022 LWMS Audit Recommendation	Comment	Proposed Completion Date	Status
	plant did not fully achieve effluent quality targets across the audit period.			

3.6. Adequacy of Environmental Management Plans, sub-plans and compliance documents and opportunities for improvement

The environmental management plans, sub-plans and compliance documents appear to be satisfactory in implementing the conditions of consent as approved under Condition 18R of Schedule 2 of Project Approval MP 10_0012 (as modified). The purpose of the plans is to guide management of operations to ensure environmental impacts are minimise and the site is managed in accordance with the conditions of consent.

This Audit continues to find that the 2017 water balance has not been a reliable predictor of rainfall, evaporation rates and levels in dams for the Woodlawn bioreactor landfill. As a consequence, inflows into the dam systems have exceeded outflows, leading to increasing dam levels which exceed freeboard levels.

We note that in the 2021 Audit, it was recommended that a contingency plan be prepared to empty the dams if the revised water balance model report will not be achieved. The Audit also recommended that due the higher rainfall and lower evaporation in 2020, 2021 and 2022, the target dates for the emptying of certain dams shall be reassessed and discussed with the relevant Regulators and extension shall be considered as a contingency.

On 1st April 2022, Veolia received a Development Control Order from DPE seeking the preparation of a short to medium term leachate management strategy and a long-term leachate and water management strategy due to exceedance of the 80% capacity limit and 0.5m freeboard requirements for dams as noted in the Order.

As noted in Section 3.3, progress has been made in developing a short, medium and long term strategy for managing water and leachate, including the preparation of a revised water balance model, with a development modification submitted to DPE seeking to implement the required changes to the water management system. This modification shall also seek to update the reference water balance model for future compliance assessments.

Once this matter is resolved, it is recommended that the site's Soil and Water Management Plan be updated accordingly.

3.7. Other matters

Nil.

3.8. Agency consultation and feedback

Consultation was undertaken in accordance with the requirements of Condition 18R(a). Consultation letters were prepared and issued to agencies on 20th February 2023 to seek feedback on key environmental matters relating to the audit. Consultation was performed with Water NSW, DPE and NSW EPA Copies of letters issued are provided in Appendix G. Feedback from agencies was requested by 6th March 2023.

3.8.1. Water NSW

A letter was issued to Water NSW on 20th February 2023 providing an opportunity to comment on the environmental performance of the LWMS including environmental compliance matters relating to the management of water and leachate under Development Consent MP 10_0012.

No feedback had been received at the time of writing this report.

3.8.2. Department of Planning and Environment

A letter was issued to DPE on 20th February 2023 providing an opportunity to comment on the environmental performance of the LWMS including environmental compliance matters relating to the management of water and leachate under Development Consent MP 10_0012.

No feedback had been received at the time of writing this report.

3.8.3. NSW EPA

A letter was issued on 20th February 2023 to NSW EPA providing an opportunity to comment on the environmental performance of the LWMS including environmental compliance matters relating to the management of water and leachate under Development Consent MP 10_0012.

NSW EPA requested that several matters be considered in the Audit in a letter dated 14th May 2023 (Appendix G). These matters are set out in Table 3.5 along with a reference to where these comments have been addressed in the Audit report.

Table 3.5. Summary of consultation feedback from NSW EPA and how the comments have been addressed in the Audit.

Topic	Summary of EPA comment / request (from letter dated 3 May 2022)	Summary response	Section addressed
General	The Audit is required to: + Determine whether the leachate and water management system is achieving its intended objectives; and + Outline all reasonable and feasible measures that may be required to improve water and leachate management at the site. To inform the audit Jackson should request access to all relevant correspondence sent from the EPA to Veolia regarding leachate and water management during the audit period. The audit should assess and report on Veolia's progress in implementing the recommendations made in last year's audit.	+ This has been assessed in the Audit through a review of compliance with Conditions of Consent 18R(d).	Appendix A
Development Control Order	On 1 April 2022 the Department of Planning & Environment (DPE) issued Veolia with a Development Control Order to remedy breaches of various water related conditions of the Project Approval. The terms of the DCO were developed in consultation with the EPA because many of the issues identified in the DCO also relate to the environment protection licence that applies to the premises. DPE approved an extension to the due date for submission of the leachate and water management strategies required by the DCO from 31 August 2022 to 16 December 2022 (for the short to medium term strategies) and 28 February 2023 (for the long-term strategies). On 28 February 2023, Veolia submitted a consolidated document containing proposed short, medium and long-term leachate and water management strategies. The EPA has advised Veolia it is not in a position at the present time to assess the adequacy of the strategies presented because not all the information required by the terms of the DCO has been provided. Specifically, the submission did not include the supporting water modelling (other than some summary graphs). The EPA considers that a detailed and justified water balance is fundamental to the development of the strategies required by the DCO.	+ Compliance with the conditions of the Development Control Order is presented in Section 3.3 of the Audit report.	Section 3.3.

Topic	Summary of EPA comment / request (from letter dated 3 May 2022)	Summary response	Section addressed
	The Audit should consider the DCO submissions from Veolia to date and assess Veolia's compliance with the terms of the DCO.		
Leachate Management in the Landfill Void	Ineffective leachate and water management can flood gas extraction pipework and inhibit the removal of landfill gas from the waste mass. This can lead to fugitive emissions of landfill gas to the atmosphere and result in odour impacts. The Independent Odour Audit #9 (The Odour Unit, 2021) has identified the importance of leachate and water management and landfill gas capture infrastructure in the effective management of fugitive landfill gas emissions. We refer Jackson to this report on the Veolia website here for more information. The EPA has directed Veolia to investigate this issue under Pollution Reduction Programs (PRPs) attached to the environment protection licence. A PRP report (Earth2Water Pty Lt, August 2021) identified the importance of keeping leachate levels in gas extraction wells as low as possible to maximise the area of free pipe available for gas drainage. The report recommended that leachate levels should be kept to at least 4 metres below the waste surface to allow for a 2-metre buffer between the leachate and the top of the perforated section of gas extraction wells. In response to the PRP recommendation the EPA has requested Veolia submit a leachate extraction procedure that includes a monitoring program and associated Trigger Action Response Plan (TARP). Veolia submitted a draft Leachate Level Monitoring and Extraction Procedure and associated TARP to the EPA for review on 5 October 2022. The EPA has provided initial comments to Veolia on the TARP. These have related to real-time leachate monitoring through SCADA, the role of sensors and leachate level monitoring frequencies. The EPA will provide further comments on these documents when the actions required under the DCO (see above) have been completed. This will allow the procedure and TARP to be considered as part of the overall water and leachate management strategies at the premises in an integrated and coordinated way.	+ The Auditors note the EPA requirement to investigate the management of leachate within the void through a PRP program. + It is understood these measures are required to improve the management of leachate within the landfill void are part of the draft *Short, to Medium Term and Long-Term Leachate and Water Management Strategies* by Engeny (February, 2023). + The Auditors recommend the effectiveness of these measures are reviewed as part of future Audit(s) when this management plan is in force.	N/a

