Permit

Environmental Protection Act 1994

Environmental authority EA0001002

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

Environmental authority number: EA0001002

Environmental authority takes effect on 28 March 2022.

Environmental authority holder(s)

Name(s)	Registered address
New Lenton Coal Pty Ltd	Level 16, 175 Eagle Street, Brisbane QLD 4000
MPC Lenton Pty Ltd	Level 16, 175 Eagle Street, Brisbane QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Resource Activity, Schedule 3, 13: Mining black coal.	ML70109, ML70260, MDL315, EPC857, MDL349
Resource Activity, Schedule 3, 09: A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance.	ML70109, ML70260, MDL315, EPC857, MDL349
Ancillary 31 – Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t.	ML70109, MDL315, EPC857, MDL349
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.	ML70109, ML70260, MDL315, EPC857, MDL349
Ancillary 60 – Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b)(c) more than 5000t but not more than 10,000t.	ML70109, ML70260, MDL315, EPC857, MDL349

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

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

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

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

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

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise- one the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State*

Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

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

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

Signature

28 March 2022

Date

Ben Byrd
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 28 March 2022

Enquiries:
Business Centre (Coal)
Department of Environment and Science
PO Box 3028
EMERALD QLD 4720
Phone: (07) 4987 9320
Email: CRMining@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Conditions of environmental authority:

Agency interest: General	
Condition number	**Condition**
A1	**Estimated Rehabilitation Cost (ERC)** The environment authority holder must not carry out, or allow the carrying out of, a resource activity under this environment authority unless – a) An ERC decision is in effect for the resource activity being carried out; and b) The environmental authority holder has paid a contribution to the scheme fund or given a surety for the environmental authority under the *Mineral and Energy Resources (Financial Provisioning) Act 2018*; and c) The environmental authority holder has complied with the requirements under the *Mineral and Energy Resources (Financial Provisioning) Act 2018* for paying a contribution to the scheme fund, or giving a surety for the authority, as required from time to time.
A2	**New Estimated Rehabilitation Cost (ERC) decision before expiry** When an ERC decision is in force for this environment authority, the environmental authority holder must apply, under section 298 of the *Environmental Protection Act 1994*, for a new ERC decision, at least **three (3) months** before the ERC period to which the decision relates ends.
A3	**When environment authority holder must re-apply for Estimated Rehabilitation Cost (ERC) decision** When ERC decision is in force for this environmental authority, the environmental authority holder must re-apply within **ten (10) business days** under section 298 of the *Environmental Protection Act 1994* for an ERC decision when: a) there is an increase in the likely maximum amount of disturbance to the environment as a result of the environment authority holder carrying out the resource activity; or b) there is a change relating to the carrying out of the resource activity that may result in an increase in the ERC for the resource activity.
A4	**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.
A5	**Storage and handling of flammable and combustible liquids** Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.8 of *AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 2004*.

A6	**Monitoring and records** Record, compile and keep for a minimum of **five (5) years** all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
A7	Where monitoring is a requirement of this environmental authority, ensure that an appropriately qualified person(s) conducts all monitoring.
A8	**Notification of emergencies, incidents and exceptions** All reasonable actions are to be taken to minimise environmental harm, or potential environmental harm, resulting from any emergency, incident or circumstances not in accordance with the conditions of this environmental authority.
A9	As soon as practicable after becoming aware of any emergency, incident or information about circumstances which results or may result in environmental harm not in accordance with the conditions of this environmental authority, the administering authority must be notified by telephone and in writing.
A10	The notification of emergencies or incidents as required by **Condition A8** of this environmental authority must include but not be limited to the following: a) the holder of the environmental authority; b) the location of the emergency or incident; c) the number of the environmental authority; d) the name and telephone number of the designated contact person; e) the time of the release; f) the time the environmental authority holder became aware of the release; g) the suspected cause of the release; h) the environmental harm caused, threatened, or suspected to be caused by the release; and i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.
A11	Not more than **ten business days** following the initial notification of an emergency, incident or information about circumstances, which result or may result in environmental harm, written advice must be provided to the administering authority in relation to: a) proposed actions to prevent a recurrence of the emergency or incident; b) the outcomes of actions taken at the time to prevent or minimise environmental harm; and c) proposed actions to respond to the information about circumstances which result or may result in environmental harm.

A12	As soon as practicable, but not more than **six (6) weeks** following the conduct of any environmental monitoring performed in relation to the emergency or incident, which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority, written advice must be provided of the results of any such monitoring performed to the administering authority.
A13	**Exploration activities** Exploration activities must be undertaken in accordance with the conditions contained in the *Code of Environmental Compliance for Exploration and Mineral Development Projects (EM586)*.
A14	**Definitions** Words and phrases used throughout this environmental authority are defined in the Definitions sections at the end of this document. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.
A15	**Complaint Response** All complaints received must be recorded including details of complainant, 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	**Dust nuisance** Subject to **Conditions B2** and **B3** of this environmental authority, the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance at any sensitive or commercial place.
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen days to the administering authority following completion of monitoring.

B3	If the environmental authority environment authority holder can provide evidence through monitoring that the following limits are not being exceeded then the environment authority 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); or b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM_{10}) 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 PM_{10} 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 - PM_{10} high volume sampler with size selective inlet - Gravimetric method of 1990 (or more recent editions); and ii) any alternative method of sampling PM_{10}, which may be permitted by the Air Quality Sampling Manual as published from time to time by the administering authority.
B4	If monitoring indicates exceedance of the relevant limits in **Condition B3** of this environmental authority, 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.
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 water to waters must only occur from the release points specified in both **Table C1** (Mine Affected Water Release Points, Sources and Receiving Waters) and depicted in **Figure 1** (Burton Mine Monitoring and Release Points – Burton (RPs 6, 7, 9, 10 and 11)) and **Figure 2** (New Burton Mine Groundwater Monitoring Locations) attached to this environmental authority.
C3	The release of mine affected water to internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with **Conditions C31** to **C35** inclusive is permitted.

C4	The release of mine affected water to waters in accordance with **Condition C2** must not exceed the release limits stated in **Table C2** (Contaminant 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.
C5	The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table C1** (Mine Affected Water Release Points, Sources and Receiving Waters) or each quality characteristic and at the frequency specified in **Table C2** (Contaminant Release Limits) and **Table C3** (Release Contaminant Trigger Investigation Levels – Potential Contaminants). NOTE: *The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event **Condition C5** is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.*

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

Release Point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving waters description
RP 6	21.595611	148.15697	B2W (formerly Western Lease Dam)	Spillway or End of Pipe	Anna Creek (Burton Gorge Dam)
RP 7	21.58841	148.158429	Tank B2N Mine Affected Water – Pit distribution Network [2] (Burton Widening / Burton North Void)	End of Pipe	Lower Anna Creek
RP 9	21.57388	148.16943	Mine Affected Water – Pit distribution Network [2] (Burton Widening Sump)	End of Pipe	Anna Creek
RP 10	21.537101	148.15161	Burton North Void	End of Pipe	Isaac River
RP11	21.573591	148.169379	Burton North Void Mine Affected Water – Pit distribution Network [2]	End of Pipe	Anna Creek
RP15	21.622801	148.128228	Mine Affected Water – Pit distribution Network [2]	End of Pipe	Isaac River

NOTE:
[1] Contaminant Source and Location describes the final holding dam before the potential release of water. The water may be mine affected water pumped from other locations: e.g. mixed rainfall accumulations, fish bowls and sumps.
[2] The source of the water may be from a specific pit or combination of mixed pit waters. Prior to release the water will be assessed for release suitability (Tables C2 and C4).

Table C2: Contaminant Release Limits

Quality Characteristic	Release Limits	Monitoring frequency	Comment
Electrical conductivity (µS/cm)	Release limits specified in **Table C4** for variable flow criteria.	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
Turbidity (NTU)	No Limit	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impact and can provide instantaneous results.
Suspended Solids (mg/L)	1000	At commencement and prior to cessation of release (at a minimum) and weekly during a release [1]	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (mg/L)	Release limits specified in Table C4 for variable flow criteria	At commencement and prior to cessation of release (at a minimum) and weekly during a release [1]	
NOTE: [1] The determination of suitability for release of water should be informed by monitoring undertaken prior to release.			

