

Permit

Environmental Protection Act 1994

Environmental Authority

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

Environmental authority number: EPML00959213

Environmental authority takes effect on 5 March 2026

The anniversary date of this environmental authority is **7 October** each year.

An annual return will be due each year on 1 April.

Environmental authority holder(s)

Name(s)	Registered address
FITZROY (CQ) PTY LTD	Level 20, 324 Queen St, BRISBANE CIY QLD 4000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML70340, ML70374, ML70375, ML70339, ML70484, ML70482, ML700067
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML70340, ML70374, ML70375, ML70339
Ancillary 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) less than 2000t	ML70340, ML70374, ML70375, ML70339
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML70340, ML70374, ML70375, ML70339

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).

Mobile and temporary activities

If you operate a mobile and temporary ERA, other than regulated waste transport, you are required to maintain a work diary. You must:

- use the approved form for a work diary (ESR/2015/1696);
- keep the work diary records for 2 years after the last entry;
- inform the administering authority within 7 days of the work diary being lost or stolen;
- record the information required in the work diary for each location within 1 day of leaving the location.

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(1) 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, in accordance with section 200(2) of the EP Act, the day that the EA takes effect may not be before:

- (a) if the authority is for a resource activity—the day the relevant tenure is granted to the applicant; or
- (b) if a development permit for a material change of use of premises under the *Planning Act 2016* is necessary for carrying out an activity that related to the authority—the day the development permit takes effect; or
- (c) if an SDA Approval under the *State Development and Public Works Organisation Act 1971* is necessary for carrying out an activity that relates to the authority—the day the approval takes effect.

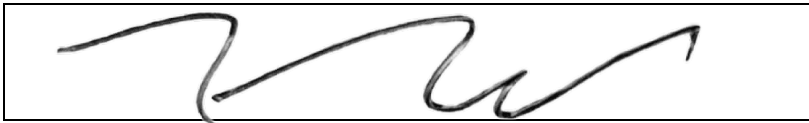
If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

The anniversary day of this EA is the same day each year. The payment of the annual fee will be due each year on this day.

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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 EA.



Signature

5 March 2026

Date

Ben Byrd

Department of the Environment, Tourism, Science and Innovation

Delegate of the administering authority

Environmental Protection Act 1994

Enquiries:

Business Centre Coal

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Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this EA, 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 restore the environment (section 319C)
- 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 EP Act. 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 and Federal Government agencies prior to commencing any activity at the site. For example, this may include permits or approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access State controlled roads), the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development (to clear vegetation), and the Department of Primary Industries (to clear marine plants or to obtain a quarry material allocation).

Conditions of environmental authority

The environmental 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	Acoustic
Schedule E	Waste
Schedule F	Land
Schedule G	Regulated Structures
Appendix 1	Monitoring Points, Release Points & Treated Wastewater Irrigation Area
Appendix 2	Receiving Environment Monitoring Points & Gauging Stations
Appendix 3	Groundwater Monitoring Network
Appendix 4	Authorised Surface Disturbance Areas
Appendix 5	Authorised Underground Working and Subsidence Disturbance Areas
Appendix 6	Rehabilitation Completion Criteria

Legislative requirements and conditions of environmental authority

Conditions of environmental authority

Agency interest: General	
Condition number	Condition
A1	This environmental authority does not authorise environmental harm unless a condition contained within the environmental authority explicitly authorises the harm. Where there is no condition or the environmental authority is silent on a matter, the lack of condition or silence shall not be construed as authorising harm.
A2	In the carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must prevent and/or minimise the likelihood of environmental harm being caused.
A3	Coal Extraction The environmental authority holder is approved for a coal extraction rate of up to five (5) million tonnes per annum (Mtpa) of run-of-mine (ROM) ore in accordance with this environmental authority.
A4	Coal Processing Coal from Broadlea Coal Mine, Ironbark No.1 Coal Mine, Broadmeadow East Coal Mine, Burton Coal Mine, Vulcan Coal Mine and Vulcan South Coal Mine is permitted to be processed at the Carborough Downs Coal Handling and Processing Plant (CHPP) at a total combined processing rate not exceeding 12.9Mtpa of ROM coal.
A5	Reject Disposal Coal rejects from Broadlea Coal Mine and Ironbark No.1 Coal Mine are permitted to be disposed of at Carborough Downs Coal Mine in accordance with the Mining Waste Management Plan required by condition F16 . Coal rejects from the processing of coal from Broadmeadow East Coal Mine, Burton Coal Mine, Vulcan Coal Mine and Vulcan South Coal Mine must be removed from the Carborough Downs Coal Mine. <i>Note: The administering authority accepts that coal rejects from the processing of third-party coal will undergo minor mixing with rejects originating from the Broadlea Coal Mine, Ironbark No.1 Coal Mine and Carborough Downs Coal Mine due to CHPP equipment limitations and mechanical handling activities, resulting in minor quantities of third-party coal rejects remaining on the Carborough Downs Coal Mine.</i>
A6	Maintenance of measures, plant and equipment The environmental authority holder must ensure: (a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; (b) that such measures, plant and equipment are maintained in a proper condition; and (c) that such measures, plant and equipment are operated in a proper manner.
A7	Monitoring and records All monitoring records or reports required by this environmental authority must be kept for a period of not less than five (5) years .
A8	Upon request from the administering authority, copies of all records, plans and other documentation required by the conditions of this environmental authority must be made available and provided to the administering authority's nominated office within ten (10) business days or by an alternative timeframe agreed between the administering authority and the holder.
A9	Where monitoring is a requirement of this environmental authority, ensure that an appropriately qualified person conducts all monitoring.

A10	Any management or monitoring plans, systems or programs required to be developed and implemented by a condition of this environmental authority must be reviewed for effectiveness in minimising the likelihood of environmental harm on an annual basis, and amended promptly if required, unless a particular review date and amendment program is specified in the plan, system or program.
A11	Notification of emergencies and incidents All reasonable actions are to be taken to minimise environmental harm, or the risk thereof, resulting from any emergency, incident or circumstances not in accordance with the conditions of this environmental authority.
A12	The environmental authority holder must notify the administering authority as soon as practicable after becoming aware of any emergency or incident resulting in the release of contaminants, or which threatens the release of contaminants, not authorised to be caused under this environmental authority.
A13	The notification in condition A12 must include, but not be limited, to the following: (a) the environmental authority number and name of holder; (b) the name and telephone number of the designated contact person; (c) the location of the emergency or incident; (d) the date and time of the release; (e) the time the holder of the environmental authority became aware of the release; (f) the estimated quantity and type of substance released; (g) the suspected cause of the release; (h) a description of the effects of the release including environmental harm and/or environmental nuisance caused, threatened, or suspected to be caused by the release; (i) any sampling conducted or proposed, relevant to the emergency or incident; and (j) immediate actions taken to prevent any further release and mitigate any environmental harm and/or environmental nuisance caused by the release.
A14	Not more than fourteen (14) days following the initial notification of an emergency or incident, 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 environmental harm or environmental nuisance; and (c) proposed actions to prevent a recurrence of the emergency or incident.
A15	Activity Land subject to mining activities and works previously approved under parts of MDL 354, MDL 359, EPC 667 and EPC 675 that subsequently became ML 70339, ML 70340, ML 70374, ML 70375, ML 70484 and ML 70482 irrespective of its termination; must be rehabilitated to result in sites that are: (a) non-polluting; (b) safe to humans and wildlife; (c) stable; and (d) able to sustain an agreed post-mining land use.

A16	Exploration Notwithstanding condition A15, exploration activities conducted under this environmental authority must be conducted in accordance with the rehabilitation conditions of the administering authority's <i>Eligibility criteria and standard conditions for exploration and mineral development projects—ESR/2016/1985 (formerly EM586)</i>.
A17	Contaminants must not be released to the receiving environment unless in accordance with the contaminant limits authorised by this environmental authority.
A18	Complaints All complaints received must be recorded, including details of complaint, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

Agency interest: Air	
Condition number	Condition
B1	Subject to conditions B2 and B3 the release of dust or particulate matter resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised person) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
B3	If the environmental authority holder can provide evidence through monitoring that the following limits are not being exceeded, then the holder is not in breach of condition B1: (a) Dust deposition of 120 milligrams per square metre per day, averaged over one month when monitored in accordance with AS 3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method of 1991 (or more recent editions); and (b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM₁₀) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, at a sensitive or commercial place downwind of the operational land, when monitored in accordance with: (i) Particulate matter - Determination of suspended particulate PM₁₀ high-volume sampler with size-selective inlet – Gravimetric method, when monitored in accordance with AS 3580.9.6 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM₁₀ high volume sampler with size-selective inlet - Gravimetric method of 1990 (or more recent editions); or (ii) Any alternative method of sampling PM₁₀, which may be permitted by the Air Quality Sampling Manual as published from time to time by the administering authority.
B4	If monitoring indicates exceedance of the relevant limits in condition B3, then the environmental authority holder must investigate whether the exceedance is due to emissions of dust from the activity. If the mining activity is found to be the cause of the exceedance, then the environmental authority holder must: (a) address the complaint including the use of appropriate dispute resolution if required; and (b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.
B5	The results of PM ₁₀ , dust deposition and meteorological monitoring must be reported to the administering authority on request.
B6	If requested by the administering authority, the results of PM ₁₀ , dust deposition and meteorological monitoring must be made available for use in any air quality monitoring network in the Moranbah region operated independently of mining operations.

B7	Odour nuisance Subject to requirement of condition B8, 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.
B8	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 person) of environmental nuisance at any sensitive or commercial place, and the results must be notified with fourteen (14) days to the administering authority following completion of monitoring.
B9	If the administering authority determines the odour released to constitute a noxious or offensive odour, then the environmental authority holder must: (a) address the complaint including the use of appropriate dispute resolution if required; and (b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.

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 as a result of the authorised mining activities, 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 waters must only occur from the release points specified in Table C1 (Mine affected water release points, sources and receiving waters) and indicated in Appendix 1 - Monitoring Points, Release Points & Treated Wastewater Irrigation Area attached to this environmental authority.
C3	Mine affected water is permitted to be released from release points specified in Table C1 (Mine Affected Water Release Points, Sources and Receiving Waters) based on flow criteria in the Isaac River when there is no local flow in Billie's Gully in accordance with Table C2 (Mine Affected Water Release during Flow Events).

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

Release Point (RP)	Latitude (GDA2020)	Longitude (GDA2020)	Mine Affected Water Source and Location	Monitoring Point	Receiving waters description
RP 1	-21.98472	148.24949	Carborough Truck Fill Dam	Pump intake / End of Pipe	North Creek
RP 2	-21.98313	148.23003	Carborough Truck Fill Dam	Pump intake / End of Pipe	Billie's Gully
RP 3	-21.95511	148.20943	CHPP Process Dam 1	Pump intake / End of Pipe	Billie's Gully
RP 3a	-21.95148	148.21298	CHPP Process Dam 1	Pump intake / End of Pipe	Billie's Gully
RP 4	-21.96228	148.19967	DREA Sediment Dam	Pump intake / End of Pipe	Billie's Gully

C4	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.
C5	The release of mine affected waters to waters in accordance with condition C2 and condition C3 must not exceed the release limits stated in Table C3 (Mine Affected Water Release Limits) when measured at the monitoring points specified in Table C1 (Mine affected water release points, sources and receiving waters) for each quality characteristic.

Table C2 (Mine Affected Water Release during Flow Events)

Receiving waters /stream	Release Point (RP)	Gauging station	Latitude (GDA2020)	Longitude (GDA2020)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for release (m ³ /s)	Maximum release rate	Electrical Conductivity and Sulphate Release Limits
North Creek	RP1	GS1 (shown in Appendix 2 – Receiving Environment Monitoring Points & Gauging Stations)	-21.94669	148.29504	Continuous (minimum daily)	Low Flow 1m ³ /s	1.08m ³ /s	Electrical Conductivity 800µS/cm Sulphate 500mg/L
							0.8m ³ /s	Electrical Conductivity 1,200µS/cm Sulphate 700mg/L
							0.5 m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
						Low Flow 1.5m ³ /s	0.75m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
						Medium Flow 2m ³ /s	1m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
						Medium Flow 2.5m ³ /s	0.96m ³ /s	Electrical Conductivity 2,000µS/cm Sulphate 700mg/L
							0.29m ³ /s	Electrical Conductivity 5,000µS/cm Sulphate 700mg/L
							0.13m ³ /s	Electrical Conductivity 10,000µS/cm Sulphate 700mg/L
						Medium Flow 10m ³ /s	1.16m ³ /s	Electrical Conductivity 5,000µS/cm Sulphate 700mg/L
							0.53m ³ /s	Electrical Conductivity 10,000µS/cm Sulphate 700mg/L
						High Flow 50m ³ /s	2.68m ³ /s	Electrical Conductivity 10,000µS/cm Sulphate 700mg/L

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Receiving waters /stream	Release Point (RP)	Gauging station	Latitude (GDA2020)	Longitude (GDA2020)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for release (m ³ /s)	Maximum release rate	Electrical Conductivity and Sulphate Release Limits
Billie's Gully	RP2 RP3 RP3a RP4	GS2 (shown in Appendix 2 – Receiving Environment Monitoring Points & Gauging Stations)	-21.95072	148.21379	Continuous (minimum daily)	Medium Flow 0.1m ³ /s	0.35m ³ /s	Electrical Conductivity 800µS/cm Sulphate 500mg/L
							0.31m ³ /s	Electrical Conductivity 1,000µS/cm Sulphate 700mg/L
							0.28m ³ /s	Electrical Conductivity 1,250µS/cm Sulphate 700mg/L
							0.1m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
						Medium Flow 0.2m ³ /s	0.7m ³ /s	Electrical Conductivity 800µS/cm Sulphate 500mg/L
							0.63m ³ /s	Electrical Conductivity 1,000µS/cm Sulphate 700mg/L
							0.56m ³ /s	Electrical Conductivity 1,250µS/cm Sulphate 700mg/L
							0.2m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
						Medium Flow 0.3m ³ /s	1.08m ³ /s	Electrical Conductivity 800µS/cm Sulphate 500mg/L
							0.94m ³ /s	Electrical Conductivity 1,000µS/cm Sulphate 700mg/L
							0.84m ³ /s	Electrical Conductivity 1,250µS/cm Sulphate 700mg/L
							0.3m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
							0.11m ³ /s	Electrical Conductivity 3,000µS/cm Sulphate 700mg/L
						Medium Flow 0.5m ³ /s	0.5m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
							0.19m ³ /s	Electrical Conductivity 3,000µS/cm Sulphate 700mg/L
							0.05m ³ /s	Electrical Conductivity 8,000µS/cm Sulphate 700mg/L
						Medium Flow 0.8m ³ /s	0.8m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
							0.3m ³ /s	Electrical Conductivity 3,000µS/cm Sulphate 700mg/L
						Medium Flow 1.0m ³ /s	1.0m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
						Medium Flow 0.6m ³ /s	0.11m ³ /s	Electrical Conductivity 5,000µS/cm Sulphate 700mg/L
						Medium Flow 1.2m ³ /s	0.23m ³ /s	Electrical Conductivity 5,000µS/cm Sulphate 700mg/L

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Receiving waters /stream	Release Point (RP)	Gauging station	Latitude (GDA2020)	Longitude (GDA2020)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for release (m ³ /s)	Maximum release rate	Electrical Conductivity and Sulphate Release Limits
Isaac River (via Billie's Gully)	RP2 RP3 RP3a RP4	GS3 - Moranbah North MP1 (shown in Appendix 2)	-21.86813	147.97163	Continuous (minimum daily)	Medium Flow 10m ³ /s	0.52m ³ /s	Electrical Conductivity 800µS/cm Sulphate 500mg/L
							0.36m ³ /s	Electrical Conductivity 1,000µS/cm Sulphate 700mg/L
						Medium Flow 15m ³ /s	0.77m ³ /s	Electrical Conductivity 800µS/cm Sulphate 500mg/L
							0.54m ³ /s	Electrical Conductivity 1,000µS/cm Sulphate 700mg/L
						Medium Flow 20m ³ /s	1.03m ³ /s	Electrical Conductivity 800µS/cm Sulphate 500mg/L
							0.72m ³ /s	Electrical Conductivity 1,000µS/cm Sulphate 700mg/L
						Medium Flow 30m ³ /s	1.07m ³ /s	Electrical Conductivity 1,000µS/cm Sulphate 700mg/L
							0.1m ³ /s	Electrical Conductivity 2,000µS/cm Sulphate 700mg/L
						Medium Flow 50m ³ /s	0.1m ³ /s	Electrical Conductivity 3,000µS/cm Sulphate 700mg/L
						High Flow 100m ³ /s	0.45m ³ /s	Electrical Conductivity 1,500µS/cm Sulphate 700mg/L
							0.21m ³ /s	Electrical Conductivity 3,000µS/cm Sulphate 700mg/L
							0.12m ³ /s	Electrical Conductivity 5,000µS/cm Sulphate 700mg/L
						Flood Flow 200m ³ /s	0.12m ³ /s	Electrical Conductivity 10,000µS/cm Sulphate 700mg/L

NOTE: Simultaneous releases can occur provided that total electrical conductivity and total release rates are not exceeded.

