Permit

Environmental Protection Act 1994

Environmental authority EPML00643713

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

Environmental authority number: EPML00643713

Environmental authority takes effect on 6 August 2025

Environmental authority holder(s)

Name(s)	Registered address
CORONADO CURRAGH PTY LTD	Level 31, Central Plaza One, 345 Queen Street BRISBANE CITY QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML1878, ML1990, ML700006, ML700007, ML700008, ML700009, ML80010, ML80011, ML80012, ML80086, ML80110, ML80112, ML80123, ML80171
Ancillary 08 - Chemical Storage 2: Storing 50t or more of chemicals of dangerous goods class 6, division 6.1 under subsection (1)(b)	ML1878, ML1990, ML700006, ML700007, ML700008, ML700009, ML80010, ML80011, ML80012, ML80086, ML80110, ML80112, ML80123, ML80171
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML1878, ML1990, ML700006, ML700007, ML700008, ML700009, ML80010, ML80011, ML80012, ML80086, ML80110, ML80112, ML80123, ML80171
Ancillary 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (b) more than 2000t but not more than 5000t	ML1878, ML1990, ML700006, ML700007, ML700008, ML700009, ML80010, ML80011, ML80012, ML80086, ML80110, ML80112, ML80123, ML80171
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a	ML1878, ML1990, ML700006, ML700007, ML700008, ML700009, ML80010, ML80011,

Environmentally relevant activity/activities	Location(s)
total daily peak design capacity of (b-ii) more than 100 but not more than 1500EP otherwise	ML80012, ML80086, ML80110, ML80112, ML80123, ML80171

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 land give written notice to the administering authority if they become aware of the following:

- the presence of, or happening of an event involving, a hazardous contaminant on the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- if the land is contaminated land – a change in the condition of the land that is causing, or is reasonably likely to cause, serious or material environmental harm (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 land (notice must be given within 20 business days).

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 *Planning Act 2016* 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.

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

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.

	6 August 2025
Signature	Date

Jessica Johnson
Department of the Environment, Tourism, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

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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)

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access State controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

Matters of national environmental significance (MNES) are regulated under the Commonwealth EPBC Act rather than under state legislation. You may need to submit a referral if your project potentially impacts any matters protected under the EPBC Act. For more information on self-assessments, and referral and assessment processes please visit the Department of Climate Change, Energy, the Environment and Water webpage, https://www.dcceew.gov.au/environment/epbc/advice.

Obligations under the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003* (the Cultural Heritage Acts)

The Cultural Heritage Acts require anyone who carries out a land-use activity to exercise a duty of care. This 'duty of care' means land users must take all reasonable and practicable measures to ensure their activity does not harm Aboriginal or Torres Strait Islander cultural heritage, and applies to any activity where Aboriginal or Torres Strait Islander cultural heritage is located. For more information on your obligations under this legislation, please visit the Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism webpage at, https://www.tatsipca.qld.gov.au/.

Conditions of environmental authority

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site-specific conditions of approval.

This environmental authority consists of the following Schedules and Appendices:

Schedule A	General
Schedule B	Air
Schedule C	Water
Schedule D	Regulated structures
Schedule E	Noise and vibration
Schedule F	Waste
Schedule G	Land
Schedule H	Watercourse diversions
Figure 1	Release points (RP) and monitoring points (MP) on Blackwater Creek
Figure 2	Release points (RP) and monitoring points (MP) on the Mackenzie River
Figure 3	Curragh Mine Onsite Landfill Facility
Figure 4A	Approved Disturbance Area (Curragh North and Curragh Central)
Figure 4B	Approved Disturbance Area (Curragh South)
Figure 4C	Approved Bord and Pillar Mine Areas
Figure 5	Prescribed Environmental Matters
Figure 6	Creek Diversions
Figure 7	Groundwater Monitoring Bores

Conditions of environmental authority:

Agency interest: General	
Condition number	**Condition**
A1	The environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
A2	In carrying out coal mining, disturbance of land is limited to the areas marked "Approved Disturbance Area" and "Approved Underground Bord and Pillar Mining Areas" in **Figure 4A - Approved Disturbance Area (Curragh North and Curragh Central), Figure 4B - Approved Disturbance Area (Curragh South)** and **Figure 4C - Approved Bord and Pillar Mine Areas.**
A3	**Prevent and /or minimise likelihood of environmental harm** In carrying out the environmentally relevant activities, you must take all reasonable and practicable measures to prevent and / or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this authority.
A4	**Maintenance of measures, plant and equipment** The environmental authority holder must ensure: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority b) maintain such measures, plant and equipment in a proper and efficient condition c) operate such measures, plant and equipment in a proper and efficient manner d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
A5	**Monitoring and records** Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than **five** (**5) years**.
A6	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
A7	**Notification of emergencies, incidents and exceptions** The holder of this environmental authority must notify the administering authority by written notification within **twenty-four (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.

A8	Within **ten (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 recurrence of the emergency or incident.
A9	**Complaints** The holder of this environmental authority must record all environmental complaints received about the mining activities including: a) name, address and contact number for 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.
A10	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 **ten (10) business days** of completion of the investigation, or no later than **ten (10) business days** after the end of the timeframe nominated by the administering authority to undertake the investigation.
A11	**Coal Extraction** The environmental authority holder is approved for a coal extraction rate of up to **eighteen (18) million tonnes per annum (Mtpa)** of run-of-mine (ROM) coal by means of open cut mining (including highwall mining) and underground bord and pillar mining.
A12	**Exploration** Exploration activities can be undertaken outside of the Approved Disturbance Area as shown in **Figure 4A - Approved Disturbance Area (Curragh North and Curragh Central), Figure 4B - Approved Disturbance Area (Curragh South)** and **Figure 4C - Approved Bord and Pillar Mine Areas** within the tenure boundaries. The exploration activities must not result in a significant residual impact to any prescribed environmental matters.
A13	Disturbance caused by exploration activities must be rehabilitated in accordance with the standard conditions in the document titled '*Eligibility criteria and standard conditions for exploration and mineral development projects - Version 2*' (ESR/2016/1985).

Agency interest: Air	
Condition number	**Condition**
B1	**Air Monitoring Plan** An air monitoring plan is to be implemented for the duration of mine operation and must be provided within **ten (10) business days** upon request of the administering authority. This plan must include: a) the monitoring locations, types and parameters for the monitoring network b) sensitive receptors c) description and spatial distribution of the dust generating activities d) the effectiveness of the monitoring network including the appropriateness of the monitoring locations to act as suitable representative sites for sensitive places (if there is no monitoring at a particular sensitive place) e) align with monitoring methods and contaminants outlined in condition **B3**. f) mitigation measures (both preventive and in case of exceedance) g) record of air emission complaints and actions taken h) record of exceeded levels at monitoring locations and actions taken; and i) an Air Control Strategy as per condition **B4.**
B2	**Nuisance** The release of dust or particulate matter or both resulting from the mining activities must not cause an environmental nuisance, at any sensitive or commercial place.
B3	**Air monitoring and quality contaminants limits** The environmental authority holder must ensure that the air emissions generated by the mining activities do not cause exceedances of the following limits when measured at any sensitive place or commercial place: a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of Australian Standard *AS3580.10.1 Methods of sampling and analysis of ambient air – Determination of particulate matter - Deposited matter - Gravimetric method*. b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic meter over a 24-hour averaging time, when monitored in accordance with the most recent version of either: *1.* Australian Standard *AS3580.9.6 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – PM10 high volume sampler with size - selective inlet - Gravimetric method*, or *2.* Australian Standard *AS3580.9.9 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM(sub)10(/sub)low volume sampler - Gravimetric method*, or 3. Beta attenuation monitoring (BAM) method used to calculate mass concentration of PM10 volume as per Australian Standard *AS3580.9.11Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 beta attenuation matters.*

B4	**Air Emissions Control Strategy** The environmental authority holder must develop and implement an Air Emissions Control Strategy that includes an action plan to prevent exceedances of air emissions as per the limits in condition **B3**. The Air Emissions Control Strategy must be immediately activated: a) when monitoring indicates that air emissions are increasing and have the potential to exceed the limits stated in condition **B3**, and b) in response to air quality complaints.
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 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 ten business days to the administering authority following completion of monitoring.
B7	**Greenhouse Gas Abatement Plan** The following Greenhouse Gas Abatement Plan must be implemented and complied with whilst the EA is in force and any activities are being carried out: • **Curragh Bord and Pillar Mine Project, 16/10/2024, Version 1** or as updated from time to time as allowed under condition **B7a)** a) the GHG emission reduction program in the Greenhouse Gas Abatement Plan may be updated without an EA amendment application to incorporate opportunities to further reduce emissions and improve energy efficiency. b) updates to the Greenhouse Gas Abatement Plan carried out under condition **B7a)** must meet the requirements of Appendix A of the latest version of the Queensland Greenhouse Gas Emissions Guideline (ESR/2024/6819). **Audit** c) An appropriately qualified person must undertake an annual audit by 30 June each year to determine whether the Greenhouse Gas Abatement Plan has been implemented and complied with during the previous financial year. **Statement of Compliance** d) A statement of compliance must be prepared about the work undertaken to implement and comply with the GHG Abatement Plan. The statement of compliance must: 1. be prepared by an appropriately qualified person; and 2. be submitted to the administering authority within **10 business days** of the audit completion under condition **B7c)** being completed; and 3. consider the following compliance criteria: i) whether the emission reduction targets in the Greenhouse Gas Abatement Plan have been met. ii) whether the emission reduction measures in the Greenhouse Gas Emission Reduction Program have been implemented. iii) whether the Greenhouse Gas Abatement Plan has been reviewed in accordance with review provisions in the Greenhouse Gas Abatement Plan. iv) whether greenhouse gas emissions have been monitored in accordance with the monitoring program in the Greenhouse Gas Abatement Plan.

	v) whether public reporting on progress toward the emission reduction targets has been carried out in accordance with the reporting program in the Greenhouse Gas Abatement Plan. 4. state whether the work complies with the above compliance criteria. 5. be supported by the following information: i) methodology, assumptions and input data used to determine greenhouse gas emissions. **Public reporting** e) Within 20 business days of the audit being completed under condition **B7c)** the following information must be published on the environmental authority holder's website: 1. the statement of compliance required under condition **B7d);** and 2. the latest version of the Greenhouse Gas Abatement Plan. **Non-compliance** Any non-compliance with the Greenhouse Gas Abatement Plan must be reported to the administering authority in accordance with the general conditions for contravention of a condition (**A7, A8**).
B8	**Continuous monitoring** Continuous monitoring must be conducted in accordance with the standards and at the locations specified in **Table B1 - Monitoring locations, parameters, and methods.**
B9	The EA holder must ensure that monitoring sites identified as PM10-3* and PM10-4* in **Table B1 - Monitoring locations, parameters, and methods** are installed and operational prior to the commencement of mining activities in X Pit and Y or Z Pit, respectively. Coordinates of these monitoring locations must be provided to the administering authority within ten (10) business days of the installation.

Table B1 – Monitoring locations, parameters, and methods

Monitoring Point	Latitude (decimal degree, GDA2020)	Longitude (decimal degree, GDA2020)	Monitoring Parameter	Monitoring Frequency	Monitoring Method
PM10-1	148.8280928 E	23.2958760 S	PM10	Continuous	BAM
PM10-2	148.8829875 E	23.5549214 S	PM10	Continuous	BAM
PM10-3 *	TBD	TBD	PM10	Continuous	BAM
PM10-4 *	TBD	TBD	PM10	Continuous	BAM

Note: * Sites not yet installed at the time of document publishing – To be installed prior to the commencement of mining activities in X Pit (PM10-3) and Y or Z Pit (PM10-4), coordinates could vary slightly or are to be confirmed once land access arranged.

