Government of Western Australia
Department of Water and Environmental Regulation

Amended Licence

Licence number	L6637/1995/15
Licence holder	Electricity Generation and Retail Corporation
Registered business address	Forrest Centre 219 St Georges Terrace PERTH WA 6000
DWER File Number	DER2015/000109-3
Duration	18/10/2014 to 17/10/2036
Date of amendment	13 May 2020
Premises details	Collie 'A' Power Station Boys Home Road PALMER WA 6225 Legal description - Being Part of Lot 3001 on Plan 51101 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	1.2 million tonnes of coal per annual period
Category 52: Electric power generation	340 MWe
Category 53: Flyash disposal	120,000 tonnes per annual period
Category 61: Liquid waste facility	1,862,000 tonnes per annual period

This licence is granted to the licence Holder, subject to the following conditions, on 13 May 2020 by:

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 works with the business owners, community, consultants, industry and other representatives 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 with 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: http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html

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.

Licence holders 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 the Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

Collie A Power Station (Collie A) is a 340MWe, single generation unit, coal fired thermal power station located approximately 10 km east of the town of Collie. The power station has been in operation since 1999 and is owned by Synergy. Electricity generated at this facility supplies customers via the South-West Interconnected System (SWIS).

Pre-crushed coal is delivered to Collie A via an overland conveyor from the Premier Coal Mine, approximately 6 km south east. Coal is transferred from the stockpiles to the Power Block where it is fed into a boiler with low Nitrogen oxide (NOx) burners. Coal is burnt in the boiler with the resultant heat being used to heat circulating water to generate steam. High pressure steam is then directed to a turbine hall to spin a single turbine which generates power. Steam exhausted from the turbine is cooled in a condenser and returned to the boiler for reuse.

The primary emissions within the exhaust gases include carbon monoxide (CO), carbon dioxide (CO_2), sulfur dioxide (SO_2), NOx and particulate matter with minor emissions of metals and organics. Waste water is treated on site and approximately 65% of the treated water is reused on site with the remainder being discharged via the 68 km underground ocean outfall pipeline north of the Leschenault Inlet. The water is discharged through a diffuser at a depth of 10 m approximately 710 m offshore.

The fly ash is slurried with water and discharged to the Ash Storage Dam on the premises. Bottom ash is collected and intermittently trucked to the Ash Storage Dam. Decant water from the Ash Storage Dam is collected in a lined pond and returned to the power station for reuse or treatment and disposal.

Collie A has been assessed under part IV of the *Environmental Protection Act 1986* and is subject to conditions of Ministerial Statements 146 and 394. Ministerial Statement conditions require the development and implementation of an Environmental Management Plan which outlines monitoring, management and auditing requirements for atmospheric, noise and greenhouse gas emissions, vegetation protection, water supply, social amenity and solid and liquid waste discharges.

The licences and works approvals issued for the Premises since 10/10/2014 are:

Instrument amendment log		
Instrument	**Issued**	**Description**
L6637/1995/15	10/10/2014	DER initiated amendment to convert licence to new REFIRE format, authorise operation of Ash Storage Dam cell 1A embankment raise and incorporate requirements of Appeal Determination 2633/11.
L6637/1995/15	29/04/2016	Department initiated amendment to extend the duration of licence.
L6637/1995/15	02/06/2016	Licensee initiated amendment to revise licence limits for discharge to surface water via the ocean outfall.
L6637/1995/15	06/01/2017	Amendment Notice 1: Registered business address changed from Australia Place, 11th Floor, 15-17 William Street, Perth WA 6000 to Forrest Centre, 219 St Georges Terrace, Perth WA 6000.
L6637/1995/15	26/10/2017	Amendment Notice 2: Licence Holder initiated amendment to construct a 3 m embankment raise on Ash Storage Dam Cell 2B and to increase the approved throughput capacity for the disposal of flyash from 95,000 tonnes per annum to 120,000 tonnes per annum.
L6637/1995/15	30/04/2018	Amendment Notice 3: Licence Holder initiated amendment to allow the burial of up to 20, 000 tonnes of fly ash from Bluewaters Power station within the Ash storage cell 2A.
L6637/1995/15	18/01/2019	Amendment Notice 4: Licence Holder applied to have the following administrative amendments made to the Licence: • Table 1.3.1 – Containment infrastructure for the Fly ash and bottom ash dam (Reference point C2) to include sludge from the water treatment and saline collection processes, • Table 3.3.1 – The units for dissolved oxygen should be in mg/L, rather than percentage.
L6637/1995/15	29/04/2019	Amendment Notice 4 Licence Holder initiated amendment to remove the Licence Condition 3.2.2 was amended by the removal of text *'sampling location'*.
L6637/1995/15	21/05/2019	Amendment Notice 4 was amended by the removal of entire condition 3.2.2 initiated by the Licence Holder.
L6637/1995/15	13/05/2020	DWER initiated revision of the licence to amalgamate previous issued amendment notices between 2016 to 2019.

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 (AACR)' means a report submitted in a format approved by the CEO (relevant 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' a 12 month period commencing from 1 July to 30 June of the same Calendar year;

'ANCOLD' means Australian National Committee on Large Dams;

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

'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' CEO for the purposes of notification means:

Director General
Department Administering the *Environmental Protection Act 1986*
Locked Bag 10
JOONDALUP DC WA 6919
Email: info@dwer.wa.gov.au

'code of practice for the storage and handling of dangerous goods' means document titled "Storage and handling of dangerous goods - Code of Practice" published by the Department of Mines and Petroleum, as amended from time to time;

'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;

'Collie Power Station Ash Dam Environmental Management Plan' means the document titled; "Verve Energy - Collie Power Station Ash Dam Environmental Management Plan", GHD Australia Pty Ltd, March 2013 and its subsequent approved versions;

'dangerous goods' has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*;

'environmentally hazardous material' means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum;

'FAD' means fly ash dam;

'freeboard' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'fugitive emissions' means all emissions not arising from point sources identified in Section 2.2;

'Licence Holder' refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.

'Noise Regulations' *means Environmental Protection (Noise) Regulations 1997 (WA);*

'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 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;

'PDWSA' means Public Drinking Water Source Area, as proclaimed under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* or the *Country Areas Water Supply Act 1947*;

'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' refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map in Schedule 1 to this 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;

'RL' means Reduced level, a relative measurement of the vertical distance between an assumed survey height reference point, and other survey data points

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'Schedule 3' means Schedule 3 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;

'triennial' means the inclusive period from 1 July 2014 until 30 June 2017 and each subsequent inclusive three year period;

'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 7D' means the promulgated Test Method 7D – Determination of Nitrogen Oxide Emissions from Stationary Sources (Alkaline-Permanganate/Ion Chromatographic Method);

'USEPA Method 7E' means the promulgated Test Method 7E – Determination of Nitrogen Oxides 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;

'USEPA Method 201A' means the promulgated Test Method 201A – Determination of PM_{10} and $PM_{2.5}$ Emissions from Stationary Sources (Constant Sampling Rate Procedure); and

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

'VWP' means Vibrating Wire Piezometers, an instrument to measure water pressure within the pore spaces in soils and rocks.

