Permit

Environmental Protection Act 1994
Environmental authority EPML00586713

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPML00586713

Environmental authority takes effect on 16 December 2020

Environmental authority holder(s)

Name(s)	Registered address
AQUILA COAL PTY LTD	Level 14 225 St Georges Tce PERTH WA 6000 Australia
SOUTH32 EAGLE DOWNS PTY LTD	108 St Georges Tce PERTH WA 6000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML70389
Schedule 3 08: A petroleum or GHG storage activity, other than items 1 to 7, that includes an activity from Schedule 2 with an AES	PL485
Ancillary 08 - Chemical Storage 1: Storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a)	ML70389, PL485
Ancillary 14 - Electricity Generation 1: Generating electricity by using gas at a rated capacity of 10MW electrical or more	ML70389, PL485
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ML70389, PL485

Environmentally relevant activity/activities	Location(s)
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML70389, PL485
Ancillary 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and sorting, dismantling, baling or temporarily storing- (d) category 1 regulated waste	ML70389, PL485
Ancillary 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and sorting, dismantling, baling or temporarily storing- (c) category 2 regulated waste	ML70389, PL485
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML70389, PL485

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.
An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.
A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.
For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term ‘duty to notify’.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Alison Sinclair
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 16 December 2020

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Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Conditions of environmental authority

Agency Interest - General	
Condition number	**Condition**
A1	**Scope of Activity** This environmental authority authorises the mining of up to 11 million tonnes of run of mine (ROM) coal per annum.
A2	**Maintenance of measures, plant and equipment** The environmental authority holder must ensure: a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; b) that such measures, plant and equipment are maintained in a proper condition; and c) that such measures, plant and equipment are operated in a proper manner.
A3	**Monitoring and records** Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
A4	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
A5	**Notification of emergencies, incidents and exceptions** The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.
A6	Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following: a) Results and interpretation of any samples taken and analysed; b) Outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; c) Proposed actions to prevent a recurrent of the emergency or incident.

A7	**Complaints** The holder of this environmental authority must record all environmental complaints received about the mining activities including: a) Name, address and contact number of the complainant; b) Time and date of complaint; c) Reasons for the complaint; d) Investigations undertaken; e) Conclusions formed; f) Actions taken to resolve the complaint; g) Any abatement measures implemented; h) Person responsible for resolving the complaint.
A8	The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.
Agency Interest - Air	
Condition number	**Condition**
B1	**Dust nuisance** Subject to conditions **B2** and **B3** the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.

B3	If the environmental authority holder can provide evidence through monitoring that the following limits are not being exceeded then the holder is not in breach of condition **B1**: a) dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with AS 3580.10.1 *Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method* of 2003 (or more recent editions); or b) a concentration of particulate matter with an aerodynamic diameter of less than ten (10) micrometre (µm) (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a twenty-four (24) hour averaging time, (can be exceeded no more than five (5) times per year) at a sensitive or commercial place downwind of the operational land, when monitored in accordance with: i) particulate matter - Determination of suspended particulate PM_{10} high-volume sampler with size-selective inlet - Gravimetric method, when monitored in accordance with AS 3580.9.6 of 2003 (or more recent editions) *Ambient air - particulate matter – Determination of suspended particulate PM_{10} high volume sampler with size-selective inlet - Gravimetric method*; and ii) any alternative method of sampling PM_{10}, which may be permitted by the *Air Quality Sampling Manual* as published from time to time by the administering authority.
B4	If monitoring indicates exceedance of the relevant limits in condition **B3**, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.
B5	**Odour nuisance** The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any nuisance sensitive or commercial place.
B6	When requested by the administering authority, odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
B7	If the administering authority determines the odour released to constitute an environmental nuisance, in accordance with the latest version of the administering authority's guideline *Odour Impact Assessment from Developments* (2004), then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement odour abatement measures so that emissions of odour from the activity does not result in further environmental nuisance.

Agency Interest - Water	
Condition number	**Condition**
C1	**Contaminant release** Contaminants must not be released to the environment except as permitted under the conditions of this environmental authority.
C2	The release of mine affected water to waters must only occur from the release points specified in **Table C1 (Mine affected water release points, sources and receiving waters)** and depicted in **Figure 1 Surface Water Release Points and Groundwater Monitoring Locations** attached to this environmental authority.
C3	The release of mine affected water to internal water management infrastructure installed and operated in accordance with a water management plan that complies with condition **C30** is permitted.
C4	The release of mine affected water to waters in accordance with condition **C2** must not exceed the release limits stated in **Table C2 (Mine affected water release limits)** when measured at the monitoring points specified in **Table C1 (Mine affected water release points, sources and receiving waters)** for each quality characteristic.

Table C1 (Mine affected water release points, sources and receiving waters)

Release point (RP)	Easting (GDA94)	Northing (GDA94)	Contaminant source and location	Monitoring point	Receiving waters
RP 1 – DREA Catch Dam	625782	7544773	DREA runoff	Spillway	Ripplestone Creek (Eastern Tributary)
RP 2 – Mine Water Dam	627771	7543998	Dam water	Spillway	Ripplestone Creek (Eastern Tributary)
RP 3 – DM901a Sediment Dam	624703	7545439	DREA runoff	Spillway	Ripplestone Creek (Eastern Tributary)

C5	The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table C1 (Mine affected water release points, sources and receiving waters)** for each quality characteristic and at the frequency specified in **Table C2 (Mine affected water release limits)** and **Table C3 (Release contaminant trigger investigation levels)**.

Table C2 (Mine affected water release limits)

Quality characteristic	Interim release limits (limits to apply from the date of issue)	Future release limits from 30 April 2015**	Monitoring frequency
Electrical conductivity (µS/cm)	1000	Aquatic ecosystem protection (no drinking water value): An end-of-pipe limit to achieve in the range 0 to 1000 EC in the receiving waters - (Must have natural flow i.e. the 20th percentile flow trigger and achieve a 1:4 dilution).	Daily during release (the first sample must be taken within 2 hours of commencement of release)
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)
Turbidity (NTU)	NA*	Limit to be determined based on receiving water reference data	Daily during release* (first sample within 2 hours of commencement of release)
Suspended solids (mg/L)	Limit = 80th percentile of upstream background sites	Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment	Daily during release* (first sample within 2 hours of commencement of release)
Sulphate (SO_4^{2-}) (mg/L)	1000	1000	Daily during release* (first sample within 2 hours of commencement of release)

*Note: NA – not available, * local trigger values need to be developed*

*Note: **Future release limits will apply from a yet to be negotiated date using alternative numbers that will be derived from the information gathered by any combination of the following:*

a) the results of near field monitoring

b) any studies or investigations carried out in accordance with recommendations 2 & 3 of the Cumulative Impact Study on water quality in the Fitzroy River Basin

c) any review of the QLD Water Quality Guidelines

d) other relevant information

This information should be available by 30 April 2015 and when it becomes available limits will be determined for each mine site based on the environmental values to be protected and in accordance with criteria below.

Table C3 (Release contaminant trigger investigation levels)

Quality characteristic	Trigger levels (µg/L)	Comment on trigger level	Monitoring frequency
Aluminium	55	*For aquatic ecosystem protection, based on SMD guideline*	Commencement of release and thereafter weekly during release
Arsenic	13	*For aquatic ecosystem protection, based on SMD guideline*	
Cadmium	0.2	*For aquatic ecosystem protection, based on SMD guideline*	
Chromium	1.0	*For aquatic ecosystem protection, based on SMD guideline*	
Copper	2.0	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Iron	300	*For aquatic ecosystem protection, based on low reliability guideline*	
Lead	10	*For aquatic ecosystem protection, based on SMD guideline*	
Mercury	0.2	*For aquatic ecosystem protection, based on LOR for CV FIMS*	
Nickel	11	*For aquatic ecosystem protection, based on SMD guideline*	
Zinc	8.0	*For aquatic ecosystem protection, based on SMD guideline*	
Boron	370	*For aquatic ecosystem protection, based on SMD guideline*	
Cobalt	90	*For aquatic ecosystem protection, based on low reliability guideline*	
Manganese	1900	*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum	34	*For aquatic ecosystem protection, based on low reliability guideline*	
Selenium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Silver	1.0	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1.0	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Vanadium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Ammonia	900	*For aquatic ecosystem protection, based on SMD guideline*	
Nitrate	1100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	*Protection of livestock and short term irrigation guideline*	

Note: *All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.*

C6	If quality characteristics of the release exceed any of the trigger levels specified in **Table C3 (Release contaminant trigger investigation levels)** during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in **Table C3 (Release contaminant trigger investigation levels)** and: a) where the trigger values are not exceeded then no action is to be taken; b) where the downstream results exceed the trigger values specified in **Table C3 (Release contaminant trigger investigation levels)** for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites; and i) if the result is less than the background monitoring site data, then no action is to be taken; or ii) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within 90 days of receiving the result, outlining: 1) details of the investigations carried out; and 2) actions taken to prevent environmental harm.
C7	If an exceedance in accordance with condition **C6 a) ii)** is identified, the holder of the authority must notify the administering authority in writing within **24 hours** of receiving the result.
C8	**Contaminant release events** The holder must ensure an automatic stream flow gauging station is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in **Table C4 (Mine affected water release during flow events)**.