Table C3 (Mine Affected Water Release Limits)

Quality Characteristic	Release Limits	Monitoring frequency	Comment
Electrical conductivity ($\mu\text{S}/\text{cm}$)	Release limits specified in Table C2 (Mine Affected Water Release during Flow Events) for variable flow criteria.	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Unit)	6.0 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
Turbidity (NTU)	NA*	Daily during release* (first sample within two hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide instantaneous results.
Suspended Solids (mg/L)	RP1 = 1074 RP2/RP3/RP3a/RP4 = 332	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.
Sulphate (SO_4^{2-}) (mg/L)	Release limits specified in Table C2 (Mine Affected Water Release during Flow Events) for variable flow criteria.	Daily during release* (first sample within 2 hours of commencement of release)	Drinking water environmental values from NHMRC 2006 guidelines or ANZECC.

NOTE: * Limit for suspended solids can be omitted if turbidity limit is included. Limit for turbidity not required if suspended solids limit included. Both indicators should be measured in all cases.

C6	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table C1 (Mine affected water release points, sources and receiving waters) for each quality characteristic and at the frequency specified in Table C2 (Mine affected water release limits) and Table C4a (Release contaminant trigger investigation levels: North Creek) and Table C4b (Release contaminant trigger investigation levels: Billie's Gully/Isaac River). <i>NOTE: The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response, in the event condition C6 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.</i>
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Table C4a (Release contaminant trigger investigation levels: North Creek)

Quality Characteristic	Trigger Levels (ug/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	1170	Based on 80th percentile of background data	Commencement of release and thereafter weekly during release
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline	
Copper	3	Based on 80th percentile of background data	
Iron	1120	Based on 80th percentile of background data	
Lead	10	For aquatic ecosystem protection, based on SMD guideline	
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	
Zinc	8	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	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Ammonia	900	For aquatic ecosystem protection, based on SMD guideline	
Nitrate	1100	For aquatic ecosystem protection, based on ambient QLD WQ Guidelines (2006) for TN	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	Protection of livestock and short term irrigation guideline	
Sodium	142,000		

NOTE:

- All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
- The quality characteristics required to be monitored as per Table C4a 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 C4a by amendment.
- SMD – slightly moderately disturbed level of protection, guideline refers ANZECC and ARMCANZ (2000).
- LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

Table C4b (Release Contaminant Trigger Investigation Levels: Billie's Gully/Isaac River)

Quality Characteristic	Trigger Levels (ug/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	100	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline	
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline	
Copper	2	For aquatic ecosystem protection, based on SMD guideline	
Iron	300	For aquatic ecosystem protection, based on low reliability guideline	
Lead	10	For aquatic ecosystem protection, based on SMD guideline	
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	
Zinc	8	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	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Ammonia	900	For aquatic ecosystem protection, based on SMD guideline	
Nitrate	1100	For aquatic ecosystem protection, based on ambient QLD WQ Guidelines (2006) for TN	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	Protection of livestock and short term irrigation guideline	
Sodium	142,000		

NOTE:

- A)** All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
- B)** The quality characteristics required to be monitored as per Table C4b 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 C4b by amendment.
- C)** SMD – slightly moderately disturbed level of protection, guideline refers ANZECC and ARMCAZ (2000).
- D)** LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR

C7	If quality characteristics of the release exceed any of the trigger levels specified in Table C4a (Release contaminant trigger investigation levels: North Creek) or Table C4b (Release contaminant trigger investigation levels: Billie's Gully/Isaac River) during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in Table C4a (Release contaminant trigger investigation levels: North Creek) or Table C4b. (Release contaminant trigger investigation levels: Billies Gully/Isaac River) and: (a) where the trigger values are not exceeded then no action is to be taken; or (b) where the downstream results exceed the trigger values specified in Table C4a (Release contaminant trigger investigation levels: North Creek) or Table C4b (Release contaminant trigger investigation levels: Billie's Gully/Isaac River) for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and; (i) if the result is less than the background monitoring site data, then no action is to be taken; or (ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC and ARMCAZ 2000 methodology, 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. <i>NOTE: Where an exceedance of a trigger level has occurred and is being investigated in accordance with condition C7(b)(ii), no further reporting is required for subsequent trigger events for that quality characteristic.</i>
C8	If an exceedance in accordance with condition C7(b)(ii) is identified, the holder of the authority must notify the administering authority within fourteen (14) days of receiving the result.
C9	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 C2 (Mine Affected Water Release during Flow Events).
C10	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 C2 (Mine Affected Water Release during Flow Events) for the release point(s) specified in Table C1 (Mine affected water release points, sources and receiving waters).
C11	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 C2 (Mine Affected Water Release during Flow Events) when measured at the monitoring points specified in Table C1 (Mine affected water release points, sources and receiving waters).
C12	The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in Table C1 (Mine affected water release points, sources and receiving waters).
C13	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.

C14	Notification of release event The environmental authority holder must notify the administering authority via WaTERS 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 verification to the administering authority of the following information: (a) Release commencement date and time; (b) Expected release cessation date and 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).
C15	The environmental authority holder must notify the administering authority as soon as practicable (nominally within twenty-four (24) hours after of cessation of a release event) of the cessation of a release notified under condition C14 and within twenty-eight (28) days provide the following information in writing: (a) Release cessation date and 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 Department 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. <i>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 C15 and C16, provided the relevant details of the release are included within the notification provided in accordance with conditions C15 and C16.</i>
C16	Notification of release event exceedance If the release limits defined in Table C3 (Mine Affected Water Release Limits) are exceeded, the holder of the environmental authority must notify the administering authority within twenty-four (24) hours of receiving the results.
C17	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.
C18	Monitoring of water storage quality Water storages stated in Table C5 (Water storage monitoring) which are associated with the release points must be monitored for the water quality characteristics specified in Table C6 (Onsite water storage contaminant limits) at the monitoring locations and at the monitoring frequency specified in Table C5 (Water storage monitoring).

Table C5 (Water storage monitoring)

Water Storage Description	Latitude (GDA2020)	Longitude (GDA2020)	Monitoring Location	Frequency of Monitoring
MP 11 – Carborough Truck Fill Dam	-21.98226	148.23218	Water body	Quarterly
MP 12 – CHPP Process Dam 1	-21.95235	148.21198	Water body	Quarterly
MP 29 – DREA Sediment Dam	-21.96154	148.19953	Water body	Quarterly

C19	In the event that waters storages defined in Table C5 (Water storage monitoring) exceed the contaminant limits defined in Table C6 (Onsite water storage contaminant limits), the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.
C20	The quality of the receiving waters must be monitored at the locations specified in Table C8 (Receiving water upstream background sites and downstream monitoring points) for each quality characteristic and at the monitoring frequency stated in Table C7 (Receiving waters contaminant trigger levels).

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
Sulfate (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 and ARMCANZ (2000) stock water quality guidelines.² Page 4.2-15 of ANZECC and 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

Table C7 (Receiving waters contaminant trigger levels)

Quality Characteristic	Trigger Level	Monitoring Frequency
pH	6.5 – 8.5	Daily during the release
Electrical Conductivity ($\mu\text{S}/\text{cm}$)	1,000	
Suspended solids (mg/L)	80th percentile of upstream reference site	
Sulfate (SO_4^{2-}) (mg/L)	1,000	
Sodium (mg/L)	142	

Table C8 (Receiving water upstream background sites and downstream monitoring points)

Monitoring Points (MP)*	Receiving Waters Location Description	Latitude (GDA2020)	Longitude (GDA2020)
Upstream Background Monitoring Points			
MP1	North Creek at 10,100m upstream of RP 1 gully confluence	-21.94405	148.29697
MP27	Isaac River at the Wotonga – Blair Athol Railway Crossing	-21.96467	148.04585
Downstream Monitoring Points			
MP2	North Creek at 3,460m downstream of RP 1 gully confluence	-22.00639	148.31279
MP26*	Billie's Gully REMP Point	-21.97890	148.18016
MP28	Isaac River downstream from the Peak Downs Highway Bridge	-22.04960	148.13060

NOTE: *The data from background monitoring points must not be used where they are affected by releases from other mines.

C21	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table C7 (Receiving waters contaminant trigger levels) during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: (a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; 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: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm. <i>NOTE: Where an exceedance of a trigger level has occurred and is being investigated in accordance with condition C21(b), no further reporting is required for subsequent trigger events for that quality characteristic.</i>
C22	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. For the purposes of the REMP, the receiving environment is the waters of North Creek and Billie's Gully connected or surrounding waterways within 10km downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.

C23	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); (b) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; (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 (Receiving water upstream background sites and downstream monitoring points)); (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; (e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table C3 (Mine Affected Water Release Limits); Table C4a (Release contaminant trigger investigation levels: North Creek) or Table C4b (Release contaminant trigger investigation levels: Billie's Gully/Isaac River); (f) include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC and ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments); (g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology; (h) apply procedures and/or guidelines from ANZECC and ARMCANZ 2000 and other relevant guideline documents; (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.
C24	A REMP Design Document that addresses each criterion presented in conditions C22 and C23 must be prepared and submitted to the administering authority. Due consideration must be given to any comments made by the administering authority on the REMP Design Document and subsequent implementation of the program.
C25	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions C22 and C23 must be prepared annually and made available on request to the administering 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.

C26	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: (a) Supplying stock water subject to compliance with the quality release limits specified in Table C9 (Stock water release limits); (b) Supplying irrigation water subject to compliance with quality release limits in Table C10 (Irrigation water release limits); or (c) Supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority.
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Table C9 (Stock water release limits)

Quality characteristic ¹	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 and ARMCANZ (2000) Irrigation Guidelines and/or by agreement with third party.

C27	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 or tanks, for the purpose of supplying structures, such as dams water to another mining operation. The volume, pH and electrical conductivity of water transferred to another mining operation must be monitored and recorded.
C28	If the responsibility of water contaminated by mining activities (the water) is given or transferred to another person in accordance with conditions C26 or C27: (a) The responsibility of the water must only be given or transferred in accordance with a written agreement (the third party agreement); (b) Include in the third party agreement a commitment from the person utilising the water to use water in such a way as to prevent environmental harm or public health incidences and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the <i>Environmental Protection Act 1994</i>, 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.

C29	Water general All determinations of water quality must be: (a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; (b) made in accordance with methods prescribed in the latest edition of the administering authority's Monitoring and Sampling Manual; (c) collected from the monitoring locations identified within this environmental authority, within two (2) hours of each other where possible; (d) carried out on representative samples; and (e) laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) method of analysis.
C30	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 C33 to C38 inclusive: (a) Must not produce any visible discolouration of receiving waters; nor (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.
C31	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.
C32	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 administering authority's Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities.
C33	Water Management Plan A Water Management Plan must be implemented and maintained to ensure it provides for the proper effective management of the actual and potential impacts resulting from the mining activity and to ensure compliance with conditions of this environmental authority.

C34	The Water Management Plan must: (a) provide for effective management of actual and potential environmental impacts resulting for water management associated with the mining activity carried out under this environmental authority; (b) be developed in accordance with the administering authority's 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 including situations where it is not possible to pump surplus water to another mine site under condition C26; and (vii) a program for monitoring and review of the effectiveness of the water management plan.
C35	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 C34; (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.
C36	The holder of this environmental authority must attach to the review report required by condition C35, 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 issued identified.
C37	The review report required by condition C35 and the written response to the review report required by condition C36 must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
C38	A copy of the Water Management Plan must be provided to the administering authority on request.
C39	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.
C40	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.
C41	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 storm water.
C42	For the purpose of ensuring water does not become mine affected water, 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 C41; and (b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions C33 to C38 inclusive.
C43	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.

C44	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.
C45	Treated wastewater The only contaminant permitted to be released to land is treated wastewater in compliance with the release limits stated in Table C12 (Contaminant release limits to land) that has been measured at the monitoring location defined in Table C11 (Contaminant release monitoring location).

Table C11 – Contaminant release monitoring location

Monitoring Location	Latitude (GDA2020)	Longitude (GDA2020)
Irrigation Discharge Pump	-21.99395	148.26072

Table C12 (Contaminant release limits to land)

Contaminant	Unit	Release limit	Limit type	Frequency
5 day Biochemical oxygen demand (BOD)	mg/L	No Limit (but included in monitoring)		Monthly
Total suspended solids	mg/L	No Limit (but included in monitoring)		Monthly
Nitrogen (Total Nitrogen)	mg/L as Nitrogen	60	Maximum	Monthly
Phosphorus (Total Phosphorus)	mg/L as Phosphorus	20	Maximum	Monthly
E.coli	c.f.u/100mL	1000	Maximum	Monthly
Total Chlorine	mg/L	5.0	Maximum	Weekly
pH	pH units	6.0 – 9.0	Range	Monthly
Electrical conductivity (EC)	µS/cm	1,600	Maximum	Monthly

Note: “pH” and “Total Chlorine” must be measured “in-situ” using suitably calibrated equipment

C46	Treated wastewater may only be released to land in accordance with the conditions of this approval at the locations within the nominated area(s) identified in Appendix 1 - Monitoring Points, Release Points & Treated Wastewater Irrigation Area.
C47	The released to land of treated wastewater must be carried out in a manner such that: (a) vegetation is not damaged; (b) there is no surface ponding of treated wastewater; and (c) there is no run-off of treated wastewater.
C48	If areas where treated wastewater is released to land are accessible to employees or the general public, prominent signage must be provided advising that treated wastewater is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the treated wastewater.
C49	All treated wastewater released to land must be monitored at the frequency and for the parameters specified in Table C12 (Contaminant release limits to land) at the monitoring location specified in Table C11 (Contaminant release monitoring location).
C50	The daily volume of treated wastewater released to land at the facility must not exceed 36 kL/day.

