Permit

Environmental Protection Act 1994

Environmental authority EPML00887913

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

Environmental authority number: EPML00887913

Environmental authority takes effect on 25 March 2024.

Environmental authority holder(s)

Name(s)	Registered address
Copper Resources Australia Pty Ltd	Suite 2, Level 2, 45 Grenfell St, ADELAIDE SA 5000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Resource Activity, Schedule 3, ERA 17: Mining copper ore.	ML90177; ML90188 and ML90219
Ancillary Activity, Schedule 2, ERA 7 – Chemical manufacturing, 3: Manufacturing, in a year, a total of 200t or more of any of the following—, (d) explosives.	
Ancillary Activity, Schedule 2, ERA 8 – Chemical storage, 3: Storing more than 500m3 of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c).	
Ancillary Activity, Schedule 2, ERA 14 – Electricity generation, 2: Generating electricity by using a fuel, other than gas, at a rated capacity of—, (a) 10MW electrical to 150MW electrical.	
Ancillary Activity, Schedule 2, ERA 31 – Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke—, (b) more than 100,000t.	
Ancillary Activity, Schedule 2, ERA 61 – Thermal waste reprocessing and treatment, 1: Thermally reprocessing or treating, in a year, the following quantity of general waste—, (a) 5,000t or less.	

Environmentally relevant activity/activities	Location(s)
Ancillary Activity, Schedule 2, ERA 63 – Sewage Treatment, 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of—, (a) 21 to 100EP—, (i) if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme.	
Ancillary Activity, Schedule 2, ERA 60 – Waste disposal, 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b)—, (f) more than 50,000t but not more than 100,000t.	ML90177

Additional information for applicants

Environmentally relevant activities

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

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

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

Mobile and temporary activities

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

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

Contaminated land

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

- the presence of, or happening of an event involving, a hazardous contaminant on the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- if the land is contaminated land – a change in the condition of the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the land (notice must be given within 20 business days).

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

Take effect

Please note that, in accordance with section 200 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

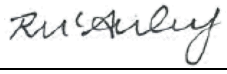
c) otherwise – on the day the authority is issued.

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.

	**25 March 2024**
Signature	Date

Rebecca McAuley
Department of Environment, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Minerals Business Centre
PO Box 7230, CAIRNS QLD 4870
Phone: (07) 4222 5352
Email: 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, Science and Innovation to ensure that you have the most current version of the environmental authority relating to this site.

Conditions of environmental authority

The environmentally relevant activities conducted at the locations as described above must be conducted in accordance with the following site-specific conditions of approval. This environmental authority consists of the following Schedules:

Schedule A	General
Schedule B	Air
Schedule C	Land and Rehabilitation
Schedule D	Regulated Dams (including structures containing mineral waste)
Schedule E	General and Regulated Waste Management
Schedule F	Noise
Schedule G	Water
Schedule H	Sewage Treatment
Schedule I	Definitions/Acronyms
Schedule J	Plans

Schedule A – General	
Condition number	**Condition**
(A1)	This environmental authority authorises environmental harm referred to in the conditions herein. Where a condition in this environmental authority refers to environmental harm the condition is taken to authorise the environmental harm occurring in compliance with the condition. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising environmental harm.
(A2)	The activities approved under this environmental authority are the mining activities defined within Table A1 – Authorised Activities and identified in Schedule J Plan 1 – General Area Plan.

Table A1 – Authorised Activities

Mine Domain	Mine Feature	Tenure	Maximum Surface Area of Disturbance (ha)	Coordinates (GDA94 MGA zone 54)	
				Northing	Easting
Residual Voids	Las Minerale	ML90177	45	7714505	433161
				7714592	433267
				7714280	433883
				7713719	434028
				7713570	433892
				7713675	433707
				7714044	433426
				7714505	433161
	Southern Rocklands		40	7713600	433312
				7713727	433592
				7713516	433801
				7713555	433951
				7713451	434113
				7713007	434170
				7712949	434121
				7712933	433674
				7713132	433452
				7713600	433312
	Southern Rocklands Extended		6	7713817	432910
				7713918	433040
				7713742	433225
				7713605	433111
				7713817	432910
Run of Mine (ROM)	ROM Pad	ML90177	6.5	7713853	434154
				7713714	434226
				7713787	434434
				7713683	434518

				7713810	434686
				7714028	434564
Processing Area	Processing Plant	ML90177	17	7714047	434893
				7713934	434735
				7713716	434588
				7713371	434831
				7713527	435019
				7713705	435053
				7713974	434937
Regulated Dams and Diversions	Tailings Storage Facility	ML90188	153	7714821	439011
				7714812	438674
				7714809	438358
				7714848	438355
				7714848	437725
				7714886	437687
				7715062	437694
				7715071	437693
				7715083	437692
				7715364	437684
				7715601	437694
				7715670	437784
				7715701	438064
				7715760	438547
				7715821	438645
				7715951	438839
				7715950	439119
				7715994	439224
				7715994	439271
				7715671	439341
				7715594	439314
				7715552	439317
				7715536	439308
				7715368	439293
				7715073	439267
	Tailings Storage Facility Decant Pond	ML90188	0.511	7715463	438412
				7715466	438302
				7715333	438322
				7715341	438424
	Process Water Pond	ML90177	1.28	7714004	434701
				7713971	434618

				7713838	434698
				7713880	434755
	Raw Water Pond		0.4	7714008	434836
				7713947	434878
				7713916	434821
				7713973	434785
	Plant Site Catch Dam (ECD2)		0.83	7714049	434807
				7714000	434706
				7713943	434732
				7713999	434833
	ROM Pad Drainage Pond		0.16	7713863	434692
				7713827	434712
				7713844	434745
				7713882	434725
	Water Storage Facility		37	7715560	432695
				7715454	432498
				7715209	432860
				7715044	432705
				7714961	432760
				7715001	432909
				7714898	433018
				7714952	433059
				7714958	433427
				7715095	433632
				7715169	433583
				7715345	433379
				7715560	432695
	Morris Creek Diversion Dam/ Embankment	ML90219 ML90177	46 (includes area of inundation)	7713860	432615
				7713859	432622
				7713314	432778
				7713316	432771
	Backflow Prevention Dam		N/A	7714378	433934
				7714107	433972
				7714071	433978
				7714002	433998
				7713934	434020
	Morris Creek Diversion Channel Levee		N/A	7714546	432825
				7714424	432729
				7714311	432647
	East Dump Catch Dam		0.5	7713784	435207

	(MB-SP-01)			7713755	435130
				7713676	435148
				7713716	435198
				7713758	435225
	East Dump Catch Dam (MB-SP-02)		0.58	7714068	435855
				7714072	435858
				7714062	435874
				7714058	435869
	North Dump Catch Dam 1 (MB-SP-06)		1.52	7714148	435339
				7714150	435345
				7714094	435385
				7714091	435380
	West Dump Catch Dam (MB-SP-07)		2.4	7713877	433494
				7713736	433573
				7713744	433575
				7713883	433497
	North Dump Catch Dam 3 (MB-SP-08)		0.66	7714296	433892
				7714302	433932
				7714139	433958
				7714133	433918
	Chalcopyrite Sump		0.12	TBD[1]	TBD[1]
				TBD[1]	TBD[1]
				TBD[1]	TBD[1]
				TBD[1]	TBD[1]
Water Storages	Pipeline Sump 1		0.2	7714801	436243
	Pipeline Sump 2		0.2	7714828	436367
Waste Disposal	North Waste Rock Dump		38	7714427	433930
				7714507	434068
				7714335	434273
				7714213	434801
				7714050	434782
				7713799	434055
	South Waste Rock Dump		46.5	7713880	434332
				7713818	434198
				7713516	433983
				7713513	434113
				7713161	434280
				7713158	434124

				7712992	434055
				7712959	434860
				7713183	434914
				7713260	434857
				7713480	434636
				7713697	434488
				7713880	434332
	East Waste Rock Dump		56.66	7714072	435583
				7714056	435272
				7713661	435251
				7713242	434917
				7713337	435160
				7713130	435359
				7713067	435351
				7713002	435821
				7713874	435832
				7713871	435628
	West Waste Rock Dump		45	7713854	432623
				7713281	432786
				7713188	432362
				7712964	432419
				7712971	433303
				7713540	433139
				7713866	432752
Ancillary Infrastructure	Workshop and Offices	ML90177	2	N/A	N/A
	Sewage Treatment Plant		1	7713775	434920
				7713731	434888
	General/Regulated Waste Storage		1	N/A	N/A
	Power Station		2	7713763	434807
				7713662	434704
	Fuel & Chemical Storage		2	N/A	N/A
	Explosives Handling and Storage Facility		1.4	7715854	433476
				7714966	432386
	High Explosives Magazine			7715120	432618
				7714965	432649
	Tailings Pipeline		5	7713690	434582

		ML90177 ML90219 ML90188		7715158	437662
	Laydown/borrow pits		28	N/A	N/A
Stockpiles	Clay & Topsoil (Stockpiles 1 – 25)	ML90177 ML90188	43.8	N/A	N/A
Transport Corridors	Haul Roads & Tracks	ML90177 ML90219 ML90188	40	N/A	N/A
Exploration	Pads/tracks	ML90177	5	N/A	N/A
1 To be determined and notified to the administering authority upon construction.					

Maintenance of Measures, Plant and Equipment	
(A3)	The holder of this environmental authority must: (a) install 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 condition; and (c) operate such measures, plant and equipment in a proper manner.
(A4)	No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration increases, or is likely to increase the risk of environmental harm caused by the mining activities.
Monitoring & Reporting	
(A5)	All management or monitoring plans, systems or programs required to be developed and implemented by the conditions of this environmental authority must be reviewed: (a) at regular intervals not exceeding once every three (3) years; and (b) for effectiveness in minimising the likelihood of environmental harm and amended as promptly as necessary to meet that objective.
(A6)	The holder of this environmental authority must record, compile, evaluate and keep for a period of seven (7) years all monitoring results, records and documents required by this environmental authority and any complaints received about the mining activities and make available for inspection all or any of these records upon request by the administering authority.
(A7)	The holder of this environmental authority must upon request by the administering authority, supply monitoring records, plans and reports in the form and by the means requested by the administering authority within ten (10) business days.
(A8)	All monitoring referred to in this environmental authority shall be undertaken by a suitably qualified and experienced person using monitoring equipment that is accurately calibrated and maintained in good working order and condition.
(A9)	All analyses and tests required to be conducted under this environmental authority must be carried out by a laboratory that has NATA certification for such analyses and tests, except as otherwise authorised by the administering authority.
Risk Management	

(A10)	The holder of this environmental authority must develop and implement a risk management system for mining activities before 31 October 2012 which conforms to the Standard for Risk Management (ISO31000:2009) or the latest edition of Australian Standard for Risk Management.
Emergency Response/Contingency	
(A11)	An emergency response/contingency plan must be developed and implemented before 31 October 2012 to respond to emergency events and incidents. This plan must be provided to the administering authority upon request.
(A12)	The emergency response/contingency plan must be developed in accordance with the most recent version of the ISO14001 standard and must include but not be limited to the following matters: (a) response procedures to be implemented to prevent or minimise the risk of environmental harm arising from incidents; (b) response procedures to minimise the extent and duration of environmental harm caused by an incident; (c) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused; (d) the resources to be used in response to an incident; (e) procedures to investigate the cause of any incidents, including releases, and where necessary, implement remedial actions to reduce the likelihood of a recurrence of similar events; (f) the provision and availability of documented procedures to staff attending any incident to enable them to effectively respond; (g) training of staff that will be called upon to respond to incidents to enable them to effectively respond; (h) timely and accurate reporting of the circumstance and nature of incidents to the administering authority in accordance with conditions of this environmental authority; (i) procedures for accessing monitoring points during incidents; and (j) procedures to notify any potentially impacted stakeholder who may be affected by the event.
Notification of Emergencies, Incidents and Exceedances	
(A13)	The holder of this environmental authority must promptly notify the administering authority by telephone or facsimile as soon as reasonably possible and no later than twenty-four (24) hours after becoming aware of: (a) any emergency or incident which results in the release of contaminants to the receiving environment not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority; or (b) any monitoring result that indicates an exceedance of any environmental authority limit.

