



Application for Licence Amendment

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

| | |
|--------------------------|--|
| Licence Number | L6818/1997/11 |
| Licence Holder | Shire of Bridgetown Greenbushes |
| File Number | DER2015/000123-1 |
| Premises | <p>Bridgetown Waste Management Facility</p> <p>Lot 903 Bridgetown – Boyaup Brook Road</p> <p>BRIDGETOWN WA 6255</p> <p>Legal description –</p> <p>Lot 903 on Plan 189961</p> |
| Date of Report | 28 July 2022 |
| Proposed Decision | Revised licence granted |

Abbie Crawford
A/MANAGER, WASTE INDUSTRIES

Officer delegated under section 20 of the Environmental Protection Act 1986

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1. Decision summary

Licence L6818/1997/11 is held by the Shire of Bridgetown-Greenbushes (Licence Holder) for the Bridgetown Waste Management Facility (the Premises), located at Lot 903 on Plan 189961 Boyup Brook Road.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during operation of the Premises. As a result of this assessment, Revised Licence L6818/1997/11 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, 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 23 December 2022 the Licence Holder applied to the department to amend Licence L6818/1997/11 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendments being sought relate to:

- Amend Category 61A activities to allow shredded green waste to be removed from the premise. Previously green waste was used as cover material over inactive areas of the landfill and as dust suppressant. Due to the increasing throughput of green waste, the licence holder is seeking to allow green waste to be removed from the premises;
- Reduce Category 62 throughput to 5,000 tonnes per annual period. The throughput was increased to 5,500 tonnes per annual period upon the commencement of the Contained Deposit Scheme (CDS). However, throughputs have not increased since the CDS began and the licence holder is seeking to reduce the throughput to the previously assessed level;
- Amend groundwater monitoring conditions. As part of the groundwater monitoring requirements, the Licence Holder was required to undertake quarterly monitoring, however one of the monitoring wells is damaged and unable to be sampled; and
- Amend the due date to submit the final landfill profile and post closure capping plan. The Licence Holder was required to submit the final landfill profile and post closure capping plan to the department by 3 December 2018. This Licence Holder has requested an extension to the due date.

As part of a routine review of premises activities and monitoring data, DWER conducted an investigation into the outcomes of recent compliance inspections, data reported through annual reporting requirements (Annual Environment Report (AER)), as well as any complaints received to the department regarding premises activities. The review identified a number of items that will be considered as part of this licence amendment. These include:

- The Licence Holder failed to undertake monthly groundwater monitoring of ten groundwater monitoring bores for the period between August 2017 until December 2019. The purpose of the monitoring was to develop further understanding of the groundwater conditions beneath the Premises prior to the Licence Holder reducing groundwater monitoring requirements at the premises;

- The Licence Holder failed to submit the final landfill profile and post closure plan to the department within required timeframe. The Licence Holder has applied to amend the due date in this amendment; and
- Remove a number of redundant conditions from the licence.

2.2.1 Liquid waste management amendment

On 1 March 2022 the Licence Holder submitted an amendment application to construct two 250,000 L liquid waste holding tanks at the premises to store excess liquid during the winter period and discharge back to the liquid waste ponds for evaporation in the summer months. In addition, to the scope set out in Section 2.2 above, DWER has also assessed the risks relevant to the construction and operation of the liquid waste holding tanks and has consolidated the findings of this assessment and the original amendment scope as part of this decision report.

Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed throughput capacity changes

| Category | Current throughput capacity | Proposed throughput capacity | Description of proposed amendment |
|----------|--------------------------------|--------------------------------|--|
| 61 | 700 tonnes per annual period | 700 tonnes per annual period | No change |
| 61A | 5 000 tonnes per annual period | 5 000 tonnes per annual period | No change |
| 62 | 5 500 tonnes per annual period | 5 000 tonnes per annual period | Reduced throughput of 500 tonnes per annual period |
| 64 | 5 000 tonnes per annual period | 5 000 tonnes per annual period | No change |

This amendment is limited to changes to Category 61, 61A and 62 activities. No changes to the aspects of the existing Licence relating to Category 64 have been requested by the Licence Holder.

2.2.2 Update of licence format

As part of this amendment package, the department has updated the format and appearance of the Licence. Aside from amendments relating to this application, the obligations of the Licence Holder have not changed in updating the Licence. In updating the Licence, the CEO has:

- Revised Licence condition numbers; and
- Removed any redundant conditions and realigned condition numbers for numerical consistency.

The full update of Licence conditions as they relate to this Revised Licence are detailed in Section 5. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

2.3 Category 62 throughput

The licence holder applied to reduce the throughput of Category 62 waste to 5,000 tonnes per annual period. The throughput was previously increased in 2020 to 5,500 tonnes per annual period upon the commencement of the Contained Deposit Scheme (CDS). The Delegated Officer notes that the reduction of the waste throughput for Category 62 waste does not alter the risk assessment previously undertaken for the receipt and processing of waste approved under the licence.