Table C4 Mine affected water release during flow events

Receiving waters/ streams	Release point (RP)	Gauging station	Gauging station Easting (GDA94)	Gauging station Northing (GDA94)	Receiving water flow recording frequency	Receiving water flow criteria for discharge (m^3/s)	Maximum release rate (for all combined RP flows)	Electrical conductivity release limits
Ripplestone Creek (Eastern Tributary)	RP1	Gauging Station 1	To be provided prior to commence-ment of mining activities	To be provided prior to commence-ment of mining activities	Continuous (minimum daily)	To be provided prior to commencement of mining activities	To be provided prior to commence-ment of mining activities	To be provided prior to commence-ment of mining activities
Ripplestone Creek (Eastern Tributary)	RP2	Gauging Station 2	To be provided prior to commence-ment of mining activities	To be provided prior to commence-ment of mining activities	Continuous (minimum daily)	To be provided prior to commencement of mining activities	To be provided prior to commence-ment of mining activities	To be provided prior to commence-ment of mining activities
Ripplestone Creek (Eastern Tributary)	RP3	Gauging Station 3	To be provided prior to release	To be provided prior to release	Continuous (minimum daily)	To be provided prior to any release	To be provided prior to release	To be provided prior to release

C9	The release of mine affected water to waters in accordance with condition **C2** must only take place during periods of natural flow in accordance with the receiving water flow criteria for discharge specified in **Table C4 (Mine affected water release during flow events)** for the release point(s) specified in **Table C1 (Mine affected water release points, sources and receiving waters)**.
C10	Contaminant release flow rate must not exceed 20% of receiving water flow rate.
C11	The daily quantity of mine affected water released from each release point must be measured, recorded and provided to the administering authority on request.
C12	Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.
C13	**Notification of release event** The environmental authority holder must notify the administering authority via WaTERS within twenty-four (24) hours after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: a) release commencement date/time; b) details regarding the compliance of the release with the conditions of Agency Interest: Water of this environmental authority (that is, contaminated limits, natural flow, discharge volume); c) release point/s; d) release rate; e) release salinity; and f) receiving water/s including the natural flow rate.
C14	The environmental authority holder must notify the administering authority via WaTERS (within **twenty-four (24) hours** after cessation of a release) of the cessation of a release notified under condition **C13** and within **twenty-eight (28) days** provide the following information in writing: a) release cessation date and time; b) natural flow rate in receiving water; c) volume of water released from each release point; d) details regarding the compliance of the release with the conditions of Agency interest: Water of this environmental authority (i.e. contaminant limits, natural flow, discharge volume).
C15	**Notification of release event exceedance** If the release limits defined in **Table C2 (Mine affected water release limits)** are exceeded, the holder of the environmental authority must notify the administering authority via WaTERS within **twenty-four (24) hours** of receiving the results.

C16	The environmental authority holder must, within **twenty-eight (28) days** of a release that is not compliant with the conditions of this authority, provide a report to the administering authority via WaTERS detailing: a) the reason for the release; b) the location of the release; c) the total volume of the release and which (if any) part of this volume was non-compliant; d) the total duration of the release and which (if any) part of this period was non-compliant; e) all in situ and any water quality monitoring results (including all laboratory analyses); f) identification of any environmental harm as a result of the non-compliance; g) any other matters pertinent to the water release event.
C17	**Monitoring of water storage quality** Water storages stated in **Table C5 (Water storage monitoring)** which are associated with the release points must be monitored for the water quality characteristics specified in **Table C6 (Onsite water storage contaminant limits)** at the monitoring locations and at the monitoring frequency specified in **Table C5 (Water storage monitoring)**.

Table C5 (Water storage monitoring)

Water storage description	Easting (GDA94)	Northing (GDA94)	Monitoring location	Monitoring frequency
Catch Dam	To be provided prior to the commencement of mining activities			Quarterly
Mine Water Dam				Quarterly
DM901a Sediment Dam	624703	7545439	Spillway	Quarterly

Table C6 (Onsite water storage contaminant limits)

Quality characteristic	Test value	Contaminant limit
pH (pH unit)	Range	Greater than 4, less than 9
EC (µS/cm)	Maximum	5970
Sulphate (mg/L)	Maximum	1000
Fluoride (mg/L)	Maximum	2.0
Aluminium (mg/L)	Maximum	5.0
Arsenic (mg/L)	Maximum	0.5
Cadmium (mg/L)	Maximum	0.01
Cobalt (mg/L)	Maximum	1.0
Copper (mg/L)	Maximum	1.0
Lead (mg/L)	Maximum	0.1
Nickel (mg/L)	Maximum	1.0
Zinc (mg/L)	Maximum	20

Note: Total measurements (unfiltered) must be sampled and analysed.

C18	In the event that water storages defined in **Table C5 (Water storage monitoring)** exceed the contaminant limits defined in **Table C6 (Onsite water storage contaminant limits)**, the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.
C19	**Receiving environment monitoring and contaminant trigger levels** The quality of the receiving waters must be monitored at the locations specified in **Table C7 (Receiving water upstream background sites and downstream monitoring points)** for each quality characteristic and at the monitoring frequency stated in **Table C8 (Receiving waters contaminant trigger levels)**.

Table C7 (Receiving water upstream background sites and downstream monitoring points)

Monitoring points	Receiving waters location description	Easting (GDA94)	Northing (GDA94)
Upstream background monitoring points			
Monitoring point 1	Upstream Ripplestone Creek (Western Tributary) MP1, the Eastern Tributary immediately upstream off the Winchester Road.	629,139	7,542,410
Monitoring point 4	Upstream Ripplestone Creek (Western Tributary) MP4 at a pooling area which should be suitable for safe access for water sampling and Macroinvertebrate sampling.	625,335	7,542,984
Downstream monitoring points			
Monitoring point 2	Downstream Ripstone Creek,	630,016	7,539,575
Monitoring point 3	The most downstream Ripstone Creek location (MP3), where the upper Ripstone Creek tributary flows from Peak Downs Mine.	627,992	7,539,521

Notes:
a) The upstream monitoring point should be within 5km of the release point.
b) The downstream point should not be greater than 5km from the release point.
The data from background monitoring points must not be used where they are affected by releases from other mines.

Table C8 (Receiving waters contaminant trigger levels)

Quality characteristic	Trigger level	Monitoring frequency
pH	6.5 – 8.0	Daily during the release
Electrical conductivity (μS/cm)	1000	
Suspended solids (mg/L)	To be provided prior to the commencement of mining activities	
Sulphate (SO_4^{2-}) (mg/L)	1000	

C20	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in **Table C8 (Receiving waters contaminant trigger levels)** during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; b) where the downstream results exceed the upstream results complete an investigation into the potential for environmental harm and provide a written report to the administering authority via WaTERS within 90 days outlining: i) details of the investigations carried out; and ii) actions taken to prevent environmental harm.
C21	**Receiving environment monitoring program (REMP)** A REMP must be developed and implemented by the environmental authority holder to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority. For the purposes of the REMP, the receiving environment is the waters of Ripplestone Creek (Eastern Tributary) and connected waterways within 20km downstream of the release.

C22	The REMP must address (but not necessarily be limited to) the following: a) must be undertaken in accordance with the Department of Environment and Heritage Protection *Guideline Receiving environment monitoring program guideline; and* b) description of potentially affected receiving waters including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality); c) description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the *Environmental Protection (Water) Policy 2009*); d) any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed; e) water quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP; f) monitoring for any potential adverse environmental impacts caused by the release; g) monitoring of stream flow and hydrology; h) monitoring of toxicants should consider the indicators specified in **Table C3 (Release contaminant trigger investigation levels)** to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems; i) monitoring of physical chemical parameters as a minimum those specified in **Table C2 (Mine affected water release limits)** (in addition to dissolved oxygen saturation and temperature); j) monitoring biological indicators (for macro invertebrates in accordance with the AusRivas methodology) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.*1 Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages; k) the locations of monitoring points (including the locations specified in **Table C7 (Receiving water upstream background sites and downstream monitoring points)** which are background and downstream impacted sites for each release point); l) the frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within two years (depending on wet season flows) in accordance with the *Queensland Water Quality Guidelines 2009*. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges; m) specify sampling and analysis methods and quality assurance and control; n) any historical datasets to be relied upon; o) description of the statistical basis on which conclusions are drawn; and p) any spatial and temporal controls to exclude potential confounding factors.