(A14)	The notification under Condition (A13) must include but not be limited to the following: (a) the environmental authority number and name of the holder; (b) the name and telephone number of the designated contact person; (c) the location of the emergency, incident or exceedance; (d) the date and time of the emergency, incident or exceedance; (e) the time the holder of this environmental authority became aware of the emergency, incident or exceedance; (f) the estimated quantity and type of substances involved in the emergency, incident or exceedance, if known; (g) the cause of the emergency, incident or exceedance if known; (h) a description of the nature and effects of the emergency, incident or exceedance including risks to the environment or livestock, if known; (i) any sampling conducted or proposed, relevant to the emergency, incident or exceedance; (j) immediate actions taken to prevent or mitigate any further environmental harm caused by the emergency, incident or exceedance; and (k) details of any notification of persons who may be affected by the emergency, incident or exceedance.
(A15)	The holder of this environmental authority must notify any potentially impacted stakeholder by telephone or facsimile immediately after becoming aware of any emergency or incident that has the potential to impact on environmental values or breaches any condition of this environmental authority concerning the release of contaminants to the environment.
(A16)	The notifications under Condition (A13) & (A15) must include the following: (a) the location of the release; (b) the date and time of the release; (c) the estimated quantity and type of any substances involved in the release; (d) the date and time of expected cessation of the release; (e) receiving water(s) including the natural flow rate; (f) the potential impacts to environmental values caused by the release (including available data); and (g) where there is potential impact on the receiving environment, precautionary measures that should be taken.

(A17)	Within ten (10) business days or as otherwise agreed following the initial notification of an emergency, incident or exceedance, further written advice must be provided to the administering authority including the following: (a) results and interpretation of any samples taken and analysed; (b) details regarding the compliance of the release with the conditions of this environmental authority (i.e. contamination limits, natural flow, release volume); (c) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and (d) proposed actions to prevent a recurrence of the emergency, incident or release.
(A18)	As soon as practicable, but not more than six (6) weeks following the implementation of any environmental monitoring performed in relation to the emergency or incident, which results in the release of contaminants not in accordance with, or reasonably expected to be not in accordance with the conditions of this environmental authority, written advice must be provided to the administering authority detailing the results of any such monitoring performed.
Transition to New Standards	
(A19)	Where a condition requires compliance with a standard published externally to this environmental authority and the standard is amended or changed subsequent to issue of this environmental authority, the holder of this environmental authority must, unless otherwise agreed to by the administering authority: (a) comply with the amended or changed standard within twelve (12) months, unless a different period is specified in the amended standard or relevant legislation; and (b) until compliance with the amended or changed standard can be achieved, continue to remain in compliance with the previous standard.
Community	
(A20)	The holder of this environmental authority must establish, promote and maintain easily accessible lines of communication between residents, stakeholders and land owners reasonably expected to be affected by the activities to ensure that social impacts are identified and managed. This must include but not be limited to the following: (a) regular meetings with all relevant stakeholders at intervals of not more than six (6) months; or (b) the establishment of a consultative committee with representation by all relevant stakeholders that meets at regular intervals as determined by the committee.
Complaints	

(A21)	Records must be kept of all environmental complaints received about the mining activities including the following details and must be made available for inspection by the administering authority on request: (a) name, address and contact number 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; and (h) person responsible for resolving the complaint.
(A22)	When requested by the administering authority, the holder of this environmental authority must undertake relevant specified monitoring within a timeframe agreed to by the administering authority to investigate any complaint of environmental harm considered in the opinion of an authorised officer not to be vexatious or frivolous. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures implemented must be provided to the administering authority within ten (10) business days following completion of the investigation or no later than ten (10) business days after the end of the timeframe nominated by the administering authority to undertake the investigation.
Third Party Auditing	
(A23)	Compliance with the conditions of this environmental authority must be audited by a suitably qualified third party auditor nominated by the holder of this environmental authority and accepted by the administering authority before 1 March 2013 and then at regular intervals not exceeding once every three (3) years.
(A24)	Within one (1) month of completing the audit required under Condition (A23), the holder of this environmental authority must provide a written report to the administering authority addressing the: (a) actions taken to ensure compliance with this environmental authority; and (b) actions taken to prevent a recurrence of any non-compliance issues identified.
(A25)	The third party auditor must certify the independent findings of the audit in the report required under Condition (A24).
(A26)	The holder of this environmental authority must promptly act upon any recommendations arising from the audit by: (a) investigating any non-compliance issues identified; and (b) as soon as practicable, implementing measures or taking necessary action to ensure compliance with the requirements of this environmental authority.
Exploration	
(A27)	Disturbance due to exploration activities in areas not scheduled to be mined must be rehabilitated in accordance with the provisions detailed in the administering authority's *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

<table>
<tr><th colspan="2">Schedule B – Air</th></tr>
<tr><th>Condition number</th><th>Condition</th></tr>
<tr><td colspan="2">General</td></tr>
<tr><td>(B1)</td><td>The release of dust and/or particulate matter, noxious or offensive odour or any other airborne contaminants resulting from the mining activities must not cause environmental harm.</td></tr>
<tr><td>(B2)</td><td>The holder of this environmental authority must ensure that vehicles (including trains) used for transporting bulk materials from the mining lease(s), leave the mining lease(s) with appropriate load preparation to prevent the spillage and/or loss of particulate matter and/or windblown dust during transport.</td></tr>
<tr><td>(B3)</td><td>The holder of this environmental authority must implement and maintain best practice environmental management dust control procedures that incorporates a program for continuous improvement for the management of dust resulting from the mining activities including, but not limited to equipment selection, mine planning, design and operation and staff training.</td></tr>
<tr><td colspan="2">Point Source Releases to Air</td></tr>
<tr><td>(B4)</td><td>Point source emissions to air must only be released to the atmosphere from the release points specified in Table B1 – Release Points.</td></tr>
<tr><td colspan="2">Table B1 – Release Points
<table>
<tr><th>Release Point/Monitoring Location</th><th>Minimum Release Height (m)</th><th>Minimum Velocity (m/s)</th></tr>
<tr><td>Power Station Stacks 1 - 14</td><td>20</td><td>14[1]</td></tr>
</table>
[1] Estimate based on preliminary design.</td></tr>
<tr><td>(B5)</td><td>The release of contaminants to the atmosphere from the site to which this environmental authority relates must not cause an exceedance of the Ambient Air Quality Limits specified in Table B2 – Ambient Air Quality Limits and Table B4 – Ambient Air Quality & Dust Deposition Trigger Levels & Limits.</td></tr>
<tr><td>(B6)</td><td>The sulphur content of any fuel burned in the power station units on the mining lease(s) must not exceed 0.5 percent by weight.</td></tr>
<tr><td colspan="2">Mineral Concentrate Management</td></tr>
<tr><td>(B7)</td><td>The concentrate storage shed must be constructed and maintained in a manner which does not result in exceedances of air quality contaminant limits beyond the boundary of the site or at any sensitive receptor.</td></tr>
<tr><td colspan="2">Ambient Air Quality Monitoring</td></tr>
<tr><td>(B8)</td><td>The holder of this environmental authority must conduct the activities in such a manner so as not to cause any exceedance of the ambient air quality limits when measured hourly at the monitoring location identified in Table B2 – Ambient Air Quality Limits.</td></tr>
</table>

Table B2 – Ambient Air Quality Limits

Contaminant	Air Quality Limit[1]/Limit Type			Monitoring Location
	Maximum as a one hour average	Maximum as a 24 hour average	Maximum as an annual average	
Sulphur dioxide	570µg/m^3 0.2 ppm	230µg/m^3 0.08 ppm	22µg/m^3 0.0075 ppm	DM-01, DM-02, DM-03 (Chumvale Homestead) and DM-04
Nitrogen dioxide	250µg/m^3 0.12 ppm	NA	33µg/m^3 0.016ppm	
Carbon Monoxide[2]	11mg/m^3 (9ppm)	NA	NA	DM-01, DM-03 (Chumvale Homestead) and DM-05

1. Ambient air quality limits are based on Schedule 1 of the *Environmental Protection (Air) Policy 2008.*

2. Based on an 8 hour period.

(B9)	If monitoring required in accordance with Condition (B8) indicates the limits in Table B2 – Ambient Air Quality Limits have been exceeded, the holder of this environmental authority must undertake an investigation to identify the cause of the exceedance. If the exceedance is found to be attributable to the mining activities, the holder of this environmental authority must promptly implement measures to ensure that contaminants generated by the mining activities do not exceed the limits listed in Table B2 **–** Ambient Air Quality Limits when measured at the monitoring location.
Ambient Air Quality and Dust Deposition Monitoring Program	
(B10)	The holder of this environmental authority must develop and implement an ambient air quality and dust deposition monitoring program, at the monitoring points specified in Table B3 **–** Air Quality Monitoring Sites and shown in Schedule J Plan 2 – Air Quality Monitoring Locations at the monitoring frequency and for the contaminants specified in Table B4 – Ambient Air Quality & Dust Deposition Trigger Levels & Limits.

Table B3 – Air Quality Monitoring Sites

Site	Coordinates (GDA94 MGA zone 54)		Monitoring Location
	Northing	Easting	
Compliance			
1	7713623	436029	DM-01 (eastern boundary of ML90177)
2	7713324	437035	DM-03 (Chumvale Homestead)
3	TBD1	TBD1	DM-05 (Process plant boundary)
Reference			
1	7715342	430774	DM-02 (western boundary of ML90177)
2	7716933	440348	DM-04 (northeast of ML90188)
Dust Deposition			
1	TBD[1]	TBD[1]	Dust deposition gauge (process plant area)
2	TBD[1]	TBD[1]	Dust deposition gauge (process plant area)

[1] To be determined and notified to the administering authority upon commissioning, but no later than 2 March 2016.

(B11)	The holder of this environmental authority must conduct the activities in such a manner so as not to cause any exceedance of the ambient air quality limits identified in Table B4 **–** Ambient Air Quality & Dust Deposition Trigger Levels & Limits at any sensitive place or commercial place and beyond the boundary of the licensed place.

Table B4 - Ambient Air Quality & Dust Deposition Trigger Levels & Limits

Contaminant	Limit Type/Measurement Period	Trigger Level	Air Quality Limit [2]	Frequency of Monitoring
Particulates (PM_{10} fraction)	24 hour average Note: Five (5) days of exceedances allowed each year including natural causes	NA	50µg/m^3	Continuous or at least once every thirteen (13) days
Total suspended particulate matter (TSP)	24 hour average		90µg/m^3	
Arsenic and its compounds measured as the total metal content in (PM_{10} fraction) [1,3,4]	Annual average	NA	0.006µg/m^3	Where copper and its compounds exceeds trigger levels and in accordance with the requirements of Condition B14 and as required to ensure compliance with B11
Cadmium and its compounds measured as the total metal content in (PM_{10} fraction) [1,3,4]	Annual average		0.005µg/m^3	
Lead and its compounds measured as the total metal content in total suspended particulates (TSP) [1,3,4]	Annual average		0.5µg/m^3	

Nickel and its compounds measured as the total metal content in (PM_{10} fraction) [1,3,6]	Annual average		0.02 µg/m^3	
Zinc and its compounds measured as the total metal content in total suspended particulates (TSP) [1,3,4]	24 hour average	NA	No Limit - measured for evaluating the effectiveness of dust control measures	
Copper and its compounds measured as the total metal content in total suspended particulates (TSP)	24 hour average	TBD[7,8]	NA	Monthly
Dust Deposition [5]				
Arsenic and its compounds as arsenic[3]	Annual average	4 µg/m^2/day [5]	NA	Where copper and its compounds as copper exceeds trigger levels and in accordance with the requirements of Condition B14
Cadmium and its compounds as cadmium [3]	Annual average	2 µg/m^2/day [5]		
Lead and its compounds as lead [3]	Annual average	100 µg/m^2/day [5]	250 µg/m^2/day	
Copper and its compounds as copper	Annual average	330 µg/m^2/day	NA	Monthly
Dust deposition (total insoluble matter)	Monthly average	NA	120 mg/m^2/day	Monthly

1 The holder of this environmental authority may elect to monitor these contaminants as the total metal content in total suspended particulates and meet the same limit.

