Amended Licence

Licence Number	L4706/1972/17
Licensee	Electricity Generation and Retail Corporation T/A Synergy
ACN	NA
Registered business address	Forrest Centre 219 St Georges Terrace PERTH WA 6000
DWER File Number	DER2014/002698-1
Duration	18/10/2014 to 17/10/2036
Date of amendment	**6 January 2020**
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

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production / design capacity
Category 12: Screening, etc. of material	3,500,000 tonnes per annual period
Category 52: Electric power generation	854 MWe per annual period
Category 53: Flyash disposal	200,000 tonnes per annual period
Category 61: Liquid waste facility	3,285,000 tonnes per annual period

This Licence is granted to the Licensee, subject to the following conditions, on **6 January 2020**, by:

Carmen Standring

Digitally signed by Carmen Standring
Date: 2020.01.06 09:30:56 +08'00'

A/MANAGER, PROCESS INDUSTRIES

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

Contents

Introduction

This Introduction is not part of the Licence conditions.

DWER's industry licensing role

The Department of Water and Environmental Regulation (DWER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DWER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DWER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DWER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DWER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

https://www.legislation.wa.gov.au/

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.

- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licensees are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

Muja Power Station (MPS) is a coal-fired thermal power station located south-east of the town of Collie 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). MPS typically operates as a base load plant and is capable of producing up to one fifth of the electricity requirements of the South West region.

Coal is transported from nearby coal mines to the site via trucks and along an overland conveyor belt. The coal is deposited in live stockpiles, and then transported into the station mills via bunkers and conveyor belt systems. Air for combustion is supplied by a rotary air heater supplying two separate systems, the primary and secondary air. The boilers are forced circulation type, designed to burn coal. Heat from combustion is converted to superheated steam and then mechanical energy via a traditional Parsons steam turbine in Stage C, and a larger Toshiba turbine in Stage D.

The stacks from units C and D are 151 m tall and are fitted with Electrostatic Precipitators.

The primary emissions from MPS are point source air emissions from the boiler stacks resulting in emissions of carbon monoxide (CO), carbon dioxide (CO_2), sulfur dioxide (SO_2), nitrogen oxide (NOx) and particulate matter with minor emissions of metals and organics. Fly ash and bottom ash not removed from the Premises for specific reuse are sent to respective storage dams and the supernatant from the bottom ash dam is recycled and reused in the system. Supernatant from the flash dam is reused onsite as ash slurry water.

Approximately 9 ML of waste water per day is generated at the site and treated for re-use at the Premises by a sequence of filtration and reverse osmosis.

Amendment December 2019

The Licensee applied for an amendment to change the operation of the MPS to a mid-merit power station with a single power generating unit in operation at times during the year while the second unit is kept warm to allow for a faster return to service when required.

As a part of the warm start-up amendment, the type and style of the Licence was updated including consolidating changes made under Amendment Notices 1, 2, and 3 issued between 2016 to 2019 as detailed in the instrument log below. The obligations of the Licensee have not changed in consolidating the licence. For the consolidation amendments DWER has not undertaken any additional risk assessment of the Premises.

In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 2 of the previous Licence and advise the Licensee to obtain the form from the Department's website;
- revised Licence condition numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

The licences and works approvals issued for the Premises since 2009 are:

Instrument log		
Instrument	**Issued**	**Description**
L4706/1972/14	1/10/2009	Licence re-issue with global changes.
W4706/2010/1	26/7/2010	Works approval to refit Muja A and B.
L4706/1972/15	1/10/2010	Licence re-issue with global changes.
L4706/1972/16	1/10/2012	Licence re-issue with global changes. Term of licence extended to two years.
L4706/1972/17	10/10/2014	Licence reissue and former DER initiated amendment to convert licence to new template, reflect changes that are detailed in works approval W4706/2010/1 and inclusion of ambient SO_2 targets.
L4706/1972/17	10/12/2015	Licensee initiated amendment to revise wastewater acceptance requirements and correct administrative errors.
L4706/1972/17	29/04/2016	Department initiated amendment in accordance with section 59(1)(k) of the *Environmental Protection Act 1986* to amend the duration of the licence date month year.
L4706/1972/17	06/01/2017	Amendment Notice 1: updated registered business address as requested by the Licensee.
L4706/1972/17	07/04/2017	Amendment Notice 2: Requirements for the monitoring of point source emissions to air (from units C and D) have been updated to reflect the use of the CEMS instead of quarterly stack testing. Also improvement requirements IR1 relating to the submission of an ash dam seepage improvement plan have been removed. The plan was received by the Department on 25 February 2016.
L4706/1972/17	11/09/2018	Amendment Notice 3: The Licensee requested to make the following changes: 1. To remove the Muja A (Boiler 1 and 2) and Muja B (Boiler 3 and 4) references from the Licence as the four boiler units are no longer operating and are in the process of being decommissioned. 2. To amend air emission sampling methods to reflect the capability of the infrastructure to meet the sampling methodology. 3. To allow for the discharge of iron sludge from groundwater treatment to be discharged into the flyash dam. 4. In addition to these changes the closure and decommissioning of Muja A and B has reduced the energy generating capacity of the Premises accordingly from 1094 MWe per annual period to 854 MWe per annual period.
L4706/1972/17	6/1/2020	Licence amendment to allow for an altered operational strategy involving one power generating unit being in operation while the second unit is maintained in a warm state to allow for faster start up when required. The amendment also included consolidation of amendment notices 1, 2 and 3 as listed above in the instrument log table.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Annual Audit Compliance Report' means a report in a format approved by the CEO as presented by the Licensee or as specified by the CEO (guidelines and templates may be available on the Department's website);

