Decision Report

Application for a Licence

Division 3, Part V *Environmental Protection Act 1986*

Application number	APP-0026589
Licence number	L2864/2025/1
Applicant	Rex Rowles
Premises	Mortlock Malt 6013 Northam-Pithara Road KARRANADGIN WA 6460
Date of report	29 April 2025
Status of report	Final

1. Purpose and scope of assessment

Mortlock Malt (the applicant) has applied for a licence to operate Mortlock Malt; a malting facility (Mortlock Malt; prescribed premises). An application was submitted under Division 3 Part V of the *Environmental Protection Act 1986 (*EP Act) on 1 December 2024.

This report sets out the delegated officer's assessment of potential risk events arising from emissions and discharges that will be generated during operations at the premises.

In completing the assessment documented in this 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. Application details

Background

Mortlock Malt was granted works approval W6544/2021/1 on 11 October 2021, for construction works and time limited operations of a malting facility. The works approval expired on 10 October 2024 before the applicant had submitted the required construction compliance reporting, to demonstrate the facility had been constructed in accordance with the requirements outlined in the works approval.

This report documents the department's assessment of risks arising from the operation of the infrastructure, constructed in accordance with W6544/2021/1.

Overview of premises operations

The malting facility is located on a rural property at 6013 Northam-Pinthara Road (the premises), about 16 km north of Goomalling. The facility produces about 400 tonnes of malt per year for use in the production of craft beers and spirits, equating to about one to seven tonne batch of malt processed each week.

All malting activities are conducted within a designated shed. The malting process comprises three steps: steeping, germination and kilning. Steeping involves immersing barley grain in aerated water for up to eight hours. In between each immersion, water is drained from the grain and the grain is transferred from steeping tanks to germination boxes for root and shoot production. Humidity and temperature are controlled in the germination boxes. A false-floor comprised of mesh is situated inside the germination boxes to retain grain solids. Once the barley shoot is about three quarters the length of the grain, the germination of the grain is halted by kilning, which dries the grain and promotes the development of colour and flavour. Accumulated dry waste is manually collected and disposed off-site.

Wastewater from the malting process (about 30 kL/week) flows via gravity from the germination beds to a collection sump adjacent to the malting shed, before being transferred to a lined evaporation pond. The premises operates a closed loop system where wastewater disposal is via evaporation only, with no on-site discharges.

Table 1 describes the prescribed premises categories that the application is subject, as defined in Schedule 1 of the Environmental Protection Regulations 1987.

Table 1: Prescribed premises category

Classification of premises	Assessed design capacity (category threshold of 200 tpa)
Category 18: Food processing: premises (other than premises within category 24) — (a) on which vegetables are, or fruit or meat is, preserved, cooked, dried, canned, bottled or processed; and (b) from which liquid waste is or is to be discharged onto land or into waters.	Up to 400 tonnes per annual period (tpa).

Operational infrastructure

The operational infrastructure at the premises includes the following:

- 2 x 200 kL polyethlyene water tanks;
- 6 x 100 tonne grain silos;
- an enclosed steel shed with a dust extraction system housing the malting facility;
- a diesel-fired boiler, to generate heat for malt kilning;
- a collection sump constructed out of medium-density polyethylene (MDPE) and incorporating an in-built sediment basket to capture sediment leaving the malting process;
- a clay-lined evaporation pond for storage and evaporation of wastewater, and
- a 13,500 L self bunding fuel storage tank.

3. DWER technical review

Works approval compliance

An inspection was conducted by the department on 21 November 2024 to ensure the infrastructure was constructed/installed in accordance with the applicant's works approval which expired 10 October 2024. Photographic evidence from the inspection, diagram schematics and invoice receipts verified the following infrastructure had been constructed in accordance with the works approval's design specifications and dimensions at the authorised location(s):

- Fully enclosed steel malting shed with concrete floor;
- Chain disc conveyor to transfer grain;
- Dust extraction system to extract any free dust and collect into bags for disposal off-site;
- Steep/germination/kiln vessel installed inside the malting shed on concrete floor;
- 1.8 mm stainless steel wedge wire floor;
- 200 L covered collection sump (has capacity to be fitted with filter sleeves if fine material is to be expected) installed above ground (to prevent surface water inflow) with a 150 mm outlet draining to the evaporation pond;
- Collection sump connected to the germination vessels via a 100 mm PVC pipe;
- 5 X 50 tonnes grain storage silos installed on concrete pads;
- 2 X 50,000 L PE (polyethylene) water storage tanks;
- Self-bunded fuel storage tank; and
- HDPE-lined evaporation pond constructed to contain a 1:20 year rainfall event.

