

Permit

Environmental Protection Act 1994

Environmental authority EPML01722313

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

Environmental authority number: EPML01722313

Environmental authority takes effect on 14 May 2024.

The anniversary date of this environmental authority is 9 August each year.

Environmental authority holder(s)

Name(s)	Registered address
MT RUBY MINES PTY LTD	63 Abbott ST CAIRNS CITY QLD 4870
L & P MINES PTY LTD	Level 1, 100 Hutt St ADELAIDE SA 5000
TABLELANDS MINING GROUP PTY LTD	c/-Hopgood Ganim Lawyers, Waterfront Place, Level 8, 1 Eagle Street BRISBANE CITY QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Non-Scheduled Mining Activity Mining Lease - ML	ML20701
Schedule 3 09: A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance	ML20743
Schedule 3 10: Investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit	ML20743
Schedule 3 14: Mining iron ore	ML100142, ML20414, ML20488, ML20743
Schedule 3 19: Mining metal ore, other than a metal ore mentioned in items 11, 12, 14, 15, 16,17 or 18	ML20743
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ML20743

Environmentally relevant activity/activities	Location(s)
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (a) 1000t to 100,000t	ML100142, ML20414, ML20488
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-i) 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML20743

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

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

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

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

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

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

T. Gibbs

Signature

14 May 2024

Date

Teale Gibbs
Department of Environment, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Mineral Business Centre
P O Box 7230, Cairns Qld 4870
Phone: (07) 4222 5352
ESCairns@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 at www.resources.qld.gov.au, or 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.

Legislative Requirements and Conditions of Environmental Authority

Part 1 – For ML20414 and ML100142

General

- 1-A1 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.
- 1-A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Schedule 1A – Table A1 (Authorised Disturbance Areas and Locations) and Schedule I – Figure 1 (Mt Ruby Infrastructure Layout).

Table A1 – Authorised Disturbance Areas and Locations

Mine Domain	Mine Feature	Mining Lease(s)	Location (GDA94 – Zone 55)		Maximum area of disturbance (ha)
			Easting	Northing	
Stockpiles	Product Stockpiles	ML20414	TBA ¹	TBA ¹	0.9
Infrastructure/Processing	Processing/ infrastructure Areas	ML20414	TBA ¹	TBA ¹	0.4
Mining Area	Mining Area	ML20414	TBA ¹	TBA ¹	1.2
Drainage/Stormwater Control	North Sediment Dam, Drainage Protection Bund	ML20414	TBA ¹	TBA ¹	0.2
Infrastructure/Processing	Pipelines	ML20414	TBA ¹	TBA ¹	0.1
Access Roads and Tracks	Access Roads and Tracks	ML20414	TBA ¹	TBA ¹	0.3
Total Tenure Disturbance	ML20414				3.1
Water Storage	Turkey's Nest Dam	ML100142	TBA ¹	TBA ¹	0.92
Laydown Area	Laydown Area	ML100142	TBA ¹	TBA ¹	1.34
Access Roads and Tracks	Access Roads and Tracks	ML100142	TBA ¹	TBA ¹	1.0
Drainage/Stormwater Control	South Sediment Dam	ML100142	TBA ¹	TBA ¹	0.16
Drainage/Stormwater Control	Clean Water Diversion Bund	ML100142	TBA ¹	TBA ¹	0.19
Total Tenure Disturbance	ML100142				3.61
Total Mine Disturbance	ML20414 and ML100142				6.71

TBA – The environmental authority holder must provide this detail/information, to the administering authority within 3 months of the grant of ML100142.

Maintenance of Measures, Plant and Equipment

1-A3 The holder of this environmental authority 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;
- 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.

Monitoring

1-A4 Except where specified otherwise in another condition of this environmental authority, all monitoring data, records and reports required by this environmental authority or related to environmental management of the activities must be:

- a) carried out by an appropriately qualified person; and
- b) kept for a period of not less than 5 years; and
- c) provided to the administering authority in the specified format within 10 business days of a request.

1-A5 The following information must be recorded in relation to all monitoring required under the conditions of this environmental authority:

- a) the date and time at which the sample was taken; and
- b) the location or monitoring point at which the sample was taken; and
- c) the results of all monitoring and details of any exceedances of the conditions of the environmental authority; and
- d) any other pertinent details in order to interpret the sampling results (i.e. stream flow, wind directions or any unusual observations such as odour or colouration).

Financial Assurance

1-A6 The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the Act.

1-A7 The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.

Risk Management

- 1-A8 The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian Standard for Risk Management, to the extent relevant to environmental management, by 5 November 2019.

Notification of Emergencies, Incident and Exceptions

- 1-A9 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.
- 1-A10 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:
- a) results and interpretation of any samples taken and analysed;
 - b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm;
 - c) proposed actions to prevent a recurrence of the emergency or incident.

Complaints

- 1-A11 The holder of this environmental authority must record all environmental complaints received about the mining activities including:
- a) name, address and contact number for of the complainant;
 - b) time and date of complaint;
 - c) reasons for the complaint;
 - d) investigations undertaken;
 - e) conclusions formed;
 - f) actions taken to resolve the complaint;
 - g) any abatement measures implemented;
 - h) person responsible for resolving the complaint.
- 1-A12 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

Third Party Reporting

- 1-A13 The holder of this environmental authority must:
- a) obtain from an appropriately qualified person, a report on compliance with the conditions of this environmental authority by 5 August 2022;

- b) obtain further such reports at regular intervals, not exceeding 3 yearly intervals, from the completion of the report referred to above; and
- c) provide each report to the administering authority within 90 days of its completion.

Amendments to Standards, Policies or Guidelines

- 1-A14 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority 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 2 years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation;
 - 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.

Exploration Activities

- 1-A15 All exploration activities carried out on the relevant mining tenures comply with the provisions detailed in the administering authority's Code of Environmental Compliance for Exploration and Mineral Development Projects (the code). Where there is a discrepancy between the code and this environmental authority, the conditions of this authority apply.

Air

Dust, Odours and Airborne Contaminants

- 1-B1 The environmental authority holder must ensure that air emissions do not cause environmental harm to any sensitive place or commercial place.

Dust and Particulate Matter Monitoring

- 1-B2 The environmental authority holder shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the dust and particulate matter emissions generated by the mining activities do not cause exceedances of the following levels when measured at any sensitive or commercial place:
- a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of *Australian Standard AS3580.10.1 Methods 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, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either:
 - 1. *Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet – Gravimetric method*, or
 - 2. *Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric*

method.

- 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 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*;
- d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 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*.

Transportation

1-B3 The holder of the environmental authority must ensure that vehicles used for transporting bulk materials leave the licensed place with appropriate load preparation to prevent the spillage and/or loss of particulate matter and/or windblown dust during transport.

Waste

1-C1 All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.

1-C2 All waste material must be managed and disposed of in a manner that minimises the potential generation and/or release of contaminants to the receiving environment.

TG

1-C3 The only waste that can be disposed of on site is waste generated on site and is limited to waste rock.

Burning Waste

1-C4 Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.

Acoustic

Noise

1-D1 The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in Schedule 1D –Table D1 Noise Limits to be exceeded at a sensitive place or commercial place.

Table D1 – Noise Limits

Sensitive Place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and public holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
LAeq, adj, 15 mins	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
LA1, adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Commercial Place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and public holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	7am to 6pm	6pm to 10pm	10pm to 7am
LAeq, adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Table D1 – Noise limits notes:

1. CV = Critical Value
2. AV = Adjustment Value
3. bg = background noise level (**LA90, adj, 15 mins**) measured over 3-5 days at the nearest sensitive receptor
4. To calculate noise limits in
 Table D1: If $bg \leq (CV - AV)$:
 Noise limit = $bg + AV$
 If $(CV - AV) < bg \leq CV$:
 Noise limit =
 CV If
 $bg > CV$:
 Noise limit = $bg + 0$
5. In the event that measured bg (**LA90, adj, 15 mins**) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level
6. If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the processes outlined in the "Planning for Noise Control" guideline.

Airblast overpressure nuisance

- 1-D2 The holder of this environmental authority must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in Table D2 - Blasting Noise Limits to be exceeded at a sensitive place or commercial place.

Table D2 (Blasting Noise Limits)

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

Groundwater

- 1-E1 The holder of this environmental authority must not release contaminants to groundwater.

Water

Contaminant Release to Waters

- 1-F1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.

Water Management Plan

- 1-F2 A Water Management Plan must be developed by an appropriately qualified person and implemented.

Stormwater and Water Sediment Controls

- 1-F3 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater
- 1-F4 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 1-F3;
 - b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with condition 1-F2, for the purpose of ensuring water does not become mine affected water.

Water Reuse

- 1-F5 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 supplying stock water subject to compliance with the quality release limits specified in ANZECC and ARMCANZ (2000) Volume 1: Chapter 4.3 Table 4.3.1, 4.3.2, & 4.3.3.
- 1-F6 If the responsibility for mine affected water is given or transferred to another person in accordance with condition 1-F5:
- a) The responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third party agreement); and
 - b) The third party agreement must include a commitment from the person utilising the mine affected water to use it in such a way to prevent environmental harm and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the Environmental Protection Act 1994; and
 - c) The third party agreement must be signed by both parties to the agreement.

Land

Chemical and Flammable or Combustible Substances

- 1-G1 All explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the current

Australian Standard where such is applicable. Where no relevant Australian standard exists store such materials within an effective on-site containment system.

- 1-G2 Flammable and combustible substances, including petroleum products, must be stored and handled in accordance with the latest edition of AS1940—The storage and handling of flammable and combustible liquids.
- 1-G3 Minimising the potential for contamination of land and waters must be achieved by diverting stormwater around contaminated areas and facilities used for the storage of chemicals and flammable or combustible substances.

Rehabilitation

- 1-G4 Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that:
 - a) suitable native species of vegetation for the location are established and sustained for earthen surfaces;
 - b) potential for erosion is minimised;
 - c) the quality of water, including seepage, released from the site does not cause environmental harm;
 - d) potential for environmental nuisance caused by dust is minimised;
 - e) the water quality of any residual water body does not have potential to cause environmental harm;
 - f) the final landform is stable and protects public safety.
- 1-G5 Rehabilitation must commence progressively in accordance with the plan of operations.

