Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

CEO-initiated licence amendment

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

Licence Number	L8222/2008/2
Licence Holder	Naturaliste Vintners Pty Ltd
ACN	102 764 429
Premises	Naturaliste Vintners 61 Hairpin Road NORTH JINDONG WA 6280 Legal description – Being lot 109 on Plan 73361
DWER File Number	DWERVT16018 / INS-0001621
Date of report	12/11/2025
Decision	Licence granted

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1. Scope and purpose of assessment

1.1 DWER initiated licence review

On 21 August 2024, the department initiated a review of licence L8222/2008/2 held by Naturalist Vintners Pty Ltd (the licence holder). The premises is classified as a Category 25: Alcoholic beverage manufacturing facility under Schedule 1 of the Environmental Protection Regulations 1987, with a design or production capacity of 1,260 kL of wine per year. The premises is also licenced under Category 61: Liquid waste facility, with a design or production capacity of 1,000 tonnes per year.

The review was initiated and undertaken in accordance with the department's *Guideline: Industry Regulation licence reviews* and *Procedure: Industry Regulation licence reviews*.

Alcoholic beverage production such as wineries can have significant environmental impacts through nutrient export in the absence of adequate waste management practices (dealing with the treatment wastewater and solid wastes) and require site-specific risk-based regulatory controls.

The review considers the infrastructure and activities in place to minimise, monitor, and control risks associated with production, handling, storage, and emission of waste at the premises, and will address the following aspects:

- an update of the format of the licence;
- considerations of previous licenses and works approvals issued to the licence holder;
- a review of the risk profile of emissions from the premises;
- a review of the current licence conditions with regard to adequacy and appropriateness for current activities or operations on the premises;
- review whether any additional regulatory controls are required to mitigate risk or emissions; and
- consider current scientific knowledge related to the operations on the premises.

Under section 59 of the EP Act the department may amend a licence at any time. Based on the outcomes of this licence review, the department will give effect to the findings in accordance with the procedure specified in section 59B of the EP Act.

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

1.2 Background

The premises is located in Jindong, approximately 18km southwest of Busselton. The site is surrounded by similar agriculturally based land uses, including vineyards and grazing cattle and sheep. The nearest residence is a farmhouse approximately 800 meters northwest of the winery. The premises is located between two rivers, with the Carbunup River 600m to the east and Mary Brook 1km to the west.

The initial licence was granted in 2009. In 2014, the licence was reissued in a revised format without being reviewed or re-assessed. In 2018, the licence holder lodged an amendment application to remove the conditions surrounding irrigation and allow for the drying of sludge in 10 shallow ponds, which was granted.

2. Premises overview

2.1 Wastewater treatment and disposal

The wastewater treatment and disposal systems detailed below have been described by the licence holder in their response to DWER's review notification letter.

"Collection & Settling:
Wastewater from winery operations is first screened through 5mm drain baskets in the winery building, with all drains draining to the 7kL sump. From the sump, wastewater is pumped into three fiberglass settling tanks, each with a capacity of 60 kL. These tanks allow solids to settle and overflow into the next tank, before the water is transferred via a gravity overflow into the aeration lagoon.

Aeration Lagoon:
The lagoon is HPDE lined dam that has a capacity of 2,700 kL. It contains two pontoon-mounted aeration pumps that help oxygenate the water and promote biological treatment. The lagoon overflows into a series of 10 shallow ponds.

Shallow drying ponds:
The ponds are arranged in two rows of five shallow ponds, Each with a capacity of 137 kL. Each pond is lined with bentonite clay to prevent seepage and separated by permeable barriers made of gravel and limestone, allowing water to flow sequentially from one pond to the next.

Sludge

There was approximately 90kL of sludge produced and dried in the drying ponds between 2008 and 2019. All three 60kl Storage Tanks have been fitted with base valves for sludge removal when required. In the event of sludge needing to be removed and dried, the sludge is transferred via pump and the sludge transfer line to the drying ponds. This is carried out in summer in order to facilitate drying. Once dried the sludge is removed via excavator and trucks for offsite processing. The 3 x 60kl Storage Tanks are dipped annually to determine sludge build up. Based on current sludge volumes in Tank1, desludging will next occur in late 2027 or 2028.