2.4 Final landfill profile and post closure capping plan

The landfill cap provides the primary means for protecting groundwater by preventing excessive water infiltration and therefore minimising the generation of leachate in the landfill cell. Capping is also used to minimise odour, landfill gas and dust emissions from the waste, windblown litter, the presence of scavengers and vermin, the risk of fire spreading across the site and prepares the site for its future intended use.

The Delegated Officer notes that capping of landfill cells should be installed progressively throughout the life of the landfill as each cell is completed, and normally within 12-18 months of reaching final waste levels. As the Licence Holder failed to submit the final landfill profile and post closure capping plan to the department by the required date (3 December 2018), the Delegated Officer considers the need for the plan to be submitted in a timely manner and will consider the proposed amendment to the due date within the risk assessment.

2.5 Hydrogeological setting

The Premises is located at the southern end of the Darling Plateau on the southern side of a hill. Land at the Premises slopes away from the central northern area (>290 m AHD) on average about 4% to the southwest (~270 m AHD) and more sharply to the southeast (~260 m AHD). A ridgeline and landfill mass running north-south through the Premises divides the sites surface drainage and may influence the direction of groundwater flow beneath the premises.

Investigations undertaken at the premises observed the following geological layers beneath the premises:

- Surface laterite/mottled layer (0-4 mbgl) comprises of orange/brown gravel and ferricrete (cemented areas) over a mixed silt/clay layer with variable amounts of mixed fine-grained sand and gravel;
- Pallid layer (4-25 mbgl) comprises primarily of low permeability white kaolin clay and small amounts of sand and gravel;
- Saprolite layer (25-30 mbgl) comprises a thin layer of silty sand and weathered granite. Groundwater can occur within this layer; and
- Bedrock layer (30 mbgl) of granite rock with localised quartz bands, shearing and joints. Groundwater can occur within bedrock gaps.

Surface water drains towards the Hardy Estuary Blackwood River Catchment via local watercourses. Historically landfilled areas drain to the southwest whilst the land subject to the new landfill cells drain towards the southeast.

Groundwater has been found at depths of approximately 20-25 mbgl within the saprolite layer. Groundwater may also temporarily occur within the surface mottled layer above the Pallid layer with groundwater detected in monitoring bore MB8 during monitoring undertaken in 2017. The hydrogeology at the Premises and potential for groundwater is addressed in further detail within the risk assessment Leachate emissions (landfill).

The Astron Environmental *Groundwater Monitoring Plan – Updates to GWMP (April 2016)* Report concludes that groundwater at the Premises flows to the southeast. As part of the risk

assessment process the following communication from a DWER Senior Hydrogeologist has been considered:

- Insufficient groundwater monitoring data is available to support the assumption that groundwater beneath the premises flows towards the southeast;
- The landfill straddles a drainage divide. Consequently, the direction of groundwater flow on the northern side of the site is likely to be in a west to northwest direction, whereas groundwater near the southern boundary of the site is likely to flow in a southeast direction;
- Small amounts of groundwater are likely to occur in saprock at the base of the weathered profile. Seasonally, groundwater is also likely to occur at shallow depth near the contact between pisolitic gravels or ferruginous duricrust and the underlying clayey regolith; and
- Hydraulic conductivity of the shallow, seasonal aquifer is likely to be much greater than the deep aquifer, and may provide a pathway for the transfer of leachates downgradient during winter rainfall events.

Key findings: The Delegated Officer has reviewed previous hydrogeological setting of the premises and considers the following:

1. The purpose of the monthly monitoring required for the period August 2017 until December 2019 was to develop further understanding of the groundwater conditions beneath the Premises prior to the Licence Holder reducing groundwater monitoring requirements at the premises.
2. As the monitoring was not undertaken as required in the licence, the Delegated Officer will consider the need for further monitoring and monitoring wells within the risk assessment.

2.6 Liquid waste holding tanks

2.6.1 Background

The Licence Holder is currently approved to receive a combined total of up to 700 tonnes per annual period of septage wastes, wastes from grease traps and fire debris and wash water under category 61.

Analysis of the facility design was undertaken by the Licence Holder by modelling monthly pond volumes and the liquid input (both liquid waste and rainfall) and output (via evaporation) over a period of 22 years. The results of the existing facility modelling are shown in Figure 1 below.