Agency interest: Water	
Condition number	**Condition**
C1	**Contaminant release** Contaminants that will, or have the potential to, cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.
C2	Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in **Table C1** and depicted in **Figure 1** and **Figure 2** attached to this environmental authority.
C3	The release of mine affected water to internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with conditions **C33** to **C38** inclusive 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** when measured at the monitoring points specified in **Table C1** for each quality characteristic.

Table C1 (Mine Affected Water Release Points, Sources and Receiving Waters)

Release Point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving waters description
RP 1	-23.5130	148.8753	Dam RD1	Dam	Blackwater Creek
RP 2	-23.5098	148.8868	Dam RD30	End of pipe	Blackwater Creek
RP 3	-23.2837	148.8478	Dam CN3	Release channel downstream of pipe outlet	Mackenzie River
RP 4	-23.3588	148.8717	Various sources[1]. Pumped from behind the levee to release channel	Release channel downstream of pipe outlet	Mackenzie River
RP 5	-23.4522	148.9011	Various sources[2]. Outlet pipe through plug on the former Blackwater Creek channel.	Release channel downstream of pipe outlet	Blackwater Creek
RP 6	-23.2615	148.8763	Various sources[3]. Outlet pipe through Mackenzie River levee	End of pipe	Mackenzie River
RP 7	-23.3072	148.8565	Various sources[4]. Release outlet to Mackenzie River on pipe network	End of pipe	Mackenzie River
RP8	-23.3167	148.8675	Various sources[5], predominantly S pit. Outlet pipe through Mackenzie River levee.	Standing water at pipe inlet	Mackenzie River
RP9	-23.2834	148.8936	Dam CN2	End of pipe	Mackenzie River

[1] Various sources include: Dam CN2, S Pit, T Pit
[2] Various source include: F Pit, D Pit, E Pit
[3] Various sources include: U Pit Ext., U Pit, T Pit
[4] Various source include: T Pit, S Pit
[5] Various sources include: T Pit, S Pit

Table C2 (Mine Affected Water Release Points, Sources and Receiving Waters)

Quality Characteristic	Release Limits	Monitoring frequency	Comment
Electrical conductivity (µS/cm)	Release limits specified in **Table C4** for variable flow criteria.	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)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
Suspended Solids (mg/L)		Daily during release* (first sample within 2 hours of commencement of release)	Suspended solids are required to measure the performance of sediment and erosion control measures.
Turbidity (NTU)	Mackenzie River release points 182 NTU or Blackwater Creek release points 629 NTU	Daily during release* (first sample within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide instantaneous results

*Note: *Limit for suspended solids can be omitted if turbidity limit is included. Limit for turbidity not required if suspended solids limit included.*

C5	a) The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table C1** for each quality characteristics and at the frequency specified in **Table C2** and **Table C3**. *Note: the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition **C5** is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.* b) The holder of the environmental authority must ensure that there are no adverse impacts to the ecosystem or wetlands through overland flow for RP9.

Table C3 (Release Contaminant Trigger Investigation Levels, Potential Contaminants)

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	1	*Based on LOR*	
Chromium	1	*For aquatic ecosystem protection, based on SMD guideline*	
Copper	4	*80th percentile value for reference sites*	
Iron	300	*For aquatic ecosystem protection, based on low reliability guideline*	
Lead	4	*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	*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	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Vanadium	11	*80th percentile value for reference sites*	
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*	
Sodium	180,000	*Australian Drinking Water Guideline*	
Sulphate	200,000	*Drinking water environmental values from NHMRC 2006 guidelines or ANZECC*	

Note:
1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
2. The quality characteristics required to be monitored as per Table C3 can be reviewed once the results of two years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from Table C3 by amendment.
3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

C6	If quality characteristics of the release exceed any of the trigger levels specified in **Table C3** 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** and: 1. where the trigger values are not exceeded then no action is to be taken; or 2. where the downstream results exceed the trigger values specified **Table C3** for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and; a) if the result is less than the background monitoring site data, then no action is to be taken; or b) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm. Note: *Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C6 2(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*
C7	If an exceedance in accordance with condition **C6 2(b)** is identified, the holder of the authority must notify the administering authority in writing within **one (1) business day** of receiving the result.
C8	**Mine Affected Water Release Events** The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in **Table C4**.
C9	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition **C2** must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in **Table C4** for the release point(s) specified in **Table C1**.

Table C4 (Mine Affected Water Release during Flow Events)

Receiving waters/ stream	Release Point (RP)	Gauging station	Gauging Station Latitude (decimal degree, GDA94)	Gauging Station Longitde (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge (m3/s)	Maximum release rate (for all combined RP flows)	Electrical Conductivity and Sulphate Release Limits
Mackenzie River	RP 3 RP 4# RP 6 RP 7 RP 8 RP 9	Bingegang tailwater gauge MP14 (Sunwater)	-23.0737	149.0319	Continuous (minimum daily)	**Low flow** > 1 m3/s for a period of 30 days after natural flow events that exceed 30 m3/s	≤ 0.5 m3/s	Electrical conductivity ≤ 310 µS/cm Sulphate (SO4)2- ≤ 200 mg/L
						Medium Flow > 30 m3/s	≤0.18 m3/s	Electrical conductivity ≤ 3,500 µS/cm Sulphate (SO42-) ≤ 500 mg/L
							≤ 0.10 m3/s	Electrical conductivity ≤ 6,000 µS/cm Sulphate (SO42-) ≤ 750 mg/L
						High flow > 80 m3/s	Release rate not to exceed 350 (natural) to 1 (mine affected water) dilution of the flow rate at Bingegang tailwater gauge	Electrical conductivity ≤ 7,000 µS/cm (≤ 6000 µS/cm for RP4) Sulpate (SO42-) ≤ 750 mg/L
Blackwater Creek	RP 1 RP 2 RP 5	MP 1	-23.5122	149.0319	Continuous (minimum daily)	**Low Flow** <0.5 m3/s for a period of 4 weeks after natural flow events that exceed 1 m3/s	≤ 0.5 m3/s	Electrical conductivity ≤ 680 µS/cm Sulpate (SO42-) ≤ 250 mg/L
						Medium Flow > 2.5 m3/s	≤ 0.16 m3/s	Electrical conductivity ≤ 6,000 µS/cm Sulpate (SO42-) ≤ 500 mg/L
						High Flow > 5 m3/s	≤ 0.18 m3/s	Electrical conductivity ≤ 10,000 µS/cm Sulphate (SO42-) ≤ 1000 mg/L

Note:
#Release of mine affected water form RP4 under high flow conditions (Mackenzie River) must not exceed 6,000 (µS/cm).

C10	The release of mine affected water to waters in accordance with condition **C2** must not exceed the Electrical Conductivity and Sulphate release limits or the Maximum Release Rate (for all combined release point flows) for each receiving water flow criteria for discharge specified in **Table C4** when measured at the monitoring points specified in **Table C1**.
C11	The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in **Table C1**.
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 as soon as practicable and no later than **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) expected release cessation date/time; c) release point/s; d) release volume (estimated); e) receiving water/s including the natural flow rate; and f) any details (including available data) regarding likely impacts on the receiving water(s). Note: *Notification to the administering authority must be addressed to the Manager and Project Manager of the local Administering Authority via email or facsimile.*
C14	The environmental authority holder must notify the administering authority as soon as practicable (nominally within **twenty-four (24) hours** after cessation of a release event) 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/time; b) natural flow volume in receiving water; c) volume of water released; d) details regarding the compliance of the release with the conditions of Agency Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume); e) all in-situ water quality monitoring results; and f) any other matters pertinent to the water release event. Note: *Successive or intermittent releases occurring within twenty-four (24) hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with conditions C13 and C14, provided the relevant details of the release are included within the notification provided in accordance with conditions C13 and C14.*
C15	**Notification of Release Event Exceedance** If the release limits defined in **Table C2** are exceeded, the holder of the environmental authority must notify the administering authority within **twenty-four (24) hours** of receiving the results.

C16	The authority holder must, within **twenty-eight (28) days** of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing: a) the reason for the release; b) the location of the release; c) all water quality monitoring results; d) any general observations; e) all calculations; and f) any other matters pertinent to the water release event.
C17	**Monitoring of Water Storage Quality** Water storages stated in **Table C5** which are associated with the release points must be monitored for the water quality characteristics specified in **Table C6** at the monitoring locations and at the monitoring frequency specified in **Table C5**.
C18	In the event that waters storages defined in **Table C5** exceed the contaminant limits defined in **Table C6**, the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.

Table C5 (Water Storage Monitoring)

Water Storage Description	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Monitoring Location	Frequency of Monitoring
Dam RD1	-23.5130	148.8753	Mixed sample taken from bank or pontoon if available	Quarterly
Dam CN3	-23.2877	148.8492	Mixed sample taken from bank or pontoon if available	Quarterly
T Pit	-23.3047	148.8613	Mixed sample taken from bank or pontoon if available	Quarterly

Table C6 (Onsite water storage contaminant limits)

Quality Characteristic	Test Value	Contaminant Limit
pH (pH unit)	Range	Greater than 4, less than 9[2]
EC (µS/cm)	Maximum	5970[1]
Sulphate (mg/L)	Maximum	1000[1]
Fluoride (mg/L)	Maximum	2[1]
Aluminium (mg/L)	Maximum	5[1]
Arsenic (mg/L)	Maximum	0.5[1]
Cadmium (mg/L)	Maximum	0.01[1]

Cobalt (mg/L)	Maximum	1[1]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Nickel (mg/L)	Maximum	1[1]
Zinc (mg/L)	Maximum	20[1]

Note:
1 Contaminant limit based on ANZECC & ARMCANZ (2000) stock water quality guidelines.
2 Page 4.2-15 of ANZECC & ARMCANZ (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4–9".
Note: Total measurements (unfiltered) must be taken and analysed.

C19	**Receiving environment monitoring and contaminant trigger levels** The quality of the receiving waters must be monitored at the locations specified in **Table C8** and shown in **Figure 1** and **Figure 2** for each quality characteristic and at the monitoring frequency stated in **Table C7**.

Table C7 (Receiving Waters Contaminant Trigger Levels)

Quality Characteristic	Trigger Level	Monitoring Frequency
pH	Blackwater Creek 6.5 – 9.0 Mackenzie River 6.5 - 8.5	Daily during the release
Electrical Conductivity (μS/cm)	Blackwater Creek 720 μS/cm Mackenzie River 400 μS/cm	
Suspended solids (mg/L)	Blackwater Creek 690 mg/L Mackenzie River 200 mg/L	
Sulphate (SO_4^{2-}) (mg/L)	Blackwater Creek 250 mg/L Mackenzie River 200 mg/L	
Sodium (mg/L)	Blackwater Creek 180 mg/L Mackenzie River 50 mg/L	

C20	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in **Table C7** 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; or

	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 in the next annual return, outlining: 1. details of the investigations carried out; and 2. actions taken to prevent environmental harm. Note: *Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C20(2) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*

Table C8 (Receiving Water Upstream Background Sites and Downstream Monitoring Points)

Monitoring Points	Receiving Waters Location Description	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)
Upstream Background Monitoring Points			
Monitoring Point 1	Blackwater Creek 800 metres upstream of RP 1	-23.5190	148.8773
Monitoring Point 12	Bedford Weir Tailwater Mackenzie River 3,400 metres upstream of RP 4	-23.3721	148.8414
Downstream Monitoring Points			
Monitoring Point 4	Blackwater Creek 6,000 metres downstream of RP 5	-23.4061	148.9158
Monitoring Point 11 (access permitting)	Mackenzie River 4,700 metres downstream of RP6	-23.2631	148.9014
Monitoring Point 13	Mackenzie River downstream of RP4.	-23.3160	148.8678
Monitoring Point 14 (alternative)	Bingegang Weir Headwater Mackenzie River approx. 40 kilometres downstream of RP 6	-23.0737	149.0319

Notes:
a) The upstream monitoring point should be within 4 km the release point.
b) The downstream point should not be greater than 45 km from the release point.
c) The data from background monitoring points must not be used where they are affected by releases from other mines.

