Permit

Environmental Protection Act 1994

Environmental Authority EA0002817

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

Environmental authority number: EA0002817

Environmental authority takes effect on 19 May 2022

Environmental authority holder

Name(s)	Registered address
Stanmore IP South PTY LTD	Level 15, 133 Mary Street Brisbane City QLD 4001 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3, 13: Mining black coal	ML700046 ML 700047 ML 700048
Ancillary 38 - Surface Coating: anodising, electroplating, enamelling or galvanising using, in a year, the following quantity of surface coating materials – more than 100t but not more than 1000t (1)(b).	ML 700046 ML 700047 ML 700048
Ancillary 63 - Sewage Treatment: Operating Sewage Treatment – operating sewage treatment works, other than no-release works with a total daily peak design capacity of -more than 21 but not more than 100EP equivalent persons - if treated effluent discharged from works to an infiltration trench or irrigation scheme(1)(a)(i).	ML 700046 ML 700047 ML 700048

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority is issued is a restatement of the ERA as defined by legislation at the time the approval is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an environmental authority as to

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the scale, intensity or manner of carrying out an ERA, then the conditions prevail to the extent of the inconsistency.

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority 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 'managing contaminated land'.

	19 May 2022
Signature	Date

Alisha Stewart
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date Issued: 19 May 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 Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Obligations under the *Mining and Quarrying Safety and Health Act 1999*

If you are operating a quarry, other than a sand and gravel quarry where there is no crushing capability, you will be required to comply with the *Mining and Quarrying Safety and Health Act 1999*. For more information on your obligations under this legislation contact Mine Safety and Health phone 13 QGOV (13 74 68) or your local Mines Inspectorate Office.

Development Approval

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment and Science to ensure that you have the most current version of the environmental authority relating to this site.

Conditions of environmental authority

The environmentally relevant activities conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Schedule A - General	
Condition number	**Condition**
A1	**General** This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
A2	**Authorised activities** In carrying out the mining activities authorised by this environmental authority, disturbance of land: a) is authorised in the areas marked 'A'; and b) is not authorised in the areas marked 'B'; and c) is only authorised in areas marked 'C' to the extent reasonably necessary for infrastructure. The areas stated in a) to c) of this condition, are shown in **Appendix 1, Figure 1: Authorised mining activities – Isaac Downs** of this environmental authority.
A3	**Scope of activity** This environmental authority authorises the mining of **five (5) million tonnes** of run of mine (ROM) coal per annum.
A4	**Prevent and/or minimise likelihood of environmental harm** In carrying out the mining activities the environmental authority holder must take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused.
A5	**Maintenance of measures, plant and equipment** The environmental authority holder must: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; b) maintain such measures, plant and equipment in a proper and efficient condition; c) operate such measures, plant and equipment in a proper and efficient manner; and d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

A6	**Monitoring records** Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than **five (5) years**.
A7	**Management Plans and Reports** Management plans and reports required under any condition of this environmental authority must be developed by an appropriately qualified person.
A8	All records, reports, plans and programs required by this environmental authority, must be made available to the administering authority within **five (5) business days** of the administering authority's request.
A9	Monitoring and determinations required under any condition of this environmental authority must be conducted by an appropriately qualified person(s).
A10	**Notification of emergencies, incidents and exceedances** The administering authority must be notified in writing within **twenty-four (24) hours** after the environmental authority holder becomes aware of any emergency or incident that results in the release of contaminants not in accordance, or is reasonably expected to be not in accordance, with the conditions of this environmental authority.
A11	Notifications made under **Condition A10** must include the following information: a) the environmental authority number; b) the holder/s of the environmental authority; c) the name and telephone number of a designated contact person who is authorised to talk with the administering authority on behalf of the environmental authority holder in relation to the incident or emergency; d) the location of the event or release, including a physical address, lot on plan description (if available), GPS coordinates and any other information necessary to identify the specific location of the incident or emergency; e) the time and date of the incident or emergency; f) the time the holder of the environmental authority became aware of the incident or emergency; g) details of any landholders affected or potentially affected by the incident or emergency; h) the suspected cause of the incident or emergency; i) the environmental harm caused, threatened, or suspected to be caused by the incident or emergency; and j) actions taken to prevent or mitigate any environmental harm caused by the incident or emergency.

A12	Within **ten (10) business days** following the initial notification as per **Condition A10** of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following: a) results and interpretation of any samples taken and analysed; b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and c) proposed actions to prevent a recurrence of the emergency or incident.
A13	**Complaints** The environmental authority holder must record all environmental complaints and include the following details: a) name, address and contact details for the complainant; b) time and date of complaint; c) time and date of notification to the administering authority; d) reasons for the complaint, including the location of the issue; e) investigations undertaken; f) conclusions formed; g) actions taken to resolve the complaint; h) any abatement measures implemented; and i) person responsible for resolving the complaint.
A14	Any complaint of nuisance or environmental harm must be investigated by the environmental authority holder. If the complaint is validated, the environmental authority holder must: a) implement abatement measures as soon as reasonably practicable so that the environmental harm or nuisance to which the complaint relates ceases or no longer negatively impacts the complainant; and b) provide full details of the complaint to the administering authority within **twenty-four (24) hours** of validating the complaint.

A15	When requested by the administering authority to undertake relevant specified monitoring to investigate any complaint of environmental harm or nuisance, the environmental authority holder must: a) within a timeframe nominated or agreed to by the administering authority, commence monitoring; b) undertake the monitoring for a duration nominated or agreed to by the administering authority; and c) provide the results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, to the administering authority within **ten (10) business days** of completion of the investigation or monitoring, or no later than **ten (10) business days** after the end of the timeframe nominated by the administering authority to undertake the investigation.
A16	If the monitoring undertaken in accordance with **Condition A15** indicates the occurrence of environmental harm or nuisance then the environmental authority holder must: a) address any complaint including the use of appropriate dispute resolution if required; and b) implement abatement measures as soon as reasonably practicable so that the environmental harm or nuisance to which the complaint relates ceases or no longer negatively impacts the sensitive receptor.
A17	**Risk management** A risk management system must be developed and implemented for all stages of mining activities and mirror the content requirements of the *Standards Australia Risk management – Principles and guidelines* (AS/NZS ISO 31000), or the latest edition of a Standards Australia for risk management, to the extent relevant to environmental management.
A18	**Third-party reporting** An appropriately qualified independent, third party auditor must be nominated to audit compliance with the conditions of this environmental authority. The third party audit must be completed **one (1) year** from commencement of the **mining activities**, and then at regular intervals not exceeding **thirty-six (36) months**.
A19	Within **ninety (90) days** of completing the audit, as required by **Condition A18,** a written report must be provided to the administering authority that has been certified by the appropriately qualified independent third party auditor, detailing any non-compliance issues that were found (if no non-compliance issues were found this should be stated in the report). If non-compliance issues were found the report must also address: a) actions taken by the holder of this environmental authority to ensure compliance with this environmental authority; and b) actions taken to prevent a recurrence of any identified non-compliance.

A20	Where a condition of this environmental authority requires compliance with a standard, policy or guideline and the standard is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must: a) comply with the amended or changed standard, policy or guideline within **two (2) years** of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to regulated structures referred to in **Conditions H1 to H33**, the time specified in that condition; and b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.
A21	**Definitions** Words and phrases used throughout this environmental authority are defined in the Definitions section of this environmental authority. 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 are to be used.

Schedule B - Air	
Condition number	**Condition**
B1	The release of dust and/or particulate matter or both resulting from the authorised mining activities must not cause an environmental nuisance, at any sensitive receptor or commercial place.
B2	When requested by the administering authority or as a result of a complaint, dust and particulate monitoring must be undertaken, and the results thereof notified to the administering authority within **fourteen (14) days** following completion of the monitoring period. Dust and particulate matter emissions generated by the authorised mining activities must not exceed the following levels when measured at any sensitive receptor or commercial place: a) Dust deposition of 120 milligrams per square metre per day, averaged over one (1) month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 *Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method*. b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, monitored in accordance with the most recent version of either: i. Australian Standard AS3580.9.6 *Methods for sampling and analysis of ambient air— Determination of suspended particulate matter— PM_{10} high volume sampler with size-selective inlet – Gravimetric method*; or

	ii. Australian Standard AS3580.9.9 *Methods for sampling and analysis of ambient air— Determination of suspended particulate matter— PM_{10} low volume sampler— Gravimetric method*; or iii. Australian Standard AS3580.9.11 *Methods for sampling and analysis of ambient air— Determination of suspended particulate matter— PM_{10} beta attenuation monitors*. c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres ($PM_{2.5}$) suspended in the atmosphere of 25 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version either of AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM (sub)2.5(/sub) low volume sampler—Gravimetric method or AS/NZS3580.9.12 (2013): Determination of suspended particulate matter – PM2.5 beta attenuation monitors. d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a one (1) year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air- Determination of suspended particulate matter - Total suspended particulate matter (TSP) - High volume sampler gravimetric method. Where possible the sampling frequency will be **one (1) day** in **three (3)** as required, or **three (3) days per week** based on **six (6) days** of operation per week.
B3	If the monitoring indicates an exceedance of the relevant limits in **Condition B2**, then an investigation must be undertaken to determine whether the exceedance is due to emissions from the activity. If the authorised mining activities are found to be the cause of the exceedance then dust abatement measures must be implemented as soon as reasonably practicable so that emissions of dust from the mining activities do not result in further environmental nuisance.
B4	If during the monitoring period nominated as per **Condition B2**, there is an exceedance of the relevant limits listed in **Condition B2**, the environmental authority holder must notify the administering authority within **twenty-four (24) hours** of the exceedance occurring. The notification must also include the actions taken in accordance with **Condition B3**.
B5	**Dust Management Plan** At least **one (1) month** prior to the commencement of mining activities for the project, a Dust Management Plan must be developed and submitted to the administering authority for review. The administering authority's comments must be addressed in the final version of the Dust Management Plan which must be implemented by the environmental authority holder. The Dust Management Plan must include, but not necessarily be limited to: a) procedures for monitoring dust emissions from the project, in accordance with the conditions of this approval; b) details of locations, frequencies and methods for monitoring PM_{10}, $PM_{2.5}$, TSP and deposited particulate matter (dust deposition); c) details of monitoring in response to a complaint using equipment approved under the relevant Australian Standards;

	d) details of at least one meteorological station capable of monitoring wind direction and speed; e) detail how real-time monitoring data will be utilised to inform environmental management decisions associated with the mining activities; and f) a framework for identifying actual and potential dust impacts, and for applying pro-active and reactive mitigation and management measures to address those impacts.
B6	The Dust Management Plan required by **Condition B5** must also include: a) a preventative management system for PM_{10}, $PM_{2.5}$ and TSP; b) real time monitoring program for PM_{10} and $PM_{2.5}$ between the Isaac Downs Coal Mine and the Township of Moranbah; c) trigger action response program; and d) procedures for updating the Isaac Downs Coal Mine website to enable public access to the monitoring results.
B7	An annual report on the Dust Management Plan required by **Condition B5** must be developed by an appropriately qualified person and submitted to the administering authority with each annual return. The report must include: a) a review of the suitability of the preventative dust management system and the trigger action response program; b) recommendations or improvements to the Dust Management Plan, including whether additional monitoring locations are required; and c) the results of the real time monitoring program and the actions taken to reduce potential impacts on sensitive receptors and commercial places from the authorised mining activities.
B8	**Spontaneous Combustion Management Plan** A Spontaneous Combustion Management Plan must be developed and implemented prior to the commencement of the mining activities. The Spontaneous Combustion Management Plan must: a) identify potential and actual spontaneous combustion heating areas; b) include regular inspections of spontaneous combustion heating areas; c) include a risk assessment that will guide and prioritise management actions; d) include remedial actions where a high risk has been identified; and e) describe a program for the review of the effectiveness of the Spontaneous Combustion Management Plan.
B9	**Odour** The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activities must not cause an environmental nuisance at any sensitive receptor or commercial place.

B10	If the administering authority determines odour released from the mining activities to constitute an environmental nuisance, the environmental authority holder must implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance.

Schedule C - Surface Water	
Condition number	**Condition**
C1	**Contaminant release** Contaminants that have, or may have the potential to cause environmental harm, must not be released directly or indirectly to any waters as a result of the 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 point specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** as depicted in **Appendix 1, Figure 2: Location of Water Release Points, Water Quality Monitoring Points and Infrastructure Areas** attached to this environmental authority.

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

Release Point (RP)	Easting (GDA94 – Zone 55)	Northing (GDA94 – Zone 55)	Mine Affected Water Source and Location	Monitoring Point	Receiving Waters Description
RP 1	620661	7563311	Release dam 1	Spillway of release dam 1	5 Mile Gully

C3	The release of mine affected water to waters from the release point must be monitored at the locations specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** for each quality characteristic and at the frequency specified in **Table C2: Mine Affected Water Release Limits** and **Table C3: Release Contaminant Trigger Investigation Levels.** ***Note:*** *The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event* ***Condition C3*** *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 C2: Mine Affected Water Release Limits.

Quality Characteristic	Release Limits	Monitoring Frequency
Electrical conductivity (µS/cm)	Release limits specified in **Table C4** for variable flow criteria.	Daily during release (the first sample must be taken within **two (2) hours** of commencement of release).
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	
Total Suspended Solids (mg/L)	Release limits specified in **Table C4** for variable flow criteria.	
Sulphate (SO_4^{2-}) (mg/L)	Release limits specified in **Table C4** for variable flow criteria.	

Table C3: Release Contaminant Trigger Investigation Levels.

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	55	*For aquatic ecosystem protection, based on SMD guideline*	Commencement of release within **(2) hours** and thereafter weekly during release
Antimony	9	*For aquatic ecosystem protection, based on low reliability guideline*	
Arsenic	13	*For aquatic ecosystem protection, based on SMD guideline*	
Cadmium	0.2	*For aquatic ecosystem protection, based on SMD guideline*	
Chromium IV	1.0	*For aquatic ecosystem protection, based on SMD guideline*	
Copper	1.4	*For aquatic ecosystem protection, based on SMD guideline*	
Iron	700	*For aquatic ecosystem protection, based on low reliability guideline*	
Lead	3.4	*For aquatic ecosystem protection, based on SMD guideline*	
Mercury	0.2	*For aquatic ecosystem protection, based on LOR for CV FIMS*	
Nickel	11	*For aquatic ecosystem protection, based on SMD guideline*	
Zinc	8.0	*For aquatic ecosystem protection, based on SMD guideline*	
Boron	940	*For aquatic ecosystem protection, based on SMD guideline*	
Cobalt	1.4	*For aquatic ecosystem protection, based on low reliability guideline*	
Manganese	1900	*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum	34	*For aquatic ecosystem protection, based on low reliability guideline*	

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Selenium	5	*For aquatic ecosystem protection, based on SMD guideline*	
Silver	1.0	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1.0	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Vanadium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Ammonia	900	*For aquatic ecosystem protection, based on SMD guideline*	
Nitrate	1100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	
Total recoverable hydrocarbons (TRC) C6-C9	20	*Model Mining Conditions*	
Total recoverable hydrocarbons (TRC) C10-C36	100	*Model Mining Conditions*	
Fluoride (total)	320	*80th percentile for Isaac River at Goonyella gauge*	
Sodium	188,000	*80th percentile for Isaac River at Goonyella gauge*	

Notes:

*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 list of quality characteristics required to be monitored as per **Table C3** will be reviewed once the results of the monitoring data is gathered for the interim period until 30 June 2023 or an earlier date if the data is, or becomes, available and if it is determined that there is no need to monitor for certain individual quality characteristics these can be removed from **Table C3**.*

3. SMD – slightly moderately disturbed level of protection; guideline refers ANZG (2018).

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

C4	An automatic stream flow gauging station/s must be installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in **Table C4: Mine Affected Water Release During Flow Events**.