'Act' means the *Environmental Protection Act 1986;*

'AHD' means the Australian height datum;

'Annual Period' means the inclusive period from 1 July until 30 June in the following year;

'AS 4323.1' means the Australian Standard AS4323.1 *Stationary Source Emissions Method 1: Selection of sampling positions;*

'AS 3580.14' means the Australian Standard AS *3580.14* Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples;*

'averaging period' means the time over which a limit or target is measured or a monitoring result is obtained;

'CEMS' means continuous emissions monitoring system;

'CEMS Code' means the current version of the Continuous Emission Monitoring System (CEMS) Code for Stationary Source Air Emissions, Department of Environment & Conservation, Government of Western Australia;

'CEO' means Chief Executive Officer of the Department of Water and Environmental Regulation;

'CEO' for the purpose of correspondence means:

Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 10
JOONDALUP DC WA 6027
Telephone: (08) 6367 7000
Facsimile: (08) 6367 7001
Email: info@dwer.wa.gov.au

'Collie airshed power generators' means the occupiers of the following part V licences in force during the term of this Licence:

1. Bluewaters I & II Power Station, Bluewaters Power 1 Pty Ltd & Bluewaters Power 2 Pty Ltd, L8326/2008;
2. Collie A Power Station, Electricity Generation and Retail Corporation T/A Synergy, L6637/1995;
3. Muja Power Station, Electricity Generation and Retail Corporation T/A Synergy, L4076/1972; and
4. Worsley Alumina Refinery, BHP Billiton Worsley Alumina Pty Ltd, L4504/1981;

'Department' means the department established under section 35 of the Public Sector Management Act 1994 and designated as responsible for the administration of Part V, Division 3 of the EP Act.

'DWER' means Department of Water and Environmental Regulation;

'keep warm' means a period when plant or equipment is kept at operational or near operational temperatures and pressures to provide for fuel oil heating and auxiliary steam to allow independent restart by introducing a fuel other than coal on an occasional basis for periods of up to 48 hours.

'Licence' means this Licence numbered L4706/1972/17 and issued under the Act*;*

'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'Muja Power Station Ash Dam Environmental Management Plan' means the document titled; "Synergy GBU Muja Power Station – Fly Ash Dam Environmental Management Plan", dated June 2015 and its subsequent approved versions;

'MWe' means power output (electricity generated) in megawatts;

'MWth' means power input (thermal) in megawatts;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'normal operating conditions' means any operation of a particular process (including abatement equipment) excluding start-up, shut-down, keep warm and upset conditions, in relation to stack sampling or monitoring;

'NOx' means oxides of nitrogen, calculated as the sum of nitric oxide and nitrogen dioxide and expressed as nitrogen dioxide;

'PM' means total particulate matter including both solid fragments of material and miniscule droplets of liquid;

'$PM_{2.5}$' means particles with an aerodynamic diameter of less or equal to 2.5 µm;

'PM_{10}' means particles with an aerodynamic diameter of less or equal to 10 µm;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

‘quarterly’ means the 4 inclusive periods from 1 July to 30 September, 1 October to 31 December and in the following year, 1 January to 31 March and 1 April to 30 June;

‘Schedule 1’ means Schedule 1 of this Licence unless otherwise stated;

‘shut-down’ means the period when plant or equipment is brought from normal operating conditions to inactivity by introducing to the boilers a fuel other than coal;

‘spot sample’ means a discrete sample representative at the time and place at which the sample is taken;

‘stack test’ means a discrete set of samples taken over a representative period at normal operating conditions;

‘start-up’ means the period when plant or equipment is brought from inactivity to normal operating conditions by introducing to the boilers a fuel other than coal;

‘STP dry’ means standard temperature and pressure (0^{o}Celsius and 101.325 kilopascals respectively), dry;

‘USEPA’ means United States (of America) Environmental Protection Agency;

