



Application for Works Approval

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

Works Approval Number	W2858/2025/1
Applicant	Shire of Upper Gascoyne
File number	INS-0002858
Premises	Gascoyne Junction Landfill Site Wansborough Road Gascoyne Junction Legal description Portion of Reserve 52428, Lot 561 on Deposited Plan 72451 Shire of Upper Gascoyne
Date of report	19/03/2025
Decision	Works approval granted

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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 construction and operation of the premises. As a result of this assessment, works approval W2858/2025/1 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 6 January 2025, the applicant (Shire of Upper Gascoyne) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The Shire of Upper Gascoyne operates the existing Class II putrescible landfill at Wansborough Road, Gascoyne Junction (the premises) which is approximately 550 m east of Gascoyne Crossing. The premises is currently registered as a Category 89: putrescible landfill site (R2338/2012/1) under Part 2 of Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) and can accept up to a combined total of 5,000 tonnes per annum of waste.

The site currently accepts kerbside and commercial waste and has a designated area for the stockpiling of recyclable materials. The application is to undertake construction works relating to a new lined evaporation pond at the premises. The evaporation pond is required to store brine wastewater from the proposed reverse osmosis (RO) plant which is part of a larger water harvesting process being established by the Shire.

The application relates to category 61: Liquid waste facility and assessed production capacity under Schedule 1 of the EP Regulations which are defined in works approval W2858/2025/1. 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 works approval W2858/2025/1.

The Shire proposes to make a separate application in the future to licence the currently registered site (R2338/2012/1) for continued receipt of putrescible waste, controlled wastes and the operation of the evaporation pond.

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 construction and operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Vehicle movements on unsealed surfaces, earthworks, construction and installation of site infrastructure	Air / windborne pathway	Monitor prevailing winds and cease construction during high winds;
Noise			Vehicle speeds will be limited onsite; and All waste loads will be covered during transport.
			Compliance with <i>Environmental Protection (Noise) Regulations 1997</i> (Noise Regs).
Time Limited Operations			
Noise	Acceptance of RO brine and disposal to evaporation pond – <i>normal operations</i>	Air/windborne pathway	Siting. Operational noise at the premises is not expected to increase as a result of the use of the evaporation pond.
RO brine	Acceptance of RO brine and disposal to evaporation pond – <i>loss of containment (overtopping)</i>	Overland runoff / migration onto surrounding land Seepage through soil to groundwater	Designed and sized to ensure an excess evaporation potential is achieved across a 12-month period based on monthly inputs for inflow (RO plant wastewater and rainfall) and evaporation.
	Acceptance of RO brine and disposal to evaporation pond – <i>loss of containment (seepage)</i>	Seepage through pond liner into soils and groundwater	Evaporation pond will be lined with 2.0 mm smooth high density polyethylene (HDPE) geomembrane. Embankments and compacted surfaces will be subject to compaction testing in accordance with AS 1289.5. The Site Won material used for the embankments and liner subgrade will be compacted in uniform layers, not exceeding a compacted layer thickness of 300 mm. Each layer will be compacted to achieve a minimum 98% of Standard Maximum Dry Density (MMDD) and $\pm 2\%$ of Optimum Moisture Content (OMC). Soil classification testing and field nuclear density testing will be undertaken throughout works. Destructive and non-destructive weld testing.

3.1.2 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 2 and Figure 1 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

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

Human receptors	Distance from prescribed activity
Residential Premises/	550 m west of the prescribed premises boundary
Environmental receptors	Distance from prescribed activity
Flora	<i>Rhodanthe ascendens</i> (P1) 1,100m northwest <i>Bergia auriculata</i> (P2) 1,400m northwest <i>Abutilon sp. Pritzelianum</i> (P3) 500m north <i>Grevillea subterlineata</i> (P3) 1,400m northwest
Fauna	Specially protected fauna: Fauna Common Sandpiper 900m north Glossy Ibis 1,200m northwest
Underlying groundwater (non-potable purposes)	The Site is located within the Gascoyne Proclaimed Groundwater Area, as defined under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act). The Gascoyne Junction Water Reserve is located 740m north of the premises and is classified by the DWER as a Priority 1 protected area. The groundwater level is estimated to be greater than 4 meters below ground level (mbgl), based on previous excavations at the site and the relative lower elevation of the surrounding area. Additionally, the Gascoyne Junction GJ 1/22 Bore Completion Report shows that the groundwater elevation within GJ 1/22 Bore, located on Gregory St approximately 1km from the Site, is 20.9mbgl.
Drinking water source areas	Gascoyne Junction Water Reserve located approximately 700m north of the prescribed premises.
Watercourse	Non-perennial watercourse located approximately 40m to the west of the premises.
TECs/PECs	Priority 3 ecological community located approx. 550m northeast from the prescribed premises.
Cultural receptors	Distance from activity
Aboriginal heritage site	A review of the National Native Titles Tribunal National Native Title Register indicates that nonexclusive Native Title rights and interests are shown to exist over both the existing Site and the proposed expansion area (UCL PIN 11240241), as per the Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People Determination. As part of acquiring the Unallocated Crown Land, the Shire is required to enter into an Indigenous Land Use Agreement (ILUA) with the Registered