C21	**Receiving Environment Monitoring Program (REMP)** The environmental authority holder must develop and implement a REMP to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site.
C22	The REMP must: a) Assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); and b) Be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; and c) Include monitoring from background reference sites (e.g. upstream or background) and

	downstream sites from the release (as a minimum, the locations specified in **Table C8**); and d) Specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the *Queensland Water Quality Guidelines* 2006. This should include monitoring during periods of natural flow irrespective of mine or other discharges; and e) Include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in **Table C2 and C3**; and f) Include, where appropriate, monitoring of 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*); and g) Include, where appropriate, monitoring of macro-invertebrates in accordance with the AusRivas methodology, and h) Apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; and i) Describe sampling and analysis methods and quality assurance and control; and j) Incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
C23	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions **C21** and **C22** 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 for the purpose of: i) supplying stock water subject to compliance with the quality release limits specified in **Table C9**; or ii) supplying irrigation water subject to compliance with quality release limits in **Table C10**; or iii) supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority.

Table C9 (Stock water release limits)

Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	5000

Table C10 (Irrigation Water Release Limits)

Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5

Electrical Conductivity	µS/cm	N/A	Site specific value to be determined in accordance with ANZECC & ARMCANZ (2000) Irrigation Guidelines

C25	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 dams or tanks, for the purpose of supplying water to Jellinbah Mine. The volume, pH and electrical conductivity of water transferred to Jellinbah Mine must be monitored and recorded.
C26	If the responsibility for mine affected water is given or transferred to another person in accordance with conditions **C25** or **C26:** a) the responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third party agreement); and b) the third party agreement must include a commitment from the person utilising the mine affected water to use it in such a way as to prevent environmental harm or public health incidents and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994,* environmental sustainability of the water disposal and protection of environmental values of waters; and c) the third party agreement must be signed by both parties to the agreement.
C27	**Water General** All determinations of water quality and biological monitoring 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 *Monitoring and Sampling Manual*; Note: *Condition C28 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.* c) collected from the monitoring locations identified within this environmental authority, within forty-eight (48) hours of each other where possible; d) carried out on representative samples; and e) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used.
C28	The release of any contaminants as permitted by this environmental authority, directly or indirectly to waters, other than internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with conditions **C31** to **C36** inclusive: 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.
C29	**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 exceedances with the conditions of this environmental authority; and g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
C30	**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 the latest edition of the *Guideline - Activities in a watercourse, lake or spring associated with a resources activity or mining operations.*
C31	**Water Management Plan** A Water Management Plan must be implemented.
C32	The Water Management Plan must: a) 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 b) be developed in accordance with the guideline *Preparation of water management plans for mining activities (EM324)* and include: i. a study of the source of contaminants; ii. a water balance model for the site; iii. a water management system for the site; iv.measures to manage and prevent saline drainage; v.measures to manage and prevent acid rock drainage; vi.contingency procedures for emergencies; and iv. a program for monitoring and review of the effectiveness of the water management plan.
C33	The Water Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must: a) assess the plan against the requirements under condition **C32**; b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and c) identify any amendments made to the water management plan following the review.
C34	The holder of this environmental authority must attach to the review report required by condition **C33**, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates: a) to ensure compliance with this environmental authority; and b) to prevent a recurrence of any non-compliance issues identified.

C35	The review report required by condition **C33** and the written response to the review report required by condition **C34** must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
C36	A copy of the Water Management Plan must be provided to the administering authority on request.
C37	**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.
C38	**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.
C39	**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.
C40	**Stormwater, other than mine affected water, is permitted to be released to waters from:** a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition **C39**; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions **C31** to **C36** inclusive, for the purpose of ensuring water does not become mine affected water.
C41	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.
C42	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.
C43	**Sewage effluent** The daily operation of the sewage treatment plant and pollution control equipment must be carried out by a person(s) with appropriate experience and/or qualifications to ensure the effective operation of that treatment system and control equipment.
C44	Pipelines and fittings associated with the sewage treatment system must be clearly identified.
C45	All treated effluent released from the sewage treatment facilities must be monitored at the frequency and for the parameters specified in **Table C11.**

Table C11 (Sewage effluent quality targets)

Quality characteristics	Release limit	Units	Limit type	Monitoring frequency
5 day Biochemical Oxygen Demand	20	mg/L	max	Monthly
pH	6.0 to 9.0	pH Units	range	Monthly
Free Chlorine Residual	3	mg/L	max	Monthly
Faecal coliforms	<1000	Cfu/100mL[2]	max	Monthly

C46	Treated effluent used directly from the sewage treatment facilities for dust suppression or irrigation must not exceed sewage effluent release limits defined in **Table C11**.
C47	Treated effluent used for dust suppression or irrigation must not cause spray drift or over spray to any sensitive or commercial place.
C48	Treated effluent from the sewage treatment plant must only be discharged from the authorised discharge location.
C49	Treated effluent must not be used for dust suppression or reused for irrigation so as to create a likelihood of contact or exposure to persons.
C50	Treated effluent must not be released from the site to any waters or the bed and banks of any waters.
C51	**Groundwater** The holder of this environmental authority must not release contaminants to groundwater.
C52	All determinations of groundwater quality monitoring must be performed by a suitably qualified person.
C53	The holder of the environmental authority must implement a groundwater monitoring program which has been developed by a suitably qualified person. The program must be able to detect a significant change to groundwater quality values and standing water levels (consistent with the current suitability of the groundwater for domestic and agricultural use) due to activities that are part of this mining project.
C54	The holder of the environmental authority must report the results and analysis of groundwater monitoring to the administering authority on request.
C55	Groundwater affected by the mining activities must be monitored at compliance bores at the nominated locations, frequencies and other parameters defined in **Table C12** and shown in **Figure 7.**

Table C12 (Groundwater monitoring locations and frequency)

Bore ID	Bore Location Coordinates[1]		Ground Surface Elevation[2]	Screened Interval (m bgl)[3]	Screened Formation	Monitoring Frequency
	Easting	Northing				
BH1	690,092	7,399,431	157.70	18*	Rangal Coal Measures**	Quarterly
BH2	689,860	7,401,174	169.82	70*	Rangal Coal Measures**	Quarterly
BH3	688,960	7,404,720	176.52	43*	Rangal Coal Measures**	Quarterly
BH4	688,374	7,401,328	170.19	33*	Burngrove Formation**	Quarterly
1304aMB (MB4A)	691,481	7,398,090	153.35	6 – 9	Weathered Profile	Quarterly
1309MB (MB7)	689,082	7,423,302	124.43	12 – 18	Alluvium	Quarterly
1410MB (MB8)	688,842	7,423,144	126.05	10 – 18	Alluvium	Quarterly
1411MB (MB9)	688,974	7,423,010	128.23	9 – 20	Alluvium	Quarterly
1418MB (FF2)	688,428	7,400,647	175.56	1.2 – 16	Weathered Profile	Quarterly
1419MB	693,083	7,418,830	138.46	1.2 - 15	Weathered Profile	Quarterly
1426MB (SMB2)	691,085	7,419,864	128.79	12 – 26	Alluvium	Quarterly
1529MB (PMB07)	691,161	7,417,211	123.81	33 – 39	Rangal Coal Measures (Coal Bands)	Quarterly
1534MB	689,540	7,421,687	133.30	27 - 33	Rangal Coal Measures (Coal Bands)	Quarterly
HYDRO23_12[4]	692,897	7,416,176	131.38	Not applicable	Rangal Coal Measures (Mammoth Seam & Overburden)	High frequency[5,8]
HYDRO23_02MB[6]	691,540	7,414,006	118.95	7 - 10	Rangal Coal Measures (Overburden)	High frequency[5] Quality: Quarterly
HYDRO23_06MB[6]	691,421	7,414,674	119.86	11.5 – 14.5	Rangal Coal Measures (Overburden)	High frequency[5] Quality: Quarterly
HYDRO23_07MB[6]	692,406	7,413,541	127.02	13 - 16	Weathered Profile	High frequency[5] Quality: Quarterly
HYDRO23_08MB[6]	694,604	7,413,222	123.76	7 - 10	Weathered Profile	High frequency[5] Quality: Quarterly
MB101[7]	692,406	7,413,541	127	97	Rangal Coal Measures (Interburden)	High frequency[5,8]
MB102[7]	694,333	7,414,192	127	151	Rangal Coal Measures (Mammoth Seam)	High frequency[5,8]

Note:
** No data on screened interval available; terminal depth of bore shown (based on published drill logs)*
***No logged data on screened lithology available; inferred screened stratigraphic unit shown*

[1] Coordinates presented in GDA/MGA94, Zone 55
[2] Elevation presented in metres above Australian Height Datum (mAHD)
[3] Depth of bore screened interval presented in metres below ground level (mbgl)
[4] HYDRO23_12 shall be decommissioned 12 months after cessation of gas drainage undertaken as part of the Curragh Pilot Gas Drainage Program
[5] 'High frequency' monitoring means automatic recording of groundwater levels at pre-set intervals (nominally 6-hourly) using a datalogger
[6] HYDRO_02MB, 06MB, 07MB and 08MB to be monitored for interpretive purposes only (i.e. no trigger values are applicable to these bores); these bores shall be decommissioned after 3 consecutive 'dry' results are recorded in a bore
[7] Indicative bore location, elevation and screened interval (subject to confirmation by survey following bore construction)
[8] Groundwater levels only are to be monitored at these bores

C56	If the groundwater contaminant trigger levels defined in **Table C13** 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. An action plan to mitigate potential harm must be developed by a suitably qualified person.

Table C13 (Groundwater contaminant trigger levels)

Parameter	Bore No	Unit	Trigger Levels			Limit Type
			Alluvium	Rangal coal measures	Burngrove	
Groundwater Level	All other bores	RL AHD (m)	Greater than 2 metre drawdown from the background level.			Maximum
	MB101	RL AHD (m)	51.51[1,2]			Minimum
	MB102	RL AHD (m)	74.89[1,2]			Minimum
pH		pH Units	6.5 - 9.0	6.5 - 9.0	6.5 - 9.0	Minimum/Maximum
Electrical Conductivity		µS/cm	TBA	TBA	TBA	Maximum
Total Dissolved Solids		mg/L	TBA	TBA	TBA	Maximum
Calcium*		mg/L	TBA	TBA	TBA	Maximum
Magnesium*		mg/L	TBA	TBA	TBA	Maximum
Sodium*		mg/L	TBA	TBA	TBA	Maximum
Potassium*		mg/L	TBA	TBA	TBA	Maximum
Chloride*		mg/L	TBA	TBA	TBA	Maximum
SO_4*		mg/L	TBA	TBA	TBA	Maximum
CO_3*		mg/L	TBA	TBA	TBA	Maximum
HCO_3*		mg/L	TBA	TBA	TBA	Maximum
PO4		mg/L	TBA	TBA	TBA	Maximum
NO3		mg/L	TBA	TBA	TBA	Maximum
Iron		mg/L	TBA	TBA	TBA	Maximum
Aluminium		mg/L	TBA	TBA	TBA	Maximum
Arsenic		mg/L	TBA	TBA	TBA	Maximum
Mercury		mg/L	TBA	TBA	TBA	Maximum
Total Petroleum Hydrocarbons						
TPH (C6-C9)		mg/L	TBA	TBA	TBA	Maximum
TPH (C10-C14)		mg/L	TBA	TBA	TBA	Maximum
TPH (C15-C28)		mg/L	TBA	TBA	TBA	Maximum
TPH (C28-C36)		mg/L	TBA	TBA	TBA	Maximum

**means these cations and anions are to be monitored once/year*

[1] In the absence of observed groundwater level data at this location, the trigger level elevation is based on the predicted groundwater level following depressurisation. This trigger level has not been adjusted for observation/model error.
[2] The trigger level is to be reviewed when a representative observed water level dataset is available to compare with simulated and predicted water levels.