C51	The treated wastewater must be monitored for flow and contaminants at the wet weather storage output.
C52	The daily volume of treated wastewater release to land must be measured and records kept of the volumes of treated wastewater released.
C53	When circumstances prevent the release to land of treated wastewater such as during or following rain events, waters must be directed to an enclosed wet weather storage or alternative measures must be taken to store/lawfully dispose of treated wastewater.
C54	The enclosed wet weather storage capacity, required by C53 , must be a minimum of 47.5 kL.
C55	A minimum area of 1.2 hectares of land, excluding any necessary buffer zones, must be utilised for the release to land of treated wastewater.
C56	Treated wastewater must only be supplied to another person or organisation that has a written plan detailing how the user of the treated wastewater will comply with their general environmental duty under section 319 of the EP Act whilst using the treated wastewater.
C57	The irrigated pasture must be harvested at least annually. Any biomass harvested/removed from plants growing on irrigated land must not be disposed of on the irrigated land.
C58	If treated wastewater that exceeds the contaminant limits specified in Table C12 (Contaminant release limits to land) is released to land, the holder of the environmental authority must: (a) notify the administering authority via WaTERS within twenty-four (24) hours of becoming aware; (b) complete an investigation into the cause of the exceedance within ten (10) business days; and (c) take immediate action to ensure compliance with condition C45 of this environmental authority and notify the administering authority of when action has been completed.
C59	Water Sampling Monitoring and sampling must be carried out in accordance with written procedures that address, and complies with, the requirements of the latest version of the guideline: <i>Monitoring and Sampling Manual: Environmental Protection (Water) Policy, Department of Environment and Science, 2018</i> .
C60	The following information must be recorded in relation to all water sampling: (a) The date on which the sample was taken; (b) The time at which the sample was taken; (c) The monitoring point at which the sample was taken; and (d) The results of all monitoring.
C61	Groundwater must be monitored: (a) at the locations defined in Table C13 (Groundwater monitoring locations and frequency); (b) at the frequencies defined in Table C13 (Groundwater monitoring locations and frequency); (c) for quality characteristics at groundwater compliance monitoring bores listed in Table C14 (Groundwater quality limits), and (d) for groundwater levels at monitoring locations listed in Table C13 (Groundwater monitoring locations and frequency).

Table C13 (Groundwater monitoring locations and frequency)

Monitoring Locations	Hydrogeological unit	Latitude (GDA2020)	Longitude (GDA2020)	Ground surface RL (mAHD)	Screened interval or sensor depth for VWPs (mbgl)	Frequency
Groundwater compliance monitoring bores						
GW16	Rewan Group	-21.96220	148.26755	259	19 - 25	Quarterly
GW17	Rewan Group	-21.97262	148.27582	246	19 - 25	
GW19	Rewan Group	-21.94934	148.21821	278	19 - 25	
GW22	Rewan Group	-21.95794	148.20494	264	19 - 25	
MB1	Leichardt coal seam	-21.99831	148.26696	254.35	151 - 154	
MB2	Leichardt coal seam	-22.01953	148.28787	236.63	161 - 164	
MB3	Leichardt coal seam	-22.01204	148.27975	249.21	155 -158	
MB4	Rewan Group	-22.01508	148.30459	219.68	77.5 – 80.5	
Vibrating Wire Piezometers (water level only)						
VWP1	Rewan Group	-22.00035	148.28114	246.59	99.5	Quarterly
	Upper Rangal Coal Measures				164.5	
	Leichardt Coal Seam				183.5	
VWP2	Rewan Group	-22.01060	148.29044	231.64	100	
	Upper Rangal Coal Measures				215	
	Leichardt Coal Seam				235	

Notes:

mAHD – metres above Australian Height Datum

mbgl – metres below ground level

Coordinates are in GDA 94 MGA Map zone 55

Table C14 (Groundwater Quality Limits)

Location	Quality Characteristic	pH (field)	Electrical Conductivity (Lab)	Aluminium (dissolved)	Antimony (dissolved)	Arsenic (dissolved)	Iron (dissolved)	Mercury (dissolved)	Molybdenum (dissolved)	Selenium (dissolved)	Silver (dissolved)	Sulphate (dissolved)	C6 - C9 Fraction	C10 - C36 Fraction	Bicarbonate, sodium, carbonate, calcium, chloride, potassium, magnesium.
	Trigger level type	Range	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Interpretation Only
	Unit	pH units	(µS/cm)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(mg/L)
GW16		6 - 8.5 ^C	8934 ^A	0.055 ^D	0.009 ^D	0.004 ^A	0.03 ^A	0.0006 ^D	0.034 ^D	0.01 ^D	0.001 ^E	192 ^A	100 ^B	1000 ^B	N/A
GW17			19110 ^A	0.055 ^D		0.002 ^A	0.1 ^A			0.01 ^A		355 ^A			
GW19			36610 ^A	0.055 ^D		0.019 ^A	1.12 ^A			0.05 ^A	0.005 ^A	1335 ^A			
GW22			42510 ^A	0.2375 ^A		0.017 ^A	0.8 ^A			0.05 ^A	0.005 ^A	1469 ^A			
MB1*		N/A ^F	15910 ^A	0.055 ^D		0.013 ^D	0.54 ^A		0.132 ^A	0.01 ^D	0.001 ^E	64 ^A			
MB2*			18700 ^A	0.65 ^{A*}			0.1 ^A		0.143 ^A			37.5 ^A			
MB3*			11070 ^A	0.055 ^D			1.65 ^A		0.034 ^D			27 ^A			
MB4*			34680 ^A	0.055 ^D			1.24 ^A		0.034 ^D			23 ^A			

Notes:

* New bores will require re-calculation of site-specific values on completing 12 rounds of sampling.

A 95th percentile site specific value (adjusted to meet limit of reporting where required)

B Assessing Petroleum Hydrocarbon Contamination, released by the National Environmental Protection Council Assessment of Site Contamination (NEPM variation)

C ANZECC Livestock Drinking Water Guidelines

D ANZECC Aquatic Ecosystem toxicant default guidelines 95% Protection (fresh water) – up to LOR range where required, ie Selenium.

E ANZECC Aquatic Ecosystem toxicant default guidelines 95% Protection (marine water) – up to LOR range where required, ie Silver.

F No limit applied, to be reassessed following the completion of twelve (12) rounds of sampling. Bore to be replaced to screen same aquifer and within 30 metres of the location detailed in Table C13 (Groundwater monitoring locations and frequency)

C62	Baseline groundwater monitoring The baseline groundwater monitoring program must be continued for monitoring bores MB1, MB2, MB3 and MB4 to include twelve (12) sampling events in total for the indicators defined in Table C14 (Groundwater quality limits).
C63	Within two (2) months of completing the baseline monitoring detailed in condition C62, groundwater quality limits for bores MB1, MB2, MB3 and MB4 must be assessed using the approach set out in the latest version of the departmental guideline Using monitoring data to assess groundwater quality and potential environmental impacts and the following provided to the administering authority: (a) Proposed groundwater quality limits for bores MB1, MB2, MB3 and MB4; and (b) A report detailing the assessment, which must include: (i) data used; (ii) time-series plots; (iii) box-plots; (iv) outlier analysis; (v) trend analysis, and (vi) summarised site-specific values and statistics; and (c) All raw data.
C64	Groundwater Quality Results of groundwater monitoring from the monitoring bores identified in Table C14 (Groundwater Quality Limits) must not be exceeded at the same monitoring bore on three (3) consecutive occasions.
C65	If the quality limits specified in Table C14 (Groundwater Quality Limits) are exceeded at the same monitoring bore on three (3) consecutive occasions, the holder of the environmental authority must notify the administering authority via WaTERS within twenty-four (24) hours of receiving the results.
C66	If an exceedance is detected under condition C64, an investigation must be conducted and a report provided to the administering authority within forty-eight (48) days of detecting the exceedance under condition C64. The investigation must determine if the exceedance is the result of: (a) activities conducted under this environmental authority; (b) natural variation; or (c) neighbouring land use resulting in groundwater impacts; and if the exceedance is the result of activities conducted under this environmental authority, whether environmental harm has occurred or may occur as the result of the activities.
C67	If an investigation undertaken in accordance with condition C66 determines that environmental harm has or may occur, the holder of this environmental authority must: (a) implement immediate measures to reduce the potential for environmental harm; and (b) develop long-term mitigation measures to address any existing groundwater contamination and prevent recurrence of groundwater contamination. (c) Provide a report of the measures and long-term mitigation measures implemented to the administering authority within twenty-eight (28) days of submission of the report under condition C66.
C68	Subject to requirements of condition C61, groundwater levels and groundwater drawdown fluctuations in excess of two (2) metres per year, not resulting from the pumping of licensed bores, must be notified within seven (7) days to the administering authority following completion of monitoring.
C69	Groundwater Monitoring and Management Plan On or before 31 July 2022, a revised Groundwater Monitoring and Management Program must be developed, implemented and maintained.

C70	The Groundwater Monitoring and Management Program required by condition C69 must: (a) provide a hydrogeological conceptual groundwater model; (b) identify all potential sources of contamination to groundwater from the activities authorised under this environmental authority; (c) identify all environmental values that may be impacted; (d) detail groundwater levels in all identified hydrogeological units present across and adjacent to the site to confirm existing groundwater flow paths; (e) ensure all potential groundwater impacts due to mining activities and rehabilitation activities are identified, monitored and mitigated; (f) ensure adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives: (i) detect any impacts to groundwater quality due to the mining activities and rehabilitation activities; (ii) detect any changes to groundwater level due to the mining activities and rehabilitation activities; (iii) determine compliance with condition C64 and condition C68 and (iv) determine trends in groundwater quality; (v) determine any interaction or impact from groundwater on surface water (groundwater monitoring locations should align with receiving environment surface water quality monitoring locations, if appropriate); (g) document groundwater management and monitoring methodologies undertaken for the duration of all mining activities and rehabilitation activities; (h) provide an appropriate quality assurance and quality control program; (i) ensure groundwater levels are measured and reported as both metres below top of casing (mbtoc) and metres above the Australian Height Datum (mAHD). (j) include a review process to identify improvements to the program that includes addressing any comments provided by the administering authority.
C71	Annual Groundwater Monitoring Report An Annual Groundwater Monitoring Report must be completed and submitted to the administering authority by 1 April each year, for the monitoring conducted in the calendar year prior. The Annual Groundwater Monitoring Report must be completed by an appropriately qualified person.
C72	The Annual Groundwater Monitoring Report required by condition C71 must include: (a) a review of all the groundwater quality and standing water level data of all groundwater bores listed within Table C13 (Groundwater monitoring locations and frequency); (b) details of any review undertaken of the groundwater conceptual model; (c) an assessment of any impacts on groundwater level due to the mining activities; (d) comparison with receiving environment surface water quality monitoring results to determine any interaction or impact from groundwater on surface water, and (e) the suitability of the current groundwater monitoring network to effectively detect impacts from mine related activities, including any proposed improvements to the groundwater monitoring network
C73	Groundwater – Monitoring standards The construction, maintenance, operation and decommissioning of each groundwater monitoring bore must be undertaken in a manner that: (a) prevents contaminants entering the groundwater; (b) ensures representative groundwater samples from the target hydrogeological unit; and (c) maintains the hydrogeological environment within the hydrogeological unit.

C74	Monitoring and sampling must be carried out in accordance with written procedures that address the requirements of the latest version of the guideline: <i>Monitoring and Sampling Manual: Environmental Protection (Water) Policy, Department of Environment and Science, 2018</i> .
C75	The following information must be recorded in relation to all water sampling: (a) The date on which the sample was taken; (b) The time at which the sample was taken; (c) The monitoring point at which the sample was taken; and (d) The results of all monitoring.
C76	Groundwater – Provision of data The results and analysis of groundwater monitoring conducted under condition C61 must be submitted to the administering authority via WaTERS by 1 April each year for the monitoring conducted in the calendar the year prior.

Agency interest: Acoustic	
Condition number	Condition
D1	Subject to conditions D2 and D3 , noise from the mining activity must not cause an environmental nuisance at any sensitive or commercial place.
D2	When requested by the administering authority, noise 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 person) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
D3	Noise monitoring must include the following descriptors, characteristics and conditions: (a) $L_{Aeq, adj, T}$; (b) The level and frequency of occurrence and adjustments for impulsive or tonal noise; (c) Atmospheric conditions including wind speed, wind direction and rain; (d) Effects due to extraneous factors such as traffic noise; and (e) Location, date and time of monitoring.
D4	Noise is not considered to be a nuisance under condition D1 if monitoring shows that noise does not exceed the following levels in the time periods specified in Table D1 (Noise Limits).
D5	If monitoring indicated exceedance of the limits in Table D1 (Noise limits), then the environmental holder must: (a) address the complaint including the use of appropriate dispute resolution if required; and (b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
D6	The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's Noise Measurement Manual.
D7	Airblast overpressure nuisance Subject to conditions D8 and D9, the airblast overpressure level from blasting operations on the premises must not exceed the limits defined in Table D2 (Airblast overpressure level) at any sensitive place.

Table D1 (Noise limits)

Noise level dB(A) measured as	Monday to Saturday			Sundays and Public Holidays		
	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
	Noise measured at a 'Noise sensitive place'					
LA10, adj, 10 mins	B/g + 5	B/g + 5	B/g + 3	B/g + 5	B/g + 5	B/g + 0
LA1, adj, 10 mins	B/g + 10	B/g + 10	B/g + 5	B/g + 10	B/g + 10	B/g + 5
	Noise measured at a 'Commercial place'					
LA10, adj, 10 mins	B/g + 10	B/g + 10	B/g + 5	B/g + 10	B/g + 10	B/g + 5
LA1, adj, 10 mins	B/g + 15	B/g + 15	B/g + 10	B/g + 15	B/g + 15	B/g + 10

NOTE: 'B/g' refers to Background.

Table D2 (Airblast overpressure level)

Location	Airblast Overpressure Measured
Sensitive or commercial place	Air blast overpressure level of 115 dB (Linear peak) for nine (9) out of ten (10) consecutive blasts initiated and not greater than 120 dB (Linear peak) at any time.

D8	When requested by the administering authority, airblast overpressure 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 person) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
D9	Airblast overpressure monitoring must include the following descriptors, characteristics and conditions: (a) Location of the blast(s) within the mining area (including which bench level); (b) Atmospheric conditions including temperature, relative humidity and wind speed and direction, and (c) Location, date and time of recording.
D10	If monitoring indicates exceedance of the relevant limits in Table D2 (Airblast overpressure level), then the environmental authority holder must: (a) address the complaint including the use of appropriate dispute resolution if required; and (b) immediately implement airblast overpressure abatement measures so that airblast overpressure from the activity does not result in further environmental nuisance.
D11	The method of measurement and reporting of airblast overpressure levels must comply with the latest edition of the administering authority's Noise Measurement Manual.
D12	Vibration nuisance Subject to conditions D13 and D14 , vibration from the mining activity must not cause an environmental nuisance at any sensitive or commercial place.
D13	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised person) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.