Table C3: Release Contaminant Trigger Investigation Levels – Potential Contaminants

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Chromium	1	*Based on background data*	Commencement of release and thereafter weekly during release
Copper	2	*Based on background data*	
Zinc	8	*For aquatic ecosystem protection, based on SMD guideline*	
Selenium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Nitrate	1,100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Sodium (mg/L)	180	*Australian Drinking Water Guidelines. Trigger may require amendment if future advice from Queensland Health becomes available.*	
Barium	2000	*Trigger from Australian Drinking Water Guidelines*	

NOTE:

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

*2. The quality characteristics required to be monitored as per **Table C3** can be reviewed once the results of **two (2) years** monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from **Table C3** by amendment.*

3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).

4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

C6	If quality characteristics of the release exceed any of the trigger levels specified in **Table C3** (Release Contaminant Trigger Investigation Levels - Potential Contaminants) during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in **Table C3** (Release Contaminant Trigger Investigation Levels - Potential Contaminants) 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 **Table C3** (Release Contaminant Trigger Investigation Levels – Potential Contaminants) for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and; i) if the result is less than the background monitoring site data, then no action is to be taken; or ii) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: (1) details of the investigations carried out; and (2) actions taken to prevent environmental harm.

	NOTE: *Where an exceedance of a trigger level has occurred and is being investigated, in accordance with Condition C6 b (ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*
C7	If an exceedance in accordance with **Condition C6 b (ii)** is identified, the environment authority holder must notify the administering authority within **fourteen (14) days** of receiving the result.
C8	**Mine Affected Water Release Events** The environment authority holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in **Table C4** (Mine Affected Water Release During Flow Events).
C9	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with **Condition C2** of this environmental authority must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in **Table C4** (Mine Affected Water Release during Flow Events) for the release point(s) specified in **Table C1** (Mine Affected Water Release Points, Sources and Receiving Waters).
C10	The release of mine affected water to waters in accordance with **Condition C2** of this environmental authority must not exceed the Electrical Conductivity release limits, Sulphate release limits or the Maximum Release Rate (for all combined release point flows) for each receiving water flow criteria for discharge specified in **Table C4** (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).

Table C4: Mine Affected Water Release during Flow Events

Receiving waters/ stream	Release Point (RP)	Gauging station	Gauging Station Latitude (decimal degree, GDA94)	Gauging Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge (m^3/s) [A]	Maximum release rate (m^3/s) (for all combined RP flows)3	Electrical Conductivity and [B] (micro Siemens/cm)	Sulphate (mg/L)
Anna Creek	RP6 RP7	GST 4	21.578053	148.161795	Continuous (minimum daily)	**No/Low Flow** Less than 1.0 metres cubed /sec for a period of 28 days after natural flow events that exceed 1.0 metre cubed /sec	0.5 [C]	Less than 500	250
						Medium Flow More than 1.0 metres cubed /sec	0.12[C]	Less than 1500	500
	RP9 RP11	GST4	21.578053	148.161795	Continuous (minimum daily)	**No/Low Flow** Less than 1.0 metres cubed/ sec for a period of 28 days after natural flow events that exceed 1.0 metres cubed /sec	0.5 [C]	Less than 500	250
						Medium Flow More than 1.0 meters cubed/sec	0.34 [C]	Less than 1500	300
							0.23 [C]	Less than 2000	500
							0.17 [C]	Less than 2500	1000
							0.14 [C]	Less than 3000	1000
							0.11 [C]	Less than 3500	1000
							0.082 [C]	Less than 4500	1000
						High Flow More than 4.0 meters cubed/sec	0.45 [C]	Less than 3500	1000
							0.34 [C]	Less than 4500	1000
							0.27 [C]	Less than 5500	1000
							0.23 [C]	Less than 6500	1000
							0.19 [C]	Less than 7500	1000
							0.17 [C]	Less than 8500	1000

Receiving waters/ stream	Release Point (RP)	Gauging station	Gauging Station Latitude (decimal degree, GDA94)	Gauging Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge (m^3/s) [A]	Maximum release rate (m^3/s) (for all combined RP flows)3	Electrical Conductivity and [B] (micro Siemens/cm)	Sulphate (mg/L)
						Very High Flow More than 20 meters cubed/sec	0.85 [C]	Less than 8500	1000
Isaac River	RP10	GST 5	21.537001	148.151725	Continuous (minimum daily)	High Flow More than 5.32 metres cubed/sec	0.60	Less than 3500	1000
							0.45	Less than 4500	1000
							0.36	Less than 5500	1000
							0.30	Less than 6500	1000
							0.26	Less than 7500	1000
							0.23	Less than 8500	1000
						Very High Flow More than 26 metres cubed/sec	1.11	Less than 8500	1000
Burton Gorge Dam	RP15	BGD GST	21.622801	148.128228	Continuous (minimum daily)	High Flow More than 1.0 metres cubed/sec	0.12	Less than 6000	1000

[A]: Flow triggers should be compared to natural flow only (except for Teviot Creek gauging station where upstream Teviot Dam influences local flow conditions). As stream flow measurements are downstream of the discharges for many of Burton Coal Mines release points, the discharge rates should be subtracted from the stream flow measurements before comparing to the stream flow trigger.
[B]: Prior to release commencement, an assessment of the water quality of the relevant mine affected water source must be undertaken and the Electrical Conductivity release limit and maximum release rate determined. This determined release limit and maximum release rate applies for the duration of the release.
[C] Discharges from RP6/RP7 cannot occur concurrently with discharges from RP9/RP10.

NOTE: The minimum flow triggers listed in **Table C4** may be reviewed once the results and interpretation of two years continuous natural flow monitoring and electrical conductivity data is available from gauging stations and application for amendment is made to the administering authority.

C11	The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in **Table C1** (Mine Affected Water Release Points, Sources and Receiving Waters).
C12	Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.
C13	**Notification of Release Event** The environmental authority holder must notify the administering authority as soon as practicable and no later than **twenty-four (24) hours** after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: a) release commencement date/time; b) expected release cessation date/time; c) release point/s; d) release volume (estimated); e) receiving water/s including the natural flow rate; f) determined maximum release rate and EC limit (in accordance with **Condition C10**); and g) any details (including available data) regarding likely impacts on the receiving water(s). NOTE: *Notification to the administering authority must be addressed to the Manager and Project Manager of the local Administering Authority via email or facsimile.*
C14	The environmental authority holder must notify the administering authority as soon as practicable (nominally within **twenty-four (24) hours** after cessation of a release event) of the cessation of a release notified under **Condition C13** and within **twenty-eight (28) days** provide the following information in writing: a) release cessation date/time; b) natural flow volume in receiving water; c) volume of water released; d) details regarding the compliance of the release with the conditions of Department Interest: Water of this environmental authority (i.e. release limits, natural flow, discharge volume); e) all in-situ water quality monitoring results; and f) any other matters pertinent to the water release event. NOTE: *Successive or intermittent releases occurring within **twenty-four (24) hours** of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with **Conditions C13 and C14**, provided the relevant details of the release are included within the notification provided in accordance with **Conditions C13 and C14**.*
C15	**Notification of Release Event Exceedance** If the release limits defined in **Table C1** (Contaminant Release Limits) are exceeded, the environmental authority holder of the environmental authority must notify the administering authority within **twenty-four (24) hours** of receiving the results

C16	The environment authority holder must, within **twenty-eight (28) days** of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing: a) the reason for the release; b) the location of the release; c) all water quality monitoring results; d) any general observations; e) all calculations; and f) any other matters pertinent to the water release event.
C17	**Water Storage access by Livestock** Where practicable, the environmental authority holder must implement measures to prevent access by livestock to water storages which are associated with the release points listed in **Table C1** (Mine Affected Water Release Points, Sources and Receiving Waters).
C18	**Receiving Environment Monitoring and Contaminant Trigger Levels** The quality of the receiving waters must be monitored at the locations specified in **Table C5** (Receiving Water Upstream Background Sites and Downstream Monitoring Points) for each quality characteristic and at the monitoring frequency stated in **Table C6** (Receiving Waters Contaminant Trigger Levels).
C19	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in **Table C7** (Stock Water Release Limits) 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. NOTE: *Where an exceedance of a trigger level has occurred and is being investigated, in accordance with **Condition C19(b)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*

Table C5: Receiving Water Upstream Background Sites and Down Stream Monitoring Points

Monitoring points	Receiving waters location Description	Latitude (Decimal degree, GDA94)	Longitude (Decimal degree, GDA94)
Upstream Background Monitoring Points			
UBMP 4	Anna Creek 2100 metres upstream of RP 9 and RP 11. 4400 metres upstream of RP 7. 6100 metres upstream of RP 6.	7613732	622706
UBMP 5	Isaac River 100 metres upstream of RP 10.	7618028	619293
Downstream Monitoring Points			
DMP 8	Lower Anna Creek (Burton Gorge Dam)	21.62171	148.12805
DMP 4	Anna Creek 4400 metres downstream of RP 9 & 11	21.587677	148.157409
DMP 5	Isaac River 4500 metres downstream of RP 10	21.562708	148.141682
NOTE: The data from background monitoring points must not be used where they are affected by releases from other mines.			