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 Licence Holder 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 Licence Holder 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 Licence Holder 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 Licence Holder 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	Containment cell or dam number(s)	Material	Infrastructure and other requirements
C1	Ash Storage Dam - Cell 1 (1A & 1B)	Fly ash and bottom ash	Lined with low permeability clay
C2	Ash Storage Dam - Cell 2 (2A, 2B & 2C)	Fly ash, bottom ash	Lined with low permeability clay
		Sludge from the power station water treatment and saline collection processes.	Compliance with Licence Condition 5.1.8 must be achieved prior to deposition of any wastewater treatment sludge into Cell 2.
C3	Ash Runoff Dam	Decant water, potentially contaminated stormwater, seepage and supernatant	Lined with 1mm HDPE to achieve a permeability of at least $<10^{-9}$ m/s or equivalent
C4	Saline Water Dam	Potentially contaminated stormwater, Ash Dam return water and power station waste water	Lined with clay and 1mm HDPE to achieve a permeability of at least $<10^{-9}$ m/s or equivalent
C5	Coal Stockyard Collection Pond	Stormwater/drainage from the coal stockyard	Lined with low permeability clay
C6	Coal Stockyard Runoff Pond	Overflow from the Coal Stockyard Collection Pond	Lined with 1mm HDPE liner to achieve a permeability of at least $<10^{-9}$ m/s or equivalent
C7	Coal Stockyard Surge Pond	Overflow from the Coal Stockyard Runoff Pond	In-situ soils
C8	Coal Stockyard Storage Area	Pre-crushed coal	Lined with low permeability clay

1.3.2 The Licence Holder shall manage containment infrastructure C3, C4, C5 and C6 such that a minimum top of embankment freeboard of 300mm is maintained at all times.

1.3.3 The Licence Holder shall manage the Ash Storage Dam (C1 and C2) such that:
(a) minimum top of embankment freeboard of 300mm is maintained;
(b) seepage collection and recovery system is maintained and used to capture seepage from the Ash Storage Dam;
(c) collected seepage is returned to the Ash Runoff Dam or process; and
(d) the supernatant pond on the Ash Storage Dam is minimised as far as possible.

1.3.4 The Licence Holder shall undertake an annual water balance for the Ash Storage Dam. The water balance shall as a minimum consider the following:
(a) site rainfall;
(b) evaporation;
(c) decant water recovery volumes;
(d) seepage recovery volumes; and
(e) volumes of flyash deposited

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

1.3.6 The Licence Holder shall undertake a Triennial Hydrogeological Assessment and Monitoring Review of the Ash Storage Dam (C1 and C2) to evaluate the performance of the seepage recovery system and assess the environmental impact of the facility on surface and groundwater resources. The first review shall be for the period 1 July 2014- 30 June 2017. The review shall:
(a) be undertaken in accordance with Operational Policy No. 5.12 – Hydrogeological reporting associated with a groundwater well licence, Department of Water, 2009; and
(b) be undertaken by a suitably qualified groundwater professional.

1.3.7 The Licence Holder shall only allow waste to be accepted on to the Premises if:
(a) it is of a type listed in Table 1.3.7; and
(b) the quantity accepted is below any limit listed in Table 1.3.7; and
(c) it meets any process requirements listed in Table 1.3.7.

Table 1.3.7: Waste acceptance

Waste	Quantity Limit	Process requirements
Wastewater from Bluewaters power station, Muja power station, the CWRF, and Colltech	None specified	Wastewater from Bluewaters power station, Muja power station, the CWRF, and Colltech may be accepted for final disposal via ocean outfall pipeline.
Flyash from the Bluewaters Power Station	20,000 tonnes per annum	Accepted into Cell 2A of the Ash Storage Dam at no less than 15%v/w moisture content at the time of receipt. Transport, acceptance and deposition of flyash in accordance with the Collie Power Station Fly Ash Dam Cell 2 Addendum to Operating Manual - Revision 1 (December 2015).

1.3.8 The Licence Holder shall cease deposition of flyash into Cell 2A in the event of dust emissions being visible above the crest of the Ash Storage Dam Cell 2A embankment.

2 Emissions

2.1 General

2.1.1 The Licence Holder shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Point source emissions to air

2.2.1 The Licence Holder 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 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	**Emission Point and source, including abatement**	**Emission point height (m)**
A1	Collie A Main Stack - coal fired boiler via Electrostatic Precipitator	170

2.2.2 The Licence Holder shall not cause or allow point source emissions to air greater than the limits listed in Table 2.2.2.

Tale 2.2.2: Point source emission limits to air			
Emission point reference	**Parameter**	**Limit (including units)[1,2,3]**	**Averaging period**
A1	PM	80 mg/m^3	Stack test (Minimum 60 minute average)
	Oxides of nitrogen	800 mg/ m^3	Stack test (Minimum 30 minute average)

Note 1: All units are referenced to STP dry
Note 2: All units are referenced to 7% O_2.
Note 3: Emission limits are not applicable during start-up and shut-down periods of operation.

2.3 Point source emissions to surface water

2.3.1 The Licence Holder 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	**Description**	**Source including abatement**
W1	Collie Power Station marine outfall	Collie power station saline water treatment plant

2.3.2 The Licence Holder shall not cause or allow point source emissions to surface water that do not meet the limits listed in Table 2.3.2.

Table 2.3.2: Point source emission limits to surface water

Emission point reference	Monitoring point reference	Parameter	Limit (including units)	Averaging period
W1	M1 – Collie power station saline water treatment plant discharge tank outlet	pH	6.5-8.5 6.0-8.5 (during maintenance periods)	Spot sample
		Total dissolved solids	<32 000 mg/L	
		Total suspended solids	<150 mg/L	
		Dissolved oxygen	>5.0 mg/L	
		Iron	<5.0 mg/L	
		Manganese	<5.0 mg/L	
		Arsenic	<0.1 mg/L	
		Cadmium	<0.02 mg/L	
		Chromium (total)	<0.1 mg/L	
		Cobalt	<0.23 mg/L	
		Copper	<0.25 mg/L	
		Lead	<0.1 mg/L	
		Mercury	<0.002 mg/L	
		Nickel	<0.3 mg/L	
		Vanadium	<1.0 mg/L	
		Zinc	<1.6 mg/L	
		Phosphate (as phosphorous)	<17.6 kilograms	Daily
		Nitrate (as nitrogen)	<44 kilograms	

2.3.3 The Licence Holder shall discharge saline water from W1 within a horizontal radius of up to six metres from the diffuser outfall and extending vertically through the water column.

2.3.4 The Licence Holder shall only discharge saline water from W1 to the marine environment that does not cause visible floating oil, grease, scum, litter or other objectionable matter.

3 Monitoring

3.1 General monitoring

3.1.1 The licence Holder 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;
(d) all sediment sampling is conducted in accordance with AS/NZS 5667.12; and
(e) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

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

3.1.3 The Licence Holder shall record production or throughput data and any other process parameters relevant to any monitoring undertaken.

3.1.4 The Licence Holder 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 Licence Holder 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 Licence Holder 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	Reporting Units[1, 3]	Averaging period	Frequency[2]	Method
A1	PM	mg/m^3	Stack Test (Minimum 60 Minute average)	Quarterly until CEMS are installed	USEPA Method 5 or 17
	Nitrogen oxides		Stack Test (Minimum 30 Minute average)		USEPA Method 7D or 7E
	Sulfur dioxide		Stack Test (Minimum 30 Minute average)		USEPA Method 6 or 6C

Table 3.2.1: Monitoring of point source emissions to air					
Emission point reference	**Parameter**	**Reporting Units[1, 3]**	**Averaging period**	**Frequency[2]**	**Method**
	Total Volatile Organic Compounds		Stack Test (Minimum 30 Minute average)	Annually	USEPA Method 18
	Benzene				
	Carbon monoxide		Stack Test (Minimum 30 Minute average)		USEPA Method 10
	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)		Laser diffraction of sample collected via 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% O2.