C57	**Determining contaminant trigger level and limit type** The background groundwater quality for each geology must be determined from hydraulically isolated background bore(s) that have not been affected by any mining activities. The groundwater contaminant trigger levels and limit type as per **Table C14** must be determined and submitted to the administering authority by **1 February 2023**.
C58	**Bore construction and maintenance and decommissioning** The construction, maintenance and management of groundwater bores (including background and compliance groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring. For all bores constructed after February 2015 construction and decommissioning must be in accordance with the *Manual for Minimum Construction Standard for Water Bores in Australia*.

Agency interest: Regulated Structures	
Condition number	**Condition**
D1	**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 Structures (EM635) a*t 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.
D2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
D3	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 (EM635)*.
D4	**Design and construction[1] of a regulated structure** Conditions **D5** to **D9** inclusive do not apply to existing structures. Note [1] : *Construction of a dam includes modification of an existing dam—refer to the definitions.*
D5	All regulated structures must be designed by, and constructed [2] 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 (EM635)*. Note [2]: *Certification of design and construction may be undertaken by different persons.*
D6	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.
D7	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 (EM635)*, and must be recorded in the Regulated Dams/Levees register.
D8	**Regulated structures** must: a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);* 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) 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.

D9	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; b) construction of the regulated structure is in accordance with the design plan.
D10	Operation of a regulated structure, except for an existing structure, is prohibited unless: a) the holder has submitted to the administering authority: i) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition **G6**; ii) a set of 'as constructed' drawings and specifications; iii) certification of those 'as constructed drawings and specifications' in accordance with condition **G9**; iv) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; v) the requirements of this authority relating to the construction of the regulated structure have been met; vi) the holder has entered the details required under this authority, into a Register of Regulated Structures; and vii) there is a current operational plan for the regulated structures.
D11	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.
D12	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
D13	Conditions **D14** – **D17** inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
D14	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.
D15	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.
D16	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.
D17	The holder must record any changes to the MRL in the Register of Regulated Structures.

D18	**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.
D19	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 Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
D20	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.
D21	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.
D22	Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
D23	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.
D24	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 (EM635).
D25	The holder must: a) Within **twenty (20) business days** of receipt of the annual inspection report, provide to the administering authority: i) The recommendations section of the annual inspection report; and ii) If applicable, any actions being taken in response to those recommendations; and b) If, following 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.
D26	**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.
D27	**Decommissioning and rehabilitation** Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with condition **D28**; 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 iii) the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).
D28	After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria: 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 soil 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, and 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 petroleum activity(ies). i) 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 petroleum activities being completed.
D29	**Register of Regulated Structures** A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.
D30	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated structure is submitted to the administering authority.
D31	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition **D10** and **D11** has been achieved.
D32	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
D33	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.
D34	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.

D35	**Transitional arrangements** All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within **6 months** of amendment of the authority adopting this schedule.
D36	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in **Table D1**, depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
D37	**Table D1** ceases to apply for a structure once any of the following events has occurred: a) It has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or b) It has been decommissioned; or c) It has been certified as no longer being assessed as a regulated structure.
D38	Certification of the transitional assessment required by condition **D35** and **D36** (as applicable) must be provided to the administering authority within **6 months** of amendment of the authority adopting this schedule.

Table D1 (Transitional Hydraulic Performance Requirements for Existing Structures)

Transition period required for existing structures to achieve the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Dams*			
Compliance with Criteria	**High**	**Significant**	**Low**
90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing)	Within 5 years or as per compliance requirements (e.g. TEP timing)	Review consequence assessment every 5 years.

Agency interest: Noise and vibration	
Condition number	**Condition**
E1	**Noise limits** The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the limits in **Table E1** to be exceeded at a sensitive place or commercial place.
E2	A Noise Monitoring Plan is to be implemented by 28 April 2025 to ensure compliance with **Table E1** limits and must be provided within **ten (10) business days** upon request of the administering authority. The plan must include: a) align with monitoring and reporting requirements outlined in condition **E6** b) mitigation measures (both preventive and in case of exceedance) c) record of noise emission complaints and actions taken d) record of noise levels and monitoring locations and actions taken e) a Noise Control Strategy as per condition **E3**.
E3	**Noise Control Strategy** The environmental authority holder must develop and implement a Noise Control Strategy that prevents exceedances of noise as per the limits in **Table E1** and **Table E2**. The Noise Control Strategy must be immediately activated: a) when monitoring indicates that noise levels are increasing and have the potential to exceed the noise limits stated in **Table E1** b) when monitoring indicates that levels of blasting noise is increasing and has the potential to exceed the noise limits stated in **Table E2** c) in response to noise complaints, and d) in response to blasting complaints.

Table E1 (Noise limits)

Noise level dB(A)	**7am - 6pm**	**6pm - 10pm**	**10pm - 7am**
	Noise measured at a 'Sensitive place'		
$L_{Aeq, adj, 15 mins}$	42	42	37
$L_{A1, adj, 15 mins}$	52	52	47
	Noise measured at a 'Commercial place'		
$L_{Aeq, adj, 15 mins}$	48	N/A	N/A

E4	**Airblast overpressure limits** The holder of this environmental authority must ensure that blasting does not cause the limits for peak particulate velocity and air blast overpressure in **Table E2** to be exceeded at a sensitive place or commercial place.
E5	The holder of the environmental authority must develop and implement a blast monitoring program to monitor compliance with **Table E2** criteria.

Table E2 (Blasting noise limits)

Blasting noise	Sensitive or commercial blasting noise limits	
	7am – 6pm	**6pm – 7am**
Airblast overpressure	115dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120dB (Linear) Peak at any time	No blasting impacts to occur
Ground vibration peak particulate velocity	5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10mm/second peak particle velocity at any time.	No blasting impacts to occur

E6	**Monitoring and reporting** Noise monitoring and recording must include the following descriptor characteristics and matters: a) LAN,T (where N equals the statistical levels of 1, 10 and 90 and T = time) b) background noise LA90 c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels d) atmospheric conditions including temperature, relative humidity and wind speed and directions e) effects due to any extraneous factors such as traffic noise f) location, date and time of monitoring g) all equipment in operation at the time of the noise measurement; and h) if the complaint concerns low frequency noise, Max LpLIN,T and one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.
E7	The monitoring and reporting of noise emissions must be undertaken in accordance with the current edition of the administering authority's Noise Measurement Manual (ESR/2016/2195), the relevant Australian Standard and the Environmental Protection Regulation 2019 (Chapter 5, Part 4).
E8	Noise measurements must be taken using a class 1 sound level meter as classified under AS IEC 61672.

Agency interest: Waste	
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 10 metre 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 10 metre radius of the scrap tyre storage area.
F3	Disposing of scrap tyres resulting from the authorised activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable.
F4	Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.
F5	**Waste management** A Waste Management Plan, in accordance with the *Waste Reduction and Recycling Act 2011,* must be implemented and must cover: a) describe how Curragh Coal Mine recognise and apply the waste and resource management hierarchy (*Waste Reduction and Recycling Act 2011)*; b) identify characterisations of wastes generated from the project and general volume trends over the past 3 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 type 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); h) cover a disposal procedure for hazardous wastes; i) outline the process to be implemented to allow for continuous improvement of the waste management systems; j) identify responsible staff (positions) for implementing, managing and reporting the Waste Management Plan; and k) cover a staff awareness and induction program that encourages re-use and recycling.

F6	Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.
F7	General waste must only be disposed of into the waste disposal trench facility of ML1878 and identified in **Figure 3**.
F8	The holder of this environmental authority may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.
F9	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. Note: Records of documents maintained in compliance with a waste tracking system established under the *Environmental Protection Act 1994* or any other law for regulated waste will be deemed to satisfy this condition.
F10	Records of trade and regulated wastes or material leaving the mining lease for recycling or disposal, including the final destination and method of treatment, must be in accordance with the *Waste Reduction and Recycling Act 2011.*
F11	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 under the provisions of the *Environmental Protection Act 1994*.
F12	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 under the provisions of the *Environmental Protection Act 1994*.

Agency interest: Land	
Condition number	**Condition**
G1	**Topsoil** Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.
G2	**Preventing contaminant release to land** Contaminants must not be released to land in manner which constitutes nuisance, material or serious environmental harm.
G3	**Chemicals and flammable or combustible liquids** All flammable and combustible liquids, chemicals, explosives, corrosive substances, toxic substances, gases and dangerous goods 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.
G4	Spillage of all flammable and combustible liquids, chemicals, explosives, corrosive substances, toxic substances, gases and dangerous goods must be controlled in a manner that prevents environmental harm (other than trivial harm).
G5	All chemicals and flammable or combustible liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land. Where no relevant Australian Standard is available, the following must be applied: a) storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and b) drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.
G6	**Spill kit** An appropriate spill kit, personal protective equipment and relevant operator instructions/emergency procedure guides for the management of wastes, chemicals and flammable and combustible liquids associated with the activity must be kept at the site.
G7	**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. Note: *This is not applicable where the landowner / holder is also the environmental authority holder.*
G8	**Acid rock drainage and leachate management** Subject to the release limits defined in Department 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 or water course.

G9	**Rehabilitation landform criteria** All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover.
G10	Progressive rehabilitation must commence within three years when areas become available within the operational land.
G11	**Residual void outcome** Residual voids must comply with the following rehabilitation outcomes: residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself and subject to any other condition within this environmental authority.
G12	The rehabilitation of disturbed areas and residual void investigation reports, submitted to the administrating authority in June 2012, are to be updated to incorporate rehabilitated landform criteria and residual void outcomes for ML700006, ML700007, ML700008, ML700009, **six (6) months** prior to coal mining occurring on these ML's. The rehabilitated landform criteria and residual void outcomes from these reports must be reviewed every three years, or if any amendments occur and re-submitted to the administering authority.
G13	**Erosion** Rehabilitated land must: a) not have a rate of soil loss that exceeds that present in representative unmined areas within the mining leases that have the same chemical and physical characteristics including slope, slope length and fire regime; and b) not exhibit any signs of continued erosion greater than that exhibited on representative unmined areas within the mining leases.
G14	**Weed control** Class 1 and Class 2 declared plants as listed under the Land Protection Pest and Stock Route Management Act 2002 and subordinate legislation must not be present in the rehabilitation in densities that prevent the revegetation criteria from being achieved.
G15	**Pilot Gas Drainage Program** All new surface disturbance associated with the Pilot Gas Drainage Program must avoid impacts to prescribed environmental matters.
G16	**Rehabilitation of Pilot Gas Drainage Program** Rehabilitation of disturbance associated with the Pilot Gas Drainage Program must be completed within 6 months of the cessation of gas drainage activities and must achieve the following outcomes: a) all drilling stimulation and gas drainage equipment removed from site; b) boreholes sealed with grout and casing removed 300mm below the ground surface; c) all sumps backfilled; d) topsoil replaced at drill pad and access track areas; and e) drill pad areas reseeded with pasture grass.
G17	**Subsidence Monitoring and Management Plan**

	A subsidence monitoring and management plan must be developed and maintained by an appropriately qualified person. The subsidence monitoring and management plan must include the monitoring and management of subsidence in all surface areas above the approved underground bord and pillar mining area shown in **Figure 4A – Approved Disturbance Area (Curragh North and Curragh Central)** and at a minimum include: a) survey of the surface levels above the underground mining area prior to the commencement of mining in each panel; b) monitoring program that specifies the location, frequency and method for monitoring surface subsidence; c) investigation to be undertaken in the event that subsidence monitoring detects surface movement in excess of 100mm. The investigation must include: (i) Confirmation of the cause of the level of subsidence (ii) Identification of any associated surface subsidence effects or environmental impacts (iii) Identification of any required rehabilitation/remediation measures for identified surface effects or environmental impacts d) Periodic review and update of the plan, where necessary, to ensure it continues to achieve the requirements of this condition.
G18	**Rehabilitation of Blackwater Creek diversion** Rehabilitation of the Blackwater Creek diversion works must be conducted in accordance with the document EM Plan 1.4 Blackwater Creek Diversion Monitoring and Maintenance Plan.
G19	**Rehabilitation monitoring program** 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.
G20	**Post closure management plan** A post closure management plan for the site must be prepared at least **eighteen (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; or 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.
G21	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; and 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.
G22	**Biodiversity offsets** Significant residual impacts to prescribed environmental matters, other than if the impacts were authorised by an existing authority issued before the commencement of the *Environmental Offsets Act 2014*, are not authorised under this environmental authority or the *Environmental Offsets Act 2014* unless the impacts are specified in **Table G2 – Authorised impacts to prescribed environmental matters** in the locations shown in **Figure 5 – Prescribed Environmental Matters**.
G23	Records demonstrating that each impact to a prescribed environmental matter not listed in **Table G2 - Authorised impacts to prescribed environmental matters** did not, or is not likely to, result in a significant residual impact to that matter must be: a) completed by an appropriately qualified person; and b) kept for the life of the environmental authority.
G24	An environmental offset made in accordance with the *Environmental Offsets Act 2014* and Queensland Environmental Offsets Policy, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in **Table G2 - Authorised impacts to prescribed environmental matters**, unless a lesser extent of the impact has been approved in accordance with condition **G26** for staged offsets.