Contaminated Land

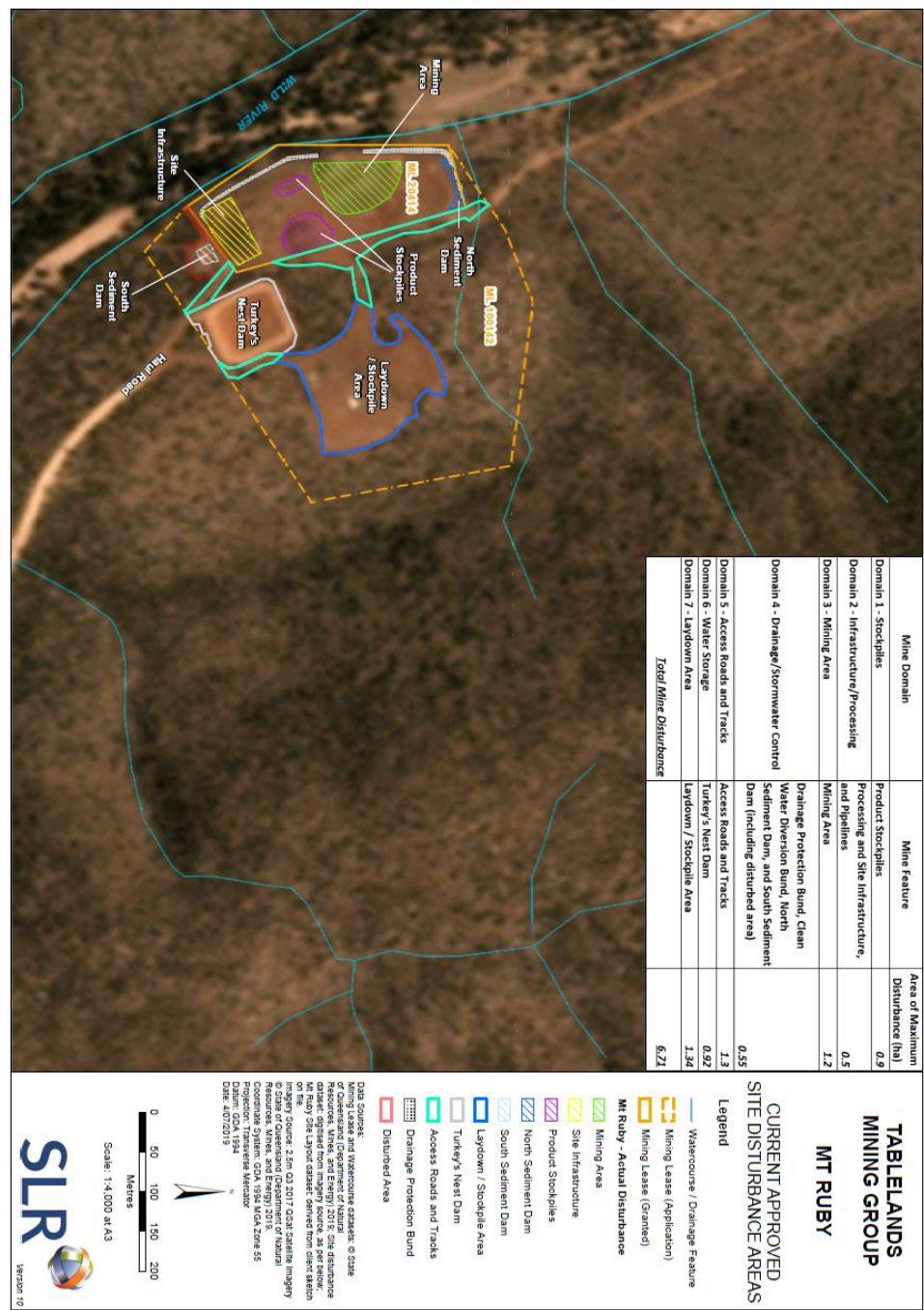
- 1-G6 Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
- 1-G7 Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
- 1-G8 Minimise the potential for contamination of land by hazardous contaminants.

Biodiversity

- 1-G9 The holder of this environmental authority must ensure there are no impacts to State significant biodiversity values from mining activities.

Schedule I – Figure 1 - Mine Infrastructure Layout

Schedule I – Mine infrastructure Layout (version dated 04/07/2019)



End of Part 1

Part 2 – For ML20488

General

- 2-A1 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.
- 2-A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Schedule 2A – Table A1 (Authorised Disturbance Areas and Locations) and Schedule J – Figure 1 (Mt Lucy Mine Infrastructure Layout).

Table A1 – Authorised Disturbance Areas and Locations

Mine Domain	Mine Feature	Mining Lease(s)	Location (GDA94 – Zone 55)		Maximum area of disturbance (ha)
			Easting	Northing	
Mining Area	Open Pit Area (Area A and Area B)	ML20488	249066 248448	8080419 8080798	4.29
Processing	Mine operational Area, ROM pad, Ore stockpile Area and WRD	ML20488	248955	8080449	7.22
Drainage	Sediment dam	ML20488	248950	8080644	0.10
Access	Access roads and tracks	ML20488	248681	8080657	0.38
Infrastructure	Admin area mobile crushing plant	ML20488	248858	8080402	0.38
Total Mine Disturbance	ML20488				12.37

Maintenance of Measures, Plant and Equipment

- 2-A3 The holder of this environmental authority must:
- Install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
 - maintain such measures, plant and equipment in a proper and efficient condition;
 - operate such measures, plant and equipment in a proper and efficient manner;
 - ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

Monitoring

- 2-A4 Except where specified otherwise in another condition of this environmental authority, all monitoring data, records and reports required by this environmental authority or related to environmental management of the activities must be:
- carried out by an appropriately qualified person; and

- b) kept for a period of not less than 5 years; and
- c) provided to the administering authority in the specified format within 10 business days of a request.

2-A5 The following information must be recorded in relation to all monitoring required under the conditions of this environmental authority:

- a) the date and time at which the sample was taken; and
- b) the location or monitoring point at which the sample was taken; and
- c) the results of all monitoring and details of any exceedances of the conditions of the environmental authority; and
- d) any other pertinent details in order to interpret the sampling results (i.e. stream flow, wind directions or any unusual observations such as odour or colouration).

Financial Assurance

- 2-A6 The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the Act.
- 2-A7 The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.

Risk Management

- 2-A8 The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian Standard for Risk Management, to the extent relevant to environmental management, by 27 September 2019.

Notifications of Emergencies, Incidents and Exceedances

- 2-A9 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.
- 2-A10 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:
- a) results and interpretation of any samples taken and analysed;
 - b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm;
 - c) proposed actions to prevent a recurrence of the emergency or incident.

Complaints

- 2-A11 The holder of this environmental authority must record all environmental complaints received about the mining activities including:
- a) name, address and contact number for of the complainant;
 - b) time and date of complaint;

- c) reasons for the complaint;
- d) investigations undertaken;
- e) conclusions formed;
- f) actions taken to resolve the complaint;
- g) any abatement measures implemented;
- h) person responsible for resolving the complaint.

2-A12 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

Third-Party Reporting

2-A13 The holder of this environmental authority must:

- a) within one year (29 June 2020) of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority
- b) obtain further such reports at regular intervals, not exceeding three-yearly intervals, from the completion of the report referred to above
- c) provide each report to the administering authority within 90 days of its completion.

2-A14 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority 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 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, the time specified in that condition;
- 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.

Exploration Activities

2-A15 All exploration activities carried out must comply with each of the standard environmental conditions contained in the latest version of the *Eligibility criteria and standard conditions for exploration and mineral development projects*.

Air

Dust, Odours and Airborne Contaminants

2-B1 The environmental authority holder must ensure that air emissions do not cause environmental harm to any sensitive place or commercial place.

Dust and Particulate Matter Monitoring

- 2-B2 The environmental authority holder shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the dust and particulate matter emissions generated by the mining activities do not cause exceedances of the following levels when measured at any sensitive or commercial place:
- a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of *Australian Standard AS3580.10.1 Methods 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, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either: *Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet – Gravimetric method*, or
 1. *Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric method*.
 - c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM2.5) 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 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*;
 - d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 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*.

Transportation

- 2-B3 The holder of the environmental authority must ensure that vehicles used for transporting bulk materials leave the licensed place with appropriate load preparation to prevent the spillage and/or loss of particulate matter and/or windblown dust during transport.

Waste

- 2-C1 All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.
- 2-C2 All waste material must be managed and disposed of in a manner that minimises the potential generation and/or release of contaminants to the receiving environment.
- 2-C3 The only waste that can be disposed of on site is waste generated on site and is limited to:
- a) Waste rock.

Burning Waste

- 2-C4 Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.

Noise

- 2-D1 The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in Schedule 2D –Table D1 Noise Limits to be exceeded at a sensitive place or commercial place.

Table D1 – Noise Limits

Sensitive Place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and public holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
L _{Aeq} , adj, 15 mins	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
L _{A1} , adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5
Commercial Place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and public holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	7am to 6pm	6pm to 10pm	10pm to 7am
L _{Aeq} , adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Table D1 – Noise limits notes:

- CV = Critical Value
- AV = Adjustment Value
- bg = background noise level (L_{A90}, adj, 15 mins) measured over 3-5 days at the nearest sensitive receptor
- To calculate noise limits in
 Table D1: If $bg \leq (CV - AV)$:
 Noise limit = $bg + AV$
 If $(CV - AV) < bg \leq CV$:
 Noise limit =
 CV If
 $bg > CV$:
 Noise limit = $bg + 0$
- In the event that measured bg (L_{A90}, adj, 15 mins) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level
- If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the processes outlined in the "Planning for Noise Control" guideline.

Groundwater

- 2-E1 The holder of this environmental authority must not release contaminants to groundwater.

Contaminant Release to Waters

- 2-F1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.

Water Management Plan

- 2-F2 A Water Management Plan must be developed by an appropriately qualified person and implemented.