4. Consultation

The application was referred to relevant public authorities and advertised for public comment on the department's website in April 2025. No submissions were received within the specified timeframe.

5. Risk assessment

Determination of emission, pathway and receptor

The department assesses the risks of emissions affecting nearby receptors from the prescribed premises operations 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.

Receptors

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

Table 2 below provides a summary of potential human and environmental receptors that may

be impacted as a result of activities upon or emissions and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors

Human receptors	**Approximate distance from prescribed activity**
Rural homesteads and other agricultural infrastructure	• 1.5 km east northeast; • 1.9 km south; • 2.0 km northwest; • 2.4 km south; • 2.7 km west; • 3.9 km northeast; and • 3.9 km north.
Environmental receptors	**Distance from prescribed activity**
Local groundwater resources	Not situated within a groundwater area proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act). Groundwater salinity in the local area is between 14,000 and 35,000 mg/L total dissolved solids. Depth to groundwater at the premises is about six metres (m) below ground level.
Rivers and water courses	A minor (second and first order) ephemeral watercourse intercepts the northern and eastern boundaries of the premises respectively. The watercourse is about 100 m northeast, and down gradient of the evaporation pond's location. This watercourse connects with the Mortlock River downstream of the premises.
Local soils	The premises is situated within the 'Wongan Hills 1 Subsystem' soil profile. This soil profile is defined as comprising undulating low hills, with granite rock outcrops. Grey-brown shallow and deep loamy duplex, sandy and loamy earth and shallow and deep sands are characteristic of this soil profile. Common vegetation types associated with this soil profile include Salmon Gum (*Eucalyptus salmonophloia*), *Melaleuca* sp., *Acacia* sp., Gimlet (*Eucalyptus* sp.) and Mallee (*Eucalyptus* sp.).

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 identified potential source-pathway and receptor linkages. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls, 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 the below table.

Exclusions to this assessment

The following matters are out of the scope of this assessment and have not been considered within the risk assessment detailed in this report:

- other general farming activities being conducted on the premises;
- vehicle (i.e., truck) movements on private or public roads; and
- land use zoning and compatibility with surrounding land uses

The licence is related to category 18 activities only and does not offer the defence to offence provisions in the EP Act (see sections 74, 74A and 74B) relating to emissions or environmental impacts arising from prescribed and non-prescribed activities, including those listed above.

Risk assessment table

The table below describes the risk events associated with the proposal consistent with the *Guideline: Risk Assessments* (DWER 2020). The table identifies whether the risk events are acceptable and tolerated, or unacceptable and not tolerated, and the appropriate treatment and degree of regulatory control, where required.