Marc and lees (solids)

Grape marc is trucked offsite for external processing. Lees is screened through 5mm drain screens to remove gross solids.

2.2 Review of wastewater management

This report documents the department's assessment of the winery's wastewater treatment and disposal system, specifically its capability to accept and dispose of wastewater through evaporation alone. The assessment considers the expected wastewater generated from crushing 1,800 tonnes of grapes annually to produce approximately 1,260 kL of wine. The production of 1260kL of wine can be expected to generate 2850 kL of wastewater.

In response to the department's review notification letter the licence holder provided information about their current on-site operations and infrastructure. It was confirmed that no irrigation of wastewater is taking place and that there has been no liquid waste accepted at the facility.

2.2.1 Wastewater management and water balance

Two 10-year rainfall studies were conducted to determine when the aeration lagoon would overflow into the drying ponds, and if ever there was a scenario where both the aeration lagoon and drying ponds would ever both be at capacity. One study used average monthly rainfall figures and included a wet (2021) and dry (2019) year, and the other used the actual rainfall data from 2013-2023.

Wastewater production data from the winery operations were taken from the 2023/2024 Annual Environmental Report (AER), which had a wine produced to wastewater produced ratio of 1:2.27L, which is the lowest ratio of the last 5 years. This ratio was used to adjust and approximate wastewater production at the premises maximum production capacity of 1260kL.

Table 1 summarises the findings. The storage capacity of the drying ponds fluctuates each winter, and they can overflow during wet years. In the 2013-2023 rainfall period, the aeration lagoon only overflowed once into the drying ponds and the drying ponds did not overflow, however using the monthly rainfall averages, the aeration lagoon would overflow into the drying ponds around September each year and after 3 average rainfall years, if the following year was a wet year, mimicking 2021 rainfall, then both the aeration lagoon and drying ponds would overflow.

Table 1: Aeration lagoon and drying ponds holding capacity in different rainfall scenarios

Scenario	Aeration Lagoon	Drying ponds
2013-2023 rainfall data	Overflowed once in the 10 years, in the month of September.	No overflow occurred, with storage capacity after winter ranging between 761.7kL (ponds is 41% full) & 1174kL (10% full).
10 year period, using average monthly rainfall, including 1 wet year (Year 4) and one dry year (Year 8) within the 10 year period.	Overflowed 8 out of 10 years, usually in September.	After 3 consecutive years of average rainfall, the drying ponds overflowed the following year on a wet year (2021 rainfall). Winter storage capacity fluctuated between 0kL – 957kL.

2.2.2 Category 61 – Liquid waste facility

The licence holder provided the following submission as to why the premises should keep Category 61 on the licence: - *In the event of reduced tonnages and the resultant revenue and WWTS throughput, the option of third party waste receival is potentially invaluable to the business continuity of Naturaliste Vintners, as well as the activated sludge and microbial population responsible for digestion that has been established over the last 16 years.*

The ability to receive third part wastewater allows Naturaliste Vintners to act as an emergency or commercial disposal point in the event that other wine businesses need to dispose of winery wastewater in a controlled and regulated system.".

The licence holder provided the following reasoning on their capability to accept up to 1000kL/yr of third-party wastewater in addition to wastewater generated from the winery:

"At the peak of the wet season (based on an average of 782ml annual rainfall) the sludge drying / reed beds fill up to approximately 25% of their capacity with rainwater, thus leaving a

maximum capacity for additional wastewater overflow of 975kl. We would thus estimate a total storage capacity of 3,855kl of wastewater at the peak of winter rainfall, not accounting for evaporation.

Based on an estimated annual throughput of 2,170kl of wastewater, and roughly equivalent annual evaporative loss, we believe that an additional 900-1000kl of capacity exists in the WWTS before emissions to land are likely."

The licence holder provided a '*Naturaliste Vintners Wastewater Application Form'*, which was explained to the department as serving as the wastewater quality acceptance criteria to be provided to third-party waste generators.