Topic	Summary of EPA comment / request (from letter dated 3 May 2022)	Summary response	Section addressed
	The Audit should assess performance of the leachate management in the landfill void, particularly in relation to the objective of keeping leachate levels to below 4 metres beneath the waste surface.		
Leachate Treatment Plant	In June 2022, Veolia installed an additional membrane train in the leachate treatment plant (LTP). The additional membrane train was expected to increase the capacity of the LTP from 4 L/s to more than 6 L/s. The Audit should assess and comment on improvements to the actual performance of the LTP since the new treatment train has been installed.	+ The effectiveness of the third Ultrafiltration Membrane train has been reviewed within this Audit.	Appendix A
Evaporation Dams	**Evaporation Dam 1** Condition 18Q of Schedule 2 of the Project Approval states that: *"No interaction between the treated leachate in the coffer dam(s) and the mine stormwater in ED1 is permitted".* The audit should consider that: + On 10 May 2022, Veolia implemented an unapproved emergency syphon of treated leachate from the ED1 coffer dam to the unlined section ED1. + On 14 September 2022, the liner of the ED1 coffer dam #1 failed. Treated leachate from the coffer dam and from the LTP was then pumped into unlined sections of ED1. + On 24 October 2022, the EPA issued Veolia with Prevention Notice 3503885 directing it to take action to address the potential impacts on groundwater that may have resulted from the unapproved discharges into the unlined sections of ED1. + From 10 May 2022 to 11 November 2022 Veolia discharged approximately 71 ML of treated leachate from ED1 Coffer Dam #1 into unlined sections of ED1. + During the audit period, Veolia pumped 50 ML of water from ED3S into ED1. The water in ED3S exhibits elevated levels of ammonia and has previously received discharges of treated leachate from the neighbouring Woodlawn Mechanical Biological Treatment Facility.	+ The transfer of treated leachate from ED1 Coffer Dam to ED1 has been reviewed in Section 3.3. and Appendix A.	Section 3.3 Appendix A

Topic	Summary of EPA comment / request (from letter dated 3 May 2022)	Summary response	Section addressed
	Evaporation Dam 3 ED3N Condition 18T of Schedule 2 of the Project Approval states that: "ED3N must be emptied of effluent from the existing leachate system by 31 December 2022". This does not appear to have been achieved and observations made by EPA officers at a site inspection on 30 March 2023 indicated that all of the dams within the ED3N complex are either full or nearly full. ED3S On 29 August 2022 the DPE issued Veolia with a Formal Warning for transferring 3.3ML of treated leachate from the neighbouring Woodlawn Mechanical Biological Treatment Facility (EPL 20476) into ED3S-S in contravention of Section 4.2 (1)(b) of the *Environmental Planning and Assessment Act* 1979. As part of the DCO, Veolia is required to investigate and address seepage from ED3S to the underground workings of the mine operated by Tarago Operations Pty Ltd (EPL 20821). The provision of the information under the DCO is still pending. The audit should assess whether the Proponent has met its obligations under the POEO Act.	+ This has been considered within the Audit and the findings are presented in Appendix A. + EPA have requested a groundwater monitoring network review. Veolia has provided EPA the proposed scope of work for this. EPA have provided advice on the proposed scope of work, which is intended to be supplied to a hydrogeological services provider for a suitably qualified third-party review following vendor terms being finalised. Included in this scope is the comment from EPA to investigate the potential for leachate to be migrating to workings underground, when assessing the suitability of the monitoring network.	Appendix A N/a

Topic	Summary of EPA comment / request (from letter dated 3 May 2022)	Summary response	Section addressed
Groundwater Monitoring	Condition 17 of Schedule 2 of the Project Approval requires Veolia to prepare and implement a Soil and Water Management Plan that, amongst others things, includes a groundwater monitoring program. It is the EPA's expectation that this monitoring program be established and maintained in accordance with the minimum standards described in the document titled "Environmental Guidelines: Solid Waste Landfills 2nd Edition" (EPA, 2016). Annual Returns submitted in recent years have reported non-compliances with groundwater monitoring frequency conditions, often citing the reason as monitoring wells being dry or insufficiently recharged. On one occasion a groundwater monitoring well could not be accessed due to safety concerns. The monitoring network should be fit-for-purpose and adequately meet the requirements of section 4.4 of the Landfill Guidelines. The EPA has written to Veolia about this matter and Veolia has committed to engaging an independent expert to review the adequacy of the current monitoring network. The audit should assess progress on this commitment and outline all reasonable and feasible measures that may be required to improve groundwater monitoring at the site.	+ EPA have requested a groundwater monitoring network review. Veolia has provided EPA the proposed scope of work for this. EPA have provided advice on the proposed scope of work, which is intended to be supplied to a hydrogeological services provider for a suitably qualified third-party review following vendor terms being finalised. Included in this scope is the comment from EPA to investigate the potential for leachate to be migrating to workings underground, when assessing the suitability of the monitoring network.	N/a

Topic	Summary of EPA comment / request (from letter dated 3 May 2022)	Summary response	Section addressed
Transport of Liquid Waste to and from the Premises	The Woodlawn Landfill receives leachates generated at the Clyde Transfer Terminal (EPL 11763) and the Banksmeadow Transfer Terminal (EPL 20581).). Veolia has also recently advised the EPA that it has been transporting leachate off the landfill for disposal at other licensed waste facilities. There is also some community concern regarding leaking waste containers during transport from the intermodal facility to the landfill by road. The audit should assess whether the Proponent has met its obligations under Part 4 of the *Protection of the Environment Operations (Waste) Regulation* 2014 with respect to tracking the transport of leachate into and out of the premises. The audit should assess whether Veolia has obtained and is compliant with all the statutory approvals required to transport leachate to and from the premises.	+ Veolia have sought advice from the waste tracking section of EPA on this matter and recently received advice. This advice is being reviewed by Veolia and is being considered in light of all of Veolia's sites in the Sydney region, to first understand the scope of work potentially required to be undertaken by an expert third party to resolve any identified issues.	N/a

3.9. Summary of complaints, adequacy of responses and management

During the audit period a total of 332 complaints were received by the site, comprising a mix of complaints made to the NSW EPA Environment Line or directly to Veolia via email, phone or through their Community Feedback Line. Of the complaints received, 323 were related to odour and 9 were related to road traffic. A geographic analysis of the odour complaints is provided in Table 3.6. The total number of complaints dropped slightly from 384 during the 2022 Audit period.