2 Limits based on Schedule 1 of the *Environmental Protection (Air) Policy 2008*.

3 Metal analysis must be carried out in accordance with a methodology sufficient to produce representative results capable of comparison against the respective limits & trigger values.

4 Monitored in accordance with any method for measuring TSP as recommended in the most recent version of the relevant Australian Standard for measuring TSP.

5 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*.

6 Monitored in accordance with the most recent version of the relevant Australian Standard for measuring 10 micrometres (PM_{10}) suspended.

7 Metal analysis must be carried out in accordance with a methodology sufficient to produce representative results capable of comparison against the respective limits and trigger values.

8 Monitoring of copper and its compounds to set accurate and representative air quality trigger level must be undertaken and completed by 2 February 2016 and provided to the administering authority.

(B12)	The holder must record the results and analysis of ambient air quality and dust deposition monitoring and provide them to the administering authority on request.
(B13)	In the event of monitoring showing exceedance of the trigger levels specified in Table B4 – Ambient Air Quality & Dust Deposition Trigger Levels & Limits, the holder of this environmental authority must: (a) Undertake an investigation to identify the cause of the exceedance and the potential for environmental harm being caused or likely to be caused by the exceedance. If the exceedance is found to be attributable to the mining activities, the holder of this

	environmental authority must promptly implement measures to ensure that contaminants generated by the mining activities do not exceed the limits listed in Table B4. (b) If the exceedance is found to not be due to mining activities, record details of the investigation and likely causes of the exceedance. (c) Where the exceedance is attributable to the mining activities, complete an investigation and provide a written report to the administering authority within three (3) months of the date of the original exceedance, outlining: (i) details of the investigation carried out; and (ii) actions taken to prevent environmental harm.
Environmental Nuisance	
(B14)	When requested by the administering authority, monitoring of noxious or offensive odours or any other noxious or offensive airborne contaminants must be undertaken to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance caused by noxious or offensive odours or airborne contaminants from the site and the results provided to the administering authority within ten (10) business days following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected sensitive place or commercial place and at upwind control sites.
(B15)	In the event of a complaint made to the administering authority (which in the opinion of an authorised officer is considered neither frivolous nor vexatious) about airborne contaminants generated in carrying out the mining activities, dust and particulate matter must not exceed any 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* and Australian Standard AS/NZS3580.1.1:2007 “Methods for siting and analysis of ambient air, Part 1.1: Guide for siting air monitoring equipment” (or more recent versions as they become available); (b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic metre over a twenty-four (24) hour averaging time, when monitored in accordance with the most recent version of the relevant Australian Standard for measuring 10 micrometres (PM_{10}) suspended; and Note: Five (5) days of exceedances allowed each year including natural causes. (c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a one (1) year averaging time, when monitored in accordance with any method for measuring TSP as recommended in the most recent version of the relevant Australian Standard for measuring TSP.
(B16)	If monitoring indicates the airborne contaminants specified in Condition (B15) have been exceeded, the holder of this environmental authority must compare the results of the impacted site to that of the reference monitoring site. If the level of airborne contaminants at the impacted site does not exceed

	the reference monitoring site, then no action is to be taken and the contaminants will be regarded as not having been generated in the carrying out of the authorised activity.
(B17)	If monitoring indicates the limits in Condition (B15) have been exceeded, the holder of this environmental authority must promptly implement dust abatement measures so that emissions of dust determined as having been generated by the mining activities, cease to exceed the limits in Condition (B15).
Light	
(B18)	In the event of a complaint about light emissions from any mining activity that, after investigation is in the opinion of an authorised officer causing a nuisance at a sensitive place, the administering authority may request the holder of this environmental authority to take appropriate action to mitigate the nuisance and the holder must take appropriate action (e.g. by screening or directing the light away from the sensitive place) within a time set by the administering authority.
Meteorological Monitoring	
(B19)	Under circumstances where relevant wind, temperature and rainfall data cannot be provided to the holder of this environmental authority from the Cloncurry Meteorological Station operated by the Bureau of Meteorology, the holder of this environmental authority must establish and maintain an on-site meteorological station to measure and record wind speed, wind direction, temperature and rainfall intensity. The holder must record, compile, evaluate and keep all monitoring records obtained from the on-site meteorological station.

Schedule C – Land and Rehabilitation	
Condition number	**Condition**
General	
(C1)	Contaminants that will or may cause environmental harm must not be directly or indirectly released to land except as permitted under this environmental authority.
(C2)	Any spillage of wastes, contaminants or other materials must be cleaned up promptly. Such spillages must be cleaned up using dry methods that minimise the release of wastes, contaminants or materials to any stormwater drainage system, roadside gutter or waters.
Rehabilitation Objectives	
(C3)	Land disturbed by mining must be rehabilitated in accordance with Table C1 - Rehabilitation Requirements.

Table C1 - Rehabilitation Requirements

Mine Domain	Mine Feature	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Residual Voids	Las Minerale	All land subject to mining activities must be rehabilitated to meet the requirements of the administering authority's Guideline - Rehabilitation requirements for Mining Projects and will be defined in the Post Mine Land Use Plan	TBD[1]	TBD[1]	TBD[1]
	Las Minerale				
	Southern Rocklands				
	Southern Rocklands Extended				
Run of Mine (ROM)	ROM Pad		TBD[1]	TBD[1]	TBD[1]
Processing Area	Processing Plant		TBD[1]	TBD[1]	TBD[1]
Regulated Dams and Diversions	Tailings Storage Facility		TBD[1]	TBD[1]	TBD[1]
	Tailings Storage Facility Decant Pond				
	Process Water Pond				
	Raw Water Pond				
	Plant Site Catch Dam (ECD2)				
	ROM Pad Drainage Pond				
	Water Storage Facility				
	Morris Creek Diversion Dam/ Embankment				

	Backflow Prevention Dam				
	Morris Creek Diversion Channel Levee				
	East Dump Catch Dam (MB-SP-01)				
	East Dump Catch Dam (MB-SP-02)				
	North Dump Catch Dam 1 (MB-SP-06)				
	West Dump Catch Dam (MB-SP-07)				
	North Dump Catch Dam 3 (MB-SP-08)				
	Chalcopyrite Sump				
Water Storages	TSF South Catch Dam (SP-04)		TBD[1]	TBD[1]	TBD[1]
	TSF East Catch Dam (SP-05)				
	TSF North-East Catch Dam (SP-06)				
	TSF North-Central Catch Dam (SP-07)				
	TSF North-West Catch Dam (SP-08)				
	Pipeline Sumps				
Waste Disposal	North Waste Rock Dump		TBD[1]	TBD[1]	TBD[1]
	South Waste Rock Dump				
	East Waste Rock Dump				
	West Waste Rock Dump				
Ancillary Infrastructure	Workshop and Offices		TBD[1]	TBD[1]	TBD[1]
	Sewage Treatment Plant				
	General/Regulated Waste Storage				
	Power Station				
	Fuel & Chemical Storage				
	Explosives Handling & Storage Facility & High Explosives Magazine				
	Water Supply Pipeline				
	Tailings Pipeline				
	Laydowns/borrow pits		TBD[1]	TBD[1]	TBD[1]

Stockpiles	Clay & Topsoil (Stockpiles 1 – 25)		TBD[1]	TBD[1]	TBD[1]
Transport Corridors	Roads & Tracks		TBD[1]	TBD[1]	TBD[1]
Lone Block	Cleared Area		1. To create a rehabilitation profile which will be safe to humans and wildlife; 2. To encourage foraging in the rehabilitated area by Purple-Necked Rock Wallaby; 3. To minimise the risk of pollution through well designed rehabilitation profiles that will reduce the risk of mobilisation of pollutants wither to aqueous systems or to the atmosphere in the form of dust; 4. To produce rehabilitated landforms which are geotechnically stable and reduce the likelihood of erosion and mobilisation of sediment; 5. To produce a rehabilitated landform which will be able to sustain a post- mining land use similar to that pre- mining, which in the case of the Rocklands project is low intensity grazing land and native animal habitat; and 6. To leave on closure any infrastructure that will be of benefit to stakeholders.	TBD[1]	TBD[1]
Exploration	Pads/tracks		TBD[1]	TBD[1]	TBD[1]

[1] Post mine land use, rehabilitation indicators and completion criteria are to be nominated in accordance with Condition (C18).

(C4)	Areas that are available for rehabilitation must be identified in the current Plan of Operations.
(C5)	Rehabilitation must commence progressively as areas become available and in accordance with the Plan of Operations.

Disturbance to Land

(C6)	When carrying out mining activities the holder of this environmental authority must: (a) avoid, minimise or mitigate (in order of preference) any impacts on areas of sensitive vegetation or other areas of ecological value; (b) minimise the risk of injury, harm, or entrapment to wildlife and stock; (c) minimise disturbance to land that may otherwise result in land degradation; (d) ensure that for land that is to be significantly disturbed by mining activities the topsoil layer is removed and handled in a manner that will minimise degradation of its biological, chemical and physical properties and is used for rehabilitation purposes (in accordance with Condition (C10 – C12); (e) prior to carrying out any disturbance activities, make all relevant staff, contractors or agents carrying out those activities, aware of the location of any Category A, B or C Environmentally Sensitive Area (ESA) and the relevant requirements of this environmental authority; (f) if significant disturbance to land is unavoidable, the holder of this environmental authority must clear vegetation in a way which minimises fragmentation; and (g) manage cleared vegetation so that it is stockpiled in a manner that facilitates salvage, respreading or burning and does not impede vehicle, stock or wildlife movements. *Note: This environmental authority does not authorise the taking of protected animals or the tampering with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring.*
Biodiversity Offsets	
(C7)	Prior to commencing construction of the extension to the East Waste Rock Dump, the holder of this environmental authority must undertake an assessment to identify the presence of any potential state significant biodiversity values as identified by the *Queensland Biodiversity Offset Policy*. An assessment report must be provided to the administering authority within one (1) month from the date of completion of the assessment.
(C8)	If the assessment required by condition (C7) shows that mining activities will potentially impact on a state significant biodiversity value, the holder of this environmental authority must demonstrate to the administering authority that it has met the requirements of the *Queensland Biodiversity Offset Policy* through provision of a site specific Biodiversity Offset Strategy.