Table C6: Receiving Waters Contaminant Trigger Levels

Quality characteristic	Trigger Level	Monitoring Frequency
pH	6.5 – 8.5	Daily during release
Electrical Conductivity (µS/cm)	1000 (NOTE: For protection against toxicity this may need to be reduced in some circumstances e.g. where in close proximity upstream of a drinking water dam or regional waterway.)	
Suspended solids (mg/L)	To be determined. (NOTE: Turbidity may be required to assess ecosystems impacts and can provide instantaneous results.)	At commencement and prior to cessation of release (at a minimum) and weekly during a release.
Sulphate (SO_4^{2-}) (mg/L)	250 (NOTE: Protection of drinking water Environmental Value.)	
Sodium (Na) (mg/L)	180	

Table C7: Stock Water Release Limits

Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	5,000

Table C8: Irrigation Water Release Limits

Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	Site specific value to be determined in accordance with ANZECC & ARMCANZ (2000) Irrigation Guidelines

C20	**Receiving Environment Monitoring Program (REMP)** The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (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 the Burton Gorge Dam and connected or surrounding waterways, including Isaac River and Anna Creek, within 20km 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.

C21	The REMP must: a) Assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); and b) Be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; and c) Include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the release (as a minimum, the locations specified in **Table C5** (Receiving Water Upstream Background Sites and Downstream Monitoring Points)); and d) Specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the Queensland Water Quality Guidelines 2006. This should include monitoring during periods of natural flow irrespective of mine or other discharges; and e) Include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in **Table C2** (Contaminant Release Limits) and **Table C3** (Release Contaminant Trigger Investigation Levels – Potential Contaminants); and 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); and g) Include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology, and h) Apply procedures and/or guidelines from ANZECC and ARMCANZ 2000 and other relevant guideline documents; and i) Describe sampling and analysis methods and quality assurance and control; and j) Incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
C22	An REMP Design Document that addresses each criterion presented in **Conditions C20** and **C21** of this environmental authority must be maintained and submitted to the administering authority on request. Due consideration must be given to any comments made by the administering authority on the REMP Design Document and subsequent implementation of the program.
C23	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with **Conditions C20** and **C21** of this environmental authority must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

C24	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 C7** (Stock Water Release Limits); or b) Supplying irrigation water subject to compliance with quality release limits in **Table C8** (Irrigation Water Release Limits); or c) Supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority; or d) Transferring and supplying water between environmental authority holders for the purposes of using or disposing of the water in accordance with their environmental authority conditions.* *Note: Lenton JV Burton has an agreement in place with neighbouring mine sites to allow use of a pipeline running partially through the Lenton JV Burton Mining Lease for the transfer of mine affected water.
C25	If the responsibility for mine affected water is given or transferred to another person in accordance with **Condition C24 a) – c)** of this environmental authority: a) The responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third-party agreement); and b) The third-party agreement must include a commitment from the person utilising the mine affected water to use it in such a way as to prevent environmental harm or public health incidents and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994*, environmental sustainability of the water disposal and protection of environmental values of waters; and c) The third-party agreement must be signed by both parties to the agreement.
C26	**Water general** All determinations of water quality and biological monitoring must be: a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; b) made in accordance with methods prescribed in the latest edition of the administering authorities Monitoring and Sampling Manual; c) collected from the monitoring locations identified within this environmental authority, within ten (10) hours of each other where possible; d) carried out on representative samples; and e) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used. NOTE: ***Condition C26*** *requires the Monitoring and Sampling Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.*
C27	The release of any contaminants as permitted by this environmental authority, directly or indirectly to waters, other than internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with **Conditions C31** to **C35** inclusive: a) must not produce any visible discoloration of receiving waters; and

	b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.
C28	**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 mine affected water released from all release points; e) the release flow rate at the time of sampling for each release point; and f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority.
C29	Water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
C30	**Temporary interference with waterways** Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with Department of Environment and Resource Management Guideline - *Activities in a Watercourse, Lake or Spring associated with Mining Activities*.
C31	**Water management plan** A Water Management Plan must be developed by an appropriately qualified person before mining activities begin on site. A copy of the Water Management Plan must be provided to the administering authority within **10 business days** of request.
C32	The Water Management Plan must: a) Provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and b) Be developed in accordance with the administering authority's *guideline Preparation of water management plans for mining activities* and include: i) a study of the source of contaminants; ii) a water balance model for the site; iii) a water management system for the site; iv) measures to manage and prevent saline drainage; v) measures to manage and prevent acid rock drainage; vi) contingency procedures for emergencies; and

	vii) a program for monitoring and review of the effectiveness of the water management plan.
C33	The Water Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must: a) assess the plan against the requirements under **Condition C32** of this environmental authority; b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and c) identify any amendments made to the water management plan following the review.
C34	The environmental authority holder must attach to the review report required by **Condition C33** of this environmental authority, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates: a) to ensure compliance with this environmental authority; and b) to prevent a recurrence of any non-compliance issues identified.
C35	The review report required by **Condition C33** of this environmental authority and the written response to the review report required by **Condition C34** must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
C36	**Saline drainage** The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.
C37	**Acid rock drainage** The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.
C38	**Stormwater and water sediment controls** An Erosion and Sediment Control Plan must be developed and reviewed by an appropriately qualified person for implementation in all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater. A copy of the Plan must be provided to the administering authority within **10 business days** of request.
C39	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 C38** of this environmental authority; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with **Conditions C31 to C35** inclusive, for the purpose of ensuring water does not become mine affected water.
C40	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.

C41	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.
C42	**Sewage effluent** All effluent released from the treatment plant must be monitored at the frequency and for the parameters specified in **Table C9** (Sewage effluent quality targets for dust suppression and irrigation).
C43	Sewage effluent used for dust suppression or irrigation must not exceed sewage effluent release limits defined in **Table C9** (Sewage effluent quality targets for dust suppression and irrigation).

Table C9: Sewage effluent quality targets for dust suppression and irrigation

Quality characteristics	Release limit	Units	Limit type	Monitoring frequency
5 day Biochemical Oxygen Demand (uninhibited)	20	mg/L	max	Monthly
pH	6.5 to 8.5		range	Monthly
Free Chlorine Residual	140	mg/L	max	Monthly
Faecal coliforms, based on the average of a minimum of five samples collected	1000	Colonies per 100 millilitres	max	Monthly

C44	Sewage effluent used for dust suppression or irrigation must not cause spray drift or over spray to any sensitive or commercial place.
C45	Subject to **Conditions C42 to C44** inclusive, sewage effluent from sewage treatment facilities must be reused or evaporated and must not be directly released from the sewage treatment plant to any water way or drainage.
C46	**Groundwater** Groundwater affected by the mining activities must be monitored for pH, Electrical Conductivity and water levels at frequencies and locations defined in **Table C10** (Groundwater monitoring locations and frequency) and shown in **Figure 2** (New Burton Mine Groundwater Monitoring Locations) of this authority.

Table C10: Groundwater monitoring locations and frequencies

Monitoring Points	Easting	Northing	Monitoring Frequency
BD1247P	620264	7616055	Quarterly – water levels only
BD1248P	622890	7606690	Quarterly – water levels only
BD1250P	622560	7607860	Quarterly
BD613C	623101	7605268	Quarterly
DDH6	619304	7618185	Quarterly

C47	Groundwater levels must be monitored, and groundwater draw down fluctuations in excess of two metres per year, not resulting from the pumping of licensed bores, must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
C48	Groundwater standing water level and quality must be monitored during exploration activities ahead of mining. This data may be used by the administering authority as grounds for amendment of groundwater monitoring and/or management requirements of this environmental authority.
C49	The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the administering authority's *Water Quality Sampling Manual*.