In considering the licence holders submission to retain the ability to accept up to 1000kL of third party generated wastewater, the Delegated officer does not consider that the information provided demonstrates that:

- the ponds have sufficient capacity to contain all rainfall, wastewater generated from the winery at full production and up to 1000kL of third-party wastewater (See section 2.2.1)
- there is sufficient control or certainty over the quality or level of contamination of wastewater that would have to be delivered by a controlled waste contractor, given that the controlled waste tanker could carry mixed loads and/or have residue wastewater from a previous delivery.
- there is a critical need to accept third party generated wastewater supported by the fact that the premises have never accepted third party wastewater.

Managing wastewater inputs into the lagoon can become challenging during the winter months due to the unpredictable rainfall patterns. There have been increasingly erratic weather patterns in the southwest of Western Australia, which have led to more intense winter storms and rainfall. This makes forecasting lagoon and drying pond levels uncertain. Repeat intense storms in winter could rapidly increase the lagoon overflow into the drying ponds, pushing them close to capacity and heightening the risk of overflow.

Should the licence holder wish to accept third party liquid waste in the future they will need to apply for a works approval or licence amendment and the application to be supported by a water balance, waste acceptance plan and contingency planning in the event that a contaminated load is inadvertently accepted into the wastewater treatment system. Accepting waste from a third party presents significant risks that need to be fully assessed.

Delegated officer summary:

Based on the expectation that approximately 2844 kL per year of wastewater could be expected from producing 1260kL of wine, the delegated officer considers the aeration lagoon, and drying ponds are not adequately sized to be able to contain all rainfall and wastewater during a normal average rainfall period.

Due to the risk of the ponds overtopping during wet years, the unpredictability of winter rainfall, and lack of demonstrated wastewater acceptance controls Category 61 – liquid waste facility and the ability to accept third party generated wastewater will be removed from the licence.

The Delegated officer has also considered that no other wineries are licensed to accept controlled waste.

2.2.3 Sludge management

The delegated officer sees a slight risk in compromising the containment integrity of the drying ponds floor lining by using an excavator to scrape the sludge from the drying ponds**.** If the excavator digs/scrapes too far, it may result in cracking and piercing of the drying ponds floor lining.

Furthermore, aerial images (see Appendix 1) of the drying ponds also show that there is considerable growth of vegetation occurring in the ponds and on the pond walls over the last 10 years. Vegetation roots can penetrate the dam wall/lining which create cracks and pathways for water and nutrients to seep through. As such, it is possible the drying ponds are now compromised and the risk of wastewater and sludge leaching into the environment is a possibility.

Delegated officer summary:

The licence holder must ensure no vegetation growth occurs in the drying ponds. Given there has been vegetation growth within the ponds, there is now the potential for wastewater/sludge leaching through any cracks the roots may have caused.

2.3 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. Where linkages are in-complete they have not been considered further in the risk assessment.

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

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified. Licence L8222/2008/2 that accompanies this amendment report authorises emissions associated with the operation of the premises.

The conditions in the issued licence, as outlined in Table 2 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 2 below describes the risk events associated with the amendments consistent with the Guidance Statement: Risk Assessments (DER 2017). 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**.**