(C9)	The holder of this environmental authority must provide an offset for impacts on state significant biodiversity values in accordance with the *Queensland Biodiversity Offset Policy*. The biodiversity offset must be consistent with the offset identified in the Biodiversity Offset Strategy, required in accordance with Condition (C8), and must be provided either: (a) prior to impacting on state significant biodiversity values; or (b) where a land based offset is to be provided, within twelve (12) months of the later of either of the following: (i) the date of issue of this environmental authority; or (ii) the relevant stage identified in the Biodiversity Offset Strategy submitted under Condition (C8); or (c) where an offset payment is to be provided, within four (4) months of the later of either of the following: (i) the date of issue of this environmental authority; or (ii) the relevant stage identified in the Biodiversity Offset Strategy submitted under condition (C8).
(C10)	A Biodiversity Offset Strategy must be developed and submitted to the administering authority thirty (30) days, or a lesser time period agreed to by administering authority, prior to impacting on state significant biodiversity values. The Biodiversity Offset Strategy must include at a minimum: (a) demonstration that the activity has avoided or minimised impacts to state significant biodiversity values; (b) where there will be impacts to state significant biodiversity values, a detailed description of the values which will be impacted, and the extent of that impact; (c) mapping that details the surveyed locations of any state significant biodiversity values at the licensed place; (d) results of a flora and fauna assessment of the affected area to determine if the operations will directly impact on any state significant biodiversity values detailed in the *Queensland Biodiversity Offset Policy;* (e) project stages for the provisions of offsets (f) where an offset transfer is proposed, or where a land based offset is to be secured within twelve (12) months of commencement of the relevant stage, evidence that an offset can be located within the landscape; and (g) an ecological equivalence assessment where required by the *Queensland Biodiversity Offset Policy.*
Topsoil Stockpiles	
(C11)	Topsoil and subsoils must be stripped and stockpiled ahead of mining to a depth determined from soil surveys to ensure that useable soil resources are preserved for rehabilitation.

(C12)	Topsoil and subsoil stockpiles must be managed to ensure stability and minimise the release contaminants. Measures must include: (a) vegetating stockpiles; (b) minimising the height of stockpiles; and (c) re-using stockpiles as soon as possible.
(C13)	A topsoil inventory which identifies the topsoil requirements for the mining project and availability of suitable topsoil on site must be detailed in a Topsoil Management Plan.
Chemicals and Flammable or Combustible Liquids	
(C14)	All explosives, hazardous chemicals, corrosive substances, toxic substances, gases, *flammable or combustible* liquids and dangerous goods must be stored and handled in accordance with the current, relevant Australian Standard where applicable.
(C15)	Notwithstanding the requirements of any applicable Australian Standard, any liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land.
(C16)	Where no relevant Australian Standard is available, the following must be applied: (a) storage tanks must be bunded such that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 110% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and (b) drum storages must be bunded such that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.
(C17)	All containment systems must be designed to minimise rainfall collection within the system.
Post Mine Land Use Plan	

(C18)	The holder must develop and submit to the administering authority a Post Mine Land Use Plan (PMLUP) before 31 October 2015 and update and resubmit the plan with each subsequent Plan of Operations. The PMLUP must describe how the rehabilitation objectives in Table C1 – Rehabilitation Requirements will be achieved. On acceptance of the PMLUP by the administering authority, rehabilitation objectives, indicators and completion criteria must be specified in the environmental authority. The Post Mine Land Use Plan must include: 1. residual void investigation in accordance with Condition (C19); 2. schematic representation of final land form inclusive of drainage features 3. slope design; 4. drainage design; 5. erosion controls proposed on reformed land; 6. description of experimental design for monitoring of analogue and rehabilitated areas inclusive of statistical design; 7. proposed revegetation methods inclusive of plant species selection, re-profiling, respreading soil, soil ameliorants/amendments, surface preparation and method of propagation; 8. materials balance including available top soil and low permeability capping material; 9. chemical, physical and biological properties of soil and water; 10. performance criteria for the cover system; 11. a rehabilitation monitoring program; and 12. a Rehabilitation Action Plan for the cleared area to be rehabilitated identified in Plan 1 – General Area Plan. The Rehabilitation Action Plan must: (i) be developed by an appropriately qualified person; (ii) be designed to encourage foraging in the rehabilitated area by Purple-Necked Rock Wallaby populations; and (iii) be designed to achieve the rehabilitation goals of the environmental authority.
Residual Void Studies	

(C19)	Complete an investigation into residual voids and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in Condition (C20) and landform design criteria for review and comment by the administering authority. The investigation must at a minimum include the following: (a) a study of options available for minimising final void area and volume; (b) develop design criteria for rehabilitation of final voids; (c) a void hydrology study, addressing the long-term water balance in the voids, connections to groundwater resources and water quality parameters in the long term; (d) a study of the measures to protect the residual voids, un-compacted overburden and workings from the "probable maximum flood" level based on the Bureau of Meteorology's "probable maximum precipitation" forecast for the locality; (e) a pit wall stability study, considering the effects of long-term erosion and weathering of the pit wall and the effects of significant hydrological events; (f) a study of void capability to support native flora and fauna; and (g) a proposal/s for end of mine void rehabilitation success criteria and final void areas and volumes. *Note: These studies must be undertaken during the life of the mine, and will include detailed research and modelling.*
Residual Void Outcome	
(C20)	Residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself, and subject to any other condition within this environmental authority.
Rehabilitation Monitoring Program	
(C21)	The holder of this environmental authority must appoint a suitably qualified and experienced person in the field of mine site rehabilitation, to develop a rehabilitation monitoring program for implementation on commencement of any rehabilitation.
(C22)	The holder must conduct rehabilitation monitoring in accordance with the program developed in the PMLUP on at least a yearly basis following submission of the PMLUP, which must include sufficient spatial and temporal replication to enable scientifically justifiable conclusions as established under the rehabilitation program or other methodology to the satisfaction of the administering authority.
(C23)	Verification of rehabilitation success must be carried for each domain and must include sufficient replication to enable statistical analysis of results at an acceptable power.
Post Closure Management Plan	

(C24)	A Post Closure Management Plan for the site must be prepared at least eighteen (18) months prior to final production onsite and implemented for a period of: (a) at least thirty (30) years following final production on site; or (b) a shorter period if: (i) the site is proven to be geo-technically and geo-chemically stable; and (ii) it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm; and (iii) the plan is prepared at least six (6) months prior to final production onsite.
(C25)	The Post Closure Management Plan must include the following elements: (a) operation and maintenance of: (i) wastewater collection and reticulation systems; (ii) wastewater treatment systems; (iii) the groundwater monitoring network; (iv) final cover systems; and (v) vegetative cover. (b) monitoring of: (i) surface water quality; (ii) groundwater quality; (iii) seepage rates; (iv) erosion rates; (v) the integrity and effectiveness of final cover systems; (vi) the health and resilience of vegetative cover.
Infrastructure	
(C26)	All buildings, structures, mining equipment and plant erected and/or used for the mining activities must be removed from the site prior to surrender, except where: (a) agreed in writing by— (i) the Minister responsible for the *Mineral Resources Act 1989*; (ii) the administering authority; and (iii) the landowner; or (b) authorised for on-site disposal under condition **(E3)**.
Contaminated Land	
(C27)	Prior to making an application for surrender or approval for progressive rehabilitation the holder of this environmental authority must undertake a contaminated land assessment/investigation of the relevant areas of the licensed place in accordance with the administering authority's *Guideline for the Assessment & Management of Contaminated Land in Queensland.*

Schedule D – Regulated Dams (including structures containing mineral waste)	
Condition number	**Condition**
General	
(D1)	The design storage allowance for the regulated dams specified in this environmental authority are a minimum design storage requirement and any releases from any regulated dams must also meet the requirements set out under the water schedule.
(D2)	The hazard category of any dam must be assessed by a suitably qualified and experienced person prior to its construction and at least once every two (2) years thereafter.
(D3)	The holder of this environmental authority must not commence construction of any regulated dam (i.e. dams determined to be in the significant or high hazard category) unless the location, hydraulic performance, size and purpose of that dam are specifically referenced in accordance with this environmental authority in the form of tabulated details as identified in Table D1, D2 & D3.
(D4)	The construction and operation of regulated dams listed in Table D1 - Location of Regulated Dams, must be located on the mining lease(s) within the polygonal area defined by the co- ordinates listed in Table D1 – Location of Regulated Dams.

Table D1 - Location of Regulated Dams

Name of Regulated Dams	**Coordinates (GDA94 MGA zone 54)**	
	Northing	**Easting**
Tailings Storage Facility	7714821	439011
	7714812	438674
	7714809	438358
	7714848	438355
	7714848	437725
	7714886	437687
	7715062	437694
	7715071	437693
	7715083	437692
	7715364	437684
	7715601	437694
	7715670	437784
	7715701	438064
	7715760	438547
	7715821	438645
	7715951	438839
	7715950	439119
	7715994	439224
	7715994	439271
	7715671	439341
	7715594	439314
	7715552	439317
	7715536	439308
	7715368	439293
	7715073	439267
Tailings Storage Facility Decant Pond	7715463	438412
	7715466	438302

	7715333	438322
	7715341	438424
Water Storage Facility	7715560	432695
	7715454	432498
	7715209	432860
	7715044	432705
	7714961	432760
	7715001	432909
	7714898	433018
	7714952	433059
	7714958	433427
	7715095	433632
	7715169	433583
	7715345	433379
	7715560	432695
Plant Site Catch Dam (ECD2)	7714049	434807
	7714000	434706
	7713943	434732
	7713999	434833
Process Water Pond	7714004	434701
	7713971	434618
	7713838	434698
	7713880	434755
Raw Water Pond	7714008	434836
	7713947	434878
	7713916	434821
	7713973	434785
PAF Sump (Southern Rocklands Extended Pit)	7713939	432895
	7713890	433047
	7713761	433138
	7713637	433188
	7713628	433181
	7713753	432977
	7713835	432882
	7713890	432859
ROM Pad Drainage Pond	7713863	434692
	7713827	434712
	7713844	434745
	7713882	434725
Morris Creek Diversion Dam/Embankment	7713860	432615
	7713859	432622
	7713314	432778
	7713316	432771
Morris Creek Diversion Channel Levee	7714546	432825
	7714424	432729
	7714311	432647
Backflow Prevention Dam	7714378	433934
	7714107	433972
	7714071	433978
	7714002	433998
	7713934	434020
East Dump Catch Dam (MB-SP-01)	7713784	435207
	7713755	435130
	7713676	435148

	7713716	435198
	7713758	435225
East Dump Catch Dam (MB-SP-02)	7714068	435855
	7714072	435858
	7714062	435874
	7714058	435869
North Dump Catch Dam 1 (MB-SP-06)	7714148	435339
	7714150	435345
	7714094	435385
	7714091	435380
West Dump Catch Dam (MB-SP-07)	7713877	433494
	7713736	433573
	7713744	433575
	7713883	433497
North Dump Catch Dam 3 (MB-SP-08)	7714296	433892
	7714302	433932
	7714139	433958
	7714133	433918
Chalcopyrite Sump	TBD[1]	TBD[1]
	TBD[1]	TBD[1]
	TBD[1]	TBD[1]
	TBD[1]	TBD[1]

[1] TBD and notified to the administering authority upon completion of final design plan.

(D5) The construction and operation of regulated dams must comply with Table D2 - Size and Purpose of Regulated Dams.

