Amendment Report

Application for Licence Amendment

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

Licence Number	L7819/2002/9
Licence Holder	Margaret River Winemakers Pty Ltd
ACN	161 739 046
File Number	DER2013/000256-1~5
Premises	Margaret River Winemakers 5 Harmans Mill Road METRICUP, WA 6280 Legal description – Lot 112 on Plan 40318 Certificate of Title Volume 25189 Folio 794 As defined by the premises maps attached to the revised licence.
Date of Report	03/08/2023
Decision	Revised licence granted

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1. Decision summary

Licence L7819/2002/9 is held by Margaret River Winemakers Pty Ltd (licence holder, MRW) for the Margaret River Winemakers (the premises), located at 5 Harmans Mill Road, Metricup.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the winery and distillery. As a result of this assessment, revised licence L7819/2002/9 has been granted.

The revised licence issued because of this amendment consolidates and supersedes the existing licence previously granted in relation to the premises. The revised licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format. Furthermore, the delegated officer has determined to add additional regulatory controls to the licence as a result of changes to the irrigation area size and changes to the nature of the waste stream from distilling operations. these changes to operations have not been previously assessed and approved through a works approval or licence amendment application.

2. Scope of assessment

2.1 Regulatory framework

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

2.2 Amendment summary

MRW is a contract winemaking facility established in 1998 and are authorised under licence L7819/2002/9 to produce up to 1,400 kilolitres of wine per annual period. The winery processes grapes from vineyards within the local area and retains a portion of product for their own label. The winery consists of a winery, cellar door, wastewater treatment plant (WWTP) and a wastewater disposal area (irrigation area L1). The premises is located 4.5 km north of the Cowaramup townsite.

On 20 June 2023, the licence holder submitted an application to the department to amend licence L7819/2002/9 under sections 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- to authorise the production on-site of a new alcoholic beverage (vodka, gin and fortified wines) through the operation of a 300 L still, producing up to 3,400 litres of ethanol at 96% per annum, diluting to produce 7,566 litres of spirit-based beverage such as gin, vodka and fortified wines.

It is noted that according to the licence holder, the still was installed in about 2003 and the distilling infrastructure and new process/beverage product being produced was not authorised by a works approval or licence amendment at the time.

In revising this licence, the CEO has determined to:

- updated the format and appearance of the licence;
- deleted the redundant AACR form set out in schedule 1 of the previous licence and advise the licensee to obtain the form from the department's website;
- revise reporting requirements for the Annual Environmental Report (AER) to annually;

- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency;
- additional regulatory controls relating to wastewater management;
- corrected clerical mistakes and unintentional errors; and
- provide a nutrient loading calculator to assist the licence holder in correctly and accurately calculating and presenting the wastewater nutrient loading rates in the AER and Annual Audit Compliance Report (AACR) - see Appendix 2.

2.2.1 Operation of the distillery (from application)

A 300 L still has been placed within the existing winery building. The still has the design capacity to produce 39.5 litres a day of ethanol at 96%. MRW uses 27,600 L of wine produced on-site to distill to manufacture 7,566 L of spirits (gin, vodka and fortified wine)

To make a single batch of spirits, three hundred litres of wine are poured into the still, and a mesh bag containing botanicals is submerged within. The still is heated over a 24-hour period producing:

- 39.5 litres of ethanol at 96%, which is later diluted with water and turned into 40% gin and 20% infused gin.
- 260 litres of de-alcoholised wine that is sent to the existing wastewater treatment plant (WWTP).
- 0.5 litres of methanol that is placed into a refrigeration circulation tank and into tank cooling jackets and removed offsite.
- 25 litres of wastewater are produced after each still batch from rinsing the still, and the wastewater directed to the WWTP.

The waste botanical solids are removed from the mesh bag and disposed of into garden beds within the premises, and wastewater directed to the wastewater treatment plant. The hearts, heads and tails deemed suitable, are diluted, and bottled as 40% gin. The rejected heads and tails are mixed with previous batches of ethanol and distilled again. This product is diluted with water to 40% before having liquid botanical essences added to make 20% gin infused products. The still is not operated every day and only when the product is required.