Agency interest: Noise and Vibration	
Condition number	**Condition**
D1	**Noise nuisance** Subject to **Conditions D2** and **D3** of this environmental authority 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 officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
D3	**Noise monitoring** If the environmental authority holder can provide evidence through monitoring that the limits defined in **Table D1** (Noise Limits) and **Table D2** (Airblast overpressure level), are not being exceeded then the environment authority holder is not in breach of **Condition D1** of this environmental authority. Monitoring must include: a) $L_{A,\ max\ adj,\ T}$; b) relevant background sound level; c) the level and frequency of occurrence of impulsive or tonal noise; d) atmospheric conditions including wind speed and direction; and e) location, date and time of recording.
D4	If monitoring indicates exceedance of the limits in **Table D1** (Noise Limits) and **Table D2** (Airblast overpressure level), then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
D5	The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's Noise Measurement Manual.

D6	**Vibration nuisance** Subject to **Conditions D7** and **D8** of this environmental authority vibration from the mining activity must not cause an environmental nuisance, at any sensitive place.
D7	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
D8	If the environmental authority holder can provide evidence through monitoring that the limits defined in **Table D3** (Vibration Limits), are not being exceeded then the environment authority holder is not in breach of **Condition D6** of this environmental authority. Monitoring must include: a) peak particle velocity (mm/s); b) air blast overpressure level (dB linear peak); c) location of the blast/s within the mining area (including which bench level); d) atmospheric conditions including temperature, relative humidity and wind speed and direction; and e) location, date and time of recording.
D9	For the purposes of **Condition D6** of this environmental authority the mining activities will not cause environmental nuisance where noise from the mining activities does not exceed the criteria specified in **Table D3** (Vibration Limits).
D10	If monitoring indicates exceedance of the limits in **Table D3** (Vibration Limits), then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
D11	Every explosive blast for the mining activity shall be designed by a competent person to achieve the criteria specified in **Table D2** (Airblast overpressure level) and **Table D3** (Vibration Limits).
D12	All relevant information pertaining to the design of every explosive blast for the mining activity in relation to the criteria specified in **Table D2** (Airblast overpressure level) and **Table D3** (Vibration Limits) shall be kept in written and diagrammatic form.

Table D1: Noise limits

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

NOTE: Where 'Background' or 'B/g' means background sound pressure level measured in accordance with the latest edition of the administering authority's Noise Measurement Manual. Table D1 does not purport to set operating hours for the mining activities.

Table D2: Airblast overpressure level

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

NOTE: Table D2 does not purport to set limits applicable to any particular explosive blast, rather sets design criteria for every explosive blast.

Table D3: Vibration Limits

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

Agency interest: Waste	
Condition number	**Condition**
E1	**Waste Management Plan** A Waste Management Plan, must be developed, implemented, and reviewed, by a suitably qualified person(s), before mining activities begin on site. The waste management plan must be made available to the administering authority upon request within **10 business days**. The Waste Management Plan must at a minimum include the following: a) types and amounts of regulated waste generated; b) description of how the types of regulated waste are generated and will be dealt with under the waste and resource management hierarchy; c) procedures for identifying and implementing opportunities to minimise the amount of regulated waste generated and improve practices employed; d) procedures for dealing with accidents, spills and incidents that may impact on waste management; e) location of disposal of regulated waste; f) staff training on matters relevant to regulated waste management; and g) mechanisms and dates for review of the waste management plan.
E2	Waste must not be burnt or allowed to burn on the site unless permitted by the administering authority.

E3	A designated area must be set aside for the segregation of economically viable recycling solid or liquid waste.
E4	Site contamination will be assessed at relinquishment of the mining tenure according to the *Environmental Protection Act 1994*, with results and any required remediation actions detailed in the Final Rehabilitation Report.
E5	Records of trade waste or material leaving the Mining Lease for recycling or disposal, including the final destination and method of treatment, in accordance with the *Environmental Protection Act 1994*, will be maintained and be made available for inspection by an authorised person or the administering authority.
E6	Regulated waste disposal areas on the mining lease will be capped with two meters of inert material and revegetated in accordance with available and recognised best practice following the cessation of their use as disposal areas in a manner that will encourage run-off.
E7	**Storage of tyres** Scrap tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options must be stored in stable stacks and at least ten (10) meters from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
E8	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a ten (10) meter radius of the scrap tyre storage area.
E9	Where no feasible recycling or waste to energy options are available, disposing of scrap tyres resulting from the mining activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable.
E10	Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.
E11	**Inert demolition and construction waste disposal** Inert demolition and construction waste must only be disposed of into designated waste disposal areas which are consistent with the site Waste Management Plan.
E12	Only inert demolition and construction waste will be disposed of in the in-pit disposal area.
E13	Deposited waste must be covered as soon as practicable to limit stormwater infiltration, prevent exposure of waste, and prevent issues arising from vectors and pest species
E14	All reasonable and practicable measures must be taken to contain litter within the waste operations area, and retrieve litter released.
E15	A register for the onsite waste disposal activity must be maintained by the environment authority holder and be made available for inspection by the administrating authority upon request. The register must contain: a) the type of waste disposed b) the quantity of waste disposed

	c) the date of disposal; and d) the disposal location (GPS coordinates and depth of disposal).
E16	The environmental authority holder may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.
Agency interest: Land	
Condition number	**Condition**
F1	**Rehabilitation and final landform design** 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** (Final land use rehabilitation approval schedule) and **Table F2** (Landform design).
F2	**Progressive rehabilitation** Progressive rehabilitation must commence within **twelve (12) months** of the area becoming available within the operational land.
F3	**Residual void** 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 to any other condition within this environmental authority; b) be left as stable structures with the competency certified by an appropriately qualified third party (e.g. an engineer listed on the National Professional Engineers Register); and c) be fenced or bunded appropriately to restrict human, stock and other fauna in areas representing a potential hazard.
F4	Complete and submit a Residual Void Investigation Report for the New Burton Coal Mine to the administering authority by 31 March 2023. The Residual Void Investigation Report must propose acceptance criteria to meet the outcomes in **Condition F3** and landform design criteria in **Table F1** (Final land use rehabilitation approval schedule) and **Table F2** (Landform design). The investigation must at a minimum include the following: a) a study of options available for minimising final void area and volume b) develop design criteria for rehabilitation of final voids; c) a void hydrology study, addressing the long-term water balance in the voids, connections to groundwater resources and water quality parameters in the long term; d) a pit wall stability study, considering the effects of long-term erosion and weathering of the pit wall and the effects of significant hydrological events; e) a study of void capability to support native flora and fauna; and

	f) a proposal/s for end of mine void rehabilitation success criteria and final void areas and volumes. These studies must be updated during the life of the mine and will include detailed research and modelling.
F5	Areas which are to be progressively rehabilitated to land suitable for grazing must demonstrate achieving the specified land suitability and ensure: a) success criteria defined in the document entitled "*Burton Coal Mine Environmental Management Plan*" dated May 2010, Appendix 3 – Proposed rehabilitation success criteria - Grassland suitable for grazing, are met; and b) all areas disturbed by mining activities must be rehabilitated to a stable landform and comply with the design criteria defined in **Table F2** (Landform design).
F6	Areas which are to be progressively rehabilitated to land not suitable for grazing must demonstrate achieving the specified land suitability and ensure: a) achieve a self-sustaining native ecosystem; b) success criteria defined in the document entitled "Burton Coal Mine Environmental Management Plan" dated May 2010, Appendix 3 - Proposed rehabilitation success criteria - Bushland, are met; c) all areas disturbed by mining activities must be rehabilitated to a stable landform and comply with the design criteria defined in **Table F1** and **Table F2**.
F7	**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 mining lease surrender, except where agreed in writing by the post mining land owner / holder. NOTE: *This is not applicable where the landowner / holder is also the environmental authority holder.*
F8	**Topsoil** Topsoil resources that are suitable for use in rehabilitation must be salvaged ahead of mining disturbance for strategic use in rehabilitation of the mine area.
F9	The characteristics of overburden must be determined prior to disturbance by mining to a standard sufficient to enable selective handling of materials required.
F10	Cleared vegetation from the site must be managed in accordance with the following hierarchy: a) reuse, e.g. use of logs and tree stumps as shelter for fauna in rehabilitated areas; b) recycle, e.g. mulching of vegetation and use in rehabilitation on the site; and c) other alternative management options implemented in a way that causes the least amount of environmental harm.
F11	The environmental authority holder must provide the administering authority a map that shows the aerial extent and topography of final landforms including final voids. If amendments to the map are required then the environmental authority holder must provide the administering authority with the amended map.