‘USEPA Method 5’ means the promulgated Test Method 5 – Determination of Particulate Matter Emissions from Stationary Sources;

‘USEPA Method 6’ means the promulgated Test Method 6 – Determination of Sulfur Dioxide Emissions from Stationary Sources;

‘USEPA Method 6C’ means the promulgated Test Method 6C – Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyser Procedure);

‘USEPA Method 10’ means the promulgated Test Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources (Instrumental Analyser Procedure);

‘USEPA Method 17’ means the promulgated Test Method 17 – Determination of Particulate Matter Emissions from Stationary Sources;

‘USEPA Method 18’ means the promulgated Test Method 18 - Measurement of Gaseous Organic Compounds Emissions by Gas Chromatography;

‘USEPA Method 29’ means the promulgated Test Method 29 – Determination of Metals Emissions from Stationary Sources;

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.1.5 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:
(a) pollution;
(b) unreasonable emission;
(c) discharge of waste in circumstances likely to cause pollution; or
(d) being contrary to any written law.

1.2 General conditions

1.2.1 The Licensee shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

1.2.2 The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials that are liquids, outside an engineered containment system.

1.2.3 The Licensee shall implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises.

1.3 Premises operation

1.3.1 The Licensee shall ensure that material specified in Table 1.3.1 is only stored and/or treated within vessels or compounds provided with the infrastructure detailed in that Table and identified in Schedule 1.

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 Dam 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. Wastewater from the Muja Power Station Central Water Receival Facility and Desalination Plant comprising brine and reverse osmosis rejects.	Compacted insitu soils
C2	Coal Storage Area	Coal feedstock	Compacted in-situ soils
C3	Ash Storage Dam	Fly ash and bottom ash, including brine concentrate used in the flash handling process; Reverse Osmosis rejects and sludges from the power station water treatment system, and ferric water treatment sludges from the Muja Power Station Central Water Receival Faci lity, Desalination Plant and groundwater supply system.	Compacted in-situ soils
C4	Supernatant Dam	Supernatant and stormwater from the Ash Storage Dam.	HDPE and clay lined with leak detection system

1.3.2 The Licensee shall undertake an annual water balance for the Ash Storage Dam (C3). The water balance shall as a minimum consider the following:
(a) site rainfall;
(b) evaporation;
(c) decant water recovery volumes;
(d) seepage recovery volumes;
(e) volume of water treatment sludges deposited; and
(f) volume of fly ash deposited.

1.3.3 The Licensee shall operate the Ash Storage Dam in accordance with the Muja Power Station Ash Dam Environmental Management Plan.

1.3.4 The Licensee shall only allow waste to be accepted on to the Premises if:
(a) it is of a type listed in Table 1.3.2; and
(b) the quantity accepted is below any limit listed in Table 1.3.2; and
(c) it meets any process requirements listed in Table 1.3.2.

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.	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
Wastewater stream from the Muja Power Station Central Water Receival Facility, Desalination Plant and groundwater supply system comprising ferric water treatment sludges	25 ML per annual period	Ferric water treatment sludges to be discharged to the Ash Storage Dam specified in Table 1.3.1
Wastewater stream from the Muja Power Station Central Water Receival Facility and Desalination Plant comprising brine and reverse osmosis rejects	None specified	Brine and reverse osmosis rejects to be discharged to the Bottom Ash Dam specified in Table 1.3.1

2 Emissions

2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit and/or target in this section.

2.2 Point source emissions to air

2.2.1 The Licensee shall ensure that where waste is emitted to air from the emission points in Table 2.2.1 and identified on the Map of emission points and containment infrastructure in Schedule 1, it is done so in accordance with the conditions of this licence.

Table 2.2.1: Emission points to air

Emission point reference and location on Map of emission points and containment infrastructure	Emission Point and source	Emission point height (m)	Source, including any abatement
A3	Stack C	151	Boiler unit 5 and 6 (200 MWe each) for Stage C via ESP
A4	Stack D	151	Boiler unit 7 and 8 (227 MWe each) for Stage D via ESP

2.2.2 The Licensee shall target point source emissions to air at or below the levels specified in Table 2.2.2.

Table 2.2.2: Point source emission targets to air			
Emission point reference	**Parameter**	**Target (including units) [1, 2, 4]**	**Averaging period [3]**
A3 and A4	PM	250 mg/m^3	CEMS (60 minute average)
	Oxides of nitrogen	800 mg/m^3	CEMS (60 minute average)

Note 1: All units are referenced to STP dry
Note 2: All units are referenced to 7% O_2
Note 3: CEMS requires clock hour average. Averaging periods must be referenced by the end time of the averaging period with the first averaging period of a calendar day ending at 01:00am.
Note 4: Emission targets are not applicable during start-up and shut-down periods of operation.