3.2.2 The Licence Holder shall ensure that all non-continuous sampling and analysis undertaken pursuant to condition 3.2.1 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

3.3 Monitoring of point source emissions to surface water

3.3.1 The Licence Holder 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	**Monitoring point reference and location on Map of Monitoring points**	**Parameter**	**Units**	**Frequency**
W1	M1 - Collie power station saline water treatment plant discharge tank outlet	Discharge volume	m^3	Continuously when flowing (reported as weekly averages)
		Turbidity	NTU	
		Total dissolved solids (calculated from electrical conductivity)	mg/L	
		Dissolved oxygen	mg/L	
		pH	-	Weekly
		Temperature	°C	
		Total suspended solids	mg/L	
		Phosphate-phosphorous, Nitrate-nitrogen, Total Petroleum Hydrocarbons	mg/L	Monthly

Table 3.3.1: Monitoring of point source emissions to surface water				
Emission point reference	**Monitoring point reference and location on Map of Monitoring points**	**Parameter**	**Units**	**Frequency**
		sodium, potassium, calcium, magnesium, iron, manganese, chloride, sulphate, bicarbonate, silica, arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, zinc	mg/L	Quarterly

3.4 Process monitoring

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

Table 3.4.1: Process monitoring					
Monitoring point reference	**Process description**	**Parameter**	**Units**	**Frequency**	**Method**
PM1	PM1 – Ash Storage Dam Leachate Well	pH	-	Quarterly	None specified
		Total dissolved solids (calculated from Electrical conductivity), total suspended solids, chloride, sulphate	mg/L		
PM1	PM1 – Ash Storage Dam Leachate Well	Calcium, carbonate bicarbonate, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, fluoride, lead, iron, magnesium, manganese, mercury, molybdenum, nickel, selenium, strontium, vanadium, zinc	mg/L	Annually	None specified

3.5 Ambient environmental quality monitoring

3.5.1 The Licence Holder 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 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.

3.5.2 The Licence Holder shall undertake the monitoring in Tables 3.5.2, 3.5.3, and 3.5.4 and 3.5.5, according to the specifications in those tables.

Table 3.5.2: Monitoring of ambient marine water quality

Monitoring point reference and location on Map of monitoring locations	Parameter	Units	Averaging period	Frequency [1,2]
WS01-WS04, WP01, WP07	pH	-	Spot sample	Annually
	Temperature	°C		
	Total dissolved solids, total suspended solids, dissolved oxygen, bicarbonate	mg/L		
	Arsenic	µg/L		
	Cadmium			
	Chromium			
	Copper			
	Lead			
	Mercury			
	Vanadium			
	Zinc			

Note 1: Annual monitoring is to be undertaken in November
Note 2: Preferentially sampling shall occur 2 to 7 days after quarterly monitoring is conducted in accordance with Table 3.3.1.

Table 3.5.3: Monitoring of marine biota (mussels)

Monitoring point reference and location on Map of monitoring locations	Parameter	Units	Averaging period	Frequency[1]
WP01, WP03-WP04, WP07	Arsenic, cadmium, chromium, copper, lead, mercury, vanadium, zinc	mg/kg	Spot sample	Annually

Note 1: Annual monitoring is to be undertaken in November
Note 2: Mussels are to be deployed at the monitoring locations for a period of six weeks prior to undertaking the monitoring.

Table 3.5.4: Monitoring of marine sediment quality

Monitoring point reference and location on Map of monitoring locations	Parameter	Units	Averaging period	Frequency[1]
WP01, WP03-WP04, WP07	Arsenic, cadmium, chromium, copper, lead, mercury, vanadium, zinc	mg/kg	Spot sample	Annually

Note 1: Annual monitoring is to be undertaken in November

Table 3.5.5: Monitoring of ambient groundwater quality				
Monitoring point reference and location on Map of monitoring locations	**Parameter[1]**	**Units**	**Averaging period**	**Frequency**
MP3-MP12, MP14, MP16-20	Standing water level	m(AHD)	Spot sample	Quarterly
	pH	---		
	Total dissolved solids (calculated from Electrical conductivity), chloride, sulphate	mg/L		
MP17-MP20	Aluminium, iron, manganese,			
	Arsenic, selenium			Annually
MP7-12, MP14, MP16MP20	Potassium, calcium, magnesium, carbonate, bicarbonate, cadmium, chromium, copper, lead, mercury, nickel, zinc			
MP7-12, MP14, MP16	Aluminium, barium, beryllium, boron, bromide, cobalt, fluoride, iron , manganese, nitrate, nitrite, strontium			

Note 1: Standing water level shall be measured prior to sampling each groundwater monitoring location.

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 Licence Holder 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 Licence Holder 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 Licence Holder 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 Licence Holder 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[1]
-	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
1.3.4	Annual Ash Storage Dam water balance	
1.3.5	Internal compliance audit of the Collie Power Station Ash Dam Environmental Management Plan	
Tables 2.2.2, 2.3.2	Summary of Limit exceedances	
Table 3.2.1	Results of point source emission to air monitoring	
Table 3.3.1	Results of point source emission to surface water monitoring	
Table 3.4.1	Results of process monitoring	
Table 3.5.2	Results of ambient marine water quality monitoring	
Table 3.5.3, Table 3.5.4	Results of ambient marine biota and sediment monitoring	
Table 3.5.5	Results of ambient groundwater quality monitoring	
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 3

4.2.2 The Licence Holder 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 Licence Holder shall submit the information in Table 4.2.3 to the CEO according to the specifications in that table.

Table 4.2.3: 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[1]**
1.3.6	Triennial Hydrogeological Assessment and Monitoring Review	-	Triennially (commencing July 2014- 30 June 2017)	30 September	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 3

4.3 Notification

4.3.1 The Licence Holder 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[2]**
Tables 2.2.2, 2.3.2	Breach of any limit specified in the Licence	Part A: As soon as practicable on becoming aware of the incident but no later than 5pm of the next usual working day. Part B: Within 7 working days of becoming aware of the exceedance.	N1
3.1.5	Calibration report	As soon as practicable.	None specified

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 3

5 Works

5.1 Ash Storage Dam Embankment Raise (231 mAHD)

5.1.1 The Licence Holder must install and undertake the Works for the infrastructure:
(a) specified in Column 1 of Table 5.1.1; and
(b) to the requirements specified in Column 2 of Table 5.1.1.

Table 5.1.1: Infrastructure requirements table	
Column 1	**Colum 2**
Infrastructure	**Requirements**
Ash Storage Dam - Cell 2B embankment raise to 231 mAHD	Constructed in accordance with the relevant parts of: • GHD (April 2013), TW Power Services Pty Ltd Collie 'A' Power Station – Cell 2B Embankment Raise and Category 53 Capacity Increase Licence Amendment Supporting Document. • GHD (January 2013), Transfield Worley Power Services Cell 2 Design and Tender: Additional Geotechnical Investigation. • GHD (May 2017), TW Power Services Pty Ltd Collie Cell 2B Embankment Raise Design Report for Regulator. • Department of Mines and Petroleum (2013), Tailings storage facilities in Western Australia – code of practice. • ANCOLD (May 2012), Guidelines on Tailings Dams – Planning, Design, Construction, Operation and Closure.
Ash deposition lines	Multiple spigot discharge outlets

5.1.2 Subject to Condition 5.1.1, within 30 days after completing construction of the works specified in Column 1 of Table 5.1.1, the Licence Holder must provide to the CEO certification from a suitably qualified engineer or geotechnical specialist confirming that the infrastructure specified in Column 1 of Table 5.1.1 has been constructed with no material defects and to the requirements specified in Column 2 of Table 5.1.1.

5.1.3 Where a departure from the requirements specified in Column 2 of Table 5.1.1 occurs, the Licence Holder must provide to the CEO a description of, and explanation for, the departure along with the certification required by Condition 5.1.2.

5.1.4 Within 60 days after completing construction of the works specified in Colum 1 of Table 5.1.1, the Licence Holder must provide to the CEO an updated Operating Manual for Cell 2 of the Ash Storage Dam.