Approximately 3,400 litres of ethanol at 96% is produced per year.

Approximately 24,150 litres of de-alcoholised wine are produced per year and directed to the WWTP.

Approximately 2,100 litres of still rinse wastewater is produced each year and directed to the WWTP.

This is approximately for every 1 litre of 96% ethanol produced 7 litres of wastewater (de-alcoholised wastewater and rinse wastewater) is produced.

All wastewater generated from crushing grapes, winemaking and distilling is directed to the on-site wastewater treatment plant (WWTP) and treated wastewater disposed of on-site through the irrigation of a 1.5 ha grassed paddock. Wastewater treated and discharged has been reported annually within the MRW Annual Audit Compliance Reports (AACR) and Annual Environmental Reports (AER).

2.2.2 Background of premises operations

The following outlines the key infrastructure and operations of the winery, WWTP, irrigation and solids within the premises. This information has been sourced from the licence holder and will be used to update infrastructure and operational requirements within the revised licence.

Winery

The winery accepts grapes from local vineyards to manufacture wine. The wine produced is either retained under its own label or returned to local wineries for their bottling labeling. Once grapes are received, they are crushed and fermented. The produced wine is stored and aged within the premises before being bottled. Marc and lees from the crushing process are either removed to the bunded solids storage pad or screened within the wastewater treatment plant (WWTP) and disposed of in the solid waste bins. Winery spills, leaks and wash-down wastewater from the winery operations are drained via pipes to two enclosed concrete sumps, one located on the grassed area opposite the crush pad and the other in the car park next to the winery building.

The winery consists of:

- 48 fermentation tanks of varying sizes, with a total volume of 614,660 litres,
- 73 storage tanks of varying sizes, with a total volume of 741,669 litres.
- 2 enclosed wastewater collection sumps with pipes.
- 300L still

Wastewater treatment

The WWTP includes solids screening, settlement, pH adjustment using magnesium hydroxide dosing and manual pH meter, aeration, and clarification. Each concrete sump is activated by a float switch that pumps wastewater through a flow meter (M1) to the rotary screen within the WWTP. Solids are directed to a sealed bin located under the screen and periodically removed to the bunded solids storage pad prior to disposal offsite. Aeration takes place in two 60 kL and two 45 kL tanks and then overflows by gravity to a settlement tank. The wastewater is directed to a multi-compartment clarifier before entering the final irrigation tank for discharge.

An additional 32 kL storage tank is used on a manual switch to store irrigation wastewater on rainy days. Wastewater is sampled from the 5 kL irrigation tank 6 times a year in pre, peak, late, post and non-vintage periods. The inflow meter (M1) to the WWTP is used to determine irrigation discharge rates for reporting purposes within the existing licence.

The rotary screen is checked weekly, and sludge is checked within all tanks and 2 collection sumps monthly, with sludge removed annually or earlier as required. All pipework is checked monthly for leaks and the pH meter cleaned and replaced annually as required.

Treated wastewater disposal (Irrigation)

The existing licence has 3 irrigation areas totaling 3.5 ha, including a 2-ha vineyard and a north and south shrub/paddock measuring 1.5 ha. The three irrigation sections have valves, one on the south paddock (L1), one on the north paddock (L1) and one for the unused vineyard paddock (2 ha vineyard disposal area is now removed).

Irrigation occurs via a series of lateral drippers over the 2 grass/scrub paddocks. The third unused disposal paddock (previously the 2 ha vineyard) has a manual valve, no sprinklers and is no longer irrigated and for this reason has been removed from the revised licence.

The paddock north and south are on rotating valves that are automatically changed each time the pump is activated. The north and south paddock is divided into 6 sections each, with sections manually changed every 3 days. The current irrigation areas have now been reduced from 3.5 to 1.5 ha consisting of only the north and south paddocks. Irrigation typically occurs from December to June when irrigation is manually turned off on rainy days.

All sprinklers and pipework are checked monthly for blockages and leaks and cleaned and repaired if required.