Stormwater and Water Sediment Controls

- 2-F3 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

Land

Chemical and Flammable Combustible Substances

- 2-G1 All explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the current Australian Standard where such is applicable. Where no relevant Australian standard exists store such materials within an effective on-site containment system.
- 2-G2 Flammable and combustible substances, including petroleum products, must be stored and handled in accordance with the latest edition of AS1940—The storage and handling of flammable and combustible liquids.
- 2-G3 Minimising the potential for contamination of land and waters must be achieved by diverting stormwater around contaminated areas and facilities used for the storage of chemicals and flammable or combustible substances.

Rehabilitation

- 2-G4 Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that:
- a) suitable native species of vegetation for the location are established and sustained for earthen surfaces;
 - b) potential for erosion is minimised;
 - c) the quality of water, including seepage, released from the site does not cause environmental harm;
 - d) potential for environmental nuisance caused by dust is minimised;
 - e) the water quality of any residual water body does not have potential to cause environmental harm;
 - f) the final landform is stable and protects public safety.
- 2-G5 Rehabilitation must commence progressively in accordance with the plan of operations.

Prescribed Environmental Matters

- 2-G6 Significant residual impacts to prescribed environmental matters are not authorised in ML20488 under this environmental authority or the *Environmental Offsets Act 2014*.
- 2-G7 Records demonstrating that each impact to a prescribed environmental matter did not, or is not likely to, result in a significant residual impact to that matter must be:
- a) completed by an appropriately qualified person; and
 - b) kept for the life of the environmental authority.

Contaminated Land

- 2-G8 Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
- 2-G9 Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
- 2-G10 Minimise the potential for contamination of land by hazardous contaminants.

Nature Conservation

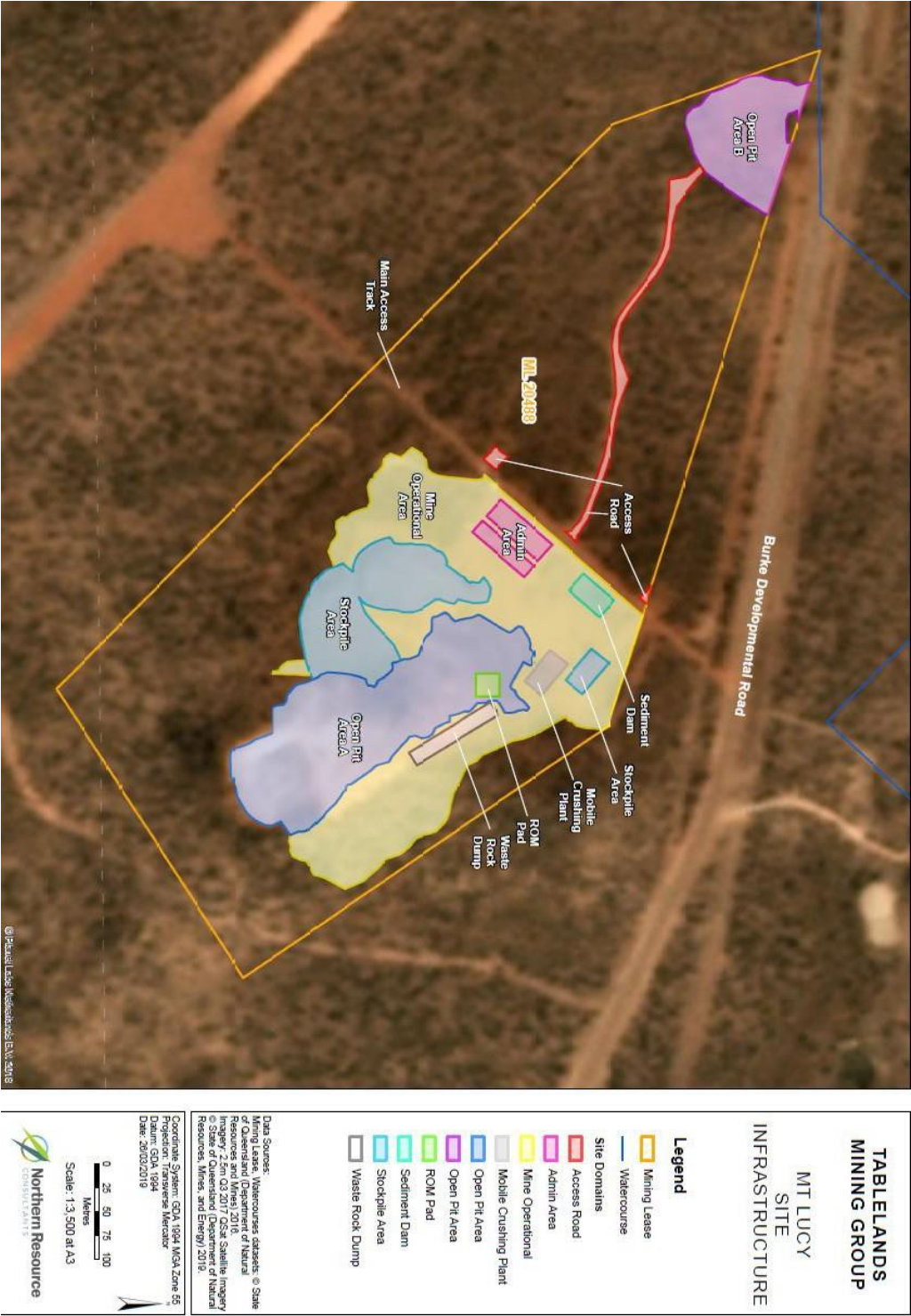
- 2-I1 An appropriately qualified spotter/catcher must be engaged to work ahead of vegetation clearing to ensure the protection of prescribed native wildlife and breeding places.

Note: This environmental authority does not authorise the taking of native wildlife or the tampering with a breeding place that is being used by prescribed native wildlife to incubate or rear the animal's offspring.

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Schedule J – Figure 1 – Mt Lucy Mine Infrastructure Layout

Schedule J – Mt Lucy Mine Infrastructure Layout (version dated 17/05/2019)



End of Part 2

Part 3 – For ML20701

Schedule A - General

- 3-A1 The conditions of approval for this environmental authority are standard conditions contained within the document entitled: Code of Environmental Compliance for Mining Lease Projects, EM588, Version 1.1.
- 3-A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Schedule 3A – Table A1 (Authorised Disturbance Areas and Locations) and Schedule C – Figure 1 (Mine Infrastructure Layout).
- 3-A3 Schedule 3A – Table A1 (Authorised Disturbance Areas and Locations) and Schedule C – Figure 1 (Mine Infrastructure Layout) must be provided to the administering authority at least 6 months prior to commencement of site activities via an amendment application pursuant to the *Environmental Protection Act 1994*.

Schedule B – Land and Rehabilitation

Rehabilitation

- 3-B1 Mining cannot commence until such time that the Progressive Rehabilitation and Closure Plan (PRCP) schedule is updated to reflect mining activities for ML20701.

Schedule C – Figures

Schedule C – Figure 1 (Mine Infrastructure Layout)

To be nominated via an amendment application in accordance with Condition 3-A3.

End of Part 3

Definitions for Part 1 - ML20414 and ML100142, Part 2 – ML20488 and Part 3 - ML20701

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

“the Act” means the *Environmental Protection Act 1994*.

“administering authority” means:

- (a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 - the local government; or,
- (b) for another matter - the chief executive.

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

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

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

“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.

‘chemical’ means:

- a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth); or
- b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council; or
- c) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997;
- d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers’ Advisory Council and published by the Commonwealth; or
- e) any substance used as, or intended for use as:
 - (i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or
 - (ii) a surface active agent, including, for example, soap or related detergent; or
 - (iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or
 - (iv) a fertiliser for agricultural, horticultural or garden use; or
 - (v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or

- (vi) manufacture of plastic or synthetic rubber.

“chief executive” means the chief executive of the Department of Environment and Heritage Protection or its successor.

“commencement of site activities” relates to any activities relating to the mining activity and includes, but is not limited to, commencement of earthmoving activities at the site in order to construct the features represented in Schedule C – Figure 1 (Mine Infrastructure Layout).

“commercial place” means a place used as an office or for business or commercial purposes, other than a place within the boundaries of the operational land.

“dB (linear) peak” is the maximum reading in decibels (dB) obtained using the “P” time – weighting characteristic as specified in AS 1259.1 – 1990 with all frequency weighted networks inoperative.

“disturbance” of land includes:

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

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

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

“environmental authority” means a licence or approval issued pursuant to the *Environmental Protection Act 1994*.

“environmental harm” means environmental harm as defined in section 14 of the *Environmental Protection Act 1994*.

“environmental nuisance” means environmental nuisance as defined in section 15 of the *Environmental Protection Act 1994*.

“holder” means the holder of an environmental authority for a resource activity is the holder of the relevant tenure.

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

“land” in schedule D – Land and Rehabilitation, means land excluding waters and the atmosphere.

“licensed place” means the mining activities carried out at the mining tenements to which this environmental authority relates.

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

“mine affected water”:

a) means the following types of water:

- i) pit water, tailings dam water, processing plant water;
- ii) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the Environmental Protection Regulation 2008 if it had not formed part of the mining activity;
- iii) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;
- iv) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
- v) groundwater from the mine’s dewatering activities;
- vi) a mix of mine affected water (under any of paragraphs i)-v) and other water.

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

- i) land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or
- ii) land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:
 - 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.

“mining activity” means mining activity as defined in section 110 of the *Environmental Protection Act 1994*.

“mining lease” means a mining lease under the *Mineral Resources Act*.

“noxious” means harmful or injurious to health or physical wellbeing.

“offensive” means causing offence or displeasure; is unreasonably disagreeable to the sense; disgusting, nauseous or repulsive.

“peak particle velocity (ppv)” means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mm/s).

“prescribed environmental matters” has the meaning in section 10 of the Environmental Offsets Act 2014, limited to the matters of State environmental significance listed in schedule 2 of the Environmental Offsets Regulation 2014.

“progressive rehabilitation and closure plan (PRCP)” As defined in the *Environmental Protection Act 1994*.

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

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

“release” means the discharge of water (whether intentional or due to failure to prevent) to the receiving environment from any area, structure or feature located on a mining lease listed on this environmental authority.

“sensitive place” means;

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- an educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area; or
- a public park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes which is not part of the mining activity and does not include employee's accommodation or public roads.

“significant residual impact” is defined in section 8 *Environmental Offsets Act 2014*.