5.1.5 Within 60 days after completing construction of the works specified in Column 1 of Table 5.1.1, the Licence Holder must provide to the CEO an Emergency Response Plan and Trigger Action Response Plan for the Ash Storage Dam. The Emergency Response Plan must include an updated dam break study based on 0.5 m surface contours and assess the impact of a Probable Maximum Flood event.

5.1.6 Within 120 days after completing construction of works specified in Column 1 of Table 5.1.1, the Licence Holder must provide to the CEO an independent review of the design, construction, and operation of Cell 2 of the Ash Storage Dam, including the Works specified in Column 1 of Table 5.1.1. The review must be carried out by a suitably qualified engineer or geotechnical specialist in accordance with the relevant parts of ANCOLD (May 2012), Guidelines on Tailings Dams – Planning, Design, Construction, Operation and Closure; and Department of Mines and Petroleum (2013), Tailings storage facilities in Western Australia – code of practice.

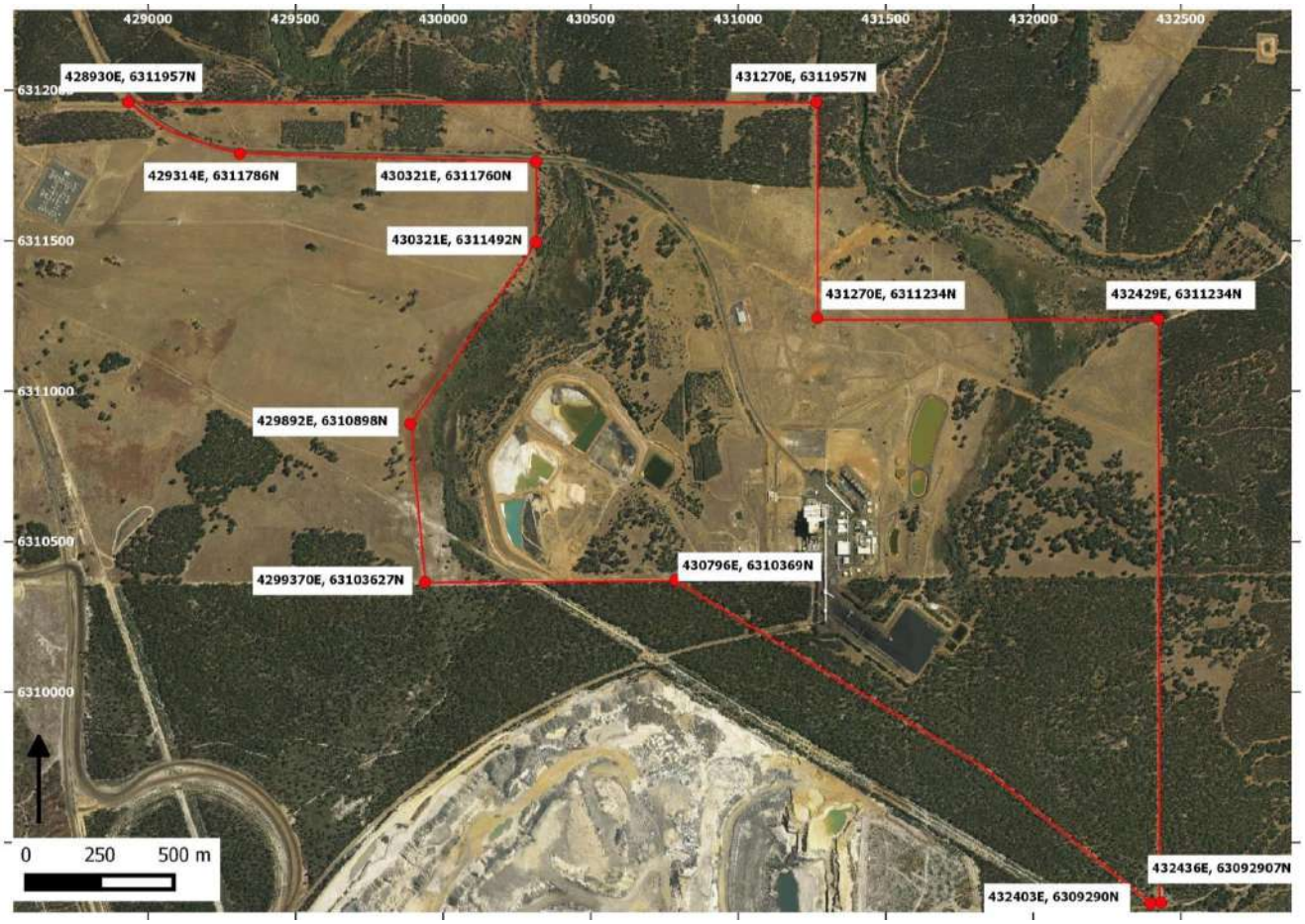
5.1.7 Within twelve months after completing construction of the works specified in Column 1 of Table 5.1.1 and annually thereafter, the Licence Holder must provide to the CEO an audit of Cell 2 of the Ash Storage Dam. The audit must be carried out by a suitably qualified engineer or geotechnical specialist in accordance with Department of Mines and Petroleum (November 2015), Tailings dam audit – guide.

5.1.8 The Licence Holder must carry out a review of the design, construction, and operation of Cell 2 of the Ash Storage Dam prior to disposing of sludge from the water treatment and saline collection processes into the FAD. The review must be carried out by a suitably qualified engineer or geotechnical specialist in accordance with the relevant parts of ANCOLD (May 2012), Guidelines on Tailings Dams – Planning, Design, Construction, Operation and Closure; and Department of Mines and Petroleum (2013), Talings storage facilities in Western Australia – code of practice.

Schedule 1: Maps

Premises map

The Premises are shown in the map below. The red line depicts the premises boundary. The premises excludes the Flyash Australia Operation (L7833/2002) located within the area described in the adjacent table.

