



Application for Licence Amendment

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

Licence Number	L7440/1998/7
Licence Holder	Water Corporation
ACN	28 003 434 917
File Number	DEC13161/1
Premises	Bridgetown Wastewater Treatment Plant #2 Lot 10438 on Plan 153767 HESTER BROOK WA 6255
Date of Report	23/07/2021
Proposed Decision	Revised licence granted

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**MANAGER, WASTE INDUSTRIES
REGULATORY SERVICES**

an officer delegated under section 20
of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L7440/1998/7 is held by Water Corporation (Licence Holder) for the Bridgetown Wastewater Treatment Plant #2 (WWTP) (the Premises), located on Lot 10438 on Plan 153767, Hester Brook WA 6255. The WWTP comprises an Intermittent Decanting Extended Aeration (IDEA) plant treating water to a tertiary standard, a chlorine disinfection plant, two lined sludge drying beds and an irrigation storage dam.

An inspection in 2019 identified that there were ongoing issues with the Clarifier which contained elevated concentrations of suspended solids. To deal with the issues, the Licence Holder installed a 'Rotating Dynamic Disc Filter' (RDDF) containing Xylem Taron Filter (XTF).

The leachate from the treatment process is recirculated and the dried sludge is disposed of at an approved site. The treated wastewater (TWW) following filtration and disinfection is used to irrigate the nearby Bridgetown Golf Course.

The main potential emissions are odour and impact on groundwater. Though no changes to emissions and discharges are expected on filtration process upgrade at the Premises, this Amendment Report documents the assessment of potential risks to the environment and public health.

The Revised Licence issued as a result 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.

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 Application summary

On 29 April 2021, the Licence Holder submitted an application to the department to renew the Licence L7440/1998/7 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act).

As corrective action, the licence holder has installed RDDF/XTF to improve the wastewater treatment process, to filter out the filamentous bacteria, before TWW is discharged to Effluent Storage Dam (ESD).

The stage 1 test undertaken in closed-loop in February 2021 were successful, dropped the turbidity from >70NTU to <40NTU and soluble salt levels from an average of 80mg/L to 50mg/L. This performance was enhanced on dosing the wastewater with polyaluminium chloride.

The Licence Holder intends to commission RDDF/XTF upgrade, testing the infrastructure for a period of 12 months in open-loop from May 2021 onwards. Subject to performance, the RDDF/XTF installation would be a permanent asset and subsequently, the Clarifier would be decommissioned. A comparison of sages 1 and 2 tests, in closed and open loop, is provided in Table 1 below.

Table 1: Stages 1 and 2 process comparison.

	Stage 1	Stage 2
Sludge	Sludge from XTF is returned to Sludge Lagoons Via RAS after coagulation	Sludge from the XTF is returned to Sludge Lagoons Via RAS after coagulation
Reactor Dosing (coagulation)	Dosed with Polyaluminium Chloride for settlement	Dosed with Polyaluminium Chloride for settlement
Returned to Inlet Work Enters Effluent Storage Dam	Yes	No
Type	Closed Loop - Configuration	Open Loop - Configuration
Status	Started the 11 th of February 2021	May – subject to regulatory approval

2.3 Consolidation of Licence

As part of this amendment package the department has consolidated the licence by incorporating changes made under the Amendment Notices as summarised in Table .

Table 2: Licences consolidated in this amendment

Instrument	Issued	Summary of approval
L7440/1998/6	29/10/2009	Licence reissue
L7440/1998/6	12/05/2011	Licence amendment to remove reference to some groundwater bores no longer considered necessary
L7440/1998/7	23/10/2014	Licence reissue in old format
L7440/1998/7	22/01/2015	Licence amendment to REFIRE format
L7440/1998/7	6/04/2018	Amendment Notice 1 to capture newly-drilled monitoring bores and alter S1 monitoring point description
L7440/1998/8	23/07/2021	Licence amendment to authorise trial of new filtration system and update to new standard format

The obligations of the Licence Holder have not changed in consolidating the licence. The department has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices. In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

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 *Guidance Statement: Risk Assessments* (DER 2017).

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Decision Report are detailed in Table below. Table also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 3: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Odour	<p>Construction: N/A</p> <p>Operation: RDDF/XTF</p>	Air/windborne pathway	<p>Construction: RDDF installation completed alongside existing system</p> <p>Sludge will not be stored wet; and</p> <p>Sludge will not be stored out of the treatment process.</p>
Uncontrolled discharge of contaminants/chemical storage	<p>Operation: Release of chemicals due to equipment and storage failure</p>	Overland flow	<p>Hazardous chemicals and hydrocarbons stored in bunded areas compliant with AS1940 and AS192;</p> <p>Spill kits, containment and recovery equipment, operator instructions and emergency procedures;</p> <p>Waste products stored in appropriate rubbish bins and removed from site by the contractor regularly;</p> <p>Fuel stored in self bunded tanks;</p> <p>All semi-mobile equipment fitted with spill kits;</p> <p>Suitably trained staff;</p> <p>Regular maintenance and servicing of equipment and vehicles;</p> <p>Hardstand areas created will be sufficiently graded and bunded;</p> <p>During operations, all chemicals will be stored in purpose-built areas that comply with AS3780; and</p> <p>Procedures and training for the use and handling of chemicals and maintenance regimes for bunds and associated control equipment.</p>
Leachate	<p>Construction: N/A</p>	Seepage to soils and groundwater	<p>Construction: N/A</p> <p>Operation: Containment sumps (lined)</p> <p>Leachate drain lined - returns to the inlet works</p>