Native Title Body Corporation, the Yinggarda Aboriginal Corporation. This process is ongoing.

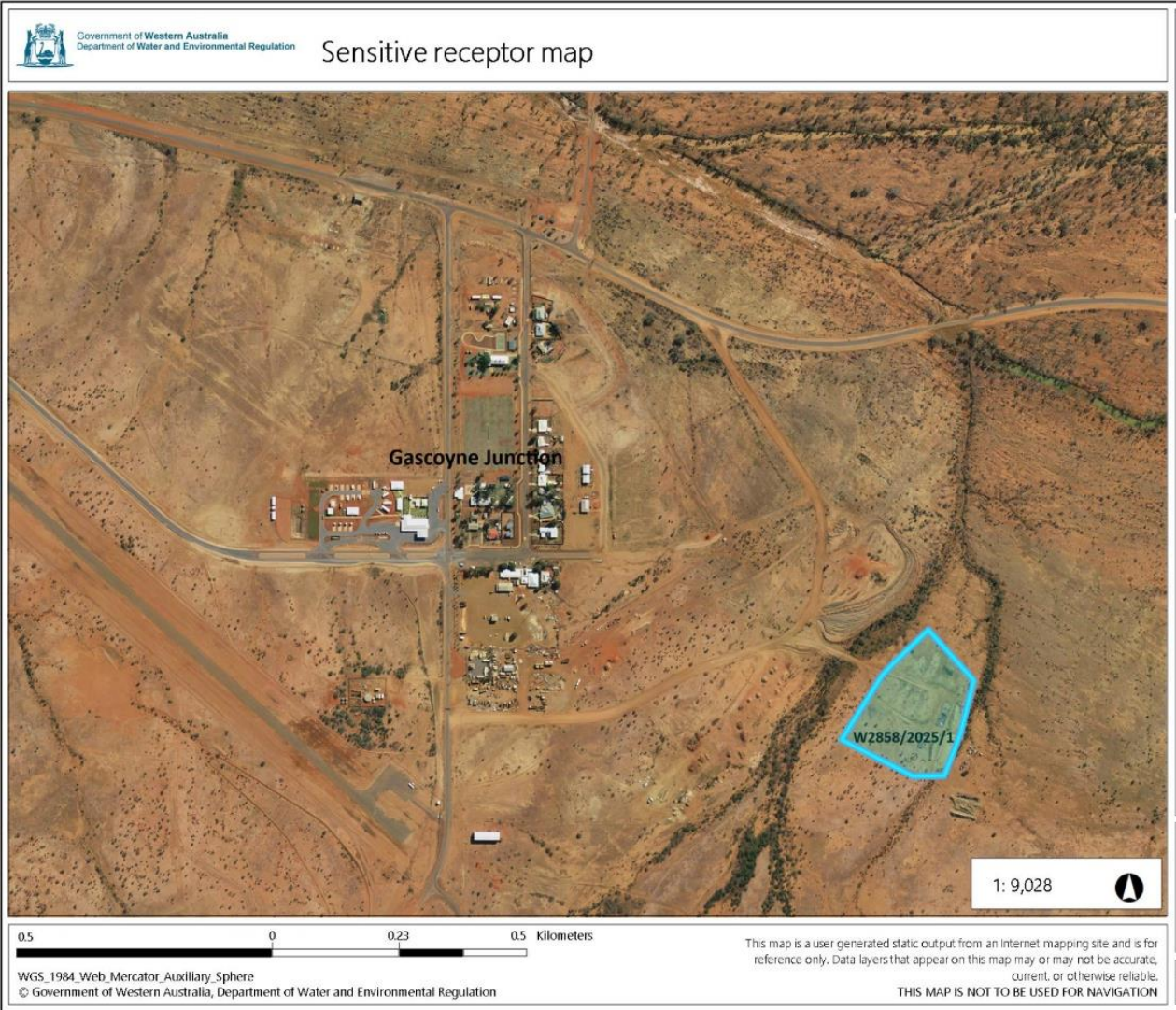


Figure 1: Proximity to sensitive receptors (premises boundary shown in blue)

3.2 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 3.1. 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 3.1), 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 works approval 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 3.