Table F1: Final land use and rehabilitation approval schedule

Disturbance Type		Class [A]		Rehabilitation Methods	Proposed Land Use
		Capability	Suitability		
Overburden		VI-VII	3-4	Generally less than 5 percent gradient on plateau and up to 20 percent on outer margins. Includes selective topsoil placement concentrated in more erosion potential areas such as margins. Includes areas of bushland habitat and grasslands with potential for grazing (to be verified through grazing trials).	Potential for grazing on some areas
Ramps		VIII	[B] 5	Ramps not in-filled with tailings, reject or pre-strip spoil will be basically treated as part of the final void and left at angle of repose. Limited benching, battering or drainage control works may occur along adjoining spoil to control erosion.	Not suitable for grazing
Final Voids		VIII	[B] 5	Those not utilised for rejects, tailings or pre-strip placement will remain as water storage bodies. Exposed coal seams may be sealed in areas not permanently or seasonally inundated to prevent spontaneous combustion. Its potential use will be dependent on the final water quality.	Not suitable for grazing
High walls		VIII	[B] 5	Highwalls will be assessed on an individual basis. Some will be backfilled and others associated with final voids left at 65 degrees in competent rock or blasted to less than17 degrees in non-competent rock.	Not suitable for grazing
Infrastructure	Buildings, Roads, ROM, Camp, Laydown	VI-VII	3 - 4	Facilities to be either left for future users or sold for removal with the site rehabilitated to grassland or bushland, dependant on original use. Contaminated areas to be remediated in consultation with the Administering Authority. Contaminated areas have been identified and will be rehabilitated on a case-by case basis from a Stage 2 Contaminated Land Survey.	Suitable for grazing
Tailings	In dams	VIII	5	Two options will be considered: 1. Decommissioned well before cessation of mining to dewater then capped with 1m with spoil and topsoil designed to drain water off the structure. Seeded to trees and shrubs (bushland). 2. Reprocessed with waste placed in spoil	Not suitable for grazing
	In pits	VII - VIII	4 - 5	Capped with adjoining spoil so that the area is freely drained, topsoiled and seeded to trees, shrubs and grasses (bushland).	Not suitable for grazing
Rejects	Designated dumps	VIII	5	Re-graded to less than 15 percent, capped with 1m of spoil (minimum) and seeded to grasses, trees and shrubs (bushland)	Not suitable for grazing
	In pits/Spoil	VII - VIII	4 - 5	Capped to a minimum of 1 m with spoil and topsoiled. Seeded to trees and shrubs (bushland).	Not suitable for grazing
Co-disposal	In pits/Spoil	VII - VIII	4 - 5	Capped with adjoining spoil so that the area is freely drained, topsoiled and seeded to trees, shrubs and grasses (bushland).	Not suitable for grazing

[A]: DME (1995) Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland. “Land Suitability Assessment Techniques”.
[B] 5 - The class could be graded higher if the voids are backfilled.

Table F2: Landform design

Disturbance Type	Design Criteria	Qualifications
Final Highwalls and Ramps: [1] competent material [2] incompetent material	 Less than 70 degree slope Less than 50 degree slope	Competency certified by an appropriately qualified professional accredited by a credible third party
Low walls	Left at angle of repose	Drainage, erosion control and seeding works is to be conducted as required.
Spoil emplacement areas - grassland suitable for grazing	Slope angle Less than 12 percent Plateau Less than 20 percent outer batters	
Spoil emplacement areas – not suitable for grazing	Slope angle less than 20 percent	
Subsidence	Risk based treatment of subsided areas.	Monitoring and evaluation of risk will be used to determine appropriate treatment.
Coal washery waste disposal areas	Average slope angle for outer batters less than 20 percent. Minimum 1m of inert spoil cover.	Externally draining or in pit. No acidic leachate. Capping must be sufficient to break capillary rise of solutes.
Industrial areas	Less than 12 percent slope	
Water storages	Drained and walls breached unless otherwise agreed with landholder.	

Agency interest: Regulated Structure	
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[1] 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[2] under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933).
G6	Construction of a regulated structure is prohibited unless the environment authority holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.
G7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933), and must be recorded in the Register of Regulated Structures.
G8	Regulated structures must: a) be designed and constructed in 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; and ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line. c) for regulated dams that are dams associated with a failure to contain – seepage: have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.
G9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; b) construction of the regulated structure is in accordance with the design plan.

[1] Construction of a dam includes modification of an existing dam — refer to the definitions.

[2] Certification of design and construction may be undertaken by different persons.

G10	**Operation of a regulated structure** Operation of a regulated structure, except for an existing structure, is prohibited unless the environment authority holder has submitted to the administering authority: a) one electronic copy of the design plan and certification of the 'design plan' in accordance with **Condition G6**, and b) a set of 'as constructed' drawings and specifications, and c) certification of those 'as constructed drawings and specifications' in accordance with **Condition G9**, and 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 environment authority 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 environment authority 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 environment authority 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 environment authority 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 environment authority holder must record any changes to the MRL in the Register of Regulated Structures.

G18	**Design Storage Allowance** The environment authority 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 environment authority 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 environment authority 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.
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 environment authority holder must: a) within **twenty (20) business days** of receipt of the annual inspection report, provide to the administering authority: i) the recommendations section of the annual inspection report; and ii) if applicable, any actions being taken in response to those recommendations; and b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the environment authority holder, provide this to the administering authority within **ten (10) business days** of receipt of the request.
G26	**Transfer arrangements** The environment authority 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	**Decommissioning and rehabilitation** Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with **Condition G28**; or b) be left in-situ for a beneficial use(s) provided that: i) it no longer contains contaminants that will migrate into the environment; ii) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and iii) the administering authority, the environmental authority holder and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).
G28	After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria: a) the landform is safe for humans and fauna; b) the landform is stable with no subsidence or erosion gullies for at least **three (3) years**; c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated; d) not allowing for acid mine drainage; e) there is no ongoing contamination to waters (including groundwater); f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the *Instructions for the treatment and management of acid sulfate soils* (2001); g) all significantly disturbed land is reinstated to the pre-disturbed land suitability class; and h) for land that is not being cultivated by the landholder: i) groundcover, that is not a declared pest species is established and self-sustaining; ii) vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining; iii) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the resource activities; i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within **three (3) months** of the resource activities being completed.
G29	**Register of Regulated Structure** A Register of Regulated Structures must be established and maintained by the environment authority holder for each regulated dam.

G30	The environment authority holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
G31	The environment authority holder must make a final entry of the required information in the Register of Regulated Structures once compliance with **Conditions G10** to **G11** has been achieved.
G32	The environment authority holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
G33	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
G34	The environment authority holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.
G35	**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 Structures* (EM635) or the former *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* must be assessed and certified in accordance with the *Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Structures* (EM635) within **six (6) months** of amendment of the authority adopting this schedule.
G36	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635) specified in **Table G1**, depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
G37	**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; or b) it has been decommissioned; or c) it has been certified as no longer being assessed as a regulated structure.
G38	Certification of the transitional assessment required by **Conditions G35 and G36** (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

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

Definitions

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

"accepted engineering standards" in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments, and relevant Australian and New Zealand Standards.

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

a) vegetation establishment, survival and succession;

b) vegetation productivity, sustained growth and structure development;

c) fauna colonisation and habitat development;

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

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

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

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

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

"acid sulfate soil(s)" means a soil or soil horizon which contains sulfides or an acid soil horizon affected by oxidation of sulfides.

"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 as a result of mining activity.

"administering authority" means the Department of Environment and Science or its successor.

