



Decision Document

Environmental Protection Act 1986, Part V

Proponent: Water Corporation

Licence: L5400/1992/12

Registered office: 629 Newcastle Road
LEEDERVILLE WA 6007

ACN: n/a

Premises address: Waroona Wastewater Treatment Plant
22 Drake Road
WAROONA WA 6215
Being Lot 22 and Lot 305 on Plan 223194 as depicted in Schedule 1.

Issue date: Thursday 15th October 2015

Commencement date: Sunday, 1 November 2015

Expiry date: Saturday, 31 October 2020

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a licence. DER considers that in reaching this decision, it has taken into account all relevant considerations.

Decision Document prepared by: Cassie Bell
Licensing Officer

Decision Document authorised by: Ruth Dowd
Delegated Officer



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1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval <input type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input type="checkbox"/> Works Approval amendment <input type="checkbox"/> Licence renewal <input checked="" type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	54	240 m ³ per day
Application verified	Date: 14/08/2015	
Application fee paid	Date: 27/08/2015	
Works Approval has been complied with	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Compliance Certificate received	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Commercial-in-confidence claim	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>	



Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>Premises belongs to an Irrigation District and groundwater area under the RIWI Act; however operations do not involve the taking of water, construction of wells or interference with the bed or banks of a watercourse.</i>	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <ul style="list-style-type: none"> • <i>Environmental Protection Swan Coastal Plain Lakes Policy 1992</i> • <i>Environmental Protection Peel Inlet - Harvey Estuary Policy 1992</i> 		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <ul style="list-style-type: none"> • <i>The SCP policy applies to lakes in the SCP area of standing water greater than 1000m². The premises activities do not discharge to/alter/impact any such lakes.</i> • <i>The PHE policy sets out environmental quality objectives for the estuary (whole of catchment targets for nutrient export), and infers the need for appropriate land management by landholders within the policy area. The premises has some obligation under this policy to reduce nutrient loadings to the catchment.</i> 		

3 Executive summary of proposal and assessment

The Waroona Wastewater Treatment Plant (WWTP) is located along Drake Road in Waroona and has been established since 1992. The Premises is neighboured on the western side by the earthmoving contractor 'Carna Earthmoving'. On the other sides of the WWTP are small farm lots. The closest resident to the plant is approximately 400 m north of the plant.

The Premises is located at the base of the Darling scarp and the edge of the Swan coastal plain. The site is underlain by surficial sediments and shallow aquifers. The groundwater is approximately 1m below the surface. The site occurs within the same catchment as the RAMSAR listed Peel-Yalgorup wetland system

Within the site is also a planted treelot of *Eucalyptus globulus* (Tasmanian blue gums).

There are three treatment ponds on the premises. Alum dosing occurs to assist in reducing phosphorus levels encountered in the final effluent discharge from the premises.

Treated wastewater used to be discharged to the adjacent treelot. It is now discharged via the flume to a clay lined swale (approximately 800 metres long) which leads into a pre-established agricultural drain. The swale was constructed in 2014 under works approval W5433/2013/1 and is being tested for effectiveness in further reducing phosphorus concentration in the wastewater.