Table 3.6. Analysis of the number and geographic locations of odour complaints received during the Audit period.

Location	Distance from the Bioreactor landfill (km)	Direction from the Bioreactor landfill (km)	Number of complaints
Tarago	7 km	East	204
Borough	20.6 km	South east	53
Lake Bathurst	10 km	East	24
Collector	20.6 km	North west	7
Currawang	9.4km	North west	23
Mt Fairy	13.3km	South	10
Gundaroo	29km	West	0
Oallen	37 km	East	0
Quialigo	21.8 km	North-east	1
Not specified	Unknown	Unknown	10
TOTAL			**332**

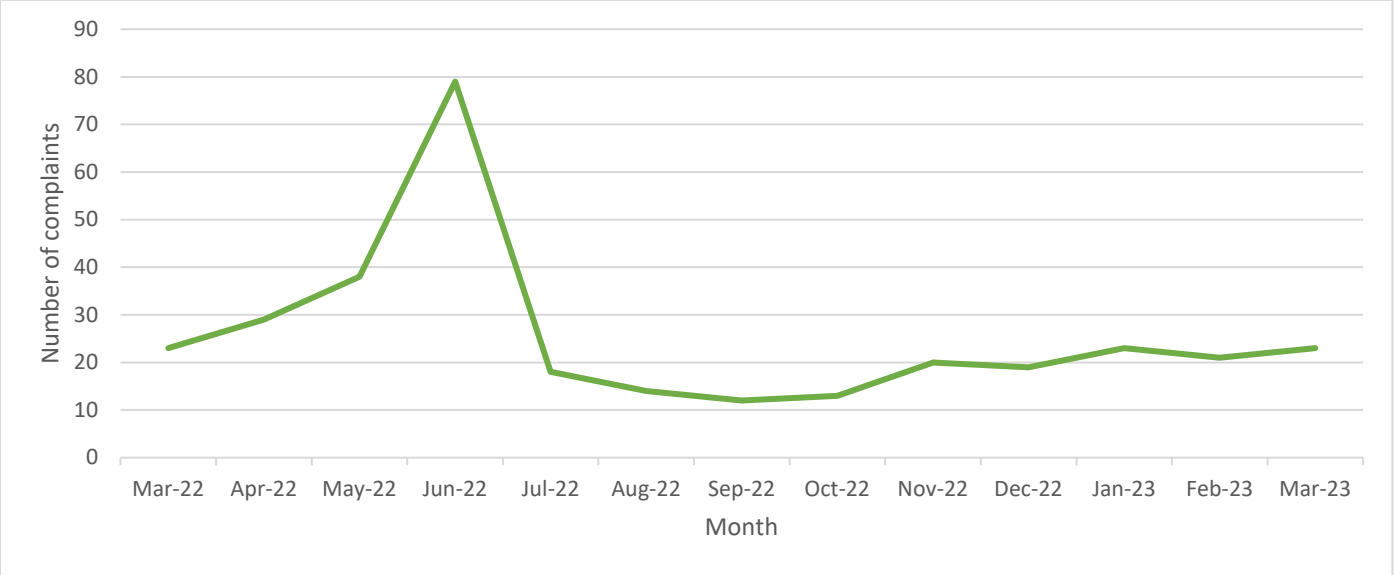
Evidence suggests that the township and surrounding land holdings of Tarago continue to be the main source of odour complaints, being the closest populated area located east of the Bioreactor landfill. An analysis of complaints by month during the Audit period is shown in Figure 3.1. The analysis suggests that the highest number of complaints were received in the two-month period between May and June 2022, during which the performance of the LTP dropped beneath 4 L/sec. The performance of the LTP was consistently below the target of 4 L/sec until the beginning of August 2022.

It is noted that in June 2022, there was a sudden drop in temperature of the LTP influent, due to cold and windy conditions, as a result of using a new foaming control system. This resulted in a significant loss of heat (thermal mass) from the system. It took a considerable period of time to recover from this event.

Veolia also undertook installation and commissioning of the third ultrafiltration membrane in May and June. However, as the process was impacted by the temperature loss, all membranes were not running simultaneously until late 2022. On the 8th February 2023, the LTP started treating leachate at a rate of over 6 L/sec, which is 50% more than its target.

The LTD has also been upgraded with a new aerator improving oxygen levels and mixing and facilitating greater denitrification (removal of nitrogen). These system improvements and optimisations will assist in reducing odour levels from leachate, and should translate into a reduction of off-site odour complaints.

Figure 3.1. Complaints received by month during the Audit period.



We note that the number of complaints has only declined slightly from 384 in the 2022 Audit period, and is still substantially higher than the 2021 Audit period (39 complaints). Previous evidence suggests that the increase in complaints appear to be related to the high levels of rainfall (The Odour Unit, 2021), which impacts the performance of the LTP. In the 2023 Audit period, the rainfall at the site was 1,003 mm, being slightly less than the rainfall experienced at the site in the 2022 Audit period (1,234 mm), though still substantially higher than the long-term average of around 580 mm/yr.

Whilst the leachate management system is one odour source from the site, the report notes that the construction of additional leachate treatment capacity (involving LTP optimization, increased contingency capacity and improvement of evaporation) will have a significant effect on the minimisation of odour from the void and leachate management system in the medium to long-term. The auditors agree with this conclusion, though during the next Audit period, the adequacy of the LTP and the optimisations made to the operation should be assessed.

3.10. Summary of incidents, adequacy of responses and management

During the Audit period, a total of nine (9) incidents were recorded in Veolia's incident register for the site, which include notifiable matters which are required to be reported to the Department of Planning and Environmental and NSW EPA. This is a reduction from 45 during the 2022 Audit period.

Of these incidents, all were considered to be insignificant or minor, except the tear in the liner to the Coffer Dam 1. This was a notifiable incident. On 27th September 2022, Veolia notified EPA that a small section of HDPE liner of Coffer Dam 1 had failed. Veolia in response pumped water from Coffer Dam 1 to the outer ED1 Dam to enable repairs to the Coffer Dam 1 liner.

In relation to the adequacy of the response to these incidents, the Auditors have found that Veolia has responded and taken appropriate action, and have proactively engaged DPE and NSW EPA to identify potential compliance matters. Whilst the incident relating to the tear in the liner to Coffer Dam 1 is not yet resolved, these matters are activity being addressed in consultation with EPA as outlined in section 3.3 of this report.