Table C4: Mine Affected Water Release During Flow Events

Receiving waters/ stream	Release Point (RP)	Gauging station	Gauging Station Easting (GDA94 – Zone55)	Gauging Station Northing (GDA94 – Zone 55)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge (m^3/s)	Maximum release rate (for all combined RP flows)	Release Limits
Isaac River (via 5 Mile Gully)	RP1	Isaac Downs[1]	619857	7562207	Continuous (minimum daily)	**Very Low Flow** <4m^3/s for a period of 28 days after natural flow events that exceed 4 m3/s	< 2m^3/s	Electrical conductivity (µS/cm): 720µS/cm Sulphate (SO_4^{2-}): 250 mg/L TSS: 55 mg/L
						Low Flow 4m^3/sec	0.142m^3/sec	Electrical conductivity (µS/cm): 3,000µS/cm Sulphate (SO_4^{2-}): 300mg/L TSS: 55 mg/L
						Medium Flow 10m^3/sec	0.257m^3/sec	Electrical Conductivity (µS/cm): 4,000 Sulphate (SO_4^{2-}): 300mg/L TSS: 200 mg/L
						High Flow 50m^3/sec	1.09m^3/sec	Electrical conductivity (µS/cm): 5,000µS/cm Sulphate (SO_4^{2-}): 400mg/L TSS: 200 mg/L
						Very High Flow 100m^3/sec	2.02m^3/sec	Electrical conductivity (µS/cm): 5,000µS/cm Sulphate (SO_4^{2-}) 400mg/L TSS: 300 mg/L
						Flood Flow 250m^3/sec	3.07m^3/sec	Electrical conductivity (µS/cm): 8,000µS/cm Sulphate (SO_4^{2-}) 400mg/L TSS: 400 mg/L

Notes:
[1]Goonyella flow gauging station can be utilised as a backup if Isaac Downs station is inoperable.

C5	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with **Condition C2** must only take place in accordance with the receiving water flow criteria and water quality for discharge specified in **Table C4: Mine Affected Water Release During Flow Events** for the release point specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters.**
C6	The daily quantity of mine affected water released from the authorised release point (RP1) must be measured and recorded at the monitoring points specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters.**
C7	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.
C8	If any trigger levels specified in **Table C3: Release Contaminant Trigger Investigation Levels** are exceeded for any quality characteristic at the release point specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** during a release event the downstream results (IR2 specified in **Table C7: Receiving Water Upstream Background Sites and Down Stream Monitoring Points**) must be compared to the trigger values specified in **Table C3: Release Contaminant Trigger Investigation Levels**: a) where the downstream results do not exceed the trigger values then no action is to be taken; or b) where the downstream results exceed the trigger values specified in **Table C3: Release Contaminant Trigger Investigation Levels** for any quality characteristic, compare the results of the downstream site to the results from the upstream monitoring site (IR1A specified in **Table C7: Receiving Water Upstream Background Sites and Down Stream Monitoring Points**) and; i. 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 ii. where the downstream result is greater than the upstream result, complete an investigation into the potential for environmental harm and provide a written report to the administering authority via WaTERS within **ninety (90) days**, 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 C8(b)(ii)****, no further reporting is required for subsequent trigger events for that quality characteristic.*

C9	**Notification of release event** The administering authority must be notified via WaTERS within **twenty-four (24) hours** after commencing a release of mine affected water to the receiving environment in accordance with **Condition C2**. Notification must include the submission of the following information: a) release commencement date and time; b) release location (release point/s); c) release rate; d) water quality of the release including EC and pH; e) receiving water/s including flow rate when release occurred; and f) estimated duration and volume of the release.
C10	The administering authority must be notified via WaTERS within **twenty-four (24) hours** after cessation of a release event notified under **Condition C9**. The release cessation notification must include the following information: a) release cessation date and time; b) details of the receiving waters; including the natural flow rate; c) volume of water released; d) all in-situ water quality monitoring results; and e) 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 C11 and C12*** *provided the relevant details of the release are included within the notification provided in accordance with* ***Conditions C11, C12 and C13.***
C11	Within **twenty-eight (28) days** of notification under **Condition C10**, the following information must be provided to the administering authority via WaTERS: a) confirmation of: i. the release commencement date and time; ii. the release cessation date and time; iii. details of the receiving water/s including the natural flow rate; iv. volume of water released; b) all in-situ and laboratory water quality monitoring results; c) details assessing compliance of the release with the conditions of **Schedule C: Water** of this environmental authority (i.e. contamination limits, natural flow, discharge volume); d) whether the release resulted in any impacts to the receiving environment; and e) any other matter(s) pertinent to the water release event.

C12	**Notification of release event exceedance** If the release limits defined in **Table C2: Mine Affected Water Release Limits** are exceeded, the administering authority must be notified via WaTERS within **twenty-four (24) hours** of receiving the results.
C13	If an exceedance in accordance with **Condition C8 (b) (ii)** is identified, the administering authority must be notified via WaTERS within **twenty-four (24) hours** of receiving the result.
C14	A report is to be provided to the administering authority via WaTERS within **twenty-eight (28) days** of a release occurring that is not in compliance with conditions of this environmental authority. The report must include the following information: a) the reason for the release; b) the location of the release; c) the total volume of the release and which (if any) part of this volume was non-compliant; d) the total duration of the release and which (if any) part of this period was non-compliant; e) all water quality monitoring results (including all laboratory analyses); f) identification of any environmental harm as a result of the non-compliance; g) all calculations; and h) any other matters pertinent to the water release event.
C15	**Monitoring of water storage quality** Water storages stated in **Table C5: Water Storage Monitoring** (As illustrated in **Appendix 1, Figure 2: Location of Water Release Points, Water Quality Monitoring Points, Dams and Infrastructure Areas**) must be monitored quarterly for: a) the water quality characteristics specified in **Table C2: Mine Affected Water Release Limits** and **Table C3: Release Contaminant Trigger Investigation Levels** at the monitoring locations and at the monitoring frequency specified in **Table C5: Water Storage Monitoring**; and b) the volume of water held in the each of the water storages listed in **Table C5: Water Storage Monitoring.**

Table C5: Water Storage Monitoring

Water Storage Description	Easting (GDA94 – Zone 55)	Northing (GDA94 – Zone 55)	Monitoring Location	Frequency of Monitoring
Raw Water Dam (RWD)	620784	7563948	Dam wall	Quarterly
Haul Road Holding Dam 1 (HR_HD1)	620886	7563929	Dam wall	Quarterly
Haul Road Holding Dam 2 (HR_HD2)	621018	7563838	Dam wall	Quarterly
Fill Point Dam (FPD)	621156	7563544	Dam wall	Quarterly
MIA Dam	620720	7563671	Dam wall	Quarterly
Mine Water Dam (MWD)	620720	7563671	Dam wall	Quarterly
ROM Dam	621075	7563144	Dam wall	Quarterly
Southern Sed Dam (SSD)	622786	7559379	Dam wall	Quarterly

Notes:

1. Monitoring against receiving environment limits is for interpretation only to ensure adequate management of water storages to prevent environmental harm.

2. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered).

3. Coordinates of dams indicative location only and subject to change during detailed design.

C16	**Receiving environment monitoring and contaminant trigger levels** The quality of the receiving waters must be monitored at the locations specified in **Table C6: Receiving Water Upstream and Down Stream Monitoring Points** and depicted in **Appendix 1, Figure 2: Location of Water Release Points, Water Quality Monitoring Points and Infrastructure Areas** attached to this environmental authority, for each quality characteristic and at the monitoring frequency stated in **Table C7: Receiving Waters Contaminant Trigger Levels**.

Table C6: Receiving Water Upstream and Down Stream Monitoring Points

Monitoring Points	Receiving Waters Location Description	Easting (GDA94 – Zone 55)	Northing (GDA94 – Zone 55)
Upstream Background Monitoring Points			
IR1	Isaac River U/S	616,631	7,561,243
IR1A	Isaac River U/S - 850m upstream of Five Mile Gully confluence	619,733	7,562,012
FG1	Five Mile Gully U/S	621,077	7,564,123
SG1	Southern Gully U/S	624,282	7,559,618
Downstream Monitoring Points			
IR2	Isaac River Site 2	620,581	7,562,203
IR4	Isaac River Site 4	623,099	7,558,587
IR5	Isaac River D/S	624,270	7,558,237
FG2	Five Mile Gully D/S	620,227	7,562,725
SG2	Southern Gully D/S	624,366	7,558,723

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

Table C7: Receiving Waters Contaminant Trigger Levels

Quality Characteristic	Trigger Level (IR2)	Monitoring Frequency
pH (pH unit)	6.5 – 8.5 (range)[1]	Daily during the release
Electrical Conductivity (µS/cm)	1000 (maximum)[2]	
Total Suspended Solids (mg/L)	1,901 (maximum)[3]	
Sulphate (SO_4^{2-}) (mg/L)	250 (maximum)[3]	

Note:
[1] Isaac River Sub-basin Water Quality Objectives.
[2] Model water conditions for coal mines in the Fitzroy basin (DES, 2012).
[3] 80th Percentile of the Goonyella and Deverill gauges.

C17	If quality characteristics of the receiving water at the Downstream Monitoring Point (IR2) exceed any of the trigger levels specified in **Table C7: Receiving Waters Contaminant Trigger Levels** during a release event the downstream results must be compared to the upstream results in the receiving waters and: a) where the downstream result (IR2) is the same or a lower value than the upstream value (IR1A) 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 via WaTERS by **1 March** each year, 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 C17 (b) ii****, no further reporting is required for subsequent trigger events for that quality characteristic.*
C18	**Receiving environment monitoring program (REMP)** A Receiving Environment Monitoring Program (REMP) must be developed and implemented to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activities. 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 Isaac River within **ten (10) kilometres** downstream of the release point specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters**. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activities that will potentially be directly affected by an authorised release of mine affected water.
C19	The REMP must: a) assess the condition or state of receiving waters, including upstream conditions, spatially within the weed area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); b) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; c) include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the release location (as a minimum, the locations specified in **Table C6: Receiving Water and Down Stream Monitoring Points**); d) specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the Queensland Water Quality Guidelines 2006. This should include monitoring during periods of natural flow irrespective of mine or other discharges;

	e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in **Table C2: Mine Affected Water Release Limits** and **Table C3: Release Contaminant Trigger Investigation Levels**; f) include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments); g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology, h) incorporate a riparian corridor monitoring program to monitor impacts on riparian ecosystems; i) apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; j) describe sampling and analysis methods and quality assurance and control; and k) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
C20	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with **Conditions C18** and **C19** must be prepared annually and submitted to the administering authority via WaTERS. 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 limits and or triggers to protect downstream environmental values.
C21	The release of mine affected water to internal water management infrastructure is permitted provided the infrastructure is installed and operated in accordance with a Water Management Plan required by **Conditions C27** to **C31** inclusive.
C22	**Water reuse** Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party for the purpose of: a) supplying irrigation water subject to compliance with quality release limits in **Table C8: Irrigation Water Release Limits**; or b) supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority.

Table C8: Irrigation Water Release Limits.

Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	2900

C23	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 voids, dams or tanks, for the purpose of supplying water to, or transferred from, an adjoining mine. The volume, pH and electrical conductivity of water transferred to an adjoining mine must be monitored and recorded.
C24	If mine affected water is given or transferred to another person in accordance with **Condition C22** or **Condition C23**, the transfer must be in accordance with a written agreement (the third party agreement) that: a) includes a commitment from the transferee to use it in such a way so as to prevent environmental harm or public health incidents; b) reflects 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) is signed by both parties to the agreement.
C25	The release of any contaminants as permitted by this environmental authority, directly or indirectly to waters, must not result in any: a) visible discolouration of receiving waters; or b) slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.
C26	**Annual water monitoring reporting** The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority via WaTERS by **1 March** each year: 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; f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and g) water quality monitoring data where required by the environmental authority (release, receiving environment, REMP, water storages, sewage treatment plants and groundwater) must be provided to the administering authority in the specified electronic format via WaTERS.
C27	**Water Management Plan** A Water Management Plan must be developed by an appropriately qualified person for all stages of mining and implemented.

C28	The Water Management Plan required by **Condition C27** must: a) provide for effective management of actual and potential environmental impacts resulting from water management associated with all stages of mining activities carried out under this environmental authority; and b) 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.
C29	The Water Management Plan required by **Condition C27** 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 C28**; 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.
C30	A written response must be attached to the review report required by **Condition C29**, 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.
C31	The review report required by **Condition C29** and the written response to the review report required by **Condition C30** must be submitted to the administering authority via WaTERS by **1 March** of each year.
C32	**Saline drainage** Proper and effective measures must be taken to avoid or otherwise minimise the generation and/or release of saline drainage.
C33	**Acid rock drainage** Proper and effective measures must be taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.

C34	**Stormwater and water sediment controls** An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the authorised mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.
C35	The Erosion and Sediment Control (ESC) Plan required under **Condition C34 must**: a) detail how ESC control measures will adequately minimise the release of sediment to receiving waters and include the following: i. define all catchment areas; ii. detail the implementation of ESC measures required for each catchment area; iii. assess each different soil and spoil type and their characterisitcs; iv. specify design criteria for all proposed ESC structures; b) detail the locations and descriptions of all ESC measures; and c) provide an audit schedule to ensure ESC controls are maintained.
C36	A written review of the Erosion and Sediment Control (ESC) Plan required under **Condition C34** must be undertaken annually. The review must: a) include a statement that the ESC Plan has been prepared by an appropriately qualified person; b) assess the ESC plan against the requirements under **Condition C35**; c) include recommended actions to ensure actual and potential environmental impacts are effectively managed; d) provide details and timelines of the actions to be taken; and e) identify any amendments made to the ESC Plan.
C37	A copy of the Erosion and Sediment Control Plan required under **Condition C34** and the annual reviews of the Erosion and Sediment Control Plan must be provided to the administering authority on request.
C38	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 C34**; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with **Condition C27**, for the purpose of ensuring water does not become mine affected water.
C39	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.

