



Application for Licence

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

Licence Number	L6911/1997/11
Applicant	Shire of Gingin
File number	DER5528/1
Premises	Lancelin Waste Management Facility Lot 11089 on Plan 188900 and part Road Reserve (PIN 11744226) Lancelin Road LANCELIN WA 6044 As defined by the coordinates in Schedule 2 of the licence
Date of report	12/06/2024
Decision	Licence granted

Tanya Johnston
A/SENIOR ENVIRONMENTAL OFFICER, INDUSTRY REGULATION
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the premises. As a result of this assessment, licence L6911/1997/11 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) 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 and overview of premises

On 14 April 2023, the Shire of Gingin (the applicant) submitted an application for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act).

The application is for a licence renewal relating to the operation of the Lancelin Waste Management Facility (LWMF). The premises relates to the Category 62 and Category 64 activities and assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in licence L6911/1997/11. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in licence L6911/1997/11.

The LWMF provides waste disposal and recycling services to the northern population centres of the Shire of Gingin including Lancelin, Ledge Point, Nilgen, and Karakin. The LWMF has been operational since the early 1980s and consists of a landfill, stockpile areas, a reuse shed/area, and an inactive liquid waste pond. Due to the liquid waste pond no longer being serviceable, the pond was removed from the licence during a department-initiated amendment granted on 8 June 2023.

The LWMF accepts and processes wastes for disposal and/or recycling. It is proposed that the premises continues to be licensed as a Category 64 Class II Putrescible landfill with the addition of Category 62 to the licence so that up to 2,000 tonnes of waste can be stored or sorted pending removal offsite for recycling and/or disposal.

The operational hours of the LWMF are Thursday to Monday from 8.30 – 5:30pm. The LWMF is staffed at all times while open to the public. The LWMF is currently unfenced, with the Shire assessing it's options to rectify this. Parts of the premises were previously fenced, however due to the shifting nature of the sand dune system surrounding the premises, much of the fencing has been buried under sand. A map of the facility is presented below in Figure 1.

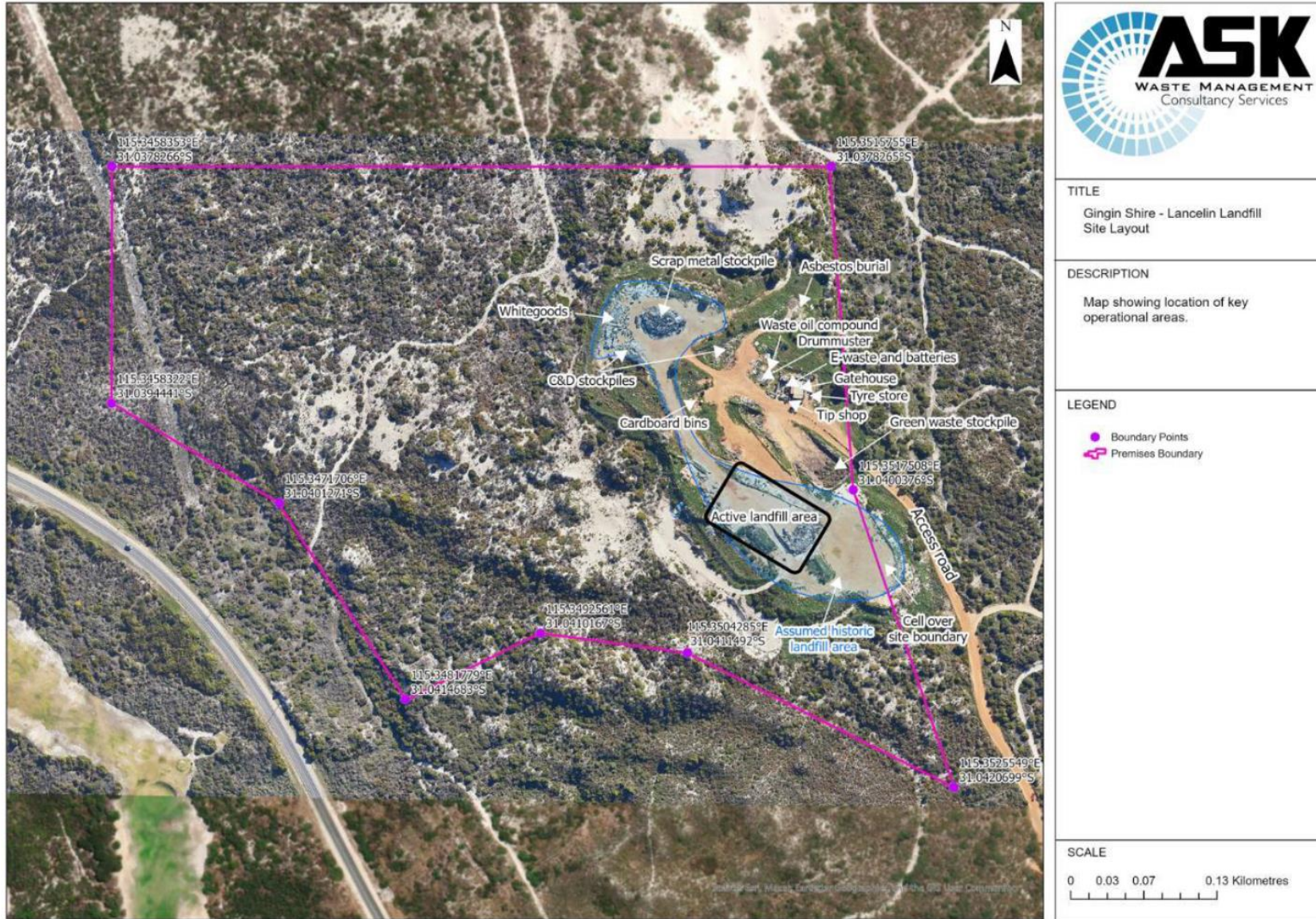


Figure 1: Site layout

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2.2.1 Waste acceptance

Waste types proposed to be accepted onto the premises include:

- Clean fill;
- Inert waste type 1 – uncontaminated fill, construction and demolition waste (C&D waste);
- Inert waste type 2 – tyres;
- Putrescible wastes - Waste from municipal and commercial sources;
- Greenwaste - Generated from commercial, and municipal sources;
- Special Waste Type 1 – Asbestos;
- White goods
- E-waste;
- Scrap metal;
- Waste oil; and
- Hazardous waste:
 - Batteries (used lead acid batteries);
 - Fluorescent lamps and tubes (CFLs); and
 - Drummuster containers

2.3 Legislative context

2.3.1 Part V of the EP Act

The LWMF operates under licence L6911/1997/10 held by the Shire of Gingin (Licence Holder). The licence expires on 12 June 2024 with the licence holder submitting a licence renewal application on 14 April 2023. This decision report documents the assessment of the application.

2.3.2 Lands Administration Act 1997

Historical practices at the premises have resulted in landfilling occurring across the prescribed premises boundary. The parcel of land is a road reserve (PIN 11744226). The Delegated Officer notes that automatic dedication of road reserves to the local government occurs under Section 27 of the *Lands Administration Act 1997* on approval of the deposited plan.

It is therefore determined that Shire has demonstrated occupancy of the land and the prescribed premises can be amended to include the area where waste has been deposited across the prescribed premises boundary.

2.3.3 Contaminated Sites Act 2003

This premises was reported to the department as per reporting obligations under section 11 of the *Contaminated Sites Act 2003*, which commenced on 1 December 2006. The premises was reported due to suspected leachate from municipal waste that might have contaminated soils and groundwater beneath the landfill area. An unauthorised tyre dumping and a fire burning incident was also reported at the site in July 2010 that involved approximately 200 tyres. Subsequently, the premises was classified as Possibly Contaminated – Investigation Required on 18 April 2017.