Works approval W2858/2025/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. storing RO wastewater (brine) in the evaporation pond. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

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

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Construction								
Excavation for construction and installation of new evaporation pond and associated infrastructure. Vehicle movements on unsealed roads.	Dust	Air / windborne pathway causing impacts to health and amenity	Residences located 550 m west of the premises.	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	N/A	Some additional noise and dust is expected during construction, however due to the nature of the works, levels are not expected to differ significantly from existing activities at the premises. The Delegated Officer has also considered there is sufficient separation to off-site receptors (~550 m) and does not reasonably foresee that noise and dust from these works will impact on off-site human receptors. Therefore, the Delegated Officer considers that the applicant's proposed controls are likely to be sufficient at mitigating dust emissions, and noise emissions associated with the construction can be sufficiently managed through the <i>Environmental Protection (Noise) Regulations 1997</i> .
	Noise		Priority ecological community located 550m northeast from the premises.	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	N/A	
Operation <i>(including time-limited-operations operations)</i>								
Acceptance of RO brine and disposal to evaporation pond – <i>normal operating conditions</i>	Noise	Air / windborne pathway causing impacts to health and amenity	Residences located 550 m west of the premises.	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	N/A	The Delegated Officer considers there is sufficient separation to off-site receptors (~550 m) and does not reasonably foresee that noise will impact on off-site human receptors. Therefore, regulatory controls are not required in the works approval.
Acceptance of RO brine and disposal to evaporation pond – <i>loss of containment</i>	RO brine	Overtopping of the evaporation pond or failure of embankments, directly discharging nutrients and sediments causing overland runoff / migration onto surrounding land and seepage through soil to	Gascoyne Junction Water Reserve located approximately 700m north. Priority ecological community located 550m	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	N	Conditions 1, 7 and 8	The evaporation pond was designed and sized to ensure an excess evaporation potential is achieved across a 12-month period based on monthly inputs for inflow (RO plant wastewater and rainfall) and evaporation. The applicant provided a water balance calculation as evidence to demonstrate the capacity of the evaporation pond is sufficient to manage the expected receival volumes. In addition, a spillway has been designed near the northwest corner to allow for controlled water discharge should the pond ever overtop. The Delegated Officer considers that the applicant's

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		groundwater.	northeast. Non-perennial watercourse located approximately 40m west.					<p>proposed construction controls are likely to be sufficient at mitigating spill or overflows of RO wastewater.</p> <p>Compliance reporting and restrictions on when time limited operations can occur will be included on the works approval to verify the integrity of the 'as constructed' infrastructure is fit-for-purpose, before being authorised for use.</p> <p>The Delegated Officer also considers the requirement for the pond to be operated with a minimum freeboard of 0.5 m is essential in mitigating risk of overtopping, and has therefore included this as a condition of time limited operations in the works approval.</p>
Acceptance of RO brine and disposal to evaporation pond – <i>loss of containment</i>		Failure of the pond liner causing seepage through the base of the pond into soils and groundwater.	Gascoyne Junction Water Reserve located approximately 700m north.	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Conditions 1, 7 and 8	<p>In order to minimise the risk of impacts from seepage, the applicant proposes to construct the new pond with a synthetic liner (2 mm HPDE geomembrane) which will undergo destructive and non-destructive weld tests prior to use. The liner will overlie a clay subgrade that will undergo compaction testing prior to liner installation.</p> <p>The Delegated Officer considers that the proposed infrastructure and applicant's proposed controls are likely to be sufficient to mitigate seepage of liquid waste during time limited operations.</p>

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.

4. Consultation

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

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 21 February 2025	None received	N/A
Applicant was provided with draft documents on 17/03/2025	Applicant responded on 17 March 2025, advising they would like to waive the remainder of the 21-day comments period and have the works approval issued as soon as possible.	N/A

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

The delegated officer notes that the applicant intends to apply for a licence following the completion of the works to authorise ongoing operation of the evaporation pond after the cessation of time limited operations authorised in the works approval.

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