3.11. Compliance between actual and predicted impacts

The Audit found that, with the continuing higher than predicted rainfall and lower than predicted evaporation during the Audit period, ongoing stress has been placed on the leachate and water management system at the Site, above that predicted as part of the environmental assessment done under Approval MP 10_0012 in 2017.

The Auditors note that the adequacy of the existing water and leachate management system was assessed originally as part of the 2017 water balance by WSP. Whilst the site has been constructed in accordance with the modelling done as part of the original environmental assessment, the ongoing extreme rainfall events have exceeded the design parameters of the existing system, leading to higher than acceptance levels of leachate and stormwater being stored in dams on the site that have the risk of spilling.

To address this matter, DPE issued Veolia a Development Control Order (Order) to remedy a breach of the Consent and requires Veolia to develop short, medium, and long-term leachate and water management strategies. In response to this requirement, Engeny Water Management has been engaged by Veolia to prepare a Leachate and Water Management Strategy for the facility. Implementation of the recommendations of this Audit and this plan will assist in addressing odour impacts which have clearly exceeded predictions under the original assessment.

3.12. Evidence collected through site inspections undertaken during the audit

A site inspection was conducted on 27th March 2023. This inspection was supported by Veolia staff. Photos taken during the site inspection are provided in Appendix B.

3.13. Evidence to support compliance assessment provided by the personnel interviewed during the audit

A summary of the evidence collected to support our compliance assessment during the interview of Veolia staff on 27th March 2023 is provided in Section 3.1 and in Appendix A. It is noted that numerous follow up contact was made with the Veolia team post the audit meeting to supply additional records and evidence. We thank Veolia for being extremely cooperative in providing this audit evidence.

3.14. Continual environmental management improvement opportunities identified as part of the audit

The Audit has noted that the ongoing wet weather conditions associated with higher than predicted levels of rainfall and lower rates of evaporation have placed increased stress on the water and leachate management systems. The ongoing odour complaints received by the Site during the Audit period is a symptom that the site's water management system has been under stress.

Veolia is required to develop a short, medium, and long-term leachate and water management strategy in accordance with Development Control Order issued on 1st April 2022. This investigation will provide a framework for improved management of water and leachate on the site.

In the interim, commissioning of the additional treatment capacity of the LTP should assist in further treatment of leachate and assist in reducing the potential for odour generation at the Site. Greater engagement with the community should be considered to help communicate action underway to address leachate and odour issues at the

Site, to provide the community with confidence that these issues are temporary and a strategy is in place to resolve these matters.

3.15. Key strengths of the development's environmental management and performance

Veolia has extensive management plans in place to assist in ensuring that the development is operated in accordance with the consent. The Audit found that, with the higher than predicted rainfall events during the Audit period, significant stress has been placed on the leachate and water management system at the Site, above that predicted as part of the approval obtained in 2017.

Veolia have proactively engaged both NSW EPA and DPE on these compliance matters. We understand that Veolia is committed to working through these matters with NSW EPA and DPE to ensure that the environmental impacts of the operation are minimised.

4. Recommendations and opportunities for improvement

A series of recommendations and opportunities for improvement in relation to the water and leachate management system operated by Veolia for the Bioreactor landfill have been identified as part of the Audit.

The Auditors note that a detailed outline of recommendations to address non-compliances is provided in Appendix A.

These are summarised in Table 3.2 in Section 3.4 and are not repeated here.

Appendix A – Compliance Audit Tables

Table A.1 Planning consent table outlining compliance with leachate and water management specific conditions under MP10_0012 (including Mods 1-4).

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
Schedule 4 – Specific Environmental Conditions – Landfill Site					
18R	Within six months of commissioning the LTP and annually thereafter, unless otherwise agreed to by the Secretary, the Proponent shall commission and pay the full cost of an independent assessment of the leachate and water management system. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary. During the audit, this expert must:	+ Independent audit reports prepared by SLR Consulting in 2019, 2020 and 2021.	**Findings:** + This Independent Audit is the fifth audit to be conducted against this condition. + The last audit was completed by Jackson Environment and Planning Pty Ltd on 19th July 2022 for the audit period 16th March 2021 to 15th March 2022. + This Audit was commissioned by Veolia on 16th February 2023, approximately 12 months since the commencement of the last audit. + Jackson Environment and Planning Pty Ltd are qualified, experienced and independent experts, endorsed by DPE on 16th February 2023 (refer to Appendix D for the DPE endorsement letter). **Recommendations:** + Nil.	Compliant	-
18R(a)	Consult with the EPA, Water NSW and the Secretary.	+ Letters were issued to DPE, NSW EPA and Water NSW on 11th April 2022.	**Findings:** + Responses provided by agencies are summarised in Section 3.8 of this Audit report. **Recommendations:** + Nil.	Compliant	-
18R(b)(i)	Assess actual performance against the assumptions and	Dam monthly storage levels,	**Findings:** + Inputs and outputs from each dam consists of direct rainfall and leachate pumped into the	Non-compliant[1]	NC1(a)

[1] The auditors note that Condition 18R(b) relates to the accuracy of WSP site Water Balance model undertaken in 2017 (and later updated in 2020, though for this audit, we have focused on the comparison to the 2017 model, forming part of the consent). This Water Balance (like all Water Balances) is based on a number of assumptions which are prone to change over time. In addition, many inputs and outputs are never going to be exactly the same as what was assumed within the Water Balance. As such, the auditors agree as per the findings of the 2021 and 2022 audit that