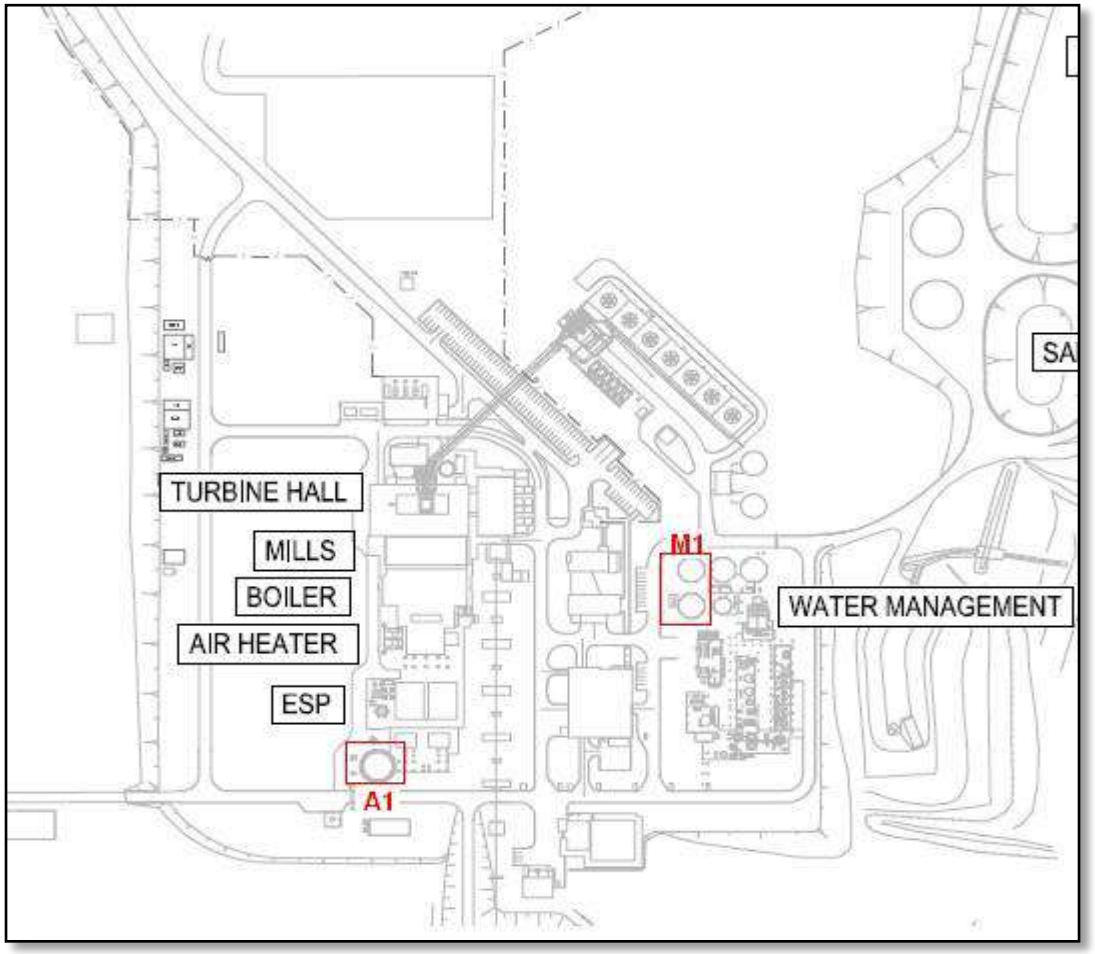


Flyash Australia Premises Boundary	
Easting	*Northing*
431203	6310517
431212	6310517
431199	6310493
431211	6310495
431199	6310479
431203	6310465
431211	6310465

Map of emission points and monitoring locations

The locations of the emission points and monitoring locations defined in Tables 2.2.1, 2.3.1, 3.2.1, 3.3.1, 3.4.1, 3.5.1, 3.5.2, 3.5.3 and 3.5.4 are shown below.