C40	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.

C41	**Sewage Treatment** Sewage treatment activities must be undertaken in accordance with the standard conditions for ERA 63 Sewage treatment at threshold 1(a)(i) (ESR/2015/1710).

Schedule D: Groundwater	
Condition number	**Condition**
D1	**Groundwater** Contaminants must not be released directly or indirectly to groundwater.
D2	Groundwater quality and levels must be monitored at the locations and frequencies defined in **Table D1: Groundwater monitoring locations and frequency** and **Appendix 1, Figure 3 – Groundwater monitoring locations.**
D3	Groundwater quality monitoring required by **Condition D2**, must be monitored for the parameters outlined in **Table D2: Groundwater quality limits**. Results and analysis of groundwater monitoring must be submitted annually to the administering authority with the report required by **Condition D11(c)**.
D4	A baseline groundwater monitoring program must be developed and implemented by an appropriately qualified person(s) and be provided to the administering authority. The baseline groundwater monitoring program must: a) include bores **MBID19A, MBID25A and MBID27**; b) include at least twelve (12) sampling events that are no more than **two (2) months** apart over a **two (2) year** period, so as to determine background groundwater quality; c) include a conceptual model used to determine the location of groundwater bores; d) allow for the identification of natural groundwater level trends and groundwater contaminant limits; e) identify remaining groundwater quality limits and groundwater level trigger limits as per **Table D2: Groundwater quality limits** and **Table D3: Groundwater level monitoring** to support an environmental authority amendment submitted within **two (2) years** of the environmental authority being granted.

D5	Results of monitoring of groundwater quality bores identified in **Table D2: Groundwater quality limits** must not exceed any of the contaminant limits specified in **Table D2: Groundwater quality limits** for the same monitoring bore on **three (3)** consecutive quarterly sampling occasions.
D6	If the contaminant limits specified **Table D2: Groundwater quality limits** are exceeded at the same monitoring bore on **three (3)** consecutive quarterly sampling occasions the holder of the environmental authority must notify the administering authority via WaTERS within **twenty-four (24) hours** of receiving the results.
D7	The administering authority must be notified via WaTERS within **twenty eight (28) days** following detection of drawdown fluctuations exceeding that specified at any bore in **Table D3: Groundwater level trigger threshold** when measured against lowest standing water level data recorded prior to overburden removal.
D8	Within **fourteen (14) days** of notification given under **Condition D6** or **D7** an investigation must commence to determine if the exceedance is a result of: a) mining activities authorised under this environmental authority; or b) seasonal/natural variation; or c) neighbouring land use resulting in groundwater impacts, or d) any other potential cause.
D9	If the investigation under **Condition D8** determines that the exceedance was caused by the mining activities, authorised under this environmental authority, then a further investigation must be undertaken which must determine whether environmental harm has occurred or may occur, and the extent thereof.
D10	If the investigation undertaken under **Condition D9** determines that environmental harm has occurred, or may occur, the following action must be taken within **twenty-eight (28) days** after completing the investigation under **Condition D9**: a) implementation of measures as soon as reasonably practicable to reduce environmental harm including potential environmental harm; and b) development of long-term mitigation measures to address any existing groundwater contamination and prevent recurrence of groundwater contamination which is implemented in a reasonable time period; and c) if environmental harm has occurred as a result of groundwater drawdown exceedances, I. determine any actions required to reduce the potential for environmental harm; and II. determine any mitigation measures required to limit the drawdown in the affected groundwater resource. d) document the steps taken under **Condition D10(a), (b), and (c),** and provide the documentation to the administering authority.

D11	**Groundwater Management and Monitoring Program** A Groundwater Management and Monitoring Program (GMMP) must be developed, implemented and provided to the administering authority at least **thirty (30) days** prior to commencement of mining activities (excluding exploration and ecological monitoring activities). The GMMP will: a) identify all potential sources of contamination to groundwater from mining activities; b) provides a hydrogeological conceptual groundwater model; and c) identifies all environmental values that must be protected; d) details groundwater levels in all identified aquifers present across and adjacent to the site to confirm existing groundwater flow paths; e) estimates the groundwater inflow to rehabilitated landforms and surface water ingress to groundwater from flooding events using the groundwater model; f) ensures all potential groundwater impacts due to mining activities are identified, monitored and mitigated; g) ensures adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives: I. detect any impacts to groundwater level due to the mining activities; II. detect any impacts to groundwater quality due to the mining activities; III. determine compliance with **Conditions D5 and D7**; and IV. determine trends in groundwater quality and levels; h) documents groundwater management and monitoring methodologies undertaken for the duration of all mining activities; i) provides an appropriate quality assurance and quality control program; and j) includes a review process to identify improvements to the program that includes addressing any comments provided by the administering authority.
D12	The Groundwater Management and Monitoring Program required by **Condition D11** and the data collected must be reviewed every **two (2) years** by an appropriately qualified person. The review must: a) include the assessment of all groundwater levels and quality data for all groundwater bores listed within **Table D1: Groundwater monitoring locations and frequency** to determine long term trends; b) assess the suitability of the groundwater monitoring network, including an assessment of whether additional groundwater quality parameter limits, trigger values or compliance bores are required for all groundwater aquifers potentially impacted by the authorised mining activities; and c) be in a report submitted to the administering authority within **three (3) months** of receiving annual groundwater data.

D13	The following information must be recorded in relation to all groundwater sampling: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; and d) the results of all monitoring.
D14	Monitoring and sampling of groundwater must comply with the latest edition of the administering authority's *Monitoring and Sampling Manual*.
D15	**Bore construction and maintenance and decommissioning** The construction, maintenance and management of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

Table D1: Groundwater Monitoring Locations and Frequency (Water Quality and Levels)[A]

Site	Monitoring unit	Easting (GDA94)	Northing (GDA94)	Top of casing (mAHD)	Screening interval (mbgl)	Monitoring frequency
MBID01	Alluvium	620649	7562169	203.23	11-17	Quarterly
MBID02	Alluvium/ weathered Permian Coal Measures	622135	7559499	200.77	11-17	Quarterly
MBID03	Alluvium	622014	7559511	201.95	14-20	Quarterly
MBID04	Leichhardt Seam/ Vermont Seam	622010	7559519	202.02	56-62	Quarterly
MBID05	Alluvium/ weathered Triassic sediments	622511	7558982	200.32	12-18	Quarterly
MBID06A	Weathered Triassic sediments	622903	7558816	199.33	13-19	Quarterly
MBID07	Weathered Triassic sediments	622883	7558685	198.86	20-26	Quarterly
MBID08	Alluvium/ weathered Triassic sediments	623187	7558824	198.68	11-17	Quarterly
MBID10	Leichhardt Seam/ Vermont Seam	621866	7559833	201.80	37-43	Quarterly
MBID11	Alluvium	621769	7560252	201.98	11-17	Quarterly
MBID12	Alluvium	621654	7560452	202.46	13-16	Quarterly
MBID13	Leichhardt Seam/ Vermont Seam	621989	7561377	204.22	42-48	Quarterly
MBID14 (VWP1, 2 & 3)	Multilevel vibrating wire piezometer (VWP) grouted in the overburden, Leichhardt and Vermont seams	623473	7558924	n/a – VWP	n/a - VWP	n/a - VWP
MBID15	Leichhardt Seam	622395	7559910	202.74	95-101	Quarterly
MBID16	Alluvium/ weathered Permian sediments	621733	7560791	202.73	18.7-24.7	Quarterly
MBID17	Alluvium	619794	7562476	201.33	9-15	Quarterly

Site	Monitoring unit	Easting (GDA94)	Northing (GDA94)	Top of casing (mAHD)	Screening interval (mbgl)	Monitoring frequency
MBID18	Leichhardt Seam	623334	7561702	222.17	54-66	Quarterly
MBID19A	Alluvium	620765	7561517	202.46	11.6 – 17.6	Quarterly
MBID21A	Alluvium	621611	7560253	200.29	9-16.5	Quarterly
MBID22	Weathered Triassic sediments	622907	7558533	199.10	24-36	Quarterly
MBID23	Alluvium	621795	7559591	194.00	7.5-13.5	Quarterly
MBID25A	Alluvium	623928	7558584	198.81	12 to 18	Quarterly
MBID26	Alluvium	624171	7559434	202.79	12 to 18	Quarterly
MBID27	Alluvium	622212	7557635	199.51	12 to 18	Quarterly
MBID28	Alluvium	622911	7558534	198	12-15	Quarterly
593	Vermont Seam	622613	7555055	218	93.3	Quarterly
594	Leichhardt Seam	622613	7555054	217	46.8	Quarterly
584D	Vermont Seam	622672	7556692	215	101.2	Quarterly
584S	Leichhardt Seam	622672	7556692	215	70.5	Quarterly
592D	Vermont Seam	622281	7558539	201	85.2	Quarterly
592S	Leichhardt Seam	622281	7558539	201	57.5	Quarterly

Notes:

*A: Bores not listed in Tables **D2: Groundwater Quality Limits** and/or **D3: Groundwater Level Thresholds** are for interpretation purposes only.*

Table D2: Groundwater Quality Limits

Bore	Parameter	pH	EC	Sulfate	Iron^	Arsenic^	Aluminium^	Molybdenum^	Selenium^	*TRH C6-C10	*TRH >C10-C40	Major ions
	Sample	Range	Max	Max	Max	Max	Max	Max	Max	Max	Max	Interpretation Only
	Unit	pH units	(µS/cm)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	N/A
MBID01		6.5 – 8.5[A]	6,609[D]	58[D]	0.7[D]	0.013[B], except 584D = 0.021[A]	0.055[B]	0.034[B]	0.01[B], except MBID15, MBID18 = 0.05[A]	20[C]	100[C]	Bicarbonate, sodium, carbonate, calcium, chloride, potassium, magnesium.
MBID03[E]			10,090[D]	174[D]	1.92[D]							
MBID11[E]			19,460[D]	491[D]	0.7[B]							
MBID17			9,840[D]	216[D]	0.7[B]							
MBID19A			5,618[D]	41[D]	4.1							
MBID21A			7,463[D]	318[B]	0.7[B]							
MBID23			17,180[D]	318[B]	0.7[B]							
MBID25A			7,731[D]	580[D]	0.7[B]							
MBID28			5,455[D]	96[D]	0.7[B]							
MBID07			4,201[D]	310[D]	0.7[B]							
MBID22			16,425[D]	1,053[D]	2.8[D]							
RN162817			14,170[D]	974[D]	1.9[D]							
MBID04			24,070[D]	66[D]	2.9[D]							
MBID13[E]			18,400[D]	489[D]	1.8[D]							
MBID15[D]			25,800[D]	5[D]	2.5[D]							
MBID18			31,020[D]	1[D]	4.1[D]							
584S			18,225[D]	706[D]	10.1[D]							
584D			11,460[D]	1[D]	6.5[D]							
593			14,790[D]	1[D]	4.3[D]							
594			22,580[D]	870[D]	2.0[D]							

Notes: TRH: Total Recoverable Hydrocarbons*
^ Limits are for dissolved component
[A] 'Isaac River Sub-basin EVs and WQOs', [B] Australian Water Quality Guidelines, [C] Model mining limit, [D] Site specific 95%ile, [E] Monitoring is not required when this bore has been removed as a direct result of the mining pit footprint.

Table D3: Groundwater Level Thresholds

Bore No.	Hydrostratigraphic Unit	Drawdown threshold (m)
MBID01	Alluvium	2.0
MBID03	Alluvium	2.0
MBID11	Alluvium	6.0
MBID17	Alluvium	2.0
MBID19A	Alluvium	2.0
MBID21A	Alluvium	3.0
MBID23	Alluvium	1.0
MBID25A	Alluvium	3.0
MBID27	Alluvium	2.0
MBID28	Alluvium	5.0
MBID22	Weathered Triassic sediments	5.0
MBID04	Leichhardt Seam / Vermont Seam	42.0
MBID18	Leichhardt Seam	46.0
584S	Leichhardt Seam	24.0
584D	Vermont Seam	23.0
594	Leichhardt Seam	10.0
593	Vermont Seam	7.0
RN162817	Weathered Triassic sediments	5.0
RN162818	Weathered Triassic sediments	5.0

Schedule E - Noise and Vibration	
Condition number	**Condition**
E1	**Noise nuisance** Noise, vibration and airblast overpressure resulting from the authorised mining activities must not cause a nuisance, at any sensitive receptor or commercial place.
E2	A Noise and Vibration Management Plan must be implemented at the site and include the following as a minimum: a) be developed by an appropriately qualified person; b) identification of all potential sensitive and commercial locations which may be affected by noise and vibration impacts from the mining activities; c) identification of all major sources of noise and vibration emissions that may occur as result of the operation of the project; d) description of the procedures to manage the noise and vibration emissions from the sources identified; e) collection of noise and vibration data using the methods described in the Noise and Vibration Monitoring Program; f) identifying adverse meteorological conditions likely to produce elevated levels of noise and vibration at a sensitive or commercial place due to mining activities; g) integration of noise and vibration control strategies as described in the Blast Management Program; h) protocols for regular maintenance of plant and equipment, to minimise the potential for noise and vibration emissions; and i) description of procedures to be undertaken if any exceedance is detected.
E3	**Noise monitoring** When requested by the administering authority, or as a result of a complaint, noise monitoring must be undertaken and the results thereof notified to the administering authority within **fourteen (14) days** following completion of the monitoring period. Noise from the authorised mining activities must not exceed the limits specified in **Table E1: Noise limits** at any sensitive receptor or commercial place.

E4	Monitoring required by **Condition E2** must include: a) LA_{10}, adj, 10 mins; b) LA_{1}, adj, 10 mins; c) the level and frequency of occurrence of impulsive or tonal noise; d) atmospheric conditions including wind speed and direction; e) effects due to extraneous factors such as traffic noise; and f) location date and time of recording.
E5	If the monitoring indicates an exceedance of the relevant limits in **Table E1: Noise limits**, an investigation must be undertaken to determine whether the exceedance is due to the authorised mining activities. If the authorised mining activities are found to be the cause of the exceedance then noise abatement measures must be implemented as soon as reasonably practicable so that noise from the activity does not result in further environmental nuisance.
E6	If during monitoring as required by **Condition E3**, there is an exceedance of the relevant limits listed in **Table E1: Noise limits**, the administering authority must be notified within **seven (7) days** of the exceedance occurring. The notification must also include the actions taken in accordance with **Condition E5**.