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
	predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted inputs and outputs into and out of each dam.	LTP daily performance data, rainfall records from the site and the AWS gauge at Goulburn near the site, site evaporation records, recent water balance modelling work by WSP in 2021.	dam, natural and mechanically enhanced evaporation from each dam. We have assumed the liners remain waterproof and losses through the liners are negligible. + Each of the above elements is covered below in more detail, however a basic summary of findings follows: + The basis for comparison of "predicted" is the data included in the water balance prepared by WSP in its letter dated 28 September 2017 and which forms part of the consent. "Actual" is the water balance data collected during the audit period 16th March 2022 to 15th March 2023. This audit period has seen very wet climatic conditions continue though it appears that rainfall conditions are less extreme than the previous Audit period. + ED1 Coffer Dam 1 reached its freeboard level shortly after the 2nd November 2021 during the previous audit period, at least 7 months earlier than predicted under the wettest scenario. ED1 Coffer Dam remained above the freeboard level until September 2022 at which point it fell below the freeboard level. + A liner tear in ED1 Coffer Dam 1 occurred (date unknown) and Veolia were granted approval under a Control Order (to breach their licence which prevents the storage of leachate within ED1 which was used to store acid mine drainage) to syphon leachate from ED1 Coffer Dam 1 into ED1 and to use ED1 for emergency storage of leachate. As a result, the storage level in ED1 has increased by 582 ML while the storage in ED1 Coffer Dam 1 was reduced to ensure the leachate level remained below the liner tear which occurred near the top of the liner. + Veolia was able to complete installation of the liner into ED1 Coffer Dam 2 and Veolia is waiting for approval for the storage to be used following liner testing and validation. This will provide much needed additional storage. + All ED3N lagoons remain full or nearly full. Only ED3N2 had some storage available below the freeboard level. + Table A1, below, indicates Coffer Dam 1 had storage available too. However, due to the liner tear the headroom would need to be reduced accordingly. It is understood that the leachate in ED1 Coffer Dam 1 is now at a level below the tear and so effectively it has no headroom above the current leachate level. + The water balance conditions on the site, showing available headroom and change in storage over the audit period is summarised in Table A1. It is based on storage level data provided by Veolia and which are based on independent dam storage volume survey levels provided by an independent Registered Surveyor.		

Condition 18R(b) cannot be assessed completely in accordance with the DPE Independent Audit Guidelines (May 2020) and the respective compliance status of the items within this condition should be read and interpreted in this context.

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**

	ED3S	ED1	ED3N1	)3N2	ED3N3	ED3N4	ED3SS	ED1 Coffer Dam
Storage level (27/2/23)	194.8	1355.	25.4	.8.6	18.758	129.65	112.13	166.37
Change over 12 months	+40.2	582	+25.4	0.3	+1.4	+18.6	-4.8	-42.6
Freeboard/Headroom Vol	180		23.2	.9.1	16.4	109.5	108.3	190.3 (normal) 152.3 (80% target until tear repaired)
Freeboard available?	no		no	yes	no	no	no	yes

Table A1. Dam Storage Status (as at end of February2022)

+ This last audit period saw continued wet weather though not as extreme as 2021-2022. Storages volumes of leachate have increased by 619 ML as a result of another year of net rainfall (as opposed to net evaporation which was assumed even in the wettest year in the reference water balance).
+ Rainfall measured at the site gauge in the 2022 Audit period was 1,234 mm while this it was 1,003 mm in the 2023 Audit period.
+ Evapotranspiration in the 2022 Audit period was 910mm and was 863mm during this Audit period. Note that lower evapotranspiration is considered worse.
+ Net rainfall last year was 324mm.
+ Net rainfall this audit period was 140 mm.
+ Net evaporation (Goulburn TAFE gauge) is 603mm in an average year for comparison purposes.
+ On 5th January 2022 Veolia wrote to DPE seeking approval of contingency arrangements for using ED1 for short term diversion of stormwater from landfill void walls to ED1; pump and spray off landfill to increase evaporative losses and construct additional coffer dams to store treated leachate.
+ On 1st April 2022 Veolia received a Development Control Order from DPE seeking the preparation of a short to medium term leachate management strategy and a long-term leachate and water management strategy due to exceedance of the 80% capacity limit and 0.5m freeboard requirements for dams as noted in the Order. The non-compliances

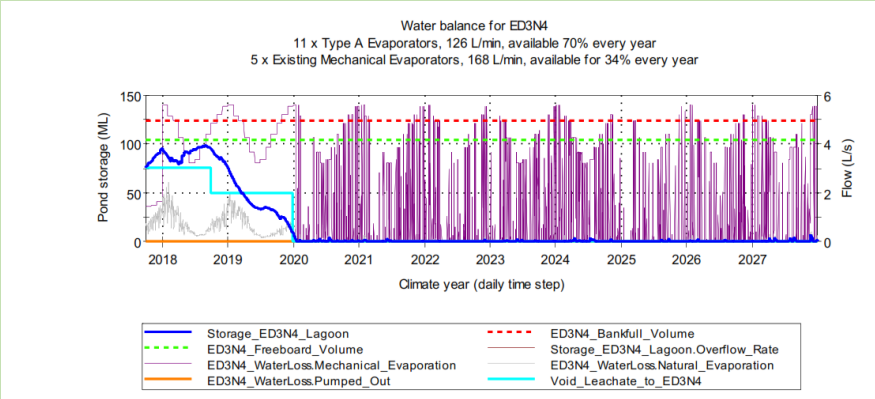
Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
			demonstrate the limitations of the existing water balance model and the urgent need to update it. + In response, Veolia had engaged a consultant to complete the work needed to revise the long-term leachate management strategy. At this time (May 2023) the long-term leachate and water management strategy had just been completed. **Recommendations:** + Continue to investigate a weather independent means of evaporating leachate from the storage dams. + Repair the liner in ED1 Coffer Dam 1 as a priority. + Lower the leachate level in ED1 Coffer Dam 1 to the target level (which is approximately 80% capacity) as a priority. + The leachate and water management strategy as required under April 2022 Development Control Order be completed as a priority, including a revised water balance model, with a development modification submitted to DPE seeking to implement the required changes to the water management system. This modification shall also seek to update the reference water balance model for future compliance assessments. + The development modification shall also include a revised and practical target date(s) for emptying of ED3N lagoons and replace their liners based on an updated water balance model. + It will now also need to include emptying of ED1 which has been used as a last resort and whereby leachate has been mixed with acid mine drainage. +Another wet year of data with net rainfall is available for use in either calibration or validation of the revised water balance and this data should be included in the revised water balance. + As the revised water balance has not yet been completed, all applicable recommendations made in the previous audit period for the water balance still apply though have not been repeated again in this audit report.		
18R(b)(ii)	Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted mechanical	Actual mechanical evaporation from each dam can only be inferred from a water balance. Predicted	**Findings:** + This audit period actually saw lower evapotranspiration as measured from the site gauge than the previous audit period and so logically even lower evaporation rates should have occurred. + Veolia has added an additional 14 mechanical aeration units across the storages during the audit period. ED3 dams each received one unit while ED3SS received 2 extra units and Coffer Dam 1 another 8 units. + Evaporator operation logs were provided as evidence of operation and confirm their	Non-compliant	NC1(b)

