



Application for Licence Amendment

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

Licence Number	L4706/1972/17
Licence Holder	Electricity Generation and Retail Corporation T/A Synergy
ACN	N/A
File Number	DER2014/002698-1
Premises	Muja Power Station Muja Power Station Road COLLIE WA 6225 Legal description – Being Lot 5192 on Plan 213624, part Lot 4903 on Plan 167984, Lot 1 on Diagram 53100 and portion of State Forest 24 As defined in Schedule 1
Date of Report	19/09/2024
Proposed Decision	Revised licence granted

Amendment description

This amendment is made pursuant to section 59 of the Environmental Protection Act 1986 (EP Act) to amend the existing licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is hereby given under section 59B(9) of the EP Act.

This amendment is limited to the replacement of an ambient groundwater monitoring well and changes to the origin of wastewater received by the Muja Power Station (the Premises). The change to the origin of wastewater received by the Premises is associated with activities performed under Category 61: liquid waste facility.

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

Purpose and scope of assessment

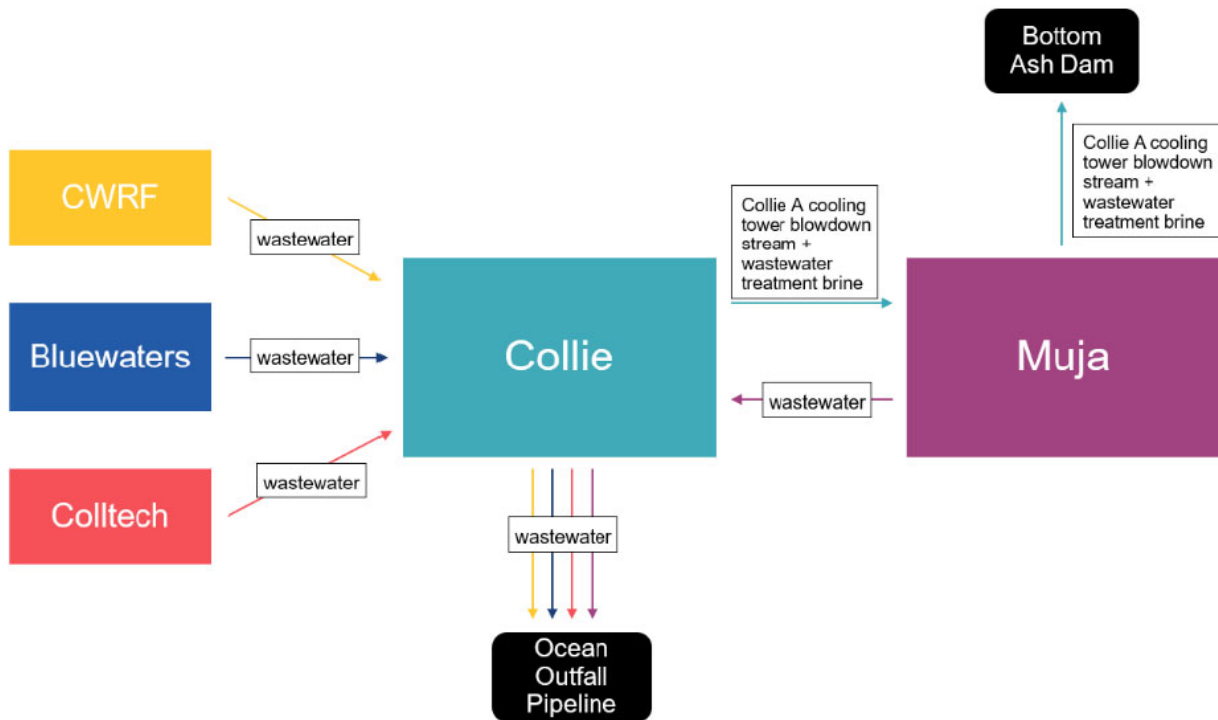
On 5 June 2024, the Electricity Generation and Retail Corporation trading as Synergy (Licence Holder) submitted an application to the department to amend Licence L4706/1972/17 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendment seeks to gain approval for the Premises to receive wastewater from the Bluewaters Power Station as part of the Collie 'A' Power Station wastewater stream and the inclusion of a newly installed groundwater monitoring bore (MB8R) to replace a nearby damaged groundwater monitoring bore (MB8).