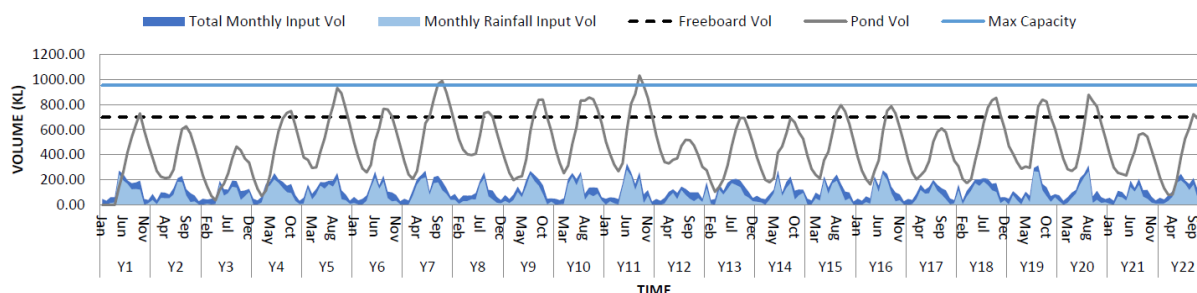


Figure 1: Current liquid waste facility freeboard assessment

The review undertaken by the Licence Holder shows that freeboard was being breached 15 years out of the 22 years that were modelled and with a potential pond overflow event 3 out of 22 years. The Licence Holder confirms that the result of the modelling is supported by actual performance of the facility. Since commissioning, the facility has not been able to accept

waste during winter and spring due to high levels in the liquid waste facultative pond.

The Licence Holder noted that the freeboard issues identified are only occurring during the winter period when evaporation is low, but liquid waste input is at a maximum due to rainfall. During the summer months the volume of the pond drops significantly, indicating there is a large evaporation surplus during this period. Evaporation data recorded from Bridgetown showed that average evaporation for the 20 year modelling period is 1,325 mm (based on daily evaporation from 2000 to 2022). The total monthly evaporation ranged between 36.8 mm in June 2010 and 262.7 mm in January 2021. The total average evaporation exceeds average annual rainfall by approximately 582 mm, with rainfall generally exceeding evaporation between May to September.

2.6.2 Proposed design

The applicant's proposed design is to incorporate two 250,000 L liquid waste storage tanks (500,000 L total storage capacity) to maintain liquid waste pond freeboard within the allowed 300 mm freeboard requirement of the licence. The required storage volume was calculated by assessing the liquid waste inputs and total rainfall for the past 22 years against the total storage capacity of the liquid waste pond. It can be seen in the below Figure 2, that a total of 500,000 L will be sufficient to maintain freeboard of the liquid waste pond through the winter periods, whilst being capable of emptying the liquid waste storage ponds and evaporating the liquid waste during the summer period.

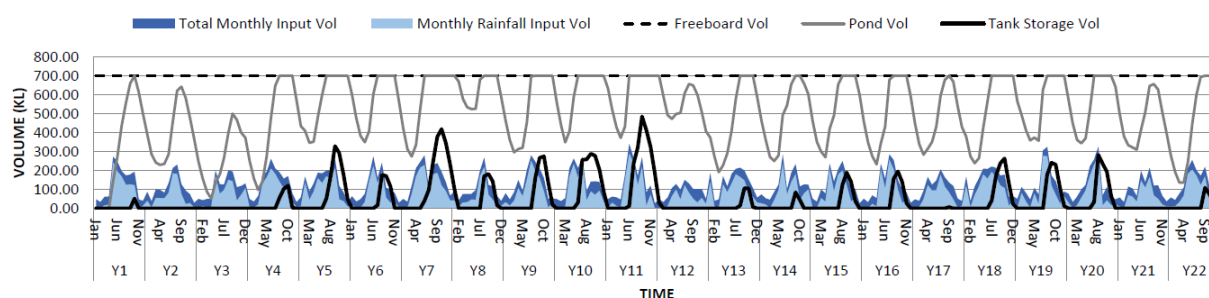


Figure 2: liquid waste facility freeboard assessment, with storage tanks

During winter, the Licence Holder proposes to pump liquid waste from the facultative liquid waste pond to the liquid waste holding tanks as required to maintain 300mm freeboard via continuous (no joints) above ground pipe. The pump is proposed to be positioned within the bunded area so that any leaks or spills will be contained within the bunded area and returned to the facultative pond via the drainage sump. The applicant has proposed to return liquid waste to the facultative pond during the summer period via gravity feed into the sump within the bunded area.

The bunded area is proposed to be constructed of compacted natural in-situ clay with a geosynthetic clay liner across the base. The bund is proposed to be constructed 200mm high from compacted clay. The shape of the bunded area will act as an additional rainfall catchment area and result in additional volume directed to the facultative pond. Figure 3 below shows the proposed new liquid waste holding tank infrastructure.

NOTES:

1. TANK LOCATION IS CURRENTLY CLEARED, LEVELED, AND ELEVATED IN RELATION TO THE EXISTING INFRASTRUCTURE.
2. BUNDED AREA TO BE GEOSYNTHETIC CLAY LINED (GCL), TO ACHIEVE A PERMEABILITY OF LESS THAN 10^{-9} m/s
3. BUNDED AREA TO PROVIDE A 2% CROSSFALL TOWARDS DRAINAGE SUMP.
4. BUNDING TO BE MINIMUM 1m CLEAR OF TANKS.
5. STORAGE TANKS TO BE STEEL WITH IMPERIOUS INTERNAL LINING.
6. TANK ROOFING TO BE GUTTERED WITH STORMWATER DISCHARGED TO LANDSCAPE ADJACENT TO THE FACILITY VIA ENERGY DISSIPATING ROCK PITCHING SUITABLE TO PREVENT EROSION.

