Decision Report

Application for Licence

Part V Division 3 of the *Environmental Protection Act 1986*

Licence number	L2956/2025/1
Licence holder	Ecocycle Pty Ltd
ACN	146 190 516
DWER references	DER2017/001541 APP-0027515
Premises details	Kwinana Mercury Treatment Plant Lot 101 Donaldson Rd, KWINANA BEACH, WA 6167
Date of report	16/10/2025
Status of Report	Final

1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from the emissions and discharges during ongoing operation of the Kwinana Mercury Treatment Plant at 6 (Lot 101) Donaldson Road, Kwinana (the Premises). As a result of this assessment, Licence L2956/2025/1 (L2956) has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the licence review documented in this report, the Department of Water and Environmental Regulation (DWER, the department) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 14 February 2025, Ecocycle Pty Ltd (the licence holder) submitted an application to the department for a new licence under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act).

The application seeks a licence for the ongoing operational activities and use of selected infrastructure and equipment constructed under a works approval W6090/2017/1 (W6090) for recycling batteries and e-waste, and for recovery of mercury from waste products.

The following Prescribed Premises Categories and operations were sought, and will be assessed as part of this licence application:

- Prescribed Premises Category 39: Chemical or oil recycling: premises on which waste liquid hydrocarbons or chemicals are refined, purified, reformed, separated or processed;
- Prescribed Premises Category 61A: Solid Waste Facility: premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land;
- operation of the warehouse facility – including warehouse unloading/loading bay, onsite firefighting system, and horizontal baler;
- operation of the process building – including emissions stack, onsite firefighting system, liquid waste storage, covered waste storage, and a heating, ventilation and air-conditioning (HVAC) system;
- operation of the existing fluorescent lamp recycler located on Level 2 of the Process Building including receiving, processing, storing, and redistributing up to 120 tonnes/annum of fluorescent lamps, where processing is undertaken using the fluorescent lamp recycler;
- receiving and storing of up to 2000 litres/annum of mercury-containing dental amalgamate liquid waste, that will not be refined, purified, reformed, separated or processed on the Premises but will be redistributed to the Ecocycle Campbellfield, Victoria facility;
- receiving and storing of up to 100 tonnes/annum of mercury-containing liquid waste, that will not be refined, purified, reformed, separated or processed on the Premises but will be redistributed to the Ecocycle Campbellfield, Victoria facility; and

- receiving, storing, sorting and redistributing up to 2000 tonnes/annum of e-waste and mixed batteries (including lithium batteries).

However, it was later confirmed that Category 39 was not the most appropriate category for the licence, as the infrastructure to be included in the licence comprising a fluorescent lamp recycler and baler do not have the capability of refining, purifying, reforming, separating or processing liquid chemicals or hydrocarbons.

Through consultation with the licence holder between 13 March and 22 April 2025, it was determined that the Prescribed Premises Category which best aligned with the intent of receiving and storing of mercury-containing liquid waste and amalgamate but not refining, purifying, reforming, separating or processing the waste would be Category 61- Liquid waste facility which receives liquid waste produced on other premises (other than sewerage waste) where it is stored, reprocessed, treated or irrigated.

3. Current Approval

3.1 Works Approval W6090/2017/1

W6090/2017/1 was issued to BMT Australia Pty Ltd (BMT) on 8 May 2018 and expires on 07 December 2026. The works approval authorises works and operations under Categories 39 (chemical or oil recycling) and 61A (Soild waste facility) and included authority for the construction of the four-storey process building, a single storey warehouse and roofed outside storage area at the Premises. These structures were constructed between 2018 and 2019 in accordance with the requirements set in the works approval

The works approval was transferred to the licence holder on 24 August 2023.

4. Premises overview

4.1 Current Premises Operations

The Premises currently receives fluorescent tubes and globes, amalgamate from the dental industry, e-waste, and batteries.

4.1.1 Fluorescent tubes and globes

The Premises currently receives, stores, sorts, and processes up to 120 tonnes per annum of fluorescent tubes and globes using the FLR located in the Process Building. The fluorescent tubes and globes are received in sealed cardboard cartons and are sorted into bins prior to processing through the FLR. The FLR breaks down the fluorescent tubes and globes and separates the glass, phosphor powder, metal, and plastic end caps. The phosphor powder is separated by a cyclone and dust separator where the phosphor powder is collected and stored in sealed steel bins for further off-site processing. This generates a maximum of 5 tonnes per annum of mercury-containing phosphor powder, which is classified as a controlled waste (D120 - Mercury and mercury compounds).