3. Location and siting

3.1 Siting context

The LWMF is located on Lot 11089 on Plan 188900 Lancelin Road, Lancelin (the Site). The Lot is a crown reserve vested in the Shire under a management order for the designated purpose of a waste disposal site.

The LWMF is located 2.4km southeast of the Lancelin town centre, 650m inland of the Indian Ocean and covers an area of approximately 25 ha, with the waste management operations occupying approximately 4 ha.

3.2 Sensitive receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant'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 1 below provides a summary of potential human 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 1: Sensitive human receptors and distance from premises boundary

Human receptors	Distance from prescribed activity
Residential Premises	The nearest residential receptors are located approximately 600m southeast and 1,100 m northwest from the prescribed premises.
Sporting Clubs	The Lancelin Community Sport and Recreation Club, Lancelin Football Club and the Lancelin Golf Club are located approximately 750 m to the southwest of the premises, with areas of the golf course located approximately 175 m west of the premises boundary.

3.3 Specified ecosystems and ecological receptors

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at, or emissions and discharges from, the premises. The description of specified ecosystems and distances from the premises are discussed in Table 2 and shown in Figure 2 and Figure 3.

Table 2: Sensitive environmental receptors and distance from premises boundary

Environmental receptors	Distance from prescribed activity
Indian Ocean	The Indian Ocean is located approximately 600m west of the premises.
RIWI Act Groundwater Area	The premises is situated within the proclaimed Gingin Groundwater Area.
Beneficial users of groundwater	<p>There are two registered groundwater abstraction bores located approximately 500 m southwest of the prescribed premises. The bores are registered to:</p> <ul style="list-style-type: none"> • Shire of Gingin. Licence number GWL110373(4) allows the Shire of Gingin to abstract 22,500 kL per annum for the irrigation of up to 3 ha of ovals and playing fields; and • Lancelin Community & Sporting Club Inc. Licence GWL173299(3) allows the Lancelin Community & Sporting Club Inc to abstract up to 350,000 kl per annum for the irrigation of the golf course and bowling greens.
Threatened and Priority Flora	<p>Glossy-Leaved Coastal Guinea Flower (<i>Hibbertia leptotheca</i>) located approximately 350 m east from the prescribed premises.</p> <p><i>Conostylis pauciflora</i> subsp. <i>Euryrhipis</i> located approximately 450 m east of the prescribed premises.</p> <p><i>Stylidium maritimum</i> located approximately 140 m south of the prescribed premises.</p>

3.4 Bushfire prone areas

The Facility is located in a Bushfire Prone area as shown in Figure 4 below.