Table D2 - Size and Purpose of Regulated Dams

Regulated Dam	Hazard Category	Maximum Surface Area (Ha)	Maximum Volume (m3)	Maximum Height (m)	Purpose
Tailings Storage Facility	High	153	19.4×10^6	16	Permanent storage of tailings
Tailings Storage Facility Decant Pond	Significant	0.511	40,000	16	Collection of TSF decant water
Water Storage Facility	Low	37	1.1×10^6	8	Storage of potentially contaminated waters
Process Water Pond	High	1.28	12,000	4.5	Storage of process water
Raw Water Pond	Low	0.4	7800	5.9	Storage of water for processing requirements
Plant Site Catch Dam (ECD2)	High	0.83	12,000	4	Storage of potentially contaminated waters
PAF Sump (Southern Rocklands Extended Pit)	High	4.6	830,000	60	Storage of contaminated waters
Chalcopyrite Sump	High	0.12	4,667	2.5	

ROM Pad Drainage Pond	High	0.16	3,550	6	Storage of potentially contaminated waters
Morris Creek Diversion Dam/Embankment	High	89	3,900	12	Surface flow diversion
Morris Creek Diversion Channel Levee	High	N/A	N/A	4	Surface flow diversion
Backflow Prevention Dam	High	N/A	TBD[1]	TBD[1]	Surface backflow prevention
East Dump Catch Dam (MB-SP-01)	Low	0.5	TBD[1]	TBD[1]	Storage of potentially contaminated waters
East Dump Catch Dam (MB-SP-02)	Low	0.58	TBD[1]	TBD[1]	
West Dump Catch Dam (MB-SP-07)	Low	2.4	TBD[1]	TBD[1]	
North Dump Catch Dam 1 (MB-SP-06)	Low	1.52	TBD[1]	TBD[1]	
North Dump Catch Dam 3 (MB-SP-08)	Low	0.66	16,734	2.5	

[1] TBD and notified to the administering authority upon completion of final design plan

(D6)	Regulated dams constructed on the mining lease(s) must comply with the hydraulic performance criteria shown in Table D3 – Hydraulic Performance Criteria for Regulated Dams.

Table D3 – Hydraulic Performance Criteria for Regulated Dams

Name of Regulated Dam	Spillway Capacity or Diversion Capacity (levees) AEP	Design Storage Allowance (dams other than levees) AEP	Mandatory Reporting Level[1] (dams other than levees) AEP[2]
Tailings Storage Facility	1-in-10,000 year ARI	1-in-200 year ARI 2 month wet season plus process inputs for the 2 month wet season	1-in-200 year ARI 72 hour rainfall duration
Tailings Storage Facility Decant Pond	1-in-1,000 year ARI	1-in-20 year ARI 2 month wet season plus process inputs for the 2 month wet season	1-in-10 year ARI 72 hour rainfall duration
Water Storage Facility	1-in-10,000 year ARI	1-in-200 year ARI 2 month wet season plus process inputs for the 2 month wet season	1-in-200 year ARI 72 hour rainfall duration
Process Water Pond	1-in-10,000 year ARI	Pond with equal capacity provided to contain any overflow	N/A (Overflow reports to Plant Site Catch Dam)
Raw Water Pond	1-in-100 year ARI	N/A	N/A
ROM Pad Drainage Pond	1-in-10,000 year ARI	1-in-50 year ARI 72 hour rainfall duration	N/A (Overflow reports to Plant Site Catch Dam)
Plant Site Catch Dam (ECD2)	1-in-10,000 year ARI	Empty during normal operation provides overflow capacity for process water dam and ROM pad dam	1-in-200 year ARI 72 hour rainfall duration
PAF Sump (Southern Rocklands Extended pit)	N/A	Greater than 1-in-200 year ARI 2 month wet season plus PAF drainage	1-in-200 year ARI 72 hour rainfall duration
Morris Creek Diversion	PMF[3]	PMF[3] of critical duration	PMF3

Dam/Embankment			
Morris Creek Diversion Channel Levee	PMF[3]	PMF[3] of critical duration	N/A
Backflow Prevention Dam	PMF[3]	PMF[3] of critical duration	N/A (Dam crest is 1m above PMF level and diverts backflow along old Morris Creek channel)
East Dump Catch Dam (MB-SP-01)	N/A	1-in-10 year ARI 24 hour rainfall duration	N/A (Dams are designed to overflow when rainfall exceeds 1-in-10 year ARI 24 hour rainfall duration)
East Dump Catch Dam (MB-SP-02)			
North Dump Catch Dam 1 (MB-SP-06)			
West Dump Catch Dam (MB-SP-07)			
North Dump Catch Dam 3 (MB-SP-08)	1-in-100 year ARI	1-in-20 year ARI 24 hour rainfall duration	1-in-10 year ARI 24 hour rainfall duration
Chalcopyrite Sump	1-in-100 year ARI	1-in-20 year ARI 24 hour rainfall duration	1-in-10 year ARI 24 hour rainfall duration

[1] Refers to the level below the spillway crest, required to contain either the AEP (design risk) 72hr storm or the AEP (design risk) wave allowance, whichever is lower.
[2] AEP means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.
[3] PMF refers to the Probable Maximum Flood.

(D7)	The spillway for any regulated dam constructed within the operational land must be designed and maintained to withstand the peak flow from the critical design storm in Table D3 – Hydraulic Performance Criteria for Regulated Dams.
Regulated Dams – Certification and Operation	
(D8)	Every regulated dam must be constructed in accordance with a certified design plan that has been submitted to the administering authority and developed so that the resulting dam will deliver the performance stated in the submitted design plan and is compliant with this environmental authority.
(D9)	The holder of this environmental authority must not commence construction of a regulated dam unless: (a) the holder has submitted to the administering authority two (2) electronic copies (including one (1) locked and one (1) working copy) of a design plan together with the certification of a suitably qualified and experienced person that the design of the regulated dam will deliver the performance stated in that submitted design plan and that dam is compliant with this environmental authority; and (b) at least twenty (20) business days has passed since the receipt of those documents or the administering authority notifies the holder that a design plan and certification has been submitted for that dam.
(D10)	When construction or modification of any regulated dam is complete and prior to commencing operation of that dam, the holder of this environmental authority must submit to the administering authority two (2) electronic copies (including one (1) locked and one (1) working copy) of a set of 'as constructed' drawings together with certification by a suitably qualified and experienced person that the regulated dam 'as constructed' will deliver the performance stated in the submitted design plan and is compliant with this environmental authority.

(D11)	An operational plan must be kept current for each regulated dam, and cover all matters relevant to its operation and maintenance so as to be consistent with conditions in this environmental authority.
(D12)	Where an operational plan covers decommissioning and rehabilitation, those operations are to be consistent with the design plan for the regulated dam and the rehabilitation requirements of this environmental authority.
Morris Creek Diversion Dam/Embankment	
(D13)	The holder of this environmental authority must install and maintain a seepage detection system to detect any seepage from the West Waste Rock Dump that could potentially enter the Morris Creek Diversion Channel.
(D14)	If seepage is detected in the seepage detection system required in accordance with Condition (D13), the environmental authority holder must take all reasonable and practicable measures to prevent seepage entering the Morris Creek Diversion Channel not in accordance with the conditions of this environmental authority.
(D15)	Water stored in the Morris Creek Diversion Dam/Embankment or diverted along the Morris Creek Diversion Channel must not enter any open pit or waste rock dump. *Note: Water stored in the Morris Creek Diversion Dam/Embankment may enter the south western portion of the West WRD in accordance with Condition E12.*
Mandatory Reporting Level	
(D16)	If a Mandatory Reporting Level (MRL) is required in accordance with Table D3 – Hydraulic Performance Criteria for Regulated Dams, it must be marked on the regulated dam in such a way that the MRL is clearly visible during routine inspection of the dam.
(D17)	The holder of this environmental authority must notify the administering authority as soon as possible, but within twenty-four (24) hours, of the level in any regulated dam reaching the mandatory reporting level in Table D3 – Hydraulic Performance Criteria for Regulated Dams; and must promptly act to prevent or minimise the risk of environmental harm.
Inspection of Regulated Dams	
(D18)	A suitably qualified and experienced person must inspect all regulated dams annually before 1 November each year and at any time when abnormal or otherwise unsatisfactory conditions are observed.
(D19)	At each annual inspection, the condition and adequacy of each regulated dam must be assessed for dam safety and in terms of the necessary structural, geotechnical and hydraulic performance criteria.
(D20)	At each annual inspection if a mandatory reporting level is required it must be determined and marked on each regulated dam.

(D21)	A final assessment of the adequacy of available storage in each regulated dam must be based on a dam level observed within the month of October and result in an estimate of the level in that dam as at 1 November each year.
(D22)	For each annual inspection, two (2) electronic copies (including one (1) locked and one (1) working copy) of a final report on the condition and adequacy of each regulated dam, certified by the suitably qualified and experienced person and including any recommended actions to be taken to ensure the integrity of each regulated dam, must be provided to the administering authority by 1 December each year.
(D23)	The holder of this environmental authority must, upon receipt of the final annual inspection report, consider the report and its recommendations and within one month of receipt of the annual inspection report, formulate actions to ensure that each regulated dam safely performs to its intended functions. Taking into account the weather conditions at the time, the holder of this environmental authority must promptly implement the formulated actions where practicable.
(D24)	All containment embankments within all regulated dams must be monitored for signs of embankment deterioration in accordance with the monitoring requirements of the design plan.
Decommissioning of Regulated Dams – Objective	
(D25)	Regulated dams must be dealt with in accordance with the conditions of this environmental authority and must not be abandoned.
(D26)	On cessation of operation of any regulated dam, that regulated dam must be maintained so as to avoid environmental harm until that regulated dam is decommissioned.
(D27)	Prior to the cessation of mining activities, each regulated dam must be decommissioned such that it either: (a) becomes a stable landform that safely confines flowable substances; (b) is approved or authorised under relevant legislation for a beneficial use; (c) is a void authorised by the administering authority to remain after decommissioning; or (d) is compliant with the rehabilitation requirements of this environmental authority.
(D28)	The holder of this environmental authority must, prior to surrender of the mining leases implement either: (a) a plan for de-commissioning the regulated dams such that, amongst other things, the regulated dams and their contents will be structurally stable and resistant to erosion and any seepage or other emissions will not cause environmental harm; or (b) a site management plan for the continued operation and maintenance of the regulated dams.
Decommissioning of Regulated Dams – Documentation and Compliance	

(D29)	Decommissioning activities for regulated dams must be documented. Where the detailed documentation is not already contained in the design plan for the dam the detailed documentation is considered to be an amendment to the design plan and must be submitted as an amendment to the design plan.
(D30)	All engineering aspects, including but not limited to stability, cover and drainage design of the proposed land forms forming part of any decommissioning and rehabilitation, must be provided as a design plan and certified by a suitably qualified and experienced person.