4.1.2 Amalgamate

Amalgamate, a mercury-containing liquid waste, is currently received at the Premise from the dental industry. The amalgamate is received in liquid waste containers, and is temporarily stored in the Warehouse Building prior to off-premise disposal to the Ecocycle Campbellfield, Victoria facility for further processing.

4.1.3 E-waste

The licence holder currently receives up to 2,000 tonnes of e-waste per annum at the Premise. E-waste includes but not limited to

- Computers/servers
- Screens TVs, monitors, displays
- Keyboards
- Printers
- Mobile phones
- Hand-held device (such as laptops, tablets, and e-readers)
- Mixed cables attachment to the e-waste

The e-waste is received at the Premises in steel bins and is sorted by hand into categories such as plastics, modems, and motherboards or processed using a horizontal baler used for the compaction of plastic and metal e-waste. The e-waste is then stored in the Warehouse Building for future off-site redistribution.

4.1.4 Batteries

A range of batteries are currently received by the premises. The batteries originate from battery-embedded devices such as toys, toothbrush, vapes, mobile phones, laptops/tablets, and other batteries from trucks, forklifts, cars, solar batteries, and mixed domestic batteries. These battery types include lithium-ion, nickel-cadmium, nickel-metal hydride, lead acid, and alkaline.

The batteries are currently received by the Premise in storage bins and collection containers. The batteries are sorted by hand and based on the type of battery, are placed in specific containers for short term storage in the Warehouse Building prior to being transported to the Ecocycle Campbellfield, Victoria facility for processing. Lithium-ion batteries are stored in UN rated galvanised steel bins and the remaining batteries are stored in polyethylene intermediate bulk containers (IBCs).

Items with embedded batteries such as electronic toys, toothbrush, vapes, mobile phones, laptops/tablets, etc are not processed at the Premises. These items are sorted and stored in the Warehouse Building prior to being transported to the Ecocycle Campbellfield, Victoria facility for processing using a Battery-In-Devices-Shredder (BIDS).

4.2 Compliance (W6090)

Environmental Compliance Reports for the construction of the warehouse and process buildings were provided to the department between April 2019 and April 2020. The ECRs were provided to satisfy the requirements of the construction conditions set in W6090.

4.2.1 Receiving liquid waste

The department understands the Premise is receiving Amalgamate, a mercury-containing liquid waste. Receiving this kind of waste is regulated under Prescribed Premise Category 61 (Liquid Waste Facility). The current works approval for the Premises, is not prescribed to receive liquid waste. Section 52 of the EP Act provides that an occupier of any premises commits an offence if any work is undertaken on, or in relation to, the premises which causes the premises to become, or to become capable of being, Prescribed Premises, except in accordance with a works approval.

4.2.2 Installation and use of equipment

The department understands a fluorescent light recycler (FLR) was installed and operated not in accordance with a works approval or licence.

The Process Building includes an emissions stack. Although not originally constructed to be used by the FLR, any use of the stack for the discharge of air emissions is required to be monitored under Conditions 17 and 18 of W6090, and these results are required to be provided to the department under Conditions 19, 20 and 21 of W6090.

These potential breaches are currently being investigated by the department. However, the risk presented by ongoing use of the FLR has been included in this decision report and will be regulated by conditions in the new licence.

5. Other Approvals

5.1 *Dangerous Goods Safety Act 2004*

The licence holder holds an approval for the storage and handling of substances in accordance with Dangerous Goods Licence, DGS022523. The licence was issued on 20 May 2024 to the licence holder from the Department of Energy, Mines, Industry Regulation and Safety.

5.2 State Environmental (Cockburn Sound) Policy 2015

The Premises lies within the Policy Area. However, the emissions from the Premises area unlikely to present a risk to the Protected Area of Cockburn Sound.

5.3 Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999 and Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1993

The Premises lies within Area A of the Policy Area. However, the predicted emissions from the Premises do not include sulfur dioxide. Therefore, as it is unlikely the Premises will emit sulfur dioxide into the atmosphere, there is little risk to the nearby residential areas.