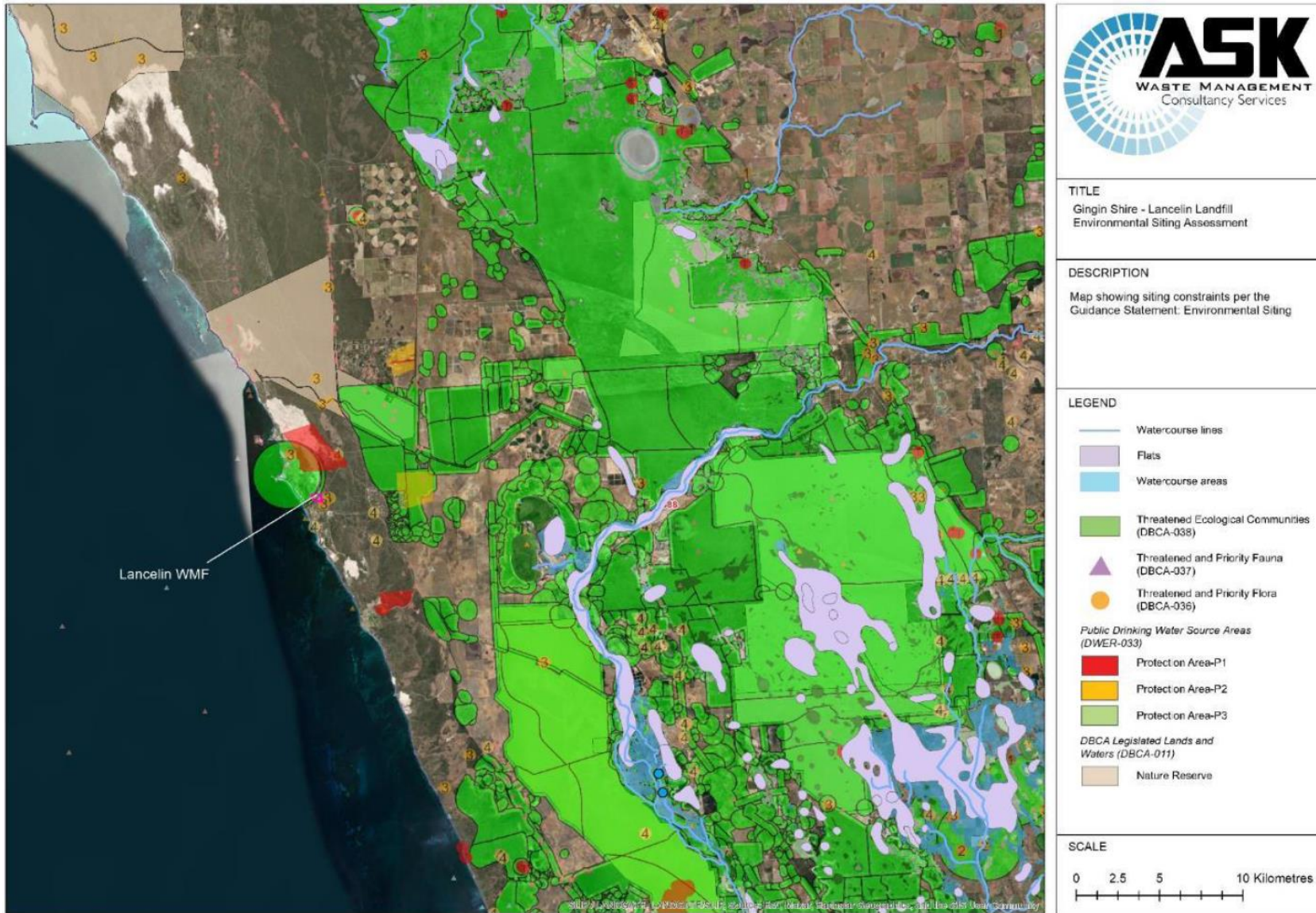


Figure 2: Environmental siting

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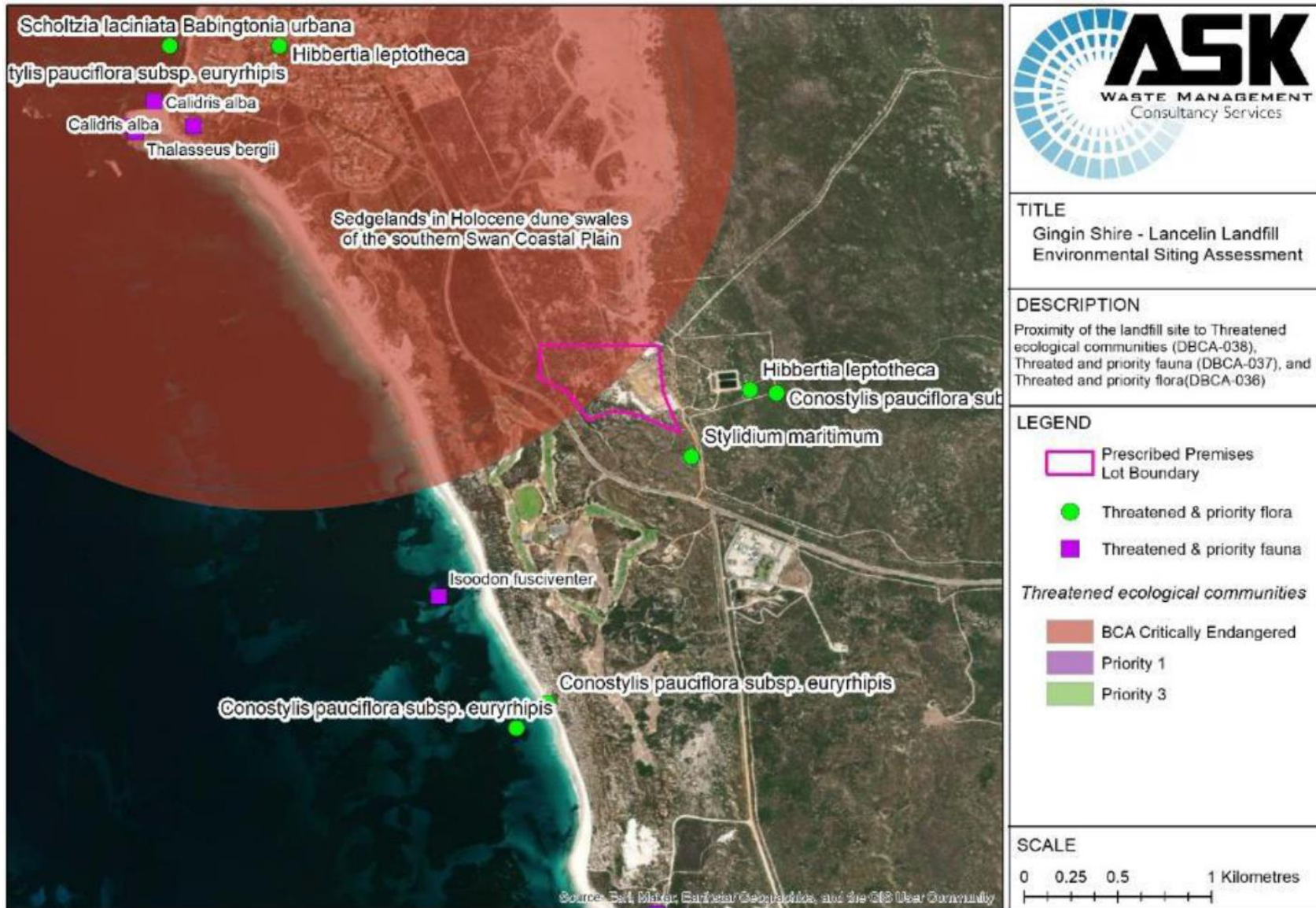


Figure 3: Threatened ecological communities

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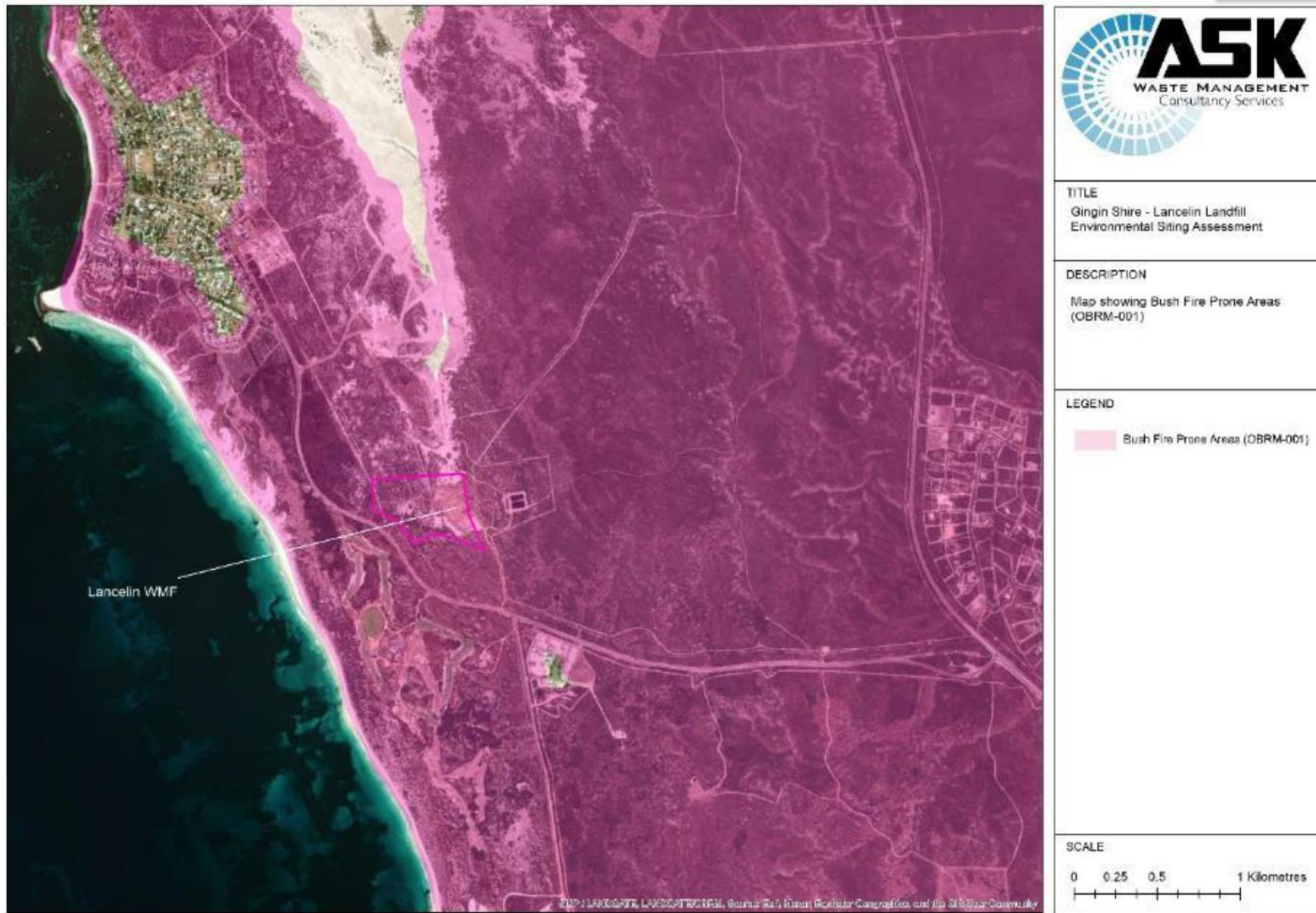


Figure 4: Bushfire prone areas

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3.5 Environmental Siting

3.5.1 Climate and rainfall

The climate in Lancelin is described by the Bureau of Meteorology (BoM) as Mediterranean with hot, dry summers and mild, wet conditions during winter. Climate data collected by the BoM, from the Gingin Aero Station between 1996 and shows that on average the monthly rainfall is 23.2mm, with most annual rainfall occurring in the winter months. The annual mean maximum temperature is 25.7 degrees with temperatures highest in January and February.