Collie A main stack and surface water discharge monitoring locations



Coal Stockyard monitoring locations

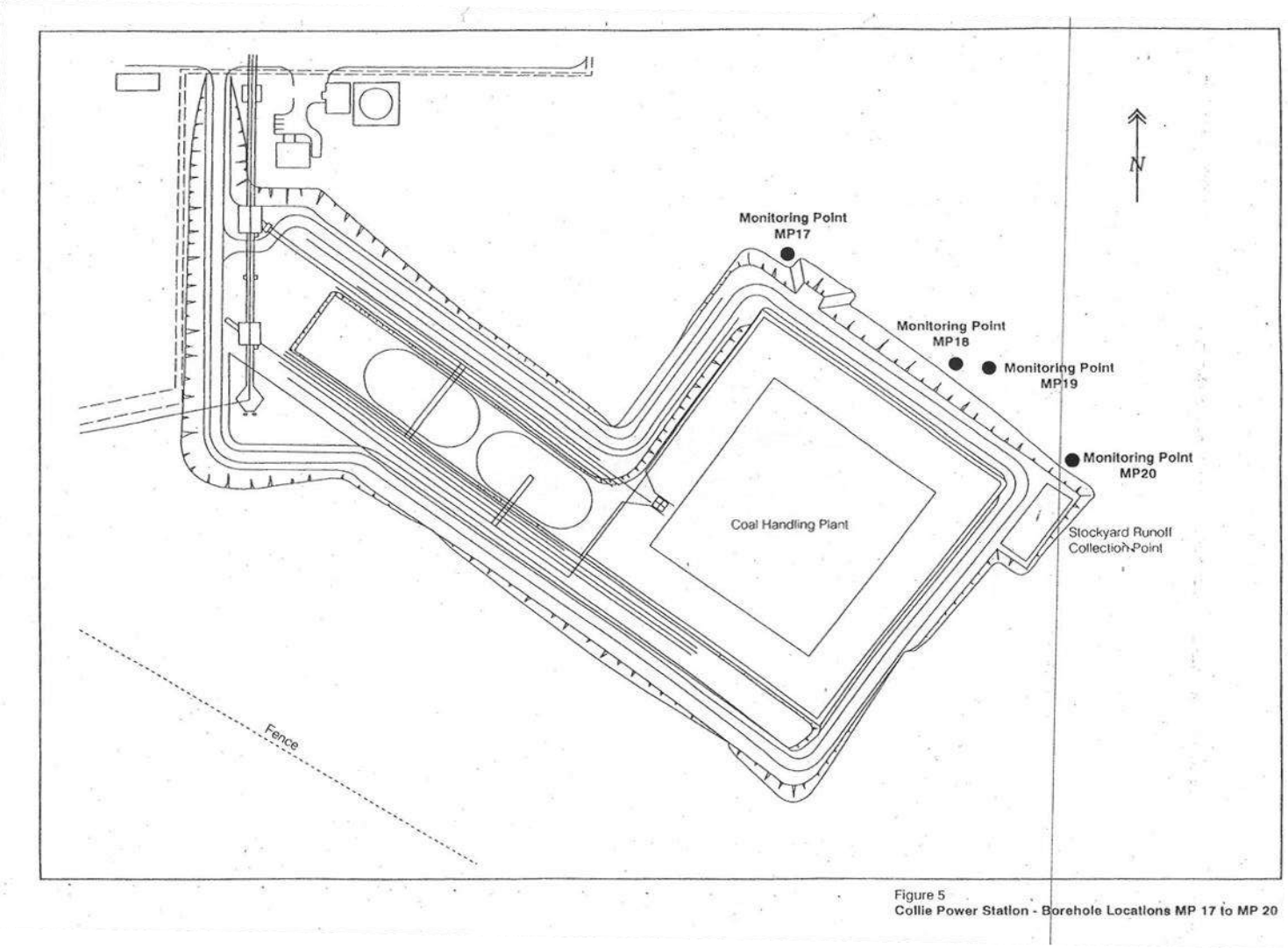


Figure 5
Collie Power Station - Borehole Locations MP 17 to MP 20

Ash Storage Dam monitoring locations

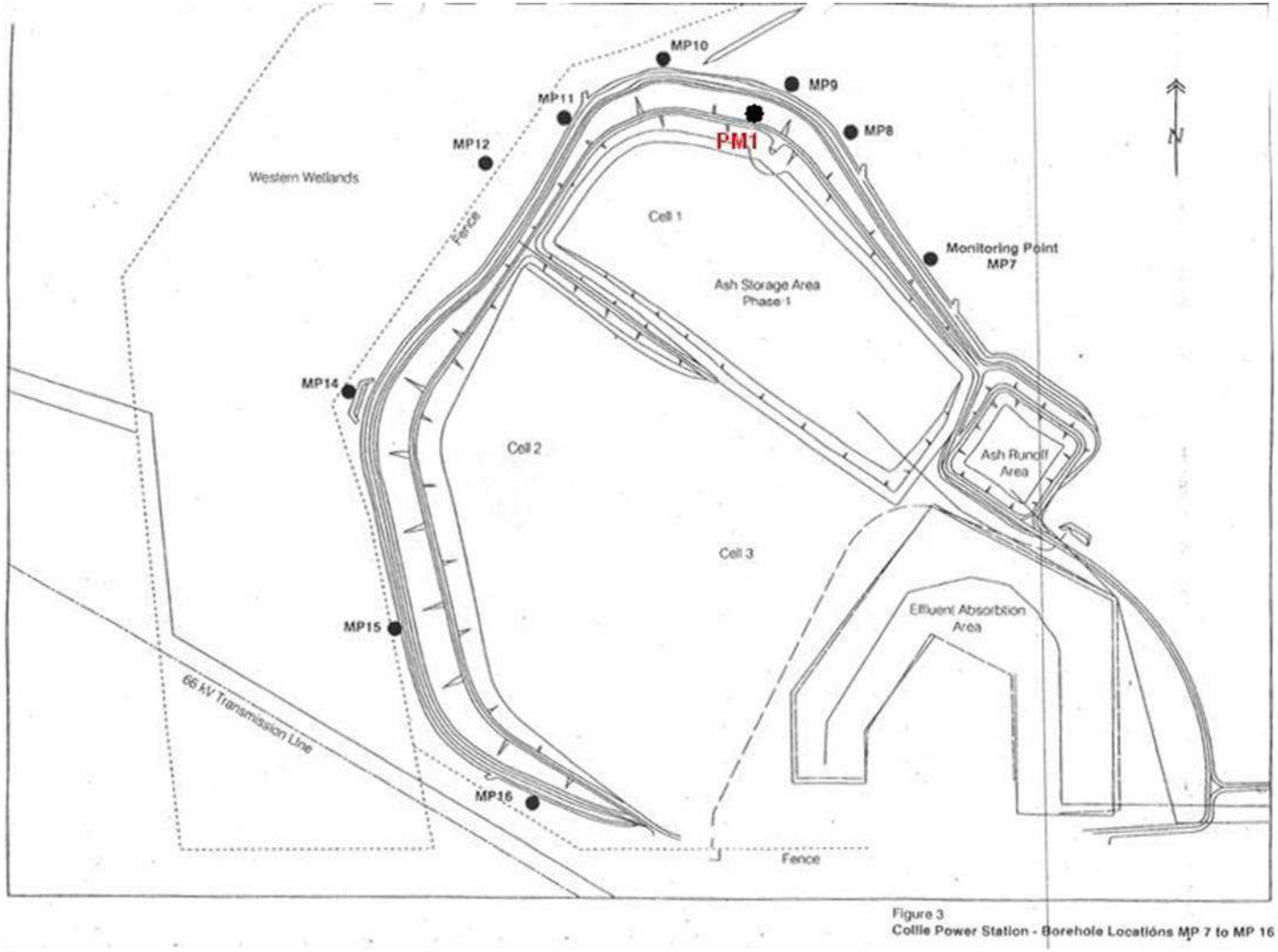


Figure 3
Collie Power Station - Borehole Locations MP 7 to MP 16

Saline Water Dam monitoring locations

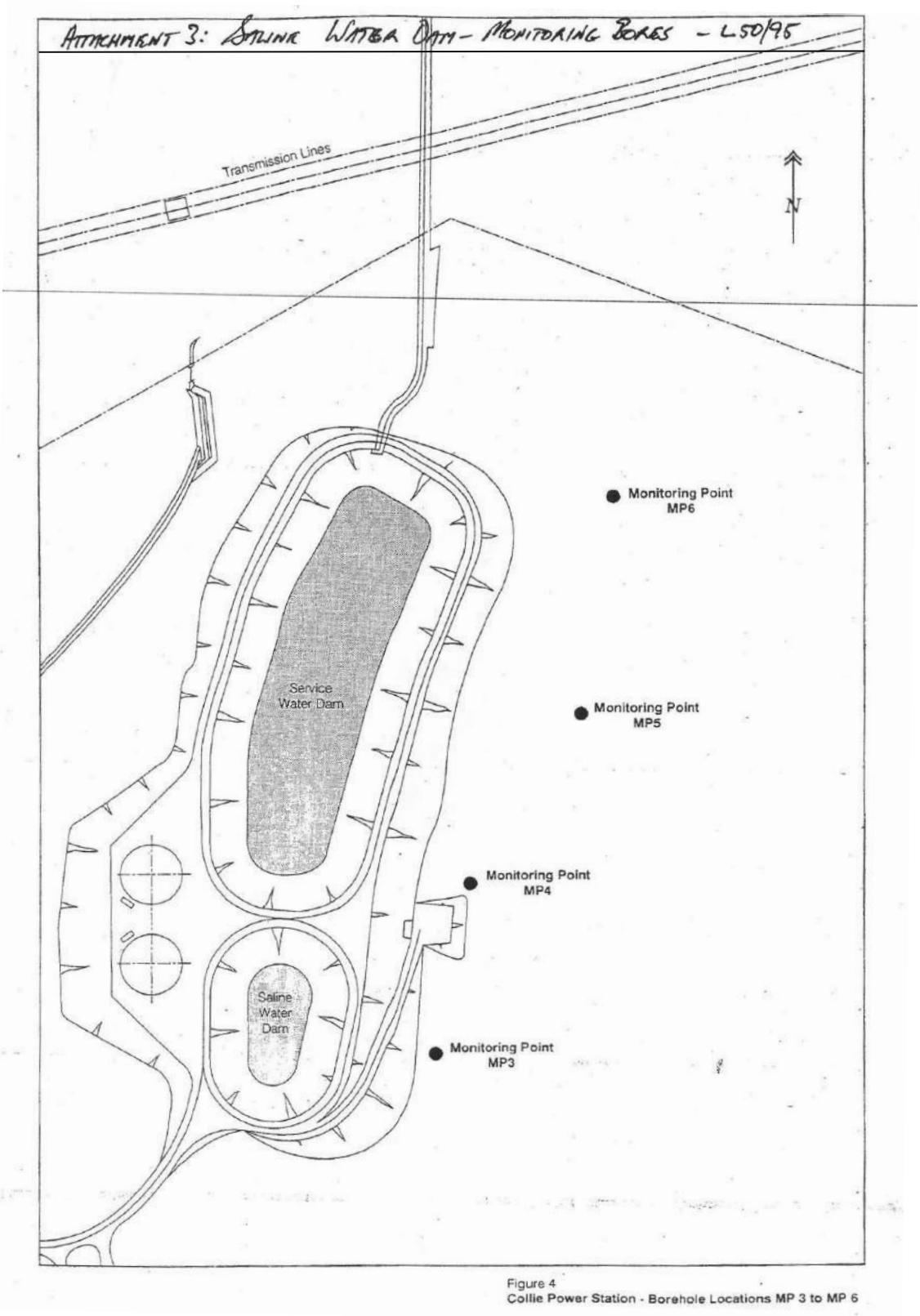
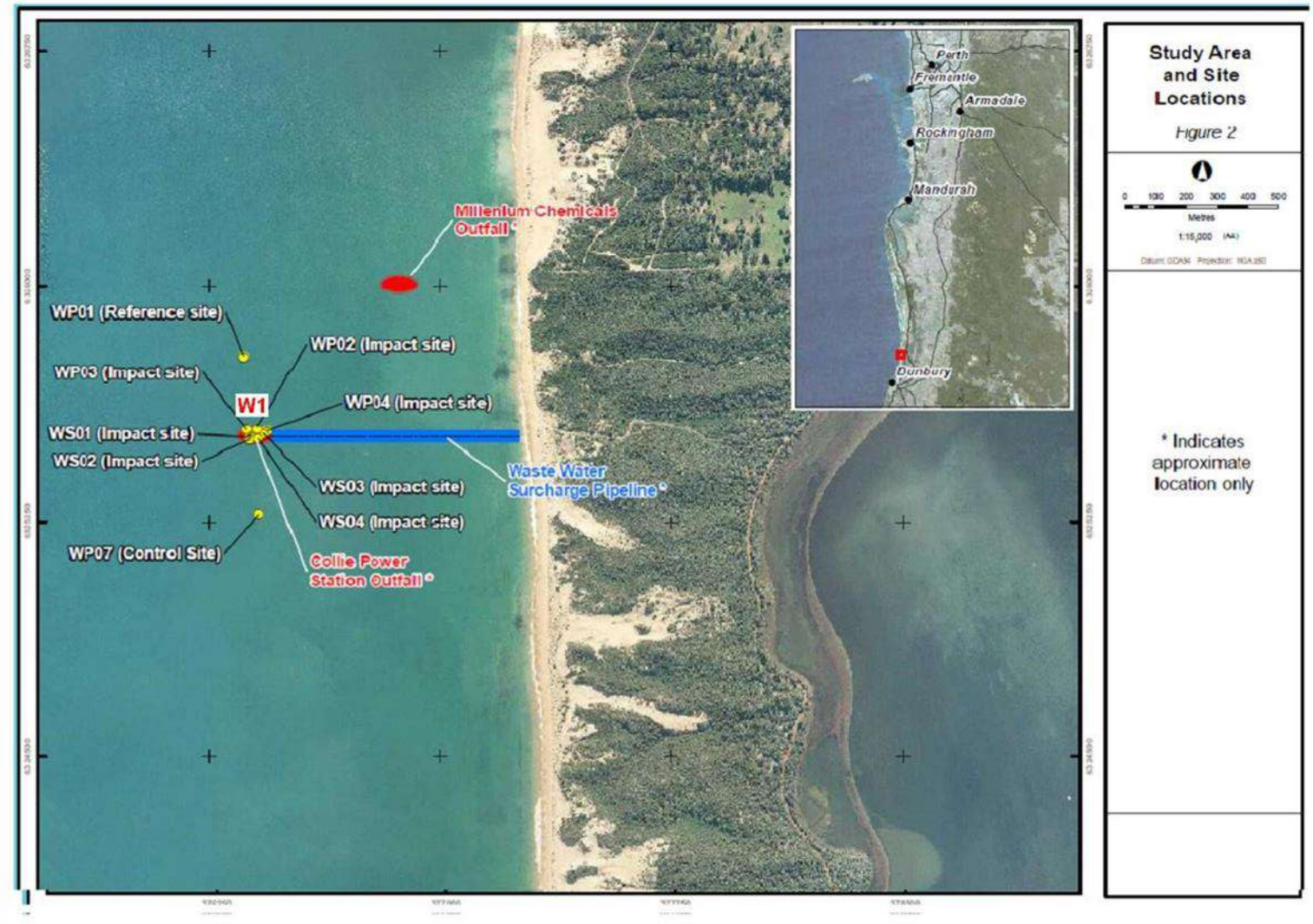