This Licence is the successor to Licence L5400/1992/11 and continues to authorise the operations at the Premises. The reissue of the licence has not involved a re-assessment of the environmental risk of all operations; however the disposal of treated wastewater to the clay lined swale has been considered and is now reflected in the licence conditions. The licence has been updated to the current licence format which has inherently resulted in changes to the licence condition wording and structure. Some administrative changes and corrections have also been made to the conditions. Where any change to the intent of conditions has occurred, justification is provided in the Decision Table below.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Interpretation	L1.1.1 – 1.1.5	Conditions 1.1.1 – 1.1.5 have been added to the licence as part of the reissue, to ensure that terminology used within the licence is referenced to the appropriate definitions where applicable, that any reference to a standard or guideline is to the most current version of that standard or guideline and that emissions not authorised through the licence comply with the provisions of the <i>Environmental Protection Act 1986</i> .	
General conditions	L1.2.1	Condition 1.2.1 has been added to the licence as part of the reissue to ensure that all pollution control and monitoring equipment is maintained such that it is operational and fit for purpose.	
Premises operation	L1.3.1 – 1.3.5	Conditions 1.3.1 – 1.3.5 have been included on the licence, as transferred from the previous licence L5400/1992/11 conditions 7, 21, 20, 17 and 18, respectively.	
Emissions general	L2.1.1	Limits have been set on the licence (see Point source emissions to surface water section below) and therefore Condition 2.1.1 regarding recording and investigation of exceedances of limits has been included.	
Point source emissions to surface water including monitoring	L2.2.1 – 2.2.2 L3.2.1	<p>Operation</p> <p><u>Emission Description</u> <i>Emission:</i> Discharge of treated wastewater to Drakesbrook Drain (agricultural drain) from the clay lined swale and/or the woodlot.</p> <p><i>Impact:</i> Contamination of soil, surface water and shallow groundwater in the catchment (the drain belongs to same catchment as the RAMSAR listed Peel-Yalgorup wetland system) with nutrients, pathogens and other contaminants (e.g. heavy metals) present in wastewater. This may also lead to secondary effects such as weed infestation in the riparian zone and algal blooms in the drain. Any stock drinking from the drain</p>	



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		<p>downstream could become sick from ingestion of the water.</p> <p><i>Controls:</i> The wastewater is treated in three treatment ponds prior to discharge to a 700m long clay-lined swale for further stripping of nutrients which is being trialled and was constructed under works approval issued by DER. Prior to this, wastewater was discharged to a woodlot which was not particularly effective at reducing nutrients (<10% reduction) but has been retained as a contingency measure (such as if the swale is taken offline for maintenance), as it is a better option than direct discharge to the drain from the ponds. The swale has been in operation since 2014 and wastewater is being analysed on a monthly basis to ensure it is effective. Wastewater is dosed with alum to further reduce phosphorus levels and keep them below 5mg/L at the discharge point.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Moderate <i>Likelihood:</i> Possible <i>Risk Rating:</i> Moderate</p> <p><u>Regulatory Controls</u> Condition 2.2.1 has been included on the licence to authorise the discharge of wastewater from the woodlot to the drain, and from the clay lined swale to the drain. The discharge from the woodlot to the drain was already authorised under the previous licence, whereas the discharge from the swale to the drain is current practice since commencement of the swale trial; however the previous version of the licence did not reflect this as it was not amended following the construction of the swale. Condition 2.2.2 has been included on the licence to set the limit of 5mg/L for total phosphorus (in 3 out of 4 samples), as transferred from the previous version of the licence (condition 11). The limit now applies to both locations: i.e. water exiting the boundary from the woodlot (used as a contingency) and from the clay lined swale. Condition 3.2.1 has been included on the licence to set the monitoring requirements for the discharges of water (quantity, quality and contaminant loads) from both the woodlot</p>	