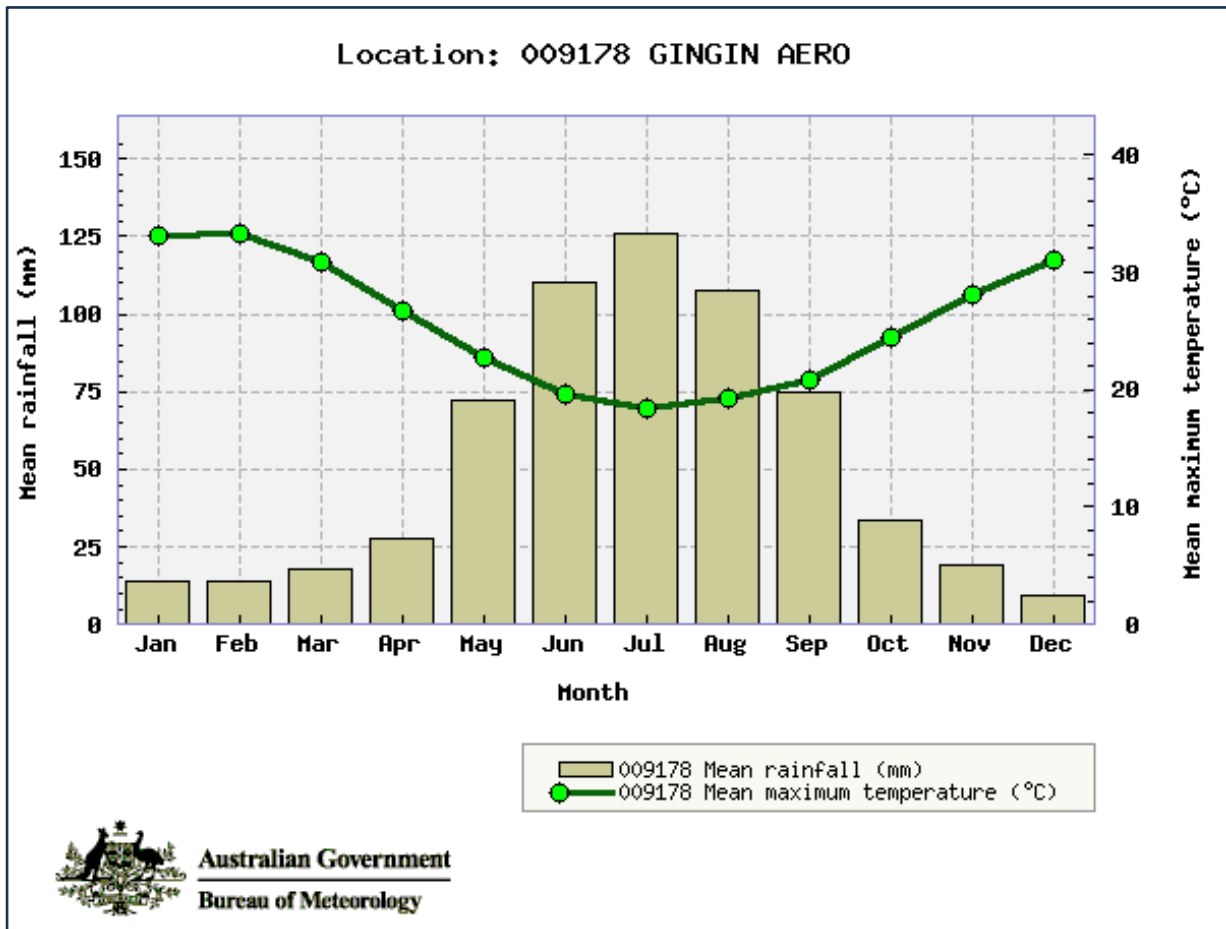


Figure 5: Rainfall and maximum temperature

3.5.2 Wind direction and strength

Based on the climate data for the Gingin Aero Station (1996-2023), the prevailing wind is easterly in the morning to southwesterly in the afternoon. This is depicted in the wind roses shown in Figure 6.



Figure 6: Wind direction and strength at 9am (left) and 3pm (right)

3.5.3 Topography

The premises is situated on the Swan Coastal Plain in a low-lying area between the Indian Ocean and the Gingin Scarp. The premises is located within a coastal dune system, which runs north – south through the middle of the site with a slightly increasing gradient to the south. The premises sits at an approximate elevation of 11m, surrounded by coastal dunes to the north, south, and west of the premises each at an approximate elevation of 15m, 14m, and 16m respectively. Elevation for the premises and surrounding areas are depicted in Figure 7 below.

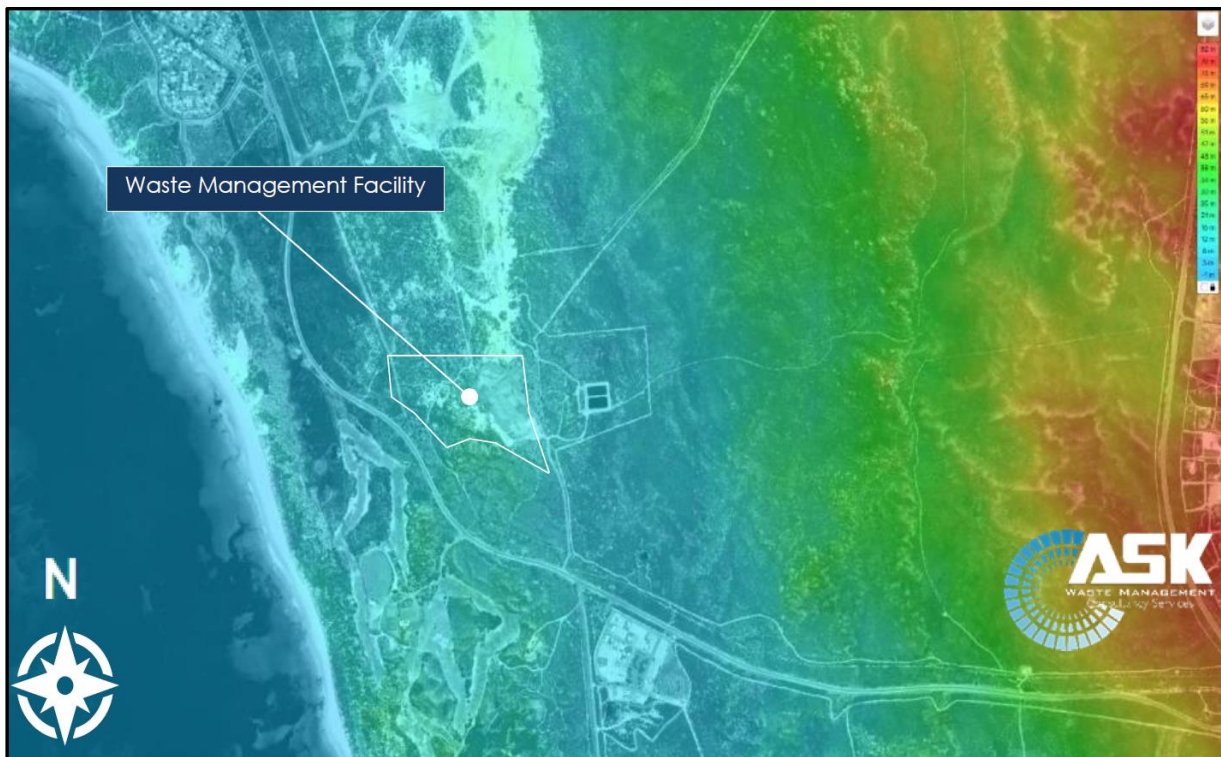


Figure 7: Topographic map of the premises and surrounding area

3.5.4 Geology

The geology of the Lancelin area is classed as quaternary, siliciclastic/undifferentiated siltstone and sandstone with calcareous sediments. The bedrock geology of the area is classed as chalk, greensand, glauconitic sandstone, siltstone, and marl (DMIRS, 2023). The regolith geology beneath the premises is categorised as carbonate-rich clay, silt, and sand in coastal deposits, while the dominant soil groups consist of calcareous sands (DMIRS, 2023). No investigations have been undertaken at the premises to confirm the geology present onsite.

3.5.5 Hydrology

There are no permanent water bodies on the premises. The nearest surface water body is the Indian Ocean located 600m to the west of the premise.