The delegated officer has considered the irrigation details provided by the licence holder and has determined to update the revised licence with the size of the irrigation area (1.5 ha) and associated management operations.

The delegated officer notes that a Nutrient Irrigation Management Plan (NIMP) was submitted in October 2014 to meet the requirements of existing condition 4.1.1 and 4.1.2. It is noted that the NIMP now almost 10 years old was based on an irrigation area of 3.5 ha, this has now significantly reduced to 1.5 ha. The delegated officer considers that the existing NIMP is now redundant and no longer meets the irrigation practices presently occurring within the premises.

The delegated officer has determined to request a revised NIMP to reflect existing practices. (see decision section for further determination).

The delegated officer notes that there is no flow meter located on the outlet from the wastewater treatment plant to the irrigation area and that this is considered insufficient to accurately measure discharges of wastewater to the irrigation areas for licence reporting purposes including calculating annual discharge fees.

The delegated officer has determined to add a work's condition for the installation of an outflow meter. (see decision section for further determination).

Solids management

Marc, lees, screening solids and other organic wastes are stored on a bunded concrete hardstand equipped with a sealed drainage sump. Collected leachate is manually pumped to the WWTP prior to discharge to the irrigation area. Solids from the WWTP screen are deposited into a bin that is emptied monthly to the solid waste storage pad.

All solid organic waste is removed off site to various vineyards within the region for composting and spreading to vines.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 1 below.

Table 1 also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence holder controls

Emission	Sources	Potential pathways	Applicant controls (from application)
Dust, odour and noise	Operation of the winery including the still and the	Air/windborne pathway	All operations are undertaken within the enclosed winery building
Spills and		Surface	All beverage manufacturing operations are

Emission	Sources	Potential pathways	Applicant controls (from application)
leaks of tanks and processing equipment.	bottling of wine and gin.	runoff contaminating soil and groundwater	undertaken within the enclosed winery building. All wastewater is directed to the WWTP All spills recovered immediately. Sludge removed annually from collection sumps
Organic solid wastes	Management of the solid waste storage pad and solids bin	Leachate and solid spills causing contamination of soils and groundwater	All grape solids (marc) removed and stored temporarily on the solids storage pad and removed for offsite disposal. All leachate collected in the bunded area is pumped to the WWTP Botanicals are used as mulch in garden beds
Irrigation of nutrient and chemical rich wastewater	Wastewater generated from the production of beverage (wine and gin).	Direct contamination of soil and groundwater	Irrigate 1.5 Ha pasture Do not irrigate on days when raining, Alternate irrigation every day between the north and south paddocks. Not irrigated onto visibly waterlogged land Irrigation is via drippers. The north and south paddock is divided into 6 sections each, with sections manually changed every 3 days. Irrigation does not runoff or spray drift beyond boundaries. Irrigation only occurs between December to June. All wastewater is stored or tankered off-site during the months of July to November when the irrigation area is too wet to accept wastewater.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the delegated officer has excluded employees, visitors and contractors of the licence holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 2 below provides a summary of potential human and environmental receptors that may be impacted because 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
Rural commercial building – Margaret River	180 m south southeast of the winery building

Dairy Company	
Rural commercial building – 3 oceans winery	846 m south of the winery building
Environmental receptors	**Distance from prescribed activity**
Carbunup River	295 m northeast of the irrigation area and 210 m northeast from the WWTP.
Underlying groundwater (non-potable purposes) Proclaimed groundwater under the *Rights to Water and Irrigation Act 1914 (RIWI)* Superficial groundwater drain eastwards towards Carbunup River	Maximum groundwater height within 1 metre of the surface (Geocortex aerial).
Soils- Gentle slope to flat gravelly duplex – Forrest Grove soils	Porous soils, leaching potential

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the licence holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

The revised licence L7819/2002/9 that accompanies this Amendment Report authorises emissions associated with the operation of the beverage manufacturing premises i.e. wine and gin manufacturing activities.