D14	Vibration monitoring must include the following descriptors, characteristics and conditions: (a) Location of the blast(s) within the mining area (including which bench level); (b) Atmospheric conditions including temperature, relative humidity and wind speed and direction; and (c) Location, date and time of recording.
D15	If monitoring indicates exceedance of the relevant limits in Table D3 (Vibration limits), then the environmental authority holder must: (a) address the complaint including the use of appropriate dispute resolution if required; and (b) immediately implement vibration abatement measures so that vibration from the activity does not result in further environmental nuisance.

Table D3 (Vibration limits)

Location	Vibration measured
Sensitive or commercial place	5 mm/s peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 mm/s peak particle velocity at any time

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

Agency interest: Waste	
Condition number	Condition
E1	A Waste Management Plan, in accordance with the waste management hierarchy of the <i>Waste Reduction and Recycling Act 2011</i>, must be implemented and maintained. The Waste Management Plan must include: (a) waste management practices that will ensure that recyclables are diverted from landfill; (b) procedures for identifying and implementing opportunities to improve the waste management practices employed including information and education packages for waste generators to assist in maximising the diversion of recyclable materials from landfill; (c) details of any accredited management system employed, or planned to be employed, to implement the waste management practices; (d) procedures for dealing with accidents, spills and other incidents that may impact on the waste management; (e) disposal procedures for hazardous wastes; (f) procedures for auditing waste loads to identify material to be removed for recycling; (g) how often the performance of the waste management practices will be assessed (at least annually); (h) the indicators or other criteria, taking into account economic, social and environmental factors on which the performance of the waste management practices will be assessed; (i) requirements for waste transport contractors to appropriately manage source separated recyclable materials; and (j) a staff awareness and induction program that encourages re-use and recycling.
E2	A designated area or storage containers must be set aside for the laydown and segregation of wastes.
E3	An effective fire break must be provided and maintained around all waste laydown areas.
E4	Tyres stored awaiting disposal or transport for take-back and recycling or waste-to-energy options, should be stockpiled in volumes less than three (3) metres in height and two hundred square metres (200m ²) in area and at least ten (10) metres from any other tyre storage area.
E5	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a ten (10) metre radius of the scrap tyre storage area.
E6	Waste must not be burned or allowed to be burned on the mining leases, unless for fire training purposes.
E7	Waste batteries must be stored: (a) in a bunded and roofed area; or (b) palletised and plastic wrapped.
E8	Each container of regulated waste must be marked to identify the waste contained therein.

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E9	Where practicable, waste tyres resulting from the mining activities can be disposed of in underground slopes provided this practice does not cause an unacceptable fire risk or compromise mine safety.
E10	Waste tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.
E11	Disposing of waste tyres resulting from the mining activities in spoil emplacement is acceptable, providing tyres are placed as deep in the spoil as reasonably practicable.
E12	Except as otherwise permitted by the conditions of this environmental authority, all general and regulated waste must be removed and transported from site by a person(s) who has the authority to transport such waste to a facility that is lawfully able to accept the waste.

Agency interest: Land	
Condition number	Condition
F1	Topsoil Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.
F2	A topsoil inventory which identifies the topsoil requirements for the mine including availability of suitable topsoil on-site must be detailed in the Topsoil Management Plan.
F3	All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover in accordance with Table F1 (Landform design), Table F2 (Final land use and rehabilitation approval schedule) and in accordance with the completion criteria outlined in Appendix 6 (Rehabilitation Completion Criteria).

Table F1 (Landform design)

Disturbance Type	Maximum slope range (%)	Projected surface area (ha)
Spoil dump – external wall	10-15	11
Residual void	20-215	8
Infrastructure areas	10-15	31.5
Rail loop area	10-15	55
Dry reject disposal area (elevated)	10-15	78

F4	Progressive rehabilitation must commence when areas become available within the operational land in accordance with the Rehabilitation Management Plan requirements outlined in condition F8 .
F5	Complete a review of the investigation into rehabilitation of disturbed areas to include the Dry Rejects Emplacement Area and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in Table F1 (Landform Design) and Table F2 (Final Land Use and Rehabilitation Approval Schedule) and Appendix 6 (Rehabilitation Completion Criteria) by 20 December 2013 .
F6	Complete a review of the assessment report, to be undertaken by a Registered Professional Engineer of Queensland (RPEQ), of geotechnical issues and erosivity of the proposed final landforms, including Dry Rejects Emplacement Area and final voids, by 20 December 2013 to demonstrate long-term landform stability. Reference is to be made to the Queensland Mining Guidelines (or subsequent reprints) in making this assessment.
F7	Residual void outcome Residual voids must comply with the following outcomes: (a) 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 of any other condition within this environmental authority; and (b) Residual voids must comply with Table F3 (Residual void design).

Table F2 (Final land use and rehabilitation approval schedule)

	Disturbance Type								
	Box Cut	Spoil Dump(s)	Sediment/ Supply Dams	Evaporation Dam	Infrastructure (CHPP, MIA, Power facilities, Pipelines)	Dry Rejects Emplacement Areas	Rail Loop	Quarry Area	Road(s), Track(s), coal quality and compliance bores and gas pipelines
Tenure ID	Lot 1 SP187962 Lot 24 SP162593	Lot 1 SP187962 Lot 24 SP162593	Lot 1 SP187962 Lot 24 SP162593 Lot 1 SP192451	Lot 24 SP162593	Lot 1 SP187962 Lot 24 SP162593 Lot 1 SP192451 Lot 3 SP190266	Lot 1 SP192451	Lot 1 SP192451	Lot 1 SP192451	Lot 1 SP187962 Lot 24 SP162593 Lot 1 SP19245191 Lot 3 SP190266 Lot 2 SP214498 Lot 3 SP190266
Projected surface area (ha)	8	25	14.2	4.8	31.5	78	55	3	110.3
Pre-mine land use	Grazing	Grazing	Grazing	Grazing	Grazing	Grazing	Grazing	Grazing	Grazing
Post-mine land description	Water Storage	Grazing	Water Storage	Grazing	Grazing	Native ecosystem on batters/grazing on upper surface	Grazing	Native ecosystem/ Grazing	Ongoing Access or Grazing
Post-mine land suitability classification	V	IV	V	V	IV	IV	IV	IV	IV
Projective cover range (%)	N/A	70%	N/A	N/A	70%	70%	70%	70%	70%

Table F3 (Residual void design)

Void Identification	Void wall – competent rock slope (%)	Void wall – incompetent rock slope (%)	Void maximum surface area (Ha)
Box cut void	<215% (65 degrees)	<65% (33 degrees)	8

F8	The Rehabilitation Management Plan must be amended and implemented by 30 December 2013 and: (a) Provide for the effective management of actual and potential environmental impacts and for the rehabilitation of significantly disturbed land resulting from the mining activities carried out under this environmental authority; (b) Be developed in accordance with the administering authorities Guideline rehabilitation requirements for mining projects and must include at least the following components: (i) measures to ensure the rehabilitation objectives defined in Appendix 6 (Rehabilitation Completion Criteria) are met; (ii) a justification of the rehabilitation indicators defined in Appendix 6 (Rehabilitation Completion Criteria), including how the relationship between the indicator and the objective has been established; (iii) a justification that the completion criteria defined in Appendix 6 (Rehabilitation Completion Criteria), will determine if the rehabilitation objectives have been met and are suitable to ensure the post mine land use identified in Table F2 (Final land use and rehabilitation approval schedule); (iv) monitoring of reference sites identified in Table F4 (Reference Sites) inclusive of statistical design; (v) rehabilitation methods applied to each domain; (vi) landform design criteria including: (1) a justification of how landform design will be consistent with the surrounding topography; (2) schematic representation of final landform inclusive of: (3) drainage design and features; (4) slope designs; (5) cover design; and (6) erosion controls proposed on reformed land. (vii) rehabilitation monitoring and maintenance requirements to be applied to all areas of disturbance, including: (1) how the rehabilitation indicators defined in Appendix 6, are to be measured; (2) how the results of monitoring of indicators defined in Appendix 6, will be reported and interpreted; (3) how the rehabilitation completion criteria defined in Appendix 6, are to be measured; and (4) how the rehabilitation completion criteria defined in Appendix 6, will be reported and interpreted. (viii) a program for monitoring all land undergoing rehabilitation and rehabilitated areas including the verification of rehabilitation success, determined by the rehabilitation indicators and rehabilitation completion criteria defined in Appendix 6. The program must include: (1) the minimum sampling intensity must be specified for the monitoring of progressive rehabilitation; (2) a justification of the suitability of the minimum sampling intensity;
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	(3) sufficient replication of monitoring to enable statistical analysis of results at an acceptable power; (4) the provision to be undertaken at no more than twelve monthly intervals. (5) contingency procedures for rehabilitation maintenance or redesign; and (6) a program for monitoring and review of the effectiveness of the rehabilitation management plan. NOTE: it is an offence under the <i>Land Protection (Pest and Stock Route Management) Act 2002</i> to fail to control Class 1 or Class 2 pests on a Mining Lease or to move or transport a vehicle containing the reproductive material of a declared pest plant.
F9	Preventing contaminant release to land Contaminants must not be released to land in a manner which constitutes nuisance, material or serious environmental harm.
F10	Storage and spillage of chemicals and flammable or combustible liquids All flammable or combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of AS 1940 - Storage and handling of flammable and combustible liquids.
F11	Spillage of all flammable and combustible liquids must be controlled in a manner that prevents environmental harm.
F12	Infrastructure All infrastructure constructed by or for the environmental authority holder during the mining activities including water storage structures, must be removed from the site prior to environmental authority surrender, except where agreed in writing by the post mining land owner/holder.
F13	A Dry Rejects Emplacement Area (DREA) and DREA Sediment Dam is authorised under this authority in accordance with the specifications set out in 'Capital Consulting for Carborough Downs Coal Mine Dry Rejects Emplacement Area (DREA) and DREA Sediment Dam Final Design Report CO207-CDM-CI-RP-005 Rev 1, 19 March 2013' and is to be located within the control points outlined in the register of regulated dams.
F14	The holder of this environmental authority must ensure that there is always a current operational plan for the DREA, which may form part of other plans required by legislation.
F15	The DREA shall be designed to prevent environmental harm arising from contaminants being generated in the facility, leachate and runoff from the facility or other sources.

F16	Mining waste management A Mining Waste Management Plan together with the certification by an appropriately qualified person must be developed and implemented by 20 December 2013. The Mining Waste Management Plan must at a minimum include: (a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following contaminants: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Net Acid Producing Potential (NAPP), Total Sulfur (S), Chromium Reducible Sulfur (SCr), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulphate (SO₄); (b) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal; (c) the availability or leachability of metals from the mining waste; (d) quantity of potentially acid forming (PAF) mining waste; (e) review potential impacts of PAF mining waste on the success of proposed rehabilitation methods; (f) management actions for mining waste that has been identified as having a high availability or leachability of metals; (g) management actions for mining waste that has been defined as PAF; (h) identification of environmental impacts and potential environmental impacts; (i) control measures for routine operations to minimise likelihood of environmental harm; (j) contingency plans and emergency procedures for non-routine situations; and (k) periodic review of environmental performance and continual improvement. <i>NOTE: Individual parameters in (a) above can be removed following sufficient mine waste characterisation to demonstrate that certain individual parameters are not present in sufficient quantities to warrant further characterisation.</i>
F17	Acid mine drainage and leachate management Subject to the release limits defined in Agency interest C: 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 the environment.
F18	Native vegetation Cleared vegetation must be managed in accordance with the following hierarchy: (a) Reuse, e.g. use of logs and tree stumps as shelter for fauna in rehabilitated areas; (b) Recycle, e.g. mulching of vegetation and use in rehabilitation; and (c) Other alternative management options implemented in a way that causes the least amount of environmental harm, e.g. carrying out burning of waste vegetation under the appropriate permits.
F19	Areas which are to be rehabilitated to native ecosystem must comply with the following outcomes: (a) Achievement of a self-sustaining native ecosystem with species composition and distribution similar to the Brigalow 11.4.9, Poplar Box 11.5.3, and/or Lancewood 11.7.2 Regional Ecosystems reference sites as shown in Table F4 (Reference sites); and (b) All areas significantly disturbed by mining activities must be rehabilitated to the landform design criteria in Table F1 (Landform design).

F20	Authorised Disturbance Disturbance is permitted to be undertaken within authorised disturbance areas depicted in Appendix 4 (Authorised Surface Disturbance Areas) and Appendix 5 (Authorised Underground Working and Subsidence Disturbance Areas), in accordance with the projected surface areas detailed in Table F1 (Landform design) and Table F2 (Final land use and rehabilitation approval schedule).
F21	The only type of mining authorised to be conducted on ML700067 is bord and pillar mining. The subsidence resulting from bord and pillar mining must not exceed 400mm within the 'CAR South – Subsidence Envelope' areas as depicted in Appendix 5 (Authorised Underground Working and Subsidence Disturbance Areas) and must not exceed 50mm in all other areas authorised to be disturbed on ML700067.
F22	Surface areas over bord and pillar mining areas of ML700067, not otherwise detailed in Table F2 (Final land use and rehabilitation approval schedule), must maintain the pre-mining grazing suitability classification.
F23	A LiDAR survey to produce a digital elevation model (DEM) for the entirety of the areas depicted as 'CAR South - Subsidence Envelope' in Appendix 5 (Authorised Underground Working and Subsidence Disturbance Areas) must be conducted prior to commencement of mining activities identified as having the potential to generate greater than 50mm of subsidence. The survey must be capable of being used as a baseline survey collected prior to the onset of subsidence to identify whether terrain changes will lead to erosion risk, changes to channel stability, and the potential hydraulic consequences of subsidence.
F24	A Subsidence Monitoring Program must be developed, documented and certified by an appropriately qualified person, by 30 June 2026. The SMP must be capable of determining the occurrence and extent of any subsidence caused by the mining activity and compliance with condition F21.
F25	The Subsidence Monitoring Program as per condition F24 must include: (a) annual (as a minimum) collation of ground level data to compare with baseline assessment conducted in F23; (b) identification of any additional risks to erosion, channel stability or hydraulic consequences of subsidence; (c) the monitoring methodology; and (d) proposed mitigation and/or remedial works to be undertaken if subsidence results from the mining activity.
F26	A Subsidence Monitoring Report detailing the extent to which the environmental authority holder has complied with conditions F21 to F25 which has been certified by an appropriately qualified person, must be completed annually and submitted to the administering authority upon request.