Operation of the Premises

The licence holder operates the Premises, located on Muja Power Station Road, Collie. The Premises operates as a coal-fired thermal power station and began operation in 1966. It consists of four power generating units arranged in pairs (labelled C and D with a combined capacity of 854 MW). The Premises typically operates as a base load plant and can produce up to one fifth of the electricity requirements of the Southwest region.

Wastewater movement from the Collie 'A' Power Station to the Premises

Collie 'A' Power Station and the Premises are operated by the licence holder. Under condition 1.3.7 of its licence (L6637/1995/15) Collie 'A' Power Station may receive wastewater from Bluewaters Power Station, Muja Power Station, the Central Water Receiving Facility and Desalination Plant (CWRP) and Colltech (as illustrated below)



It is understood the contract for accepting wastewater from Colltech expired in August 2024 and is unlikely to be renewed. Therefore, Collie 'A' Power Station now only receives wastewater from Bluewaters Power Station, the Premises, and CWRF. All wastewater received by Collie 'A' Power Station is combined and held in the Collie 'A' Power Station discharge tank for analysis prior to the water being discharged. If the water meets the discharge criteria as required by Table 2.3.2 of L6637/1995/15, then it may be discharged to the ocean via the saline ocean outfall pipeline.

Condition 1.3.4 of Licence L4706/1972/17 as amended 1 July 2021 permits the Premises to accept an unspecified volume of wastewater from CWRF without restriction, and wastewater from the Collie 'A' Power Station only as a contingency measure. The condition states that wastewater accepted by the Premises may only comprise of cooling tower blowdown stream and wastewater treatment brine from Collie 'A' Power Station. As the wastewater of the wastewater from Collie 'A' Power Station must meet the discharge criteria as required by Table 2.3.2 of L6637/1995/15, the quality of water received by the Premises is of the same quality as would be disposed to the ocean via the ocean outfall pipeline.

Proposed Amendments

Wastewater

Under normal operations, the wastewater treatment brine from Collie 'A' Power Station is discharged to the Indian Ocean via an ocean outfall pipeline. However, the Licence Holder will be installing leak detection, monitoring and control systems, in the form of flowmeters and valves on the saline ocean outfall pipeline. These works are likely to take 40 working days to install. During this period Collie 'A' Power Station will continue to receive wastewater from Bluewaters Power Station as permitted under condition 1.3.7 of its Licence L6637/1995/15. However, due to technical constraints, Collie 'A' Power Station does not have the capacity to store all this wastewater. Therefore, under condition 1.3.4 of the Premises Licence L4706/1972/17 the wastewater from Collie will be transferred to the Premises, as illustrated below.

Although wastewater historically and currently received by the Premises from Collie 'A' Power Station contains wastewater from Bluewaters Power Station, the licence for the Premises does not specifically acknowledge this. Therefore, the licence holder has applied for an

amendment of the Premises licence to acknowledge that wastewater received by the Premises may also contain wastewater from the Bluewaters Power Station.