Table E1: Noise limits

Noise level dB(a)	**Monday to Sunday (including public holidays)**		
	7am - 6pm	**6pm - 10pm**	**10pm - 7am**
	Noise measured at a 'Sensitive Receptor'		
L_{Aeq} 15min	45	42	37
L_{A1} 15 mins	50	47	42

E7	The method of measurement and reporting of noise monitoring must comply with the current edition of the administering authority's *Noise Measurement Manual*.
E8	**Vibration nuisance** When requested by the administering authority, or as a result of a complaint, vibration monitoring must be undertaken, and the results thereof notified to the administering authority within **fourteen (14) days** following completion of the monitoring period. Vibration from the authorised mining activities must not exceed the limits specified in **Table E2: Vibration limits**, at any sensitive receptor or commercial place.

E9	Monitoring required by **Condition E8** 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, wind speed and direction; and e) location, date and time of recording.

Table E2: Vibration limits

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

E10	If the monitoring indicates an exceedance of the relevant limits in **Table E2: Vibration limits** then an investigation must occur as to whether the exceedance is due to the authorised mining activities. If the authorised mining activities are found to be the cause of the exceedance then abatement measures must be implemented as soon as reasonably practicable so that vibration from the activity does not result in further environmental nuisance.
E11	If during monitoring as required by **Condition E8**, there is an exceedance of the relevant limits listed in **Table E2: Vibration limits**, the administering authority must be notified within **seven (7) days** of the exceedance occurring. The notification must also include the actions taken in accordance with **Condition E10**.
E12	Every explosive blast for the mining activities must be designed by a competent person to achieve the criteria specified in **Table E2: Vibration limits** and **Table E3: Airblast overpressure level**.
E13	All relevant information pertaining to the design of every explosive blast for the mining activities in relation to the criteria specified in **Table E2: Vibration limits** and **Table E3: Airblast overpressure level** must be kept in written and diagrammatic form.

E14	A Blast Management Program must be developed by an appropriately qualified person and implemented at the site. The Blast Management Program must include the following as a minimum: a) planning to activate the timely implementation of additional noise and vibration controls during adverse meteorological conditions; b) consideration of best practice environmental management noise and vibration control measures; and c) a program for monitoring and review of the effectiveness of the Blast Management Program.
E15	**Airblast overpressure nuisance** When requested by the administering authority, or as a result of a complaint, airblast overpressure monitoring must be undertaken and the results thereof notified to the administering authority within **fourteen (14) days** following completion of the monitoring period. The airblast overpressure level from blasting operations must not exceed the limits defined in **Table E3: Airblast overpressure level** at any sensitive receptor or commercial place.

Table E3: Airblast overpressure level

Parameter	**Airblast overpressure measured at a sensitive receptor or commercial place**	
	Monday to Sunday 9am - 7pm	**Other times and public holidays**
Air blast overpressure level (dB [Lin] Peak)	Maximum 115 dB for 9 out of 10 consecutive blasts	No blasting to occur
Air blast overpressure level (dB [Lin] Peak)	120 dB maximum	No blasting to occur

E16	Airblast overpressure monitoring required by **Condition E15** must include the following descriptors, characteristics and conditions: a) location of the blast(s) within the mining area (including which bench level); b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and c) location, date and time of recording.
E17	If the monitoring indicates an exceedance of the relevant limits in **Table E3: Airblast overpressure level** then an investigation must be completed as to whether the exceedance is due to the authorised mining activities. If the authorised mining activities are found to be the cause of the exceedance then airblast overpressure abatement measures must be implemented as soon as reasonably practicable so that vibration from the activity does not result in further environmental nuisance.
E18	If during monitoring as required by **Condition E15**, there is an exceedance of the relevant limits listed in **Table E3: Airblast overpressure level**, the administering authority must be notified within **seven (7) days** of the exceedance occurring. The notification must also include the actions taken in accordance with **Condition E17**.
E19	The method of measurement and reporting of airblast overpressure levels must comply with the current edition of the administering authority's *Noise Measurement Manual*.

Schedule F - Waste	
Condition number	**Condition**
F1	**Storage and disposal of tyres** Scrap tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options must be stored in stable stacks and at least **ten (10) metres** from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
F2	Where no feasible recycling or waste-to-energy options are available, disposing of scrap tyres resulting from the authorised mining activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable. A record must be kept of the number and location for tyres disposed.
F3	Scrap tyres resulting from the authorised mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.
F4	**Waste management** Unless otherwise permitted by a condition of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.
F5	**Waste disposal** Waste, other than any spoil, tailings or overburden removed as part of the authorised mining activities or permitted by another condition of the environmental authority, must not be disposed of within any void created by this activity.

F6	**Waste Management** A Waste Management Plan for non-mining waste must be implemented that: a) describes how the Isaac Downs Coal Mine recognises and applies the waste management hierarchy; b) characterises wastes generated from the project and identifies general volume trends over the past **five (5) years**; c) contains a program for safe recycling or disposal of all wastes - reusing and recycling where possible; d) contains waste commitments with auditable targets to reduce, reuse and recycle; e) has waste management control strategies which addresses: I. the type of wastes; II. segregation of the wastes; III. storage of the wastes; IV. transport of the wastes; f) monitoring and reporting matters concerning the wastes; g) emergency response planning; h) disposal, reused and recycling options; i) identifies the potential adverse and beneficial impacts of the wastes generated; j) details the hazardous characteristics of the waste generated (if any); k) contains a disposal procedure for hazardous wastes; l) outlines the process to be implemented to allow for continuous improvement of the waste management systems; m) identifies responsible staff (positions) for implementing, managing and reporting the Waste Management Plan; and n) contains a staff awareness and induction program that encourages re-use and recycling.
F7	A designated area must be set aside for the segregation of economically viable, recyclable solid and liquid waste.

F8	**Mine Waste Management Plan** A Mine Waste Management Plan must be developed and implemented by an appropriately qualified person for every stage of the mining activities. The Mine Waste Management Plan must be submitted to the administering authority **one (1) month** prior to commencement of overburden removal for review and comment. The Mine Waste Management Plan must at a minimum include: a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following contaminants: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Total Sulphur (S), Chromium Reducible Sulphur (Scr), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulphate (SO_4); b) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal; c) the availability or leachability of metals from the mining waste; d) quantification of Potentially Acid Forming (PAF) from mining waste present; e) review impacts of the PAF mining waste on the rehabilitation; f) management actions for mining waste that has been identified as having a high availability or leachability of metals; g) management actions for mining waste that has been defined as PAF; h) identification of environmental impacts and potential environmental impacts; i) control measures for routine operations to minimise likelihood of environmental harm; j) contingency plans and emergency procedures for non-routine situations; and k) periodic review of environmental performance and continual improvement.
F9	Within **twenty (20) business days** of receiving comments from the administering authority as per **Condition F8**, the Mine Waste Management Plan must be updated to address the comments, amended to adopt any recommendations and submitted to the administering authority for approval.

Schedule G - Land	
Condition number	**Condition**
G1	**Preventing contaminant release to land** Contaminants must not be released to land unless otherwise authorised by a condition of this environmental authority.
G2	**Topsoil** A Topsoil Management Plan must be developed, implemented and made available to the administering authority upon request. The Topsoil Management Plan must contain topsoil management strategies including but not limited to: a) stripping in advance of mining activities; b) stockpiling; and c) rehabilitation processes.
G3	A topsoil inventory which identifies the topsoil requirements for the authorised mining activities and availability of suitable topsoil on site must be maintained.
G4	Land disturbed by the authorised mining activities must be rehabilitated in accordance with: a) **Appendix 2, Table 1: Rehabilitation Requirements**; b) **Table G1: Residual Void Design**; and c) the Rehabilitation Management Plan required by **Condition G7**.
G5	Only items of infrastructure which are beneficial to the post-mining land use can be retained, when there is written agreement between the environmental authority holder and the post-mining landowner/holder. Where the post-mining landowner/holder, is also the environmental authority holder, infrastructure cannot remain without the administering authority's agreement.
G6	Only the residual void detailed in **Table G1: Residual Void Design**, is permitted at the approved place located generally as per **Appendix 1, Figure 3: Proposed Final Landform.** The residual void must comply with its design requirements specified in **Table G1: Residual Void Design**.

G7	**Rehabilitation Management Plan** A Rehabilitation Management Plan for all areas disturbed by the authorised mining activities must be developed and implemented by an appropriately qualified person that includes, at a minimum, the following: a) a map of existing areas of rehabilitation including classification and status of rehabilitation; b) a strategy and schedule for the progressive rehabilitation of all disturbance during the life of mine; c) a strategy for weed and pest management which includes disturbed and rehabilitated areas; d) a strategy for successfully achieving rehabilitation requirements of this environmental authority; e) details of the grazing trials that are to be undertaken on overburden emplacement areas; f) details of the objectives and success criteria for rehabilitation of each mining domain to achieve rehabilitation outcomes listed in **Appendix 2, Table 1: Rehabilitation Requirements** and **Table G1: Residual Void Design**; g) details of landform design to achieve rehabilitation outcomes listed in **Appendix 2, Table 1: Rehabilitation Requirements** including end of mine design and schematic representation of final landform inclusive of: i. drainage design and features; ii. slope designs; iii. cover design; iv. erosion controls proposed on reformed land; h) details of how landform design will be consistent with surrounding topography; i) details of how the final land uses will align with local planning scheme requirements; j) specify the spoil characteristics, soil analysis and soil separation for use on rehabilitation; k) specify the topsoil requirements for the site and how topsoil will be managed for use in rehabilitation; l) details of any topsoil deficit and how any deficit will be managed for successful rehabilitation; m) details of rehabilitation methods to be applied to each domain; n) describe the monitoring of reference sites inclusive of identification of at least **three (3)** reference sites for each mine domain for use in rehabilitation monitoring in this environmental authority; o) description of rehabilitation indicators and how these will be monitored;

	p) description of management actions to address unsuccessful rehabilitation or redesign; q) description of wastewater collection and reticulation and treatment systems; r) description of any risks to groundwater and how these will be managed; and s) description of seepage and leachate management considerations, including the prevention and management of acid mine drainage.
G8	The Rehabilitation Management Plan required by **Condition G7** must be submitted to the administering authority for review and comment **one (1) month** prior to commencement of overburden removal**.**
G9	Within **twenty (20) business days** of receiving comments from the administering authority as per **Condition G8**, the Rehabilitation Management Plan must be updated to address the comments, amended to adopt any recommendations and submitted to the administering authority for approval.
G10	Where there is an inconsistency between the Rehabilitation Management Plan and this environmental authority, the requirements of this environmental authority prevail.
G11	Rehabilitation must commence and be undertaken progressively in accordance with the Rehabilitation Management Plan required by **Condition G7.**

Table G1: Residual Void Design

Void identification	**Void high wall – competent rock slope**	**Void high wall incompetent rock slope**	**Void low wall**	**Void maximum surface area (ha)**	**Void maximum depth (m)**	**Void volume (Mm^3) (+/- 2.5%)**
Pit 1	215% (65^o)	100% (45^o)	25% (14^o)	75	170	72

G12	**Rehabilitation Monitoring Program** A Rehabilitation Monitoring Program must be developed and implemented by an appropriately qualified person for the life of this environmental authority.
G13	The Rehabilitation Monitoring Program required by **Condition G12** must be submitted to the administering authority for review and comment **one (1) month** prior to commencement of overburden removal.
G14	Within **twenty (20) business days** of receiving comments from the administering authority on the Rehabilitation Monitoring Program submitted in accordance with **Condition G12**, the Rehabilitation Monitoring Program must be updated to address the comments and resubmitted to the administering authority for approval.
G15	Where there is an inconsistency between the Rehabilitation Monitoring Program and this environmental authority, the requirements of this environmental authority prevail.
G16	The review of the Rehabilitation Monitoring Program required by **Condition G12** must occur at intervals no greater than **thirty-six (36) months** from commencement of the mining activities. If changes to the Rehabilitation Monitoring Program are necessary, the following action must occur: a) submit the Rehabilitation Monitoring Program to the administering authority for review and comment; and b) within **twenty (20) business days** of receiving comments from the administering authority, the Rehabilitation Monitoring Plan must be updated to address the comments and resubmitted to the administering authority for approval
G17	Every **three (3) years**, a report of the findings of the rehabilitation monitoring program must be submitted to the administering authority. The report must contain the following: a) how the rehabilitation objectives in the Rehabilitation Management Plan required by **Condition G7** are being met; b) if the rehabilitation objectives are not being met, the corrective actions to be taken; c) a statistical analysis of how areas of rehabilitation compare to reference sites; d) a statistical analysis of how areas of rehabilitation are meeting the requirements of **Condition G4**; e) the sampling and monitoring intensity used in the Rehabilitation Monitoring Program required by **Condition G13**; and f) justification of the sampling and monitoring intensity used in the Rehabilitation Monitoring Program required by **Condition G12**.

G18	**Vegetation management** Cleared vegetation from the site must be managed in accordance with the following hierarchy: a) recycle, e.g. mulching of vegetation and use in rehabilitation on the site; and b) other alternative management options implemented in a way that causes the least amount of environmental harm.
G19	**Chemical Storage** Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable. Where no standard exists, storage of such materials must be within an effective on-site containment system.