2.2.3 The Licensee shall take the management action specified in Table 2.2.3 in the case of an event specified in that table.

Table 2.2.3: Management actions			
Emission point reference	**Event/ action reference**	**Event**	**Management action**
A3 and A4	EA1	USEPA Performance Specification 11 CEMS correlation via manual stack sampling causes exceedance of particulates target.	The Licensee shall notify the CEO in writing 7 days prior to commencement of the annual CEMS calibration curve correlation.
A3 and A4	EA2	Exceedance of particulates emission target.	The Licensee shall complete a review of the operation of the pollution control equipment and CEMS within 48 hours of the event unless the management action specified for event EA1 has been completed.

2.2.4 The Licensee shall use fuels specified in Table 2.2.4 only if they meet the specifications in that Table.

Table 2.2.4: Fuel Specification		
Fuel type	**Purpose**	**Specification**
Coal	Fuel	Boiler units may be fired using coal during any operating conditions.
F60 Fuel Oil or equivalent	Fuel used during start-up, keep warm and shutdown periods and to support coal combustion based on process demand	Boiler units may be fired using Fuel Oil during start-up, keep warm and shut-down periods. Use of F60 Fuel Oil or equivalent during normal operations shall be restricted only to periods where system demand justifies the coal combustion process to be supported.

2.3 Point source emissions to surface water

2.3.1 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.3.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.3.1: Emission points to surface water		
Emission point reference and location on Map of emission points and containment infrastructure	**Description**	**Source including abatement**
W1	Bottom Ash Dam (BAD) discharge point	Bottom Ash Dam settling pond
W2	Recharge basin discharge point	Treated wastewater and uncontaminated stormwater from surface water management systems

3 Monitoring

3.1 General monitoring

3.1.1 The licensee shall ensure that:
(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all surface water sampling is conducted in accordance with AS/NZS 5667.4, AS/NZS 5667.6 or AS/NZS 5667.9 as relevant;
(c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
(d) all laboratory samples are submitted to a laboratory with current NATA accreditation for the parameters to be measured.

3.1.2 The Licensee shall ensure that:
(a) monthly monitoring is undertaken at least 15 days apart.
(b) quarterly monitoring is undertaken at least 45 days apart.
(c) annual monitoring is undertaken at least 9 months apart.

3.1.3 The Licensee shall record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.

3.1.4 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

3.1.5 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

3.2 Monitoring of point source emissions to air

3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to air

Emission point reference	Parameter	Units1, 3	Averaging period	Frequency[2]	Method
A3 - A4	Volumetric flow rate	m^3/s	60 minutes	Continuous	CEMS
	Stack temperature	°C			
	PM	mg/m^3	60 minutes	Continuous	CEMS via suitable annual correlation of referenced particulates[4]
	Sulfur dioxide		60 minutes	Continuous	CEMS
A3 - A4	NOx	mg/m^3	60 minutes	Continuous	CEMS
A3 – A4	Carbon monoxide	mg/m^3	Stack Test (Minimum 30 Minute average)	Annually	USEPA Method 10
	Total Volatile Organic Compounds		Stack Test (Minimum 30 Minute average)		USEPA Method 18
	Benzene				
	Metals As, Be, Cd, Co, Cr, Cu, Hg, Mn, Ni, Pb, Zn		Stack Test (Minimum 60 Minute average)		USEPA Method 29
	PM_{10}		Stack Test (Minimum 60 Minute average)		USEPA Method 5 or 17
	$PM_{2.5}$				

Note 1: All units are referenced to STP dry
Note 2: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.
Note 3: Concentration units are referenced to 7% O_2.
Note 4: Where applicable, USEPA Performance Specification 11 including Appendix F, Procedure 2 will be used to convert and substantiate the calculation of particulate matter from raw instrument data.

3.2.2 The Licensee shall ensure that sampling required under Condition 3.2.1 of the Licence is undertaken at sampling locations in accordance with the AS 4323.1 or relevant part of the CEMS Code.

3.2.3 The Licensee shall ensure that all non-continuous sampling undertaken pursuant to condition 3.2.1 is undertaken by a holder of NATA accreditation for the relevant methods of sampling. The Licensee shall ensure that all analysis undertaken pursuant to condition 3.2.1 is undertaken by a holder of NATA accreditation for the relevant method of analysis.

3.3 Monitoring of point source emissions to surface water

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of point source emissions to surface water

Emission point reference	Parameter	Units	Frequency
W1 W2	pH[1]	mg/L	Prior to and weekly when discharging
	Total dissolved solids		
	Total suspended solids		
	Sulphate		
	Arsenic		
	Cadmium		
	Chromium		
	Copper		
	Lead		
	Iron		
	Manganese		
	Mercury		
	Nickel		
	Selenium		
	Zinc		
	Discharge volume	m^3/day	Daily when discharging

Note 1: In-field non-NATA accredited analysis permitted.