Schedule E – General and Regulated Waste Management	
Condition number	**Condition**
Waste Management Plan	
(E1)	A waste management plan must: (a) be developed by an appropriately qualified person; (b) be implemented and maintained by the environmental authority holder for the duration of all mining activities; and (c) include all of the following: (i) a description of the mining activities that may generate waste; (ii) waste management control strategies including; (A) recording of the types and amounts of wastes generated by the mining activities; (B) segregation of the wastes; (C) storage of the wastes; (D) transport of the wastes; (E) monitoring and reporting matters concerning the waste. (iii) the hazard characteristics of the wastes generated including disposal procedures for hazardous wastes; (iv) a program for reusing, recycling or disposing of all wastes; (v) how the waste will be dealt with in accordance with the waste and resource management hierarchy, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices in the waste and resource management hierarchy (i.e. avoidance, reuse, recycling, energy recovery, disposal); (vi) procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste management practices employed; (vii) procedures for dealing with accidents, spills, and other incidents that may impact on waste management; (viii) details of any accredited management system employed, or planned to be employed, to deal with the waste; (ix) how often the performance of the waste management practices will be assessed; (x) the indicators or other criteria on which the performance of the waste management practices will be assessed; and (xi) staff training and induction to the waste management program.
Waste Disposal	

(E2)	Unless otherwise authorised by the conditions of this environmental authority: (a) waste must not be accepted from off-site; and (b) all waste generated in carrying out the activity must be lawfully reused, recycled or removed to a facility that can lawfully accept the waste.
(E3)	The environmental authority holder must not dispose of waste on-site, with the following exceptions: (a) waste rock; (b) tailings; (c) tyres; and (d) decommissioned infrastructure waste.
(E4)	Decommissioned infrastructure waste may only be disposed of on-site where said waste is: (a) demonstrably unreasonable to be managed by a higher order precept of the waste and resource management hierarchy; (b) free of hydrocarbons, dangerous goods and hazardous waste; (c) recorded in the waste management plan required under Condition (E1), including type, quantity (by weight and volume) and location of disposal; (d) deposited within the Southern Rocklands residual void as depicted in Schedule J Plan 1 – General Area Plan of this environmental authority; and (e) deposited below 40 metres Australian Height Datum (mAHD).
(E5)	Unless otherwise authorised by the conditions of this environmental authority, waste must not be burnt or taken off site and burnt.
Regulated Waste	
(E6)	Regulated waste, other than that authorised to be disposed of on site under this authority, must only be removed and transported from the site by a person who holds a current authority to transport such wastes to a facility that is lawfully able to accept the waste.
(E7)	Regulated waste generated in the mining activity can be temporarily stored on site prior to removal provided it is for a period no longer than six (6) months and it is stored in a manner to prevent risk of fire or contamination of land or waters.
(E8)	Each container of regulated waste stored awaiting movement off-site must be clearly marked to identify the contents.
Tailings Disposal	
(E9)	A tailings disposal plan must: (a) be developed by an appropriately qualified person; (b) be implemented and maintained by the environmental authority holder for the duration of all mining activities; and (c) include all of the following details: (i) containment of tailings in accordance with the approved design plan(s);

	(ii) the management of seepage and leachates both during operation and post closure; (iii) the control of fugitive emissions to air; (iv) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings that must include: (A) progressive characterisation of all tailings material during disposal for net acid producing potential (NAPP) and the following contaminants: arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, uranium, zinc and fluoride. (B) tailings characterisation undertaken at a minimum rate of one (1) sample per week forming a monthly composite sample of tailings material discharged. This frequency must be reviewed after a period of one (1) year from the commencement date of processing. (C) geochemical kinetic testing where the acid producing potential of tailings material has not been conclusively determined to indicate oxidation rates, potential reaction products and effectiveness of control strategies. (v) a rehabilitation strategy which meets the rehabilitation objectives specified in Schedule C; and (vi) monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.
Waste Rock Disposal	
(E10)	A waste rock management plan must: (a) be developed by a suitably qualified and experienced person to meet the requirements of Condition (E11); (b) be implemented and maintained by the environmental authority holder for the duration of all mining activities; and (c) be reviewed at regular intervals not exceeding once every three (3) years.

(E11)	The waste rock management plan required under (E10) must include: (a) characterisation of the waste rock to predict the quality of runoff and seepage generated, including salinity, acidity, alkalinity, dissolved metals, metalloids and non- metallic inorganic substances; (b) a program of progressive sampling to validate pre-mine waste rock characterisation. The waste rock sampling program must include validation of salinity, acid and alkali producing potential and metal concentrations including arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, uranium and zinc; (c) where the acid rock drainage potential/neutral mine drainage potential of waste rock material has not been conclusively determined, geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies; (d) records must be maintained of all waste rock characterisation and disposal including contingency planning for the management of acid rock/neutral mine drainage; (e) a materials balance and disposal plan demonstrating how potentially acid forming and acid forming waste rock will be selectively placed and/or encapsulated to minimise the generation of acid mine drainage; (f) a materials balance and disposal plan demonstrating how waste rock that has a potential to generate neutral and/or saline mine drainage will be selectively placed and managed to minimise the generation of neutral and/or saline mine drainage; (g) a sampling program to verify encapsulation and/or placement of potentially acid forming and acid forming waste rock and waste rock that has a potential to generate neutral mine drainage; (h) how often the performance of the plan will be assessed; (i) a rehabilitation strategy which meets the rehabilitation objectives specified in Schedule C Table C1 – Rehabilitation Requirements; and (j) monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of the placed materials, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.
(E12)	Waste rock dumps must be constructed and maintained in accordance with the drawings identified in Table E1 – Waste Rock Dump Design Plans.

Table E1 – Waste Rock Dump Design Plans

Drawing Number[1]	Description
PE801-00089 E1.04	West WRD footprint
PE801-00089 E1.05	West WRD PAF Cell plan and cross-section locations
PE801-00089 E1.06	West WRD Cross Section 'A'
PE801-00089 E1.07	West WRD Cross Section 'B'
PE801-00089 E1.08	West WRD Cross Section 'C'
PE801-00089 E1.09	West WRD Cross Section 'D'
PE801-00089 E1.10	West WRD PAF Cell drainage plan
PE801-00089 E1.11	West WRD PAF Cell drainage sections and design detail
PE801-00089 E1.12	West WRD PAF Cell drainage design detail
PE801-00089 E1.13	West WRD PAF Cell drainage design detail
PE801-00089 E1.14	West WRD Morris Creek embankment design detail
PE801-00089 E1.15	North WRD backflow prevention dam and design concept

[1] Knight Piesold Pty Ltd's (Geotechnical Engineers) and Copper Resources Australia Pty Ltd's Internal Reference Systems

(E13)	All waste rock dumps must be constructed to prevent any water other than rainfall from entering the waste rock dump up to the occurrence of a 1:200 ARI flood event in Morris Creek, subject to any design criteria as specified in Table E1 – Waste Rock Dump Design Plans.
(E14)	Any surface runoff or subsurface seepage from the West Waste Rock Dump must be captured and directed to the processing plant, water storage facility, TSF or open pits.
(E15)	Only waste rock that does not exhibit acid, neutral or saline mine drainage characteristics may be used for the construction of temporary or permanent structures within the operational areas.
Tyre Storage and Disposal	
(E16)	Tyres stored awaiting disposal or transport for take-back and recycling or waste-to-energy options – must be stockpiled in volumes less than 3m in height and 200m^2 and at least 10m from any other tyre storage area.
(E17)	Fire prevention measures must be implemented including the removal of all combustible materials, including grass and vegetation, within a 10m radius of any tyre storage area.
(E18)	Subject to demonstrating to the administering authority that no other use higher in the waste and resource management hierarchy can be practicably implemented, waste tyres generated from mining activities may be disposed of on site in non acid forming waste rock dumps or underground stopes.

Schedule F – Noise	
Condition number	**Condition**
General	
(F1)	Noise from mining activities must not cause environmental harm at any sensitive place or commercial place.
(F2)	In the event of a complaint made to the administering authority (considered in the opinion of an authorised officer to be neither frivolous or vexatious) about noise generated in carrying out the licensed activity and the noise is considered by the administering authority to be an unreasonable noise, the holder of this environmental authority must take action to ensure that it is no longer an unreasonable noise.
Noise Monitoring	
(F3)	The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in Table F1 – Noise Limits to be exceeded at a sensitive place or commercial place.

Table F1 – 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 F1 – Noise limits notes:

1. *CV = Critical Value*
2. *AV = Adjustment Value*
3. *To calculate noise limits in Table F1: If bg ≤ (CV – AV):*
   Noise limit = bg + AV
   If (CV – AV) < bg ≤ CV:
   Noise limit = CV If bg > CV:
   Noise limit = bg + 0
4. *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*
5. *bg = background noise level ($L_{A90, adj, 15\ mins}$) 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.*

Note: The method of measurement and reporting of noise levels must comply with the most recent edition of the administering authority's Noise Measurement Manual or the most recent version of AS1055 *Acoustics – Description and measurement of environmental noise.*

(F4)	When requested by the administering authority, noise monitoring and recording must be undertaken within a timeframe nominated by the administering authority to investigate any complaint of environmental nuisance at any sensitive place or commercial place and the results must be provided to the administering authority within ten (10) business days following completion of monitoring.

(F5)	Noise monitoring and recording must include the following descriptor characteristics and matters: (a) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and T = 15 mins); (b) Background noise $L_{A90,}$; (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 $Lp_{LIN,T}$; and (h) If the complaint concerns low frequency noise, one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.
(F6)	Exceedances of noise limits in Table F1 at the sensitive receptor, that the holder of this environmental authority determines is not a result of mining activities, are not required to be reported to the administering authority under Condition (A17). The results of any investigations undertaken to determine compliance with this condition must be provided to the administering authority upon request.
Air Blast & Ground Vibration	
(F7)	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 F2 – Blasting Noise Limits to be exceeded at any sensitive place or commercial place.

Table F2 – Blasting Noise Limits

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

Note: The method of measurement and reporting of vibration levels must comply with the most recent edition of the administering authority's guideline *Noise and vibration from blasting (ESR/2016/2169)* .

Note: The method of measurement and reporting of airblast overpressure levels must comply with Appendix J of AS 2187.2-2006.

(F8)	The holder of this environmental authority must monitor compliance with Table F2 – Blast Noise Limits for: (a) any complaint received by the administering authority (considered in the opinion of an authorised officer to be neither frivolous or vexatious) about noise generated in carrying out the licensed activity and the noise is considered by the administering authority to be an unreasonable noise must be undertaken at the nearest sensitive place or commercial place; and (b) all blasts conducted during any time period specified by the administering authority at the nearest sensitive place or commercial place.
(F9)	Where blast monitoring detects non-compliance with Table F2 –- Blasting Noise Limits: (a) take steps to ensure compliance is achieved by subsequent blasts; and (b) continue to monitor all consecutive blasts until at least three (3) successive blasts comply with Table F2 – Blasting Noise Limits.
(F10)	The holder of this environmental authority must undertake vibration monitoring upon request by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of an authorised officer) of environmental nuisance at any sensitive place or commercial place.
(F11)	The results of the investigation conducted in accordance with Condition (F10) must be provided to the administering authority on request.
Airblast Overpressure	
(F12)	If monitoring indicates exceedance of the relevant limits in Table F2 – Blasting Noise Limits then the environmental authority holder must immediately implement airblast overpressure abatement measures to ensure that airblast overpressure from the activity does not result in further environmental nuisance.
(F13)	When requested by the administering authority, airblast overpressure monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within ten (10) business days to the administering authority following completion of monitoring.
(F14)	Airblast overpressure monitoring must include the following descriptors, characteristics and conditions: (a) location of the blast(s) within the mining area (including which bench level); (b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and (c) location, date and time of recording.

Schedule G – Water	
Condition number	**Condition**
General	
(G1)	Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.
(G2)	The maintenance and cleaning of vehicles and any other equipment or plant must not be carried out in areas from which contaminants can be released into any waters, roadside gutter or stormwater drainage system.
(G3)	All determinations of water quality must be: (a) made in accordance with methods prescribed in the latest edition of the administering authority's *Monitoring and Sampling Manual*; and (b) carried out on representative samples; and (c) collected from the monitoring locations identified within this environmental authority, within two (2) hours of each other where possible.
(G4)	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 when requested: (a) the date and time upon which the sample was taken; (b) the monitoring point at which the sample was taken; (c) the measured or estimated daily quantity of the contaminants released from all release points; (d) the release flow rate at the time of sampling for each release point; (e) the results of all monitoring and details of any exceedances with the conditions of this environmental authority; and (f) water quality monitoring data provided electronically in the specified format.
Contaminant Release to Waters	
(G5)	The release of contaminants to waters must only occur from the release points specified in Table G1 – Release Points.