“stable” means land form dimensions are or will be stable within tolerable limits now and in the

foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.

“waters” includes a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea) or any part thereof.

Part 4 – For ML20743

Schedule A – General

Activity

- 4-A1 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.
- 4-A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with **Schedule 4A – Table A1 (Authorised Disturbance Areas and Locations)** and **Schedule J – Figure 1 (Mine Infrastructure Layout)**.

Schedule 4A - Table 1 (Authorised Disturbance Areas and Locations).

Mine Feature Name	Area (ha)	Location GPS
Access roads	TBA	TBA
Haul roads	TBA	TBA
Open pit	TBA	TBA
Waste rock dump	TBA	TBA
Topsoil stockpile	TBA	TBA
Run of mine (ROM)	TBA	TBA
Workshop area	TBA	TBA
Administration area	TBA	TBA
Explosives magazine	TBA	TBA
Sewage/ablutions	TBA	TBA
Sediment dam	TBA	TBA
Freshwater dam 1	TBA	TBA
Freshwater dam 2	TBA	TBA
Freshwater dam 3	TBA	TBA
Runoff dam	TBA	TBA

- 4-A3 Schedule 4A – Table A1 (Authorised Disturbance Areas and Locations) and Schedule J – Figure 1 (Mine Infrastructure Layout) must be provided to the administering authority at least 6 months prior to commencement of site activities via an amendment application pursuant to the *Environmental Protection Act 1994*.
- 4-A4 Any TBA identified in Part 4 of the environmental authority must be provided to the administering authority at least 6 months prior to commencement of site activities via an amendment application pursuant to the *Environmental Protection Act 1994*.

Maintenance of Measures, Plant and Equipment

- 4-A5 The holder of this environmental authority must:
- install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
 - maintain such measures, plant and equipment in a proper and efficient condition;
 - operate such measures, plant and equipment in a proper and efficient manner;

- d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

4-A6 Installation, operation and maintenance of all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority must be performed by an appropriately qualified person.

Monitoring

4-A7 Except where specified otherwise in another condition of this authority, all monitoring records, reports and other site data generated as a requirement of this authority must be kept for a period of not less than 5 years, and provided to the administering authority upon request.

Financial Assurance

4-A8 The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the *Environmental Protection Act 1994*.

4-A9 The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.

Risk Management

4-A10 The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the *Standard for Risk Management (ISO31000:2009)*, or the latest edition of an Australian Standard for Risk Management, to the extent relevant to environmental management, prior to the commencement of site activities.

Notification of Emergencies, Incidents and Exceptions

4-A11 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.

4-A12 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:

- a) results and interpretation of any samples taken and analysed;
- b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm;
- c) proposed actions to prevent a recurrence of the emergency or incident.

Complaints

4-A13 The holder of this environmental authority must record all environmental complaints received about the mining activities including:

- a) name, address and contact number for of the complainant;
- b) time and date of complaint;
- c) reasons for the complaint;
- d) investigations undertaken;
- e) conclusions formed;
- f) actions taken to resolve the complaint;

- g) any abatement measures implemented;
- h) person responsible for resolving the complaint.

4-A14 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

Third-Party Reporting

- 4-A15 The holder of this environmental authority must:
- a) within 1 year of the commencement of this authority, obtain from an appropriately qualified person, a report on compliance with the conditions of this environmental authority;
 - b) obtain further such reports at regular intervals, not exceeding 3 yearly intervals, from the completion of the report referred to above; and
 - c) provide each report to the administering authority within 90 days of its completion.

Amendments to Standards, Policies or Guidelines

- 4-A16 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority 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 2 years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation;
 - 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.

Storage and Handling of Chemicals and Flammable or Combustible Substances

- 4-A17 All explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the current Australian Standard where such is applicable. Where no relevant Australian standard exists store such materials within an effective on-site containment system.

Exploration Activities

- 4-A18 All exploration activities carried out on former MDL38 (**Schedule J – Figure 6 (Overlapping tenures ML20743 and MDL38)**) since the date that ML20743 was granted remains the responsibility of the holder of this environmental authority and must be rehabilitated in accordance with the conditions contained in the latest version of the *Eligibility criteria and standard conditions for exploration and mineral development projects*.
- 4-A19 All exploration activities carried out must comply with each of the standard environmental conditions contained in the latest version of the *Eligibility criteria and standard conditions for exploration and mineral development projects*.

END OF CONDITIONS FOR SCHEDULE A

Schedule B – Air

Dust, Odours and Airborne Contaminants

- 4-B1 The release of dust, noxious or offensive odours or any airborne contaminants resulting from the mining activity must not cause environmental nuisance at any sensitive place or commercial place.

END OF CONDITIONS FOR SCHEDULE B

Schedule C – Waste

Waste

- 4-C1 Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.
- 4-C2 All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.

Sewage Treatment

- 4-C3 The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in **Schedule C - Table 1 (Contaminant release limits to land)**.

Schedule C - Table 1 (Contaminant release limits to land)

Release Point	Contaminant	Unit	Release Limit	Limit Type	Frequency
TBA	Volume	(L)	3600	Maximum	Daily
	5 day Biochemical oxygen demand (BOD) ¹	mg/L	20	Maximum	Monthly
	Total suspended solids	mg/L	30	Maximum	Monthly
	Nitrogen	mg/L	30	Maximum	Monthly
	Phosphorus	mg/L	15	Maximum	Monthly
	E-coli	Organisms/100ml	1000	Maximum	Monthly
	pH	pH units	6.0 – 9.0.	Range	Monthly

Note: The daily rate of application is based on 2L per m²/day

- 4-C4 Treated sewage effluent may only be released to land in accordance with the conditions of this approval at the following locations:
- (a) within the nominated area(s) identified in **Schedule J - Figure 2 (Sewage treatment plant and effluent disposal)**¹
 - 1. *Schedule J - Figure 2 (Sewage treatment plant and effluent disposal) must be provided to the administering authority at least 6 months prior to commencement of site activities.*
 - (b) other land for the purpose of dust suppression and/or fire-fighting.
- 4-C5 The application of treated effluent to land must be carried out in a manner such that:
- (a) vegetation is not damaged
 - (b) there is no surface ponding of effluent
 - (c) there is no run-off of effluent.
- 4-C6 If areas irrigated with effluent are accessible to employees or the general public, prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.
- 4-C7 All sewage effluent released to land must be monitored at the frequency and for the parameters specified in **Schedule C - Table 1 (Contaminant release limits to land)**.
- 4-C8 The daily volume of effluent released to land must be measured and records kept of the volumes of effluent released.

- 4-C9 When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent such as during or following rain events, waters must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent.
- 4-C10 A minimum area of 1800m² of land, excluding any necessary buffer zones, must be utilised for the irrigation and/or beneficial reuse of treated sewage effluent.
- 4-C11 Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty under section 319 of the Act whilst using the treated sewage effluent.

END OF CONDITIONS FOR SCHEDULE C

Schedule D – Noise

Noise

- 4-D1 The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in **Schedule D - Table 1 (Noise Limits)** to be exceeded at a sensitive place or commercial place.

Schedule D - Table 1 (Noise Limits)

Sensitive Place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and Public Holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
LAeq, adj, 15 mins	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
LA1, adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5
Commercial Place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and Public Holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	7am to 6pm	6pm to 10pm	10pm to 7am
LAeq, adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Table D1 – Noise limits notes:

1. CV = Critical Value
2. AV = Adjustment Value
3. To calculate noise limits in Table D1:

If $bg \leq (CV - AV)$: Noise limit = $bg + AV$

If $(CV - AV) < bg \leq CV$: Noise limit = CV

If $bg > CV$: Noise limit = $bg + 0$

4. In the event that measured bg (LA90, adj, 15 mins) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level

5. bg = background noise level (LA90, adj, 15 mins) measured over 3-5 days at the nearest sensitive receptor

6. If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the processes outlined in the "Planning for Noise Control" guideline.

Airblast overpressure nuisance

- 4-D2 The holder of this environmental authority must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in **Schedule D - Table 2 (Blasting noise limits)** to be exceeded at a sensitive place or commercial place.

Schedule D - Table 2 (Blasting noise limits)

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

Monitoring and reporting

- 4-D3 Noise monitoring and recording must include the following descriptor characteristics and matters:
- a) LAN,T (where N equals the statistical levels of 1, 10 and 90 and T = 15 mins)
 - b) background noise LA90
 - c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels
 - d) atmospheric conditions including temperature, relative humidity and wind speed and directions
 - e) effects due to any extraneous factors such as traffic noise
 - f) location, date and time of monitoring
 - g) if the complaint concerns low frequency noise, Max LpLIN,T and one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.

END OF CONDITIONS FOR SCHEDULE D

Schedule E – Groundwater

4-E1 The holder of this environmental authority must not release contaminants to groundwater.

Monitoring and reporting

4-E2 Groundwater quality and levels must be monitored at the locations and frequencies defined in **Schedule E - Table 1 (Groundwater monitoring locations and frequency)** and **Schedule J – Figure 3 (Groundwater Bore Monitoring Locations)**¹ for quality characteristics identified in **Schedule E - Table 2 (Groundwater quality trigger levels and contaminant limits)**.

1. Schedule J - Figure 3 (Groundwater monitoring bore locations) must be provided to the administering authority by 1 March 2015.

Schedule E - Table 1 (Groundwater monitoring locations and frequency)

Monitoring Bore ¹	Co-ordinates (GDA94)		Surface RL (m) ²	Monitoring Frequency
	Latitude	Longitude		
Reference Bores ³				
GMB4 (Year 1)	294301	8041466	689.6	Quarterly
GMB6 ⁴	292227	8040609	696.3	
GMB7 (Year 2 onwards)	TBA	TBA	TBA	
Compliance Bores				
GMB1	292899	8040161	701.4	Quarterly
GMB2	293184	8040186	712.4	
GMB3	293391	8039899	722.4	
GMB5	295025	8041256	674.7	

1. Monitoring is not required where a bore has been removed as a direct result of the mining activity.

2. RL must be measured to the nearest 5cm from the top of the bore casing.

3. Reference bores must:

- (a) have a similar flow regime;
- (b) be from the same bio-geographic and climatic region;
- (c) have similar geology, soil types and topography; and
- (d) not be so close to the test bore that any disturbance in the compliance bores also results in a change at the reference bore.