Table G2 (Authorised impacts to prescribed environmental matters)

Prescribed environmental matter	Maximum extent of impact	Environmental offset required	Stage 1 ML700008 (ha)	Stage 2 ML00007 (ha)	Stage 3 ML700006 (ha)	Stage 4 ML700009 (ha)
*Endangered regional ecosystem – 11.3.1**	*0.8ha*	*No*	*0*	*0.7*	*0*	*0.1*
*Endangered regional ecosystem - 11.4.7**	*10.1ha*	*No*	*6.6*	*3.5*	*0*	*0*
*Of concern regional ecosystem – 11.3.3**	*79ha*	*Yes*	*0*	*79.0*	*0*	*0*
*Remnant vegetation within a defined distance from the defining banks of a relevant watercourse***	*30.8ha*	*Yes*	*0*	*30.8*	*0*	*0*
Essential habitat for Ornamental snake	*1.3ha*	*Yes*	*0*	*1.3*	*0*	*0*
*Connectivity area***	*44.8ha*	*Yes*	*0*	*44.8*	*0*	*0*
Plants that are endangered wildlife - Solanum elachophyllum	*18.3ha*	*No*	*0*	*7.2*	*0*	*11.1*
*Habitat for an animal that is vulnerable wildlife – Yakka skink (Egernia rugosa)**	*10.9ha*	*No*	*6.6*	*4.2*	*0*	*0.1*
*Habitat for an animal that is vulnerable wildlife – Ornamental snake (Denisonia maculata)**	*79.9ha*	*No*	*0*	*79.8*	*0*	*0.1*
*Habitat for an animal that is vulnerable wildlife – Dunmall's snake (Furina dunmalli)**	*93.8ha*	*No*	*7.2*	*36.1*	*0*	*50.5*
*Habitat for an animal that is vulnerable wildlife – Eastern long-eared bat (Nyctophilus corbeni)**	*180.3ha*	*No*	*8.75*	*121*	*0*	*50.6*
*Habitat for an animal that is vulnerable wildlife- Large-eared pied bat (Chalinolobus dwyeri)**	*180.3ha*	*No*	*8.75*	*121*	*0*	*50.6*
*Habitat for an animal that is vulnerable wildlife – Squatter pigeon – (Geophaps scripta scripta)**	*97.4ha*	*No*	*8.2*	*89.1*	*0*	*0.1*
*Habitat for an animal that is vulnerable wildlife – Australian painted snipe (Rostratula australis)**	*75.9ha*	*No*	*0*	*75.9*	*0*	*0*

***These prescribed environmental matters duplicate MNES values and will be conditioned for offsets by the Commonwealth*

*** Offsets for remnant vegetation within a defined distance from the defining banks of a relevant watercourse &/ or connectivity areas may be co-located within an offset site for other prescribed environmental matters or MNES values conditioned for offsets by the Commonwealth, provided the site meets the offset requirements for each matter.*

G25	The significant residual impacts to a prescribed environmental matter authorised in condition **G21** for which an environmental offset is required by condition **G23** may be carried out in stages. An environmental offset can be delivered for each stage of the impacts to prescribed environmental matters.
G26	Prior to the commencement of each stage, a report completed by an appropriately qualified person, that includes an analysis of the following must be provided to the administering authority: a) for the forthcoming stage—the estimated significant residual impacts to each prescribed environmental matter; and b) for the previous stage, if applicable—the actual significant residual impacts to each prescribed environmental matter, to date.
G27	The report required by condition **G25** must be approved by the administering authority before a notice of election for the forthcoming stage, if applicable, is given to the administering authority.
G28	A notice of election for the staged environmental offset referred to in condition **G26**, if applicable, must be provided to the administering authority no less than three months before the proposed commencement of that stage, unless a lesser timeframe has been agreed to by the administering authority.
G29	Within six months from the completion of the final stage of the project, a report completed by an appropriately qualified person, that includes the following matters must be provided to the administering authority: a) an analysis of the actual impacts on prescribed environmental matters resulting from the final stage; and b) if applicable, a notice of election to address any outstanding offset debits for the authorised impacts.

Agency interest: Watercourse diversions	
Condition number	**Condition**
H1	Conditions **H2** to **H7** relate to the Bonnie Doon Creek diversion and Minnie Creek diversion as identified in **Figure 6 – Creek Diversions**.
H2	**Permanent watercourse diversions** Permanent watercourse diversion, or the re-establishment of a pre-existing watercourse where a temporary watercourse diversion is being replaced, must be designed and constructed to: a) incorporate natural features (including geomorphic and vegetation) present at the location of the diversion b) maintain the pre-existing hydrologic characteristics of surface water and groundwater systems for the area in which the watercourse diversion is located c) maintain the hydraulic characteristics of the permanent watercourse diversion that are equivalent to other local watercourses and are suitable for the area in which the diversion is located without using artificial structures that require on-going maintenance d) maintain sediment transport and water quality regimes that allow the diversion to be self-sustaining, while minimising any impacts to upstream and downstream water quality, geomorphology or vegetation e) Maintain equilibrium and functionality in all substrate conditions at the location of the diversion.
H3	**Temporary watercourse diversions** Temporary watercourse diversions must be designed and constructed to: a) Maintain the pre-existing hydrologic characteristics of surface water systems for the area in which the watercourse diversion is located b) Maintain the hydraulic characteristics of the watercourse diversion that are equivalent to other local watercourses and are suitable for the area in which the diversion is located. Where structures that require on-going maintenance are used, they must not compromise the equilibrium and performance of the temporary watercourse diversion and adjoining watercourses c) Maintain sediment transport and water quality regimes that minimise any impacts to upstream and downstream.
H4	**Design plan – All diversions** A certified Design Plan that achieves condition **H2** for permanent watercourse diversions (i.e. Bonnie Doon Creek in Mine Activity Area 1 (ML700006) and Minnie Creek in Mine Activity Area 2 (ML700007) as identified in **Figure 6**) and condition **H3** for temporary watercourse diversions must be submitted to the administering authority at least **ten (10) business days** before commencing construction of the diversion.
H5	The certified design plan for any temporary or permanent watercourse diversion (i.e. Bonnie Doon Creek in Mine Activity Area 1 (ML700006) and Minnie Creek in Mine Activity Area 2 (ML700007) as identified on **Figure 6**) must be consistent with the functional design/s that formed a part of the application documents for this authority.

H6	**Construction and operation – All diversions** A certified set of 'as constructed' drawings and specifications must be submitted to the administering authority within **sixty (60) business days** from the completion of construction of the temporary or permanent watercourse diversion, or re-establishment of the pre-existing watercourse. These drawings and specifications must state: a) that the 'as constructed' drawings and specifications meet the original intent of the design plan for the watercourse diversion b) construction of the watercourse diversion is in accordance with the design plan.
H7	**Register – All diversions** The details of watercourse diversions planned and constructed under an environmental authority must be accurately recorded on the Register of Watercourse Diversions kept by the holder of the authority. An electronic copy must be provided to the administering authority on request.

Definitions

Key terms and/or phrases used in this document are defined in this section. 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.

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 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.

Administering authority is the agency that administers the environmental authority provisions under 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.

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).

Ambient (or total) noise at a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

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*

Authority means environmental authority (mining activities) under the *Environmental Protection Act 1994*.

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.

Assessed or **Assess** by a suitably qualified and experienced person in relation to a hazard assessment of a dam, 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.

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.

Biosolids means the treated and stabilised solids from sewage.

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.

Bunded means within bunding consistent with Australian Standard 1940.

Certification, certifying or **certified** by an appropriately qualified and experienced person in relation to a design plan or an annual report regarding dams/structures, 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 is being certified and the precise nature of that certification.

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

c) the relevant data and facts on which the certification 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 certification has been based using the relevant data and facts, and the relevant criteria.

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 Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council, 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

   v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater, or

   vi) manufacture of plastic or synthetic rubber.

Coal mining means to carry on an operation for the purpose of extracting coal from its natural state and disposing of mineral in connection with, or waste substances resulting from, the extraction. This includes processes such as overburden removal, blasting, coal mining, waste rock and tailings disposal, crushing, washing and flotation and the construction activities associated with these processes. It does not include exploration activities.

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 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 (ESR/2016/1933)*.

Construction or **constructed** in relation to a regulated structure includes building a new regulated structure and lifting or otherwise modifying an existing regulated structure, but does not include investigation and testing necessary for the purpose of preparing a design plan.

Construction or **constructed** in relation to watercourse diversions, is the process of building, or modifying an existing diversion, but does not include investigation 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 A contaminant can be:

a) a gas, liquid or solid; or

b) an odour; or

c) an organism (whether alive or dead), including a virus; or

d) energy, including noise, heat, radioactivity and electromagnetic radiation; or

e) a combination of contaminants.

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

Cover material means any soil or rock suitable as a germination medium or landform armouring.

Dam means a land-based structure or a void that is designed to contain, divert or control flowable substances - including any substances that are thereby contained, diverted or controlled by that land-based structure or void; but does not mean a fabricated or manufactured tank or container designed to a recognised standard. In case there is any doubt, a levee dyke or bund is a dam.

Design plan (structures which are dams or levees**)** is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

Design plan (watercourse diversion**)** is a document that contains the design, operation, monitoring and revegetation criteria of a watercourse diversion that addresses the outcomes stated in conditions on the environmental authority relating to the diversion. The document should include, but not be limited to:

a) required information under a functional design

b) the location, function and description of geomorphic and riparian vegetation features within the proposed watercourse diversion

c) results from hydrologic, hydraulic and sediment transportation modelling used in the design of the diversion

d) a revegetation and vegetation management plan (a revegetation plan) for the diversion

e) engineering drawings depicting the physical attributes and dimensions of the diversion

f) (if relevant) the staged development of a permanent watercourse diversion including the proposed use of temporary watercourse diversions with identified lifespans

g) all investigation and other reports relied on by the design

h) plans and specifications sufficient to complete construction and revegetation in accordance with the design.

Design storage allowance or **DSA** means the minimum storage required in a dam at the first of November each year in order to meet the hydraulic performance requirements.

Development approval means a development approval under the *Integrated Planning Act 1997* in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

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.

Domestic waste means waste, other than domestic clean-up waste, green waste, recyclable waste, interceptor waste or waste discharged to a sewer, produced as a result of the ordinary use or occupation of domestic premises.

Dwelling means any of the following structures or vehicles that is principally used as a residence:

a) a house, unit, motel, nursing homes or other building or part of a building; or

b) a caravan, mobile home or other vehicle or structure on land; or

c) a water craft in a marina.