Table F4 (Reference sites)

Regional Ecosystem	Latitude (GDA2020)	Longitude (GDA2020)
11.4.9	-21.94538	148.21392
11.5.3	-21.96022	148.20785
11.7.2	-21.97554	148.22317
11.5.9 / 11.5.18	-21.98437	148.23325
Grazing	-21.96792	148.26982

Agency interest: Regulated Structures	
Condition number	Condition
G1	Assessment of consequence category The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933) at the following times: (a) Prior to the design and construction of the structure, if it is not an existing structure; or (b) Prior to any change in its purpose or the nature of its stored contents.
G2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
G3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).
G4	Design and construction of a regulated structure Conditions G5 to G9 inclusive do not apply to existing structures.
G5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).
G6	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority which 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.
G7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933) and must be recorded in the Regulated Structures register.
G8	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 (ESR/2016/1933); (b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: (i) floodwaters from entering the regulated dam from any watercourse or drainage line; (ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
G9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: (a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and (b) construction of the regulated structure is in accordance with the design plan.

G10	Operation of a regulated structure Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority: (a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition G6, (b) a set of 'as constructed' drawings and specifications, (c) certification of those 'as constructed drawings and specifications' in accordance with condition G6, (d) 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; (e) the requirements of this authority relating to the construction of the regulated structure have been met; (f) the holder has entered the details required under this authority, into a Register of Regulated Dams; and (g) there is a current operational plan for the regulated structures.
G11	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.
G12	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.
G13	Mandatory reporting level Conditions G14 to G17 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
G14	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.
G15	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.
G16	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.
G17	The holder must record any changes to the MRL in the Register of Regulated Structures.
G18	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.
G19	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).
G20	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.

G21	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.
G22	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G23	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.
G24	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).
G25	The holder must within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority: (a) the recommendations section of the annual inspection report; (b) if applicable, any actions being taken in response to those recommendations; and (c) 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.
G26	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.
G27	Register of Regulated Dams A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.
G28	The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority.
G29	The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with conditions G10 and G11 has been achieved.
G30	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
G31	All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
G32	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 Dams, in the electronic format required by the administering authority.
G33	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 six (6) months of amendment of the authority adopting this schedule.

G34	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Table G1 (Transitional hydraulic performance requirements for existing structures), depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
G35	Table G1 (Transitional hydraulic performance requirements for existing structures) 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; (b) It has been decommissioned; or (c) It has been certified as no longer being assessed as a regulated structure.
G36	Certification of the transitional assessment required by condition G33 and G34 (as applicable) must be provided to the administering authority within six (6) months of amendment of the authority adopting this schedule.

Table G1 - (Transitional hydraulic performance requirements for existing structures)

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.

END OF CONDITIONS

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.

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

Administering Authority is the agency that administers the environmental authority provisions under the *Environmental Protection Act 1994*.

'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).

'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 relating to the subject matter using the relevant protocols, standards, methods or literature.

'background', with reference to the water schedule means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

'blasting' means the use of explosive materials to fracture:

- a) rock, coal and other minerals for later recovery, or
- b) structural components or other items to facilitate removal from a site or for reuse.

'certification', means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

'certifying', 'certify', or 'certified' have a corresponding meaning as 'certification'.

'chemical' means:

- an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth), or
- a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council, or
- a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 2011, or
- 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
- any substance used as, or intended for use as:
 - a. a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product, or
 - b. a surface active agent, including, for example, soap or related detergent, or
 - c. a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide, or
 - d. a fertiliser for agricultural, horticultural or garden use, or
 - e. a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater, or
 - f. manufacture of plastic or synthetic rubber.

‘commercial place’ means a workplace 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.

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

‘construction’ or **‘constructed’**, in relation to watercourse diversions, is the process of building, or modifying an existing diversion, but does not include investigations and testing necessary for the purpose of preparing a design plan.

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

‘disturbance’ of land includes:

1. compacting, removing, covering, exposing or stockpiling of earth;
2. removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;
3. carrying out mining within a watercourse, waterway, wetland or lake;
4. the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;
5. 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; and
6. releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of ‘disturbance’:

1. areas off lease (e.g. roads or tracks which provide access to the mining lease);
2. areas previously disturbed which have achieved the rehabilitation outcomes;
3. 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);
4. 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; and
5. disturbance that pre-existed the grant of the tenure.

‘EC’ means electrical conductivity.

‘effluent’ means treated waste water released from sewage treatment plants.

‘equilibrium’: A state where ‘balance’ is achieved despite changing variables.

‘exploration activity’ are mining activities permitted under an environmental authority, that allows the holder to:

- determine the existence, quality and quantity of minerals;
- evaluate the potential for development of the mineral resource;
- mining and engineering feasibility studies; and
- other activities approved under the relevant mining tenure authority.

‘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:

1. geomorphic and vegetation assessment of the existing watercourse;
2. hydrologic conditions of the existing watercourse;
3. the proposed watercourse diversion route; ND
4. results from hydrologic, hydraulic and sediment transportation modelling used in the design of the diversion.

‘functionality’: the purpose that something is designed or expected to fulfil.

‘greywater’ means wastewater generated from domestic activities such as laundry, dishwashing, and bathing. Greywater does not include sewage.

‘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’.

‘holder’, for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

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

‘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.

‘LiDAR’ refers to Light Detection and Ranging (remote sensing) technology that uses pulsed laser light to measure ranges, creating precise 3-D, high resolution models.

‘leachate’ means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

‘licensed place’ means the mining activities carried out at the mining tenements detailed in the ‘Environmentally relevant activity and location details’ (page 1) of this environmental authority.

‘m’ means metres.

‘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.

‘mine affected water’ means the following types of water:

1. pit water, tailings dam water, processing plant water;
2. water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the Environmental Protection Regulation 2019 if it had not formed part of the mining activity;
3. 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;
4. groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
5. groundwater from the mine’s dewatering activities; or
6. a mix of mine affected water (under any of paragraphs i)-v) and other water.
7. 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:
 - (1) 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;
 - (2) 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:
 - (a) areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site;
 - (b) 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
 - (c) both.

‘minimise’ is to reduce to the smallest possible amount or degree.

‘mining activity’ means:

- (a) an activity that is an authorised activity for a mining tenement under the *Mineral Resources Act 1989*; or
- (b) another activity that is authorised under an approval under the *Mineral Resources Act 1989* that grants rights over land.

‘NATA’ means National Association of Testing Authorities, Australia.

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

‘non-polluting’ means having no adverse impacts upon the receiving environment.

‘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.

‘protected area’ means –

- a) a protected area under the *Nature Conservation Act 1992*, or
- b) a marine park under the *Marine Parks Act 2004*, or
- c) a World Heritage Area.

‘receiving environment’ in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

1. a watercourse
2. groundwater
3. an area of land depicted as authorised disturbance area in **Appendix 4:** (Authorised Surface Disturbance Areas or **Appendix 5:** Authorised Underground Working and Subsidence Disturbance Areas.

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

‘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.

‘Resource activity’ is an activity that involves—

1. a geothermal activity;
2. a GHG storage activity;
3. a mining activity; or
4. a petroleum activity.

‘revegetation’ is the re-establishment of vegetation 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.

‘RL’ means reduced level, relative to mean sea level as distinct from depths to water.

‘saline drainage’ The movement of waters, contaminated with salts, as a result of the mining activity.

‘Scheme fund’ means the scheme fund established under the *Mineral and Energy Resources (Financial Provisioning) Act 2018*, section 24.

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

‘sensitive place’ means:

1. a dwelling, residential allotment, mobile home or caravan park, residential marina or
2. other residential premises;
3. a motel, hotel or hostel;
4. an educational institution;
5. a medical centre or hospital;
6. a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
7. 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.

‘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.

‘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 EP Act’ means the *Environmental Protection Act 1994*.

‘Total Nitrogen (TN)’ means the sum of Organic Nitrogen, Ammonia Nitrogen, Nitrite plus Nitrate Nitrogen, expressed as mg/L as Nitrogen. This includes both the inorganic and organic fraction of nitrogen.

‘Total Phosphorus (TP)’ means the sum of the reactive phosphorus, acid-hydrolysable phosphorus and organic phosphorus, as mg/L of Phosphorus. This includes both the inorganic and organic fraction of phosphorus.

‘treated wastewater’ means the treated effluent that has been mixed with treated greywater prior to irrigation application.

‘**µS/cm**’ means micro siemens per centimetre.

‘**water**’ has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

1. a river, creek or stream in which water flows permanently or intermittently—
 - a) in a natural channel, whether artificially improved or not; or
 - b) in an artificial channel that has changed the course of the watercourse.
2. Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

‘**watercourse**’ has the same meaning given in the *Water Act 2000*.

‘**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.

“**WaTERS**” – Water Tracking and Electronic Reporting System or subsequent updated system, used to submit monitoring data and notify the Queensland Government [<https://waters.detsi.qld.gov.au/>] or contact psd.help@qld.gov.au

END OF DEFINITIONS

Permit

Environmental Authority EPML00959213 Carborough Downs Coal Mine

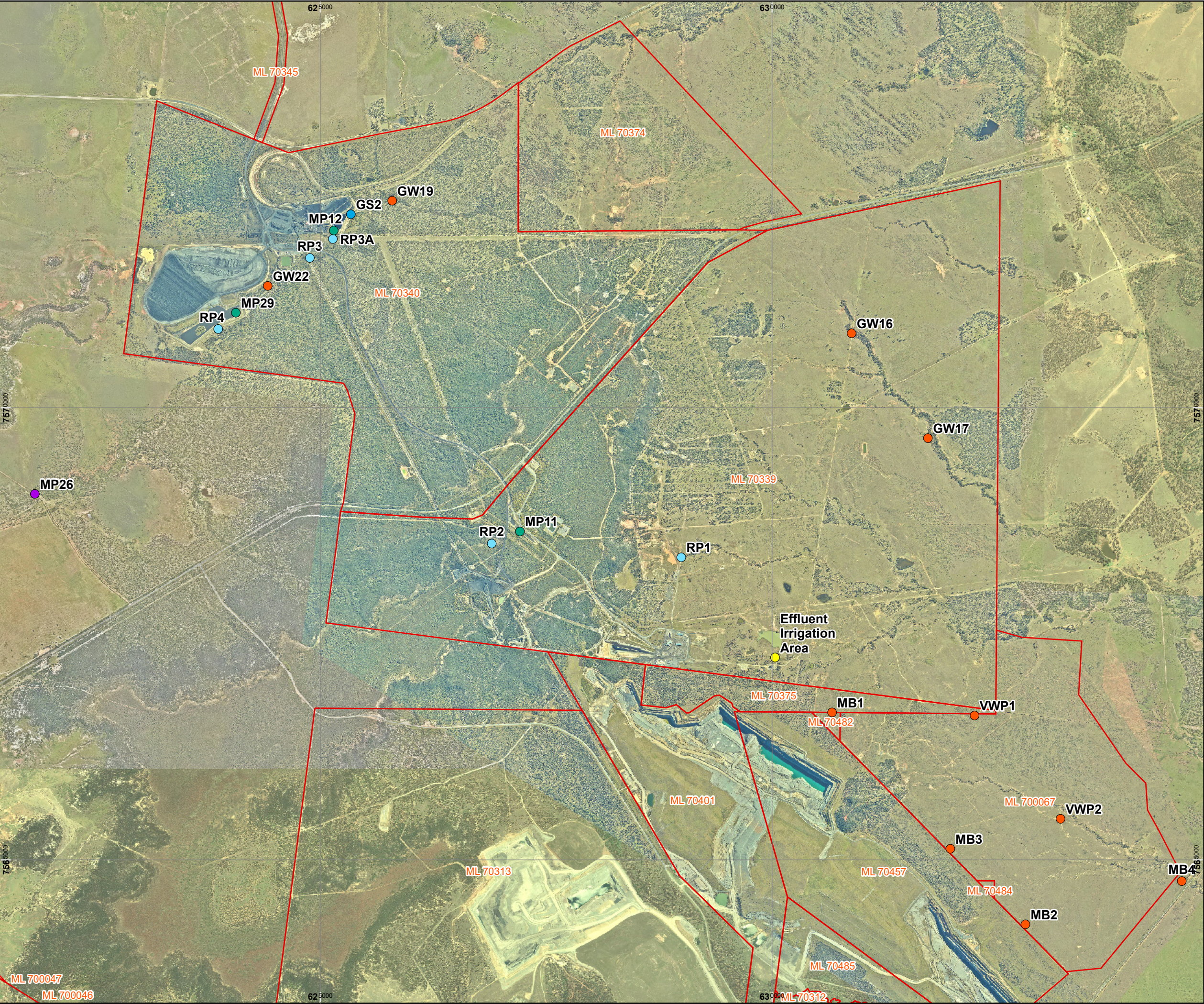
Appendices

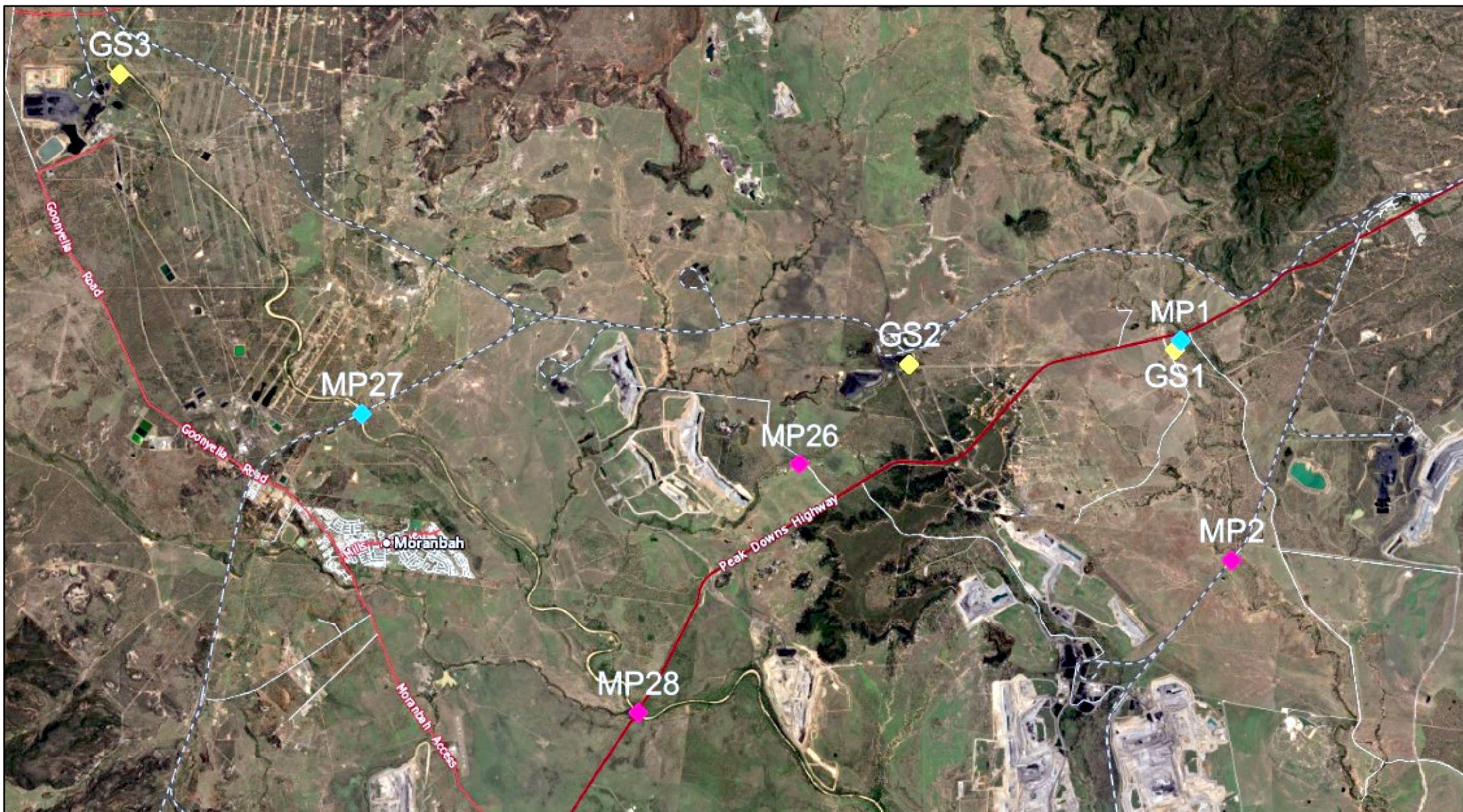
CARBOROUGH DOWNS
COAL MINE

APPENDIX 1

MONITORING POINTS,
RELEASE POINTS &
TREATED EFFLUENT
IRRIGATION AREA

- Legend
- Mining Lease
 - Monitoring Site
 - Effluent Irrigation Area
 - Groundwater
 - Receiving Water
 - Receiving Water Flow
 - Release Point
 - Water Storage Monitoring