5.4 *Contaminated Sites Act 2003*

The Premises was classified contaminated – restricted use on 20 October 2008 under the *Contaminated Sites Act 2003.* The classification was based on the detection of nitrate-impacted groundwater during a groundwater monitoring event undertaken on the parent site (Lot 101 on Plan 73740) in 2001. Lot 101 has since been subdivided and the Premises lies over one of the subdivided lots. It is unclear whether nitrate-impacted groundwater exists below the Premises. However, as the Premises does not use of groundwater extracted from beneath the Premises for processing operations, the classification is unlikely to affect ongoing use of the Premises under the new licence and ongoing works approval W6090.

6. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

6.1 Source-pathways and receptors

6.1.1 Emissions and pathways

The key emissions and associated actual or likely pathway during premises operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the licence holder currently implements in controlling these emissions, where necessary.

Table 1: Licence holder's controls

Emission	Sources	Potential pathways	Licence Holder's controls (from application)
Operation			
Fluorescent powder, and dust.	Dust released during agitation, destruction, and separation of fluorescent powder from the fluorescent lamp recycler	Air/windborne pathway via prevalent westerly winds causing impacts to health and amenity	Phosphor powder is separated by a cyclone and dust separator into sealed storage bins for further processing. Secondary catchment of dust via an activated carbon filter(s). Inbuilt exhaust system to capture fugitive dust emissions.
Gaseous and particulate emissions of mercury	During operation (destruction, separation and storage of lamp components) of the fluorescent lamp recycler		Inbuilt exhaust system to capture fugitive mercury emissions. Inbuilt activated carbon filtration to remove airborne mercury and gaseous waste and particulates. The manufacturer specifications indicated that there is no expected discharge from site.
Noise from operations	During operation (destruction, separation and storage of lamp components) of the fluorescent lamp recycler		Inbuilt silencer (fluorescent lamp recycler). Strategic placement of equipment to dampen noise. Roller doors to remain closed when possible. Regular maintenance of equipment. Operations to occur during standard business hours to limit unwanted noise emissions
	Horizontal baler		
	Warehouse facility - receiving and sorting waste		
	Process Building – receiving and sorting waste		

Emission	Sources	Potential pathways	Licence Holder's controls (from application)
Liquid waste	Liquid waste spill from containment infrastructure	Leakage through sumps and concrete floor cracks that may impact shallow groundwater (5m below ground level)	All wastes will be stored indoors or on 'operational' hardstand areas. Operational areas including the process building and warehouse feature graded concrete floors with centrally located sealed containment sumps to deal with any potentially contaminated water. These sumps are maintained, and any wastewater is removed by a licensed contractor for disposal at a licensed wastewater treatment facility.
Contaminated stormwater	Impacted stormwater from runoff over hardstand areas	Seepage into shallow groundwater (5m below ground level)	Stormwater from non-process areas will be incorporated into the site's existing drainage system, ensuring that it does not present a transport pathway for potential contaminants to escape containment.

6.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the delegated officer has excluded the licence holder's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 2 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Residential premises	Residential suburb of Medina is located approximately 2 km south-east of the Premises.
Environmental receptors	**Distance from prescribed activity**
Groundwater	Groundwater beneath the Premises is at 5 metres below ground level.

6.2 Risk ratings

Table 3 describes the risk events associated with the operation of the Premises. This is consistent with the *Guideline: Risk Assessments* (DWER 2020). In accordance with this guideline, the delegated officer has excluded the licence holder's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Where the licence holder has proposed mitigation measures/controls, these have been considered when determining the final risk rating. Where the delegated officer considers the licence holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in the below table.

Licence L2956/2025/1 that accompanies this decision report authorises emissions associated with the operation of the premises. The conditions in the licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DWER 2015).