Effluent treated waste water discharged from sewage treatment plants.

End of pipe means the location at which water is released to waters or land.

Environmental authority means an environmental authority under Chapter 5 of the *Environmental Protection Act 1994.*

Environmental authority holder means the holder of this environmental authority.

Environmental nuisance is unreasonable interference or likely interference with an environmental value caused by:

a) aerosols, fumes, light, noise, odour, particles or smoke; or

b) an unhealthy, offensive or unsightly condition because of contamination; or

c) another way prescribed by regulation.

Environmental offset has the meaning in section 7 of the *Environmental Offsets Act 2014*.

Equilibrium A state where 'balance' is achieved despite changing variables.

Environmentally relevant activity means an environmentally relevant activity as defined under Section 18 of the *Environmental Protection Act 1994* and listed under Schedule 1 of the *Environmental Protection Regulation 1998.*

Existing structure means a structure that prior to when EA is issued with new dam manual conditions meets any or both of the following, a structure:

a) with a design that is in accordance with the current version of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures and that is considerably in progress;

b) that is under considerable construction or that is constructed.

Floodwater means water overflowing, or that has overflowed, from waters, river, creek, stream, lake, pond, wetland or dam onto or over riparian land that is not submerged when the watercourse or lake flows between or is contained within its bed and banks.

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.

Foreseeable future is the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptable probability of failure before that time.

Functional design is a document that contains 'conceptual' information about the design, operation and revegetation criteria of a watercourse diversion that addresses the outcomes stated in the conditions on the environmental authority relating to the diversion. The document should include, but not be limited to:

a) geomorphic and vegetation assessment of the existing watercourse

b) hydrologic conditions of the existing watercourse

c) the proposed watercourse diversion route

d) results from hydrologic, hydraulic and sediment transportation modelling used in the design of the diversion.

General waste means waste other than regulated waste.

Greenhouse gas (GHG) includes carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur (or sulfur) hexafluoride (SF6), hydro fluorocarbons (HFCs) and perfluorocarbons (PFCs). GHG are often expressed as a standard unit called a 'carbon dioxide equivalent' or CO2-e, as the scale and duration of impact arising from individual emissions vary.

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.

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

Hazard 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 'Manual for Assessing Hazard Categories and Hydraulic Performance of Dams'.

Hydraulic performance means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

Infrastructure means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include other facilities required for the long term management of mining impacts or the protection of potential resources. Such other facilities include dams, waste rock dumps, voids, or ore stockpiles and buildings as well as other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the operational land or the background land owner.

$L_{A10,\ adj,\ 10\ mins}$ 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.

Lake includes:

a) lagoon, swamp or other natural collection of water, whether permanent or intermittent; and

b) the bed and banks and any other element confining or containing the water.

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 *DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland*.

Land suitability as defined in the *DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland*.

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

Landfill means land used as a waste disposal site for lawfully putting solid waste on the land.

Levee means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of **water** or **flowable substances** at any other times.

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 (ESR/2016/1933)* published by the administering authority.

Manual means the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority, as amended from time to time.

Maximum extent of impact means the total, cumulative, residual extent and duration of impact to a prescribed environmental matter that will occur over a project's life after all reasonable avoidance and reasonable on-site mitigation measures have been, or will be, undertaken.

Measures includes any measures to prevent or minimise environmental impacts of the mining activity such as bunds, silt fences, diversion drains, capping, and containment systems.

mg/L means milligrams per litre.

Mineral means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes—

a) clay if mined for use for its ceramic properties, kaolin and bentonite;

b) foundry sand;

c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil therefrom;

d) limestone if mined for use for its chemical properties;

e) marble;

f) mineral oil or gas extracted or produced from shale or coal by in situ processes;

g) peat;

h) salt including brine;

i) shale from which mineral oil may be extracted or produced;

j) silica, including silica sand, if mined for use for its chemical properties;

k) rock mined in block or slab form for building or monumental purposes;

But does not include—

a) living matter;

b) petroleum within the meaning of the *Petroleum Act 1923*;

c) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form; or

d) water.

'Mine affected water':

a) means the following types of water:

i) pit water, tailings dam water, processing plant water

ii) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity

iii) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water

iv) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated

v) groundwater from the mine's dewatering activities

vi) a mix of mine affected water (under any of paragraphs i)-v) and other water.

b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:

   i) land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success, or

   ii) land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:

      - areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site

      - evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff, or

   iii) both.

Minimise is to reduce to the smallest possible amount or degree.

Mining operations means mining activities carried out on land over which there is a mineral development licence or mining lease under the *Mineral Resources Act 1989*.

Modification or modifying (see definition of 'construction')

NATA means National Association of Testing Authorities, Australia.

Natural flow means the flow of water through waters caused by nature.

Nature includes:

a) ecosystems and their constituent parts; and

b) all natural and physical resources; and

c) natural dynamic processes.

Notice of election has the meaning in section 18(2) *Environmental Offsets Act 2014*.

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 means a document that amongst other things sets out procedures and criteria to be used for operating a dam during a particular time period. The operational plan as defined herein may form part of a otherwise required in legislation.

Palletised means stored on a movable platform on which batteries are placed for storage or transportation.

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 (mm/s).

Permanent watercourse diversion is a man-made structure that incorporates the geomorphologic, hydraulic, hydrologic and ecological components of a local watercourse and is designed, constructed, operated and maintained according to an engineering standard that ultimately achieves a self-sustaining watercourse able to function without features or characteristics that rely on ongoing maintenance or that impose a financial or other burden on the proponent, government or the community.

Pre-existing watercourse is the section of watercourse from which the flow of water will be diverted as a result of the construction and operation of a watercourse diversion.

Prescribed environmental matters has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significant listed in schedule 2 of the Environmental Offsets Regulation 2014.

Protected area means – a protected area under the *Nature Conservation Act 1992*, or

a) a marine park under the Marine Parks Act 1992, or
b) a World Heritage Area.

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

Process water means water used or produced during the mineral development activities.

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

Recycled water means appropriately treated effluent and urban stormwater suitable for further use.

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 (ESR/2016/1933)*;
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) Maximum operating level (metres AHD);

vi) Storage rating table of stored volume versus level (metres AHD);

vii) Design storage allowance (megalitres) and associated level of the dam (metres AHD);

viii) 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 an 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 dam means any dam in the significant or high hazard category as assessed using the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

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 (ESR/2016/1933)* published by the administering authority. A regulated structure does not include:

a) 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;

b) a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;

c) a flare pit.

Regulated waste means non-domestic waste mentioned in schedule 7 of the *Environmental Protection Regulation 1998* (whether or not it has been treated or immobilised), and includes –

a) for an element – any chemical compound containing the element; and

b) anything that has contained the waste.

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

Release event means a surface water discharge from mine affected water storages or contaminated areas on the licensed place.

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 void means an open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.

Revegetation is the re-establishment of vegetation[1] of a species and density of cover similar to surrounding undisturbed areas or the landform that existed before mining activities on soil surfaces associated with the construction or rehabilitation of a watercourse diversion.

Saline drainage is the movement of waters, contaminated with salts, 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; or

b) a motel, hotel or hostel; or

c) an educational institution; or

d) a medical center or hospital; or

e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* 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 EPP Noise. That is, a sensitive place is inside or outside on a dwelling, library and educational institution, childcare or kindergarten, school or playground, hospital, surgery or other medical institution, commercial & retail activity, protected area or an area identified under a conservation plan under Nature Conservation Act 1992 as a critical habitat or an area of major interest, marine park under Marine Parks Act 2004, park or garden that is outside of the mining lease and open to the public for the use other than for sport or organised entertainment. A commercial place is inside or outside a commercial or retail activity.

A mining camp (i.e., accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority) is not a sensitive place for that mine or mining project, whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the holders of the environmental authority for the mining project, or a related company. Accommodation for mine employees or contractors is a sensitive place if the land is held by a mining company or related company, and if occupation is restricted to the employees, contractors and their families for the particular mine or mines which are held by the same company or a related company.

For example, a township (occupied by the mine employees, contractors and their families for multiple mines that are held by different companies) would be a sensitive place, even if part or all of the township is constructed on land owned by one or more of the companies.

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 from 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.

Structure means dam or levee.

Suitably qualified and experienced person means a person who is a Registered Professional Engineer of Queensland under the provisions of the *Professional Engineers Act 2002*, who has an **appropriate level of expertise** in the structures, geomechanics, hydrology, hydraulics and environmental impact of watercourse diversions.

An ***appropriate level of expertise*** includes:

- demonstrable competency, experience and expertise in:
    - investigation, design or construction of watercourses
    - diversions operation and maintenance of watercourse
    - geomechanics with particular emphasis on channel equilibrium, geology and geochemistry
    - hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology
    - hydraulics with particular reference to sediment transport and deposition and erosion control
    - hydrogeology with particular reference to seepage and groundwater
    - solute transport processes and monitoring thereof, or
- sufficient knowledge and experience to certify that where the **suitably qualified and experienced person** has relied on advice and information provided by other **persons with relevant expertise***:
    - they consider it reasonable to rely on that advice and information
    - the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to watercourse diversions.

Persons with relevant expertise include:

- Geomorphologist: person who has demonstrated competency and relevant experience in stream geomorphology and watercourse diversions.
- Geotechnical Expert: person who has demonstrated competency and relevant experience in geotechnical assessment of soil characteristics suitable for watercourse diversions.
- Vegetation Expert: person who has demonstrated competency and relevant experience in the identification, role and function of vegetation with watercourses and adjoining floodplains, and has demonstrated competency and relevant experience in revegetation of watercourse diversions and adjoining floodplains. .
- Groundwater Expert: person who has demonstrated competency and relevant experience in groundwater systems.
- Surface Water Expert: person who has demonstrated competency and relevant experience in hydrology.
- Engineer: person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Persons Act 2002* or has similar qualifications under a respected professional registration association, and has demonstrated competency and relevant experience in design and construction of watercourse diversions.
- Soils Expert: person who has demonstrated competency and relevant experience in soil classification including the physical, chemical and hydrologic analysis of soil.

Suitably qualified and experienced person in relation to regulated structures 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 required 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.

Temporary watercourse diversion is a man-made structure that may incorporate geomorphologic, hydraulic, hydrologic and ecological components of a local watercourse and is designed, constructed, operated and maintained to an engineering standard that ensures the diversion does not compromise the equilibrium and performance of the diversion and adjoining watercourses. A temporary diversion is replaced by a permanent diversion, or the re-establishment of the pre existing watercourse, within the timeframe specified in the design plan.

The Act means the *Environmental Protection Act 1994*.

Trivial harm means environmental harm which is not material or serious environmental harm and will not cause actual or potential loss or damage to property of an amount of, or amounts totalling more than $5,000.

Tolerable limits means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values. For example, a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation.

Void means any man-made, open excavation in the ground.

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

Waste and resource management hierarchy – has the meaning provided in section 9 of the *Waste Reduction and Recycling Act 2011* and is the following precepts, listed in the preferred order in which waste and resource management options should be considered—

a) AVOID unnecessary resource consumption
b) REDUCE waste generation and disposal
c) RE-USE waste resources without further manufacturing
d) RECYCLE waste resources to make the same or different products
e) RECOVER waste resources, including the recovery of energy
f) TREAT waste before disposal, including reducing the hazardous nature of waste
g) DISPOSE of waste only if there is no viable alternative.

Waste and resource management principles – has the meaning provided in section 4(2)(b) of the *Waste Reduction and Recycling Act 2011* and means the:

a) polluter pays principle
b) user pays principle
c) proximity principle
d) product stewardship principle.

Water is defined under Schedule 4 of the *Water Act 2000.*

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

a) a river, creek or stream in which water flows permanently or intermittently—
   i) in a natural channel, whether artificially improved or not; or
   ii) in an artificial channel that has changed the course of the watercourse.

b) Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

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 water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

Weediness includes weeds that are declared plants as defined under the *Land Protection (Pest and Stock Route Management) Act 2002*.