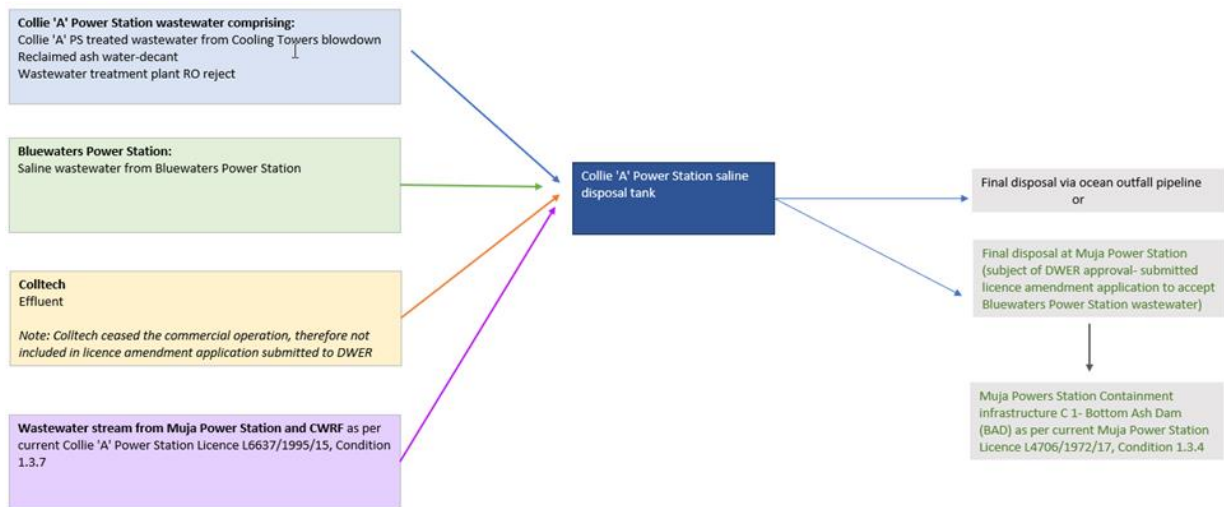


Table 1 below outlines the Licence holder’s proposed operational controls

Table 1: Licence Holder Proposed Controls (from application)

Emission	Sources	Potential pathways	Proposed controls
Wastewater	Wastewater stream from Collie A power station comprising cooling tower blowdown stream, wastewater treatment brine and wastewater from Bluewaters Power Station, accepted at Muja Power Station.	Seepage to soils and groundwater	<ul style="list-style-type: none"> a) Existing infrastructure, Bottom Ash Dam (BAD) settling pond, in place to receive wastewater (BAD already licenced to accept wastewater from Collie A comprising of cooling tower blowdown stream and wastewater treatment brine). b) Wastewater stream from Collie A power station will be recycled and reused in the system, no discharge to environment. c) Wastewater from Collie A power station is only received on the Premises (Muja) as a contingency measure, as per L4706/1972/17, table 1.3.2. d) Active management of water levels in the BAD settling pond to ensure capacity when wastewater stream from Collie A is accepted. These measures include a decant tower at the BAD which transfers any excess water to Settling Pond 1, then to Settling Pond 2, then to the wastewater treatment plant.

Emission	Sources	Potential pathways	Proposed controls
			e) Monitoring of point source emissions to surface water continuing as per L4706/1972/17, table 3.3.1). f) Monitoring of ambient groundwater quality continuing as per L4706/1972/17, table 3.4.4.

Replacement Groundwater Monitoring Well.

The Licence Holder seeks to amend Table 3.4.4 of current licence L4706/1972/17 by replacing the requirement for monitoring the decommissioned ambient groundwater monitoring well MB8 with recently installed ambient groundwater monitoring well MB8R. During a groundwater monitoring event in November 2023, the high-flow pump used to extract groundwater from MB8 became stuck and damaged the well. It was subsequently decommissioned on 13 February 2024.

Replacement well MB8R was installed on 30 January 2024 within 5 meters of the location of MB8.

This amendment is limited only to changes related to Category 61 activities on the Existing Licence. No changes to the aspects of the existing Licence relating to Category 12, 52 and 53 have been requested by the Licence Holder.

Other approvals and considerations

EP Act Part IV Approval

There are no current EP Act Part IV Approvals for this Premises.

EP Act Part V Approval

The emissions and discharges from this Premise are conditioned under Part V Licence L8653/2012/2 which expires on 17 October 2036.