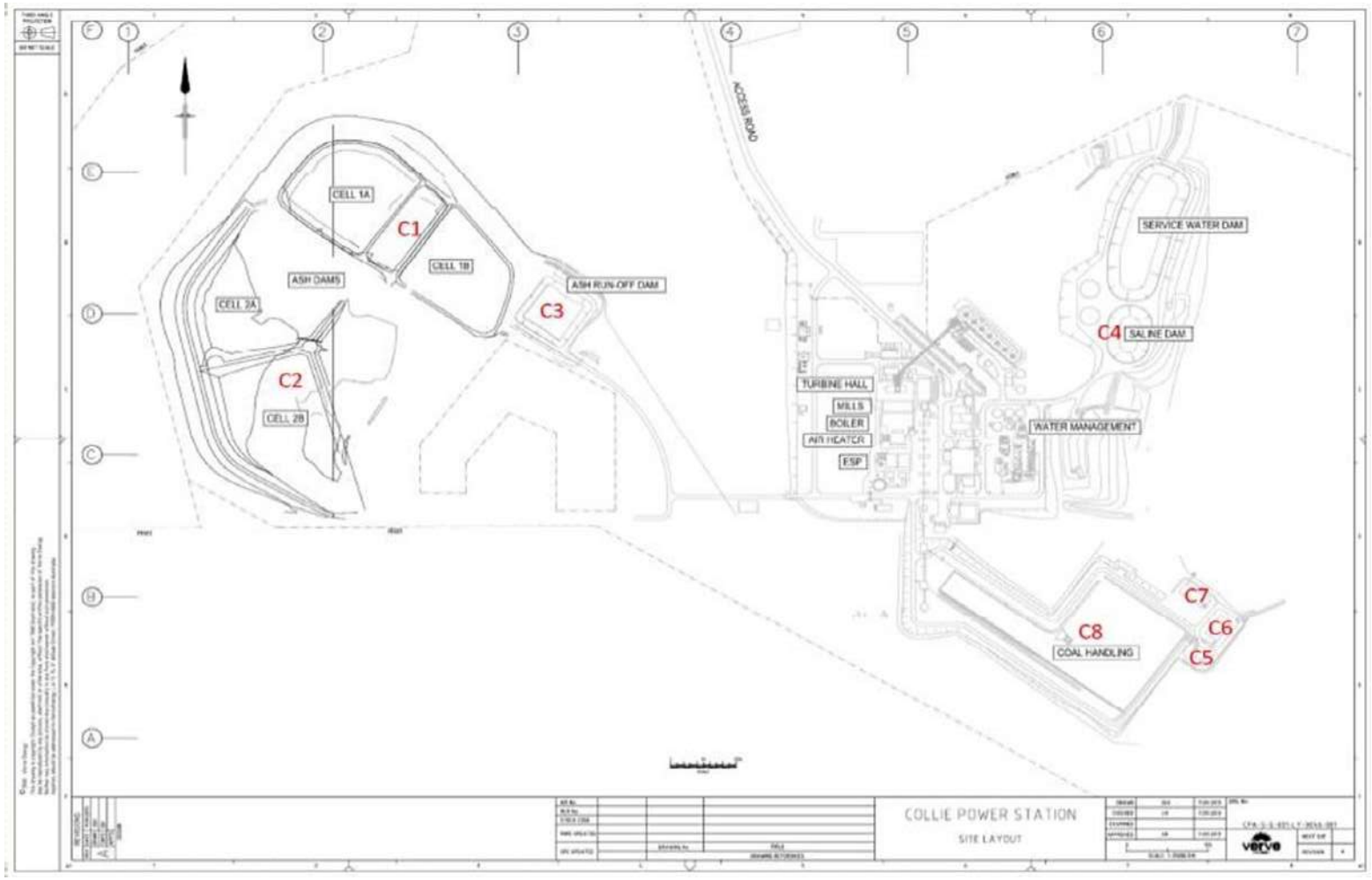
Figure 4
Collie Power Station - Borehole Locations MP 3 to MP 6