3.5.6 Hydrogeology

The hydrogeology at the premises consists of the Superficial, Leederville, and Yarragadee Aquifers. The thickness of the superficial aquifer in Lancelin is generally around 25m and is predominantly recharged by direct rainfall infiltration from the overlying soil of permeable sand and limestone during winter and early spring. It is also recharged from upward groundwater flow from other underlying aquifers (Kern, 1987).

HydroConcept (2015) notes that the Superficial aquifer consists of predominantly alluvial, shallow marine, and aeolian sequences that parallel the coastline. The Superficial aquifer is unconfined and multilayered and stretches across most of the Swan Coastal Plain between the Gingin scarp and the Indian Ocean. The sediments range from predominantly clayey (Guildford Clay) in the east adjacent to the Gingin Scarp through a sandy succession (Bassendean Sand) in the central coastal plain area, to sand and limestone (Tamala Limestone) within the coastal belt.

According to DoW (2015), the Superficial aquifer is extensive and shallow (sand, gravel, clay); and is unconfined with a saturated thickness of up to 50m. The quality is reported as generally fresh (<100mg/L Total Dissolved Solids). This aquifer is used for the town's water supply. The superficial Aquifer is underlain by the deeper and older Leederville and Yarragadee aquifers, both of which are semi-confined to confined aquifers according to DoW (2015).

Groundwater in the superficial aquifer flows westwards from the Gingin Scarp toward the sea where groundwater discharge occurs. The depth to the water table generally ranges from 2.5m to 6m below ground level in the Lancelin area, however, it can vary depending on topographic depressions in the landscape, around coastal lakes, and beneath large sand dunes and limestone ridges (Water and Rivers Commission, 1997).

There are currently no groundwater monitoring bores on the Site. Depth to groundwater has been assumed based on five groundwater bores in close proximity to the premises. Groundwater bores to the east of the premises have average static water levels between 3.4m and 5.1m below ground level (mbgl), while the bores located to the southwest have average level of between 9.8m and 11.2mbgl.

As there are no groundwater monitoring bores located at the premises, groundwater quality beneath the premises is currently unknown.

3.6 Aboriginal Heritage

The Site is located within a registered Indigenous Land Use Agreement (ILUA) with the Yued Aboriginal Corporation. The Yued ILUA was registered in 2018.

4. Operational Overview

4.1.1 Site operations

Site operations are summarised in Table 3 below.

Table 3: Site operations and processing

Waste type	Process(es)	Process controls and description
Clean Fill	Receipt, handling, reuse on site or disposal by landfilling	Stockpiled and used for capping and daily cover as required
Putrescible Waste	Receipt, handling and disposal by landfilling	<p>No waste shall be landfilled within 35 metres from the boundary of the premises</p> <p>No waste will be placed closer than 10 metres to the boundary of the premises Category 62 activities</p> <p>Waste will be placed within a defined trench or an area enclosed by earthen or other bunds</p> <p>The maximum linear length of the tipping areas will be 30 metres; the tipping face will not exceed 2 metres in vertical height</p> <p>Waste will be covered with 150mm of cover material at the end of each days operation or with at least 230mm of cover material at the end of each week</p> <p>Municipal waste from kerbside trucks will be covered within 24 hours of delivery</p> <p>Stockpile sufficient cover material to allow waste to be covered for two weeks and to cover waste in the event of a fire</p> <p>An undisturbed separation distance of at least three metres between the base of the current and future waste disposal areas and the highest level of the groundwater will be maintained</p>
Inert Waste type 1 (Used tyres)	Receipt, handling and storage prior to disposal/reuse/recycling offsite	<p>No more than 99 units to be stored onsite</p> <p>Tyres will be stored in the designated tyre store area</p> <p>The storage area will be kept clear of vegetation at all times</p>
Inert Waste type 1 (Scrap metal including whitegoods)	Receipt, handling and storage prior to disposal/reuse/recycling offsite	<p>Scrap metal will be stored in a designated area</p> <p>Scrap metal will be stockpiled and surrounded by a three sided insitu bund</p> <p>Whitegoods will be degassed prior to acceptance or offsite recycling</p>
Inert Waste Type 1 (C&D material)	Receipt, handling and storage prior to disposal offsite or by landfilling	<p>C & D waste will be stored in a designated area</p> <p>C &D waste will be stockpiled and surrounded by a</p>

Waste type	Process(es)	Process controls and description
		<p>three-sided insitu bund</p> <p>Maintain and implement an Asbestos Management Plan</p>
Greenwaste	Receipt, handling, storage prior to disposal by landfilling or burning.	<p>Greenwaste will be stored in windrows and surrounded by a three sided insitu bund</p> <p>Disposal by burning of greenwaste</p> <p>Will be dried and seasoned for at least 2 months before burning</p> <p>Will take place in a designated area at least 25 metres from any active disposal areas or the boundary of the premises</p> <p>Greenwaste to be burnt in a manner to minimise the generation of smoke</p> <p>Will take place in windrows or trenches</p> <p>Site operator will be in attendance until the fire is extinguished</p> <p>Will not take place during DFES prohibited or restricted burning periods</p>
Special Waste Type 1 (Asbestos)	Receipt and handling, prior to disposal by landfilling	<p>Asbestos material must be wrapped in heavy duty plastic or other suitable material to be accepted onsite</p> <p>Subject to acceptance controls as listed in the site Asbestos Management Plan</p> <p>Will be disposed of within a designated area within the landfill in an area not likely to be excavated, or disturbed by traffic movement</p> <p>Covered with 1m of clean fill (cover material) as soon as practicable after deposit and prior to any compaction of the waste</p> <p>The disposal location will be mapped and recorded in a site register</p> <p>The area will be signposted</p> <p>Will not be deposited within 2m of the final tipping surface of the landfill</p> <p>No work will be carried out on the landfill that could lead to the release of asbestos fibres</p>
Contaminated solid waste	Receipt and handling, prior to disposal by landfilling	<p>Only accepted if it is supported by documentation that demonstrates compliance with the acceptance criteria for Class II landfills as defined in the document 'Landfill Waste Classification and Waste Definitions 1996 (As amended)'</p> <p>Written or electronic records of all contaminated solid wastes accepted for burial at the Premises will be maintained</p> <p>Disposed within the active landfill area</p>

Waste type	Process(es)	Process controls and description
Hazardous waste (vehicle batteries, e-waste, fluoro globes)	Receipt, handling, storage prior to disposal/reuse/recycling offsite	Hazardous waste streams stored on insitu hardstand area Batteries stacked on pallets E-waste stored in a caged container Fluro tubes stored in 240L MGB
Hazardous waste (DrumMuster products)		Stored in separate containers/bins Single stream collection facilities including cardboard and glass,
Hazardous waste (Waste oil)		Stored in an oil receptacle within a low permeability banded area delineated for recycling.

5. 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.