4. An additional reference bore is required for monitoring – this bore must be constructed, and data provided to the administering authority by 1 July 2015, or at a later date as agreed to by the administering authority before 1 June 2015.

Schedule E - Table 2 (Groundwater quality trigger levels and contaminant limits)

Parameter ¹	Trigger Level	Contaminant Limit
pH (pH units)	5.7 - 7.4 ⁹ , or 20 th / 80 th percentile of reference bore concentration ⁴ whichever is higher.	5.3 ⁸ - 8.5 ⁷ , or 5 th / 95 th percentile of reference bore concentration ⁴
EC (µS/cm)	92 ³ or 80 th percentile of reference bore concentration ⁴ whichever is higher	1800 ⁸ or 95 th percentile of reference bore concentration ⁴
Sulphate (mg/L)	80 th percentile of reference bore concentration ⁴	1000 ⁶
Fluoride (mg/L)	80 th percentile of reference bore concentration ⁴	4 ⁸ or 95 th percentile of reference bore concentration ⁴
Arsenic (mg/L)	0.013 ² or 80 th percentile of reference bore concentration ⁴ whichever is higher	0.5 ⁵ or 95 th percentile of reference bore concentration ⁴ , whichever is lower
Cadmium (mg/L)	0.0002 ² or 80 th percentile of reference bore concentration ⁴ whichever is higher	0.01 ⁵ or 95 th percentile of reference bore concentration ⁴ , whichever is lower
Copper(mg/L)	0.0014 ² or 80 th percentile of reference bore concentration ⁴ whichever is higher	1 ⁵ or 95 th percentile of reference bore concentration ⁴ , whichever is lower
Iron(mg/L)	0.3 ² or 80 th percentile of reference bore concentration ⁴ whichever is higher	9.64 ⁸ , or 95 th percentile of reference bore concentration ⁴
Lead(mg/L)	0.0034 ² or 80 th percentile of reference bore concentration ⁴ whichever is higher	0.1 ⁵ or 95 th percentile of reference bore concentration ⁴ , whichever is lower
Manganese(mg/L)	1.9 ² or 80 th percentile of reference bore concentration ⁴ , whichever is higher	95 th percentile of reference bore concentration ⁴
Tin(mg/L)	80 th percentile of reference bore concentration ⁴ whichever is higher	95 th percentile of reference bore concentration ⁴
Zinc(mg/L)	0.008 ² or 80 th percentile of reference bore concentration ⁴ whichever is higher	20 ⁵ or 95 th percentile of reference bore concentration ⁴ , whichever is lower
Major cations and anions and groundwater levels	For interpretational purposes only	

- For water quality parameters all metals and metalloids must be measured and reported as dissolved (filtered) for groundwater trigger levels and total (unfiltered) for groundwater contaminant limits.
- Contaminant trigger level based on ANZECC/ARMCANZ (2000) Table 3.3.4 values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australia upland river ecosystems, Table 3.4.1 (high reliability trigger values) and section 8.3 moderate or low reliability trigger values if no value available in Table 3.4.1.
- Contaminant trigger level based on Queensland Water Quality Guidelines 2009 – Appendix G: Table G1: EC percentiles for Queensland salinity zones (75th percentile for Wet Tropics zone).
- Reference bore concentrations must be developed in accordance with the latest edition of the administering authority's Water Quality Sampling Manual. Reference bore concentrations must be determined from reference bores specified in Schedule E – Table 1 (Groundwater monitoring locations and frequency).
- ANZECC/ARMCANZ (2000) values for livestock drinking water quality Table 4.3.2.
- ANZECC/ARMCANZ (2000) major ions of concern for livestock drinking water quality Section 4.3.3.4
- Contaminant limit for pH based on ANZECC/ARMCANZ (2000) values for general water uses Section 4.2.10
- Based on 95th percentile of baseline data collected between 2009 and 2014 from groundwater monitoring bores GWB3, GWB4, GWB5.
- Based on 20th and 80th percentile of baseline data collected between 2009 and 2014 from groundwater monitoring bores GWB3, GWB4, GWB5.

Note: The method of sampling of waters and developing reference site concentrations must comply with that set out in the latest edition of the administering authority's Water Quality Sampling Manual.

Note: Incorporation of reference bore concentration as an interim or final trigger level or contaminant limit must be done through a formal amendment to this environmental authority.

Exceedance Investigation

- 4-E3 If quality characteristics of groundwater from compliance bores identified in **Schedule E – Table 1 (Groundwater monitoring locations and frequency)** exceed any of the trigger levels stated in **Schedule E – Table 2 (Groundwater quality trigger levels and contaminant limits)** the holder of this environmental authority must compare the compliance bore results to the reference bore results, and if the compliance bore results are higher, complete an investigation in accordance with the ANZECC and ARMCANZ 2000.
- 4-E4 Results of monitoring of groundwater from compliance bores identified in **Schedule E – Table 1 (Groundwater monitoring locations and frequency)**, must not exceed any of the contaminant limits defined in **Schedule E – Table 2 (Groundwater quality trigger levels and contaminant limits)**.

Bore construction and maintenance and decommissioning

- 4-E5 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.

END OF CONDITIONS FOR SCHEDULE E

Schedule F – Surface Water

Release to Waters

- 4-F1 The release of contaminants to waters must:
- only occur during flow events in the receiving waters;
 - only occur from a release points specified in **Schedule F – Table 1 (Release Points)** and identified in **Schedule J – Figure 4 (Monitoring and Release Points)**¹; and
 - be monitored at the release point and at the monitoring frequency specified in **Schedule F – Table 1 (Release Points)** for the total daily volume of water released and for each parameter specified in **Schedule F – Table 2 (Release Quality Objectives)**¹.

- Schedule J – Figure 4 (Monitoring and Release Points) must be provided to the administering authority at least 6 months prior to commencement of site activities.*

Schedule F – Table 1 (Release Points)

Release Point	Description of Release	Receiving Water	Coordinates (GDA94 MGA ZONE 55)		Monitoring frequency
			Easting	Northing	
Sediment Dam Spillway	Overflow from sediment dam	Smith Creek (Herbert River)	TBA	TBA	For all parameters, 1 sample must be taken within 12 hours of a release event commencing and for release events with duration of greater than 24 hours, samples must be taken daily for 1 week and once a week thereafter until the release event ceases.
Runoff Dam Spillway	Overflow from runoff dam	Smith Creek (Herbert River)	TBA	TBA	
Freshwater Dams Drain Spillway	Overflow from freshwater dams	Return Creek (Herbert River)	TBA	TBA	

- 4-F2 Water contaminated by mining activities when monitored at the location and frequency defined in **Schedule F – Table 1 (Release Points)** must not exceed the release quality contaminant limits defined in **Schedule F – Table 2 (Release Quality Objectives)**

Schedule F – Table 2 (Release Quality Objectives)

Release Quality Objectives ¹	
Parameter	Release Quality Contaminant Limit (mg/L unless otherwise specified)
pH (pH units)	6.0 ⁵ (minimum) 8.5 ⁵ (maximum)
EC (µS/cm)	1500 ⁶ or 95 th percentile of reference site concentration ⁴ whichever is lower
Sulphate	1000 ³ or 95 th percentile of reference site concentration ⁴ whichever is lower
Fluoride	2 ² or 95 th percentile of reference site concentration ⁴ whichever is lower
Arsenic	0.5 ² or 95 th percentile of reference site concentration ⁴ whichever is lower
Cadmium	0.01 ² or 95 th percentile of reference site concentration ⁴ whichever is lower
Copper	1 ² or 95 th percentile of reference site concentration ⁴ whichever is lower
Iron	95 th percentile of reference site concentration ⁴ whichever is lower
Lead	0.1 ² or 95 th percentile of reference site concentration ⁴ whichever is lower

Release Quality Objectives ¹	
Parameter	Release Quality Contaminant Limit (mg/L unless otherwise specified)
Manganese	95 th percentile of reference site concentration ⁴ whichever is lower
Zinc	20 ² or 95 th percentile of reference site concentration ⁴ whichever is lower
Major cations and anions	For interpretational purposes only

1. For water quality parameters (release quality contaminant limits), all metals and metalloids must be measured and reported as total (unfiltered levels).
2. ANZECC/ARMCANZ (2000) values for livestock drinking water quality and Table 4.3.2.
3. ANZECC/ARMCANZ (2000) major ions of concern for livestock drinking water quality Section 4.3.3.4
4. Reference site concentrations must be developed in accordance with the latest edition of the administering authority's Water Quality Sampling Manual. Reference site concentrations must be determined from reference site specified in Schedule F – Table 4 (Receiving Waters Monitoring Locations).
5. Contaminant limit for pH based on ANZECC/ARMCANZ (2000) values for general water uses Section 4.2.10
6. Value sourced from Jason Dunlop, Glenn McGregor, Nelli Horrigan (The State of Queensland 2005) "Potential impacts of salinity and turbidity in riverine ecosystems, Characterisation of impacts and a discussion of regional target setting for riverine ecosystems in Queensland" (Dunlop, McGregor and Horrigan).

Note: The method of sampling of waters and developing reference site concentrations must comply with that set out in the latest edition of the administering authorities Water Quality Sampling Manual.

Note: Incorporation of reference bore concentration as an interim or final trigger level or contaminant limit must be done through a formal amendment to this environmental authority.

Exceedance Investigation

4-F3 If quality characteristics, when measured at the release point identified in **Schedule F – Table 1 (Release Points)**, exceed any of the contaminant limits specified in **Schedule F – Table 2 (Release Quality Objectives)** during a release event, the environmental authority holder must compare the downstream compliance site¹ results in the receiving water to trigger values specified in **Schedule F – Table 3 (Receiving Water and Sediment Quality Objectives)** and:

- a) where the trigger values are not exceeded then no action is to be taken; or
- b) where the downstream results exceed the trigger values specified in **Schedule F – Table 3 (Receiving Water and Sediment Quality Objectives)** for any quality characteristic, compare the results of the downstream site to the reference monitoring site and:
 1. If the result is less than the reference monitoring site data, then no action is to be taken; or
 2. If the result is greater than the reference monitoring site data, complete an investigation into the potential for environmental harm, including consideration of potential environmental harm in the mixing zone, and provide a written report to the administering authority within 90 days of receiving the result, outlining:
 - i. details of the investigation carried out; and
 - ii. actions taken to prevent environmental harm.