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

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

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

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

a) against recommendations contained in previous annual inspections reports;

b) against recognised dam safety deficiency indicators;

c) for changes in circumstances potentially leading to a change in consequence category;

d) for conformance with the conditions of this authority;

e) for conformance with the 'as constructed' drawings;

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

g) for evidence of conformance with the current operational plan.

"APPEA Code" means the current APPEA, Code of Environmental Practice.

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

"areas of pre-existing disturbance" means areas where environmental values have been negatively impacted as a result of anthropogenic activity and these impacts are still evident. Areas of pre-disturbance may include areas where legal clearing, logging, timber harvesting, or grazing activities have previously occurred, where high densities of weed or pest species are present which have inhibited re-colonisation of native regrowth, or where there is existing infrastructure (regardless of whether the infrastructure is associated with the authorised petroleum activities). The term 'areas of pre-disturbance' does not include areas that have been impacted by wildfire/s, controlled burning, flood or natural vegetation die-back.

"authority" means environmental authority (mining activities) under the *Environmental protection Act 1994*.

"AS2885" means the *Australian Standard Pipelines – Gas and Liquid Petroleum.*

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

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

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

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

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

"associated water" is defined in section 185 of the *Petroleum and Gas (Production and Safety) Act 2004* and means underground water taken or interfered with, if the taking or interference happens during the course of, or results from, the carrying out of another authorised activity under a petroleum authority, such as a petroleum well, and includes waters also known as produced formation water. The term includes all contaminants suspended or dissolved within the water.

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

a) operations of any kind and all things constructed, erected or installed for that dam; and

b) any land used for those operations.

"background noise level" means the sound pressure level, measured in the absence of the noise under investigation, as the $L_{A90,\,T}$ being the A-weighted sound pressure level exceeded for 90% of the measurement time period T of not less than 15 minutes, using Fast response.

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

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

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

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

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

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

"blasting" means the use of explosive materials to fracture-

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

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

"bunded" means within bunding consistent with Australian Standard 1940.

"certification", "certifying" or **"certified"** by an appropriately qualified and experienced person in relation to a design plan or an annual report regarding dams/structures, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

a) exactly what is being certified and the precise nature of that certification;

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

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

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

"chemical" means:

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

b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council; or

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

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

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

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

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

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

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

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

vi) manufacture of plastic or synthetic rubber.

"clearing" means:

a) in relation to grass, scrub or bush – the removal of vegetation by disturbing root systems and exposing underlying soil (including burning), but does not include –
   i) the flattening or compaction of vegetation by vehicles if the vegetation remains living; or
   ii) the slashing or mowing of vegetation to facilitate access tracks; or
   iii) the clearing of noxious or introduced plant species; and
b) in relation to trees – cutting down, ringbarking, pushing over, poisoning or destroying in any way.

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

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

"completion criteria" these are the standards that are to be met by successful rehabilitation. They will generally be in the form of numerical values that can be verified by measurement of the indicators selected for the rehabilitation objectives. They may include an element based on time, e.g. the criterion has been achieved for 7 consecutive years for 95 percent of the area.

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

"consequence category" means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*.

"construction" includes building a new dam and modifying or lifting an existing dam.

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

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

"contaminant" – a contaminant can be:

a) a gas, liquid or solid; or

b) an odour; or

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

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

e) a combination of contaminants.

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

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. However; a dam does *not* mean a fabricated or manufactured tank or container designed to a recognised standard, *nor* does a dam mean a land-based structure where that structure is designed to an Australian Standard. In case there is any doubt, a levee (dyke or bund) is a dam, but (for example) a bund

designed for spill containment to AS1940 is *not* a dam.

"dam crest volume" means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).

"declared pest plants" are listed in Schedule 2 of the Land *Protection (Pest and Stock Route Management) Regulation 2003*.

"design plan" is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include 'as constructed' drawings.

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

"development approval" means a development approval under the *Integrated Planning Act 1997* or the *Sustainable Planning Act 2009* in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

"disturbance" of land includes:

a) compacting, removing, covering, exposing or stockpiling of earth;

b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;

c) carrying out mining within a watercourse, waterway, wetland or lake;

d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;

e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be removed after the mining activity has ceased; or

f) releasing of contaminants into the soil, or underlying geological strata.

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

g) areas off lease (e.g. roads or tracks which provide access to the mining lease);

h) areas previously disturbed which have achieved the rehabilitation outcomes;

i) 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);

j) 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.

k) disturbance that pre-existed the grant of the tenure.

"dwelling" means any of the following structures or vehicles that is principally used as a residence –

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

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

c) a water craft in a marina.

"EC" means electrical conductivity

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

"end" means the stopping of the particular activity that has caused a significant disturbance in a particular area. It refers to, among other things, the end of a seismic survey or the end of a drilling operation. It does not refer to the end of all related activities such as rehabilitation. In other words, it does not refer to the 'completion' of the particular activity, the time at which the petroleum authority ends or the time that the land in question ceases to be part of the authority. Under the APPEA Code 'completion' refers to the point at which the particular survey, program or operation has been rehabilitated and abandoned.

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

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

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

"environmental nuisance" is defined in section 15 of the *Environmental Protection Act* 1994 and is unreasonable interference or likely interference with an environmental value caused by:

a) aerosols, fumes, light, noise, odour, particles or smoke; or
b) an unhealthy, offensive or unsightly condition because of contamination; or
c) another way prescribed by regulation**.**

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

"estimated rehabilitation cost" - for a resource activity, see section 300(2) of the *Environmental Protection Act 1994*.

"equivalent person" means an equivalent person as defined in Item 63 of Schedule 2 in the Environmental Protection Regulation 2008.

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

"ERC decision" – means a decision of the administering authority under section 300 of the *Environmental Protection Act 1994* about the estimated rehabilitation cost for a resource activity.

"ERC period" - for the estimated rehabilitation cost for a resource activity, means—

(a) if a PRCP schedule applies for the activity—the period of between 1 and 5 years stated in the application for an ERC decision under section 298(2)(b); or

(b) if the activity is a petroleum activity that is an ineligible ERA, other than a petroleum activity to which a plan of operations applies, or the activity relates to a 1923 Act petroleum tenure granted under the Petroleum Act 1923—the period of between 1 and 5 years stated in the ERC decision about the estimated rehabilitation cost; or

(c) if a plan of operations applies for the activities—the plan period for the plan of operations; or

(d) otherwise—the total period during which the resource activity is likely to be carried out under the environmental authority for the activity.

"**existing structure"** means a structure that was in existence prior to the adoption of this schedule of conditions under the authority.

"fill" means any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place but does not include material that forms a part of, or is associated with, a structure constructed in a watercourse, wetland or spring including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.

"floodplain" has the meaning in the *Water Act 2000* and means an area of reasonably flat land adjacent to a watercourse that:

- is covered from time to time by floodwater overflowing from the watercourse; and
- does not, other than in an upper valley reach, confine floodwater to generally follow the path of the watercourse; and
- has finer sediment deposits than the sediment deposits of any bench, bar or in-stream island of the watercourse.

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

"flowline" is a small diameter pipeline through which fluids move on a petroleum lease before being sold.

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

"hazardous contaminant" means a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause serious or material environmental harm because of –

a) its quantity, concentration, acute or chronic toxic effects, carcinogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity or flammability; or
b) its physical, chemical or infectious characteristics.

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

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

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* (EM635), prepared by the administering authority, as amended from time to time.

"high bank" - the defining bank is the terrace or bank or, if no bank is present, the point on the active floodplain which confines the average annual peak flows.

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* (EM635).

Holder means:
(a) where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or

(b) where this document is a development approval, any person who is the registered operator for that development approval.

"inert demolition and construction waste" means non-putrescible waste arising from construction or demolition activity; has the potential for resource recovery. It may include materials such as brick, timber, concrete and steel.

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

"$L_{A10, adj, 10 mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10-minute measurement period, using Fast response.

"$L_{A1, adj, 10 mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10-minute measurement period, using Fast response

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

"lake" includes –

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

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

"land" in the "land schedule" of this document means land excluding waters and the atmosphere.

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

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

"land degradation" includes the following:

a) soil erosion;
b) rising water tables;
c) the expression of salinity;
d) mass movement by gravity of soil or rock;
e) stream bank instability; and
f) a process that results in declining water quality.