3.4 Ambient environmental quality monitoring

3.4.1 The Licensee shall undertake the monitoring in Table 3.4.1 according to the specifications in that table.

Table 3.4.1: Monitoring of ambient air quality

Monitoring point reference and location on Map of ambient emission monitoring sites	Parameter	Units[1]	Frequency[2]	Method
MUJ1- MUJ5 (Muja A-D, F) CPS1 (Roche Park)	Sulfur dioxide	ppb	Continuous (minimum 5 minute intervals)	AS 3580.4.1
CPS1 (Roche Park)	PM_{10}	µg/m^3		AS 3580.9.8
	$PM_{2.5}$			AS/NZS 3580.9.12

Note 1: All units are referenced to ambient conditions
Note 2: Intervals must be referenced by the end time of the interval with the first interval of a calendar day ending at 00:05 and the last interval ending at 24:00.

3.4.2 The Licensee shall ensure that the siting of ambient air monitoring equipment is in accordance with AS 3580.1.1.

3.4.3 The Licensee shall ensure that the monitoring equipment specified in condition 3.4.1 is operated and calibrated in accordance with the required methodology and is maintained so as to provide valid data for greater than 90% of the measurement intervals in every calendar month, and greater than 95% of the measurement intervals over any 12 consecutive calendar months.

3.4.4 The Licensee shall target ambient concentrations in air at or below the levels specified in Table 3.4.2.

Table 3.4.2: Ambient Air Quality Targets

Monitoring point reference and location on Map of ambient emission monitoring sites	Parameter	Target (including units)[1]	Averaging period[2]
MUJ1-MUJ5 (Muja A-D, F) and CPS1 (Roche Park)	Sulfur dioxide	200ppb	Continuous (1 hour average)

Note 1: All units are referenced to ambient conditions.
Note 2: Clock hour average. Averaging periods must be referenced by the end time of the averaging period with the first averaging period of a calendar day ending at 01:00am.

3.4.5 The Licensee shall take the specified management action in the case of an event in Table 3.4.3.

Table 3.4.3: Management actions

Monitoring point reference and location on Map of ambient emission monitoring sites	Event/ action reference	Event	Management action
MUJ1- MUJ5 (Muja A-D, F) and CPS1 (Roche Park)	EA1	The ambient monitoring data indicates an exceedance of ambient sulfur dioxide target specified in Table 3.4.2.	The Licensee shall investigate the cause of the exceedance within 2 usual working days of the event and provide a report to the CEO within 5 usual working days of the exceedance. The report shall contain a summary of: i. The date, time, location and length of the exceedance; ii. Operating conditions of the site for the 48hrs preceding the exceedance, including fuel consumption, load and coal sulphur content; iii. Any ambient monitoring data conducted by the Licensee for the 48hrs preceding the exceedance; iv. Any meteorological monitoring data conducted by the Licensee for the 48hrs preceding the exceedance; v. Any actions that the licensee has taken towards preventing, controlling or abating pollution or environmental harm; and vi. Any other factors relevant to the exceedance of the target.

3.4.6 The Licensee shall review their operations upon written notification from DWER of any ambient target exceedance within the Collie area, as represented in the map of ambient air emission monitoring sites operated and maintained by Collie airshed power generators. The Licensee shall provide a report within 5 usual working days containing a summary of:

(a) operating conditions of the site for the 48hrs preceding and following the exceedance, including fuel consumption, load and coal sulphur content;
(b) any ambient monitoring data conducted by the Licensee for the 48hrs preceding and following the exceedance;
(c) any meteorological monitoring data conducted by the Licensee for the 48hrs preceding and following the exceedance; and
(d) any actions that the licensee has taken towards preventing, controlling or abating pollution or environmental harm since receiving the report; and
(e) any other factors relevant to the exceedance of the target.

3.4.7 The Licensee shall undertake the monitoring in Tables 3.4.4, according to the specifications in that table.

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, MB7B, MB8 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		
MB7B	Standing water level	m(AHD)	Spot sample	Monthly
	pH	-		
	Electrical conductivity	µS/m		
	Volume of seepage recovered	m^3	Cumulative	

3.5 Meteorological monitoring

3.5.1 The Licensee shall undertake the meteorological monitoring in Table 3.5.1 according to the specifications in that table.