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls
Source/ Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Category 18: Food processing								
Operation								
Vehicle movement on the premises Storage of raw grain at the premises; Processing of grain into malt; and Storage of malt prior to dispatch from the premises.	Fugitive dust – receipt, handling, transport (trucks) and storage of solid materials	Air/windborne pathway causing impacts to health and amenity.	• Vehicle speeds at the premises will be managed with speed limits. • Barley will be stored within six 100 tonne grain silos. • Malting activities will be undertaken within an enclosed shed fitted with a dust extraction system which will direct dust through ducting to a cyclone separator to collect solids into bags which will be removed and used as animal feed. • Processed malt is stored and transferred onto trucks within bags.	Minimal impact to amenity at local scale **Slight**	Not likely to occur in most circumstances **Unlikely**	**Low** Acceptable, generally not subject to regulatory controls	The malting facility's location complies with the minimum separation distance from sensitive receptors of 500 m (*Environmental Assessment Guideline for Separation distances between industrial and sensitive land uses,* 2005*)*. The location of the facility and the applicant's proposed controls suggests that any fugitive dust is expected to be managed to ensure emissions are unlikely to impact the health and amenity of receptors. Based on this assessment the Delegated Officer has determined that fugitive dust from the premises' operations is low risk. The Delegated Officer accepts the applicant's proposed controls and has included the relevant infrastructure and operational requirements within the licence's infrastructure table.	N/A
	Noise		• Barley deliveries will occur only in the months of November and December. • The malting activities will be undertaken within an enclosed shed. • Traffic movements to the site will be undertaken between 9 am and 5 pm daily. • Operations will mainly be undertaken during daylight hours. • Vehicle speeds at the premises will be managed with speed limits.	Minimal impact to amenity at local scale **Slight**	Not likely to occur in most circumstances **Unlikely**	**Low** Acceptable, generally not subject to regulatory controls	The malting facility's location complies with the minimum separation distance from sensitive receptors of 500 m (*Environmental Assessment Guideline for Separation distances between industrial and sensitive land uses,* 2005*)*. The location of the facility and the applicant's proposed controls suggests that any fugitive noise from the premises operations is expected to be minimal and are unlikely to impact the health and amenity of receptors. Based on this assessment the Delegated Officer has determined that noise from the premises' operations is low risk. The Delegated Officer accepts the applicant's proposed controls and has included the relevant infrastructure and operational requirements within the licence's infrastructure table. The premises will be required will be to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*.	N/A
	Odour		• Malting activities will be undertaken within an enclosed shed. • A false floor comprised of mesh with a 1.8 mm aperture will be situated inside the germination vessels to retain solids which would otherwise flow into the evaporation pond. • Solid waste generated from the germination phase (rootlets) will be packaged in bags and transported offsite weekly for animal feed or disposed to a licensed landfill. • Visual housekeeping inspections of the site will be undertaken to ensure rootlets are not stockpiled on site.	Minimal impact to amenity at local scale **Slight**	Not likely to occur in most circumstances **Unlikely**	**Low** Acceptable, generally not subject to regulatory controls	The malting facility's location complies with the minimum separation distance from sensitive receptors of 500 m (*Environmental Assessment Guideline for Separation distances between industrial and sensitive land uses,* 2005*)*. The location of the facility and the applicant's proposed controls suggests that any odour is expected to be managed to ensure emissions are unlikely to impact the health and amenity of receptors. Based on this assessment the Delegated Officer has determined that odour emissions from the premises' operations is low risk. The Delegated Officer accepts the applicant's proposed controls and has included the relevant infrastructure and operational requirements within the licence's infrastructure table.	N/A
Storage and evaporation of wastewater from malt production within a constructed pond.			• The evaporation pond will be monitored daily for odours. • The buildup of fine solids in the evaporation pond will be monitored and rectified by scraping and removal on an 'as-needs' basis.	Minimal impact to amenity at local scale **Slight**	Not likely to occur in most circumstances **Unlikely**	**Low** Acceptable, generally not subject to regulatory controls	The evaporation pond has been constructed as per the works approval specifications, dimensions using approved material and location. The premises operations are relatively small-scale and the wastewater within the pond comprises mostly of uncontaminated stormwater and wastewater produced during the malting process. The pond has been constructed to ensure that there is a large enough surface area (1,585 m^2) and sufficient depth for improved oxygenation, better mixing and dilution of odourous compounds. Based on this assessment the Delegated Officer considers odour from the pond to be minimal and low risk. To ensure ongoing management of any discharges, the Delegated Officer has incorporated the infrastructure into an operational requirements table, specifying that it must be maintained in accordance with the original design specifications.	N/A