"$L_{A MAX adj T}$" is the adjusted average maximum A-weighted sound pressure level measured over a time period T. The maxima must be measured on a sound level meter with a frequency weighting that corresponds to perceived loudness (*A* weighting) and the meter must be set to the *fast* response time weighting. The measured values are to be adjusted upwards by 2dB(A) to 5dB(A), if the noise source has tonal characteristics. The measuring period must be in excess of five minutes. The arithmetic average of the adjusted maxima, after eliminating any extraneous noise peaks, is the measure used to characterise the noise environment. (This measure will generally be similar to a percent exceedance of 10% or less. Refer to Australian Standard AS1055.)

"land use" term to describe the selected use of the land, which is planned to occur after the cessation of resource activities.

"leachate" means a liquid that contains soluble, suspended or miscible contaminants likely to have been derived from material which is stored, processed or disposed of on site and which the liquid has passed through or emerged from, or is likely to have passed through or emerged from.

"levee" means a dam, dyke or bund that is designed only to provide for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from unplanned releases from other works of infrastructure, during the progress of those stormwater or flood flows or those unplanned releases; and does not store any significant volume of water or flowable substances at any other times.

"litter" refers to scattered items of rubbish (less than 200 litres), such as cigarette butts, discarded food wrappers and beverage containers.

"licenced waste disposal facility" is a facility approved under a development approval and operated by a holder of a registration certificate for environmentally relevant activity item number 75 under Schedule 1 of the *Environmental Protection Regulation 2008*.

"limited regulated waste" means any of the following regulated wastes, asbestos, clinical waste or quarantine waste that has been rendered non-infectious, fish processing waste, food processing waste, poultry processing waste, tyres or treatment tank sludge or residue produced in the carrying out of an activity in relation to sewage treatment and water supply activities.

"linear infrastructure" means powerlines, pipelines, flowlines, roads and access tracks.

"low consequence dam" means any dam that is not a high or significant consequence category as assessed using the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635) published by the administering authority.

"manual" means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635) published by the administering authority.

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

"mg/L" means milligrams per litre.

'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 the *Mineral Resources Act 1989* that grants rights over land.

"mine affected water":

a) means the following types of water:

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

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

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

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

v) groundwater from the mine's dewatering activities;

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

vii) associated water, coal seam gas water or produced water from the mine's petroleum activities.

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

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

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

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

2) 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

3) both.

"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.

"NATA" means National Association of Testing Authorities, Australia.

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

"nature" includes:

a) ecosystems and their constituent parts; and

b) all natural and physical resources; and

c) natural dynamic processes.

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

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

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

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

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

"operational plan" includes:

(a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance);

(b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

"overland flow water" means water, including floodwater, flowing over land, otherwise than in a watercourse or lake:

a) after having fallen as rain or in any other way; or

b) after rising to the surface naturally from underground.

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

"permanent infrastructure" includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads, pipelines ect) which is to be left by agreement with the landowner.

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

"process water" means water used or produced during the mineral development activities.

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

"receiving waters" means all groundwater and surface water that are not disturbed areas authorised by this environmental authority.

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

"Register of Regulated Dams" includes**:**

a) date of entry in the register;

b) name of the dam, its purpose and intended/actual contents;

c) the consequence category of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635);

d) dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;

e) name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;

f) for the regulated dam, other than in relation to any levees –

   i) the dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;

   ii) coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area

   iii) dam crest volume (megalitres);

   iv) spillway crest level (metres AHD).

   v) maximum operating level (metres AHD);

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

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

   viii) mandatory reporting level (metres AHD);

g) the design plan title and reference relevant to the dam;

h) the date construction was certified as compliant with the design plan;

i) the name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

j) details of the composition and construction of any liner;

k) the system for the detection of any leakage through the floor and sides of the dam;

l) dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

m) dates when recommendations and actions arising from the annual inspection were provided to the administering authority;

n) dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

"regulated dam" means any dam in the significant or high consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

"regulated waste" means non-domestic waste mentioned in schedule 7 of the *Environmental Protection Regulation 2008* (whether or not it has been treated or immobilised), and includes –

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

b) anything that has contained the waste.

"rehabilitation objectives" the end points that rehabilitation aims to achieve. They may be described in terms of future land use, biodiversity values, conservation values, health and safety outcomes, aesthetics or social outcomes or combinations of these.

"rehabilitation indicators" an indicator is something that can be measured and audited according to an established protocol and used to evaluate changes in a system.

"**rehabilitation"** or "**rehabilitated"** means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with acceptance criteria and, where relevant, includes remediation of contaminated land.

"release" of a contaminant into the environment includes –

a) to deposit, discharge, emit or disturb the contaminant; and
b) to cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and
c) to fail to prevent the contaminant from being deposited, discharged, emitted or disturbed; and
d) to allow the contaminant to escape; and
e) to fail to prevent the contaminant from escaping.

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

Resource activity is an activity that involves—
(a) a geothermal activity; or
(b) a GHG storage activity; or
(c) a mining activity; or
(d) a petroleum activity.

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

"riverine area" refers to the land confined to the flood flow channel of a watercourse.

"Run of mine (ROM) coal" means raw coal which has been extracted as part of the mining activities and has not been subject to any form of processing, crushing, screening or washing.

"saline drainage" The movement of waters, contaminated with salt(s), 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.

"sensitive place" means:

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

b) a motel, hotel or hostel; or

c) an educational institution; or

d) a medical center or hospital; or

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

f) a public park or gardens.

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

"self sustaining" means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

"significant residual impact" has the meaning in section 8 *Environmental Offsets Act 2014.*

"significantly disturbed" or **"significant disturbance"** or **"significant disturbance to land or areas"** has the meaning in Schedule 12, section 4 of the *Environmental Protection Regulation 2008*. Land is significantly disturbed if—

a) it is contaminated land; or
b) it has been disturbed and human intervention is needed to rehabilitate it—
    i) to a condition required under the relevant environmental authority; or
    ii) if the environmental authority does not require the land to be rehabilitated to a particular condition—to the condition it was in immediately before the disturbance.

"site" means the area within the petroleum authority or authorities to which the environmental authority relates.

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

"spring" means the land to which the water rises naturally from below the ground and the land over which the water then flows.

"stable" has the meaning in Schedule 5 of the *Environmental Protection Regulation 2008* and, for a site, means the rehabilitation and restoration of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

"storm water" means all surface water runoff from rainfall.

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

"suitably qualified and experienced person" in relation to dams means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 1988*, OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; AND the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and

b) a total of five years of suitable experience and demonstrated expertise in at least four of the following categories, with the 'geomechanics of dams' category being compulsory:

   i) geomechanics of dams with particular emphasis on stability, geology and geochemistry.

   ii) investigation, design or construction of dams.

   iii) operation and maintenance of dams.

   iv) hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology.

   v) hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes.

   vi) hydrogeology with particular reference to seepage, groundwater.

   vii) solute transport processes and monitoring thereof.

   viii) dam safety.

"synthetic based drilling mud" means a mud where the base fluid is a synthetic oil, consisting of chemical compounds which are artificially made or synthesised by chemically modifying petroleum components or other raw materials rather than the whole crude oil

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

"top soil" means the top layer of soil, alluvium or weathered rock that forms a suitable plant growth medium. Top soil should be non-crusting and low in salinity.

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

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

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

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

"water" means –

a) water in waters or spring;

b) underground water;

c) overland flow water; or

d) water that has been collected in a dam.

"watercourse" means a watercourse as defined under Chapter 2 of the *Water Act 2000*.

"waterlogging" is the saturation of soil by soil water.

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

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

"waters" includes –

a) river, creek, stream in which water flows permanently or intermittently either:

   i) in a natural channel, whether artificially improved or not; or

   ii) in an artificial channel that has changed the course of the river, creek or stream; or

b) lake, lagoon, pond, swamp, wetland, dam; or

c) unconfined surface water; or

d) storm water channel, storm water drain, roadside gutter; or

e) bed and banks and any other element of a river, creek, stream, lake, lagoon, pond, swamp, wetland, storm water channel, storm water drain, roadside gutter or dam confining or containing water; or

f) groundwater; or

g) non-tidal or tidal waters (including the sea); or

h) any part-thereof.

"water year" means the 12-month period from 1 July to 30 June. "**watercourse"** - means a river, creek or stream in which water flows permanently or intermittently in a visibly defined channel (natural, artificial or artificially improved) with:

(a) continuous bed and banks;

(b) an extended period of flow for some months after rain ceases, and

(c) an adequacy of flow that sustains basic ecological processes and maintains biodiversity.