LEGEND:

- PROPOSED INFRASTRUCTURE
- EXISTING INFRASTRUCTURE

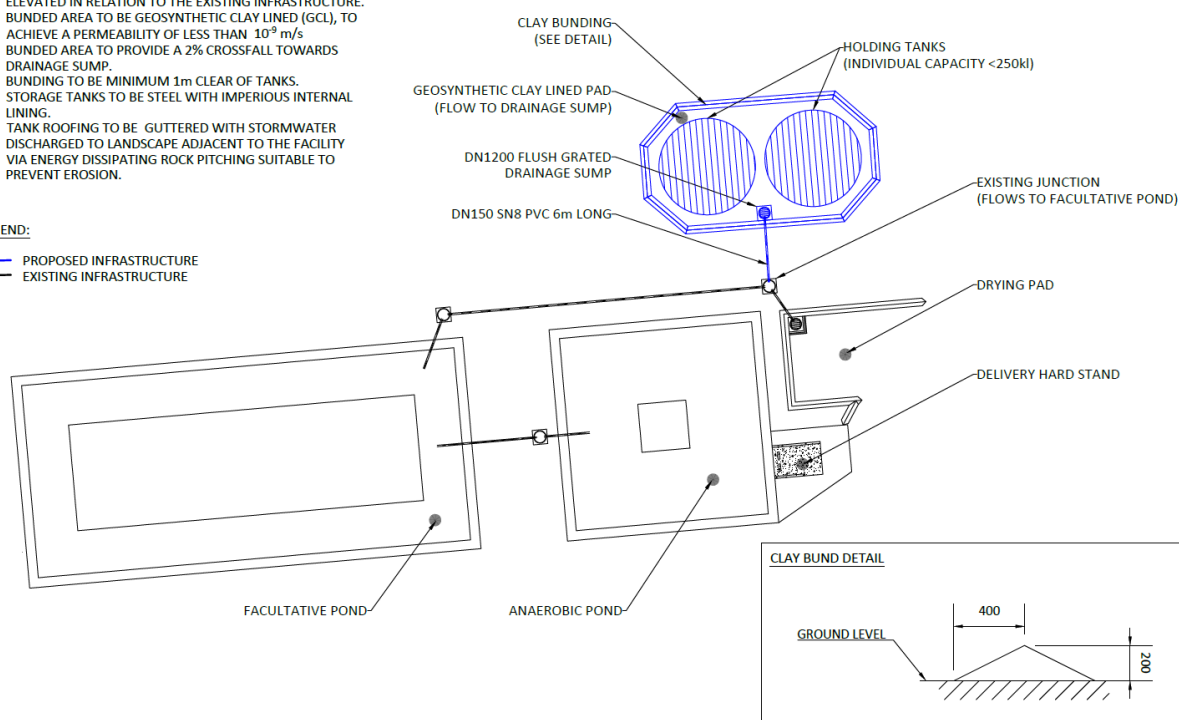


Figure 3: Proposed liquid waste management infrastructure

The Licence Holder has proposed to contain any leaks from the holding tanks by using non-linked holding tanks with individual capacity less of 253,000 L. This is the calculated volume of the liquid waste facultative pond above the 300mm freeboard, ensuring that a complete discharge of one holding tank would not result in overtopping of the pond. The Licence Holder considers that as the liquid waste holding tanks would be empty or hold very low volume for the majority of the year, the risk of a fault causing significant volume to be returned to the pond would be extremely low.

Key findings: The Delegated Officer has reviewed the proposed design of the liquid waste holding tanks proposed by the Licence Holder and considers the following:

1. DWER does not consider the proposed construction meets the definition of secondary containment infrastructure. Secondary containment refers to any means used to contain liquid leaks or spills if the primary storage container or transfer mechanism fails. Secondary containment areas prevent liquids from escaping to the environment. The use of the facultative pond as secondary containment infrastructure may also result in the freeboard requirements of the licence not being met.
2. The discharge of the liquid waste to the bund floor prior to being transferred to the facultative pond will result in erosion and impact the integrity of the geosynthetic clay liner.
3. Additional infrastructure and design requirements for the liquid waste holding tanks and secondary containment infrastructure will be considered as part of the risk assessment.