CARBOROUGH DOWNS COAL MINE

APPENDIX 2

RECEIVING ENVIRONMENT MONITORING POINTS & GAUGING STATIONS

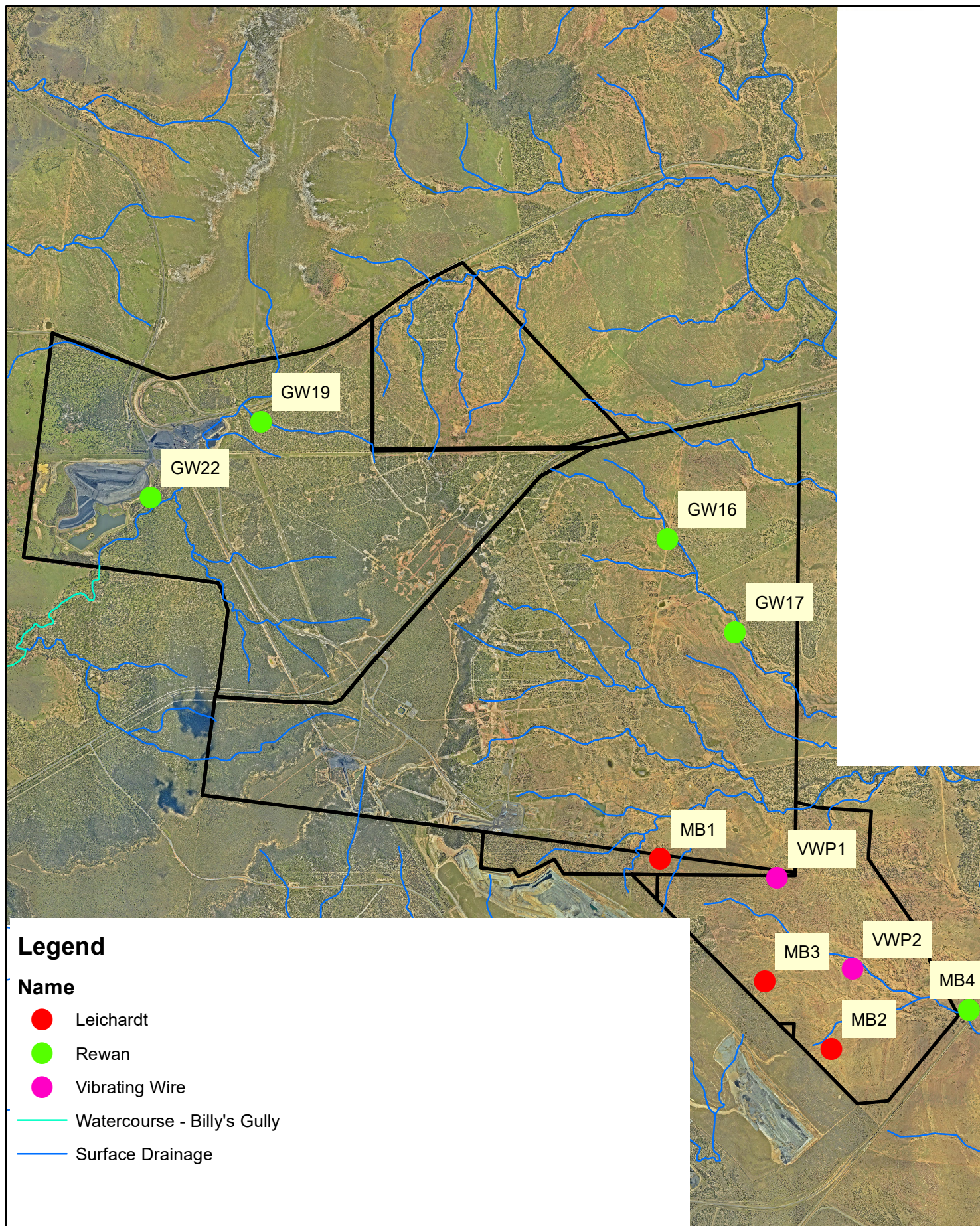
- ◆ Gauging Station
- ◆ Receiving Waters - Upstream Background Monitoring Points
- ◆ Receiving Waters - Downstream Background Monitoring Points

fitzroy



0 60 120 240 360 480
Kilometers

Drawn By: SBereyne Date: 27/02/2023



CARBOROUGH DOWNS COAL MINE

APPENDIX 3

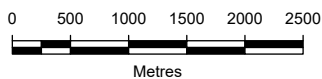
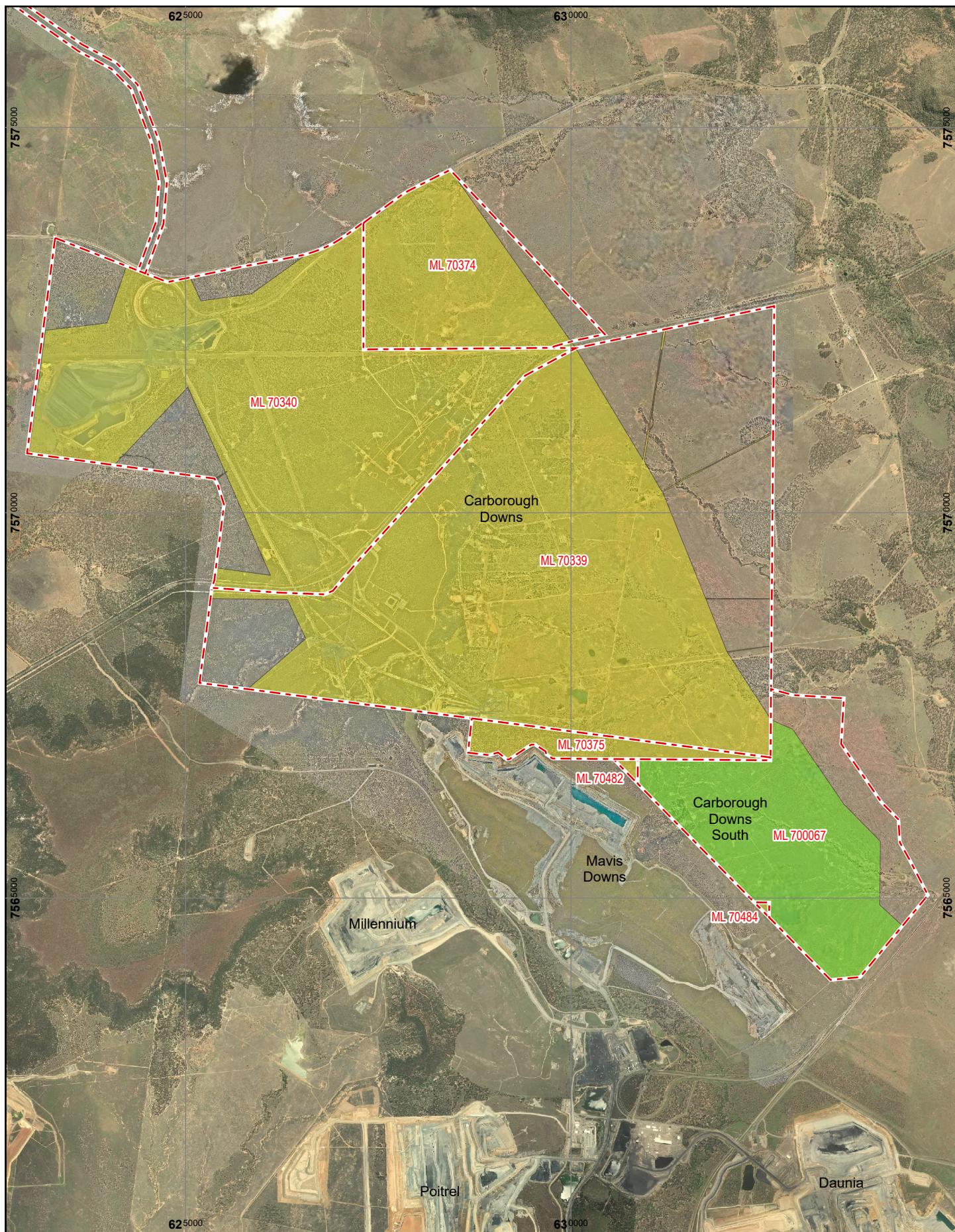
COMBINED GROUNDWATER MONITORING NETWORK



0 0.45 0.9 1.8 2.7 3.6 Km

Datum: Australian 1984 Coordinate System: AGD 1984 AMG Zone 55

Drawn By: SBereyne Date: 23/05/2022



Datum: GDA2020 Zone 55
 Scale: See Scale Bar (A4)
 Date: 11/09/2025 6:31 AM
 Drawn: RA

LEGEND

- Mining Lease
- CAR - Authorised Disturbance - Surface Areas (including Surface Workings)
- CAR South - Authorised Disturbance - Surface Area (including Surface Workings 19.3ha)

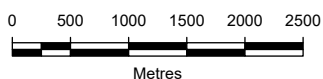
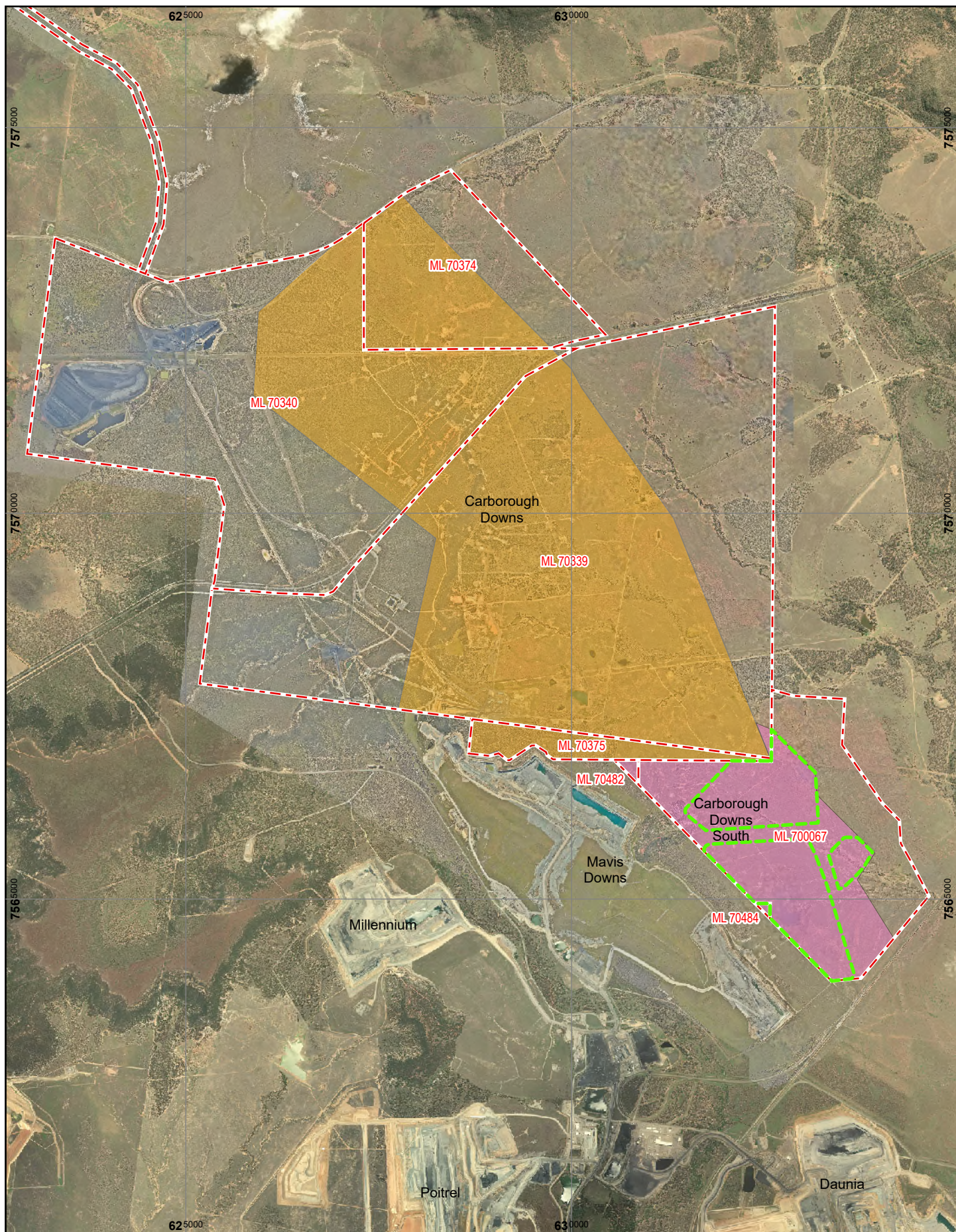


CARBOROUGH DOWNS COAL MINE

Authorised Surface Disturbance Areas



DISCLAIMER: Third party data sources are used in this map compilation.
 Minserve makes no warranty regarding this data's accuracy or currency.



Datum: GDA2020 Zone 55
 Scale: See Scale Bar (A4)
 Date: 4/11/2025 10:32 AM
 Drawn: RA



DISCLAIMER: Third party data sources are used in this map compilation. Minserve makes no warranty regarding this data's accuracy or currency.