C23	**Receiving environment monitoring program (REMP)** A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.
C24	**Water reuse** Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party).
C25	**Water general** All determinations of water quality must be: a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; b) made in accordance with methods prescribed in the latest edition of the administering authority's *Monitoring and Sampling Manual;* c) collected from the monitoring locations identified within this environmental authority, within **ten (10) hours** of each other where possible; d) carried out on representative samples; and e) laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used. Note: *Condition **C25** requires the Monitoring and Sampling Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.*
C26	The release of contaminants directly or indirectly to waters: a) must not produce any visible discolouration of receiving waters, and b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

C27	**Annual water monitoring reporting** The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of the contaminants released from all release points; e) the release flow rate at the time of sampling for each release point; f) the results of all monitoring and details of any exceedance with the conditions of this environmental authority; g) and water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
C28	**Temporary interference with waterways** Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with Department of Natural Resources and Mines (or its successor) *Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities.*
C29	**Water Management Plan** A Water Management Plan must be developed by an appropriately qualified person and implemented.
C30	The Water Management Plan must provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority, and must include: a) a study of the source of contaminants; b) a water balance model for the site; c) a water management system for the site; d) measures to manage and prevent saline drainage; e) measures to manage and prevent acid rock drainage; f) contingency procedures for emergencies.
C31	Each year the holder of the environmental authority must undertake a review of the water management plan prior to the wet season (i.e. by **1 November**) and a further review following the wet season (i.e. by **1 May** the following year) to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.
C32	A copy of the water management plan and/or a review of the water management plan must be provided to the administering authority on request.

C33	**Saline drainage** The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.
C34	**Acid rock drainage** The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.
C35	**Stormwater and water sediment controls** An erosion and sediment control plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.
C36	The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.
C37	Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.
C38	**Groundwater** Groundwater affected by the mining activities must be monitored at the locations shown in **Figure 1 (Surface Water Release Points and Groundwater Monitoring Locations)** and at the locations and frequencies specified in **Table C11 (Groundwater monitoring locations and frequency)** and condition C39 and be carried out in accordance with the latest edition of the administering authority's *Monitoring and Sampling Manual*.

Table C11 (Groundwater monitoring locations and frequency)

Monitoring point	Easting (GDA 94)	Northing (GDA 94)	Monitoring frequency
MB1	623253	7551540	Annually, until longwall mining commences, where monitoring must be then be conducted quarterly
MB2	623683	7549391	
MB3	627240	7549946	
MB4	626507	7544152	
MB5	628490	7542693	
MB6	To be installed 12 months prior to the commencement of longwall mining.	To be installed 12 months prior to the commencement of longwall mining.	
MB7	To be installed 12 months prior to the commencement of longwall mining.	To be installed 12 months prior to the commencement of longwall mining.	
Landholder Bore 8 (LHB8)	623797	7552173	
Landholder Bore 11 (LHB11)	627205	7546949	
Landholder Bore 13 (LHB13)	627200	7546952	

C39	The holder of the environmental authority is permitted to monitor groundwater annually until commencement of longwall mining activities begins. Once longwall mining commences, groundwater monitoring must be conducted quarterly.
C40	The holder of the environmental authority must develop and implement a groundwater monitoring program.
C41	The program must be able to detect a significant change to ground water quality values (consistent with the current suitability of the groundwater for beneficial uses) due to activities that are part of this mining project.
C42	The program must effectively monitor the water pressure across the base of the Dry Rejects Emplacement Area (DREA) at the interface with the natural surface and provide the means to reduce the phreatic surface within the DREA, where monitoring indicates this is necessary.
C43	The holder of the environmental authority must report the results and analysis of groundwater monitoring to the administering authority on request.
C44	Subject to condition **C45** groundwater levels must be monitored and groundwater draw down fluctuations in landowner bores in excess of two metres per year, not resulting from the pumping of licensed bores, must be notified as per conditions **A7 to A8**.
C45	Groundwater affected by the mining activities must be monitored at the locations and frequencies defined in **Table C11 (Groundwater monitoring locations and frequency)** and as shown in **Figure 1- Surface Water Release Points and Groundwater Monitoring Locations** attached to this environmental authority.
C46	If the groundwater contaminant trigger values defined in **Table C12 (Groundwater contaminant trigger values)** are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within **twenty-eight (28) days** of receiving the analysis results.

Table C12 (Groundwater contaminant trigger values)

Water Quality Indicator	Unit	Monitoring Bore Trigger Levels									
		MB1	MB2	MB3	MB4	MB5	MB6	MB7	LHB08	LHB11	LHB13
Aluminium	µg/L	5,000					5,000	5,000	5,000	5,000	5,000
Antimony	µg/L	2	1	4	2	1	4.8	4.8	4.8	4.8	4.8
Arsenic	µg/L	500					500	500	500	500	500
Calcium	mg/L	77	42	694	82	69	1,000	1,000	1,000	1,000	1,000
Chloride, Cl	mg/L	389	1,300	6,980	1,900	1,500	9,050	9,050	9,050	9,050	9,050
CO_3	mg/L	3					800	800	800	800	800
Dissolved Solids (Total)	mg/L	1,200	2,310	16,000	3,490	2,700	TBA	TBA	4,420	4,420	1,200
Electrical Conductivity	µS/cm	2,100	4,200	18,000	6,200	4,800	TBA	TBA	6320	6320	2018
HCO_3	mg/L	780	780	780	780	780	780	780	780	780	780
Iron	µg/L	4,600	747	5,590	7,050	2,350	9,985	9,985	9,985	9,985	9,985
Magnesium - Dissolved	mg/L	500					500	500	500	500	500
Mercury	µg/L	2					5.66	5.66	5.66	5.66	5.66
Molybdenum	µg/L	150					150	150	150	150	150
Petroleum Hydrocarbons (Total)	µg/L	450					450	450	450	450	450
pH	pH Units	5.0 – 8.5					5.0 – 8.5	5.0 – 8.5	5.0 – 8.5	5.0 – 8.5	5.0 – 8.5
Selenium	µg/L	20					20	20	20	20	20
Silver	µg/L	2					11	11	11	11	11
SO_4	mg/L	1,000					1,000	1,000	1,000	1,000	1,000
Sodium	mg/L	320	1,000	3,800	1,400	1,000	9,050	9,050	9,050	9,050	9,050
TPH (as total)	µg/L	264	263	459	260	260	450	450	450	450	450

C47	**Background groundwater monitoring program** A background groundwater monitoring program must be kept up to date with new reference boreholes as construction of the mine begins. These include reference bore(s) that are located an appropriate distance from potential sources of impact from mining activities to provide the following: a) representative groundwater samples from the aquifers potentially affected by mining activities; b) at least twelve sampling events (monthly sampling) to determine background groundwater quality as far as practicable; c) background groundwater quality in hydraulically isolated background bore(s) that have not been affected by any mining activities; and d) final groundwater contaminant trigger levels and limits required in condition **C49**.
C48	The groundwater monitoring data must be reviewed on an annual basis. The review must include the assessment of groundwater levels and water quality data, and the suitability of the monitoring network. The assessment must be submitted to the administering authority within **twenty-eight (28) days** of receiving the report.
C49	Groundwater contaminant trigger levels as per **Table C12 (Groundwater contaminant trigger values)** must be finalised based on a background groundwater monitoring program defined in condition **C47** and submitted to the administering authority prior to commencement of longwall mining.
C50	The following information must be recorded in relation to all groundwater water sampling: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; and d) the results of all monitoring.
C51	**Acid rock drainage and leachate management** Subject to the release limits defined in Agency Interest: Water, all reasonable and practicable measures must be implemented to prevent hazardous leachate being directly or indirectly released or likely to be released as a result of the activity to any groundwater.
C52	**Sewage effluent** All effluent released from the treatment plant must be monitored at the frequency and for the parameters specified in **Table C13 (Sewage treatment effluent quality targets for dust suppression and irrigation)**.

Table C13 (Sewage treatment effluent quality targets for dust suppression and irrigation)

Monitoring point (MP)	Quality characteristics	Release limits (Maximum)	Frequency
MP5 Treated effluent storage pond	5 day Biological oxygen demand (mg/L)	20	Monthly
	Suspended solids (mg/L)	30	
	Thermotolerant coliforms (Cfu/100mL[2])	1000	
	Total phosphorous (mg/L)	15	
	Total nitrogen (mg/L)	30	
	pH	6.5 to 8.5	

C53	Sewage effluent used for dust suppression or irrigation must not exceed sewage effluent release limits defined in **Table C13 (Sewage treatment effluent quality targets for dust suppression and irrigation)**.
C54	Sewage effluent used for dust suppression or irrigation must not cause spray drift or over spray to any sensitive or commercial place.
C55	Subject to conditions **C52 to C54** inclusive, sewage effluent from sewage treatment facilities must be reused or evaporated and must not be directly released from the sewage treatment plant to any waters or the bed and banks of any waters.
C56	The effluent irrigation areas must have a separation distance of at least thirty (30) metres from any groundwater bores and surface waters.
C57	The irrigation of treated effluent must be carried out in a manner such that: a) vegetation is not damaged; b) soil erosion and soil structure damage is avoided; c) there is no surface ponding of treated effluent; d) percolation of treated effluent beyond the plant root zone is minimized; e) the capacity of the land to assimilate nitrogen, phosphorus, salts, water and organic matter (as measured by oxygen demand) is not exceeded; and f) the quality of groundwater is not adversely affected.
C58	Notices must be prominently displayed on any treated effluent irrigation area warning staff and the public that the area is irrigated with treated effluent and not to use or drink the treated effluent. These notices must be maintained in a visible and legible condition.