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		<p>and the clay lined swale to the drain. This includes the requirement to monitor total phosphorus in water exiting the woodlot into the drain (purely to assess compliance with the phosphorus limit in condition 2.2.2) at times that the woodlot is being discharged to. The conditions also includes the monitoring of the monthly volume discharged from the pond to the swale (as a <u>substitute</u> for the volume exiting the end of the lined swale where there is no flow meter) and the monitoring of a suite of contaminants which exit the swale into the drain. These requirements differ from conditions 8, 9, 14 and 15 of the previous licence which only required detailed monitoring of the water as it exited the final treatment pond to the woodlot; however since the commissioning of the clay lined swale, the discharge from the end of the swale is a better representation of the final discharge to the environment. In addition, aluminium has been added to the parameters required to be monitored, due to the alum dosing activities on site.</p> <p>See the Improvements section for details on other relevant conditions to further assess and manage the risk of the treated wastewater discharge.</p> <p><u>Residual Risk</u> <i>Consequence:</i> Moderate <i>Likelihood:</i> Possible <i>Risk Rating:</i> Moderate</p>	
Emissions to land including monitoring	L2.3.1 L3.3.1	<p>Operation</p> <p><u>Emission Description</u> <i>Emission:</i> Discharge of treated wastewater to the woodlot, for nutrient-stripping/absorbption by trees, prior to residual runoff into the Drakesbrook Drain. <i>Impact:</i> Contamination of soil, surface water and shallow groundwater in the woodlot with nutrients, pathogens and other contaminants (e.g. heavy metals) present in wastewater. Death or loss of condition of trees in the woodlot due to overloading with contaminants or water, which may lead to additional leaching off-site via the subsequent runoff point to the drain. Secondary downstream impacts may occur as detailed in the Point source emissions to surface water section above.</p>	



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		<p><i>Controls:</i> The wastewater is treated in three treatment ponds prior to discharge to the woodlot, and will only be discharged to the woodlot as a contingency while the clay lined swale is being trialled. Wastewater is dosed with alum to further reduce phosphorus levels, which are measured monthly at both the pond discharge point (to the woodlot) and the boundary discharge point (from the woodlot to the drain).</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Moderate <i>Likelihood:</i> Possible <i>Risk Rating:</i> Moderate</p> <p><u>Regulatory Controls</u> Condition 2.3.1 has been included on the licence to authorise the discharge to the woodlot (as was previously authorised under the licence L5400/1992/11 condition 6); however the condition specifies that this is only to occur as a contingency and/or if the clay-lined swale is offline for maintenance/repair. The condition specifies other abatement measures, as transferred from condition 16 of the previous licence (maintenance of the discharge channel and vegetation). Condition 3.3.1 has been included on the licence to set the monitoring requirements for any discharge from the ponds to the woodlot (quantity, quality and contaminant loads). The condition is similar to conditions 8, 9, 14 and 15 of the previous licence requiring water quality monitoring and load calculations for the pond discharge; however it is modified such that aluminium has been added and the monitoring is only required when a discharge to the woodlot is occurring. See the Improvements section for other relevant conditions to assess and manage the risk of continued discharge to the woodlot. See the Information section for details on other relevant conditions for notification to DER of intent to discharge to the woodlot.</p>	



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		<u>Residual Risk</u> <i>Consequence:</i> Moderate <i>Likelihood:</i> Possible <i>Risk Rating:</i> Moderate	
Odour	n/a	Odour emissions were not re-assessed as part of this licence reissue.	
Monitoring general	L3.1.1 – 3.1.3	Condition 3.1.1 has been included on the licence to set the standards for monitoring undertaken (Australian standards, NATA accreditation), as there are monitoring conditions set for the treated wastewater discharges. This condition replaces conditions 12 and 13 of the previous licence. Condition 3.1.2 has been included to specify the frequency of monthly monitoring (at least 15 days apart) to ensure that monthly samples are representative of different months. Condition 3.1.3 has been included to ensure monitoring equipment is calibrated in accordance with the manufacturers specifications. This conditions partially replaces conditions 9 and 10 of the previous licence for the maintenance of flow monitoring devices at the pond discharge point and the boundary discharge point.	
Monitoring of inputs and outputs	L3.4.1	Condition 3.4.1 has been included on the licence for the monitoring of raw wastewater inflows to the wastewater treatment plant in m ³ /day. This is to formalise the monitoring and reporting of the throughput into the plant for comparison with the design capacity of the plant (240m ³ /day) and is a new requirement which was not on the previous version of the licence.	
Improvements	L4.1.1 – 4.1.2	Conditions 4.1.1 and 4.1.2; IR1 and IR2 have been included on the licence in support of the need to assess and further manage the discharges of treated wastewater to the clay lined swale and offsite; and to the woodlot (see Emissions to surface water and Emissions to land sections above for risk assessment details). IR1 requires the preparation of a report on the condition of the woodlot, specifically the condition of the vegetation, any observed impacts and the plans for future use (if applicable). It is known that the woodlot did not perform effectively at reducing nutrient levels (<10% reduction) but the condition of the woodlot as a continued disposal option is unknown.	