1. 'Compliance sites' are those detailed in Schedule F – Table 4 (Receiving Waters Monitoring Locations)

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with 4-F3 (b) (2) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

Receiving Environment Monitoring

4-F4 The release of contaminants from the authorised activity to surface waters must not exceed the water quality objectives stated in **Schedule F – Table 3 (Receiving Water and Sediment Quality Objectives)** when measured at the compliance points stated in **Schedule F – Table 4 (Receiving Waters Monitoring Locations)** and **Schedule J – Figure 4 (Monitoring and release points)**

Schedule F – Table 3 (Receiving Water and Sediment Quality Objectives)

Parameter	Water Quality Objective ¹ (mg/L unless otherwise specified)	Sediment Quality Objective ² (mg/kg dry wt, unless otherwise specified)
pH (pH units)	6.0 - 7.5 ³ , or 20 th / 80 th percentile of reference site concentration whichever is higher.	Not applicable/Not required to be measured
EC (µS/cm)	92 ⁴ or 80 th percentile of reference site concentration ⁶ whichever is higher	
Sulphate	80 th percentile of reference site concentration ⁶	2 x reference site ⁶ concentration
Fluoride	80 th percentile of reference site concentration ⁶	Not applicable/Not required to be measured
Arsenic	0.013 ³ or 80 th percentile of reference site concentration ⁶ whichever is higher	70 ⁵ mg/kg or 2 x reference site ⁶ , whichever is higher
Cadmium	0.0002 ³ or 80 th percentile of reference site concentration ⁶ whichever is higher	10 ⁵ mg/kg or 2 x reference site ⁶ , whichever is higher
Copper	0.0014 ³ or 80 th percentile of reference site concentration ⁶ whichever is higher	270 ⁵ mg/kg or 2 x reference site ⁶ , whichever is higher
Iron	0.3 ³ or 80 th percentile of reference site concentration ⁶ whichever is higher	Not applicable/Not required to be measured
Lead	0.0034 ³ or 80 th percentile of reference site concentration ⁶ whichever is higher	220 ⁵ mg/kg or 2 x reference site ⁶ , whichever is higher
Manganese	1.9 ³ or 80 th percentile of reference site concentration ⁶ whichever is higher	Not applicable/Not required to be measured
Tin	80 th percentile of reference site concentration ⁶ whichever is higher	Not applicable/Not required to be measured
Zinc	0.017 ⁷ or 80 th percentile of reference site concentration ⁶ whichever is higher	410 ⁵ mg/kg or 2 x reference site ⁶ , whichever is higher
Major cations and anions	For interpretational purposes only	

1. For water quality parameters (release quality objectives), all metals and metalloids must be measured and reported as dissolved (field filtered) levels.
2. All stream sediment sampling must be undertaken in accordance with AS 5667.12 Guidance on Sampling of Bottom Sediments of 1998.
3. ANZECC/ARMCANZ (2000) Table 3.3.4 values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems, Table 3.4.1 (high reliability trigger values) and Section 8.3 moderate or low reliability trigger values if no value available in Table 3.4.1.
4. Water quality objective based on Queensland Water Quality Guidelines 2009 – Appendix G: Table G1: EC percentiles for Queensland salinity zones (75th percentile for Wet Tropics zone).
5. ANZECC (2000) Interim Sediment Quality Guidelines Table 3.5.1 – ISQG – high values based on total sediments (dry weight).
6. Reference site concentrations must be developed in accordance with the latest edition of the administering authority's Water Quality Sampling Manual. Reference site concentrations must be determined from reference site specified in Schedule F – Table 4 (Receiving Waters Monitoring Locations).
7. Based on 95th percentile of surface water baseline data collected between 2009 and 2014.

Note: The method of sampling of waters and developing reference site concentrations must comply with that set out in the latest edition of the administering authorities Water Quality Sampling Manual.

Note: Incorporation of reference bore concentration as an interim or final trigger level or contaminant limit must be done through a formal amendment to this environmental authority.

Schedule F – Table 4 (Receiving Waters Monitoring Locations)

Monitoring Site	Description	Location	
		Easting (GDA94, 55k)	Northing (GDA94, 55k)
Reference Site ¹			
SWG1	Unnamed upper tributary of Return Creek, inflow of proposed freshwater dam in eastern section of Project area	293930	8041550
SWG7	Unnamed upper tributary of Smith Creek	290549	8039076
Compliance Point			
SWG2	Unnamed upper tributary of Return Creek, downstream of freshwater dams outlet	295081	8041187
SWG8	Unnamed upper tributary of Smith Creek	291712 ²	8040787 ²
SWG9	Mining Lease Boundary (Unnamed upper tributary of Smith Creek)	292157 ²	8040517 ²
RDO1	Rodeo Dam	296355	8041997

1. Reference sites must be:
 - a. Be from the same biogeographic and climatic region; and
 - b. Have similar geography, soil types and topography; and
 - c. Contain a range of habitats similar to those at the test sites; and
 - d. A similar flow regime; and
 - e. Not be so close to the test sites that any disturbance at the test site also results in a change at the reference site.
2. Co-ordinates to be confirmed to the administering authority by 1 June 2015.

Receiving Environment Monitoring Program (REMP)

- 4-F5 Prior to the commencement of site activities the environmental authority holder must develop and implement a REMP to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site. The REMP must also include the condition of recording and monitoring the effects of the release of contaminants on the receiving environment and whilst the contaminants are being released from the licensed place.

For the purposes of the REMP, the receiving environment is the waters of the Smith Creek and Return Creek and connected or surrounding waterways within 15km downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.

- 4-F6 A REMP design document that addresses the requirements of the REMP must be prepared and made available to the administering authority upon request.
- 4-F7 A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administering authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

Annual Water Monitoring Reporting

- 4-F8 The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format:
- 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
 - g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Water Management Plan

- 4-F9 A Water Management Plan must be developed by an appropriately qualified person and implemented.

Stormwater and Sediment Controls

- 4-F10 An Erosion and Sediment control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and release of sediment to receiving waters and contamination of stormwater.

END OF CONDITIONS FOR SCHEDULE F

Schedule G – Structures

Assessment of Hazard Category

- 4-G1 The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* 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.
- 4-G2 A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
- 4-G3 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Design and Construction of a Regulated Structure

- 4-G4 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 (EM635)*.
- 4-G5 Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.
- 4-G6 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, and must be recorded in the Regulated Dams/Levees register.
- 4-G7 Regulated structures must:
- a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*;
 - b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
 - i) floodwaters from entering the regulated dam from any watercourse or drainage line; and
 - ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
 - c) have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.
- 4-G8 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:
- a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure;
 - b) construction of the regulated structure is in accordance with the design plan.

Operation of a Regulated Structure

- 4-G9 Operation of a regulated structure is prohibited unless the holder has submitted to the administering authority:

- a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition 4-G8, and
- b) a set of 'as constructed' drawings and specifications, and
- c) certification of those 'as constructed drawings and specifications' in accordance with condition 4-G8 and
- d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan.
- e) the requirements of this authority relating to the construction of the regulated structure have been met;
- f) relevant details for the regulated structure have been included in **Schedule G – Table 1 (Location of Dams Containing Hazardous Waste)**, **Schedule G – Table 2 (Size and Purpose of Dams Containing Hazardous Waste)** and **Schedule J – Figure 5 (Locations of Dams Containing Hazardous Waste)** of this environmental authority.
- g) the holder has entered the details required under this authority, into a Register of Regulated Dams; and
- h) there is a current operational plan for the regulated structures.

Schedule G – Table 1 (Location of Dams Containing Hazardous Waste)

Name of Dam Containing Hazardous Waste	Point	Latitude (GDA 94) ¹	Longitude (GDA 94) ¹
Sediment Dam	TBA	TBA	TBA
Runoff Dam	TBA	TBA	TBA

1. A minimum of 3 control points is required to constrain the location of all activities associated with the dam containing hazardous waste. Additional infrastructure which forms part of any dam containing hazardous waste may include appurtenant works consisting of tailings discharge pipelines, seepage collections systems, runoff diversion bunds, containment systems, pressure relief wells, decant and recycle water systems.

Schedule G – Table 2 (Size and Purpose of Dams Containing Hazardous Waste)

Name of dam containing hazardous waste ¹	Maximum surface area of dam (ha)	Maximum volume of dam (m ³)	Maximum depth of dam (m) ²	Purpose of dam ³
Sediment Dam	TBA	TBA	TBA	TBA
Runoff Dam	TBA	TBA	TBA	TBA

1. The name of the dam containing hazardous waste should refer to the name of the dam e.g. process residue facility and decant dam.
2. For dams that do not require a dam well, input the maximum void depth e.g. where dams are formed by excavating below the land surface or backfilling a residual void.
3. Purpose of the dam should outline the designed function e.g. "the permanent containment of tailings resulting from the extraction of nickel, cobalt and other metals at the XYZ Refinery".

4-G10 Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

Mandatory Reporting Level

- 4-G11 Conditions 4-G12 to 4-G15 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
- 4-G12 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.
- 4-G13 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.
- 4-G14 The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

4-G15 The holder must record any changes to the MRL in the Register of Regulated Structures.

Design Storage Allowance

4-G16 The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.

4-G17 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) as outlined in **Schedule G – Table 3 (Storage Design)**.

Schedule G – Table 3 (Storage Design)

Name of Dam Containing Hazardous Waste	Design Storage Allowance ¹	Spillway Critical Design Storm ²	Mandatory Reporting Level ³
Sediment Dam	TBA	TBA	TBA
Runoff Dam	TBA	TBA	TBA

1. The design storage allowance on 1 November of each year for any dam containing hazardous waste constructed within the operational land must be equivalent to the run-off from a 1 in 10 ARI 2 month wet season plus process inputs for the equivalent wet season. Process inputs refers to the hazardous mineral process waste and water, which is being disposed of in the storage facility.
2. The critical design storm has a duration that produces the peak discharge for the catchments.
3. The mandatory reporting level refers to the volume below the spillway crest, either the 1:100 ARI 72 hour storm or the 1:100 ARI wave allowance, whichever is lower.