Table 3.5.1: Meteorological monitoring

Monitoring point reference and location on Map of ambient emission monitoring sites	Parameter	Units	Height	Method
MUJ1-MUJ5 (Muja A-D, F)	Wind speed	m/s	10 m	AS 3580.14 (deviations to be agreed by the Department)
	Wind direction	Degrees	10 m	
	Wind direction standard deviation	Degrees	10 m	
	Air temperature	^{O}C	2m	
	Relative humidity	%	2m	
	Solar radiation	W/m^2	Not specified	
CPS2 Roche Park	Wind speed	m/s	10 m	AS 3580.14 (deviations to be agreed by the Department)
	Wind direction	Degrees	10 m	
	Wind direction standard deviation	Degrees	10 m	
	Air temperature	^{O}C	2m	
	Relative humidity	%	2m	
	Solar radiation	W/m^2	Not specified	
CPS3 Collie Motorplex	Wind speed	m/s	30m	
	Gust speed	m/s		
	Wind direction	Degrees		
	Wind direction standard deviation	Degrees		
	Air temperature	^{O}C		
	Relative humidity	%		

3.5.2 The Licensee shall ensure that the monitoring equipment is operated and calibrated in accordance with the required methodology and is maintained so as to provide valid data for greater than 90% of the measurement intervals in every calendar month, and greater than 95% of the measurement intervals over any 12 consecutive calendar months.

4 Information

4.1 Records

4.1.1 All information and records required by the Licence shall:
- (a) be legible;
- (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  - (i) off-site environmental effects; or
  - (ii) matters which affect the condition of the land or waters.

4.1.2 The Licensee shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
- (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.

4.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

4.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

4.2 Reporting

4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report by 30 September in each year. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report

Condition or table (if relevant)	Parameter	Format or form
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
1.3.2	Annual water balance for the Ash Storage Dam	None specified
1.3.4	Volume of wastewater (kL) accepted onto the premises from external sources during the reporting period. Summarised in a monthly tabular format for each external source.	Table
Table 2.2.2	Summary of point source emission to air target exceedances	None specified
Table 3.2.1	Results of point source emission to air monitoring (stack tests)	
Table 3.2.1	Point source emission to air CEMS monitoring raw data	As condition 5.2.3
-	Quantity of fly ash and bottom ash removed from the Premises summarised in a tabular format for each calendar month	Table
Table 3.3.1	Weekly summary of stormwater discharge volumes and monitoring results	
Table 3.4.1	Monthly summary of ambient SO_2, PM_{10} and $PM_{2.5}$ monitoring results including the daily maximum 24 hour, 60 minute and 5 minute averages.	None specified
Table 3.4.2	Summary of ambient air quality SO_2 target exceedances	
Table 3.4.4	Ambient groundwater quality monitoring results	
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains:
- (a) any relevant process, production or operational data recorded under Condition 3.1.3; and
- (b) an assessment of the information contained within the report against previous monitoring results and Licence limits and/or targets.

4.2.3 The Licensee shall ensure that results from CEMS are made available on request as tabulated data and are reported in the Annual Environmental Report as time series graphs including:
- (a) times and dates;
- (b) unavailability of abatement;
- (c) target exceedances; and
- (d) an assessment of the information contained within the report against previous submissions and Licence limits and/or targets.

4.2.4 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements

Condition or table (if relevant)	Parameter	Averaging period	Reporting period	Reporting date (after end of the reporting period)	Format or form
Table 3.4.1	Sulfur dioxide	5 minute average	Monthly	Within 14 days	None specified
	PM_{10} and $PM_{2.5}$				
3.4.3	Sulfur dioxide data recovery (%)	Monthly			
Table 3.5.1	Wind speed	5 minute average			None specified.
	Wind direction				
	Air temperature				
	Wind direction standard deviation				
	Relative humidity				
	Solar radiation[2]				
3.5.2	Meteorological monitoring data recovery (%)	Monthly			
3.4.3 3.5.2	Calibration report	Not applicable			None specified.
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not applicable	Not Applicable	Within 14 days of the CEOs request	As received by the Licensee from third parties

Note 1: Forms are in Schedule 2.
Note 2: Solar radiation is not required for CPS3 (Collie Motorplex).