Table G1 – Release Points

Release Point	Description of Release Waters	Description of Receiving Waters	Coordinates (GDA94 MGA zone 54)	
			Northing	Easting
East Dump Catch Dam (Main Block RP1)	Surface water runoff from the East Waste Rock Dump	Morris Creek	7714048	435852
North Dump Catch Dam 1 (MB-SP-06) (Main Block RP2)	Surface water runoff from North Waste Rock Dump and associated areas	Morris Creek	7714173	435337
North Dump Catch Dam 2 (MB-SP-09)	Surface water runoff from North Waste Rock Dump and associated areas	Morris Creek	TBD[1]	TBD[1]
TSF South Catch Dam (SP-04)	Surface water runoff from TSF embankments and natural areas of Lone Block	Marathon Creek	TBD[1]	TBD[1]
TSF East Catch Dam (SP-05)	Surface water runoff from TSF embankments and natural areas of Lone Block	Marathon Creek	TBD[1]	TBD[1]
TSF North-East Catch Dam (SP-06)	Surface water runoff from TSF embankments and natural areas of Lone Block	Marathon Creek	TBD[1]	TBD[1]
TSF North-Central Catch Dam (SP-07)	Surface water runoff from TSF embankments and natural areas of Lone Block	Marathon Creek	TBD[1]	TBD[1]
TSF North-West Catch Dam (SP-08)	Surface water runoff from TSF embankments and natural areas of Lone Block	Marathon Creek	TBD[1]	TBD[1]
TSF Diversion Drain East	Surface water runoff from TSF embankments	Marathon Creek	TBD[1]	TBD[1]
TSF Diversion Drain North (Lone Block RP2)	Surface water runoff from TSF embankments	Marathon Creek diversion	7716027	439291
Spillway – Eastern Embankment (Lone Block RP1)	Release point for the eastern, western cells and the decant pond	Marathon Creek diversion	7715567	439215

[1] To be determined and notified to the administering authority upon commissioning.

(G6) The release of contaminants to waters from the release points must be monitored at the locations specified in Table G1 Release Points for each quality characteristic and at the frequency specified in Table G2 – Release Water Trigger Levels and Contaminant Limits.

Table G2 – Release Water Trigger Levels and Contaminant Limits

Quality Characteristic[17]	Trigger Levels (µg/L for toxicants)	Contaminant Limit[11] (mg/L for toxicants)	Monitoring Frequency[16]
pH (pH units)	6.0[3] (minimum) 7.5[3] (maximum)	6.0[9] (minimum) 8.5[9] (maximum)	Event based sampling of release[14] or flow[15] events: ▪ One sample must be taken within 12 hours of a release event or flow event
EC (µS/cm)	435[10]	1000[9]	
Sulphate (SO_4^{2-}) (mg/L)	80th percentile[1,2,5,13] of reference[4]	1000[6]	
Turbidity (NTU)	80th percentile[1,2,5,13] of reference[4] or 15[3], whichever is higher	95th percentile[5,13] of reference value[7,12]	

Suspended Solids (Mg/L)	N/A	95th percentile[5,13] of reference value[7,12]	commencing. A second sample must be taken between 12 and 24 hours after the release event or flow event commences. ▪ Where a release event or a flow event has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter until release or flow event ceases.
Aluminium	55[3]	95th percentile[5,13] of reference value[7,12] or 5[6], whichever is lower	
Arsenic (As III) Arsenic (As V)	24[3] 13[3]	95th percentile[5,13] of reference value[7,12] or 0.5[6] whichever is lower	
Boron	370[3]	95th percentile[5,13] of reference value[7,12] or 5[6] whichever is lower	
Cadmium	0.2[3]	95th percentile[5,13] of reference value[7,12] or 0.01[6] whichever is lower	
Chromium (CrVI)	1.0[3]	95th percentile[5,13] of reference value[7,12] or 1[6] whichever is lower	
Cobalt	80th percentile[1,2,5,13] of reference[4]	95th percentile[5,13] of reference value[7,12] or 1[6] whichever is lower	
Copper	1.4[3]	95th percentile[5,13] of reference value[7,12] or 1[6] whichever is lower	
Iron	300[3]	95th percentile[5,13] of reference value[7,12]	
Lead	3.4[3]	95th percentile[5,13] of reference value[7,12] or 0.01[8] whichever is lower	
Manganese	1900[3]	95th percentile[5,13] of reference value[7,12]	
Mercury (inorganic)	0.6[3]	95th percentile[5,13] of reference value[7,12] or 0.002[6] whichever is lower	
Nickel	11[3]	95th percentile[5,13] of reference value[7,12] or 1[6] whichever is lower	
Selenium (Total)	11[3]	95th percentile[5,13] of reference value[7,12] or 0.02[6] whichever is lower	
Silver	0.05[3]	95th percentile[5,13] of reference value[7,12]	
Uranium	80th percentile[1,2,5,13] of reference[4]	95th percentile[5,13] of reference value[7,12] or 0.2[6] whichever is lower	
Zinc	8.0[3]	95th percentile[5,13] of reference value[7,12] or 3[8] whichever is lower	
Hardness	For the purpose of interpretation, particularly in regard to metals analysis		

1. An interim trigger value can be derived from ≥ 8 but ≤17 consecutive reference site samples, derived using administering authority (2006) methodology (section 3.4.3.1).
2. Trigger values are based on the 80th percentile of at least 10 and no more than 24 consecutive reference site samples, derived using the administering authority (2009) methodology (section 4.3.3.1).
3. Default trigger values – from ANZECC (2000) trigger levels for aquatic ecosystems indicative of slightly disturbed tropical Australian upland river ecosystems.
4. Reference sites must:
    a. be from the same bio-geographic and climatic region;
    b. have similar geology, soil types and topography;
    c. contain a range of habitats similar to those at the test sites;
    d. have 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.
5. 80th and 95th percentiles are calculated using ANZECC (2000) methodology (section 7.4.4.1).
6. Contaminant limit based on ANZECC (2000) stock water quality guidelines.
7. Limit levels based on reference data are to be based on 24 consecutive samples obtained at the time of a release (18 at a minimum)
8. Contaminant limit based on NHMRC Drinking Water Guidelines (2006)
9. Contaminant limit based on administering authority policy.
10. Contaminant trigger based on Queensland Water Quality Guidelines (Table G.4 – 75th percentile).
11. Contaminant limits only apply to point source release.
12. Where 95th percentile of reference is exceeded and the reference site also exceeds the value during the same event, the value of the reference site during the same event applies.
13. 80th and 95th percentiles to be determined based on Receiving Environment Monitoring Program.
14. Release event is a surface water release from water storages or contaminated areas on the licensed place.
15. A flow event is a surface water flow that occurs as a result of rainfall.
16. The requirement to continue sampling release or flow events with a duration of 24hrs or greater is only required if there are exceedances at the release points with the receiving water contaminant trigger levels listed in Table G2.
17. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.

(G7)	The release of contaminants to water from the release points identified in Table G1 – Release Points must not exceed the release limits stated in Table G2 – Release Water Trigger Levels and Contaminant Limits when measured at the release monitoring points specified in Table G1 – Release Points for each quality characteristic.
(G8)	If quality characteristics of the release from sources defined in Table G1 – Release Points exceed any of the trigger levels specified in Table G2 – Release Water Trigger Levels and Contaminant Limits during a release event, the holder of this environmental authority must compare the results of the impacted site to the data from reference monitoring sites and: (a) if the level of contaminants at the impacted site does not exceed the reference monitoring site data, then no action is to be taken; or (b) if the level of contaminants at the impacted site is greater than the reference monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ (2000) methodology into the potential for environmental harm and provide a written report to the administering authority within three (3) months outlining: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm. *Note: Where an exceedance of a trigger level has occurred and is being investigated in accordance with part (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three month investigation period.*
(G9)	The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table G1 – Release Points.

(G10)	The release of contaminants directly or indirectly to waters must not: (a) produce any slick or other visible or odorous evidence of oil, grease or petrochemicals; nor (b) contain visible floating oil or grease.
(G11)	Releases to waters from the mining activities must be undertaken so as not to cause erosion of the bed and banks of the receiving waters or cause a material build up of sediment in such waters.
Stream Flow Monitoring	
(G12)	The holder of this environmental authority must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each release point as specified in Table G3 – Contaminant Release During Flow Events for any receiving water into which a release occurs.
(G13)	Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during periods of natural flow events specified as the minimum flow in Table G3 –- Contaminant Release During Flow Events for the contaminant release point(s) specified in Table G1 – Release Points.

Table G3 – Contaminant Release During Flow Events

Receiving Water Description	Release Point	Gauging Station Description	Coordinates (GDA94 MGA zone 54)		Minimum Flow in Receiving Water Required for a Release Event	Flow Recording Frequency
			Northing	Easting		
Morris Creek	East Dump Catch Dam (MB-SP-02)	Gauging Station @ P2	7714148	432540	Depending on individual catchment this minimum flow trigger will be either the release comprising less than 5% of the natural flow or any natural flow in the receiving environment[1]	Continuous (minimum daily)
	North Dump Catch Dam 1 (MB-SP-06)					
	North Dump Catch Dam 2 (MB-SP-09)					
Marathon Creek	TSF South Catch Dam (SP-04)	Gauging Station @ P5	7716133	439429		
	TSF East Catch Dam (SP-05)					
	TSF North-East Catch dam (SP-06)					
	TSF North-Central Catch Dam (SP-07)					
	TSF North-West Catch Dam (SP-08)					

[1] The volume of flow can be determined by height of water or flow. The actual flow must be a quantifiable measure, e.g.: ≥5m3/sec

(G14)	At the time of release the water flow volume in the respective receiving water must be at least twenty (20) times the volume at which respective treated waste waters are released.
Notification of Release Event	
(G15)	The holder of this environmental authority must promptly notify the administering authority of a release event (no later than six (6) hours after having commenced releasing mine affected water to the receiving environment). Notification must include the submission of written verification to the administering authority of the following information: (a) release commencement date/time; (b) expected release cessation date/time; (c) release point(s); (d) release volume (estimated); (e) receiving water(s) including the natural flow rate; and (f) any details (including available data) regarding likely impacts on the receiving water(s).
(G16)	The holder of this environmental authority must promptly notify the administering authority, (nominally within twenty-four (24) hours after cessation of a release) of the cessation of a release notified under Condition (G15) and within twenty (20) business days provide the following information in writing: (a) release cessation date/time; (b) natural flow volume in receiving water(s); (c) volume of water released; (d) details regarding the compliance of the release with the conditions of this environmental authority (i.e. contamination limits, natural flow, release volume); (e) all in-situ water quality monitoring results; and (f) any other matters pertinent to the water release event.
Onsite Water Storages	
(G17)	Water storages stated in Table G4 – Onsite Water Storage Monitoring Locations must be monitored for the water quality characteristics specified in Table H5 – Onsite Water Storage Contaminant Limits at the monitoring locations and at the monitoring frequency specified in Table G4 – Onsite Water Storage Monitoring Locations.

Table G4 – Onsite Water Storage Monitoring Locations

Water Storage Description	Coordinates (GDA94 MGA zone 54)		Monitoring Location[1]	Frequency of Monitoring
	Northing	Easting		
Tailings Storage Facility	TBD[2]	TBD[2]	TBD[2]	Quarterly
Tailings Storage Facility Decant Pond	TBD[2]	TBD[2]	TBD[2]	
Water Storage Facility	7715351	433694	Directly below spillway	
Process Water Pond	7713867	434890	Primary Decant Location	
Raw Water Pond	7713975	434853	Directly below spillway	
Plant Site Catch Dam (ECD2)	7713945	434932	Directly below spillway	
ROM Pad Drainage Pond	7713853	434718	Directly below spillway	
PAF Sump (Southern Rocklands Extended pit)	TBD[2]	TBD[2]	TBD[2]	
East Dump Catch Dam (MB-SP-01)	7713974	431190	Directly below spillway	
East Dump Catch Dam (MB-SP-02)	7714048	435852		
North Dump Catch Dam 1 (MB-SP-06)	7714117	435352		
West Dump Catch Dam (MB-SP-07	7713771	433490		
North Dump Catch Dam 3 (MB-SP-08)	7714175	433908		
Chalcopyrite Sump	TBD[2]	TBD[2]	TBD[2]	

1 Location is dependant on the volume of the individual storage and must consider stratification (i.e. depth profiles) and be appropriate for monitoring of in situ water quality characteristics.