LEGEND

- Mining Lease
- CAR South - Subsidence Envelope
- CAR - Authorised Disturbance - Subsidence Areas & Underground Workings
- CAR South - Authorised Disturbance - Subsidence Areas & Underground Workings



CARBOROUGH DOWNS COAL MINE

Authorised Underground Working and Subsidence Disturbance Areas

Appendix 6 - Rehabilitation Completion Criteria

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
Spoil Dumps	Long-term Safety	Spoil Dump remains safe for humans and animals now and in the future	Slopes are suitable for human and/or animal trafficking	Certification in rehabilitation report that slopes are safe and risk of future failure is determined to be acceptable	Geotechnical assessment to determine slip hazard.
			Erosion ratings are suitable for long-term safety	Erosion ratings (as adopted by the erosion rating system) are less than or equal to 2 (as defined in of the Rehab Management Plan dated 29 June 2012)	Evidenced in inspections of rehabilitation.
			No significant cracking (>1m depth) occurring in the spoil dumps from subsidence or erosion	Certification in final/progressive rehabilitation report that there are no surface cracks or erosion rills greater than 1m depth.	
	Non-Polluting	No toxic materials are available to be exposed to human or animal contact	Leaching of toxic material into waterways or surface pools does not occur	Any significant pools or seepage zones on top of or at the base of spoil dumps are sampled and analysed. Analysis results must comply with the long-term baseline of the receiving water, be within the water quality range of long-term predictions for water quality in any residual void within the catchment, or ANZECC 95% Species Protection Level / Queensland Water Quality /	Testing of any seepage zones or significant pools at the top of spoil dumps and results outlined in the Final Rehabilitation Report or Progressive Rehabilitation Report or Rehabilitation Inspections.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				NEPC Contaminated Lands guidelines.	
			All toxic and harmful material has been either capped or buried at a depth suitable to not be exposed to humans or wildlife	Leaching tests of exposed material meet specified guideline values (using standard protocols such as US EPA Toxic Characteristic Leaching Procedure).	Rehabilitation Inspection / Final Rehabilitation Report or Progressive Rehabilitation Report outlining the location of exposed overburden or waste, appropriate leaching tests, and comparison to relevant guidelines.
				Written evidence is provided that hazardous material has been buried within spoil dumps at a depth that will not be exposed to humans or wildlife	Testing from any seepage from capping or spoil dumps and results outlined in the Final Rehabilitation Report or Progressive Rehabilitation Report or Rehabilitation Inspection
		Polluted water contained on site or treated	Downstream surface / groundwater monitoring	Certification that monitoring data meet specified design criteria relevant to potential contaminants	Downstream baseline data does not exceed receiving water baseline or ANZECC Guidelines, as evidenced in the Rehabilitation Inspection or Final Rehabilitation Report or Progressive Rehabilitation Report.
	Stable	Loss of material from spoil dumps is suitable for the surrounding landscape	Erosion Rates	Erosion rates, measured or modelled (using a suitable modelling methodology such as RUSLE, CAESAR, SIBERIA, MINEROSION etc.) are no higher than 50% above the erosion rate of the surrounding	Certification report comparing erosion losses (measured or modelled) from spoil dumps to surrounding grazing lands.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				landscape OR generally less than 13t/ha/yr.	Rehabilitation Inspection Report or Final/Progressive Rehabilitation Report outlines erosion ratings for various areas.
				Erosion ratings for inspection transects (minimum 50m each transect) are less than or equal to 2 as outlined in of the Rehab Management Plan dated 29 June 2012.	
			Erosion indicators such as slumping, washouts, rills etc. are minimal	Areas where washouts occur do not exceed 5% of the total rehabilitation area for the site	Analyses from aerial photographs or on-ground inspection, outlined in the Final/Progressive Rehabilitation Report.
				Each individual washout does not exceed 100m ²	
				Minimal slumping or slips occur	
		Topsoil is fastened to the underlying spoil to minimise the chances of mass movements and slumping	Methodology of Rehabilitation	Topsoil has integrated into the spoil below; or tree & shrub species are present in sufficient densities to hold the topsoil to the underlying spoil material	Certification Report undertaken by an appropriately qualified person showing structures are fit for purpose after mine closure / certification, evidenced in the Final/Progressive Rehabilitation Report.
		Functional erosion structures	Erosion structures are fit for purpose	Inspection and certification of erosion and water control structures (such as contour banks, drop structures, armoured areas etc.)	

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Sustainable Land Use	Vegetation cover	Vegetation cover percentage and type	Groundcover $\geq 70\%$	On-ground Rehabilitation Inspection, outlined in the Final/Progressive Rehabilitation Report.
		Soil Properties that support and will continue to support the desired final land use	Chemical properties of topsoil and soil profiles that are within range of roots of proposed vegetation	pH _(1:5) range of soil is between 5.5 – 9.0 to at least 0.45m.	On-ground Rehabilitation Inspection, outlined in the Final/Progressive Rehabilitation Report.
				Cation Exchange Capacity greater than 10meq/100g	
				Root zone salinity is less than 0.6dS/m (in a 1:5 soil water mixture)	
				Evidence of nutrient and organic matter cycling is occurring	Soil quality analyses as outlined in Section of the Rehab Management Plan dated 29 June 2012, evidenced in the Final / Progressive Rehabilitation Report.
			Physical parameters of the soil	Topsoil is >150mm thick across all vegetated areas; OR chemical analyses indicate spoil is suitable to support long-term vegetation cover and meet the required land suitability classification	On-ground Rehabilitation Inspection, outlined in the Final/Progressive Rehabilitation Report.
				Slope is $\leq 15\%$	
				Erosion ratings are less than or equal to 2 as outlined in of the Rehab Management Plan dated 29 June 2012.	

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
Residual Void		Vegetation is suitable for the post-mining land use	Vegetation diversity	For grazing land uses, a suitable grass species has established and is self-sustaining as evidenced by secondary establishment of grass species.	On-ground Rehabilitation Inspection, outlined in the Final/Progressive Rehabilitation Report.
				An approximate tree density of 10 trees per hectare occurs on spoil dumps.	On-ground Rehabilitation Inspection or aerial photograph interpretation, outlined in the Final/Progressive Rehabilitation Report.
	Long-term Safety	Residual Void remains safe for humans and animals in the future	Access to the void crest is prevented	Safety barriers are installed in accordance with <i>Technical Guidelines for Environmental Management of Exploration and Mining in Queensland</i> , 1995 and certified by an RPEQ	An audit against relevant standards outlines safety barriers are installed appropriately. Evidenced in the Final/Progressive Rehabilitation Report.
			Ramp is suitably designed	Ramp remains traversable by animals / livestock.	Audit identifies as traversable by animals / livestock if access is going to be permitted to the void or suitable means of escape by wildlife provided.
			Probability of rock fall, slip or slumping is low	Geotechnical inspection and certification that the residual void is stable and has a low probability of rock fall, land slip, or slumping	Geotechnical certification.
			Signage	Signage is erected advising of steep slopes, potential for geotechnical failure or slumping, and uneven ground at the perimeter of the void safety area.	Evidenced in an audit of the residual void prior to completion.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Non-Polluting	No toxic materials are available to be exposed to human or animal contact	Underground drifts and accesses are appropriately sealed	Sealing of drifts and other access to the underground mine occurs in accordance with the <i>Technical Guidelines for Environmental Management of Exploration and Mining in Queensland</i> , 1995 or any subsequent guideline.	An audit against relevant standards outlines safety barriers are installed appropriately. Evidenced in the Final/Progressive Rehabilitation Report.
			Long-term predictions of residual void waters	Water balance modelling shows that there is a negligible risk of spill of the residual void to the surrounding environment	Certification / modelling report is undertaken
				Geochemical modelling or leachate testing is undertaken and analysed to determine the potential long-term water quality evolution of the residual void.	
				Hydrogeological evaluation indicates contaminants (if detected) will not migrate from the void and pollute surrounding groundwater or surface water supplies	Certification / groundwater investigation that no aquifer resource or surface water supplies are at risk.
			Hazardous substances removed from site	Records are available for any hazardous material buried within the Residual Void.	Audit of records of burial of hazardous substances, and overburden / capping, in the residual void.
			Access prevented	If geochemical modelling or leachate testing shows potential for harm to livestock, access is prevented by a fence on top of the safety bund.	Inspection of bunds and certification / audit that livestock access is

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Stable	Ensure long-term stability of void structures in terms of safety and consequences of further erosion	Wall Stability		prevented under conditions at time of inspection.
				Highwall and low walls of any residual void are made stable and certified by a geotechnical engineer.	Certification report.
				The zone of Highwall / low wall instability, within the period identified by the regulator, calculated by a suitably qualified Geotechnical Engineer.	
				Safety bunds are installed to prevent access to the residual void in accordance with the <i>Technical Guidelines for Environmental Management of Exploration and Mining in Queensland</i> , 1995 or any subsequent guideline.	Final Rehabilitation Report or Progressive Rehabilitation Report.
			Water Control	Waters diverted into the void or entering over the void crest are controlled and erosion via this mechanism is taken into consideration for the long-term stability of the void.	Certification report.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				Should the erodibility of exposed strata in the void be too high, overland flows and drainage lines must be prevented from entering the void.	
				Appropriately designed drains must be installed in areas where the erosive power of runoff will be concentrated within the void and its catchment.	
	Sustainable Land Use	The residual void is suitable for the post-mining land use.	Geological and mineralogical waste material placement	No bulk waste, contaminated or highly saline material is threatened to be exposed by long-term (i.e. 50 years) erosion.	Certification report outlining potential erosion in 50 years and probability of exposing waste material.
Subsidence Areas	Long-term Safety	Subsided land is safe to traverse by humans, vehicles and wildlife	Surface cracking	Surface cracks have been artificially or naturally closed and do not present a safety hazard to human or animal traffic	Inspection of subsided areas to confirm that cracks have been closed.
			Drainage migration	Migration resulting from subsidence, of flow paths and drainage lines, is not likely to significantly affect any major infrastructure such as powerlines, public roads, pipelines	Subsided drainage lines in proximity to infrastructure are modelled, migration predicted, and mitigation measures provided. Evidenced / outlined in the Final/Progressive Rehabilitation Report.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Non-Polluting	Water accumulating in subsided areas does not detrimentally affect the health of 'Endangered or 'Of Concern' vegetation communities	Areas where waters accumulate in ponds larger than 300m ² for more than 10 days will not result in detrimental health effects to surrounding 'Native Woodland' vegetation	Rehabilitation / Subsidence inspections undertaken during the mine life do not show detrimental health effects to vegetation in these areas; OR	Inspections undertaken as part of the Subsidence Monitoring Programme or the Rehabilitation Monitoring Programme indicate minimal detrimental health impacts to these areas.
				Mitigation measures have been provided to ensure that the subsided area freely drains so that water does not accumulate and have a detrimental impact to vegetation in these areas; OR	Evidence, via a Final Rehabilitation Report or Progressive Rehabilitation Report, that mitigation measures have been installed that will prevent the ponding of water in 'Endangered' or 'Of Concern' vegetation areas. Evidence is to be provided as demonstrated recordings or modelling.
		Soils adjacent to any subsidence pools receiving 'mine affected' water are suitable for the desired land use classification	Soil quality analyses of the soil profile adjacent to subsidence pools that regularly (at least every 3 years during mine life) receive mine affected water	Soil quality data shows that the soil is still suitable for the required land use classification and will have no detrimental impact to plant health; OR	Final Rehabilitation Report or Progressive Rehabilitation Report outlining soil quality data, suitability and/or deviation from background information in the relevant areas.
				No significant deviation from baseline soil data collected during the life of the mine or at the EIS stage	
	Stable	Subsidence has not drastically increased the level of erosion and migration of drainage lines and watercourses	Stream power and bed shear stress calculations for subsided drainage lines	Stream Power, Bed Shear Stress and velocity results do not exceed thresholds outlined in the relevant Subsidence Management Plan or Rehabilitation Management Plan	Final Rehabilitation Report or Progressive Rehabilitation Report examining stream power values against those recommended in the relevant Subsidence Management Plan or Rehabilitation Management Plan

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				Post-subsidence inspections demonstrate that there are no areas of significantly increased erosion that is unmanageable as a result of subsidence	Final Rehabilitation Report or Progressive Rehabilitation Report summarizing the results of post subsidence inspections on relevant longwall panels.
			Stabilisation works	Areas where erosion has increased, or is likely to increase, as a result of subsidence are stabilised with appropriate controls.	Inspection and Final Rehabilitation Report or Progressive Rehabilitation Report.
				Stabilisation works have been designed for an asset life of no less than 10 years (preferably 20) after mine closure.	Design plans and audit for stabilisation works.
	Sustainable Land Use	Erosion rates of subsided areas are similar to the surrounding landscape	Erosion rates	Erosion rate is no greater than 30% higher than what occurs in un-subsided lands surrounding the mine with a similar land use and vegetation cover	Erosion rate calculated for surrounding lands and subsided lands, evidenced in the Final/Progressive Rehabilitation Report.
		Soil quality is maintained at an acceptable standard	Soil quality results from subsidence areas	Soil quality in areas subject to periodic inundation falls within the range of pre-subsidence soil quality values encountered on-site.	Analysis of soil quality in the Final Rehabilitation Report or Progressive Rehabilitation Report.
				Soil quality remains fit for purpose for the desired post-mining land use.	

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
Dry Reject Emplacement Area	Long-term Safety	The batter slopes and top of the DREA are suitable for human and/or animal traffic	Stability	Geotechnical testing and analysis has confirmed that the top of the DREA is capable of supporting human and/or animal traffic.	Sample results, analyses and interpretation by a suitably qualified geotechnical engineer, evidenced in the Final / Progressive Rehabilitation Report.
			Batter Stability	Geotechnical testing and analysis has confirmed that capping material on the batter slopes is, and will continue to, function as designed.	
				Geotechnical testing and analysis has confirmed that batter slopes are capable of supporting human and/or animal traffic.	
	Non-Polluting	Surface waterways and surrounding landscapes are not adversely affected	Water Quality & Flow	Demonstrated that any seepage waters from the DREA are compatible with ANZECC 95% Species Protection Levels for Aquatic Ecosystems, OR receiving water (Billy's Gully) baseline conditions.	Soil / water quality analyses and interpretation evidenced in the Final / Progressive Rehabilitation Report.
				Demonstrated that runoff waters from the rehabilitated landform are compatible with ANZECC 95% Species Protection Levels for Aquatic Ecosystems; or receiving water (Billy's Gully) baseline conditions.	Soil / water quality analyses and interpretation evidenced in the Final / Progressive Rehabilitation Report.
				All waters run-off the residual landform and no ponding (especially on the top of the landform) occurs.	Results of inspections during / immediately after the wet season and/or survey data; evidenced in the