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

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

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Condition s[2] of licence	Justification for additional regulatory controls
Source / Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
Operation								
Manufacturing and bottling of wine and distilled gin.	Dust	Air/windborne pathway causing impacts to amenity	Commercial businesses located 180 m south southeast and 846 m south of the premises building	Winemaking and distillery operations are undertaken within an enclosed building. Refer to Table 1	Minimal impacts to local scale amenity C = Slight The risk event will probably not occur in most circumstances. L = Unlikely **Low Risk**	Y	Condition 1	The delegated officer considered that the operations are undertaken in an enclosed building, have been operating for 10 years with no complaints, and the distance to sensitive receptors and determined that the risk of dust, noise or odour impacting the amenity of the closest receptors was low. Furthermore, the operation of the winery and still will need to be compliant with the EP Noise Regulations at the closet commercial receptor 180 m south southeast of the operations.
	Noise					Y	Condition 1	
	Odour					Y	Condition 1	
	Spills and leaks of tank, vessels and pipes	Surface runoff contaminating soil and groundwater	Groundwater within 1 metre of the surface, soil is porous subject to leaching potential.	All operations are undertaken within the enclosed winery building. All liquid spills are directed to the WWTP. Refer to Table 1	Minimal impacts to local scale amenity C = Slight The risk event will probably not occur in most circumstances. L = Unlikely **Low Risk**	Y	Condition 1	The delegated officer considered that the operations occur with an enclosed shed with all spills and leaks directed to the existing drainage and wastewater treatment plant and determined that the risk of spills and leaks of nutrient-rich wastewater contaminating soils and groundwater is low. The licence holder's controls were deemed to be appropriate to manage the risk and were conditioned within the revised licence.
	Solid waste	Direct contamination of soil from leachate and or solid spills	Soil is porous, and groundwater within 1 metre of the surface	Marc is stored on a bunded storage pad and removed offsite. Botanical solids spread onto garden Refer to Table 1	Minimal impacts to local scale amenity C = Slight The risk event may only occur in exceptional circumstances. L = Rare **Low Risk**	Y	Condition 1	The delegated officer considered that chemical-free vegetative botanical materials will break down within a garden bed and pose a low risk to the soil and groundwater. The winery solid waste is stored on a hardstand with leachate transported to the WWTP and solid material removed from site. The delegated officer considered that the licence holder's existing controls were sufficient to manage the risk and posed a low risk to the soil and groundwater. The licence holder controls will be regulated within the licence.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Condition s[2] of licence	Justification for additional regulatory controls
Source / Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
Wastewater is generated from the production of wine and spirits.	Irrigation of nutrient and chemical-rich wastewater	Direct contamination of soil and groundwater with 1 metre of ground level.	Groundwater within 1 metre of the surface, soil is porous subject to leaching potential.	Irrigate to 1.5 ha of pasture between December - June. Refer to Table 3	Mid-level onsite impacts, low level offsite impacts at local scale C = Moderate The risk event could occur at some time L = Possible **Medium Risk**	N	Condition 1, 2, 3, 4, 10	The delegated officer considered the existing conditions of the licence, the changes to irrigation area, that the existing NIMP is outdated, there is no direct flow meter to the irrigation area and the high groundwater table with porous soils. The delegated officer determined that the risk to contamination of soil and groundwater from irrigating with high nutrient and chemical wastewater to be medium. The delegated officer considered that the licence holders' controls were not sufficient to manage the risk. The delegated officer determined to regulate the risk with the following additional controls. • Updated NIMP • Flow meter installed on the outflow pipe of the WWTP. • Water quality sampling parameters updated to reflect monthly sampling. • De-alcoholised wine, spoilt or waste wine or waste spirits (heads or tails) must not be disposed of to the wastewater treatment plant, but must be removed from the premises for off-site disposal at a licensed liquid waste facility.

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

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

4. Consultation

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

Table 4: Consultation

Consultation method	Comments received	Department response
City of Busselton advised of proposal 3 July 2023 seeking advice as to whether a planning approval is required for the distilling activities.	No response received.	
Licence holder was provided with draft amendment on 31/07/2023	Licence holder responded on 1 August 2023 Refer to Appendix 1	Refer to Appendix 1

5. Decision

Based on the assessment in this amendment report, the delegated officer has determined to grant the requested amendment for the operation of a still with a maximum production of 3.4 kL of spirits per annual period to produce up to gin, vodka and fortified wines.