C59	The daily volume of contaminants released to land must be determined by an appropriate method, for example a flow meter and records kept of such determinations.
C60	**Water sediment controls** All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the movement of sediment, including: a) all clean waters, from undisturbed areas, kept separate from dirty waters from disturbed areas; b) water from disturbed catchments diverted into the mine water management system or sedimentation dams; c) new sedimentation dams designed to capture the sediment volume calculated for the catchment area for an appropriate design storm event and d) sediment shall be excavated from sediment dams as required to maintain design capacity.
Agency Interest – Noise and Vibration	
Condition number	**Condition**
D1	**Noise nuisance** Noise from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
D2	**Noise monitoring and air blast overpressure** When requested by the administering authority, noise monitoring and air blast overpressure must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
D3	If the environmental authority holder can provide evidence through monitoring that the limits defined in **Table D1 (Noise limits)** and **Table D2** (**Airblast overpressure level)**, are not being exceeded then the holder is not in breach of condition **D1**. Monitoring must include: a) $L_{A,}$ 10, adj, 10 mins; b) $L_{A,}$ 1, adj, 10 mins; c) relevant background sound level; d) the level and frequency of occurrence of impulsive or tonal noise; e) atmospheric conditions including wind speed, direction and temperature; f) location of blasts (as appropriate); and g) location, date and time of recording.

Table D1 (Noise limits)

Noise level dB(A)	Monday to Sunday (including public holidays)		
	7am - 6pm	6pm - 10pm	10pm - 7am
	Noise measured at a 'sensitive receptor'		
$L_{A10, adj, 10 mins}$	B/g + 5	B/g + 5	B/g + 3
$L_{A1, adj, 10 mins}$	B/g + 10	B/g + 10	42
Noise measured at a 'Commercial place'			
$L_{A10, adj, 10 mins}$	B/g + 10	B/g + 10	B/g + 5

Note: Where "Background" means background sound pressure level measured in accordance with the latest edition of the administering authority's Noise Measurement Manual. Table D1 (Noise limits does) not purport to set operating hours for the mining activities.

Table D2 (Airblast overpressure level)

Parameter	Airblast overpressure measured at a sensitive or commercial place	
	Monday to Sunday 9am - 7pm	Other times and public holidays*
Air blast overpressure level (dB [Lin] Peak)	Maximum 115 dB for 4 out of 5 consecutive blasts	No blasting to occur
Air blast overpressure level (dB [Lin] Peak)	120 dB maximum	No blasting to occur

*Note: Table D2 (Airblast overpressure level) does not purport to set limits applicable to any particular explosive blast, rather sets design criteria for every explosive blast. *This restriction regarding blasting times and days are only applicable to near surface blasting and do not apply to blasting undertaken as part of underground mining or development works.*

D4	If monitoring indicates exceedance of the limits in **Table D1 (Noise limits)** and **Table D2 (Airblast overpressure level)**, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
D5	The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's *Noise Measurement Manual*.
D6	**Vibration nuisance** Vibration from the mining activity must not cause an environmental nuisance, at any sensitive place.
D7	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
D8	If the environmental authority holder can provide evidence through monitoring that the limits defined in **Table D3 (Vibration limits)**, are not being exceeded then the holder is not in breach of condition **D6**. Monitoring must include: a) peak particle velocity (mm/s); b) air blast overpressure level (dB linear peak); c) location of the blast/s within the mining area (including which bench level); d) atmospheric conditions including temperature, relative humidity and wind speed and direction; and e) location, date and time of recording.

Table D3 (Vibration limits)

Vibration parameter	Vibration measured at a sensitive place	
	Monday to Sunday 9am - 7pm	**Other times and public holidays***
Peak particle velocity (mm/s)	Maximum 5 mm/s for 4 out of 5 consecutive blasts	No blasting to occur
Peak particle velocity (mm/s)	10 mm/s maximum	No blasting to occur

Note: The method of measurement and reporting of vibration levels must comply with the latest edition of the administering authority's vibration and air blast overpressure monitoring guideline.

** This restriction regarding blasting times and days are only applicable to near surface blasting and do not apply to blasting undertaken as part of underground mining or development works.*

D9	For the purposes of condition **D6** the mining activities will not cause environmental nuisance where vibration from the mining activities does not exceed the criteria specified in **Table D3 (Vibration limits)**.
D10	If monitoring indicates exceedance of the limits in **Table D3 (Vibration limits)**, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement vibration abatement measures so that vibration from the activity does not result in further environmental nuisance.
D11	Every explosive blast for the mining activity shall be designed by a competent person to achieve the criteria specified in **Table D2 (Airblast overpressure level)** and **Table D3 (Vibration limits)**.
D12	All relevant information pertaining to the design of every explosive blast for the mining activity in relation to the criteria specified in **Table D2 (Airblast overpressure level)** and **Table D3 (Vibration limits)** shall be kept in written and diagrammatic form.

Agency Interest – Land	
Condition number	**Condition**
E1	**Preventing contaminant release to land** Contaminants must not be released to land in manner which constitutes nuisance, material or serious environmental harm.
E2	**Topsoil** Topsoil must be strategically stripped ahead of mining in accordance with a topsoil management plan.
E3	A topsoil inventory which identifies the topsoil requirements for the Eagle Downs Coal Mine and availability of suitable topsoil on site must be developed, implemented and updated annually and provided to administering authority upon request.
E4	The environmental authority holder must develop a Rehabilitation Management Plan prior to commencement of longwall mining activities and submit to the administering authority for review and comment.

E5	**Rehabilitation landform criteria** The Rehabilitation Management Plan must be implemented and include: a) map existing areas of rehabilitation; b) develop design objectives for rehabilitation of disturbed areas and post-mining land uses across the mine; c) specify spoil characteristics, soil analysis, soil separation for use on rehabilitation; d) detail rehabilitation methods applied to areas; e) contain landform design criteria including end of mine design; f) detail how landform designs will be consistent with the surrounding topography; g) identify success criteria for areas and itemise revegetation criteria; h) explain planned native vegetation rehabilitation areas and corridors; i) identify at least a minimum of three (3) reference and three (3) rehabilitation sites to be used to develop rehabilitation success criteria; j) describe rehabilitation indicators and the monitoring program to be used; k) develop a contingency plan for rehabilitation maintenance or redesign; l) describe end of mine landform design plan and post-mining land uses across the mine; and m) include a cost benefit analysis/triple bottom line assessment (or an alternative assessment method) of the proposed final landform design criteria and alternatives.
E6	In carrying out the mining activity authorised by this environmental authority, the environmental authority holder must comply with the maximum disturbance area (ha) in **Table E1 (Final land use and rehabilitation approval schedule).**
E7	In carrying out the mining activity authorised by this environmental authority, the environmental authority holder must comply with the disturbance area in **Figure 2 – Maximum disturbance area.**
E8	**Interim Completion Criteria** Land disturbed by mining must be rehabilitated in accordance with **Table E1 (Final land use and rehabilitation approval schedule).**

Table E1 (Final land use and rehabilitation approval schedule)

Details	Disturbance type						
	Ponded Areas	**Fill Areas**	**Subsidence**	**DREA (Including Topsoil and Capping Material Stockpiles)**	**Power Station**	**Sediment / Supply dams**	**Infrastructure (Including ROM Stockpiles and Roads/ Tracks)**
Maximum disturbance area (ha)	78.1	142.4	2,104	621.4 (The maximum DREA footprint is 385 ha)	**5.7**	70.5	202.7
Map reference	To be provided prior to commencement of longwall mining	To be provided prior to commencement of longwall mining	To be provided prior to commencement of longwall mining	To be provided prior to commencement of longwall mining	To be provided prior to commencement of longwall mining	To be provided prior to commencement of longwall mining	To be provided prior to commencement of longwall mining
Pre-mine land use	Grazing	Grazing	Grazing	Grazing	Grazing	Grazing	Grazing
Post-mine land use	Intermittent cattle watering holes	Grazing	Grazing and native ecosystem	Native Ecosystem for DREA and grazing for topsoil and capping material stockpiles	Grazing	Grazing or to remain as water storage upon agreement with landholder	Grazing or roads/tracks may remain as farm access upon agreement with the landholder
Post-mine land capability classification	Class D Agricultural Land	Class C Agricultural Land	Class C Agricultural Land	Class C and Class D Agricultural Land	Class C Agricultural Land	Class D Agricultural Land	Class C and Class D Agricultural Land
Projective cover range (%)	N/A	70%	70%	70%	70%	N/A	70%

Note: Gas drainage, subsidence crack rehabilitation, remedial drainage, ventilation shafts, underground communication cables, mine dewatering boreholes and associated pipelines and other access boreholes are permitted within the limit of subsidence as shown on Figure 2 – Maximum Disturbance Area.