Schedule H: Regulated Structures	
Condition number	**Condition**
H1	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)* or its successor 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.
H2	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.
H3	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)* or its successor.
H4	**Design and Construction of a Regulated Structure** **Conditions H5** to **H7** inclusive do not apply to existing structures.
H5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* or its successor. ***Note:*** *Construction of a dam includes modification of an existing dam – refer to the definitions. Certification of design and construction may be undertaken by different persons.*

H6	Construction of a regulated structure is prohibited unless: a) the environmental authority holder has submitted a consequence category assessment report, and certification to the administering authority; and b) certification for the design, design plan, and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.
H7	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)* or its successor, and must be recorded in the Register of Regulated Structures.
H8	Regulated Structures must: a) be designed and constructed in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of structures (ESR/2016/1933)* or its successor; 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.
H9	Certification by a suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and b) construction of the regulated structure is in accordance with the design plan.
H10	**Notification of affected persons** All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure: a) for existing structures that are regulated structures, within **ten (10) business days** of this condition taking effect; b) prior to the operation of the new regulated structure; and c) if the emergency action plan is amended, within **five (5) business days** of it being amended.
H11	**Operation of a regulated structure** Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following:

	a) one paper copy and one electronic copy of the design plan and certification of the design plan in accordance with **Condition H6**; b) a set of 'as constructed' drawings and specifications; c) certification of the 'as constructed drawings and specifications' in accordance with **Condition H7**; d) where the regulated structure is to be managed as part of an integrated containment system for the purposes of sharing the DSA volume across the system, a copy of the certified system design plan; e) the requirements of this authority relating to the construction of the regulated structure have been met; f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and g) there is a current operational plan for the regulated structures.
H12	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 purposes of sharing DSA volumes across the system, the holder must submit to the administering authority within **twelve (12) months** of the commencement of this condition a copy of the certified system design plan including that structure; and b) there must be a current operational plan for the existing structures.
H13	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitate, in a manner that is consistent with the current design plan and, if applicable, the associated certified 'as constructed' drawings.
H14	**Mandatory Reporting Level** **Conditions H15** to **H18** inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
H15	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.
H16	The holder must, as soon as practical and within **forty-eight (48) hours** of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
H17	The holder must immediately on becoming aware that the MRL has been reached, act to prevent occurrence of any unauthorised discharge from the regulated dam.
H18	The holder must record any changes to the MRL in the Register of Regulated Structures.
H19	**Design Storage Allowance**

	The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to **1 July** each year.
H20	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).
H21	The holder must, as soon as practicable but 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.
H22	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment system.
H23	**Annual Inspection Report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
H24	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 a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.
H25	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)* or its successor.
H26	Within **twenty (20) business days** of receipt of the annual inspection report, provide the administering authority with: a) the recommendations section of the inspection report; b) if applicable, any actions being taken in response to those recommendation; and c) if, following receipt of the recommendations and (if applicable) action, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within **ten (10) business days** of receipt of the request.
H27	**Transfer Arrangements** A copy of any reports, documentation and certifications prepared under this authority must be provided, 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.

H28	**Register of Regulated Structures** A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.
H29	The required information must be provisionally entered in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
H30	A final entry of the required information in the Register of Regulated Structures must be made once compliance with **Conditions H11** and **H12** has been achieved.
H31	The information contained in the Register of Regulated Structures must be current and complete on any given day.
H32	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.
H33	On provision of the annual return, the administering authority must also be provided with a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.

Schedule I - Nature Conservation	
Condition number	**Condition**
I1	Significant residual impacts to prescribed environmental matters are not authorised under this environmental authority unless the impacts are specified in **Table I1: Significant residual impacts to prescribed environmental matters** and **Appendix 1, Figures 5-9**.
I2	An environmental offset made in accordance with the *Environmental Offsets Act 2014* and Queensland Environmental Offsets Policy, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in **Table I1: Significant residual impacts to prescribed environmental matters**, for which an offset is required**.**

Table I1: Significant residual impacts to prescribed environmental matters

Prescribed environmental matter	Location of impact	Maximum extent of impact (ha)	Offset Required
Of concern regional ecosystem RE 11.3.2	Figure 5	62.8	Yes
Of concern Regional Ecosystem 11.3.4	Figure 5	1.4	Yes
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map: RE 11.3.25	Figure 5	1.1	Yes
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map: RE 11.3.4	Figure 5	0.3	Yes
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map: RE 11.5.3	Figure 5	0.1	Yes
Regional ecosystems that intersects with an area shown as a wetland on the vegetation management wetlands map RE 11.5.3b	Figure 5	2.1	Yes
Regulated vegetation that is essential habitat for Greater Glider– *Petauroides volans**	Figure 7	120.9	No*
Regulated vegetation that is essential habitat for Ornamental snake – *Denisonia maculate**	Figure 9	173.5	No*
Habitat for an animal that is vulnerable wildlife – Squatter Pigeon – *Geophaps scripta scripta**	Figure 6	122.1	No*
Habitat for an animal that is vulnerable wildlife – Greater Glider– *Petauroides volans**	Figure 7	120.9	No*
Habitat for an animal that is vulnerable wildlife – Koala- *Phascolarctos cinereus**	Figure 8	131.9	No*
Habitat for an animal that vulnerable wildlife – Ornamental snake – *Denisonia maculata**	Figure 9	173.5	No*

Notes:
** These matters will be offset under the* Environment Protection and Biodiversity Conservation Act 1999 *(EPBC).*

I3	An environmental offset made in accordance with the *Environmental Offsets Act 2014* and Queensland Environmental Offset Policy, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in **Table I1: Significant residual impacts to prescribed environmental matters.**
I4	The significant residual impacts to prescribed environmental matters authorised in **Condition I1** for which an environmental offset is required by **Condition I2**, may be carried out in stages. An environmental offset can be delivered for each stage of the impacts to prescribed environmental matters.

I5	Prior to the commencement of each stage, a report completed by an appropriately qualified person, that includes an analysis of the following must be provided to the administering authority: a) For the forthcoming stage – the estimated significant residual impacts to each prescribed environmental matter; and b) For the previous stage, if applicable – the actual significant residual impacts to each prescribed environmental matter, to date.
I6	The report required by **Condition I5** must be approved by the administering authority before a notice of election for the forthcoming stage, if applicable, is given to the administering authority.
I7	A notice of election for the staged environmental offset referred to in **Condition I4**, if applicable, must be provided to the administering authority no less than **three (3) months** before the proposed commencement of that stage, unless a lesser timeframe has been agreed to by the administering authority.
I8	Within **six (6) months** from the completion of the final stage of the project, a report completed by an appropriately qualified person, that includes the following matters must be provided to the administering authority: a) An analysis of the actual impacts on prescribed environmental matters resulting from the final stage; and b) If applicable, a notice of election to address any outstanding offset debits for the authorised impacts.
I9	**Groundwater Dependent Ecosystems (GDE)** The Groundwater Dependent Ecosystem Monitoring and Management Plan (GDEMMP) required by the Department of Agriculture, Water and the Environment (or its successor) must be implemented prior to commencement of overburden removal.
I10	A report of the findings of the GDEMMP as required by **Condition I9**, including all monitoring results and interpretations, must be prepared annually and made available on request to the administering authority.

END OF CONDITIONS

Definitions

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

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

a) vegetation establishment, survival and succession;
b) vegetation productivity, sustained growth and structure development;
c) fauna colonisation and habitat development;
d) ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
e) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
f) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
g) resilience of vegetation to disease, insect attack, drought and fire; and
h) vegetation water use and effects on ground water levels and catchment yields.

"acid rock drainage" means any contaminated discharge emanating from a mining activities 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 activities.

"administering authority" is the agency or department that administers the environmental authority provisions under the Environmental Protection Act 1994.

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

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

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

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

a) against recommendations contained in previous annual inspections reports;
b) against recognised dam safety deficiency indicators;
c) for changes in circumstances potentially leading to a change in consequence category;
d) for conformance with the conditions of this authority;
e) for conformance with the 'as constructed' drawings;
f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
g) for evidence of conformance with the current operational plan.

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

"ANZG" means the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018*.

"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.

"approved place" means the mining project that consists of the mining leases listed on the title page of this environmental authority.

"assess" or **"assessed"** or **"assessment"** by a suitably qualified and experienced person in relation to a consequence 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.

"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.

"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.

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

"chemical" means –

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

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

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

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

e) any substance used as, or intended for use as –
   i. a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or
   ii. a surface active agent, including, for example, soap or related detergent; or
   iii. a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or
   iv. a fertiliser for agricultural, horticultural or garden use; or

f) a substance used for, or intended for use for –
   i. mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
   ii. manufacture of plastic or synthetic rubber.

"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.

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

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

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

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

"contaminant" means a –

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 consequence or reduce it to an acceptable level.

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

"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).

"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.

"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.

"document" means the same meaning as in the *Acts Interpretation Act 1954.*

"environmental authority" means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

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

"environmental offset" means the same as in section 7 of the *Environmental Offsets Act 2014*.

"environmentally relevant activity" means an environmentally relevant activity as defined in the *Environmental Protection Act 1994* and listed in the *Environmental Protection Regulation 2008.*

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

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

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

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

"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 consequence category in the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

"infrastructure" means water storage dams, sediment dams, powerlines, pipelines, haul roads and bitumen roads and light vehicle tracks, buildings and other structures built for the purpose of mining activities but does not include other facilities required for the long term management of mining impacts or the protection of potential resources.

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

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

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

"lake" means –
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" means as defined in the *DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.*

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

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

"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.

"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 means the volume below the spillway crest, equivalent to the lower of the AEP, 72 hour storm or the AEP wave allowance (AEP is the natural exceedance probability).

"manual" means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* 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.

"mine affected water" means the following types of water:

a) means the following types of water:
   i. pit water, tailings dam water, processing plant water;
   ii. water contaminated by a mining activities 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 activities;
   iii. rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;
   iv. groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
   v. groundwater from the mine's dewatering activities;
   vi. a mix of mine affected water (under any of paragraphs i)-v) and other water.
b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:
   i. land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or

ii. land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:
    a. areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site;
    b. evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff; or

iii. both.

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

a) clay if mined for use for its ceramic properties, kaolin and bentonite;
b) foundry sand;
c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil there from;
d) limestone if mined for use for its chemical properties;
e) marble;
f) mineral oil or gas extracted or produced from shale or coal by in situ processes;
g) peat;
h) salt including brine;
i) shale from which mineral oil may be extracted or produced;
j) silica, including silica sand, if mined for use for its chemical properties;
k) rock mined in block or slab form for building or monumental purposes;

But does not include—

l) living matter;
m) petroleum within the meaning of the Petroleum Act 1923;
n) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form;
o) water.

"mining activities" means the activities:
a) authorised as per the definition in section 110 of the Environmental Protection Act 1994; and
b) all environmentally relevant activities authorised under this environmental authority; and
c) waste activities.

"modification or modifying" means (see definition of 'construction')

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

"nature" means:

a) ecosystems and their constituent parts; and

b) all natural and physical resources; and

c) natural dynamic processes.

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

"noxious" means harmful or injurious to health or physical well being, other than trivial harm.

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

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

"operational plan" means:

a) 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.

"overburden" means rock or soil, other than the topsoil (e.g. top 1m of soil) overlying the coal deposit.

"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}).

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

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

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

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

"Register of Regulated Structures" means the inclusion of**:**

a) Date of entry in the register;

b) Name of the structure, its purpose and intended/actual contents;

c) The consequence category of the structure as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933);*

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

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

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

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

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

iii. Dam crest volume (megalitres);

iv. Spillway crest level (metres AHD).

v. Maximum operating level (metres AHD);

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

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

viii. Mandatory reporting level (metres AHD);

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

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

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

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

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

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

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

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

"regulated dam" means any dam in the significant or high consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* published by the administering authority.

"regulated structure" means the inclusion of land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

"rehabilitation" means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

"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.

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

"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.

"sensitive receptor" 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 centre 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.

"significant residual impacts" means the definition in section 8 *Environmental Offsets Act 2014*.

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

"stable" means geotechnical stability of the rehabilitated landform where instability related to the excessive settlement and subsidence caused by consolidation / settlement of the wastes deposited, and sliding / slumping instability has ceased.
"stormwater" means all surface water runoff from rainfall.

"structure" means dam or levee.

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

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

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

"system design plan" means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.
void" means any man-made, open excavation in the ground.

"void maximum surface area" means the 2D view of the top of the low wall to the top of the highwall.

"waste" means the definition in section 13 of the *Environmental Protection Act 1994*.

"waste management hierarchy" means the definition given by the *Environmental Protection (Waste Management) Policy 2000*.

"water" means –

a) water in waters or spring;

b) underground water;

c) overland flow water; or

d) water that has been collected in a dams.

"watercourse" has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means

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

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

"waters" means river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, and groundwater and any part thereof.

"µg/L" means micrograms per litre

"µS/cm" means microsiemens per centimetre

END OF DEFINITIONS

Appendix 1

Figure 1: Authorised mining activities

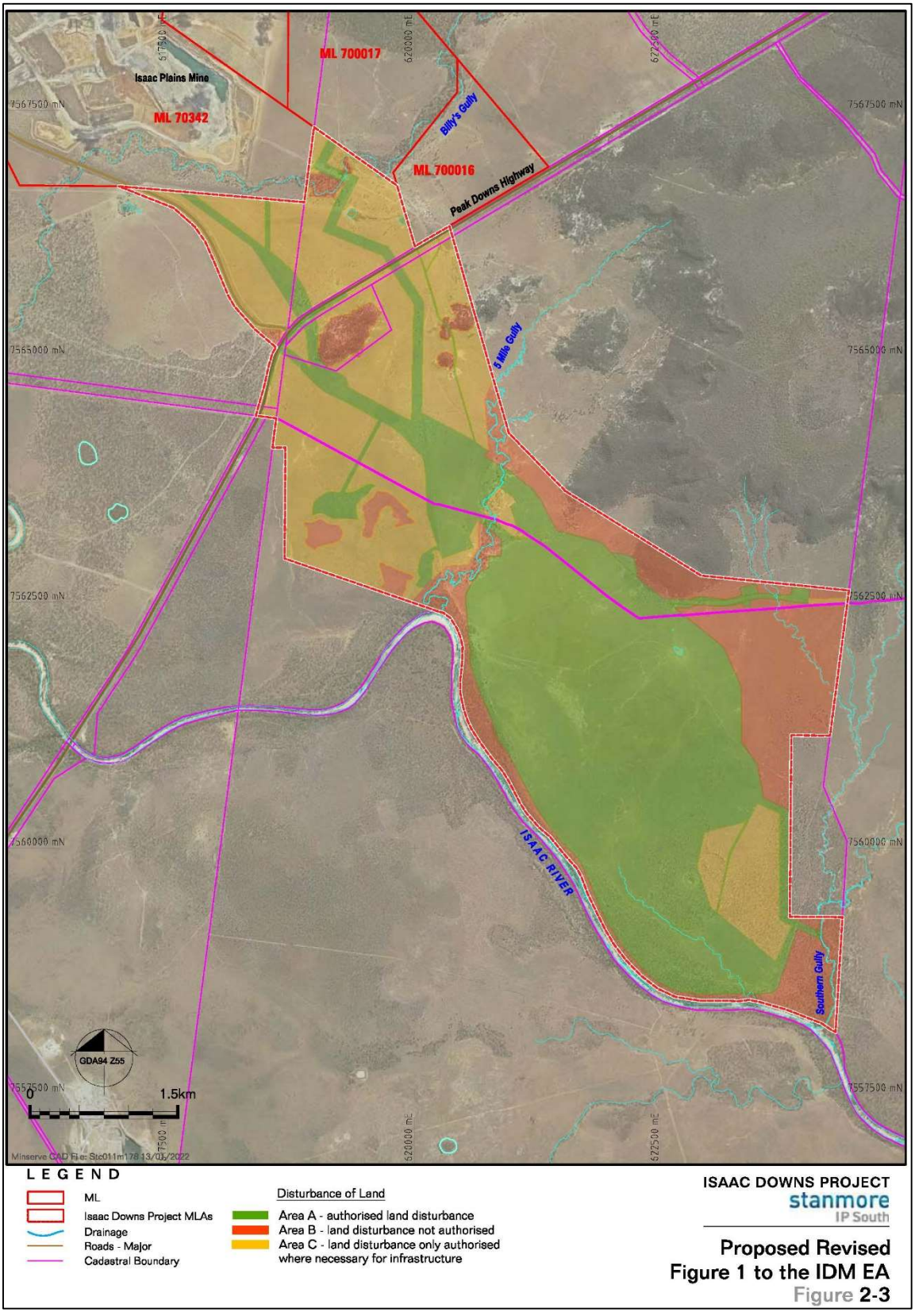


Figure 2: Location of Water Release Points, Water Quality Monitoring Points, Dams and Infrastructure Areas