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
	evaporation from each dam.	mechanical evaporation was based on the 2017 water balance report by WSP.	continued operation whenever conditions allowed. One the day of the audit some of the evaporators in the ED3N storages were working. +Actual versus predicted mechanical evaporation from each dam is assessed under this consent condition. + It is not physically possible to measure the effectiveness of mechanical evaporation except by inference and water balance. A calculation is used to estimate the actual mechanical evaporation from the dams as follows: + Starting storage + leachate input + rainfall input + water transferred in – water transferred out – evaporation –storage volume at end of period = mechanical evaporation. + Rainfall, leachate, water transferred in and out can all be easily measured. However, the conversion of pan evaporation to actual site evaporation is reliant on a correctly calibrated coefficient which was reportedly determined in 2016 via a site calibration. The adopted pan coefficient value is 0.6. + Mechanical evaporation is therefore inferred and subject to any errors in adopted pan coefficients. + This is considered a reasonable method for estimating mechanical evaporation. It is accepted it will have some margin of error. The error is however not likely to be material and if the pan coefficient is underestimated the mechanical evaporation is overestimated and vice versa. There is likely to be little error in estimating total evaporation being the sum of natural and mechanical evaporation. Nonetheless, if the benefit of mechanical evaporators is overestimated, as has occurred to date, the whole water balance will be in significant error and this may result in an off-site discharge and adverse impact to the drinking water catchments. The value in reasonably estimating the performance of mechanical evaporators cannot be overstated. + Estimated evaporation for mechanical evaporators was considered to have been determined simplistically. The estimate relied on a constant performance from year to year and was independent of factors such as rainfall and relative humidity, wind direction impacting on operability. + This recent climate condition has seen easterly winds become the dominant wind direction and this has restricted the use of the mechanical evaporators as many are located on the western side of lagoons to avoid spray drift. The assumption here is that dominant winds are always from the west. + Actual mechanical evaporation is calculated in the table below which has been provided by in part from Veolia and based on additional calculations (Table A2) Table A2. Calculated Mechanical Evaporation for each dam.		

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**

		ED3N1-4	ED3SS	ED1 coffer dam	ED3S
Leachate input	m^3	32,471	5,005	93,558	0
Direct rain catchment area	m^2	78,627	25,314	73,063	103,130
Direct rain input	m^3	78,863	25,390	73,282	103,439
Other rain catchment area	m^2	0	0	0	161,642
Other catchment area rain input	m^3	0	0	0	16,213
Evaporation surface	m^2	53,336	21,366	63,896	81,255
Natural evaporation output	m^3	27,618	11,063	49,628	70,123
Other output (pumping)	m^3	0	2,657	69000	0
Surveyed volume on end of March 2022	m^3	147,336	116,946	208,970	154,612
Surveyed volume on end of March 2023	m^3	192,408	112,126	166,370	194,823
Calculated assist evaporation volume	m^3	38,644	21,495	48,040	9,318

+ The extent of reliance on mechanical evaporation in predictions is significant and this is shown below with an extract from the original 2017 water balance report (Figure A3).
+ Figure A3 shows the heavy reliance on mechanical evaporation. It is estimated that mechanical evaporation would result in an average of 4.5 l/s loss from the ED3N4 lagoon irrespective of wettest conditions prevailing. This equates to 140 ML/year loss from this storage alone.
+ By comparison the calculated total mechanical evaporation loss for all four ED3N lagoons for the audit period was estimated to be 38.6 ML. Which is a similar finding to last year's audit.
+ The original water balance for the site did not state specific predicted net mechanical

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
			evaporative losses for each dam and it is considered to be beyond the scope or need of this audit to retrospectively define it. + We conclude that estimated mechanical evaporation does not closely reflect actual mechanical evaporation. + Some ways to improve estimated mechanical evaporation are listed as follows: a) It must be linked to the variability observed with historical evaporation – in other words during wet periods evaporation is often reduced. Assuming a constant annual value is inappropriate. b) The WSP disaggregation of annual evaporation converted the 2016 calibrated data into monthly data to reflect seasonal variation. The annual total observed a loss of 28% of flow per annum. However, on inspecting the monthly loss rates adopted, the average rate was 33%. c) Estimates must account for wind direction and how this impacts availability. Wind roses from the adjacent wind farm may be used to inform better modelling practices. d) Consider adopting a conservative approach on all future modelling and adopt actual wettest period mechanical evaporation. **Figure A3. ED3N4 predictions under the wettest climate scenario (Extracted from the 2017 Water Balance).**  		

<table>
<tr><th colspan="5">Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)</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><th>Unique Identification Non-compliance</th></tr>
<tr><td></td><td></td><td></td><td>Recommendations:
+ The previous recommendation for NC1 will address this non-compliance.</td><td></td><td></td></tr>
<tr><td>18R(b)(iii)</td><td>Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: actual versus predicted rainfall and evaporation.</td><td>As noted above actual site rainfall and evaporation data was compared with water balance rainfall and evaporation documented in the 2017 water balance. A check against a local automatic weather station at Goulburn was also undertaken.</td><td>Findings:
+ The original water balance prepared by WSP analysed three potential rainfall scenarios being dry, average and wet periods. The wet period event included the wettest year on record being 1950. Within the wettest period adopted by WSP every year apart from 1950 had net evaporation. This is shown in Table A2 below.

Table A2. Water Balance Adopted Wettest Rainfall and Net Rainfall.
<table>
<tr><th>Year</th><th>Rainfall (1)</th><th>Evaporation (2)</th><th>Net (1-2)</th></tr>
<tr><td>1950</td><td>1305</td><td>1245</td><td>60</td></tr>
<tr><td>1951</td><td>704</td><td>1153</td><td>-449</td></tr>
<tr><td>1952</td><td>1018</td><td>1056</td><td>-38</td></tr>
<tr><td>1953</td><td>500</td><td>1078</td><td>-578</td></tr>
<tr><td>1954</td><td>457</td><td>1095</td><td>-638</td></tr>
<tr><td>1955</td><td>806</td><td>1324</td><td>-518</td></tr>
<tr><td>1956</td><td>1123</td><td>1176</td><td>-53</td></tr>
<tr><td>1957</td><td>432</td><td>1264</td><td>-832</td></tr>
<tr><td>1958</td><td>575</td><td>1168</td><td>-593</td></tr>
<tr><td>1959</td><td>1068</td><td>1298</td><td>-230</td></tr>
</table>
+ Table A2 shows that net rainfall for the wettest year on record was 60mm.
+ The automatic weather station (AWS) for Goulburn has recorded for the period of March 2022to Feb 2023 being about 120mm net rainfall which is 2 times larger than the net rainfall that occurred in 1950 of just 60mm. This is on top of unusually wet years in 2020 and 2021. More recent monthly rainfall appears to be easing with 14.2mm recorded at Goulburn AWS in February.
+ Site rainfall for the 12 months audit period is 1003mm.This is down about 240mm on the previous year. Goulburn AWS was 876mm.
+ Evaporation data for the site was measured as 863mm and this down on last year which was 912mm. This would help to account for the increase in storage across the site despite lower rainfall.