The maximum total combined alcoholic beverage production (wine and spirits) assessed capacity will remain at not more than 1,400 kL/annual period, with additional regulatory controls being imposed. This determination is based on the following:

- no significant additional wastewater volumes will be generated from the distilling activities.
- there will be a change to the chemical and nutrient composition of wastewater generated from distilling operations, particularly from the disposal of approximately 24,150 litres of de-alcoholised wine and any heads and tails to the wastewater treatment plant.
- the licence holder proposed limited emission controls in the application.

The delegated officer has proposed the following additional regulatory controls:

- limit on the production volumes of spirits and wine as a surrogate emission (wastewater) control
- the requirement to submit an updated NIMP;
- installation of a flow meter out of the WWTP to the irrigation area;
- that de-alcoholised wine, spoilt or waste wine or waste spirits (heads or tails) must not be disposed of to the WWTP, but must be removed from the premises for off-site disposal at a licensed liquid waste facility, and
- reinstated the requirement for an annual environmental report submission.

In issuing the amended licence, the delegated officer has updated the format of the licence and included the existing winery and wastewater treatment plant infrastructure not previously listed and has updated the irrigation area provided by the licence holder. In noting that the irrigation area has significantly changed and that the existing NIMP is not

no longer valid. The delegated officer has determined to revise existing NIMP conditions 4.1.1 and 4.1.2 to reflect current operations and evaluate any impacts from irrigating wastewater to a 1.5Ha paddock.

In updating the key pollution control infrastructure, the delegated officer noted that there is no flow meter located on the outlet from the wastewater treatment plant to the irrigation area. To provide correct loading rates for reporting and annual fees, a flow meter is considered essential to enable these loading rates to be accurately calculated. To address this issue the delegated officer has determined to condition the requirement for a flow meter to be installed on the outlet from the irrigation tank to ensure accurate flow measurements.

In requiring de-alcoholised wine, spoilt or waste wine or waste spirits (heads or tails) to be removed offsite, it has been determined that the existing WWTP has biological treatment processes only and has limited chemical treatment ability for the discarded liquid chemical compounds (volatile compounds).

The delegated officer is satisfied that the above controls, once implemented, will lower the overall risk profile of the premises, and ensure that the distillery operation can operate in a manner that does not pose an unacceptable risk of impacts to public health and the environment.

5.1 Summary of amendments

Table 5 provides a summary of the proposed amendments and will act as record of implemented changes including changed to the licence formatting. All proposed changes have been incorporated into the revised licence as part of the amendment process.

Table 5: Summary and consolidation of licence conditions in this amendment

Existing condition	Condition summary	Conversion notes
N/A	Expiry Date: 15 May 2019	New expiry Date: 15 May 2034 In accordance with the Notice of Amendment of Licence Expiry Dates (29/04/2016)
N/A	Contents / Introduction	Revised to current licensing format.
1.1.1 1.1.2	Interpretation and definitions	Redundant condition. Revised to current licensing format.
1.1.3	Australian or other standard	Redundant condition. Revised to current licensing format.
1.1.4	Reference to code of practice	Redundant condition. Revised to current licensing format.
1.2.1	Emissions	Redundant condition. Revised to current licensing format.
1.2.2	Pollution control and monitoring equipment	Redundant condition. Revised to current licensing format
1.2.3	Storage of environmentally hazardous materials	Redundant condition. Adequately regulated by the Dangerous Goods Safety Act 2004. Deleted from licence.
1.2.4	Recovery and removal of spills	New numbering and update to wording format.
1.3.1	Wastewater operations	Redundant condition. Revised to current licensing format.