3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), 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 below provide a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guidance Statement: Environmental Siting* (DER 2016)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Residential/commercial	~ 150 m south of the premises boundary Adjoining Lot Bridgetown Golf Club
General farming zone	~ next west of premises boundary ~ next north of premises boundary
Licensed premises: L7737/2001/6 – Bridgetown Golf Club L6437/1990/11 – Timber Treathers Bridgetown (WA) Pty Ltd L6818/1997/11 – Shire of Bridgetown - Greenbushes	Adjacent Lot south-east of the premises boundary ~2.3 km east of premises boundary ~4.3 km south-east of premises boundary
Environmental receptors	Distance from prescribed activity
Threatened Fauna	<ul style="list-style-type: none"> • Phascogale tapoatafa wambenger 1.8 km south east • Calyptorhynchus sp. Carnaby's cockatoo 'white-tailed black cockatoo' 2.5 km east • Tyto novaehollandiae 1.3 km north
<u>Surface waterbodies</u> Hester Dam Catchment Hester Brook/Dalgarup Brook Unnamed surface waterbody	~ 800 m east of the site ~ 1.8 km west of the site ~ 1.6 km south-east
Contaminated Sites	Possibly contaminated - investigation required ~3.4 km south east of the site Crown Reserve 25336 Boyup Brook Road, Bridgetown, landfill, Shire of Bridgetown – Greenbushes

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the 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 .

The Revised Licence L7440/1998/7 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises.

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

Table 5. Risk assessment of potential emissions and discharges from the Premises during construction, commissioning and operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Operation (Including commissioning)								
Commissioning and operation of upgraded WWTP	Noise	Air/windborne pathway causing impacts to health and amenity	Residential premises	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	N/A	The Delegated Officer considers the Noise Regulations provide adequate regulatory control in the event that noise impacts arise.
	Odour		Bridgetown Golf Club	Refer to Section 3.1	C = Slight L = Unlikely Low Risk		Condition 1-6	The Delegated Officer considers existing conditions and Licence Holder controls to be sufficient in managing odour impacts.
	Leachate	Infiltration and overland flow of potentially treated wastewater	Hester Dam Catchment Hester Brook/Dalgarup Brook Unnamed surface waterbody;	Refer to Section 3.1	C= Moderate L= Unlikely Medium Risk	Y	Conditions 1-6 leachate is returned to the inlet works.	The Delegated Officer considers the upgraded plant does not alter the risk of leachate from the WWTP as leachate is returned to the head of the treatment process for re-treatment. Existing conditions and Licence Holder controls sufficient to manage risk.

Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
	Contaminated stormwater Chemical spill	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Bridgetown Golf Club Hester Dam Catchment Hester Brook/Dalgarup Brook Unnamed surface waterbody;	Refer to Section 3.1	C= Moderate L= Unlikely Medium Risk	Y	Condition 4	The Delegated Officer considers existing conditions and Licence Holder controls sufficient to manage risk.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

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 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 16 June 2021	Licence Holder's comments were received on 9 July 2021. Two minor typographical errors noted	Licence corrected

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Error! Reference source not found. provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process. In amending the licence, the CEO has also:

- updated the format and appearance of the licence;
- revised licence condition numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.
- Incorporated a new condition as time limited operation for filtration process.

Table 7: Consolidation of licence conditions in this amendment

Existing Licence condition/ table/schedule	Condition summary	Revised Licence condition/ table/schedule	Conversion notes
N/A	General Interpretation	Definitions	Moved to Table 8
N/A	Introduction	N/A	Definitions moved to Table 8 and redundant conditions removed
1.1.1-1.1.4	General Conditions	N/A	Redundant condition removed
1.2.1	General Conditions	1	Direct transfer
1.2.2		2	Direct transfer
1.2.3		N/A	Redundant condition removed
1.2.4		3	Direct transfer

1.3.1	Premises operation	4	Direct transfer
1.3.2		5	Direct transfer
N/A	Time limited Operation	6	New condition incorporated
3.1.1	Monitoring	7	Direct transfer
3.1.2		8	Direct transfer
3.1.3		9	Direct transfer
3.1.4		10	Direct transfer
3.1.5	Reporting	11	Direct transfer
3.2 – 3.4		N/A	Redundant condition removed
3.5.1		12	Direct transfer
3.6	Monitor Inputs and out puts	N/A	Not specified
3.7	Process monitoring	N/A	Not specified
3.8.1		13	Direct transfer
3.9 – 4.0		N/A	Not specified
5.1.1	Records	14	Direct transfer
5.1.2		15	Direct transfer
5.1.3		16	Direct transfer
5.1.4		17	Direct transfer
5.2.1	Reporting	18	Direct transfer
5.2.2		19	Direct transfer
5.2.3		20	Direct transfer
5.3.1	Notification	21	Direct transfer
Schedule 1	Reporting and Notification forms	Schedule 1	AACR removed as now available on DWERs website
Schedule 2	Maps	Schedule 2	Added Figure 2 - RDDF location site