Recommendations:
+ The WSP water balance report done in 2017 should be updated taking into consideration recent weather events and in accordance with the detailed recommendations included in</td><td>Non-compliant</td><td>NC1(c)</td></tr>
</table>

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
			Section 4 of this report. This modelling is recommended to occur as part of NC1. + Veolia should revise the water balance for the site taking into consideration the following: + To adopt the longest possible continuous time series of data instead of adopting a dry, average and wet period approach. This will see the system tested under the full range of conditions that are critical to the water balance. While the wettest period sequence adopted had the wettest rainfall year on record it may not have had the highest net rainfall on record. Moreover, some average periods can stress water storages more than "wet" periods and this was evident with water balance modelling where an average year result obtained showed a storage filling more rapidly than under the wettest year sequence. + Make an allowance for climate change in adopted parameters to stress test the system. For example, a rainfall multiplier and separate evaporation multiplier to simulate increased rainfall combined with decreased evaporation. + Amend the method for modelling mechanical evaporators to take account of the recommendations provided in this report as follows: i. It must be linked to the variability observed with historical evaporation – in other words during wet periods evaporation is often reduced. Assuming a constant annual value is inappropriate. ii. The WSP disaggregation of annual evaporation converted the 2016 calibrated data into monthly data to reflect seasonal variation. The annual total observed a loss of 28% of flow per annum. However, on inspecting the monthly loss rates adopted, the average rate was 33% which will overestimate the losses by about 20%. iii. Estimates must account for wind direction and how this impacts availability. Wind roses from the adjacent wind farm may be used to inform better modelling practices. iv. Consider adopting a conservative approach with appropriate joint probabilities, for example – wettest rainfall coupled with minimal evaporation. + Redo the site calibration to reassess the adopted pan evaporation coefficients. + The site measures evapotranspiration and yet it is evaporation not evapotranspiration that is critical to the site water balance. Therefore, consider installation of a Class A pan evaporimeter with automatic refill, bird cage and telemetry. This will prevent the need to convert ET into evaporation data and eliminate one source of error on water balance modelling. Consider also measuring relative humidity as this will affect the performance of the mechanical evaporators and may enable a better long-term calibration of the mechanical evaporators. + Incorporate a changing pan evaporation coefficient to take into account the age of		

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			leachate and long-term increase in salinity. It is noted the evaporation reduces as salinity increases. + Amend the rainfall runoff method from the simplistic c value adopted to a method which models soil moisture stores such as the hydsim model used in MUSIC. Calibrate this model for actual site soil characteristics such as field capacity, soil depths, groundwater seepage etc. This will see rainfall runoff modelled more accurately than adopting a constant runoff coefficient of 0.1 which would have significantly underestimated the volume of runoff generated from the void surface as well as flow into ED1, into the void from outside the void and into each dam etc. + If not already done, place water meters on mechanical evaporators to record actual flow through. + Consider how to establish a system which enables mechanical evaporators to be moved from the western side to the eastern side to avoid downtime during easterly winds.		
18R(b)(iv)	Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include: the actual versus predicted volume of water or treated leachate stored in each dam.	We compared measured dam storage levels against predicted storage levels under a wettest rainfall scenario.	**Findings:** + This has been analysed under Condition 18R(b)(i) above. The auditors reiterate that the storage of leachate and stormwater on site has grown significantly to the point where there is a risk of site discharge if the current wet conditions prevail. This risk appears to be abating however as we move into winter, evaporation opportunities will diminish and concern over winter rainfall should mean Veolia carefully manages this risk. Moreover, as filling of ED1 with leachate has occurred, there are fewer opportunities to store leachate on the site (notwithstanding the imminent approval of ED1 Coffer Dam 2). + Veolia is now working to restore freeboard. **Recommendations:** + The previous recommendation for NC1(a) will address this finding.	Non-compliant	NC1(d)
18R(c)(i))	Assess actual versus predicted performance of the LTP. This must include: actual versus target effluent quality.	Site physico/chemical output or treatment data was obtained from Veolia and compared against licence conditions.	**Findings:** + Effluent quality is considered to generally meet target effluent quality. However, on two occasions during the audit period ammonia exceeded its target. On both occasions levels were compliant the next day. It is possible these are sampling errors. + Despite the two days on which ammonia did not comply the LTP is consistently exceeding its water quality objectives. **Recommendations:** + It is recommended that if the lab detects an Ammonia exceedance that it retest to confirm the exceedance.	Non-compliant	NC2

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Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
18R(c)(ii))	Assess actual versus predicted performance of the LTP. This must include: actual versus target throughput.	Site throughput data was obtained from Veolia and compared against proposed throughput	**Findings:** + The average annual LTP throughput during the Audit period was 4.2 L/sec, which exceeded the target throughput. However, the LTP throughput rate was found to be less than 4 L/sec for 81 days during the Audit period. + The LTP experienced sudden drops in temperature which resulted in the loss of heat exchange capacity as the outgoing effluent does not have enough heat to exchange to warm the influent. + Leachate treatment rates in the LTP, which are to be 4 L/sec, had some minor drops below 4 L/sec in April, with a greater number of drops in May and then a consistent nonconformance in June until the start of August. + In June it was reported that there was a sudden drop in temperature due to cold and windy conditions, despite using a new foaming control system. This resulted in a significant loss of heat (thermal mass) from the system. It took a considerable period of time to recover from this episode. + Veolia also undertook installation and commissioning of the third Ultrafiltration Membrane in May and June however as the process was compromised by the temperature loss, all membranes were not running simultaneously until late 2022. + There was 11 days in January and February when the LTP failed to meet its target flow rate. + However, on the 8th of February 2023 the LTP started treating leachate at a rate of over 6 L/s which is 50% more than its target and this bodes well. + The LTD has also been upgraded with a new aerator improving oxygen levels and mixing and facilitating greater denitrification (removal of nitrogen). Odour levels at the LTD were not high or offensive on the day of the audit. **Recommendations:** + Carefully monitor the LTP this coming winter to ensure there are no thermal shocks which it is hoped that the third membrane installation will overcome. If there are thermal shocks and drops in treatable flow rate additional measures to prevent thermal shock will need to be implemented. + Continue to improve and optimise the LTP operation with the assistance of suitably qualified experts (as required). **Recommendations:** + The previous recommendation for NC5 will address this non-compliance.	Non-compliant	NC3
18R(d)	Determine whether the	Refer above for	**Findings:**	Non-	NC4(i)