µg/L means micrograms per litre

µS/cm means micro siemens per centimetre

Appendices

Figure 1 - Release points (RP) and monitoring points (MP) on Blackwater Creek

Figure 2 - Release points (RP) and monitoring points (MP) on the Mackenzie River

Figure 3 – Curragh Mine Onsite Landfill Facility

Figure 4A – Approved Disturbance Area (Curragh North and Curragh Central)

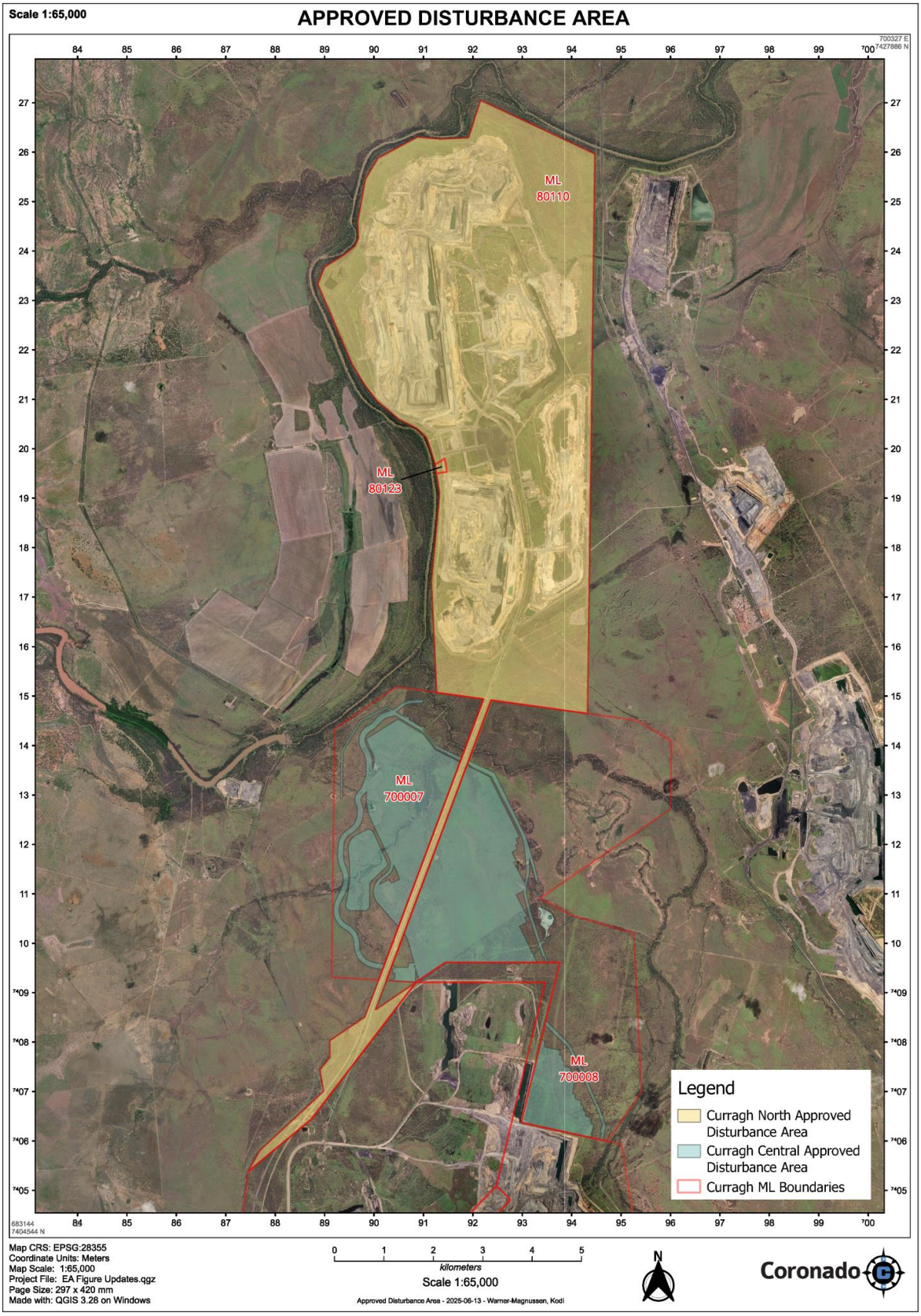


Figure 4B – Approved Disturbance Area (Curragh South)