4.3 Notification

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements

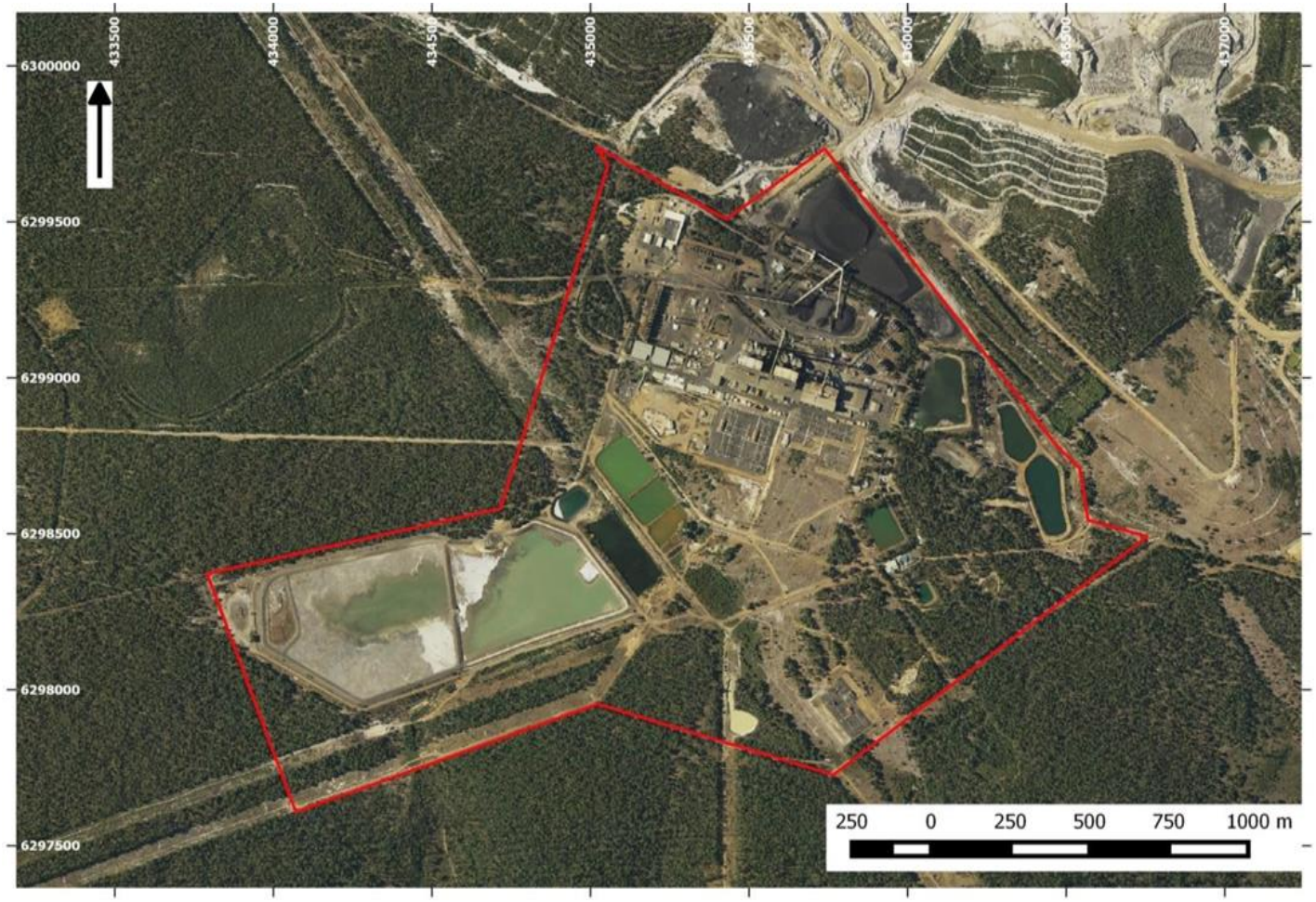
Condition or table (if relevant)	Parameter	Notification requirement[1]	Format or form
3.1.5	Calibration report	As soon as practicable.	None specified
Tables 2.2.2, 2.2.3	Exceedance of any descriptive or numerical target	Within 7 working days of becoming aware of the exceedance.	ET1
Table 3.4.2	Exceedance of ambient sulfur dioxide target for the site for any of the averaging periods	Within 48 hours of the ambient sulfur dioxide concentration target being exceeded	None specified.
		Within five usual working days.	A listing of sulfur dioxide emissions from each source listed in the Licence and located within the boundary of the licensed Premises, for the period which includes and extends one hour either side of the period in which the exceedance occurred.
			A listing of ambient sulfur dioxide data from each monitoring station, for the period which includes and extends one hour either side of the period in which the exceedance occurred.
			A listing of wind speed, wind direction and air temperature for the period which includes and extends one hour either side of the period in which the target exceedance in Table 3.8.2 occurred.

Note 1: Notification requirements in the licence shall not negate the requirement to comply with s72 of the Act.
Note 2: Forms are in Schedule 2

Schedule 1: Maps

Premises map

The Premises are shown in the map below. The red line depicts the Premises boundary.