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
	leachate and water management system is achieving its intended objectives. 1. Construction of a suitably sized and lined coffer dam (referred to as ED1 Coffer Dam) to store and evaporate treated leachate from its leachate treatment plant from September 2018 for 4- year period without filling.	evidence collected.	+The system is not achieving its objectives. The volume of water stored within the unlined ED3N dams has grown significantly instead of being drawn down. At the same time ED1 Coffer Dam is also nearly full. This will substantially delay the installation of any new liners with ED3N dams. Dams are being operated above the 80% freeboard limit set. In addition, the tear in the liner of ED1 Coffer Dam 1 means that ED1 Coffer Dam 1 must have its operational headroom reduced to a level below the tear which is about 80% of its storage capacity. **Recommendations:** + The previous recommendation for NC1 will address this non-compliance.	compliant	
	2. In accordance with Condition 18S of the Project Approval (MP 10_0012), as modified, the volume of mine water stored in ED1 must be no more than 10 ML by 31 December 2023.	Dam storage levels and interviews with staff on site and following the site audit.	**Findings:** + It is considered premature to make any conclusive findings. **Recommendations:** + Nil.	Not triggered	-
	3. In accordance with Condition 18T of the Project Approval (MP 10_0012), as modified, ED3N must be emptied of effluent from the existing leachate system by 31 December 2022.	Dam storage levels and interviews with staff on site and following the site audit.	**Findings:** + This was not achieved and is therefore not compliant. **Recommendations:** + The previous recommendation for NC1(a) will address this	Non-Compliant.	NC4(ii)
	4. Install floating evaporators in ED3N1, ED3N2, ED3N3, ED3N4 and ED3SS to manage leachate from September 2017 through to December 2019.	+ SLR Consulting (2020). Woodlawn Bioreactor - Independent Audit Leachate and Water Management	**Findings:** + As reported in the 2019 Audit Report by SLR consulting, it is noted floating evaporators have already been installed in ED3N2, ED3N3, ED3N4 and ED3SS. In addition, dam water inflows are sprayed into the dams to further increase evaporation rates. The operation of the floating evaporators and dam inflow spray locations are selected based on real time weather data including the wind direction, wind speed, temperature, humidity and the time of the day. + Additional aerators have been installed during the audit period.	Compliant	-

Conditions of Development Consent – MP10_0012 (Consolidated consent including Mods 1, 2, 3 and 4)					
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		System (dated 2708/2020).	**Recommendations:** + Nil.		
	5. Operate effectively without adversely impacting on the surrounding community.	Dam storage levels.	**Findings:** +There have been no adverse water quality impacts on the surrounding community thus far however the possibility of an off-site discharge remains high. This may have an adverse impact on the surrounding community and on the drinking water catchments. The level of leachate stored within the cells has been kept low to minimise odour impacts however the volume of leachate stored on site is approaching capacity of the dams. **Recommendations:** + Revise the water balance and determine the revised risk of an off-site discharge or need to store leachate within cells. + Ensure that risk is managed in accordance with the Soil and Water Response Plan (Section 6) of Veolia's Soil and Water Management Plan (dated 07/09/2018).	Compliant	-
	6. Minimise leachate production	LTP throughput, site inspection to verify surface water diversions and cell capping	**Findings:** +Leachate production has been minimised by diverting as much run-on water as possible and by covering cells as soon as practical. **Recommendations:** + Continue to manage and minimise run on water and continue to cover cells as soon as feasible as per Section 4.1.6 and 4.2.4 of Veolia's Soil and Water Management Plan (dated 07/09/2018).	Compliant	-
	7. Effectively separate all classes of water.	Dam storage levels and interviews with staff on site and following the site audit.	**Findings:** +AMD water has now been mixed with leachate in ED1. **Recommendations:** + Once leachate storage levels can be reduced in all dams, the leachate and AMD mixture in ED1 will need to be managed. This will now need to be included in the revised long-term Leachate and water management strategy for the site.	Non-Compliant	NC4(iii)
18R(e)	Outline all reasonable and feasible measures that may be required to improve water and leachate management at the site.	Dam storage levels and interviews with staff on site and following the site	**Findings:** + The revised water balance has not been completed within the Audit period, though the Auditors understand that additional time was required to appoint a specialist to conduct this work that was acceptable to the Department of Planning and Environment.	Non-Compliant	NC5

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Consent Condition	**Requirement**	**Evidence Collected**	**Independent Audit Findings and Recommendations**	**Compliance Status**	**Unique Identification Non-compliance**
		audit.	**Recommendations:** + Urgently and within 6 months revise the water balance and as required develop alternative strategies for managing water and leachate on the site. + Refer to actions under NC1.		

Appendix B – Site Visit Photographs

Figure B1. Photograph of the bioreactor void (view to south).

Figure B2. Photograph of the bioreactor void (view to east).

Figure B3. Photograph of the Leachate Treatment Dam (LTD) above the void.

Figure B4. Photograph of ED1. Misters in operation.

Figure B5. Photograph of treated leachate storage dam ED3N3 (foreground) and misting cannons in operation in ED3N4 (background).

Figure B6. Photograph of the inside of the Leachate Treatment Plant and the third Ultrafiltration Membrane installed.

Figure B7. Photograph of the newly constructed ED1 Coffer Dam 2 for storage of LTP Permeate (awaiting approval).

Appendix C – Audit Certification

Project Name	Woodlawn Bioreactor Leachate and Water Management System Independent Audit 2022
Consent Number	State Significant Development MP10_0012 as modified
Description of Project	Woodlawn Bioreactor Leachate and Water Management System
Project Address	619 Collector Road, Tarago NSW 2580
Proponent	Veolia Environmental Services Pty Ltd
Title of Audit	Veolia Woodlawn Bioreactor LWMS – Independent Audit 2022
Date	26 May 2023

I declare that:

i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;

ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;

iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;

iv. I am not an Environmental Representative for the project; and

v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so. The audit has been undertaken in accordance with relevant condition(s) of consent and the *Independent Audit Compliance Requirements* (Department 2020);

Notes.

a) Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000; and

b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

Name of Auditor	Alan Parsons
Signature	
Qualification	Lead Auditor HSEQ
Company	Jackson Environment and Planning Pty Ltd
Company Address	1 Power Place, Jindabyne NSW 2627

Appendix D – Audit Team Approval Letter from DPE

Appendix E – Audit Plan

Appendix F – Consultation Letters

Appendix G – NSW EPA Response Letter