Existing condition	Condition summary	Conversion notes
1.3.2, Table 1.3.2	Waste material requirements	Redundant condition. Revised to current licensing format.
1.3.3, Table 1.3.3	Management of waste	New numbering and update to wording format. Updated irrigation area and licence holder operations.
1.3.4	Waste treatment system	Redundant condition. Revised to current licensing format.
2.1.1	Investigate exceedances	Redundant condition. Revised to current licensing format.
2.2-2.4	Point source emissions to air, surface water and groundwater- no conditions	Redundant conditions, removed from licence
2.5.1, Table 2.5.1	Emission to land	Redundant condition. Revised to current licensing format.
2.5.2, Table 2.5.2	Emission limits	Revised to current licensing format
2.6-2.8	Fugitive emissions, odour, and noise – no conditions	Redundant conditions, removed from licence
3.1.1	Sampling requirements	Revised to current licensing format
3.1.2	Recording data	Revised to current licensing format
3.1.3	Equipment calibrated	Redundant condition. Revised to current licensing format.
3.1.4	Requirement for calibration and notification	Redundant condition, deleted from licence
3.2-3.4	Monitoring of point source emissions to air, surface water and groundwater – no conditions	Redundant conditions, removed from licence
3.5.1, Table 3.5.1	Monitoring of emissions to land	Revise to current licensing format Reporting units for electrical conductivity changed
3.6-3.7	Monitoring of inputs and outputs – no conditions	Redundant conditions, removed from licence
3.8-3.9	Meteorological monitoring	Redundant conditions, removed from licence
4.1.1	Improvements	Revised to current licensing format
4.1.2, Table 4.1.2	Improvements	Revised to current licensing format
5.1.1	Records	New numbering and update to wording format
5.1.2	Person left in charge	Redundant conditions, removed from licence
5.1.3	AACR	New numbering and update to wording format

Existing condition	Condition summary	Conversion notes
5.1.4	Complaints	New numbering and update to wording format
5.2.1, Table 5.2.1	AER	New numbering and update to wording format Reporting for still added.
5.2.2	AER	New numbering and update to wording format
5.3.1, Table 5.3.1	Notification – limit exceedance	New numbering and update to wording format 24-hour notification/reporting changes to 7 days.
Schedule 1: Maps	Premises map	New naming convention, updated map, and revised irrigation area.
N/A	N/A	New figure identifying where M1, M2 and W1 is located.
Schedule 2 Reporting & notifications	Annual Audit Compliance Report Form N1 Notification	Redundant attachment. Deleted from Licence Forms accessed at Guideline: Annual Audit Compliance Reports (www.wa.gov.au)
New Condition	N/A	Production limit condition. Update to new format
New condition	N/A	Requirement for a flow meter on the outlet of the irrigation tank.

References

1. Australian Water and Wastewater Association, 1998, *Effluent Management Guidelines for Australian Wineries and Distilleries*, Artarmon, New South Wales
2. Department of Environmental Regulation (DER) 2014, *Margaret River Winemakers Pty Ltd Licence L78019/2002/9, issued 8/05/2014*, Perth Western Australia
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
5. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
6. DWER 2022, WQPN 73 – Wineries and distilleries, Perth, Western Australia
7. Environmental Protection Authority, 2016, *EPA Guideline for Wineries and Distilleries,* Adelaide, South Australia.
8. Grape and Wine Research and Development Corporation, 2011, *Operational Guidelines - Winery Wastewater Management and Recycling*, Adelaide, South Australia
9. Margaret River Winemakers Pty Ltd (MWR) 2023, *Licence amendment application and supporting documents,* Perth Western Australia.