3. 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.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table below. Table also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Licence Holder controls

| Emission | Sources | Potential pathways/impact | Proposed controls |
|------------------|---|---|---|
| Dust | Vehicle movements from loading and removal of shredded green waste from the premises | Air/windborne pathway causing impacts to health and amenity | No further controls have been proposed by the Licence Holder from those previously assessed. |
| | Construction of the liquid waste holding tank infrastructure | | As the proposed location for the tanks is already cleared and levelled as a result of original works to construct the existing facility, minimal construction work is required to prepare the site for the bunded area. No further controls have been proposed by the Licence Holder |
| Noise | Loading and removal of shredded green waste from the premises Construction of the liquid waste holding tank infrastructure | Air/windborne pathway causing impacts to health and amenity | No further controls have been proposed by the Licence Holder from those previously assessed. |
| Smoke | Upset conditions (Fire) | Air/windborne pathway causing impacts to health and amenity | Fire extinguishers located within the CDS shed, and hydrants on the premises. Premises is secured when unattended. |
| Fire wash waters | Firefighting activities | Overland runoff and infiltration potentially causing soil and water contamination | No specific controls for containment of fire wash waters. |

| | | | |
|---------------|---------------------------------------|--|--|
| Liquid wastes | Product loss (infrastructure failure) | Overland runoff and infiltration potentially causing soil and water contamination. | Use of non-linked holding tanks with individual capacity less of 253,000 L. Utilizing the freeboard of the liquid waste facultative pond to contain any product loss from the liquid waste holding tanks. |
| Odour | Liquid waste holding tanks | Air/windborne pathway causing impacts to health and amenity | Tanks are able to be emptied each year with liquid held typically for around 6 months. Tank covers will be vented. It is considered unlikely that anaerobic conditions within the tank would occur during the holding period. Should this not be the case, solar powered aerators have been proposed to be installed. |

3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation

Table 3 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 3: Sensitive human and environmental receptors and distance from prescribed activity

| Human receptors | Distance from activity / prescribed premises |
|---|---|
| Residential Premises | Approximately 400 m north Approximately 600 m south east |
| Environmental receptors | Distance from activity / prescribed premises |
| Hester Conservation Park Class A | 100 m north |
| Kaniyang 18 Camp Aboriginal Site of Significance 17495 | 350 m south west |
| Blackwood River Aboriginal Site of Significance 20494 | 1.1 km north west |
| Minor perennial watercourses | Within 1km -several |

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), 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 Table 5.

The Revised Licence L6818/1997/11 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. increased throughput and container deposit scheme activities.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 4. Risk assessment of potential emissions and discharges from the Premises operation

| Risk Event | | | | | | Risk rating ¹ C = consequence L = likelihood | Licence Holder's controls sufficient? | Conditions ² of licence | Justification for additional regulatory controls |
|---|---|--|---|--|---------------------------|---|---------------------------------------|------------------------------------|---|
| Source/ Activities | Potential emission | Potential pathway and impact | Potential receptors | Potential impact | Licence Holder's controls | | | | |
| Movement, loading and removal of green waste from the premises | Noise | Air/windborne pathway | Residential Premises approximately 400 m north and 600 m south east | Air/windborne pathway causing impacts to health and amenity | Refer to Section 3.1 | C = Slight L = Unlikely Low Risk | Y | N/A | N/A |
| | Dust | | | | Refer to Section 3.1 | C = Slight L = Unlikely Low Risk | Y | N/A | N/A |
| | Odour | | | | Refer to Section 3.1 | C = Slight L = Unlikely Low Risk | Y | N/A | N/A |
| Construction of the liquid waste holding tanks and related infrastructure | Noise | Air/windborne pathway | Residential Premises approximately 400 m north and 600 m south east | Air/windborne pathway causing impacts to health and amenity | Refer to Section 3.1 | C = Slight L = Unlikely Low Risk | Y | N/A | N/A |
| | Dust | | | | Refer to Section 3.1 | C = Slight L = Unlikely Low Risk | Y | N/A | N/A |
| | Odour | | | | Refer to Section 3.1 | C = Slight L = Unlikely Low Risk | Y | N/A | N/A |
| | Uncontrolled discharge of liquid wastes | Infiltration through soil profile to groundwater Movement through | Superficial groundwater beneath the premises located within the surface laterite across the top of the Pallid | Contamination of waters or deterioration of local/regional surface water ecosystems Degradation to the beneficial | Refer to Section 3.1 | C = Minor L = Unlikely Medium Risk | N | Condition 34 | Additional controls have been placed within the licence to ensure that no liquid wastes can be accepted into the liquid |