5.1 Source-pathways and receptors

5.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this decision report are detailed in Table 4 below. Table 4 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 4: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Dust	<p>Receipt, unloading, loading, storage and landfilling of waste</p> <p>Vehicle movements</p>	Air / windborne pathway	<p>All trucks entering and leaving the Facility must be covered to prevent windblown emissions</p> <p>Entrance and site access roads to be well maintained</p> <p>Speed limits to be enforced</p> <p>Mobile water tank is kept onsite for wetting down surfaces if required</p> <p>Dust emissions will be monitored through visual inspections of disturbed and open areas to ensure that minimal visible dust generated by activities on the Premises crosses the boundary of the Premises</p>
Noise	<p>Receipt, unloading, loading, storage and landfilling of waste</p> <p>Vehicle movements</p>	Air / windborne pathway	<p>Operations emissions and operating times will comply with the <i>Environmental Protection (Noise) Regulations 1997</i>.</p> <p>Machinery operation and transport movements are scheduled to occur during standard business hours</p> <p>All mobile plant used onsite is regularly maintained</p> <p>Speed limits to be enforced on all roads</p> <p>A Complaints Register is maintained onsite to record any complaints received; this register should include the date, nature, and resolution action of any complaints received.</p>
Asbestos	Receipt, unloading, loading, storage and landfilling of waste	Air / windborne pathway	<p>Asbestos material must be wrapped in heavy duty plastic or other suitable material to be accepted onsite</p> <p>Subject to acceptance controls as listed in the site Asbestos Management Plan</p> <p>Will be disposed of within a designated area within the landfill in an area not likely to be excavated, or disturbed by traffic movement</p> <p>Covered with 1m of clean fill (cover material) as soon as practicable after deposit and prior to any compaction of the waste</p> <p>The disposal location will be mapped and recorded in a site register</p> <p>The area will be signposted</p> <p>Will not be deposited within 2m of the final tipping surface of the landfill</p> <p>No work will be carried out on the landfill that could lead to the release of asbestos fibres</p>

Emission	Sources	Potential pathways	Proposed controls
Windblown waste	Receipt, unloading, loading, storage and landfilling of waste	Air / windborne pathway	<p>Facility users are subject to load and waste acceptance controls that require all normal loads to be secured with nets and tarpaulins to prevent the accumulation of litter along principal site access routes.</p> <p>Regular inspections of incoming vehicles to ensure loads are covered, secure, and not contributing to litter.</p> <p>Regular inspections of primary access routes with active litter clean up as required.</p> <p>Only operating a single open tip face</p> <p>Levelling and compacting waste regularly</p> <p>Regularly applying cover material to the required depths</p> <p>A perimeter fence surrounding the Facility shall be maintained</p> <p>Litter screens will used on three sides around and within two meters of the tipping area</p> <p>Litter collections are to be regularly undertaken along access roads and buffer zones surrounding the Facility.</p> <p>Any waste that has been washed or blown away from the tipping area is collected and returned to the tipping area on a weekly basis</p>
Vermin	Receipt, unloading, loading, storage and landfilling of waste	Biological pathway	<p>Maintenance of a pest management program and treatments where required</p> <p>Regular pushing up and compaction of the waste</p> <p>Application of adequate cover material</p> <p>Elimination of ponding water on the property where practicable</p> <p>Frequent removal of litter and contaminants and regular cleaning and maintenance of tipping areas will be undertaken</p>
Landfill Gas	Landfill Gas	<p>Air / wind dispersion</p> <p>Lateral migration of landfill gas through the soil profile</p> <p>Passive venting to air</p>	<p>Facility staff will be trained on the health and safety risks posed by LFG emission and migration</p> <p>Where practicable organic matter will be included with soil used for daily cover to facilitate oxidising conditions for the breakdown of methane</p> <p>Surface water will be managed to reduce the generation of leachate within the waste mass, which in turn will limit LFG generation.</p> <p>A risk evaluation for LFG accumulation will be undertaken for all existing and new structures</p>

Emission	Sources	Potential pathways	Proposed controls
			<p>located at the Facility.</p> <p>Buffers will be maintained from buildings and structures to minimise the risk of offsite migration of LFG. Capping and post-closure management of the landfill in line with the proposed LCMP</p>
Odour	Receipt, unloading, loading, storage and landfilling of waste	Air / windborne pathway	<p>The waste types accepted at the Facility will be controlled in accordance with the waste acceptance procedures</p> <p>The size of the working face will be kept as small as possible</p> <p>Waste will not be deposited in standing water where practicable</p> <p>Waste will be covered regularly</p> <p>Municipal kerbside waste will be covered as soon as practicable and not later than the end of the working day</p> <p>Minimising disturbance of previously filled areas</p>
Contaminated and sediment laden stormwater	Receipt, unloading, loading, storage and landfilling of waste	Overland flow Infiltration and seepage through soil profile to groundwater	<p>Waste acceptance criteria limits set for the Premises (mass and type of waste)</p> <p>Surface water will be diverted away from the landfill cell and waste stockpile areas through the use of bunds constructed from insitu material to limit the ingress of surface water flows</p> <p>Waste will placed within a defined trench or an area enclosed by earthen or other bunds</p> <p>Waste is placed within a defined trench of restricted length (30 m)</p> <p>Regular covering of waste</p> <p>Undisturbed and rehabilitated / revegetated areas will be maintained as filters for sediment from disturbed sub-catchments</p>
Spills, contaminated stormwater	Receipt, unloading, loading, storage and landfilling of waste	Overland flow Infiltration and seepage through soil profile to groundwater	<p>Environmentally hazardous materials to be stored in accordance with the Code of Practice for the Storage of Dangerous Goods</p> <p>Hazardous materials (batteries, e-waste, fluorescent tubes) stored on insitu hardstand</p> <p>Waste oil is stored in an enclosed oil receptacle within a bunded area</p> <p>Batteries stacked and stored on pallets</p> <p>E-waste stored in a caged container</p> <p>Fluro tubes stored in 240L MGB on insitu hardstand</p>

Emission	Sources	Potential pathways	Proposed controls
Leachate	Receipt, storage and landfilling of waste	Overland flow Infiltration and seepage through soil profile to groundwater	<p>Waste acceptance criteria limits set for the Premises (mass and type of waste)</p> <p>Waste is placed within a defined trench of restricted length (30 m)</p> <p>Regular covering of waste</p> <p>Inactive trenches covered with > 1 m soil cover</p> <p>Only operating one active landfill face</p> <p>Clean stormwater is directed away from any areas where waste is present</p> <p>Regularly compacting waste to minimise rainwater infiltration</p>
Fire/smoke	Receipt, unloading, loading, storage and landfilling of waste	Air / windborne pathway	<p>Separation provided between the location of waste collection/storage areas for various combustible waste streams to ensure low risk of fire spread to other areas of the Facility</p> <p>Fire break surrounding the Facility</p> <p>Insitu hardstands provided for all operational areas</p> <p>To restrict unauthorised access and deter arson the Shire has a 1.8m fence and is maintained around the active operational areas</p> <p>Vehicles and other machinery (e.g., loaders) have appropriate heat shrouds and spark arrestors fitted and are kept, maintained and refuelled in designated areas away from combustible material.</p> <p>Regular servicing and maintenance is undertaken of on-site equipment and machinery</p> <p>No smoking policy is implemented at the site to control potential ignition sources.</p> <p>Signage is provided at the main site entry identifying materials accepted on-site to eliminate the risk of high risk hazardous waste being presented for disposal at the Facility</p> <p><u>Stockpile management</u></p> <p>Outdoor stockpiles of combustible materials are managed to achieve the following requirements:</p> <p>The maximum length of an external stockpile will be no greater than 50 m.</p> <p>The maximum height of an external stockpile (loose piled or baled) will not exceed 4 m.</p> <p>Stored combustible materials will be inspected regularly to identify any smouldering areas or</p>