4-G18 The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

4-G19 The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Annual Inspection Report

4-G20 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

4-G21 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.

4-G22 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

4-G23 The holder must:

- a) Within 20 business days of receipt of the annual inspection report, provide to the administering authority:
 - i) The recommendations section of the annual inspection report; and
 - ii) If applicable, any actions being taken in response to those recommendations; and

b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.

Transfer Arrangements

4-G24 The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

Decommissioning and Rehabilitation

- 4-G25 Dams must not be abandoned but be either:
- a) decommissioned and rehabilitated to achieve compliance with condition (4-G26); or
 - b) be left in-situ for a beneficial use(s) provided that:
 - i) it no longer contains contaminants that will migrate into the environment; and
 - ii) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and
 - iii) the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).
- 4-G26 After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity (ies) must be rehabilitated to meet the following final acceptance criteria:
- a) the landform is safe for humans and fauna;
 - b) the landform is stable with no subsidence or erosion gullies for at least three (3) years;
 - c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated
 - d) not allowing for acid mine drainage; or
 - e) there is no ongoing contamination to waters (including groundwater);
 - f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the Instructions for the treatment and management of acid sulfate soils (2001);
 - g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class;
 - h) for land that is not being cultivated by the landholder:
 - a. groundcover, that is not a declared pest species is established and self-sustaining,
 - b. vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and
 - c. the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the petroleum activity(ies).
 - i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within 3 months of petroleum activities being completed.

Register of Regulated Dams

- 4-G27 A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.
- 4-G28 The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority.
- 4-G29 The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition (4-G9) has been achieved.
- 4-G30 The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.

- 4-G31 All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
- 4-G32 The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.

END OF CONDITIONS FOR SCHEDULE G

Schedule H – Land and Rehabilitation

Rehabilitation

- 4-H1 Mining cannot commence until such time that the Progressive Rehabilitation and Closure Plan (PRCP) schedule is updated to include mining activities for ML20743.
- 4-H2 Rehabilitation must commence progressively in accordance with the PRCP.

Contaminated Land

- 4-H3 Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
- 4-H4 Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.

Extraction of Oxide Ore and Waste Rock

- 4-H5 Waste rock characterised as potentially acid forming (PAF) must not be placed in the waste rock dump, and must be disposed of into the pit void.

Permanent Watercourse Diversions

- 4-H6 Permanent watercourse diversions, or the re-establishment of a pre-existing watercourse where a temporary watercourse diversion is being replaced, must be designed and constructed to:
- a) incorporate natural features (including geomorphic and vegetation) present at the location of the diversion
 - b) maintain the pre-existing hydrologic characteristics of surface water and groundwater systems for the area in which the watercourse diversion is located
 - c) maintain the hydraulic characteristics of the permanent watercourse diversion that are equivalent to other local watercourses and are suitable for the area in which the diversion is located without using artificial structures that require on-going maintenance
 - d) maintain sediment transport and water quality regimes that allow the diversion to be self-sustaining, while minimising any impacts to upstream and downstream water quality, geomorphology or vegetation.
 - e) maintain equilibrium and functionality in all substrate conditions at the location of the diversion.

Design Plan – All Diversions

- 4-H7 A certified Design Plan that achieves condition 4-H6 for permanent watercourse diversions and condition 2 for temporary watercourse diversions must be submitted to the administering authority at least 10 business days before commencing construction of the diversion.
- 4-H8 The certified design plan for any temporary or permanent watercourse diversion must be consistent with the functional design/s that formed a part of the application documents for this authority.

Construction and operation – All Diversions

- 4-H9 A certified set of 'as constructed' drawings and specifications must be submitted to the administering authority within 60 business days from the completion of construction of the temporary or permanent

watercourse diversion, or re-establishment of the pre-existing watercourse. These drawings and specifications must state:

- a) that the 'as constructed' drawings and specifications meet the original intent of the design plan for the watercourse diversion; and
- b) construction of the watercourse diversion is in accordance with the design plan.

Register – All Diversions

- 4-H10 The details of watercourse diversions planned and constructed under an environmental authority must be accurately recorded on the Register of Watercourse Diversions kept by the holder of the authority. An electronic copy must be provided to the administering authority on request.

END OF CONDITIONS FOR SCHEDULE H

Schedule I – Definitions for Part 4 – ML20743

Definitions

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

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

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

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

“administering authority” means:

- (a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 - the local government; or,
- (b) for another matter - the chief executive.

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

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

“AHD” means ‘Australian Height Datum’ which is the Australian national standard of geodetic datum for altitude measurements and is measured in meters (m). The level of 0.0 meters (m) AHD approximates the mean sea level (as previously measured for the period 1966-1968).

“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.

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

“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 inspection 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 operation plan.

"annual exceedances probability or AEP" the probability that at least one event in excess of a particular magnitude will occur in any given year.

"ANZECC (2000)" means *the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)* published by the *Australian and New Zealand Environment and Conservation Council and the Agriculture and Resource Management Council of Australia and New Zealand* or any equivalent update/replacement guidelines.

"appropriately qualified person" means a person who has professional qualifications, training, skills and 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. With specific reference to laboratory determinations an appropriately qualified person means a NATA accredited laboratory.

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

- a) exactly what has been assessed and the precise nature of that determination;
- b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

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

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

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

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

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

"certification", means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy "Certification by RPEQs (ID: 1.4 (2A)).

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

"chief executive" means the chief executive of the Department of Environment and Heritage Protection or its successor.

“Commencement of site activities” relates to any activities relating to the mining activity and includes, but is not limited to, commencement of earthmoving activities at the site in order to construct the features represented in Schedule C – Figure 1 (Mine Infrastructure Layout).

“commercial place” means a place used as an office or for business or commercial purposes, other than a place within the boundaries of the operational land.

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

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

“consequence category” means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

“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.

“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. A dam does *not* mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

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

“Design Storage Allowance” or “DSA” means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the Department of Environment and Heritage Protection, that must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

“designer” for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

‘disturbance’ of land includes:

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

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

- a) areas off lease (e.g. roads or tracks which provide access to the mining lease);
- b) areas previously disturbed which have achieved the rehabilitation outcomes;
- c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);

- d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner.
- e) disturbance that pre-existed the grant of the tenure.

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

"environmental authority" means a licence or approval issued pursuant to the *Environmental Protection Act 1994*.

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

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

"flow event" means a surface water flow in a drainage feature or watercourse that occurs as a result of rainfall.

"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.

"geo-technically stable" means not producing seepage, leachate or contamination that is likely or has the potential to cause environmental harm.

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

"hazard category" means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

"hazardous waste" means any substance, whether liquid, solid or gaseous, derived by or resulting from, the processing of minerals that tends to destroy life or impair or endanger health.

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

"in situ" in relation to water quality monitoring, means sampling a population variable (e.g., the concentration of an aquifer groundwater quality parameter) as close as possible to its origin. Unless otherwise specified under a condition of this environmental authority, in situ water quality parameters must include pH, electrical conductivity, dissolved oxygen (% saturation) and total suspended solids.

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

“**L_A 10, adj, 10 mins**” means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10-minute measurement period, using Fast response.

“**L_A 1, adj, 10 mins**” means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10-minute measurement period, using Fast response

“**L_A, max adj, T**” means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

“**land**” in the “land schedule” of this document means land excluding waters and the atmosphere.

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

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

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

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

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

“**licensed place**” means the mining activities carried out at the mining tenements of this environmental authority.

“**major anions**” in regards to water quality monitoring, includes at minimum the carbonate ion (CO₃²⁻), bicarbonate ion (HCO₃⁻) and chloride ion (Cl⁻).

“**major cations**” in regards to water quality monitoring, includes at minimum the sodium ion (Na⁺), potassium ion (K⁺), magnesium ion (Mg²⁺) and calcium ion (Ca²⁺).

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

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

“**modification**” or “**modifying**” (see definition of “construction”).

“**mine affected water**”:

a) means the following types of water:

- i) pit water, tailings dam water, processing plant water;
- ii) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity;
- iii) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance

with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;

- iv) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
- v) groundwater from the mine's dewatering activities;
- vi) a mix of mine affected water (under any of paragraphs i)-v) and other water.

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

- i) land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or
- ii) land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:
 - 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) magnetite;
- c) metal or metalloid compounds, including but not limited to compounds containing gold, copper, silver, lead, nickel, and zinc.
- d) foundry sand;
- e) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil therefrom;
- f) limestone if mined for use for its chemical properties;
- g) marble;
- h) mineral oil or gas extracted or produced from shale or coal by in situ processes;
- i) peat;
- j) salt including brine;
- k) shale from which mineral oil may be extracted or produced;
- l) silica, including silica sand, if mined for use for its chemical properties;
- m) rock mined in block or slab form for building or monumental purposes;

but does not include—

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

“noxious” means harmful or injuries 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 plan” for a dam includes:

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

“peak particle velocity (ppv)” means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mm/s).

“protected area” means – a protected area under the *Nature Conservation Act 1992*; or

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

“progressive rehabilitation” means rehabilitation undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

“progressive rehabilitation and closure plan (PRCP)” As defined in the *Environmental Protection Act 1994*.

“QWQG (2009)” means the *Queensland Water Quality Guidelines 2009* published by the *Queensland Government* or any equivalent update/replacement guidelines.

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

- a) a watercourse;
- b) groundwater; and
- c) an area of land that is not specified in Schedule H - Table H1 (Rehabilitation Requirements) of this environmental authority.

The term does not include land that is specified in Schedule H - Table H1 (Rehabilitation Requirements) of this environmental authority.

“register of regulated dams” includes:

- a) date of entry in the register;
- b) name of the dam, its purpose and intended/actual contents;
- c) the consequence category of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*;
- d) dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
- e) name and qualifications of the suitably qualified and experience 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. longitude in GDA94 within five metres at any point from the outside of the dam including its storage area;
 - iii. dam crest volume (mega litres);
 - 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 (mega litres) 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 operation adequacy, and to ascertain the available storage volume for 1 November of any year;
- m) dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
- n) dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

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

"regulated structure" includes 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" 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.