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| Risk Event | | | | | | Risk rating ¹ C = consequence L = likelihood | Licence Holder's controls sufficient? | Conditions ² of licence | Justification for additional regulatory controls |
|---|---|--|---|--|---------------------------|---|---------------------------------------|--|---|
| Source/ Activities | Potential emission | Potential pathway and impact | Potential receptors | Potential impact | Licence Holder's controls | | | | |
| | | groundwater | Zone beneath the premises | use of groundwater Health impacts to groundwater users | | | | | waste holding tanks until such time that compliance reporting requirements have been submitted to the CEO for all infrastructure and equipment. |
| Acceptance, burial and decomposition of 5,000 tonnes of waste per annum Collection, storage and management of leachate Leachate loss resulting from seepage through landfill base and cell walls Leachate loss resulting from overtopping of leachate storage Leachate loss from failure of leachate conveyance infrastructure Acceptance and storage of liquid waste in an above ground storage tank Transfer of liquid wastes between above ground storage tank and | Landfill leachates Liquid wastes | Overland flow due to overtopping or failure of leachate ponds and related infrastructure Infiltration through soil profile to groundwater Movement through groundwater Abstraction of groundwater Direct exposure via irrigation and/or spraying | Beneficial users of groundwater (including future users) | Degradation to the beneficial use of groundwater Health impacts to groundwater users | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | N | <u>Conditions 15, 16, 17, 18, 21, 23, 24, 25, 29</u> | The Delegated Officer considers the need for the final landfill profile and post closure capping plan to be submitted in a timely manner and has amended the due date to reflect this. To allow for the assessment of identified data gaps in the current local and site-specific hydrogeological interpretation beneath the Premises, additional controls have been added to the licence. |
| | | | Superficial groundwater beneath the premises located within the surface laterite across the top of the Pallid Zone beneath the premises | Contamination of waters or deterioration of local/regional surface water ecosystems Degradation to the beneficial use of groundwater Health impacts to groundwater users | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |
| | | | The deeper groundwater layer found in the saprolite layer beneath the premises | Contamination of waters or deterioration of local/regional surface water ecosystems Degradation to the beneficial use of groundwater Health impacts to groundwater users | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |
| | | | Hester Conservation Park Class A 100 m north | Impacts to conservation values of the Conservation Park | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |
| | | | Minor perennial watercourses within 1 km | Contamination of waters or deterioration of local/regional surface water ecosystems | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |
| | | | | | | | | | |

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| Risk Event | | | | | | Risk rating ¹ C = consequence L = likelihood | Licence Holder's controls sufficient? | Conditions ² of licence | Justification for additional regulatory controls |
|---|--------------------|--|---|--|---------------------------|---|---------------------------------------|--|---|
| Source/ Activities | Potential emission | Potential pathway and impact | Potential receptors | Potential impact | Licence Holder's controls | | | | |
| liquid waste pond | | | | | | | | | |
| Acceptance and storage of liquid waste in an above ground storage tank Transfer of liquid wastes between above ground storage tank and liquid waste pond | Liquid wastes | Overland flow due to overtopping or failure of liquid waste ponds, liquid waste holding tanks and related infrastructure Infiltration through soil profile to groundwater Movement through groundwater Abstraction of groundwater Direct exposure via irrigation and/or spraying | Beneficial users of groundwater (including future users) | Degradation to the beneficial use of groundwater Health impacts to groundwater users | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | N | <u>Conditions</u> <u>15, 16, 17, 18, 21, 23, 24, 25, 29, 31, 32, 33, 34</u> | As detailed in this decision document, the proposed design of the tank pad will result in erosion of the bund floor and impact upon the integrity of the geosynthetic clay liner. The Delegated Officer considers that additional infrastructure requirements and conditions are required to adequately manage erosion and the integrity of the bund floor. The Delegated Officer does not consider the proposed construction meets the definition of secondary containment infrastructure. The proposed design may also result in the freeboard requirements of the licence not being met. The Delegated Officer considers that additional infrastructure requirements and conditions are required to adequately manage infrastructure failure at the premises. |
| | | | Superficial groundwater beneath the premises located within the surface laterite across the top of the Pallid Zone beneath the premises | Contamination of waters or deterioration of local/regional surface water ecosystems Degradation to the beneficial use of groundwater Health impacts to groundwater users | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |
| | | | The deeper groundwater layer found in the saprolite layer beneath the premises | Contamination of waters or deterioration of local/regional surface water ecosystems Degradation to the beneficial use of groundwater Health impacts to groundwater users | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |
| | | | Hester Conservation Park Class A 100 m north | Impacts to conservation values of the Conservation Park | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |
| | | | Minor perennial watercourses within 1 km | Contamination of waters or deterioration of local/regional surface water ecosystems | Refer to Section 3.1 | C= Moderate L = Possible Medium Risk | | | |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

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IR-T15 Amendment report template v3.0 (May 2021)

4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

| Consultation method | Comments received | Department response |
|---|---------------------|---------------------|
| Licence Holder was provided with draft amendment on 12 May 2022 | Refer to Appendix 1 | Refer to Appendix 1 |