E9	**Final Completion Criteria** Completion criteria must be developed and amended in **Attachment 1: Rehabilitation requirements** prior to the commencement of longwall mining.
E10	Progressive rehabilitation must commence when areas become available within the operational land.
E11	Development of acceptance criteria in accordance with condition **E5** is to consider the reestablishment of representative regional ecosystems (reference sites or another suitable alternative approved by the administering authority) and functioning habitat of areas equal to or greater than areas to be cleared and specific revegetation performance descriptors (e.g. rehabilitated areas are to display characteristics of the existing (pre-mining) regional ecosystems).
E12	Areas which are to be rehabilitated to native ecosystem must achieve a self-sustaining native ecosystem with species composition and distribution similar to an analogue/reference site or another suitable alternative approved by the administering authority.
E13	Where reasonable and practicable, areas of the site where grazing is nominated as the post-mine land use must include native grass species endemic to the area.
E14	**Rehabilitation monitoring program** Once rehabilitation has commenced, the holder of the environmental authority must conduct a Rehabilitation Monitoring Program on a yearly basis, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation program.
E15	The Rehabilitation Monitoring Program must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder.
E16	The Rehabilitation Monitoring Program must be developed, implemented and updated as necessary and provided to administering authority upon request, describing a) how the rehabilitation objectives as per condition **E5** will be achieved; and b) verification of rehabilitation success.
E17	**Post closure management plan** A Post Closure Management Plan for the site must be prepared at least 18 months prior to the final coal processing on site and implemented for a nominal period of: a) at least thirty (30) years following final coal processing on site b) a shorter period if the site is proven to be geotechnically and geochemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm.

E18	The Post Closure Management Plan must include the following elements: a) operation and maintenance of: i) wastewater collection and reticulation systems; ii) wastewater treatment systems; iii) the groundwater monitoring network; iv) final cover systems; v) vegetative cover; b) monitoring of: i) surface water quality; ii) groundwater quality; iii) seepage rates; iv) erosion rates; v) the integrity and effectiveness of final cover systems; and vi) the health and resilience of native vegetation cover.
E19	Complete an assessment report, to be undertaken by a Registered Professional Engineer of Queensland (RPEQ), of geotechnical issues and erosivity of the proposed final landforms, including final voids, prior to the commencement of longwall mining. This will demonstrate long-term landform stability. Reference is to be made to the Queensland Mining Guidelines (or subsequent reprints) in making this assessment.
E20	**General** The report required by condition **E19** must be given to the administering authority upon request.
E21	Cleared vegetation from the site must be managed in accordance with the following hierarchy: a) reuse, e.g. use of logs and tree stumps as shelter for fauna in rehabilitated areas; b) recycle, e.g. mulching of vegetation and use in rehabilitation on the site; and c) other alternative management options implemented in a way that causes the least amount of environmental harm.
E22	**Infrastructure** All infrastructure constructed by or for the environmental authority holder during the licensed activities including water storage structures must be removed from the site prior to surrender, except where agreed in writing by the post mining land owner / holder. Gas related infrastructure must be removed from the site prior to surrender, except where approval is granted by the administering authority.
E23	**Exploration** Exploration activities outside the approved disturbance area shown in **Figure 2 – Maximum disturbance area** must be conducted in accordance with the Eligibility Criteria and Standard Conditions for Exploration and Mineral Development Projects.

E24	**Storage and handling of flammable and combustible liquids** All flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of *AS 1940 – Storage and Handling of Flammable and Combustible Liquids.*
E25	Spillage of all flammable and combustible liquid must be controlled in a manner that prevents environmental harm.
E26	**Storage and handling of chemicals** All chemicals must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of the relevant Australian Standard.
E27	Spillage of all chemicals must be controlled in a manner that prevents environmental harm.
Agency Interest – Waste Management	
Condition number	**Condition**
F1	**Storage of tyres** Scrap tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options must be stored in stable stacks and at least ten (10) metres from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
F2	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a ten (10) metre radius of the scrap tyre storage area.

F3	**Waste Management** A Waste Management Plan must be developed and implemented by the environmental authority holder and must: a) describe how the Eagle Downs Coal Mine recognises and applies the waste management hierarchy; b) identify characterizations of wastes generated from the project and general volume trends over the past five (5) years c) a program for safe recycling or disposal of all wastes – reusing and recycling where possible; d) waste commitments with auditable targets to reduce, reuse and recycle; e) the waste management control strategies must consider: i) the types of wastes; ii) segregation of the wastes; iii) storage of the wastes; iv) transport of the wastes; v) monitoring and reporting matters concerning the waste; vi) emergency response planning; and vii) disposal, reused and recycling options. f) identify the potential adverse and beneficial impacts of the wastes generated; g) detail the hazardous characteristics of the waste generated (if any); i) cover a disposal procedure for hazardous wastes; ii) outline the process to be implemented to allow for continuous improvement of the waste management systems; iii) identify responsible staff (positions) for implementing, managing and reporting the Waste Management Plan; and iv) cover a staff awareness and induction program that encourages re-use and recycling.
F4	Waste must not be burned.
F5	Where possible and practical, vegetation waste from clearing shall be spread on rehabilitated areas. Vegetation waste only may be burnt as a last resort and only if there is minimal risk of causing nuisance to the neighbouring sensitive receptors.
F6	A designated area must be set aside for the segregation of economically viable, recyclable solid and liquid waste.

F7	Records must be kept for five years, and must include the following information: a) date of pickup of waste; b) description of waste; c) cross reference to relevant waste transport documentation; d) quantity of waste; e) origin of the waste; f) destination of the waste; and g) intended fate of the waste, for example, type of waste treatment, reprocessing or disposal.
F8	All regulated waste received at and removed from the site must be transported by a person who holds a current authority to transport such waste.
F9	Except as otherwise provided by the conditions of this authority, all waste removed from the site must be taken to a facility that is lawfully allowed to accept such waste.
F10	**Dry Reject Emplacement Area (DREA)** Waste from the Coal Handling and Preparation Plant shall be disposed of: a) in accordance with conditions **G1 to G18** (Dams) of this environmental authority if the shear strength of the waste is less than 1000 Pascals when deposited; or b) In accordance with conditions **F11 to F16** if the shear strength of the waste is equal or more than 1000 Pascals when deposited.
F11	**DREA - certification and operation** The authorised DREA used for the disposal of waste is located within the control points defined in **Table F1 (Location of DREA)**.

Table F1 (Location of DREA)

Name of regulated area	Easting (GDA94)	Northing (GDA94)
Dry Reject Emplacement Area	624438	7546163
	626878	7547224
	626929	7545475
	626630	7544829
	625654	7544822

F12	DREA shall be designed to prevent environmental harm arising from contaminants being generated in the facility, leachate and runoff from the facility or other sources.
F13	The authorised DREA must be constructed and maintained in accordance with certified plans submitted to the administering authority.
F14	Design plans for the authorised DREA must include performance indicators, such that: a) during operations the DREA will be operated with minimal or no potential for adverse environmental harm resulting from collapse of any component of facility; b) the potential for leachate generation will be minimal or non-existent; c) adequate drainage structures, erosion protection and storage are provided to manage seasonal and rare rainfall events with minimal or no environmental harm; and d) decommissioning and rehabilitation strategies for the DREA that demonstrate consistency with the conditions of this environmental authority.
F15	Construction of any DREA detailed in **Table F1 (Location of DREA)** must not commence unless: a) the environmental authority holder has submitted to the administering authority two copies of a design plan; b) certification from a suitably qualified and experienced person that the design of the DREA will deliver the performance stated in that design plan and that it will be compliant in all other respects with this environmental authority; c) at least **twenty (20) business days** has passed since the receipt of those documents by the administering authority; d) The administering authority notifies the environmental authority holder that a design plan and certification has been submitted for that disposal facility.
F16	**Operational plan – DREA** An operational plan must be developed and maintained for the DREA. The operational plan must include but not be limited to: a) description of landform development stages of the DREA; b) placement technique for spoil and waste material from the coal handling and processing plant on the mine site; c) management of any containment structures within the DREA designed to contain materials from the coal handling and processing plant on the mine site; d) demonstration of how operations of the DREA are consistent with the accepted design plan for the facility; and e) decommissioning and rehabilitation strategies for the DREA that demonstrate consistency with conditions of this environmental authority.