Table 2 Risk Assessment

Risk events				Risk rating [1] C = consequence L = likelihood	Additional regulatory controls	Justification for additional regulatory controls
Sources / activities	**Potential pathway and emissions**	**Potential Receptors**	**Licence holder controls**			
Containment of wastewater						
Storage of wastewater in storage tanks, aeration Lagoon and drying ponds	1. **Failure of connecting pipes associated with transferring wastewater** 2. Overtopping and spilling of containment infrastructure 3. Failure of lagoon/pond walls and lining causing nutrient rich wastewater to be released into the soil and infiltration to groundwater.	**Site soils** **Groundwater beneath premises (<2m in Winter)**	**Over flow pipe from aeration lagoon to drying beds ensuring freeboard is maintained.** **Vegetation prevented from being established on lagoon and pond walls.** **Aeration lagoon is HDPE lined.**	*C = Minor* *L = Possible* **Medium Risk**	**Removal of category 61** **A 200mm freeboard limit must be maintained in the drying ponds.** **Notification to CEO requirements of freeboard limit exceedance.** **Addition of water sampling if freeboard limit is exceeded.**	See section 2.2.2 for Cat 61 justification. A freeboard acts as a buffer to wave action and prevent overflow during heavy rainfall or unexpected inflows that could lead to uncontrolled discharges of wastewater into surrounding land. Notification requirement and water sampling added to ensure accountability and that the premises has a contingency plan for wastewater if required. Knowing the quality of water for a contingency plan is vital for site options regarding the disposal of excess wastewater.
	Odour travelling by air/wind dispersal causing impacts to amenity.	**Homesteads 500m South of aeration lagoon**	**Aeration lagoon has automatic aerators installed.**	*C = Slight* *L = Possible* **Low Risk**	Separation distance between the source and potential receptors is sufficient. There have been no odour related complaints received by DWER relating to the premises in the last 10 years.	NA
Containment of solids						
Periodic sludge removal from tanks and drying in the drying ponds	Nutrient rich sludge (and leachate) entering the environment via compromised dam lining, and infiltrating groundwater	**Groundwater beneath premises (<2m in Winter)**		*C = Minor* *L = Unlikely* **Medium Risk**	**Sludge removal conditions added to ensure removal of sludge is only done in dry months.** **Inspections of containment infrastructure to occur.**	Sludge should be managed and dried during the summer months to ensure adequate and quick drying time. Introducing sludge into wet ponds or allowing it to be exposed to rain can cause it to liquefy, increasing the risk of leaching.

	Odour travelling by air/wind dispersal causing impacts to amenity	**Homesteads 400m South of drying pond**		*C = Slight* *L = Possible* **Low Risk**	Separation distance between the source and potential receptors is sufficient.	Additionally, this can raise the likelihood of overtopping from the drying ponds, potentially releasing contaminants into surrounding areas.

3. Consultation

Table 3 provides a summary of the consultation undertaken by the department.

Table 3: Consultation

Consultation	Comments received
City of Busselton notified via email on 7/8/2024	Comments were received on 9 September 2024 as follows; Planning consent for a winery was issued on 17 January 2003 (city file ref: 5828). This application included 5 x 10m x 100m wastewater irrigation strips in the north-western corner of the lot. As part of the documentation that was submitted to support the application it was indicated that a maximum of 1,200 tonnes of grapes were proposed to be crushed on site with annual estimated wastewater volumes proposed to be 1,440kL.
Licence holder provided draft licence on 6/11/2025	Licence holder had no comments and requested to have licence issued as soon as possible.

4. Decision

Category 61 and the approval to accept up to 1,000 kL per year of third-party wastewater (refer to the Controlled Waste Regulations) has been removed from the licence. This decision was made due to the absence of a detailed environmental risk assessment and management plan demonstrating the suitability of the winery's disposal system to safely and sustainably accept controlled waste from third parties, in addition to the winery's own on-site generated wastewater. Furthermore, controlled waste tracking records indicate that no controlled liquid waste has ever been received at the premises.

Based on this assessment, it has been determined to amend the existing licence, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. City of Busselton 2024, R*E: APPLICANT NOTIFICATION - L8222/2008/2 Naturaliste Vintners Winery - LICENCE REVIEW NOTIFICATION,* email, received 9 September 2024
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DWER 2024 email to applicant, *APPLICANT NOTIFICATION - L8222/2008/2 Naturaliste Vintners Winery - LICENCE REVIEW NOTIFICATION,* 24 July 2024
5. Environmental Protection (Controlled Waste) Regulations 2004.
6. Naturaliste Vintners 2024 email to DWER, *Naturaliste Vintners Pty Ltd, L8222/2008/2 Licence Review notification August 2024,* 2 August 2024.
7. Naturaliste Vintners 2024 email to DWER, *AACR – Naturaliste Vintners – 23.24,* email attachment, received 23 July 2024

Appendix 1: Aerial images of drying ponds