Appendix 1: Summary of licence holder's comments on risk assessment and draft conditions

Condition	Summary of licence holder's comment	Department's response
Amendment Report		
2.2 Amendment Summary	Licence holder provided the following details: • At maximum production will produce 3.4kL of spirits. Our still produces ethanol at 89% average and then we water it down to 40%. Resulting in 7,566 litres of Ethanol at 40%. To produce that quantity of gin we would need to distil 24,150 litres of wine at 12% Alcohol approx. This would be 80 still loads. • Produce up to 7,566 litres of gin per year. • 25 litres of wastewater is produced from each still operation for cleaning the still, totalling 2,100 L per year of wastewater directed to the WWTP. • Water is used to dilute the ethanol product to produce gin. • Botanical essences are added directly to the ethanol as liquid, no essence is directed to the WWTP.	This information will be updated within the report.
2.2.2 Background of premises operation, Solids management	The licence holder indicated that organic waste 'marc" is transported offsite to various local wineries for compost distribution in their vineyards. The licence holder did not specify what the term other organic wastes was, nor details of how the leachate within the solids area is manually pumped.	The delegated officer considered the information provided by the licence holder and determined to regulate that all marc and other organic waste must be removed offsite. Furthermore, leachate must be pumped to the WWTP from the solid storage pad.

Appendix 2: Wastewater to land loading rate calculator

Irrigation areas[1]: size, volume irrigated, irrigation days				Annual period (as defined by your licence)[2]												Volume irrigated during annual period (kL)[3]
	Size (ha)			January	February	March	April	May	June	July	August	September	October	November	December	
EXAMPLE irrigation area:	*25*	*volume irrigated*	*kL*	*20,000*	*20,000*	*18,000*	*15,000*	*0*	*0*	*0*	*0*	*15,000*	*18,000*	*20,000*	*25,000*	*151,000*
		days of irrigation	*days/month*	*29*	*28*	*30*	*25*	*0*	*0*	*0*	*0*	*20*	*25*	*30*	*27*	
Irrigation Area 1:		volume irrigated	kL													
		days of irrigation	days/month													
Irrigation Area 2:		volume irrigated	kL													
		days of irrigation	days/month													
Irrigation Area 3:		volume irrigated	kL													
		days of irrigation	days/month													
Wastewater quality[4]	*EXAMPLE sampling date:*			*20/01/2022*	*15/02/2022*	*17/03/2022*	*19/04/2022*	*12/05/2022*	*12/06/2022*	*9/07/2022*	*15/08/2022*	*12/09/2022*	*15/10/2022*	*13/11/2022*	*7/12/2022*	
	EXAMPLE total nitrogen		*mg/L*	*13.2*	*21.3*	*17.6*	*19.2*	*42.4*	*25.1*	*30.4*	*40.3*	*34.8*	*38.7*	*44.6*	*47.3*	
	EXAMPLE BOD		*mg/L*	*4.8*	*12.1*	*6.1*	*4.9*	*4.8*	*4.1*	*3.3*	*5.2*	*4.4*	*5.2*	*5.1*	*7.5*	
	Sampling date:															
	For wineries to indicate sampling period:[5]															
	Total nitrogen		mg/L													
	Total phosphorus		mg/L													
	Biochemical oxygen demand		mg/L													

Nutrient and BOD loadings[6]			January	February	March	April	May	June	July	August	September	October	November	December	kg/ha/annual period[7]
EXAMPLE total nitrogen loadings			*10.6*	*17.0*	*12.7*	*11.5*					*20.9*	*27.9*	*35.7*	*47.3*	*183.5*
EXAMPLE BOD loadings		*kg/ha/month*	*3.8*	*9.7*	*4.4*	*2.9*					*2.6*	*3.7*	*4.1*	*7.5*	*38.8*
		kg/ha/day	*0.13*	*0.35*	*0.15*	*0.12*					*0.13*	*0.15*	*0.14*	*0.28*	
Irrigation Area 1	Total nitrogen	kg/ha/month													
	Total phosphorus	kg/ha/month													
	Biochemical oxygen demand	kg/ha/month													
		kg/ha/day													
Irrigation Area 2	Total nitrogen	kg/ha/month													
	Total phosphorus	kg/ha/month													
	Biochemical oxygen demand	kg/ha/month													
		kg/ha/day													
Irrigation Area 3	Total nitrogen	kg/ha/month													
	Total phosphorus	kg/ha/month													
	Biochemical oxygen demand	kg/ha/month													
		kg/ha/day													

Licence limits[8]				
		kg/ha/annual period	kg/ha/month	kg/ha/day
Irrigation area 1	TN			
	TP			
	BOD			
Irrigation area 2	TN			
	TP			
	BOD			
Irrigation area 3	TN			
	TP			
	BOD			

Explanatory notes and calculations:

White cells should be filled in where applicable. Pale yellow cells will calculate automatically.