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
					Final / Progressive Rehabilitation Report.
		Areas surrounding the DREA are not contaminated	Contaminated land assessment	Lands surrounding the dry reject emplacement area, especially areas receiving runoff from batter walls, comply with the <i>Draft Guidelines for the Assessment and Management of Contaminated Lands in Queensland</i> or any future revisions.	Soil assessment undertaken and results outlined in the Final / Progressive Rehabilitation Report.
			Soil quality for vegetation growth	Soil quality in areas surrounding the dry reject emplacement area, especially areas receiving runoff from batter walls, generally has the following qualities pH between 5.5 and 9 Root zone salinity <0.6dS/m Cation exchange capacity >10meq/100g	
	Stable	Rates of soil loss from DREA capping are suitable to support the post-mining land use	Batter Stability	Batter slopes are $\leq 15\%$ gradient.	On-ground inspection or topographic data (LIDAR/Photogrammetry/Survey), evidenced in the Final / Progressive Rehabilitation Report.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
		of grazing & native ecosystems.		Rates of sediment loss from the batter slopes is similar to (within 30%) of the surrounding land use as verified by measurement or calibrated modelling.	Evidence is provided in the Final Rehabilitation Report or Progressive Rehabilitation Report that sediment loss from the batter slopes is similar to soil loss rates from surrounding grazing lands.
				Runoff is only permitted to concentrate in appropriately designed sediment / runoff control structures (i.e. rock lined drains, contour drains) and has been certified as fit for purpose into the foreseeable future.	Inspection by appropriately qualified person at closure / certification reporting stage that runoff and control structures are appropriately designed and any maintenance regimes are suitable for the foreseeable future.
	Sustainable Land Use	Capping design & implementation is capable of supporting the post-mining land use	Soil Quality & Growth Medium	The thickness of material able to support vegetation cover is >0.8m (allowing for 1m thickness of capping material and limited compaction / settling / erosion since installation).	On-ground inspection and / or certification at design stage.
				Topsoil pH is between 5.5 and 9.0	Soil quality inspection undertaken in accordance with Section of the Rehab Management Plan dated 29 June 2012, evidenced in the Final / Progressive Rehabilitation Report.
				Root-zone salinity is <0.6dS/m	
				Cation Exchange Capacity >10meq/100g.	
				Evidence of nutrient and organic matter cycling is occurring	
				Erosion ratings are less than or equal to 2 as outlined in of the Rehab	

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				Management Plan dated 29 June 2012	Vegetation inspection undertaken in accordance with Section of the Rehab Management Plan dated 29 June 2012 and evidenced in the Final / Progressive Rehabilitation Report.
			Vegetation Cover & Diversity	Stem density of 10 trees per hectare or at a comparable density to nominated reference sites.	
				Groundcover $\geq 70\%$	
				Tree and groundcover has demonstrated an ability to recover from disturbance (e.g. slashing, grazing, and fire) without substantial cover losses 1 year after disturbance.	
Infrastructure	Long-term Safety	Infrastructure has been retained in a safe and operable manner; or is decommissioned and removed	Certification that residual infrastructure is safe and fit for purpose	Infrastructure Areas: Final inspection by suitably qualified person that residual infrastructure is fit for purpose and suitable for adoption by the post-mine landholder	Evidence that any infrastructure left on-site is safe to use and operable, as evidenced by maintenance logs or inspections.
	Non-polluting	Any fuel storage areas to remain after mine closure have been certified as fit for purpose	Inspection report	Infrastructure Areas Inspection and audit undertaken in accordance with AS1940:2004 and certified as meeting these standards	Audit showing that any areas subject to AS1940:2004 or any later standard, that are left for the landholder after mining, are in compliance with the standard.
		Contaminated materials have been neutralized or removed	Levels of contaminants	Contamination land assessment (in accordance with the <i>Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland</i>) shows that contaminated material has been	Contaminated land assessment, evidenced in the Final / Progressive Rehabilitation Report.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				removed, neutralised or chemically and hydrologically isolated.	
				Leaching tests of exposed material meet specified guideline values (using standard protocols such as US EPA Toxic Characteristic Leaching Procedure)	
			Water Quality	Water quality generated from the area is within the baseline for the receiving environment (i.e. North Creek or Billy's Gully) or ANZECC 95% Species Protection Levels for Aquatic Ecosystem Protection.	Evidence in the Final / Progressive Rehabilitation Report that water quality generated from infrastructure areas meets relevant guidelines.
	Stable	Rehabilitated areas are stable	Soil Salinity	Soils of the area are not highly saline (i.e. less than 0.6dS/m).	Evidence that soil inspections (undertaken for Contaminated land assessments and other completion criteria) show that soil is not highly saline. Evidence supplied in the Final / Progressive Rehabilitation Reports.
			Erosion	Rehabilitated areas are generally ≤5% gradient	Survey, topographic data, or cross sections as evidenced in the Final / Progressive Rehabilitation Reports.
				Erosion rates are compatible with the surrounding land use	Evidence is provided in the Final Rehabilitation Report or Progressive Rehabilitation Report that sediment loss from the batter slopes is similar

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
					to soil loss rates from surrounding grazing lands.
			Hydrology	Elevated road embankments do not overly impede the flow of water across the floodplain or terrace during a Q50 event (i.e. breaches in the elevated roadway are provided to allow water flow).	Inspection of rehabilitated roads and certification that the road embankment will not overly impede flows for discharges up to the Q50 event. Evidenced in the Final / Progressive Rehabilitation Report.
	Sustainable Land Use	The land is able to function to a grazing land use.	Vegetation and Grazing Function	Groundcover $\geq 70\%$	Rehabilitation inspection undertaken in accordance with Section of the Rehab Management Plan dated 29 June 2012 outlining vegetation cover, as evidenced in the Final / Progressive Rehabilitation Inspection.
				The area has demonstrated an ability to recover from significant disturbance (e.g. slashing, grazing, fire) by quickly re-establishing target covers and without substantial weed infestation	Rehabilitation inspections for species diversity, ground cover, health and erosion undertaken prior to, and after grazing. These results should be outlined in the Final/Progressive Rehabilitation Report.
				At least 10 trees / shrubs per hectare	On-ground inspections or aerial photography, as evidenced in the Final / Progressive Rehabilitation Report.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
			Topsoil Quality	Topsoil pH is greater than 5.5 but less than 9.0 to at least 45cm depth	Results of soil quality inspections undertaken in accordance with Section, evidenced in the Final / Progressive Rehabilitation Report.
				Root zone salinity is <0.6dS/m to at least 45cm depth	
				Cation Exchange Capacity >10meq/100g to at least 45cm depth	
				Evidence of nutrient and organic matter cycling is occurring	Soil quality analyses as outlined in Section, evidenced in the Final / Progressive Rehabilitation Report.
Drill Pads	Long Term Safety	Drill holes have been appropriately sealed	Drill hole rehabilitation outcomes	A plug or concrete has been used to seal drill holes below ground level, and the hole is backfilled with benign material to ground level.	Written evidence of drill hole sealing, as undertaken during the life of the mine, or an inspection undertaken as part of Rehabilitation Inspections. Evidenced in the Final / Progressive Rehabilitation Report.
				If relevant, the casing has been cut off below ground level, the hole capped or plugged, and the hole backfilled with benign material to ground level	
			Drill sumps	All sumps required for drilling purposes have been battered back so that the gradient does not exceed 30%; or appropriately backfilled with benign material suitable as a growth medium	Rehabilitation Inspection and evidenced in the Final / Progressive Rehabilitation Report.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Non Polluting	Contaminated materials are removed from the site	Soil quality	Soil quality must comply with the levels as indicated in the <i>Draft Guidelines for the Assessment and Management of Contaminated Sites in Queensland 1998</i> or any future revisions	Soil quality analyses compared against contaminated land guidelines.
	Stable	Areas disturbed by drill pads do not increase receiving water sediment loads	Capping / topsoil material.	Erosive or dispersive material must not be used to cap drill pads.	Soil quality analyses
	Sustainable Land Use	Areas disturbed by drill pads are able to be used for grazing	Soil Quality	Sealed surfaces (such as sheeted drill pads) have been removed	Soil quality analyses / Rehabilitation Inspection. .
				Soil pH is greater than 5.5, but less than 9.0	Soil quality inspection undertaken in accordance with Section of the Rehab Management Plan dated 29 June 2012, evidenced in Rehabilitation Inspections or the Final / Progressive Rehabilitation Report.
				Root zone salinity <0.6dS/m	
				Cation Exchange Capacity >10meq/100g	
				Evidence of nutrient and organic matter cycling is occurring	
			Vegetation Cover	Ground cover $\geq 70\%$	Vegetation inspection undertaken in accordance with Section of the Rehab Management Plan dated 29 June 2012.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				Ground cover has demonstrated an ability to recover from disturbance (e.g. slashing, grazing, fire)	Rehabilitation inspections for species diversity, ground cover, health and erosion undertaken prior to, and after grazing. These results should be outlined in the Final/Progressive Rehabilitation Report
Dams (remain for clean water use)	Long Term Safety	Dam walls are fit for purpose and do not show signs of probable failure	Erosion	Dam walls are fit-for purpose and have been inspected by a suitably qualified person	Dam inspection as outlined by the latest copy of the Queensland Dams manual
	Non Polluting	Water quality in the dam is suitable for the landholder's uses	Water quality	Water quality complies with ANZECC 95% species protection level guidelines for Aquatic Ecosystems; ANZECC Guidelines for Primary Industries; OR the receiving water baseline.	Long-term water quality monitoring record and interpretation, as evidenced in the Final / Progressive Rehabilitation Report
			Sediment Quality	Any saline or contaminated material has been removed from the base of the dam. Sediment at the base of the dam complies with the levels outlined in the <i>Draft Guidelines for the Assessment and Remediation of Contaminated Sites in Queensland</i> or any later guideline.	Sediment analyses from the base of the dam showing compliance with relevant guidelines, evidenced in the Final / Progressive Rehabilitation Report.

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Stable	The spillway of any dam is fit for purpose and not subject to large-scale erosion	Erosion indicators	The spillway of all dams to be left for the landholder must be inspected and certified by a suitably qualified person.	Dam inspection as outlined by the latest copy of the Queensland Dams manual
				Discharge of water from the dam does not cause significant erosion to the bed and banks of the receiving environment	Assessment / demonstration of erosion potential of discharges from the dam's spillway.
	Sustainable Land Use	Water quality in the dam is suitable for the landholder's uses	Water quality	Water quality complies with ANZECC 95% species protection level guidelines for Aquatic Ecosystems; ANZECC Guidelines for Primary Industries; OR the receiving water baseline.	Long-term water quality monitoring record and interpretation, as evidenced in the Final / Progressive Rehabilitation Report
			Sediment Quality	Any saline or contaminated material has been removed from the base of the dam. Sediment at the base of the dam complies with the levels outlined in the <i>Draft Guidelines for the Assessment and Remediation of Contaminated Sites in Queensland</i> or any later guideline.	Sediment analyses from the base of the dam showing compliance with relevant guidelines, evidenced in the Final / Progressive Rehabilitation Report.
Dams (to be decommissioned)	Long term Safety	Residual embankment walls (if any) do not pose a safety hazard to humans or wildlife	Stability	Any dam walls or embankments that are not removed are not prone to instability or slumping as certified by a suitably qualified person.	Dam inspection as outlined by the latest copy of the Queensland Dams manual

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Non Polluting	Water quality in the dam is suitable for the landholder's uses	Water quality	Water quality complies with ANZECC 95% species protection level guidelines for Aquatic Ecosystems; ANZECC Guidelines for Primary Industries; OR the receiving water baseline.	Long-term water quality monitoring record and interpretation, as evidenced in the Final / Progressive Rehabilitation Report
			Sediment Quality	Saline and contaminated material has been removed from the base of the dam. Sediment at the base of the dam complies with the levels outlined in the <i>Draft Guidelines for the Assessment and Remediation of Contaminated Sites in Queensland</i> or any later guideline.	Sediment analyses from the base of the dam showing compliance with relevant guidelines, evidenced in the Final / Progressive Rehabilitation Report.
	Stable	Erosion is not enhanced by the residual landform.	Residual Landform	The residual landform is safe, not conducive to erosion and will support the post-mining land use.	Dam inspection as outlined by the latest copy of the Queensland Dams manual
				Adequate mitigation measures have been provided to reduce the level of erosion of any spillways or breaches in dam walls or embankments.	Assessment / demonstration of erosion potential of discharges from the dam's spillway.
	Sustainable Land Use	The residual landform is suitable for the surrounding environment	Soil quality	Soil pH _{1:5} is greater than 5.5 and less than 9	Soils inspection in accordance with Section of the Rehab Management Plan dated 29 June 2012.
				Root zone salinity is less than 0.6dS/m	

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
				Soil Cation Exchange Capacity is greater than 10meq/100g.	
				Nutrient cycling / microbial processes are occurring in the soil profile	
			Vegetation Parameters	Groundcover $\geq 70\%$ in areas not subject to periodic inundation	Vegetation Survey in accordance with Section of the Rehab Management Plan dated 29 June 2012.
				Groundcover has demonstrated an ability to recover from disturbance (e.g. slashing, grazing, fire	
			Gradient	Generally gradients away from the cutting face are $\leq 15\%$	Topographic data, cross section or survey, evidenced in the Final / Progressive Rehabilitation Report.
				The cutting face is certified as stable with a minimal risk of rock-fall or slipping	Geotechnical certification, evidenced in the Final / Progressive Rehabilitation Report
Quarries and Borrow Pits	Long Term Safety	The area is safe for human, vehicle and wildlife traffic	Signage	Where steep slopes occur ($>30\%$) the upper edge of the face is fenced, bunded and signage is erected notifying persons of steep slopes	Inspection against success criteria, as evidenced in the Final / Progressive Rehabilitation Report

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Non Polluting	Exposed rock does not mobilise contaminants to receiving waters	Leachate quality; OR	Leaching tests of exposed material meet specified guideline values	Rehabilitation Inspection / Final Rehabilitation Report or Progressive Rehabilitation Report outlining the location of exposed overburden or waste, appropriate leaching tests, and comparison to relevant guidelines.
			Capping	Material with the potential to contaminate runoff is capped with benign overburden and topsoil.	Geotechnical design of capping. Inspection of capping material as evidenced in the Final / Progressive Rehabilitation Report.
	Stable	The area is safe for human, vehicle and wildlife traffic	Gradient	Generally gradients away from the cutting face are $\leq 15\%$	Topographic data, cross section or survey, evidenced in the Final / Progressive Rehabilitation Report.
				The cutting face is certified as stable with a minimal risk of rock-fall or slipping	Geotechnical certification, evidenced in the Final / Progressive Rehabilitation Report
			Signage	Where steep slopes occur ($>30\%$) the upper edge of the face is fenced, bunded and signage is erected notifying persons of steep slopes	Inspection against success criteria, as evidenced in the Final / Progressive Rehabilitation Report

Domain	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria	Evidence to be supplied of compliance with Completion Criteria
	Sustainable Land Use	The rehabilitated land is capable of supporting the final land use.	Water quality	Waters accumulating in any residual depression comply with ANZECC 95% species protection levels for Aquatic Ecosystems, or the receiving water baseline.	Water quality analyses and interpretation, evidenced in the Final / Progressive Rehabilitation Report
			Capping / Topsoil Quality	Topsoil pH is between 5.5 and 9.0	Soil inspections as outlined in Section, evidenced in the Final / Progressive Rehabilitation Report
				Root zone salinity <0.6dS/m	
				Cation Exchange Capacity >10meq/100g	
				Evidence of nutrient and organic matter cycling is occurring	Soil quality analyses as outlined in Section, evidenced in the Final / Progressive Rehabilitation Report.
			Vegetation	Stem density of 10 trees per hectare occurs to meet the Native Ecosystem Land Use	Vegetation surveys as outlined in Section, evidenced in the Final / Progressive Rehabilitation Report
				Groundcover ≥ 70%	
				Tree and groundcover has demonstrated an ability to recover from disturbance (e.g. slashing, grazing, fire)	

END OF ENVIRONMENTAL AUTHORITY