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls
Source/ Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Malt facility (germination vessels)/production	Nutrient rich wastewater from malt production	Direct discharge to soil	• Wastewater from the malting process (germination vessels) will be directed to a collection sump (PT600 Silt Pit comprised MDPE with dimensions of 600mm x 600mm x 600mm), with a silt basket with capability to remove >99% of particles > 3mm in size to remove fine solids from the wastewater. The sump is located adjacent to the malting shed. • Wastewater be transferred from the collection sump to an evaporation pond via pipeline (gravity flow).	Minimal impact to amenity at local scale **Slight**	Not likely to occur in most circumstances **Unlikely**	**Low** Acceptable, generally not subject to regulatory controls	The collection sump has been installed in accordance with the works approval design specifications. Wastewater generated from malting is directed from the germination vessels to the collection sump (covered) for filtration, prior to conveyance to the evaporation pond. The Delegated Officer considers there to be low risk of any direct discharge to soil from the malting facility. To ensure ongoing management of any discharges, the Delegated Officer has incorporated the infrastructure into an operational requirements table, specifying that it must be maintained in accordance with the original design specifications.	To maintain the collection sump integrity to minimise the risk of leaks/overflow from the infrastructure.
Storage and evaporation of wastewater from malt production within a constructed pond.		Overland runoff intercepting surface water features.	• Wastewater be transferred from the collection sump to an evaporation pond via pipeline (gravity flow) or if not be able to be, it will be removed from site by a licensed liquid waste contractor. • The evaporation pond will be constructed with above ground embankments to prevent surface water ingress during rainfall events. • The evaporation pond has been designed with a 10 percent safety margin, providing sufficient capacity for approximately 33 kilolitres of wastewater each week together with the rainfall resulting from a 1:20 ARI rainfall year. The design also includes a 500 mm operational freeboard. • The evaporation pond will have dimensions as illustrated in Figure 1 to provide a minimum storage capacity of 754 m3. • The evaporation pond will be lined with a clay liner established using locally sourced clay soils to achieve a permeability of $1x10^{-9}$ m/s. Clay soils at the premises have been previously tested (as detailed in Section 3) and found to be capable of a achieving this permeability. • The evaporation pond will have a minimum separation distance from its lowest point to the local groundwater profile of at least 5 m. • The evaporation pond will be visually monitored daily to ensure a minimum freeboard of 500mm is maintained. • The buildup of fine solids in the evaporation pond will be monitored and rectified by scraping and removal on as ‘as-needs’ basis.	Low level off-site impacts **Minor**	Not likely to occur in most circumstances **Unlikely**	**Medium** Acceptable, generally subject to regulatory controls	The pond has been constructed at a sufficient size for expected wastewater inflows and a 1:20 ARI rainfall year. The pond is expected to sufficiently capture and contain wastewater from the malting facility and uncontaminated rainwater. However, given the location of a minor ephemeral watercourse about 100 m down gradient of the evaporation pond, there is greater risk for overland runoff intercepting surface water features. Based on this assessment, the Delegated Officer considers the storage and evaporation of wastewater from malt production to be medium risk. To prevent stormwater from being transferred into the evaporation pond via the collection sump (which could lead to pond overflow during high rainfall events) the Delegated Officer also determined to include infrastructure and operation conditions to prevent surface water inflows from entering the collection sump.	Infrastructure and operation conditions to prevent surface water inflows from entering the collection sump.
		Seepage through the underlying soil profile into groundwater resources.		Low-level on-site impacts **Slight**	Not likely to occur in most circumstances **Unlikely**	**Low** Acceptable, generally not subject to regulatory controls	Given the distance to groundwater and the soil type on the premises, the Delegated Officer considers that there is a low risk of seepage of nutrient enriched wastewater from the evaporation pond leading to contamination of the underlying groundwater resource, assuming the pond was suitably constructed.	N/A

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

6. Decision

The delegated officer has determined that the proposal to operate Mortlock Malt; the malting facility, does not pose an unacceptable risk to public health or the environment. This determination is based on the following:

- The malting facility's location complies with the minimum separation distance from sensitive receptors of 500 m (Environmental Assessment Guideline for Separation distances between industrial and sensitive land uses, 2005).
- The malting facility is located away from any occupied residential receptors, and the remaining nearby receptors are sufficiently separated to prevent any significant harm from emissions.
- Emissions and discharges from normal operations are expected to be minimal, providing the infrastructure is operated and maintained in accordance with manufacturer specifications; and
- The applicant's controls are considered sufficient for ensuring there is an acceptable level of risk of impacts to identified receptors from ongoing operations (refer to the risk assessment table above, column 4).

The delegated officer has determined to apply regulatory controls in the licence to reduce the risk of overland runoff of wastewater. A watercourse (connecting to Mortlock River) is located about 100 m north-east and down gradient of the collection sump and the evaporation pond. Controls have been added to prevent surface runoff from entering the collection sump.

Based on the assessment outlined in this report, the delegated officer has determined that a licence will be granted, subject to conditions that align with the necessary controls for administration and reporting. These conditions, as outlined in the risk assessment table, have been determined in accordance with the *Guideline: Setting Conditions* (DWER 2020).

Applicant consultation

The applicant was provided with a draft licence and this report on 9 April 2025 and waived the consultation period with no additional comments.

7. Conclusion

Based on this assessment, it has been determined the issued licence will be granted subject to conditions which commensurate with the determined controls necessary for administration and reporting requirements.

In accordance with the *Guidance Statement: Licence duration* (DER 2016), the duration of the licence will be 20 years.

8. References

1. **Department of Water and Environment Regulation** (2017). *Guidance Statement: Risk Assessments*, Perth, Western Australia.
2. **Department of Water and Environmental Regulation** (2019). *Guideline: Decision Making*, Perth, Western Australia.
3. **Department of Water and Environment Regulation** (2020). *Guideline: Setting Conditions,* Perth, Western Australia.
4. **Environmental Protection Authority** (2005). *Guidance for the Assessment of Environmental Factors – Separation Distances between Industrial and Sensitive Land Uses – No.3*, (page 18) Perth, Western Australia.
5. **Mortlock Malt** (2024). *Application Document and Supporting Information.* Received 1 December 2024, Perth, Western Australia.