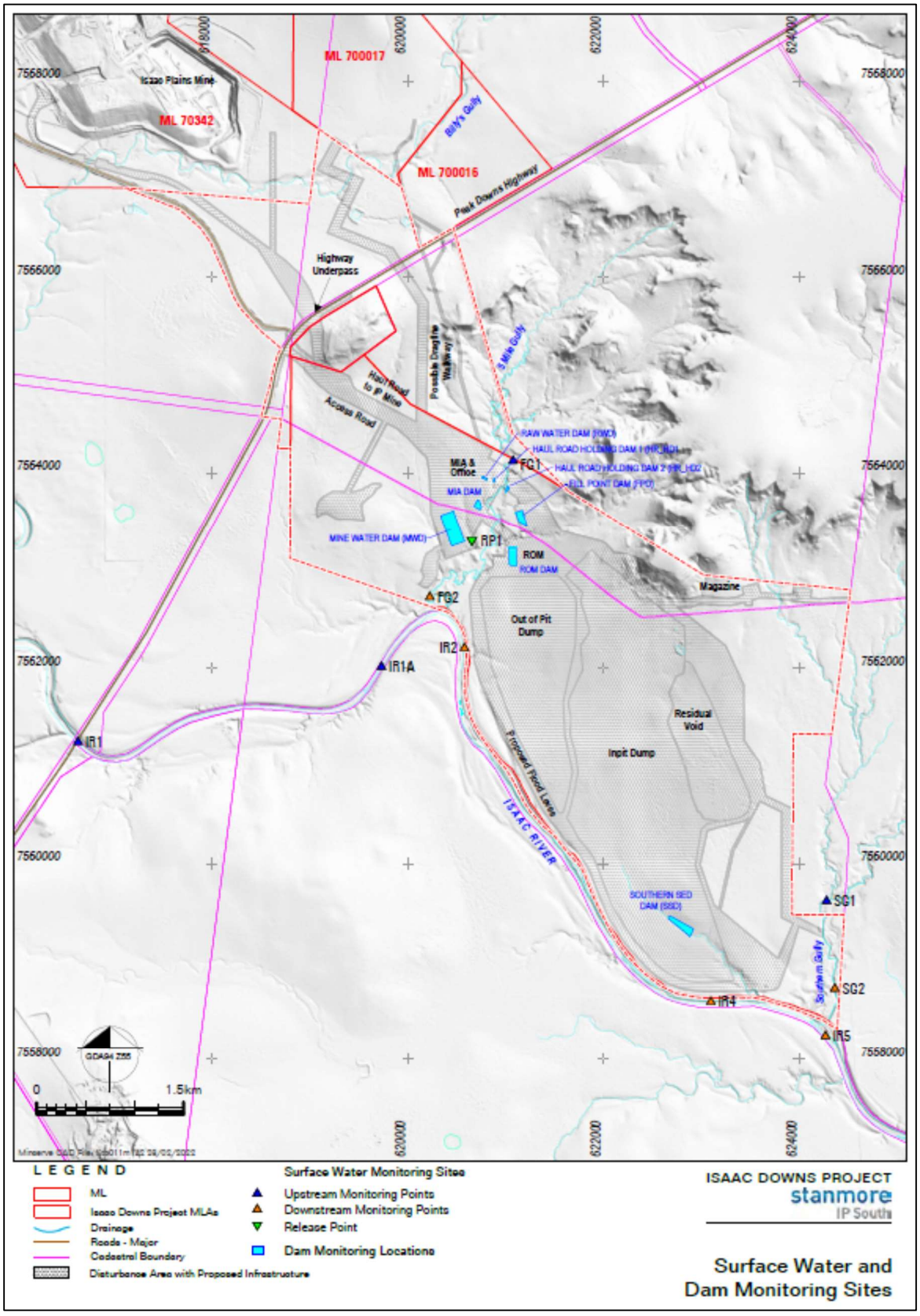


Figure 3: Proposed Final Landform

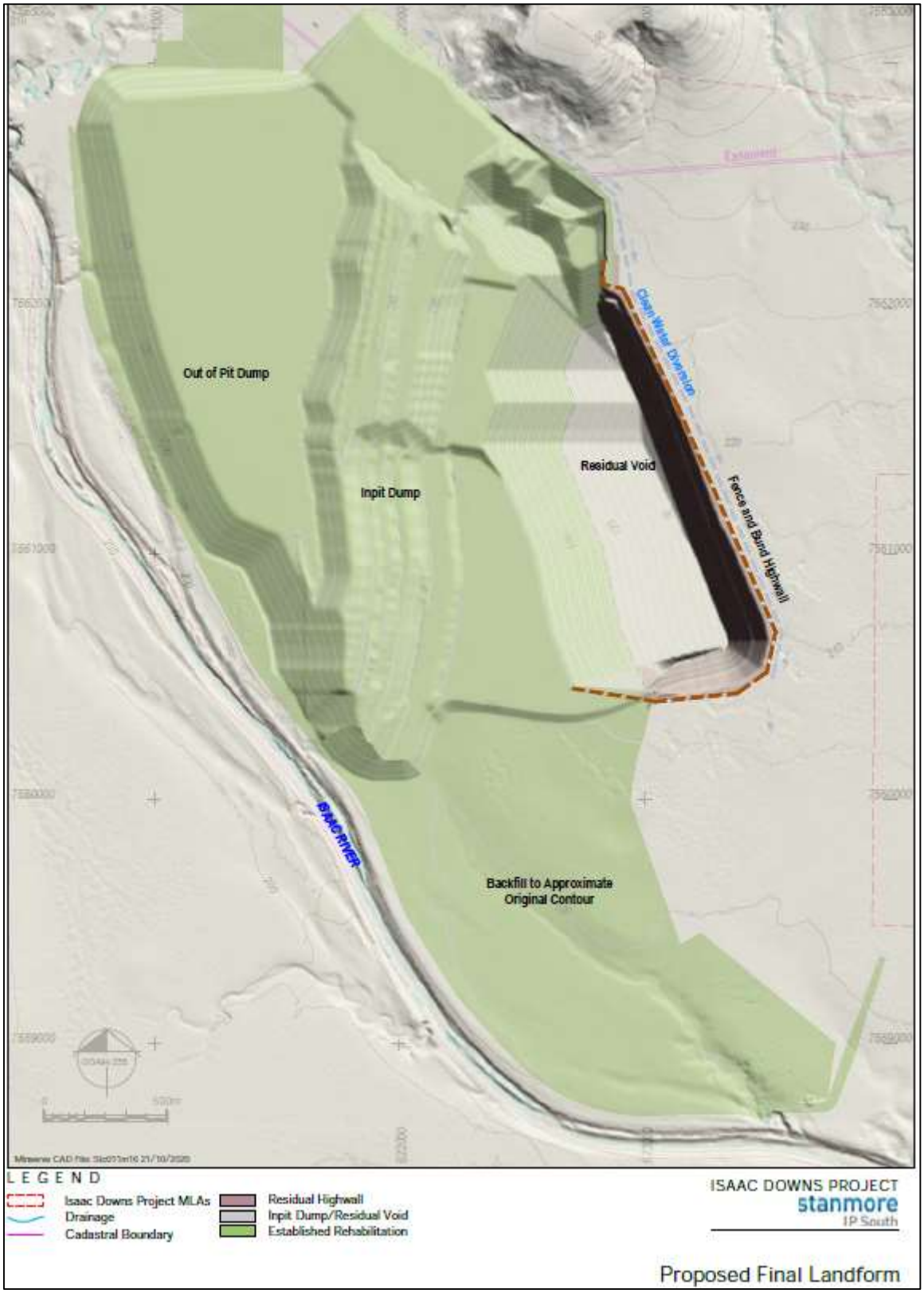


Figure 4: Groundwater Monitoring Bore Network

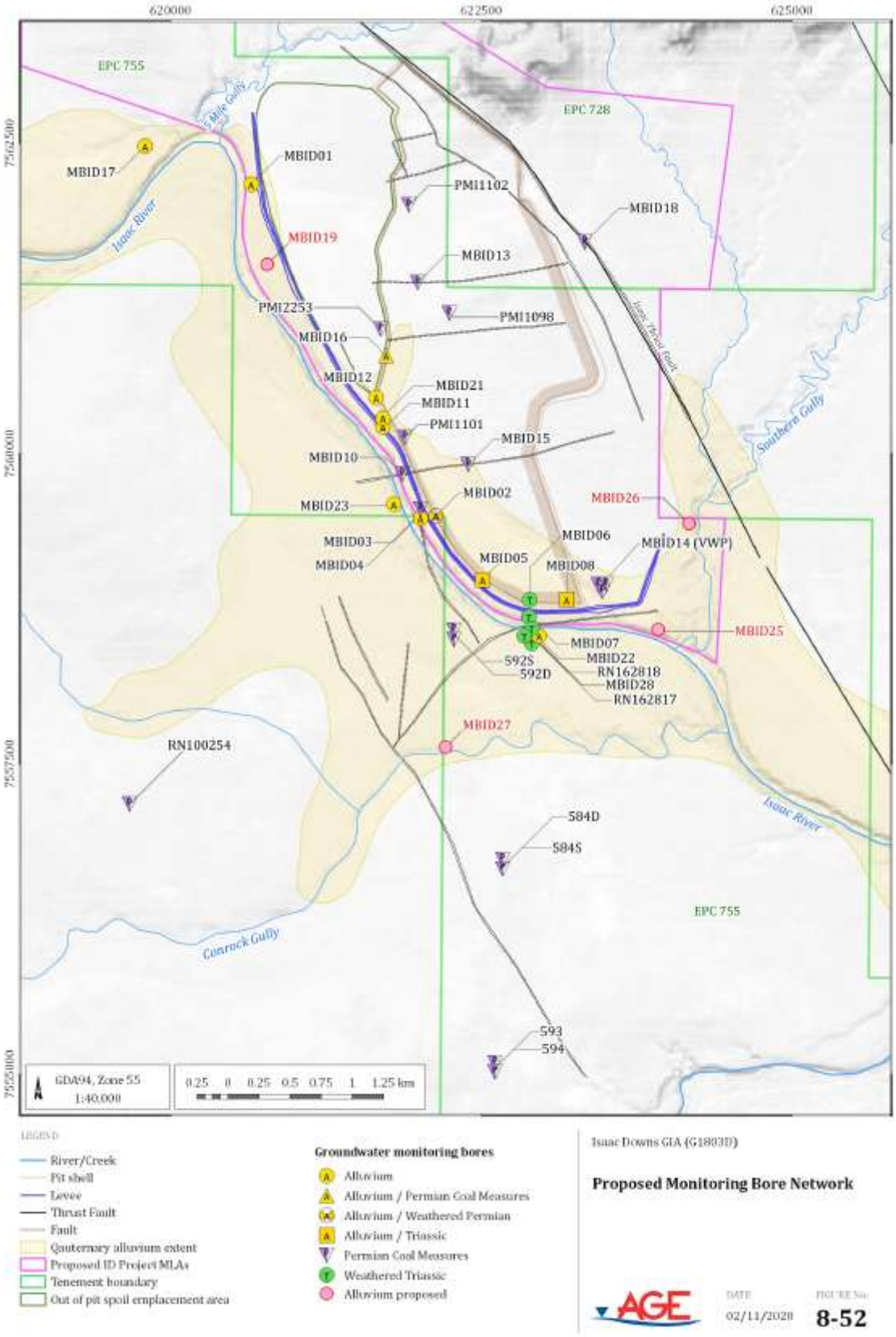


Figure 5: Authorised Impacts to Regulated Vegetation

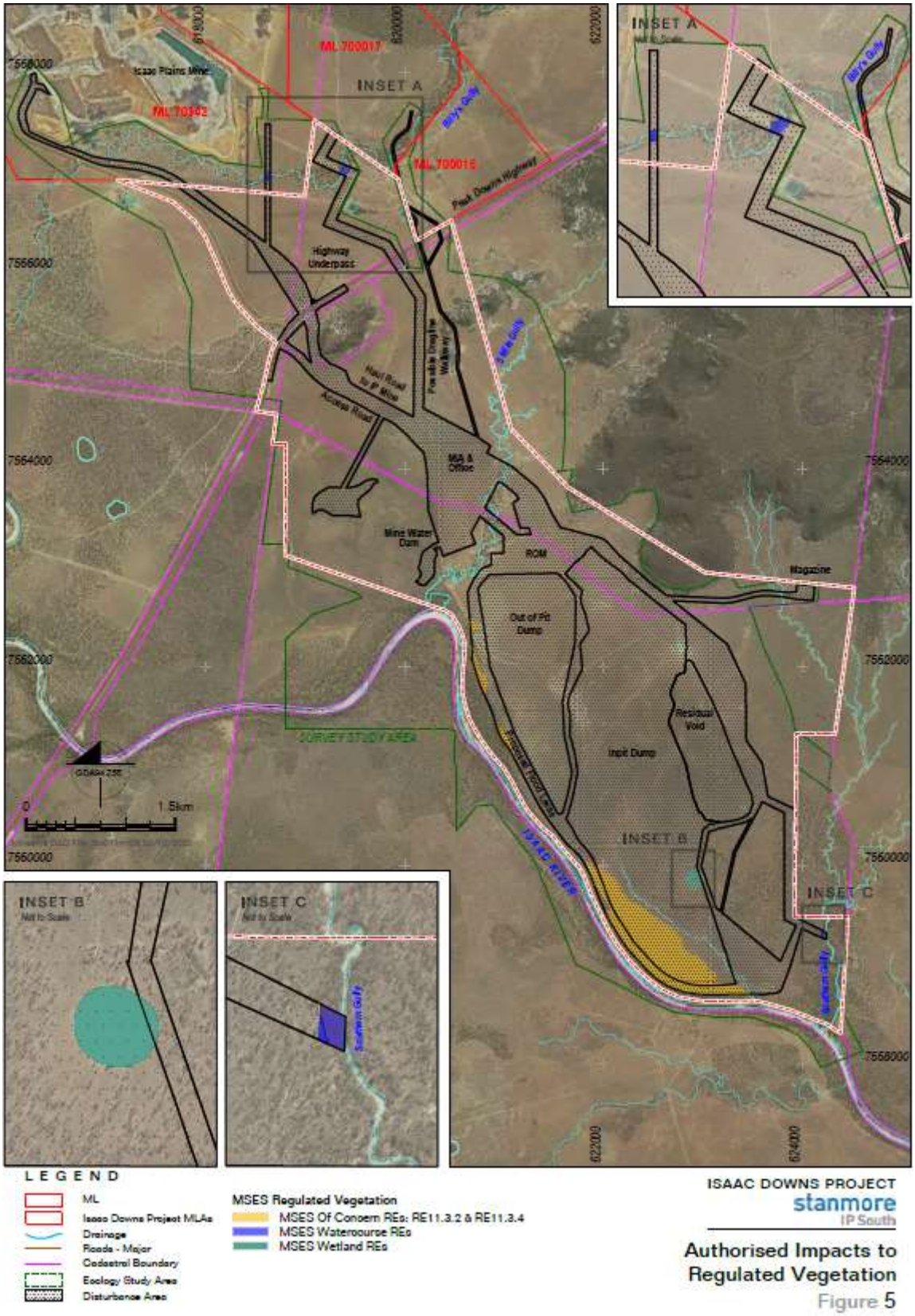


Figure 6: Authorised Impacts to Protected Wildlife Habitat, Squatter Pigeon (*Geophaps scripta scripta*)