References

1. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
2. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. DWER 2019, *Guidance Statement: Industry Regulation Guide to Licensing*, 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
Condition 3	The Licence Holder may trial the use of a Rotating Dynamic Disc Filter (RDDF) until (12 months from date of licence amendment) or until such time a Licence with inclusion of RDDF installation is granted in accordance with Part V of the EP Act, whichever is sooner.	Identified business risks/implications Will need to carry a licence amendment 3 months before end of the trial to authorise the long-term use of the Xylem Filter (RDDF).	It is noted that another amendment will be required 3 months before end of the trial period.
Condition 4	The licence holder shall ensure that The RDDF is installed on impervious concrete flooring which is sufficiently graded and/or bunded to contain spills or accidental discharges; and the existing Clarifier structure is to be operational until RDDF infrastructure is fully commissioned.		
Licence Duration	Why have we gone from a licence with an expiry of 31 Oct 2031 to 31 Oct 2026?		Licence duration is amended with expiry of 31 October 2031
Table 3	Doesn't specify in Note 1 Table 3 which analytes can be completed on In-field NATA accredited analysis. In this table, it would be for pH only.		Table 3 is amended

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY				
SECTION 1: APPLICATION SUMMARY				
Application type				
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L7440/1998/7	
		Relevant works approval number:		N/A <input type="checkbox"/>
Date application received		29/04/2021		
Applicant and Premises details				
Applicant name/s (full legal name/s)		Dr Digby Short Manager of Environment Water Corporation ABN 28 003 434 917 629 Newcastle street, Leederville WA 6007 PO BOX 100, Leederville WA 6902 environment@watercorporation.com.au craig.chaudhary@watercorporation.com.au		
Premises name		Bridgetown Wastewater Treatment Plant #2		
Premises location		Lot 10438 on Plan 153767 Hester Brook WA 6255		
Local Government Authority		The Shire of Bridgetown - Greenbushes		
Application documents				
HPCM file reference number:		DEC13161-1		
Key application documents (additional to application form):		Appendix A		
Scope of application/assessment				

<p>Summary of proposed activities or changes to existing operations.</p>	<p>Proposal involves installation of Xylem Taron Filter (XTF) to bypassing the Clarifier</p> <p>Conditions within the treatment reactor favour the growth of filamentous bacteria which have poor settling characteristics, resulting in elevated solids concentrations in the clarifier treated water discharge to the effluent storage dam (ESD).</p> <p>XTF was installed to filter out the filamentous bacteria before TWW is discharged to the ESD</p> <p>The stage 1 XTF Test was successful in a closed-loop system. Preliminary results show a drop in turbidity from >70NTU to < 40NTU, and a decrease in measured soluble salt levels from an average of 80mg/L to an average of 50mg/L, in the TWW. Performance has been enhanced by dosing with Polyaluminium Chloride.</p> <p>In stage 2 test the XTF in full operation open loop mode by bypassing the Clarifier for a period of 12 months.</p> <p>If the XTF performs to expectation, the Corporation intends to install this asset as a fixed structure and decommission the Clarifier and will apply for a permanent licence amendment</p> <p>Asset already constructed – May 2021 to May 2022</p> <p>No Change to the existing design or production capacity under licence 7440.</p>
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Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
54 - Sewage facility	520 cubic metres per day	No
61 - Liquid waste facility	1000 tonnes per annum	No

Legislative context and other approvals

<p>Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/></p>
<p>Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Ministerial statement No: EPA Report No:</p>
<p>Has the proposal been referred and/or assessed under the EPBC Act?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Reference No:</p>

Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: Expiry date: If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Regional office: Swan Avon / Mid-West Gascoyne / Kwinana Peel / North West / South West / Goldfields / South Coast
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: Priority: N/A Are the proposed activities/landuse compatible with the PDWSA (refer to <u>WQPN 25</u>)? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: Date of classification:
Direct interest stakeholders		
Shire of Bridgetown – Greenbushes	Letter to be sent	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
DMIRS	Letter to be sent	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

SECTION 2: RECEPTORS

The nearest town of Bridgetown

Human receptors	Distance from activity / prescribed premises
	<p>The closest resident is located approximately 60m south of the plant.</p> <p>A golf course is located on the neighbouring lot south-east of the plant.</p> <p>WWTP is located 4.6 km from the Bridgetown</p>
Environmental receptors	Distance from activity / prescribed premises
Specified Ecosystems	DBCA legislated tenure area located on neighbouring lot to the east of the site.
Public Drinking Water Source Area	Hester Dam Catchment Area occur at 720 m east of the site
Flora	Noted phascogale tapoatafa wambenger are present in natural forest to the east
Contaminated sites	One possibly contaminated – investigation required classified site occur at 3.5 km south – east of the site