NOTE 1 - Where there is irrigation to more than 3 areas, additional copies of this sheet should be completed.

NOTE 2 - This sheet should be completed for your annual period as defined by your licence. *E.g. If your annual period is from 1 October to the 30 September in the following year, for the 2022-2023 annual period, you should include data from January - September 2023, and October - December 2022.*
NOTE 3 - Volume irrigated during the annual period (kL), for each irrigation area is the sum of the monthly volumes irrigated to that area. *E.g. For the example shown: Volume irrigated during annual period = 20,000 (Jan) + 20,000 (Feb) + 18,000 (Mar) + 15,000 (Apr) + 15,000 (Sep) + 18,000 (Oct) + 20,000 (Nov) + 25,000 (Dec) = 151,000 kL. Noting that for the example there was no irrigation during the months of May, June, July or August.*
NOTE 4 - The sampling and analysis of your wastewater quality should be undertaken in accordance with your licence conditions. For sampling less often than monthly, i.e. quarterly, 6-monthly, or annually: for months where no sampling is required, wastewater quality should be taken to be equivalent to the most recent sample taken. *E.g. Quarterly sampling during Feb, May, Aug and Nov - total nitrogen concentrations were analysed to be 7, 11, 8 and 13 mg/L respectively in the wastewater. For March and April, as February was the most recent sample taken, total nitrogen concentration is estimated to be 7 mg/L. Similarly, for June and July, as May was the most recent sample, total nitrogen concentration is estimated to be 11 mg/L. There will be no sampling date associated with non-sampling months.* If your licence requires you to monitor loading rates for additional parameters (e.g. inorganic nitrogen, reactive phosphorus etc.) additional copies of this sheet should be completed for the additional parameters.
NOTE 5 - For wineries to indicate sampling period - this row is only required to be completed if your licence condition specifies a sampling period e.g. pre-vinatge, peak vintage, late vintage, post vintage, non-vintage. Indicate which sampling date corresponds with which period.
NOTE 6 - Parameter loading (TN, TP or BOD) each month per hectare for each irrigation area (kg/ha/month): monthly concentration of parameter (TN, TP or BOD) in mg/L * monthly volume of wastewater irrigated to irrigation area (kL) ÷ 1000 size of irrigation area *E.g. Using the example shown, for total nitrogen for January: 13.2 mg/L * 20,000 kL / 1,000 = 264 kg/month. 264 / 25 ha = 10.6 kg/ha/month (for January).* Loading of parameter (BOD) each day per hectare for each irrigation area (kg/ha/day): BOD loading (kg/ha/month) ÷ number of days of irrigation during that month. *E.g. Using the example shown, for BOD for October: 3.7 kg/ha/month / 25 days of irrigation during October = 0.15 kg/ha/day (for October)*
NOTE 7 - To calculate annual loading of parameter (TN, TP or BOD) per hectare (kg/ha/annual period): sum of monthly loadings (kg/ha/month). You should calculate an annual loading (kg/ha/annual period) for each relevant parameter for each irrigation area. *E.g. Using the example shown, for total nitrogen: 10.6 (Jan) + 17 (Feb) + 12.7 (Mar) + 11.5 (Apr) + 20.9 (Sep) + 27.9 (Oct) + 35.7 (Nov) + 47.3 (Dec) kg/ha/month = 183.5 kg/ha/annual period*
NOTE 8 - Relevant licence limits to be entered. Where TN = total nitrogen, TP = total phosphorus, and BOD = biochemical oxygen demand. Once applicable licence limits have been entered, the calculated loadings will become red text if they exceed the relevant limit.

Note: Licence holders can request a digital Excel spreadsheet (with in-built formulas) on request.

Send all requests to info@dwer.wa.gov.au

Attention: Process Industries and quote the licence number.