"release" means the discharge of water (whether intentional or due to failure to prevent) to the receiving environment from any area, structure or feature located on a mining lease listed on this environmental authority.

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

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

"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 place" means a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

- a motel, hotel or hostel; or
- an educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area; or
- a public park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes which is not part of the mining activity and does not include employees accommodation or public roads.

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

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

“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:

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

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

“system design plan” means a plan that manages an integrated containment system that shares the required DSA volume across the integrated containment system.

“tolerable limits” means that a range of values could be accepted to achieve an overall environmental management objective (eg a range of settlement of a tailing capping could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation).

“trivial harm” means environmental harm which is not material or serious environmental harm and will not cause actual or potential loss or damage to property of an amount of, or amounts totalling more than \$5000.

“void” means any constructed, open excavation in the ground.

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

“waters” includes a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea) or any part thereof.

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

Definitions relating to Watercourse Diversions – see conditions I12 to I16 of this environmental authority

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

“Certified” means assessed and approved by a suitably qualified and experienced person. In relation to ‘as constructed’ drawings and specifications, the certification must be by the suitably qualified person who supervised the construction of the watercourse diversion, or re-establishment of the watercourse.

“Construction or Constructed” is the process of building, or modifying an existing diversion, but does not include investigations and testing necessary for the purpose of preparing a design plan.

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

- required information under a functional design
- the location, function and description of geomorphic and riparian vegetation features within the proposed watercourse diversion
- results from hydrologic, hydraulic and sediment transportation modelling used in the design of the diversion
- a revegetation and vegetation management plan (a revegetation plan) for the diversion

- engineering drawings depicting the physical attributes and dimensions of the diversion
- (if relevant) the staged development of a permanent watercourse diversion including the proposed use of temporary watercourse diversions with identified lifespans
- all investigation and other reports relied on by the design; and
- plans and specifications sufficient to complete construction and revegetation in accordance with the design.

“Environmental Authority (EA)” is defined under Schedule 4 of the Environmental Protection Act 1994.

“Equilibrium”: A state where ‘balance’ is achieved despite changing variables.

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

- geomorphic and vegetation assessment of the existing watercourse
- hydrologic conditions of the existing watercourse
- the proposed watercourse diversion route
- results from hydrologic, hydraulic and sediment transportation modelling used in the design of the diversion.

“Functionality”: The purpose that something is designed or expected to fulfil.

“Holder”, for a mining tenement, means a holder of the tenement under the Mineral Resources Act 1989, and the holder of the associated environmental authority under the Environmental Protection Act 1994

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

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

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

“Revegetation” is the re-establishment of vegetation¹ of a species and density of cover similar to surrounding undisturbed areas or the landform that existed before mining activities on soil surfaces associated with the construction or rehabilitation of a watercourse diversion.

“Self-sustaining” means not requiring on-going intervention and maintenance to maintain functional riverine processes and characteristics

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

An appropriate level of expertise includes:

- demonstrable competency, experience and expertise in–
- investigation, design or construction of watercourses diversions
- operation and maintenance of watercourse diversions
- geomechanics with particular emphasis on channel equilibrium, geology and geochemistry
- hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology
- hydraulics with particular reference to sediment transport and deposition and erosion control

- hydrogeology with particular reference to seepage and groundwater
- solute transport processes and monitoring thereof; or
- Sufficient knowledge and experience to certify that where the suitably qualified and experienced person has relied on advice and information provided by other persons with relevant expertise*–
- they consider it reasonable to rely on that advice and information, and
- the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to watercourse diversions.

***persons with relevant expertise** include:

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

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

“Water” is defined under Schedule 4 of the Water Act 2000.

“Watercourse” is defined under sections 5 and 5A of the Water Act 2000.

“Watercourse Diversion” is a man-made structure that diverts or interferes with the course of flow within a watercourse, but that does not impound water.

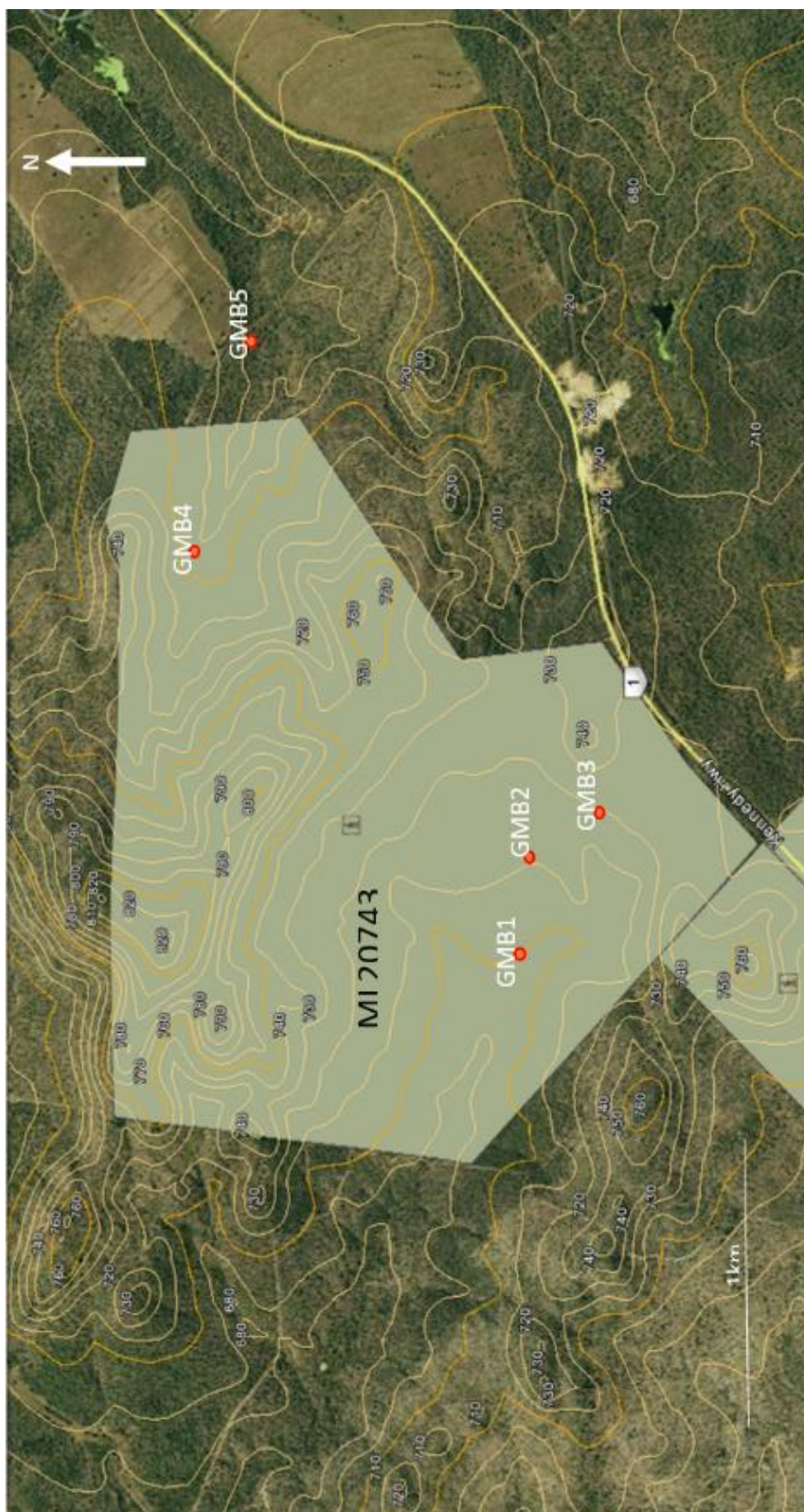
Schedule J – Figures

Schedule J – Figure 1 (Mine Infrastructure Layout)

To be nominated via an amendment application in accordance with Condition 4-A2.

Schedule J - Figure 2 (Sewage treatment plant and effluent disposal)

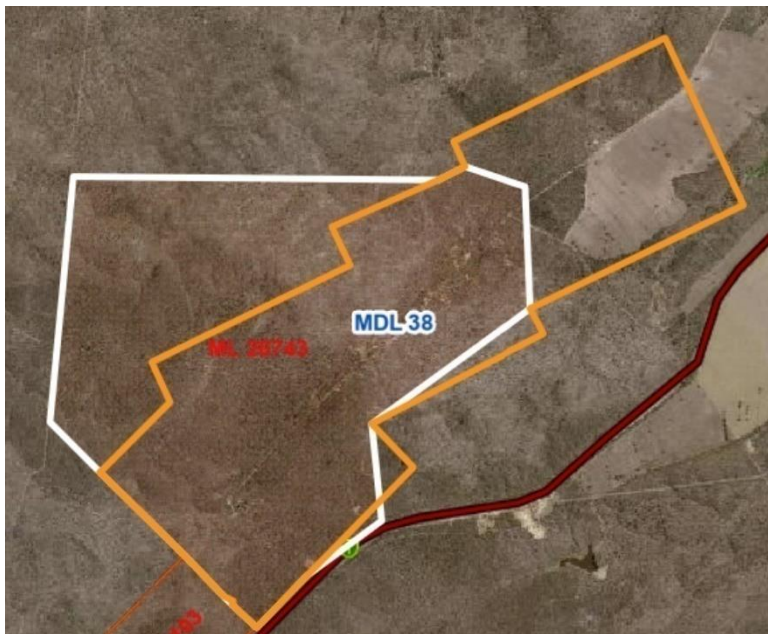
Schedule J – Figure 3 (Groundwater Bore Monitoring Locations)



Schedule J – Figure 4 (Monitoring and Release Points)

Schedule J – Figure 5 (Locations of Dams Containing Hazardous Waste)

Schedule J – Figure 6 (Overlapping tenures ML20743 and MDL38)



Note: All figures to be provided prior to commencement of mining activities.

End of Part 4

Attachments

- Eligibility criteria and standard conditions for mining lease activities - Version 2.
- Eligibility criteria and standard conditions for exploration and mining development projects - Version 2.
- Code of Environmental Compliance for Mining Lease Projects, EM588 - Version 1.1.

END OF ENVIRONMENTAL AUTHORITY