Emission	Sources	Potential pathways	Proposed controls
			<p>smoke, especially during extreme weather conditions and total fire bans (i.e., extreme temperature days).</p> <p>Combustible solid materials will be stored away from: powerlines and other ignition sources, fuels and flammable solvents used for operational purposes, and hazardous and/or controlled waste storage areas.</p> <p>The tyre stockpile will be managed to achieve the following requirements:</p> <p>Tyres are stored on an insitu hardstand.</p> <p>No more than 99 tyres stored on-site at any one time</p> <p>The tyre storage area is regularly maintained to ensure a low fuel load</p> <p>Car batteries are stored on a bunded pallet on an insitu hardstand</p> <p>Waste oil is stored in a purpose built waste oil storage unit</p> <p>Fluorescent tubes are stored in individual steel drums on a limestone hardstand. The storage area is located close to the gatehouse to enable oversight of operators.</p> <p>Lead acid batteries are stored on bunded pallets</p> <p><u>Greenwaste stockpiles</u></p> <p>All greenwaste is stored in windrows.</p> <p>The greenwaste storage area is on a base of compacted limestone.</p> <p>A 5m firebreak is maintained around the greenwaste storage area.</p> <p>Greenwaste stockpiles are monitored during hot weather and any generated heat to minimise the risk of auto ignition.</p> <p>Portable fire fighting unit maintained on-site.</p> <p>Machinery is present on-site during operations capable of breaking apart, separating, and dividing stockpiles to arrest the spread of fire if required.</p>
Fire/smoke	Burning of greenwaste at the premises	Air / windborne pathway	<p>Greenwaste is only burnt providing the following conditions are met:</p> <p>Ensure the greenwaste is dry and seasoned for at least two months before burning</p> <p>Ensure the greenwaste is burnt in a dedicated area at least 25 metres from any premises boundary or active fill area</p>

Emission	Sources	Potential pathways	Proposed controls
			<p>Greenwaste is burnt in a manner to minimise the generation of smoke</p> <p>Greenwaste burnt in windrows or trenches</p> <p>The volume of greenwaste burnt is restricted such that it can be completely burnt during daylight hours</p> <p>Staff are in attendance until the fire is extinguished</p> <p>Adherence with DFES Prohibited and Restricted Burning periods</p>

5.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 5.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 5.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant'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 applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Licence L6911/1997/11 that accompanies this decision report authorises emissions associated with the operation of the premises.

The conditions in the issued licence, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5: Risk assessment of potential emissions and discharges from the premises during operation

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Category 62: Acceptance, handling, stockpiling and storage of waste prior to removal from site	Dust	Air / windborne pathway causing impacts to health and amenity	Residential receptors located 600m southeast and 1,100 m northwest	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y	Condition 1, 4, 6 Condition 16	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act. Condition 16 gives effect to this.
	Noise		Lancelin Community Sport and Recreation Club, Lancelin Football Club and the Lancelin Golf Club are located 750 m to the southwest.	Refer to Section 5.1.1	C = Minor L = Unlikely Medium Risk	Y	N/A	The Delegated Officer considers that noise emissions are effectively regulated by the proposed noise management controls and by the EP Noise Regulations.
	Odour		Refer to Section 5.1.1	C = Minor L = Unlikely Medium Risk	Y	N/A	The Delegated Officer considers that odour emissions are effectively regulated by the proposed odour management controls and by the general provisions of the EP Act.	
	Contaminated stormwater and sediment laden stormwater	Overland flow impacting upon the ecosystem function Overland flow impacting upon the health and ecosystem function of flora communities	Indian Ocean Underlying groundwater of the proclaimed Gingin groundwater area, including beneficial users	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	N	Condition 1, 4, 6 Condition 2, 5, 6, 9, 14, 23, 29	The Delegated Officer considers the need for additional controls to be placed in the licence relating to the storage of hazardous waste and e-waste. The storage requirements will ensure that leachate generation is minimised and managed appropriately. This includes the requirement for used batteries and waste oil to be self-bunded and store in a covered area.
	Leachate	Infiltration through soil profile to groundwater causing potential impacts on human health and ecological values of the Indian Ocean and						

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Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		beneficial uses associated with quality of water in the aquifer.	and Priority Flora surrounding the premises					capture leachates from the receipt, storage and decomposition of greenwaste and the acceptance and storage of scrap metal, e-waste and hazardous wastes. Conditions requiring the installation of monitoring wells will monitor emissions to ensure there are no impacts to identified receptors.
	Fire - particulates and noxious gases (smoke)	Air/windborne pathway causing impacts to health and amenity	Residential receptors located 600m southeast and 1,100 m northwest Lancelin Community Sport and Recreation Club, Lancelin Football Club and the Lancelin Golf Club are located 750 m to the southwest.	Refer to Section 5.1.1	C = Moderate L = Possible Medium Risk	Y	Condition 1, 4, 6, 8 Condition 12, 13	<p>The Delegated Officer considers that the risk of fire/smoke can be effectively managed for the acceptance and storage waste accepted for category 62 activities with the exception of acceptance, storage and disposal of greenwaste by burning. Conditions have been placed within the licence to reinforce applicant controls for the for the acceptance and storage waste accepted for category 62 activities (excluding greenwaste).</p> <p>The Delegated Officer has considered the Information Note: Bulk green waste storage fires (DFES 2014) and Guidance note: GN04 Fire prevention and management in a materials recycling facility (DFES, 2020) in undertaking this assessment. The Delegated Officer has also considered that the premises is mapped within a bushfire prone area according to mapping published by the Office of Bushfire Risk Management.</p> <p>The delegated officer considers the risks from fire events are effectively regulated by the:</p> <ul style="list-style-type: none"> applicant's controls, including infrastructure and equipment;

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								<p>and</p> <ul style="list-style-type: none"> ● additional controls imposed to reduce the risk of fire events: <ul style="list-style-type: none"> ○ maintain appropriate temperature and spacing for all materials; and ○ general provisions of the EP Act. <p>Note: Alternative sizes of windrow and stockpile sizes, including separation distances, can be considered through the development of a Fire and Emergency Management Plan (FEMP). Where this approach is taken the applicant can seek to amend the licence to modify the stockpile dimensions as conditioned.</p> <p>The Delegated Officer notes that the applicant is also be required to adhere to the requirements of the <i>Bush Fires Act 1954</i> which includes the maintenance of fire breaks.</p>
	Contaminated fire water	Infiltration through soil profile to groundwater causing potential impacts on human health and ecological values of the Indian Ocean and beneficial uses associated with quality of water in the aquifer.	Indian Ocean Underlying groundwater of the proclaimed Gingin groundwater area, including beneficial users Groundwater abstraction bores located 500 m	Refer to Section 5.1.1	C = Moderate L = Possible Medium Risk	N	<u>Condition 2, 23, 29</u>	The Delegated Officer notes that there is no infrastructure on site to capture fire water in the event of a fire occurring at the premises. Conditions requiring the installation of monitoring wells will monitor to ensure there are no impacts from fire water in the event of a fire occurring at the premises.

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			southwest of the premises, Threatened and Priority Flora surrounding the premises					
Category 64: Burial and decomposition of wastes in unlined cells	Dust	Air/wind dispersion causing impacts to health and amenity	Residential receptors located 600m southeast and 1,100 m northwest Lancelin Community Sport and Recreation Club, Lancelin Football Club and the Lancelin Golf Club are located 750 m to the southwest.	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y	Condition 1, 4, 6 Condition 16	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act. Condition 16 gives effect to this
	Noise			Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y	N/A	The Delegated Officer considers that noise emissions are effectively regulated by the proposed noise management controls and by the EP Noise Regulations.
	Odour			Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y	Condition 9	The Delegated Officer considers that odour emissions are effectively regulated by the proposed odour management controls and by the general provisions of the EP Act.
	Asbestos fibres	Air/windborne pathway causing impacts to health	Refer to Section 5.1.1	C = Severe L = Unlikely High Risk	N	Condition 1, 4, 6, 9	The Delegated Officer has included the requirement for construction and demolition waste that is suspected of containing ACM or asbestos must be treated as being Special Waste Type 1 and landfilled in accordance with the requirements for Special Waste Type 1. Additionally, the Delegated Officer has conditioned that the crushing and screening of construction and demolishing waste	