Marine discharge emission and monitoring locations



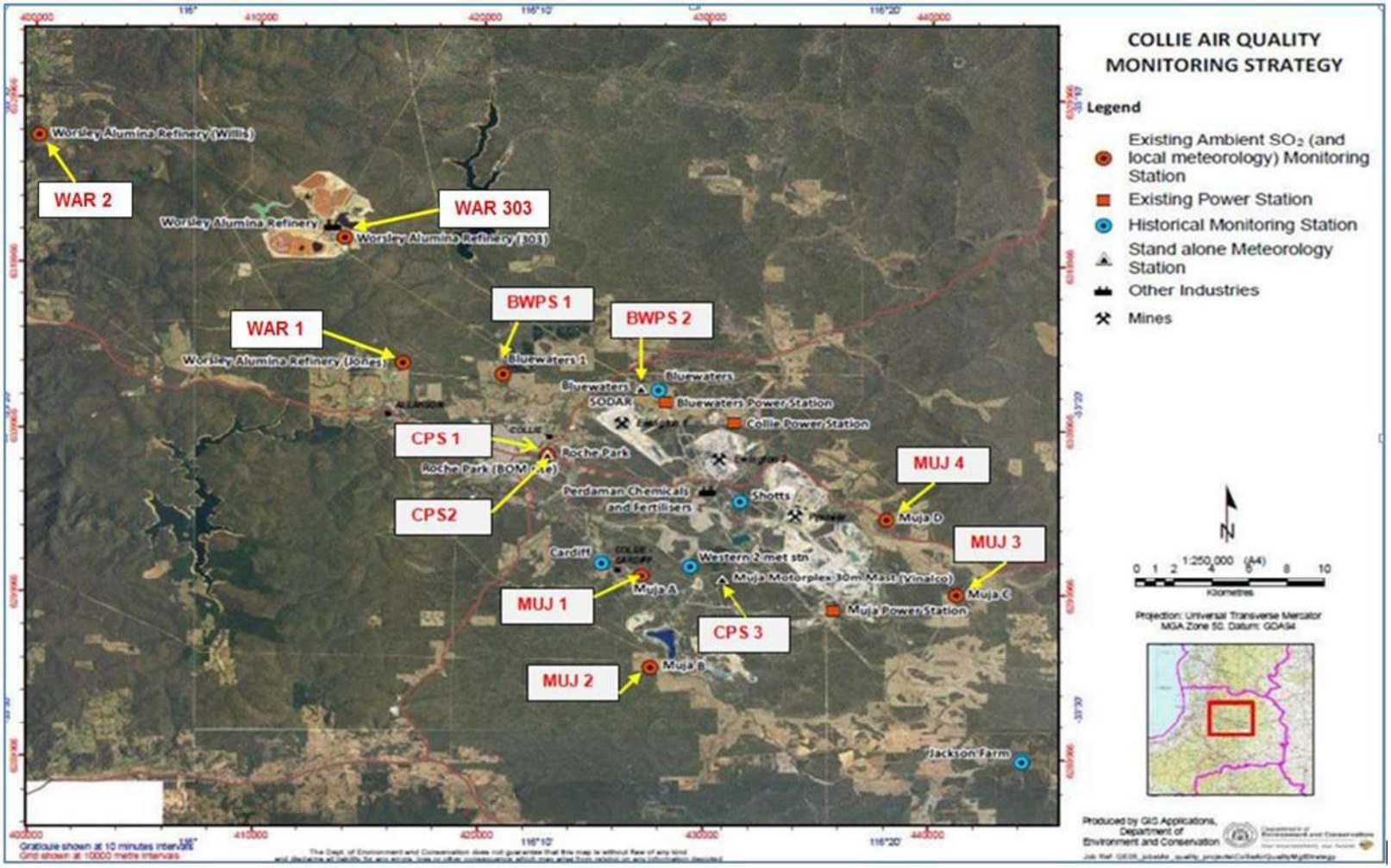
Map of storage locations

The location of the storage areas defined in Table 1.3.1 are shown below.

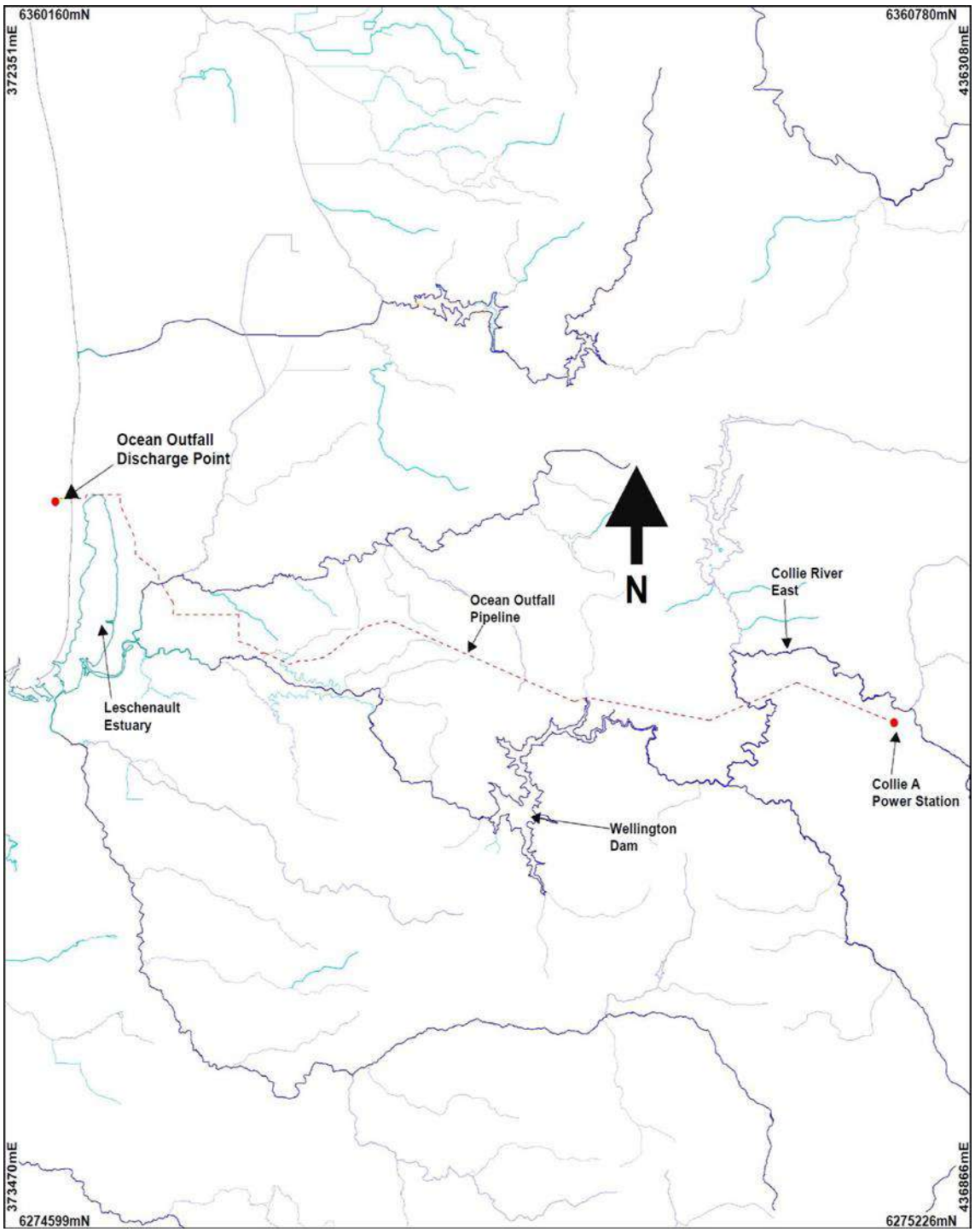


Map of ambient air quality monitoring sites

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



Map of Collie Power Station ocean outfall pipeline



Schedule 2: Prescribed Premises Category

Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
12	Screening, etc. of material	50 000 tonnes or more per year	1.2 million tonnes of coal per annual period
52	Electric power generation	20 megawatts or more in aggregate (using natural gas) 10 megawatts or more in aggregate (using a fuel other than natural gas)	340 MWe
53	Flyash disposal	1 000 tonnes or more per year	120 000 tonnes per annual period (upto 140,000 tonnes from March 2019 to December 2019)
61	Liquid waste facility	100 tonnes or more per year	1862 000 tonnes per annual period

Schedule 3: Forms & notification

Licence: L6637/1995/15 Licensee: Electricity Generation and Retail Corporation T/A Synergy
Form: N1 Date of breach:

Notification of detection of the breach of a limit

These pages outline the information that the operator must provide. Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	
Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	
Name	
Post	
Signature on behalf of Electricity Generation and Retail Corporation T/A Synergy	
Date	