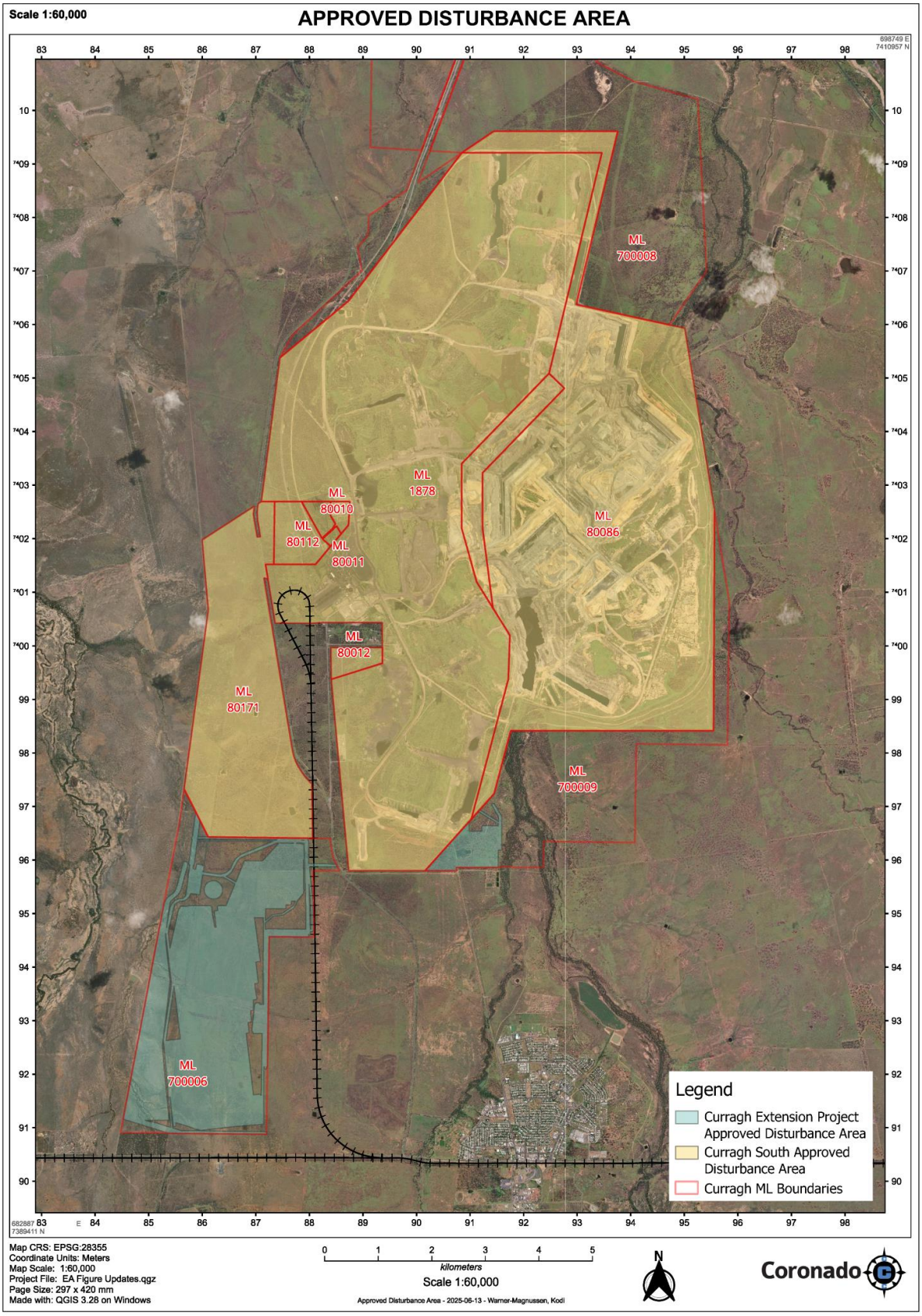


Figure 4C – Approved Bord and Pillar Mine Areas

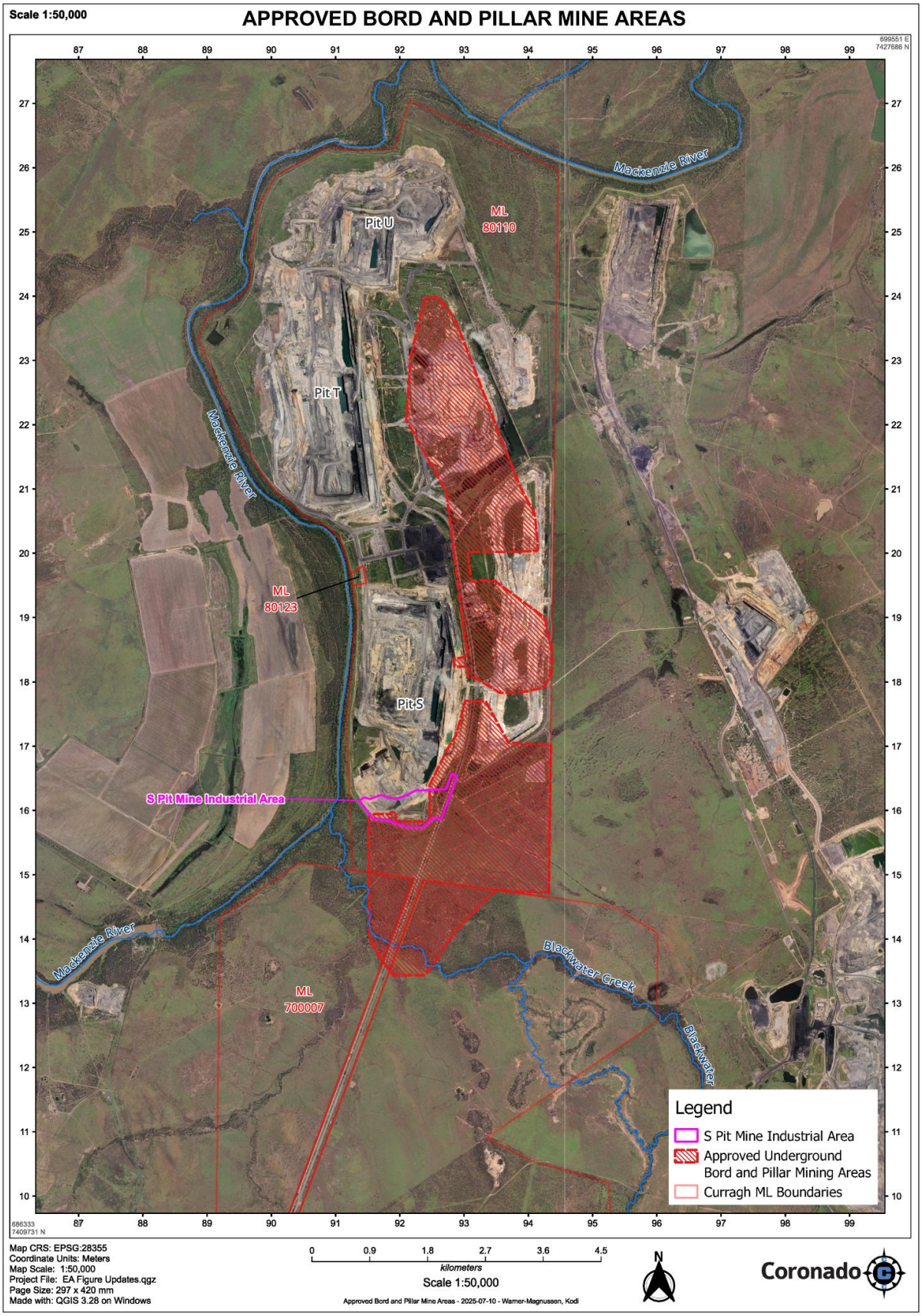


Figure 5 – Prescribed environmental matters

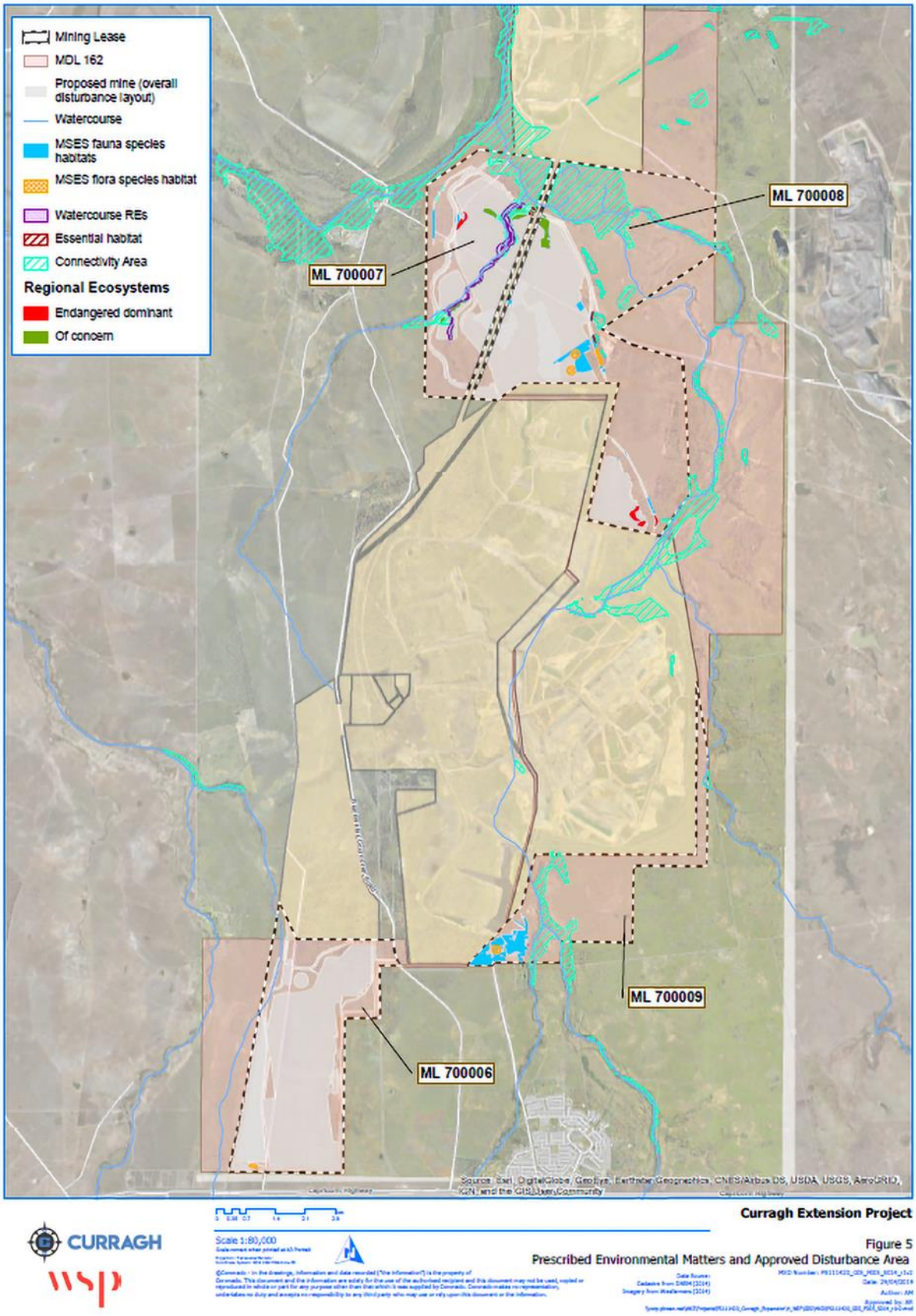


Figure 6 – Creek Diversions

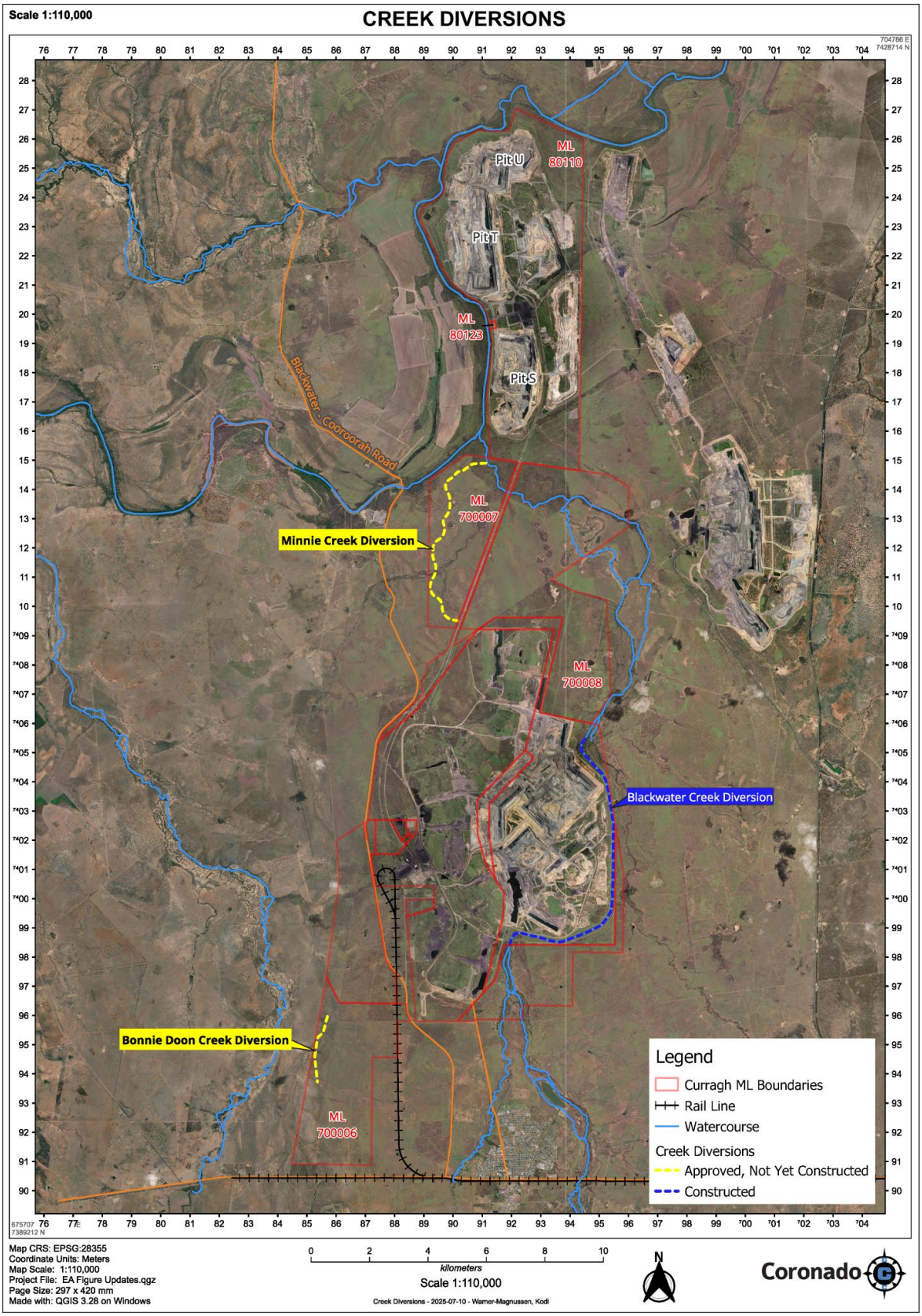
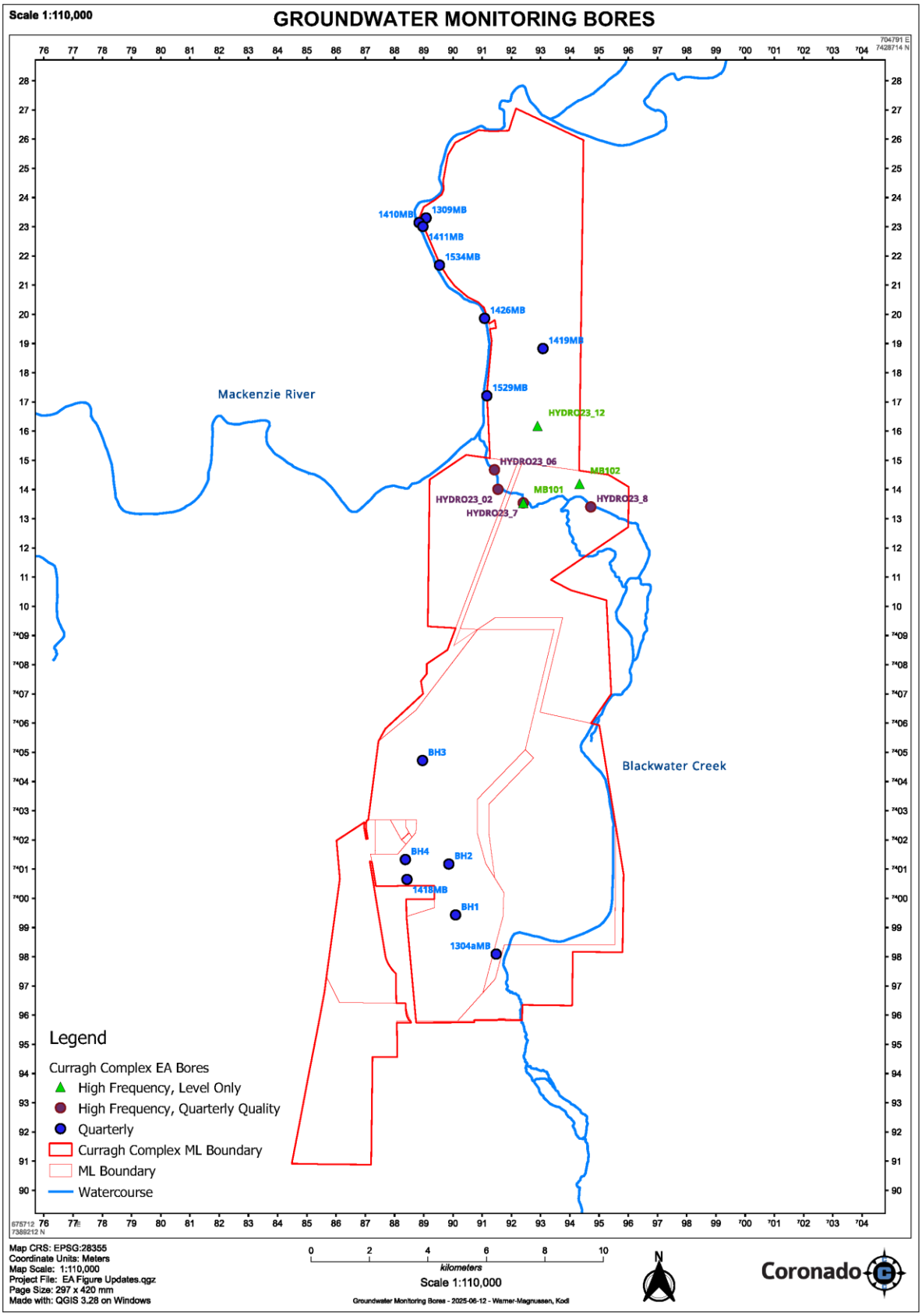


Figure 7 – Groundwater Monitoring Bores



END OF ENVIRONMENTAL AUTHORITY