F17	**Tailings/coal rejects** The management of tailings disposal must be in accordance with the following: a) all tailings material must be progressively characterised during disposal for acid generating capacity and selected metals and salts. Samples shall be tested for: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Total Sulphur (S), Chromium Reducible Sulphur (CRS), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulphate (SO4); b) one (1) tailing sample will be collected each and every week while the mine coal processing plant is operational and the sample will be stored. After four (4) samples have been collected the samples will be composited and the composite sample characterised as outlined in (a) above. A minimum of one composite tailing sample will undergo characterisation per month. A minimum of twelve (12) composite tailing samples will undergo characterisation per year; c) records must be kept of the tailings disposal to indicate locations and characteristics of tailings stored within the tailings storage facility; d) where the acid producing potential of tailings material has not been conclusively determined, geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies; and e) tailings identified as potentially acid producing will be covered or placed to minimise surface oxidation. The maximum duration of surface exposure of these materials is one month.
F18	**Mine waste** A Mining Waste Management Plan together with the certification by an appropriately qualified person must be developed and implemented during the continuation of the environmental authority. The Mining Waste Management Plan must at a minimum include: a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following contaminants: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Total Sulphur (S), Chromium Reducible Sulphur (CRS), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulphate (SO4); b) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal; c) the availability or leachability of metals from the mining waste; d) quantification of PAF from mining waste present; e) review impacts of the PAF mining waste on the rehabilitation; f) management actions for mining waste that has been identified as having a high availability or leachability of metals; g) management actions for mining waste that has been defined as PAF; h) identification of environmental impacts and potential environmental impacts; i) control measures for routine operations to minimise likelihood of environmental harm; j) contingency plans and emergency procedures for non-routine situations; and k) periodic review of environmental performance and continual improvement.

Agency Interest – Regulated Structures	
Condition number	**Condition**
G1	**Assessment of Consequence Category** The **consequence category** of any structure must be **assessed** by a **suitably qualified and experienced person** in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structure (ESR/2016/1933) at the following times: a) prior to the design and **construction** of the **structure**, if it is not an **existing structure**; or b) prior to any change in its purpose or the nature of its stored contents.
G2	A **consequence assessment** report and **certification** must be prepared for any **structure assessed** and the report may include a consequence assessment for more than one structure.
G3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).*
G4	**Design and Construction of a Regulated Structure** Conditions **G5** to **G9** inclusive do not apply to existing structures.
G5	All **regulated structures** must be designed by, and **constructed** under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).*
G6	Construction of a regulated structure is prohibited unless: a) the holder has submitted a consequence category assessment report and certification to the administering authority; and b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.
G7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*, and must be recorded in the Register of Regulated Structures.
G8	**Regulated structures** must: a) be designed and constructed in compliance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933);* b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: i) floodwaters from entering the **regulated dam** from any **watercourse** or drainage line; and ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line. c) for regulated dams that are dams associated with a 'failure to contain – seepage': have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.

G9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and b) construction of the regulated structure is in accordance with the design plan.
G10	**Notification of affected persons** All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure a) for existing structures that are regulated structures, within 10 business days of this condition taking effect; b) prior to the operation of the new regulated structure; and c) if the emergency action plan is amended, within 5 business days of it being amended.
G11	**Operation of a Regulated Structure** Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority; a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition **G7** b) a set of 'as constructed' drawings and specifications; c) certification of those 'as constructed drawings and specifications' in accordance with condition **G9**, d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the design storage allowance (DSA) volume across the system, a copy of the certified system design plan e) the requirements of this authority relating to the **construction** of the regulated structure have been met; f) the holder has entered the details required under this **authority**, into a Register of Regulated Structures; and g) there is a current operational plan for the regulated structures.
G12	For existing structures that are regulated structures: a) where the existing structure that is a regulated structure is to be managed as part of an **integrated containment system** for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within twelve (12) months of the commencement of this condition a copy of the certified **system design plan** including that structure; and b) there must be a current operational plan for the existing structures.
G13	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
G14	**Mandatory Reporting Level** Conditions **G15** to **G18** inclusive only apply to regulated structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
G15	The **Mandatory Reporting Level** (the **MRL**) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
G16	The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the **MRL**.

G17	The holder must, immediately on becoming aware that the **MRL** has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
G18	The holder must record any changes to the **MRL** in the Register of Regulated Structures.
G19	**Design Storage Allowance** The holder must assess the performance of each regulated dam or linked containment system over the preceding **November** to **May** period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to **1 July** of each year.
G20	By **1 November** of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the DSA volume for the dam (or network of linked containment systems).
G21	The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, notify the administering authority.
G22	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
G23	**Annual Inspection Report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G24	At each annual inspection, the condition and adequacy of all components of the **regulated structure** must be assessed and a suitably qualified and experienced person must prepare an **annual inspection** report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required**.**
G25	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*
G26	The holder must within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority; a) The recommendations section of the annual inspection report; and b) If applicable, any actions being taken in response to those recommendations; and c) If, following the receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within ten (10) business days of receipt of the request. Note: That for some model conditions, such as model conditions for dams associated with a resource activity - non mining activity, the notification requirements may be located in a separate part of the conditions of an environmental authority (e.g. under notification requirement conditions).

G27	**Transfer Arrangements** The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.
G28	**Decommissioning and Rehabilitation** Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with condition **G29**; or b) be left in-situ for a beneficial use(s) provided that: i) it no longer contains contaminants that will migrate into the environment; and ii) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and c) the holder of the environmental authority and the landholder agree in writing that the i) dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and ii) Landholder is responsible for the dam, on and from an agreed date.
G29	Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform and the following; a) the landform is safe for humans and fauna; b) the landform is stable with no subsidence or erosion gullies for at least three (3) years; c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated; d) not allowing for acid mine drainage; or e) there is no ongoing contamination to waters (including groundwater); f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the *Instructions for the treatment and management of acid sulfate soils* (2001); g) all significantly disturbed land is reinstated to the pre-disturbed land suitability class; h) for land that is not being cultivated by the landholder: i) groundcover, that is not a declared pest species is established and self-sustaining; ii) vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining; iii) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the mining activity(ies);and iv) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within three (3) months of mining activities being completed.
G30	**Register of Regulated Structures** A **Register of Regulated Structures** must be established and maintained by the **holder** for each **regulated structure**.

G31	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
G32	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with conditions **G11** and **G12** has been achieved.
G33	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
G34	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
G35	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.
Agency Interest – Biodiversity	
Condition number	**Condition**
H1	**Environmental offsets** Significant residual impacts to prescribed environmental matters, are not authorised under this environmental authority or the *Environmental Offsets Act 2014* unless the impacts are specified in **Table H1 (Significant residual impacts to prescribed environmental matters)** or are within the maximum disturbance area shown in **Figure 2 – Maximum disturbance area.**
H2	As a minimum requirement the offsets package must include the following: a) a proposed ecologically equivalent vegetation community to be managed and/or rehabilitated in perpetuity; b) an agreement and commitment of parties to implement the offset package; and c) a management plan that includes a map of the boundary of the proposed offset, environmental objectives, performance criteria, monitoring, reporting, corrective action, and responsibility and timing for permanent protection and management including control of weeds, cattle, site access, erosion and sedimentation and fire management.

Table H1 - Significant residual impacts to prescribed environmental matters

Prescribed Environmental Matter	Location	Maximum extent of impact	Offset required
Regulated Vegetation			
Bluegrass (*Dichanthium spp)* dominant grasslands of the Brigalow Belt Bioregions (North and South) endangered ecological community*	Figure 3	36ha	No
Brigalow (*Acacia harpophylla* dominant and co-dominant) endangered ecological community*	Figure 3	35ha	No
Protected wildlife habitat			
Habitat for an animal that is vulnerable wildlife – ornamental snake – *Denisonia maculata**	Figure 3	35ha	No

*Offsets have been provided under the *Environment Protection and Biodiversity Conservation Act 1999* approval 2008/3945.

END OF CONDITIONS

Attachment 1 Rehabilitation Requirements

Mine Domain	Rehabilitation Goal	Rehabilitation Objective	Indicator	Completion Criteria
Dry Rejects Emplacement Area (DREA) and ROM Areas.	Safe	TBD	TBD	TBD
	Non-polluting	TBD	TBD	TBD
	Stable landform	TBD	TBD	TBD
	Sustainable land use	TBD	TBD	TBD
Roads and Tracks, and Infrastructure.	Safe	TBD	TBD	TBD
	Non-polluting	TBD	TBD	TBD
	Stable landform	TBD	TBD	TBD
	Sustainable land use	TBD	TBD	TBD
Subsided Areas, Ponded Areas, and Sediment Supply Dams.	Safe	TBD	TBD	TBD
	Non-polluting	TBD	TBD	TBD
	Stable landform	TBD	TBD	TBD
	Sustainable land use	TBD	TBD	TBD

Definitions

Key terms and/or phrases used in this document are defined in this section. Applicants should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

"20th percentile flow" means the 20th percentile of all daily flow measurements (or estimations) of daily flow over a 10 year period for a particular site. The 20th percentile calculation should only include days where flow has been measured (or estimated), i.e. not dry weather days.