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								is not permitted at the premises. .
	Windblown waste	Air/wind dispersion causing amenity and nuisance impacts and attraction of pests and vermin.	Air/wind dispersion of waste causing visual amenity and nuisance impacts	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y	Condition 1, 4, 6, 7, 10 <u>Condition 9, 11</u>	The Delegated Officer considers it appropriate that fencing and litter control screen conditions be added to the licence. The requirement to ensure that any wind-blown waste collected and removed, on at least a weekly basis has also been included. Cover requirements have been updated to ensure that waste is covered in a timely manner to ensure that windblown waste is minimized.
	Vermin/vectors	Direct impact causing nuisance and impacting on human health.	Direct impact causing nuisance and impacting on human health.	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	Y	Condition 7, 10, 11 <u>Condition 9</u>	The Delegated Officer considers that emissions from vermin/vectors can be effectively regulated by the general provisions of the EP Act. Cover requirements have been updated to ensure that waste is covered in a timely manner to ensure that vermin and pests do not have access to the waste mass.
	Leachate	Infiltration through soil profile to groundwater causing potential impacts on human health and ecological values of the Indian Ocean and beneficial uses associated with quality of water in the aquifer.	Indian Ocean Underlying groundwater of the proclaimed Gingin groundwater area, including beneficial users Groundwater abstraction bores located 500 m	Refer to Section 5.1.1	C = Moderate L = Likely High Risk	N	Condition 1, 4, 6, 7, 8 <u>Condition 2, 3, 5, 9, 15, 17, 18, 19, 20, 23, 29</u>	The Delegated Officer notes that the landfill is unlined, is sited in an area of high permeability soils and is in close proximity to the Indian Ocean, groundwater abstraction bores and sensitive receptors. There is no infrastructure for the management of leachate from the landfilling and decomposition of waste within the landfill. Conditions requiring the installation of monitoring wells have been added to the licence. The Delegated Officer also considers the need for a landfill closure management plan to be

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Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			southwest of the premises, Threatened and Priority Flora surrounding the premises					developed for the premises. Condition 27 has been added to the licence to reflect this requirement.
	Contaminated stormwater and sediment laden stormwater	Overland flow impacting upon the ecosystem function Overland flow impacting upon the health and ecosystem function of flora communities	Indian Ocean Underlying groundwater of the proclaimed Gingin groundwater area, including beneficial users Groundwater abstraction bores located 500 m southwest of the premises, Threatened and Priority Flora surrounding the premises	Refer to Section 5.1.1	C = Minor L = Possible Medium Risk	N	Condition 1, 4, 6 Condition 5, 14	The Delegated Officer notes that there is no infrastructure on site to capture contaminated stormwater that comes in contact with waste. Conditions requiring the installation of monitoring wells will monitor emissions to ensure there are no impacts to identified receptors.
	Landfill gas	Lateral migration through soil and groundwater Accumulation in confined spaces (i.e., buildings, utilities) causing explosion or adverse health impacts such as	Residential receptors located 600m southeast and 1,100 m northwest Lancelin Community Sport and Recreation	Refer to Section 5.1.1	C = Severe L = Unlikely High Risk	Y	Condition 1, 4, 5, 6, 7 Condition 27	The Delegated Officer considers that the applicant's proposed controls for landfill gas are likely to be sufficient to mitigate potential emission along with the general provisions of the EP Act. The Delegated Officer has conditioned the requirement to develop a landfill closure management plan. The landfill

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		asphyxia Air/wind dispersion of odourous gases causing impacts to amenity	Club, Lancelin Football Club and the Lancelin Golf Club are located 750 m to the southwest.					closure management plan should consider the need for landfill gas management following closure and capping of the landfill.
	Fire - particulates and noxious gases (smoke)	Air/windborne pathway causing impacts to health and amenity	Residential receptors located 600m southeast and 1,100 m northwest Lancelin Community Sport and Recreation Club, Lancelin Football Club and the Lancelin Golf Club are located 750 m to the southwest.	Refer to Section 5.1.1	C = Major L = Possible High Risk	Y	Condition 1, 4, 6, 7, 8, 10, 11 <u>Condition 12, 13</u>	The Delegated Officer considers that fires are effectively managed by the proposed fire-risk prevention and management controls and by the general provisions of the EP Act. Conditions have been placed within the licence to reinforce applicant controls.
	Contaminated fire water	Infiltration through soil profile to groundwater causing potential impacts on human health and ecological values of the Indian Ocean and beneficial uses associated with quality of water in the aquifer.	Indian Ocean Underlying groundwater of the proclaimed Gingin groundwater area, including beneficial users Groundwater abstraction	Refer to Section 5.1.1	C = Moderate L = Possible Medium Risk	N	<u>Condition 2, 23, 29</u>	The Delegated Officer notes that there is no infrastructure on site to capture fire water in the event of a fire occurring at the premises. Conditions requiring the installation of monitoring wells will monitor to ensure there are no impacts from fire water in the event of a fire occurring at the premises.

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			bores located 500 m southwest of the premises, Threatened and Priority Flora surrounding the premises					

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

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

6. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 24 April 2024	None received.	N/A
Applicant was provided with draft documents on 22 May 2024	Applicant responded on 5 May 2024 and agreed to meet all of the conditions presented in the licence and agreed with the decision report.	Licence granted on 12 June 2024

7. Conclusion

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.

References

1. Bureau of Meteorology (2023). Climate Data Online. Australian Government. Available at <http://www.bom.gov.au/climate/data/index.shtml>
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. Department of Water (2015). *Gingin Groundwater Allocation Plan*.
5. Department of Mines, Industry Regulation and Safety (2023). GeoVIEW. Available at <https://geoview.dmp.wa.gov.au/geoview/?Viewer=GeoView>.
6. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
7. HydroConcept Pty Ltd (2015). *Hydrological Report – Preliminary Groundwater Assessment of the Midlands region*.
8. Kern A.M (1987). *The Geology and Hydrogeology of the Superficial Formations between Cervantes and Lancelin, Western Australia*.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY			
Application type			
Renewal	<input checked="" type="checkbox"/>	Current licence number:	L6911/1997/10
Date application received		14 April 2023	
Applicant and Premises details			
Applicant name/s (full legal name/s)		Shire of Gingin	
Premises name		Lancelin Waste Management Facility	
Premises location		Lot 11089 on Plan 188900 and part Road Reserve (PIN 11744226) Lancelin Road	
Local Government Authority		Shire of Gingin	
Application documents			
HPCM file reference number:		DER5528/1	
Key application documents (additional to application form):		N/A	
Scope of application/assessment			
Summary of proposed activities or changes to existing operations.		Renewal of licence for the operation of a Category 64 Landfill	
Category number/s (activities that cause the premises to become prescribed premises)			
Table 1: Prescribed premises categories			
Prescribed premises category and description			Proposed production or design capacity
Category 64: Class II or III putrescible landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the Landfill Waste Classification and Waste Definitions 1996, is accepted for burial.			5,000 tonnes per annual period.
Category 62: Solid waste depot: premises on which waste is stored or sorted, pending final disposal or re-use, other than in the course of operating — (a) a refund point (as defined in the Waste Avoidance and Resource Recovery Act 2007 section 47C(1)) (a refund point); or (b) a facility or other place (an aggregation point) for the aggregation of containers that have been returned to refund points until those containers are accepted for processing or disposal.			2,000 tonnes per annual period.
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"/>	Crown reserve vested in the Shire under a management order for the designated purpose of a waste disposal site.
Has the applicant obtained all relevant planning approvals?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	N/A
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"/>	No clearing is proposed.
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"/>	Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	The premises is situated within the proclaimed Gingin Groundwater Area.
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	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations Environmental Protection (Noise) Regulations
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
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: Possibly contaminated - investigation required Date of classification: 18 April 2017