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

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

"wetland" means an area shown as a wetland on a 'Map of referable wetlands', a document approved by the chief executive (environment). A map of referable wetlands can be viewed at www.ehp.qld.gov.au.

"µg/L" means micrograms per litre

Figure 1: Burton Mine Monitoring and Release Points – Burton (RP's 6, 7, 9, 10, 11 & 15)

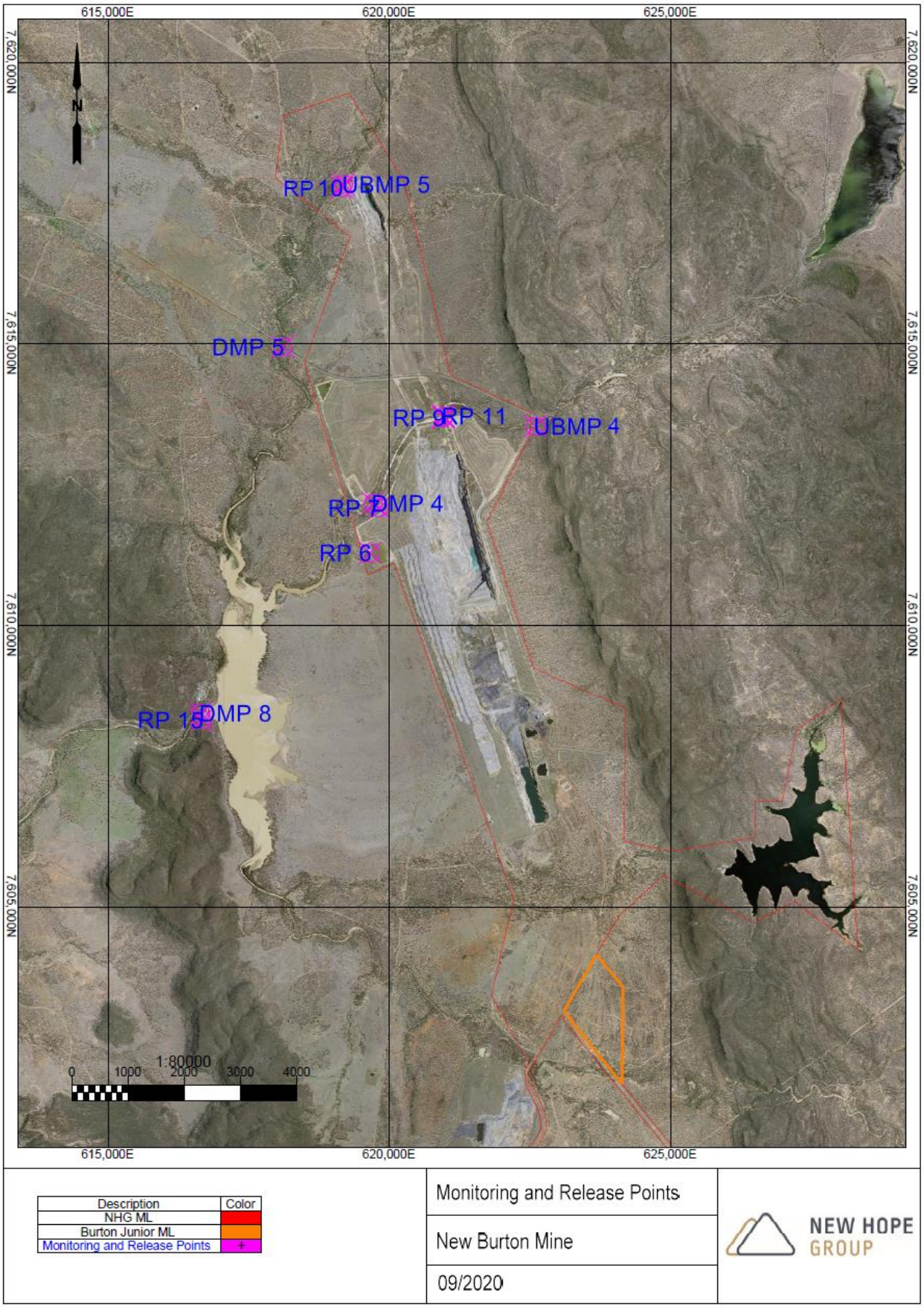
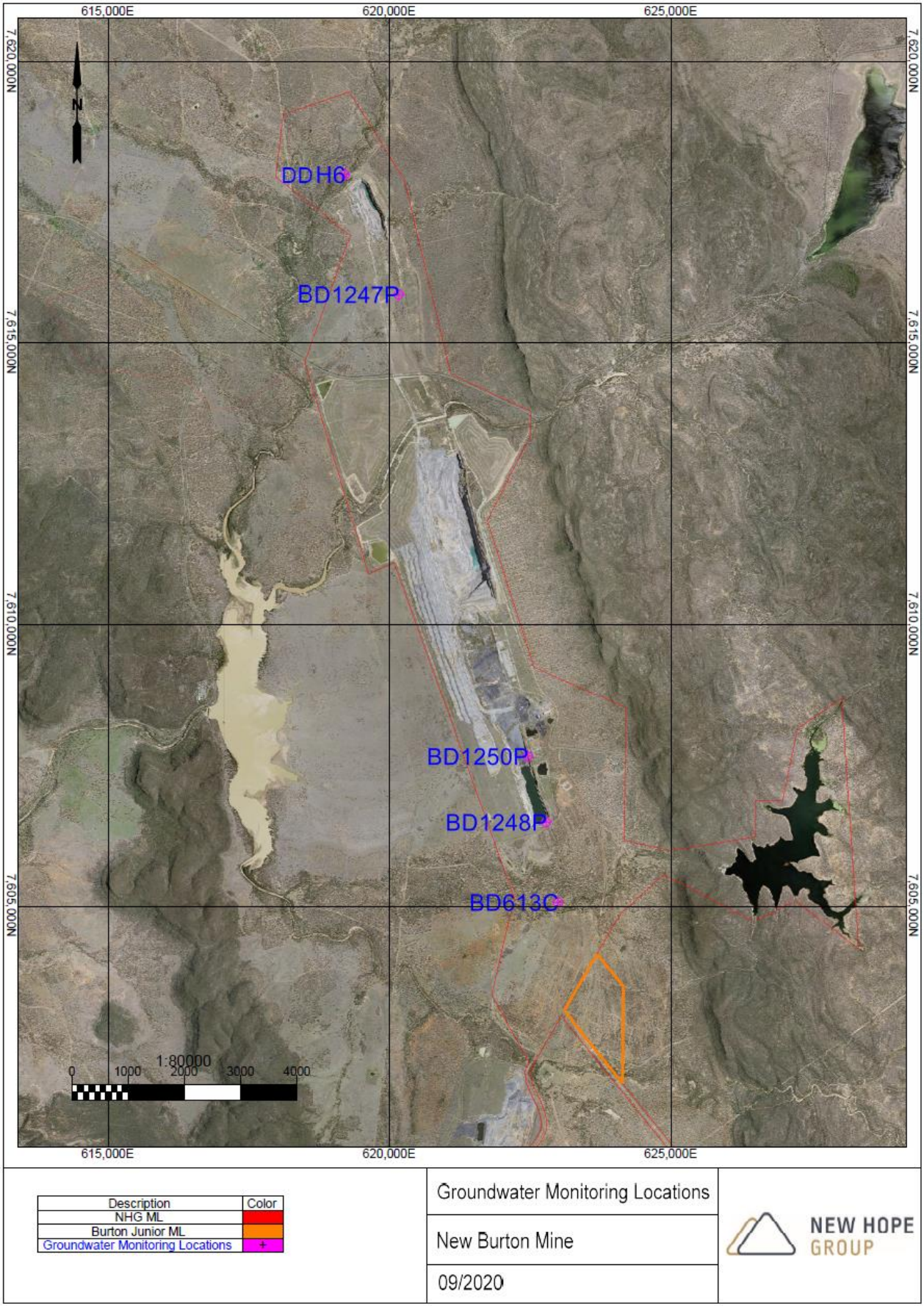


Figure 2: New Burton Mine Groundwater Monitoring Locations



END OF PERMIT