"acceptance criteria" means the measures by which the actions implemented to rehabilitate the land are deemed to be complete. The acceptance criteria indicate the success of the rehabilitation outcome or remediation of areas which have been significantly been disturbed by the mining activities. Acceptance criteria may include information regarding:

a) vegetation establishment, survival and succession;

b) vegetation productivity, sustained growth and structure development;

c) fauna colonisation and habitat development;

d) ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;

e) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;

f) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;

g) resilience of vegetation to disease, insect attack, drought and fire; and

h) vegetation water use and effects on ground water levels and catchment yields.

"acid rock drainage" means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture.

"**administering authority"** is the agency that administers the *Environmental Protection Act 1994*.

"AEP" means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.

"affected person" is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life or property can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

"airblast overpressure" means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dBL).

"annual inspection report" means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan):

a) against recommendations contained in previous annual inspections reports;
b) against recognised dam safety deficiency indicators;
c) for changes in circumstances potentially leading to a change in consequence category;
d) for conformance with the conditions of this authority;
e) for conformance with the 'as constructed' drawings;

f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
g) for evidence of conformance with the current operational plan.

"ANZECC" means the *Australian and New Zealand Guidelines for Fresh Marine Water Quality 2000*.

"appropriately qualified person" means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods or literature.

"authority" means environmental authority under the *Environmental Protection Act 1994*.

"assessed" or "assess" by a suitably qualified and experienced person in relation to a consequence assessment of a regulated structure, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

a) exactly what has been assessed and the precise nature of that assessment;

b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;

c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

"associated works" in relation to a dam, means:

a) operations of any kind and all things constructed, erected or installed for that dam; and
b) any land used for those operations.

"authority" means an environmental authority or a development approval.

"bed and banks" for a waters, river, creek, stream, lake, lagoon, pond, swamp, wetland or dam means land over which the water of the waters, lake, lagoon, pond, swamp, wetland or dam normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed and banks that is from time to time covered by floodwater.

"beneficial use" in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

a) of benefit to that owner in that it adds real value to their business or to the general community;

b) in accordance with relevant provisions of the *Environmental Protection Act 1994;*

c) sustainable by virtue of written undertakings given by that owner to maintain that dam; and

d) the transfer and use have been approved or authorised under any relevant legislation.

"**blasting"** means the use of explosive materials to fracture:

a) rock, coal and other minerals for later recovery; or

b) structural components or other items to facilitate removal from a site or for reuse.

"certification" or "certified" means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for assessing*

consequence categories and hydraulic performance of structures, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by Registered Professional Engineers of Queensland.

"chemical" means:

a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth); or

b) a dangerous good under the dangerous goods code; or

c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 1997; or*

d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or

e) any substance used as, or intended for use as:

   i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or

   ii) a surface active agent, including, for example, soap or related detergent; or

   iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or

   iv) a fertiliser for agricultural, horticultural or garden use; or

   i) mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or

   ii) manufacture of plastic or synthetic rubber.

"commercial place" means a work place used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees accommodation or public roads.

"competent person" means a person with the demonstrated skill and knowledge required to carry out the task to a standard necessary for the reliance upon collected data or protection of the environment.

"consequence" in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

"consequence category" means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for assessing consequence categories and hydraulic performance of structures.*

"construction" or **"constructed"** in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

"contaminate" means to render impure by contact or mixture.

"contaminated" means the substance has come into contact with a contaminant.

"contaminant" – as defined in section 11 of the *Environmental Protection Act 1994*.

"control measure" means any action or activity that can be used to prevent or eliminate a hazard or reduce it to an acceptable level.

"dam" means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

"design plan" is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

"design storage allowance" or "DSA" means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (*ESR/2016/1933*) published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability specified in that manual.

"disturbed" means any area that has had its natural state altered by the action or interference of carrying out an activity associated with the exploration project.

"disturbance" of land includes:

a) compacting, removing, covering, exposing or stockpiling of earth
b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion
c) carrying out mining within a watercourse, waterway, wetland or lake
d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls
e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be removed after the mining activity has ceased
f) releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of 'disturbance'.

a) Areas off lease (e.g. roads or tracks which provide access to the mining lease)
b) Areas previously disturbed which have achieved the rehabilitation outcomes
c) By agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions)
d) Areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be left by agreement with the landowner.
e) Disturbance that pre-existed the grant of the tenure.

"effluent" means treated waste water discharged from sewage treatment plants.

"emergency action plan" means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The plan must require da owners to annually review and update contact information where required.

"environmental authority" means an environmental authority granted under the *Environmental Protection Act 1994*.

"environmental authority holder" means the holder of this environmental authority.

"environmentally relevant activity" means an environmentally relevant activity as defined under Section 18 of the *Environmental Protection Act 1994* and listed under Schedule 2 or Schedule 2A of the *Environmental Protection Regulation 2008.*

"flare pit" means containment area where any hydrocarbon that is discovered in an over-pressured reservoir during a drilling operation is diverted to, and combusted. The flare pit is only used during the drilling and work over process on a petroleum well.

"flowable substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

"general waste" means waste other than regulated waste.

"hazardous waste" means a substance, whether liquid, solid or gaseous that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm.

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria for the relevant consequence category in the *Manual for assessing consequence categories and hydraulic performance of structures*.

"infrastructure" means water storage dams, levees, roads and tracks, buildings and other structures built for the purpose of the mining activity.

"$L_{A\ 10,\ adj,\ 10\ mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10-minute measurement period, using Fast response.

"$L_{A\ 1,\ adj,\ 10\ mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10-minute measurement period, using Fast response

"$L_{A,\ max\ adj,\ T}$" means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"land" in the "land schedule" of this document means land excluding waters and the atmosphere., that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term 'land' in this environmental authority relates to physical land and not to interests in land.

"land capability" as defined in the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

"land suitability" as defined in the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

"land use" means the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

"low consequence dam" means any dam that is not a high or significant consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures.*

"mandatory reporting level" or "MRL" means a warning and reporting level determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures.*

"manual" means the *Manual for assessing consequence categories and hydraulic performance of structures published by the administering authority, as amended from time to time.*

"mg/L" means milligrams per litre.

"mine water" means process water and contaminated stormwater.

"natural flow" means the flow of water through waters caused by nature.

"native vegetation" means vegetation that occurs naturally in a certain area.

"noxious" means harmful or injurious to health or physical well-being.

"offensive" means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

"operational land" means the land associated with the project for which this environmental authority has been issued.

"operational plan" includes:

a) Normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA);
b) Contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

"peak particle velocity (ppv)" means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mms^{-1}).

"progressive rehabilitation" means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

"receiving environment" means all groundwater, surface water, land, and sediments that are not disturbed areas authorised by this environmental authority.

"receiving waters" means the waters into which this environmental authority authorises releases of mine affected water.

"reference site" (or analogue site) may reflect the original location, adjacent area or another area where rehabilitation success has been completed for a similar biodiversity. Details of the reference site may be as photographs, computer generated images and vegetation models etc.

"register of regulated structures" includes:

a) Date of entry in the register;
b) Name of the structure, its purpose and intended/actual contents;
c) The consequence category of the dam as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures;*
d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;
f) For the regulated dam, other than in relation to any levees –
    i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
    ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area;
    iii. Dam crest volume (megalitres);
    iv. Spillway crest level (metres AHD);
    v. Storage rating table of stored volume versus level (metres AHD);

vi. Design storage allowance (megalitres) and associated level of the dam (metres AHD)'
vii. Mandatory reporting level (metres AHD).

g) The design plan title and reference relevant to the dam;
h) The date construction was certified as compliant with the design plan;
i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
j) Details of the composition and construction of any liner;
k) The system for the detection of any leakage through the floor and sides of the dam;
l) Dates when the regulated dam underwent and annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

"regulated structure" means any structure in the significant or high consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures* published by the administering authority. A regulated structure does not include:

- A fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container;
- A sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;
- A flare pit.

"regulated waste" as defined within the *Waste Reduction and Recycling Act 2011*.

"rehabilitation" the process of reshaping and revegetating land to restore it to a stable landform.

"representative" means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

"residual drilling material" means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

"saline drainage" the movement of waters, contaminated with salt(s), as a result of the mining activity.

"self-sustaining" means not requiring on-going intervention and maintenance to maintain functional riverine processes and characteristics.

"sensitive place" means:

a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises;

b) a motel, hotel or hostel;

c) an educational institution;

d) a medical centre or hospital;

e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or

f) a public park or gardens.

Note: The definition of 'sensitive place' and 'commercial place' is based on Schedule 1 of the *Environmental Protection (Noise) Policy 2008.*

"sewage" means the used water of person's to be treated at a sewage treatment plant.