Discharge of waste

The Premises is located within a Proclaimed Groundwater Area. As there is no change to the licensed volume of wastewater accepted at the site and no discharge is proposed within this area. Therefore, the Delegated Officer has determined there is no apparent increased risk to the immediate environment.

Environmental Protection (Clearing of Native Vegetation) Regulations 2004

There are multiple vegetation clearing permits approved for the area including state clearing permit (CPS) 1845/1, 1918/2, 1918/7, 1991/1, 6315/1 and 6578/1. However, no clearing is proposed for this amendment.

Risk assessment

As no changes to emissions were identified, no further risk assessment is required.

Consultation

The licence holder was provided with the draft amendment on 12 September 2024. Comments received from the Licence Holder on 18 September 2024 have been considered by the Delegated Officer as detailed in Appendix 1.

Decision

Monitoring bore replacement

The Delegated Officer has compared the construction details, monitoring results and location of the original ambient groundwater monitoring well MB8 with that of the replacement well MB8R. Based on the information provided by the Licence Holder, it was noted that:

- MB8R is located within 2 meters of decommissioned MBR8.
- The bore screen of decommissioned MB8 extended between 2.2 and 19.2 metres below ground level (m bgl) and the bore screen of MB8R extended between 16.5 and 21.0m bgl.
- The standing water level was identified at approximately 8m bgl in both decommissioned MB8 in August 2023 and MB8R when measured in March 2024.
- Although the standing water level in MB8R is above the screening level, groundwater samples taken from MB8R were taken from groundwater within the screening length.
- An ambient groundwater sample was taken at 18.5m bgl in decommissioned MB8 in August 2023 and although the standing water level in MB8R is above the screening level the ambient groundwater sample was taken at 18m bgl in MB8R when measured in March 2024.
- There was negligible difference in the concentrations of metals, inorganics and alkalinity between groundwater samples taken from decommissioned MB8 in August 2023 and that of MB8R when measured in March 2024.

Based on the construction details, monitoring results and the location of MB8R, the Delegated Officer considers MB8R a suitable replacement for MB8. Additionally, as the use of the existing replacement groundwater monitoring bore (MB8R) is unlikely to pose a risk to sensitive receptors, the Delegated Officer has granted the inclusion of MB8R to the licence and removal of damaged bore (MB8) from any further monitoring requirements.

Receiving wastewater from Bluewaters Power Station

The Delegated Officer has assessed the wastewater acceptance conditions of the Premises licence, L4706/1972/17 and compared it with the licence conditions of Collie 'A' Power Station's licence, L6637/1995/15 for acceptance and disposal of wastewater.

Condition 1.3.4 of Licence L4706/1972/17 as amended 1 July 2021 states the Premises can accept wastewater from CWRP comprising brine and reverse osmosis rejects, and from Collie 'A' Power Station comprising cooling tower blowdown and wastewater treatment brine.

Condition 1.3.7 of Licence L6637/1995/15 as amended 3 February 2023 states Collie 'A' Power Station can accept wastewater from CWRP, Muja Power Station, Bluewaters Power Station and Colltech. However, due to the cessation of contract, Collie 'A' Power Station no longer receives wastewater from Colltech. Therefore, Collie 'A' Power Station now only receives wastewater from Muja Power Station, Bluewaters Power Station and CWRP. As part of its licence, the wastewaters generated and received by Collie 'A' Power Station are assessed, and if required, are treated to the discharge criteria as tabled in Table 2.3.2 of Licence L6637/1995/15. The water is then stored in Collie 'A' Power Station saline water treatment plant discharge tank prior to being discharged to the ocean via the ocean outfall pipeline or may be disposed to the Premises under Condition 1.3.4 of Licence L4706/1972/17.