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		IR2 requires the preparation of a report on the performance of the clay lined swale since the commencement of the trial. This is a new requirement which was not on the previous licence; however is considered appropriate as the swale was originally constructed as a 2 year trial and the works approval did not contain any dedicated monitoring or reporting conditions. This condition serves to formalise the commitments made in the works approval application to review the performance of the swale after two years and gives a due date of 1 September 2016, in line with the Annual Environmental Report as requested by the Licensee.	
Records	L5.1.1 – 5.1.4	Condition 5.1.1 and 5.1.2 have been included on the licence setting general requirements relating to the maintenance and access of records kept and the need for a copy of the licence to be available to staff at the Premises at all times. These were not requirements on the old version of the licence, with exception to condition 5 which required records of complaints to be made available on request. Condition 5.1.3 has been included on the licence for the Annual Audit Compliance report, and is equivalent to condition 3 of the previous licence. Condition 5.1.4 has been included on the licence for the recording of complaints received about the premises and is a summarised version of condition 4 from the previous version of the licence due to no complaints being received by DER over the past few years.	
Reporting	L5.2.1 – 5.2.2	Conditions 5.2.1 and 5.2.2 have been included on the licence for the submission of an Annual Environmental Report, which effectively replaces condition 1 of the previous licence.	
Notification	L5.3.1	Condition 5.3.1 has been included on the licence to set notification requirements outside of the annual reporting. The condition requires the notification of any breaches of licence limits and the intent to discharge to the woodlot, which are both new notification requirements that were not on the previous licence version. The condition also requires the notification prior to taking any equipment offline which may result in odour, taking any treatment pond offline for maintenance, and the removal of septage sludge from any on-site treatment pond, all of which were existing notification requirements on condition 20 of the previous licence.	



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Licence Duration	n/a	A duration of 5 years is recommended for the reissued licence. The potential maximum 20 year licence duration is not considered appropriate in this case as there is a need for further information to do a more thorough review of environmental risk (via improvement conditions) and as such the licence duration is set at 5 years, with the recommendation that the licence be reviewed and amended within 12 months of the issue date after information is provided in accordance with the improvement conditions.	



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
7/09/2015	Application advertised in West Australian (or other relevant newspaper)	Nil.	
29/09/2015	Proponent sent a copy of draft instrument	Table 2.2.2 of the licence – Requested re-wording of the averaging period for clarity	Have changed to specify how the limit applies
		Table 3.4.1 of the licence – Requested clarification and review of the wording in the averaging period for clarity	The words “monthly weighted average of samples” has been simplified to “monthly”. It is noted that the licensee has suggested the wording “monthly and cumulative” as per other tables; however this is not appropriate for this specific measurement (m ³ /day).
		Condition 4.1.1 – Noted administrative error in improvement condition ordering (IR2 before IR1)	This has been corrected. The IR condition numbers have not been changed but the order has.
		Condition 4.1.1 – Requested DER consider aligning the due date of IR2 with the due date for the 2015/2016 AER. It has been confirmed that the clay swale was commissioned in May 2014, so this due date will allow >2 years of monitoring data to be considered in assessing its performance.	In light of confirmation that the swale was commissioned in May 2014, the due date for the swale assessment has been amended to 1 September 2016 as requested.
		Condition 5.2.1 – Requested AER submission due date of 63 days after annual period, or 1 September to align with other licences	Amended to 63 days as requested.
		Decision Document - Correction of detail, that water is not chlorinated.	This reference was taken from historic information on file which was obviously incorrect. Reference to the chlorination has now been removed from the Decision Document.



6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High