Table 3: Risk assessment of potential emissions and discharges from the premises during operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Reasoning	Justification for additional regulatory controls
Source/Activities	**Potential emissions**	**Potential pathways and impact**	**Receptors**	**Licence holder controls**			
Operation of fluorescent lamp recycler	Fluorescent powder, and dust released during agitation, destruction, and separation of fluorescent powder from the fluorescent lamp recycler	Air/windborne pathway via prevalent westerly winds causing impacts to health and amenity	Residential premises located approximately 2 km south-east of the Premises.	Phosphor powder is separated by a cyclone and dust separator into sealed storage bins for further processing. Secondary catchment of dust via an activated carbon filters. Inbuilt exhaust system to capture fugitive dust emissions.	**C: Moderate** **L: Rare** **Risk: medium**	The Delegated Officer considers that the Licence Holder's proposed controls for the collection of fluorescent power (which includes mercury constituents) ensure there is a limited pathway, and therefore a very low likelihood, for fugitive emissions to air to occur.	The Delegated Officer considers the level of particulate matter emissions likely to be generated due to operation is likely to produce minimal. However, due to the potential risk of mercury in air emissions, the Delegated Officer has decided to include the Licence Holder's controls as operational requirements in condition 1.
	Gaseous and particulate emissions of mercury			Inbuilt exhaust system to capture fugitive mercury emissions. Inbuilt activated carbon filtration to remove airborne mercury and gaseous waste and particulates. The manufacturer specifications indicated that there is no expected discharge from site.			
	Noise from operations			Inbuilt silencer Strategic placement of equipment to dampen noise. Roller doors to remain closed when possible. Regular maintenance of equipment. Operations to occur during standard business hours to limit unwanted noise emissions		The Premises is located in the Kwinana Industrial Area and is therefore subject to higher assigned levels under the Environmental Protection (Noise) Regulations 1997 (Noise Regulations). The Licence Holder will operate the Premises during standard business hours. Therefore, the expected noise from operations are expected to be in line with the existing noise profile of the surrounding industrial area.	The Delegated Officer considers the level of noise emissions likely to be generated due to operation will not impact on the nearest sensitive receptors due to the separation distance and higher assigned levels for the area. The provisions of the Noise Regulations will apply. No additional controls will be included in addition to those posed by the Licence Holder.
Horizontal baler Warehouse facility - receiving and sorting waste	Noise from operations and deliveries	Air/windborne pathway via prevalent westerly winds causing impacts to health and amenity	Residential premises located approximately 2 km south-east of the Premises.	Strategic placement of equipment to dampen noise. Roller doors to remain closed when possible. Regular maintenance of equipment. Operations to occur during standard business hours to limit unwanted noise emissions	**C: slight** **L: Rare** **Risk: low**	The Premises is located in the Kwinana Industrial Area and is therefore subject to higher assigned levels under the Environmental Protection (Noise) Regulations 1997 (Noise Regulations). The Licence Holder will operate the Premises during standard business hours. Therefore, the expected noise from	The Delegated Officer considers the level of noise emissions likely to be generated due to operations and delivery/collection will not impact on the nearest sensitive receptors due to the separation distance and higher assigned levels for the area. The provisions of the Noise Regulations will apply. No additional controls will be included in addition to those posed by the Licence Holder.

Risk Event					Risk rating[1] C = consequence L = likelihood	Reasoning	Justification for additional regulatory controls
Source/Activities	**Potential emissions**	**Potential pathways and impact**	**Receptors**	**Licence holder controls**			
Process Building – receiving and sorting waste						operations and deliveries are expected to be in line with the existing noise profile of the surrounding industrial area.	
Liquid waste spill from containment infrastructure	Liquid waste	Leakage through sumps and concrete floor cracks that may impact shallow groundwater (5m below ground level)	Groundwater beneath Premises	All wastes will be stored indoors or on 'operational' hardstand areas. Operational areas including the process building and warehouse feature graded concrete floors with centrally located sealed containment sumps to deal with any potentially contaminated water. These sumps are maintained, and any wastewater is removed by a licensed contractor for disposal at a licensed wastewater treatment facility.	**C: slight** **L: Rare** **Risk: low**	The Delegated Officer considers that the Licence Holder's proposed controls for the storage of liquid waste, ensure there is a limited pathway, and therefore a low likelihood, for emissions to groundwater beneath the Premises.	The Licence Holder's controls have been included in as operational requirements in condition 1.
Impacted stormwater from runoff over hardstand areas	Contaminated stormwater	Seepage into shallow groundwater (5m below ground level)	Groundwater beneath Premises	Stormwater from non-process areas will be incorporated into the site's existing drainage system, ensuring that it does not present a transport pathway for potential contaminants to escape containment.	**C: slight** **L: Rare** **Risk: low**	The Delegated Officer considers that the Licence Holder's proposed controls for the management of stormwater, ensures there is a limited pathway, and therefore a low likelihood, for emissions to groundwater beneath the Premises	The Licence Holder's controls have been included in as operational requirements in condition 1

7. Decision

Based on the assessment in this decision report, the Delegated Officer has determined that a licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements. The Delegated Officer's reasoning and grounds for imposing any additional regulatory controls can be found in Table 3, with additional rationale below.