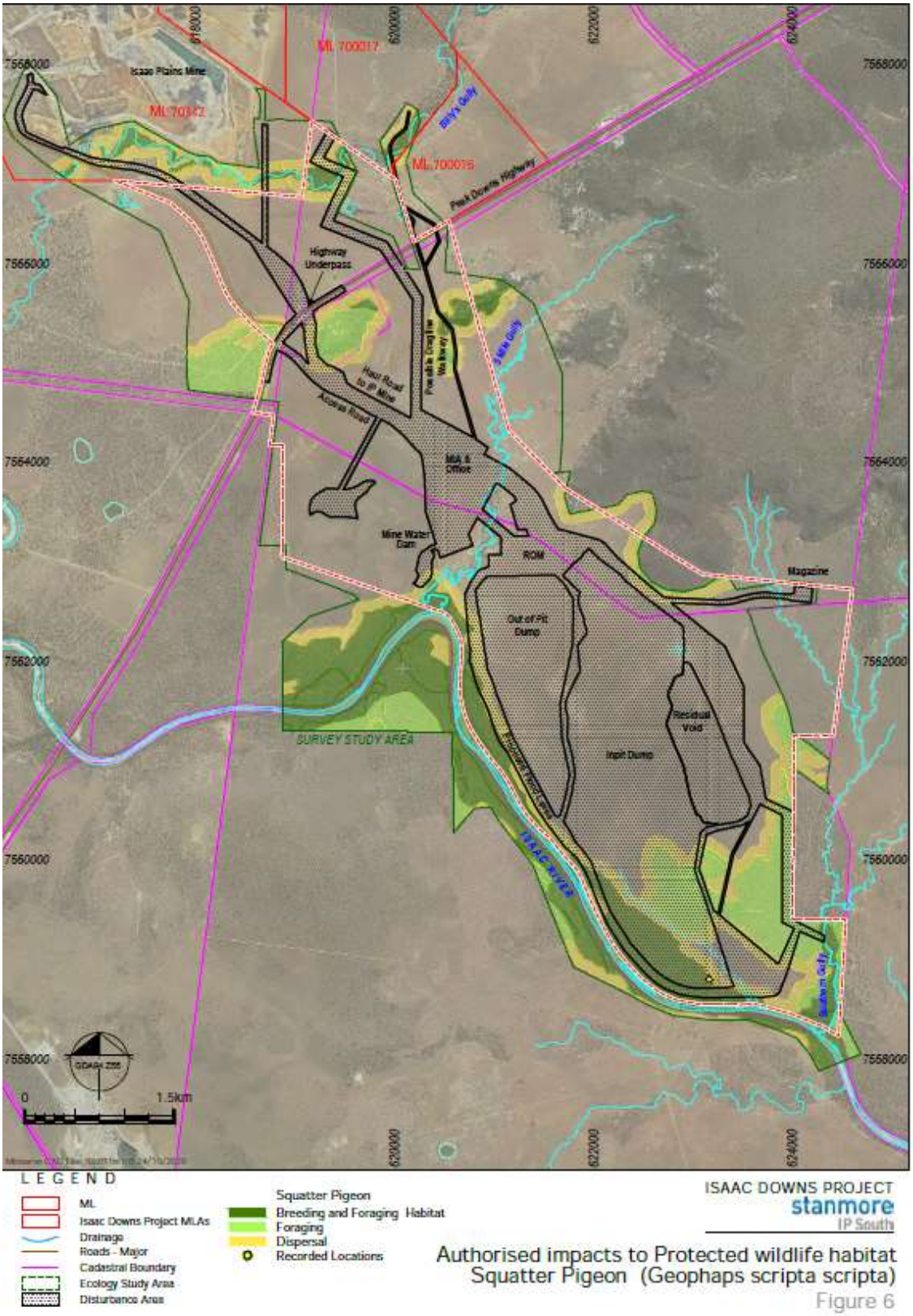


Figure 7: Authorised Impacts to Protected Wildlife Habitat, Greater Glider (*Petauroides volans*)

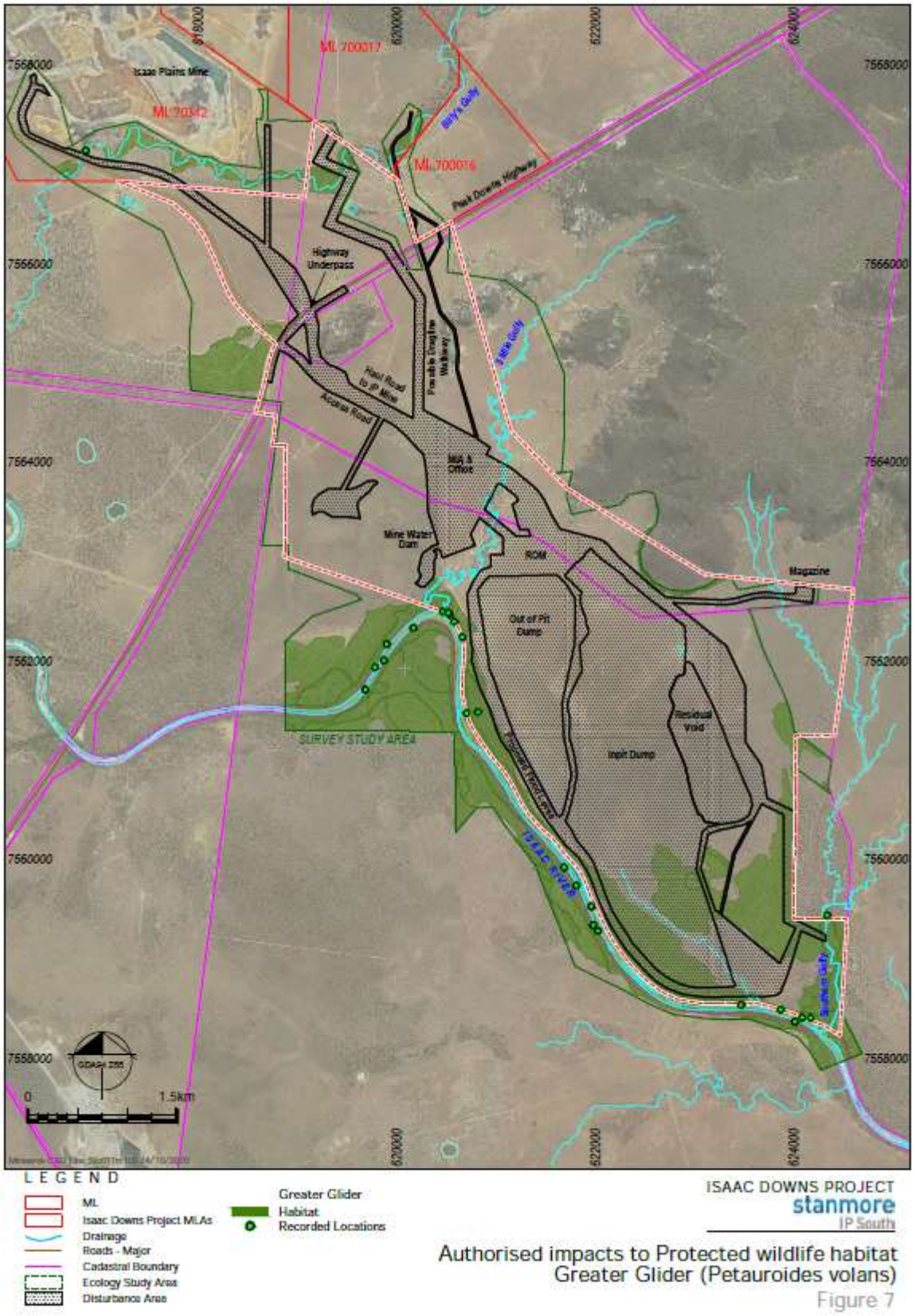


Figure 8: Authorised Impacts to Protected Wildlife Habitat, Koala (*Phascolarctos cinereus)*

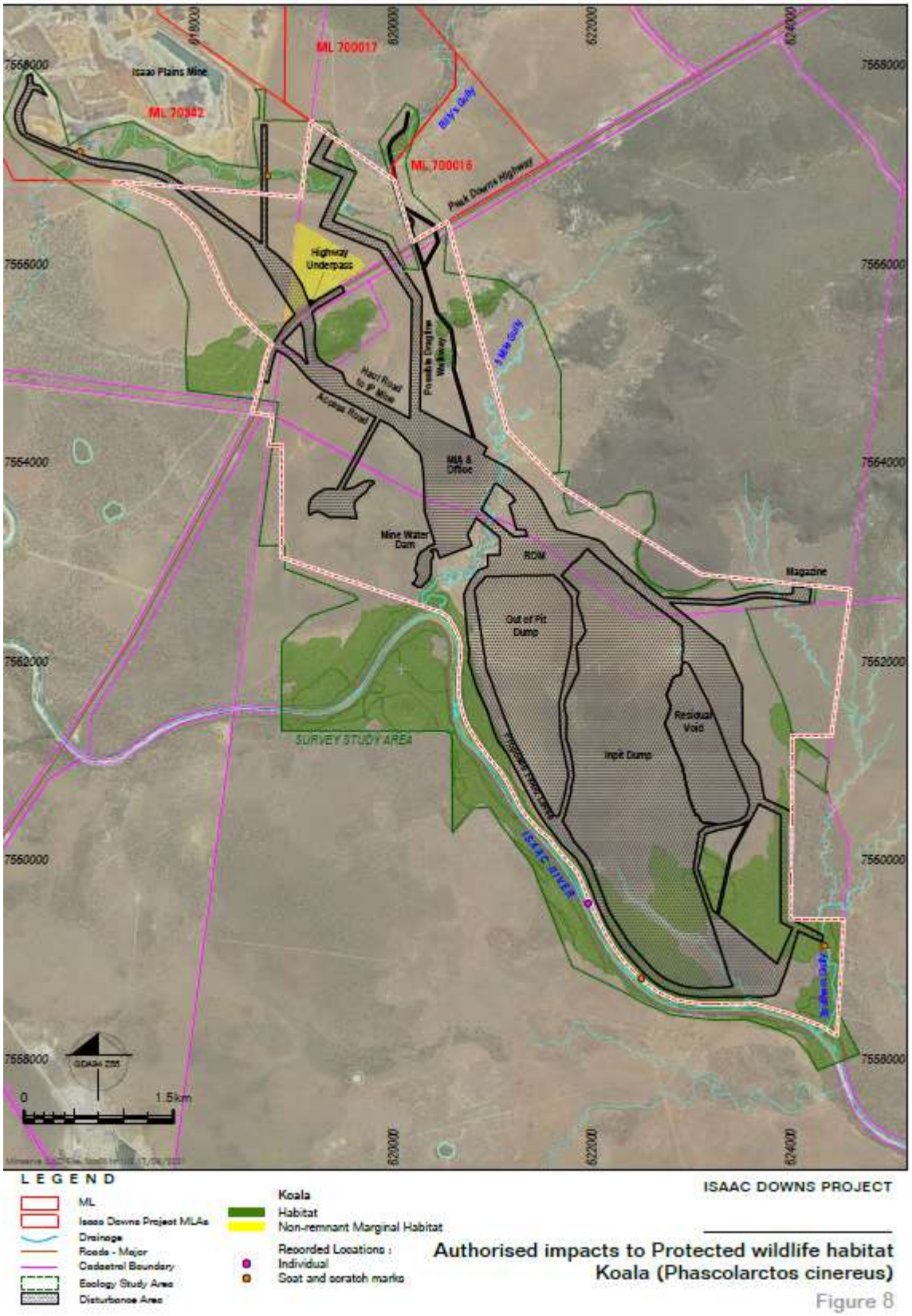
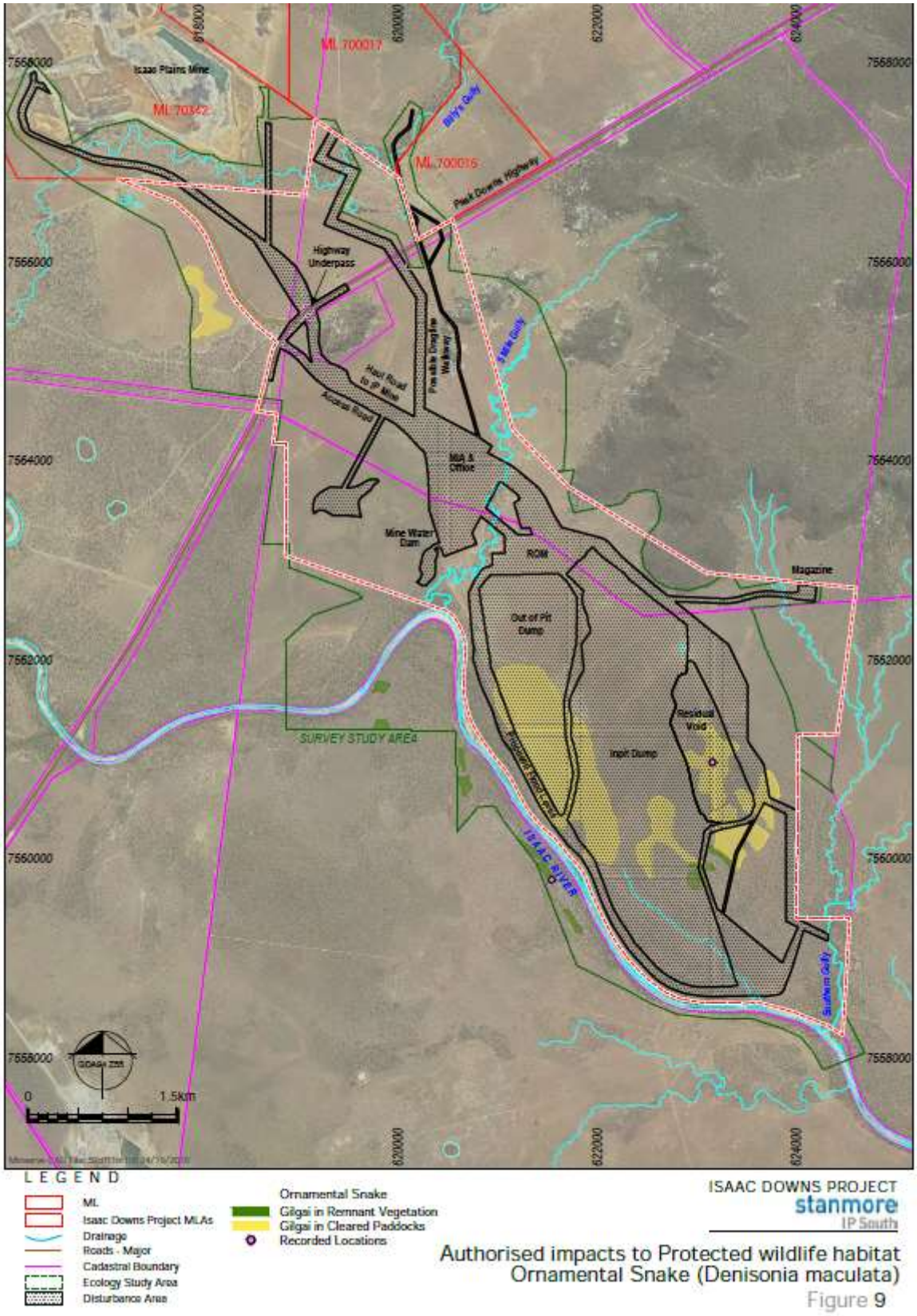