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 6 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 6: Summary of licence amendments

| Condition no. | Proposed amendments |
|------------------------------|---|
| Condition 2 Table 2 | Reduction of Category 62 throughput to 5,000 tonnes per annual period. |
| Condition 4 Table 3 | Change to processing of liquid wastes to allow the transfer of liquid waste to and from the liquid waste holding tanks. |
| Condition 5 Table 4 | Changes to processing table to allow processed green mulch to be transferred off the premises. |
| Condition 6 Table 5 | Addition of infrastructure and equipment requirements for liquid waste holding tanks and associated infrastructure. |
| Condition 8 | Addition of requirement to immediately recover any spills of residual liquids from the liquid waste holding tank area. |
| Condition 15 | Updates to Australian Standards. |
| Condition 20 Table 9 | Inclusion for monitoring of inputs and outputs for the liquid waste holding tanks. |
| Condition 21 Table 10 | Update to groundwater monitoring requirements. |
| Condition 23 Condition 24 | Updated groundwater reporting requirements. |

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| Condition 25 | Updated due date for the submission of the final landfill profile and post closure plan. |
| Condition 29 | Updated Annual Environmental Reporting requirements to include the groundwater monitoring report. |
| Condition 31 Condition 32 Condition 33 Condition 34 | Addition of construction and works requirements for the liquid waste holding tanks. |

Table 7: Consolidation of licence conditions in this amendment

| Existing condition | Condition summary | Revised licence condition | Conversion notes |
|----------------------|---|---|---|
| N/A | Introduction and background | N/A | Redundant. Deleted from licence. |
| N/A | Prescribed Premises Category table | N/A | Revised to current licensing format. Moved to Schedule 2: Primary Activities Table 10 |
| 1.1.1 1.1.2 | Interpretation and definitions | Interpretation section and Definitions | Redundant condition. Revised to current licensing format. |
| 1.1.3 | Australian or other standard | Interpretation section and Definitions | Redundant condition. Revised to current licensing format. |
| 1.1.4 | Reference to guideline | Definitions | Redundant condition. Revised to current licensing format. |
| 1.2.1 | Exceedance of any descriptive or numerical limit specified in the Licence | Condition 30 Notification requirements | Revised to current licensing format. |
| 1.2.2 Table 1.2.1 | Waste acceptance | Condition 1 Table 1 | Revised to current licensing format. |
| 1.2.2 Table 1.2.2 | Solid waste acceptance | Condition 2 Table 2 | Revised to current licensing format. |
| 1.2.3 | Non-conforming waste | Condition 3 | Revised to current licensing format. |
| 1.2.4 Table 1.2.3 | Waste Processing | Condition 5 Table 4 | New numbering |
| 1.2.5 Table 1.2.4 | Cover requirements | Condition 12 Table 6 Table 7 | New numbering |
| 1.2.6 | Infrastructure | Condition 6 Table 5 | New numbering |
| 1.2.7 | Liquid waste pond management | Condition 7 | Revised to current licensing format. |

| Existing condition | Condition summary | Revised licence condition | Conversion notes |
|--------------------------------------|--|--|--|
| 1.2.8 | Pest, and Vermin | Condition 10 | New numbering |
| 1.2.9 | Signage | Condition 11 | New numbering |
| 1.2.10 | Windblown waste | Condition 12 | New numbering |
| 1.2.11 | Leachate discharge | Condition 6 Table 5 | Moved to infrastructure table |
| 1.2.12 | Asbestos Management Plan | N/A | Previously provided and deemed sufficient. Deleted from licence. |
| 1.2.13 | Old Liquid waste pond | N/A | Redundant condition. Deleted from licence. |
| 1.2.14 1.2.15 1.2.16 1.2.17 | New liquid waste pond works requirements | N/A | Redundant condition. Deleted from licence. |
| 1.2.18 1.2.19 | Recover of spills | Condition 8 Condition 9 | New numbering |
| 1.2.20 | Firefighting systems | Condition 14 | Revised to current licensing format. |
| 2.1.1 2.1.2 | Emissions to land | Condition 1 Table 1 | Revised to current licensing format. |
| 3.1.1 3.1.2 3.1.3 3.1.4 | General monitoring | Condition 15 Condition 16 Condition 17 Condition 18 | Revised to current licensing format. |
| 3.2.1 Table 3.2.1 | Emission to land monitoring | Condition 19 Table 8 | Revised to current licensing format. |
| 3.3.1 Table 3.3.1 | Input and output monitoring | Condition 20 Table 9 | Revised to current licensing format. |
| 3.4.1 Table 3.4.1 | Process monitoring | N/A | Redundant condition. Deleted from licence. |
| 3.5.1 Table 3.5.1 | Groundwater monitoring | Condition 21 Table 10 | New numbering |
| 4.1.1 | Improvements program | Condition 24 Condition 25 | New numbering |
| 4.1.1 Table 4.1.2 | New groundwater monitoring bore specifications | N/A | Redundant condition. Deleted from licence. |

| Existing condition | Condition summary | Revised licence condition | Conversion notes |
|----------------------|-------------------------------|---------------------------|---|
| 5.1.1 | Records | Condition 27 | New numbering and update to wording format |
| 5.1.2 | AACR | Condition 26 | Revised to current licensing format. |
| 5.1.3 | Complaints | Condition 22 | Revised to current licensing format. |
| 5.2.1 Table 5.2.1 | Reporting | Condition 29 Table 11 | New numbering |
| 5.3.1 Table 5.3.1 | Notifications | Condition 30 Table 12 | Revised to current licensing format. |
| Schedule 1 | N/A | Schedule 1 | Updated maps |
| Schedule 2 | Prescribed premise categories | N/A | Redundant. Revised to current licensing format. |
| Schedule 3 | Notification form | Schedule 3 | Revised to current licensing format |