Map of emission points and containment infrastructure

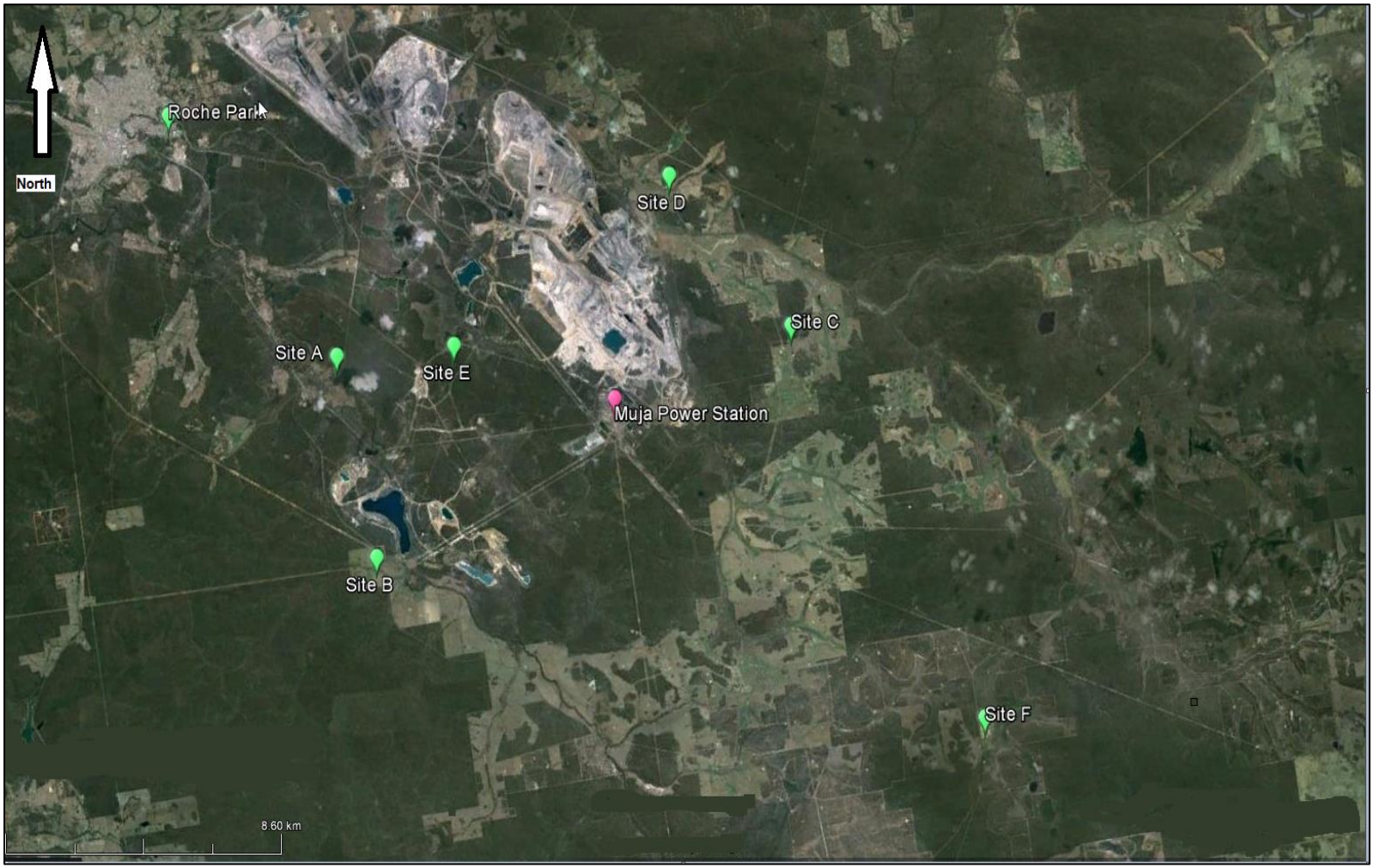
The locations of the emission points and containment infrastructure defined in Tables 1.3.1, 2.2.1 and 2.3.1 are shown below

Map of ambient groundwater monitoring locations

The locations of monitoring bores defined in Table 3.4.4 are shown below.

Map of ambient air quality monitoring sites

The locations of the Collie airshed power generators ambient air quality monitoring locations defined in Tables 3.4.1 and 3.5.1 are shown below



Schedule 2: Notification & Form

Licence: L4706/1972/17
Form: ET1
Name: Target exceedance

Licensee: Electricity Generation and Retail Corporation T/A Synergy
Period:

Form ET1: Target exceedances
Please provide an analysis of the target exceedance, including but not limited to: (a) the emission point (b) the date and time of the exceedance and period over which the exceedance occurred (c) the root cause analysis for the exceedances; (d) any common or contributory factors including but not limited to fuel, mass emissions, gas flow rates, inlet & exit temperature, abatement status; (e) a description of remedial measures taken or planned to be taken, including those taken to prevent recurrence of the exceedances; (f) complaints received that may have been caused by this exceedance; and (g) for those exceedances that may have caused complaints, meteorological details: temperature, wind speed and wind direction, humidity.