Figure 9: Authorised Impacts to Protected Wildlife Habitat, Ornamental Snake (*Denisonia maculata*)



Appendix 2, Table 1: Rehabilitation Requirements

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
1	Exploration	Rehabilitation of exploration drill holes and groundwater monitoring bores	All exploration drill holes have been rehabilitated	'Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.	All exploration drill holes have been rehabilitated in accordance with the applicable Australian Standard or guideline.
2	Overburden dumps and low wall. Indicative location generally in accordance with Appendix 1 Figure 3 (Note: Overburden dumps and levee to be incorporated into the final dump landform)	Safe	Safety hazards in rehabilitation are similar to surrounding unmined landscapes	Hazard assessment by a suitably qualified and experienced person	Risk is as low as reasonably practical (ALARP) in accordance with *AS/NZS ISO 31000:2009 Risk Management.*
		Stable	Landforms are both geotechnically and erosionally stable	Factor of safety	≥ 1.5
				Slope of Gradient	All external draining slopes are ≤15% (8.5°). All internal draining slopes, other than void low wall and void high wall are ≤15% (8.5°). Low wall overall slope angle is ≤25% (14°). All rehabilitated areas are geo-technically stable for the intended post mining grazing land use, with no active areas of rill or gully erosion, and; drainage follows appropriate drainage paths.
				Groundcover	Foliage and groundcover is comparable to reference sites.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
					No bare surfaces >20 m^2 in any area or >10 m^2 in length down any slope ≥ 5.3% (3^0). ≥80% established and persistent vegetative groundcover for all slopes 15-25% or 60% if rocks, logs or other effective erosion control cover is present. Minimum of 70% established and persistent vegetative groundcover for all slopes 0-15% or 50% if rocks, logs or other effective erosion control cover is present and consistent with the post mining land use.
		Non-polluting	No environmental harm	Surface runoff leaving rehabilitation areas is non-polluting to land and receiving waters[1]	Results that demonstrate the absence of potential for acid mine drainage from the rehabilitated landform.
					Results confirming that residual soil contamination on the mining leases has been removed, neutralized or isolated.
				pH	6.5-8.5
				EC	<4720 µs/cm
				Turbidity	<50 NTU
				Arsenic	≤13 µg/L
				Molybdenum	≤34 µg/L

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
				Selenium	≤5 µg/L
				Sulfate	≤25 mg/L
				Petroleum Hydrocarbons C6-C9	<20 µg/L
				Petroleum Hydrocarbons C10-C36	<100 µg/L
				Groundwater aquifers maintain their pre-mining or reference bore water quality.	Groundwater monitoring demonstrates that the groundwater quality is within 95th percentile of the results of baseline pre-mining bore monitoring results, or when baseline is not available, reference bores which have not been impacted by mining activities.
		Land use	Rehabilitation is suitable for sustainable light cattle grazing	Establishment of fit for purpose vegetation cover and diversity.	Results, that rehabilitated areas meet the following land suitability classification for cattle grazing as defined by the Guideline for Agricultural Land Evaluation in Queensland (State Department of Queensland 2015). a) Class 3 on areas of overburden dumps with slopes less than 8.5°; b) Class 4 on slopes 8.5° and above.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
				Removal and appropriate disposal of contaminated soil and/or on-site remediation of contaminated soils.	Validation testing to confirm that contaminated soils have been removed/remediated.
			Establish self-sustaining grazing vegetation.	Topsoil and subsoil support the proposed vegetation and land use.	Results that demonstrate soil properties (e.g. pH, salinity, nutrient content, sodium content) and soil characteristics (e.g. surface roughness, infiltration capacity) support the post mining grazing land use and land classification.
					Results that demonstrate that ameliorants and fertilizer have been applied at a suitable application rate (if required) and topsoil has been respread to a suitable depth (min 200mm) in rehabilitated areas to sustain the post mining light cattle grazing land use.
				Plant regeneration	Results that demonstrate that species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence, and will continue to do so for the foreseeable future.
3	Landholder retained infrastructure on mining infrastructure areas, including:	Safe	Safety hazards in rehabilitation are similar to safety hazards for retained infrastructure during mining.	Hazard assessment by a suitably qualified and experienced person.	Risk is as low as reasonably practical (ALARP) in accordance with *AS/NZS ISO 31000:2009 Risk Management.*

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
	• Roads • Sediment dams • Mine water dams ***Note:*** *Rehabilitation completion criteria for this domain apply at the time of transfer of assets to the landholder.*	Non-polluting	Surface runoff leaving domain is non-polluting to receiving waters.[1]	pH	6.5-8.5
				EC	≤720 µs/cm
				Turbidity	≤50 NTU
				Arsenic	≤13 µg/L
				Molybdenum	≤34 µg/L
				Selenium	≤5 µg/L
				Sulfate	≤25 mg/L
				Petroleum Hydrocarbons C6-C9	<20 µg/L
				Petroleum Hydrocarbons C10-C36	<100 µg/L
		Stable	Minimise erosion and low probability of slope slippage.	Structural and geotechnical stability	No infrastructure with structural instability is retained.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
			Landholder accepts the condition of the infrastructure including its structural integrity.	Legally binding agreement.	Executed by each party.
		Land use	Landholder formally accepts infrastructure for his/her ongoing beneficial use	Legally binding agreement.	Executed by each party.
			Rehabilitation is suitable for sustainable cattle light grazing	All retained water sources (excluding the residual void) in the rehabilitated areas provide water suitable for stock[2].	As per local or national water quality guidelines for stock watering.
				pH	6.5-8.5
				TDS	≤5000 mg/L
				Arsenic	≤13 µg/L
				Molybdenum	≤34 µg/L
				Selenium	≤5 µg/L

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
				Sulfate	≤25 mg/L
				Petroleum Hydrocarbons C6-C9.	<20 µg/L
				Petroleum Hydrocarbons C10-C36.	<100 µg/L
				Removal and appropriate disposal of contaminated soil and/or on-site remediation of contaminated soils.	Validation testing to confirm that contaminated soils have been removed/remediated.
4	Infrastructure areas not subject to landholder agreement, including: • MIA and Office • Rom Coal stockpile • STP	Safe	Site is safe for humans, stock and wildlife.	Geotechnical adequacy. Services disconnected. No exposed hazardous material or chemicals. No contaminated mine drainage or discharges. Wastes removed	Risk assessment that demonstrates the site is safe and all infrastructure has been decommissioned appropriately and in accordance with the conditions of the environmental authority and any applicable Australian Standard or guideline. Treat or remove waste and/or hazardous materials.
				Remediate contaminated land	Evidence, that demonstrates residual soil contamination on the mining leases has been removed, neutralized or isolated.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
	• Magazine and Reload Facility			Safety assessment of landform stability (geotechnical issues)	Certification by an appropriately qualified person, that the land is safe for the post-mining land use.
		Stable Erosion rates are appropriate for the post mining grazing land use.	Landforms are both geotechnically and erosionally stable.	Factor of Safety	≥ 1.5
				Slope of gradient	All slopes are ≤15% (8.5°). All rehabilitated areas are geo-technically stable for the intended post mining grazing land use, with no active areas of rill or gully erosion, and drainage follows appropriate drainage paths.
				Plant regeneration	Topsoil has been respread to a suitable depth in rehabilitated areas to sustain the post mining grazing land use.
					Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence, and will continue to do so for the foreseeable future.
				Groundcover	Foliage and groundcover is comparable to reference sites. No bare surfaces >20 m^2 in any area or >10 m^2 in length down any slope ≥ 5.3% (3^0). ≥80% established and persistent vegetative groundcover for all slopes 15-25%; or 60% if rocks, logs or other effective erosion control cover is present. Minimum of 70% established and persistent vegetative groundcover for all slopes 0-15%; or 50% if rocks, logs or other effective erosion control cover is present.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
		Non-polluting	Surface runoff leaving rehabilitation is non-polluting to land or receiving waters[1]	pH	6.5-8.5
				EC	≤720 µs/cm
				Turbidity	<50 NTU
				Arsenic	≤13 µg/L
				Molybdenum	≤34 µg/L
				Selenium	≤5 µg/L
				Sulfate	≤25 mg/L
				Petroleum Hydrocarbons C6-C9	<20 µg/L
				Petroleum Hydrocarbons C10-C36	<100 µg/L
				Groundwater aquifers maintain their pre-mining or reference bore water quality.	Groundwater monitoring demonstrates that the groundwater quality is within 95th percentile of the results of baseline pre-mining bore monitoring results, or when baseline is not available, reference bores which have not been impacted by mining activities.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
		Land use	Rehabilitation is suitable for sustainable cattle light grazing.	Establishment of adequate vegetation cover and diversity.	Results, that rehabilitated areas meet the following land suitability classification for cattle grazing as defined by the Guideline for Agricultural Land Evaluation in Queensland (State Department of Queensland 2015): a) Class 3 on areas of overburden dumps with slopes less than 8.5°; b) Class 4 on slopes 8.5° and above.
			Appropriate vegetation cover.	Vegetation type and density.	Evidence that the vegetation type and density of species in rehabilitated areas are suited to the soil composition, slope, aspect, climate and post mining grazing land use.
					Evidence, that the variety of vegetation species and their density in rehabilitated areas is comparable to reference sites, and are suited to the post mining grazing land use.
			Soil properties support the nominated post mining land use.	Topsoil and subsoil support the proposed vegetation and land use.	Results that demonstrate that soil properties (e.g. pH, salinity, nutrient content, sodium content) and soil characteristics (e.g. surface roughness, infiltration capacity) support the post mining grazing land use.
					Results that demonstrate that ameliorants and fertilizer have been applied at a suitable application rate (if required) and topsoil has been respread to a suitable depth (min 200mm) in rehabilitated areas to sustain the post mining light grazing land use.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
			Establish self-sustaining grazing vegetation.	Plant regeneration.	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence, and will continue to do so for the foreseeable future.
5	Final void, end wall and high wall The only area authorised to have a residual void is the area located generally in accordance with Appendix 1: Figure 3.	Safe	Safety hazards in rehabilitation are as low as reasonably practical.	Hazard assessment by a suitably qualified and experienced person.	Certification by an appropriately qualified and experienced person, that final voids are stable, including: a) Certification that the high wall and end wall (where not backfilled) have: I. 215% (65°) void high wall in competent (unweathered) rock. II. 100% (45°) high wall in less competent (weathered) rock. b) Geotechnically stable for the foreseeable future. c) Safety bund constructed in accordance with engineering requirements for height, based on crest width. d) No public access to high wall or end wall areas. e) Fence entire perimeter and bund to high wall areas.
		Stable	Minimise erosion and low probability of slope slippage, rock falls.	Structural and geotechnical soundness. No major erosion.	a) Absence of active rill/gully erosion; b) Certification that drainage measures and structures have been appropriately established and are directing overland flow away from the highwall edge; and c) Certification that erosion and sediment control measures have been installed and are operating as designed.

Mine Domain #	Mine Domain	Goal	Objectives	Indicators	Completion Criteria
		Non-polluting	No contamination of land, surface waters. or groundwater resources.	Deep drainage from the domain is non-polluting to regional groundwater resources and any potential regional groundwater dependent ecosystems. For the avoidance of doubt accumulation of contaminants in this domain is authorised.	a) Final void located outside of the Isaac River floodplain, as defined under the *Environmental Protection Act*. b) Evidence, which has been certified by an appropriately qualified person, based on up to date groundwater modelling, that any final void lakes will not overflow nor potentially contaminate any other surface water bodies.
					Evidence, that voids do not discharge to land or receiving waters, including surface water and groundwater.
					Groundwater monitoring demonstrates that the groundwater quality is within 95th percentile of the results of baseline pre-mining bore monitoring results, or when baseline is not available, reference bores which have not been impacted by mining activities.
		Land use	No use.	No land use beyond containment of water. Note for the avoidance of doubt, regrading, top soiling and seeding is not required.	Single residual void area of 75 ha, void maximum depth 170 m and void maximum volume 72 (Mm^3 ±2.5%).

Notes:
1: The contaminant limits specified can be re-evaluated during the operational life to determine the acceptable water quality in surface runoff to protect downstream environmental values.
2: The contaminant limits specified can be re-evaluated during the operational life to determine the acceptable water quality for stock watering.

END OF ENVIRONMENTAL AUTHORITY