"spillway" means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges form the dam, normally under flood conditions or in anticipation of flood conditions.

"stable" in relation to land, means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.

"stormwater" means all surface water runoff from rainfall.

"**suitably qualified and experienced person"** means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act* 2002, and has demonstrated competency and relevant experience:

- for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design
- for regulated levees, an RPEQ who is a civil engineer with the require qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

"system design plan" means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

"void" means any constructed, open excavation in the ground.

"waste" as defined in section 13 of the *Environmental Protection Act 1994*.

"waste management hierarchy" has the meaning given by the *Waste Reduction and Recycling Act 2011*.

"water" is defined under Schedule 4 of the *Water Act 2000*

"waste water" means used water from the activity, process water or contaminated storm water.

"water quality" means the chemical, physical and biological condition of water.

"waters" includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), storm water channel, storm water drain, roadside gutter, storm water runoff, and groundwater.

"wet season" means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

"µg/L" means micrograms per litre.

END OF DEFINITIONS

ATTACHMENTS

Figure 1 – Surface Water Release Points and Groundwater Monitoring Locations

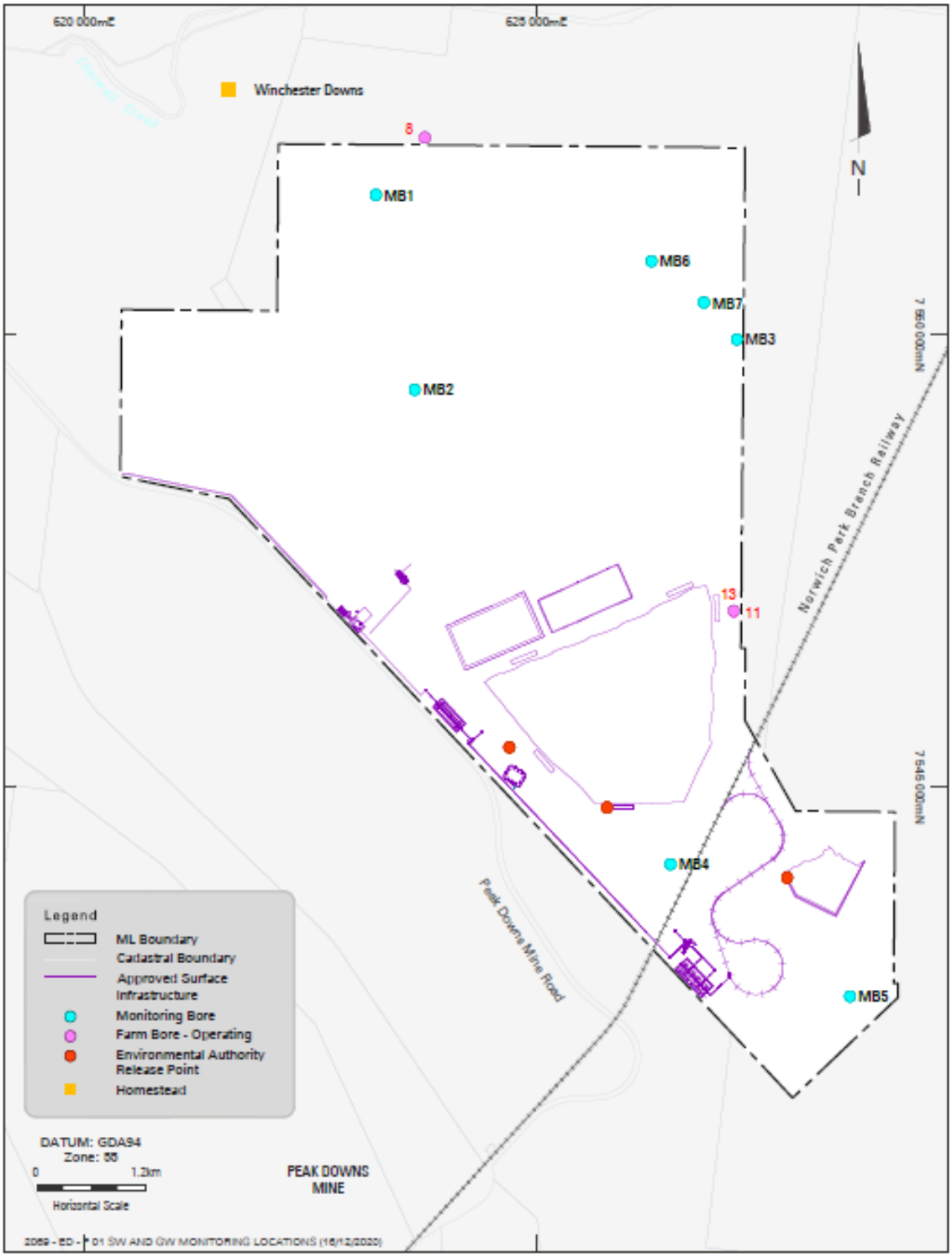


Figure 2 - Maximum Disturbance Area

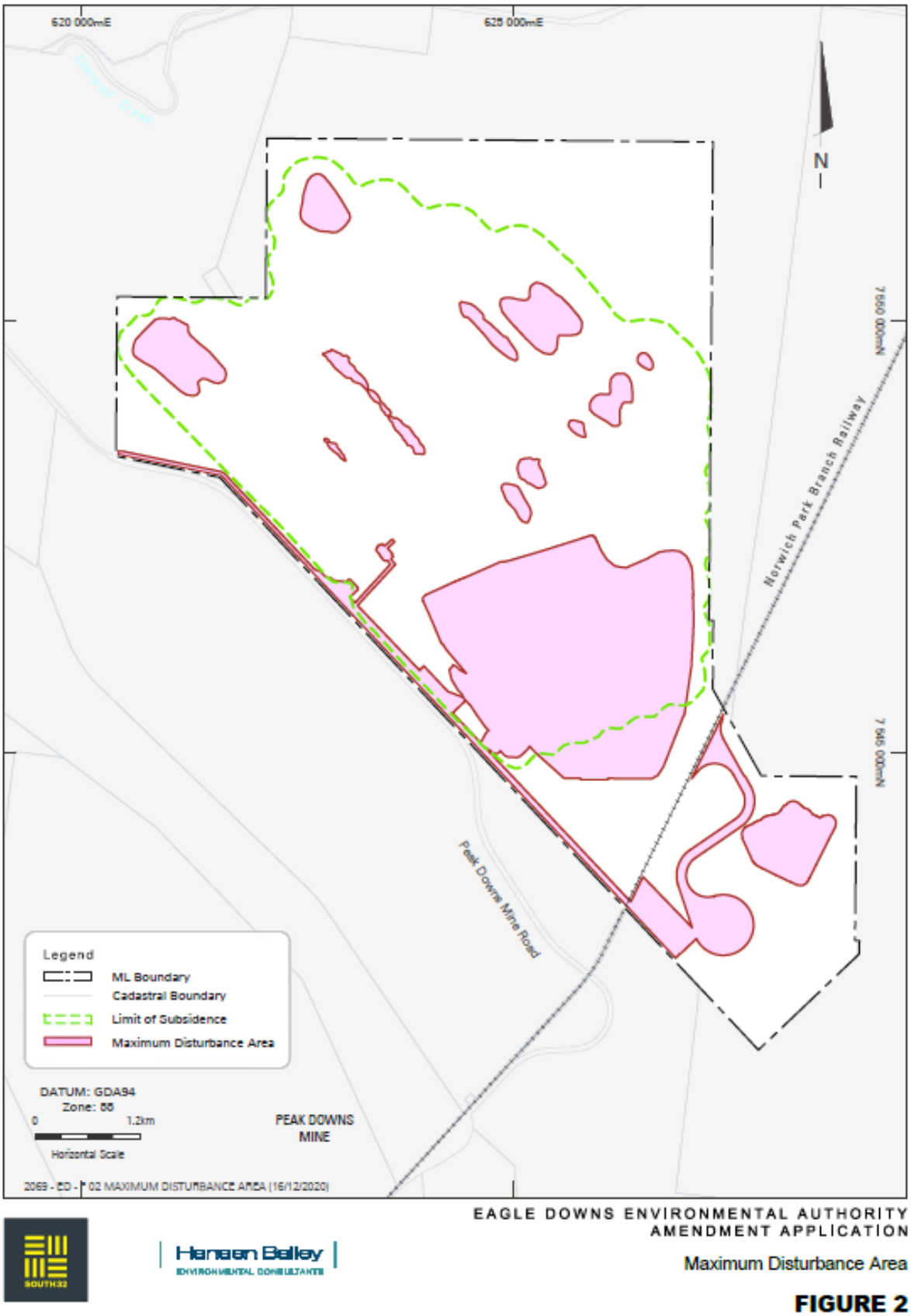


Figure 3 - Bluegrass and Brigalow Threatened Ecological Communities