Condition 1.3.4 of the Premises Licence L4706/1972/17 does not currently acknowledge that the wastewater from Collie 'A' Power Station may include treated wastewater from Bluewaters

Power Station. The Delegated Officer has considered the licence holders application to amend the wording of Condition 1.3.4 of the Premises Licence L4706/1972/17 to include Bluewaters Power Station as another source of wastewater. As the quality of wastewater received by the Premises from Coolie 'A' Power Station is required to comply with Condition 2.3.2 Table 2.3.2 of Licence L6637/1995/15, the Delegated Officer has determined that amending the wording of Condition 1.3.4 of Licence L4706/1972/17 to include from Bluewaters Power Station as a source of wastewater is essentially an administrative change and will not change the risk profile of the Premises.

As a result, the Revised Licence has been issued and this amendment supersedes the existing Licence previously granted in relation to the Premises. The Revised Licence has been granted with existing conditions being transferred, but not reassessed.

The amendment reports for the previous licence will remain on the DWER website for future reference and will act as a record of DWER's decision making.

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.

Summary of amendments

The following provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been highlighted below and will be incorporated into the Revised Licence as part of the amendment process.

Table 1.3.1: Containment infrastructure			
Containment point reference and location on Map of emission points and containment infrastructure	Containment cell or dam number(s)	Material	Infrastructure requirements
C1	Bottom Ash settling pond (BAD)	Supernatant from the fly ash and bottom ash dam and blowdown from cooling tower. Wastewater from Collie A Power Station comprising cooling tower blowdown and wastewater treatment brine, and wastewater from Bluewaters Power Station. Wastewater from the Muja Power Station Central Water Receiving Facility and Desalination Plant comprising brine and reverse osmosis rejects.	Compacted in situ soils

Table 1.3.2: Waste acceptance		
Waste	Quantity Limit	Process requirements
Wastewater stream from Collie A power station comprising cooling tower blowdown stream and wastewater treatment brine, and wastewater from Bluewaters Power Station.	None specified	Wastewater from Collie A power station can be received on the Premises as a contingency measure. Wastewater to be discharged to the Bottom Ash Dam specified in Table 1.3.1

Table 3.4.4: Monitoring of ambient groundwater quality				
Monitoring point reference and location on Map of ambient groundwater monitoring locations	Parameter	Units	Averaging period	Frequency
MB1A, MB2, MB3, MB3A, MB4, MB4A, MB5, MB5A, MB5B, MB6, MB7, MB7A, MB8R , MB8A, MB9A, MB9B, MB9C, MB10A, MB10B, MB11A, MB11B, MB12A and MB12B	Standing water level	m(AHD)	Spot sample	Quarterly
	pH	-		
	Total dissolved solids, Electrical conductivity, sulphate, arsenic, cadmium, chromium (total), copper, lead, iron, manganese, mercury, nickel, selenium and zinc	mg/L		

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

Appendix 1: Summary of Licence Holder's comments on draft amendment

Section of licence	Summary of Licence Holder's comment	Department's response
Instrument log	<p>The licence holder has suggested a wording change from</p> <p><i>Applicant initiated licence amendment to:</i></p> <ul style="list-style-type: none"> - allow bottom ash dam to receive wastewater from Collie "A" Power Station and Bluewaters Power Station. - replace reference to ambient groundwater monitoring well MB8 with MB8R as MB8 was decommissioned and MB8R was installed as a replacement for MB8" <p>to</p> <p><i>Applicant initiated licence amendment to:</i></p> <ul style="list-style-type: none"> - allow bottom ash dam to receive wastewater from Collie "A" Power Station as per previous licence conditions as well as Bluewaters Power Station wastewater. - replace reference to ambient groundwater monitoring well MB8 with MB8R as MB8 was decommissioned and MB8R was installed as a replacement for MB8" <p>This change makes it clear to the reader the Muja Power Station was previously licenced to receive wastewater from Collie 'A' Power Station.</p>	<p>These proposed changes were accepted by the Department and have been incorporated into the amended licence.</p>