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

| Condition | Summary of Licence Holder's comment | Department's response |
|--------------------------|--|---|
| Condition 31 Table 13 | The licence holder wishes to amend the construction of the tank pad. The newly proposed design is to construct a 25mm asphalt tank pad with a waterproof surface coating applied to the asphalt. The tank pad will be constructed on top of a 200mm compacted gravel subgrade. | The Delegated Officer deems the proposed construction is adequate and does not alter the risk assessment undertaken for the construction and operation of the liquid waste holding tanks. The condition has been updated. |
| Schedule 1 Maps | The emission point (E1) is noted as being in the incorrect location as based upon the old liquid waste pond location. A number of the groundwater monitoring locations and references are not correct. | A new figure with the correct information has been added to the licence. |

Appendix 2: Application validation summary

| SECTION 1: APPLICATION SUMMARY | | | | | |
|---|-------------------------------------|---|---------------|-----|-------------------------------------|
| Application type | | | | | |
| Amendment to licence | <input checked="" type="checkbox"/> | Current licence number: | L6818/1997/11 | | |
| | | Relevant works approval number: | | N/A | <input checked="" type="checkbox"/> |
| Date application received | | 24/12/2021 | | | |
| Applicant and Premises details | | | | | |
| Applicant name/s (full legal name/s) | | Shire of Bridgetown-Greenbushes | | | |
| Premises name | | Bridgetown Class II Putrescible Landfill Site | | | |
| Premises location | | Lot 903 on Deposited Plan 189961 | | | |
| Local Government Authority | | Shire of Bridgetown-Greenbushes | | | |
| Application documents | | | | | |
| HPCM file reference number: | | DER2015/000123-1 | | | |
| Key application documents (additional to application form): | | N/A | | | |
| Scope of application/assessment | | | | | |
| Summary of proposed activities or changes to existing operations. | | Licence amendment to: <ul style="list-style-type: none"> • Change the processing of mulched green waste to allow removal from site (for sale or to a composting facility); • Reduce the Category 2 throughput; • Amend groundwater monitoring condition due to damaged monitoring well that is unable to be sampled; and • Extend the due date for the final landfill profile and post closure plan for the landfill. | | | |

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

| Prescribed premises category and description | Assessed production or design capacity | Proposed changes to the production or design capacity |
|---|--|--|
| 64 - Class II or III putrescible landfill site: Not more than 5 000 tonnes per year | Combined total of up to 5,000 tonnes per annual period for wastes accepted under category 64 for landfilling. | No proposed change to the previously assessed capacity. |
| 61 - Liquid waste facility: More than 100 but not more than 10 000 tonnes per year | Combined total of up to 700 tonnes per annual period for wastes accepted under category 61 for disposal. | No proposed change to the previously assessed capacity. |
| 61A - Solid waste facility: More than 100 but not more than 10 000 tonnes per year | Combined total of up to 5,000 tonnes per annual period for wastes accepted under category 61A for reprocessing and storage | No proposed change to the previously assessed capacity. |
| 62 - Solid waste depot: More than 5 000 tonnes per year | Combined total of up to 5,500 tonnes per annual period for wastes accepted under category 62 for sorting and storage. | More than 500 but not more than 5 000 tonnes per year |

Legislative context and other approvals

| | | |
|--|--|---|
| Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Does the applicant hold any existing Part IV Ministerial Statements relevant to the application? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Has the proposal been referred and/or assessed under the EPBC Act? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Has the applicant demonstrated occupancy (proof of occupier status)? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Has the applicant obtained all relevant planning approvals? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> | No new planning approval required for amendment |

| | | |
|--|---|--|
| Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Is the Premises situated in a Public Drinking Water Source Area (PDWSA)? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i> , <i>Environmental Protection (Controlled Waste) Regulations 2004</i> , <i>State Agreement Act xxxx</i>) | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Environmental Protection (Controlled Waste) Regulations 2004 |
| Is the Premises within an Environmental Protection Policy (EPP) Area? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |
| Is the Premises subject to any EPP requirements? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | N/A |

| | | |
|---|--|---|
| <p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p> | <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> | <p>Classification: Possibly contaminated – investigation required (PC-IR)</p> <p>Date of classification: 10/01/2017</p> |
|---|--|---|