7.1 Prescribed Premises Category 61

The Delegated Officer has included Category 61 on the licence based on the following:

Category 61 approves a liquid waste facility for which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.

This licence does not include equipment that has the capability of processing or treating mercury-containing liquid waste. Therefore, under this licence the Licence Holder may receive and store mercury-containing liquid waste for the purpose of redistribution to an offsite premises. The Licence Holder has acknowledged this and has stated that the mercury-containing liquid waste, which also includes dental amalgamate, will be disposed to the Licence Holder's offsite facility in Campbellfield, Victoria for processing.

It should be noted that the Premises holds a current Works Approval which includes the approval to construct/install equipment capable of processing mercury-containing liquid waste. This activity is regulated by conditions set out in Works Approval W6090/2017/1 (W6090) as amended on 5 May 2025.

7.2 Prescribed Premises Category 61A

The Delegated Officer has included Category 61A on the licence based on the following:

Category 61A approves a solid waste facility for which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land.

This category permits the Premises to receive fluorescent lamps and globes, e-waste and batteries. The activities associated with receiving these items are discussed below.

The Delegated Officer has included use of the Warehouse and Process Buildings on the licence based on the following:

The Licence holder demonstrated compliance with conditions set in W6090 for the construction of the Warehouse and Process Buildings in a series of Compliance Construction Reports provided to the department between April 2019 and April 2020.

The Delegated Officer has included use of the fluorescent lamp recycler (FLR) on the licence based on the following:

The FLR has been operating at the premises without approval under an EP Act works approval or licence. Such actions are a breach of sections 53 and 56 of the EP Act and may be further investigated by the Department. As a result of the installation and operation of the FLR, this licence includes requirements for operation of the FLR and monitoring air emissions during its use.

The Delegated Officer has included the activity of receipt, physical processing, storage and redistribution of e-waste and batteries on the licence based on the following:

E-waste brought to the Premises will be physically sorted by hand for storage and future redistribution or physically compacted by the Premises horizontal baler for future distribution to an off-site processing facility. Conditions have been included in this licence to reduce the potential impact these activities will have on the environment.

E-waste that contains imbedded batteries such as mobile phones, laptops, etc are not permitted to be compacted by the baler. These items are to be sorted by hand and handled in the same manner as the singular batteries that are currently being received by the premises.

Batteries are currently brought to the Premises. This licence requires the batteries to be received in specific containers based on the battery chemistry. The battery chemistries include lithium-ion, nickel-cadmium, nickel-metal hydride, lead acid, and alkaline. The batteries are sorted by hand and are not permitted to be chemically processed or physically disassembled. The batteries are to be sorted and temporarily stored prior to redistribution to the licence holder's premises in Campbellfield, Victoria.

This licence includes requirements for receiving, sorting, storing and redistribution of batteries from the premises to reduce the risk of this activity to the environment.

8. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 16 May 2025	None received	N/A
Application advertised in the West Australian newspaper on 19 May 2025	None received	N/A
Licence holder was provided with draft licence and decision report on 18/09/2025	None received	N/A

9. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a licence of 12 years will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements. The decision to grant a 12-year licence is based on the expiry of the current lease of the site from the Western Australian Land Authority to the licence holder. The licence is subject to conditions commensurate with the determined controls necessary for administration and reporting requirements.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia. Accessed from www.dwer.wa.gov.au
2. Department of Water and Environmental Regulation (DWER) 2019, *Guideline: Industry Regulation Guide to Licensing*, Perth, Western Australia. Accessed from www.dwer.wa.gov.au
3. DWER 2020, *Guideline: Environmental Siting*, Perth, Western Australia. Accessed from www.dwer.wa.gov.au
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia. Accessed from www.dwer.wa.gov.au

5. Department of Energy, Mines, Industry Regulation and Safety, Dangerous Goods Licence, DGS022523, 20 May 2024
6. Ecocycle Pty Ltd, 14 February 2025, Licence Application Form
7. Ramboll February 2025, Attachment 3B: Proposed Activities