2 To be determined and notified to the administering authority upon commissioning.

(G18)	In the event that waters storages defined in Table G4 – Onsite Water Storage Monitoring Locations exceed the contaminant limits defined in Table G5 – Onsite Water Storage Contaminant Limits the holder of this environmental authority must implement measures to prevent access to waters by all livestock and minimise access by native fauna.

Table G5 – Onsite Water Storage Contaminant Limits

Quality Characteristic	Test Value	Contaminant Limit
pH (pH unit)	Range	4.0 (minimum) 9.0 (maximum)[2]
EC (µS/cm)	Maximum	5970[1]
Sulphate (mg/L)	Maximum	1000[1]
Fluoride (mg/L)	Maximum	2[1]
Aluminium (mg/L)	Maximum	5[1]
Arsenic (mg/L)	Maximum	0.5[1]
Boron (mg/L)	Maximum	5[1]
Cadmium (mg/L)	Maximum	0.01[1]
Chromium (mg/L)	Maximum	1[1]
Cobalt (mg/L)	Maximum	1[1]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Mercury (mg/L)	Maximum	0.002[1]
Nickel (mg/L)	Maximum	1[1]
Selenium (mg/L)	Maximum	0.02[1]
Uranium (mg/L)	Maximum	0.2[1]
Zinc (mg/L)	Maximum	20[1]

[1] Contaminant limit based on ANZECC (2000) stock water quality guidelines.

[2] Page 4.2-15 of ANZECC (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4–9".

Note: All metals and metalloids must be measured as total (unfiltered).

Receiving Waters Monitoring

(G19)	Receiving waters must be monitored at the locations specified in Table G6 **–** Receiving Water Reference Sites and Downstream Monitoring Points and identified on Schedule J Plan 4 – Surface Water and Groundwater Monitoring Locations for each quality characteristic and at the frequency stated in Table G7 **–** Receiving Waters Contaminant Trigger Levels.

Table G6 – Receiving Water Reference Sites and Downstream Monitoring Points

Monitoring Location	Receiving Waters Location Description	Coordinates (GDA94 MGA zone 54)	
		Northing	Easting
Reference Sites[1]			
Monitoring Point P1	Unnamed tributary of Morris Creek on western boundary of ML90177	7713677	430656
Monitoring Point P2	Morris Creek upstream of the Morris Creek Diversion Dam	7713036	431766
Monitoring Point P4	Headwater of Marathon Creek upstream of TSF	7715484	437658
Downstream Monitoring Points			
Monitoring Point P3	Morris Creek downstream of East Dump Catch Dam (MB-SP-02)	7714111	435915
Monitoring Point P5	Headwater of Marathon Creek downstream of Marathon Creek Diversion Channel	7716143	439435

[1] Reference sites must:

a. be from the same bio-geographic and climatic region;
b. have similar geology, soil types and topography;
c. contain a range of habitats similar to those at the test sites;
d. have 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.

Table G7 – Receiving Waters Contaminant Trigger Levels

Quality Characteristic[11]	Trigger Levels (µg/L for toxicants)	Monitoring Frequency[10]
pH (pH units)	6.0[3] (minimum) 7.5[3] (maximum)	Event based sampling of release[8] or flow[9] events: ▪ One sample must be taken within 12 hours of a release event or flow event commencing. A second sample must be taken between 12 and 24 hours after the release event or flow event commences. ▪ Where a release event or a flow event has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter until release or flow event ceases.
EC (µS/cm)	435[6]	
Sulphate (SO_4^{2-}) (mg/L)	80th percentile[1,2,5,7] of reference[4]	
Turbidity (NTU)	80th percentile[1,2,5,7] of reference[4] or 15[3], whichever is higher	
Suspended Solids (mg/L)	N/A	
Aluminium	55[3]	
Arsenic (dissolved)[12]	13[3]	
Boron	370[3]	
Cadmium	0.2[3]	
Chromium (total dissolved)[13]	1.0	
Cobalt	80th percentile[1,2,5,7] of reference[4]	
Copper	1.4[3]	
Iron	300[3]	
Lead	3.4[3]	
Manganese	1900[3]	
Nickel	11[3]	
Selenium (Total)	11[3]	
Uranium	80th percentile[1,2,5,7] of reference[4]	
Zinc	8.0[3]	
Hardness	For the purpose of interpretation, particularly in regard to metals analysis	

1. An interim trigger value can be derived from ≥ 8 but ≤17 consecutive reference site samples, derived using administering authority (2009) methodology (section 4.3.3.1). 2. Trigger values are based on the 80th percentile of at least 10 and no more than 24 consecutive reference site samples, derived using the administering authority (2009) methodology (4.3.3.1). 3. Default trigger values – from ANZECC (2000) trigger levels for aquatic ecosystems indicative of slightly disturbed tropical Australian upland river ecosystems. 4. Reference sites must: (a) be from the same bio-geographic and climatic region; (b) have similar geology, soil types and topography; (c) contain a range of habitats similar to those at the test sites; (d) have 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. 5. 80th and 95th percentiles are calculated using ANZECC (2000) methodology (section 7.4.4.1). 6. Contaminant trigger based on Queensland Water Quality Guidelines (Table G.4 – 75th percentile). 7. 80th and 95th percentiles to be determined based on Receiving Environment Monitoring Program. 8. Release event is a surface water release from water storages or contaminated areas on the licensed place. 9. A flow event is a surface water flow that occurs as a result of rainfall. 10. The requirement to continue sampling release or flow events with a duration of 24hrs or greater is only required if there are exceedances at the release points with the receiving water contaminant trigger levels listed in Table G2. 11. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger. 12. Trigger value for dissolved arsenic is set at the As(V) trigger limit. Speciated arsenic (As(III) and As(V) must be analysed if dissolved arsenic is detected at concentrations above the trigger value. 13. Total dissolved chromium calculated using Cr(VI) trigger value. Chromium (VI) must be analysed if total dissolved chromium is detected at concentrations above the ANZECC 2000 default trigger level of 1.0 µg/L.	
(G21)	If the quality characteristics of receiving waters at the downstream monitoring points exceed any of the trigger levels specified in Table G7 – Receiving Waters Contaminant Trigger Levels the holder of this environmental authority must compare the downstream results to the reference site results in the receiving waters and: (a) where the downstream result is the same or a lower value than the reference site result for the quality characteristic during the same sampling event, then no action is to be taken; or (b) where the downstream results exceed the reference site complete an investigation in accordance with the ANZECC & ARMCANZ (2000) methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm. Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with part (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.
Stream Sediment Monitoring	
(G22)	Sediment quality of receiving waters and reference waters must be monitored twice a year (once at the end of the wet season and once at the end of the dry season) at the monitoring locations defined in Table G6 – Receiving Water Reference Sites and Downstream Monitoring Points and identified on Schedule J Plan 4 – Surface Water and Groundwater Monitoring Locations and for the parameters defined in Table G8 – Stream Sediment Contaminant Trigger Levels and Contaminant Limits.
(G23)	The release of contaminants must not result in an exceedance of the sediment contaminant limits stated in Table G8 – Stream Sediment Contaminant Trigger Levels and Contaminant Limits.

Table G8 –Stream Sediment Interim[1] Contaminant Trigger Levels and Contaminant Limits

Parameter	Unit	Trigger Level	Contaminant Limit
Arsenic	mg/kg	20[2]	70[3]
Bismuth	mg/kg	Reference value[4,5,6]	3 times the reference value[4,5,6]
Boron	mg/kg	25[1]	75[1]
Cadmium	mg/kg	1.5[3]	10[3]
Chromium	mg/kg	80[2]	370[3]
Cobalt	mg/kg	40.4[1]	121.2[1]
Copper	mg/kg	65[2]	270[3]
Lead	mg/kg	50[2]	220[3]
Manganese	mg/kg	1018[1]	3054[1]
Mercury	mg/kg	Reference value[4,5,6] or 0.15[2] whichever is higher	1[3] or 3 times the reference value[4,5,6], whichever is higher
Nickel	mg/kg	24[1]	72[1]
Selenium	mg/kg	2.5[1]	7.5[1]
Silver	mg/kg	1.0[1]	3.7[1]
Uranium	mg/kg	Reference value[4,5,6]	3 times the reference value[4,5,6]
Zinc	mg/kg	200[2]	410[3]

1. Interim limits apply for stream sediment until a sufficient number of samples undertaken to set limits, in accordance with the Queensland Water Quality Guidelines 2009 (3.4.3.1) .
2. ANZECC (2000) Interim Sediment Quality Guidelines – low values based on total sediments.
3. ANZECC (2000) Interim Sediment Quality Guidelines – high values based on total sediments.
4. Reference sites are defined in Table H6 - Receiving Water Reference Sites and Downstream Monitoring Points.
5. An interim trigger value can be derived from $\geq$ 8 but $\leq$17 consecutive reference site samples, derived using administering authority (2009) methodology (section 4.3.3.1).
6. TBD based on Receiving Environment Monitoring Program

Note: Sediment particle size distribution must be provided for interpretation purposes
Note: All stream sediment sampling must be undertaken in accordance with the most recent version of Australian Standard AS 5667.12 Guidance on Sampling of Bottom Sediments of 1998.

(G24)	If the quality characteristics of sediments exceed any of the trigger levels specified in Table G8 – Stream Sediment Contaminant Trigger Levels and Contaminant Limits, the holder of this environmental authority must compare the results of the downstream site to the data from reference monitoring sites and: (a) if the level of contaminants at the downstream site does not exceed the reference monitoring site data, then no action is to be taken; or (b) if the level of contaminants at the downstream site is greater than the reference monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ (2000) methodology, into the potential for environmental harm and provide a written report to the administering authority within three (3) months, outlining: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm. Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with part (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three month investigation period.
Receiving Environment Monitoring Program	

(G25)	The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site. For the purposes of the REMP, the receiving environment is the waters and connected or surrounding waterways (including groundwater) of Morris Creek, Butchers Creek and Marathon Creek downstream of any release point identified in Table G1 – Release Points and Table H1 – Onsite Sewage Treatment Systems. 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. A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administering authority upon request.
(G26)	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 release limits as per Table G2, to protect receiving environment values.
Water Management Plan	
(G27)	A water management plan must be developed and implemented that provides for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority.
(G28)	The water management plan required under Condition (G27) must be developed in accordance with the most recent edition of the administering authority's *Guideline for Preparing a Water Management Plan 2009* and must include at least the following components: (c) contaminant source study; (d) site water balance and model; (e) water management system; (f) saline drainage prevention and management measures; (g) acid rock drainage prevention and management measures; (h) emergency and contingency planning; and (i) monitoring and review.
(G29)	The holder of this environmental authority must undertake a review of the water management plan before 1 November each year and a further review before 1 May the following year to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.
(G30)	A copy of the water management plan and/or a review of the water management plan must be provided to the administering authority on request.

Saline, Acid and Metalliferous Drainage	
(G31)	The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline, acid and/or metalliferous mine drainage.
Stormwater and Water Sediment Controls	
(G32)	An erosion and sediment control plan must be developed by a suitably qualified and experienced person and implemented for all stages of mining activities on the mining lease(s) to prevent or minimise erosion and the release of sediment to receiving waters and the contamination of storm water.
(G33)	The erosion and sediment control plan must provide for at least the following stormwater management functions: (a) prevent or minimise the contamination of stormwater; (b) diverting uncontaminated stormwater run-off around areas disturbed by mining activities or where contaminants or wastes are stored or handled; (c) contaminated stormwater runoff, incident rainfall and leachate is collected; and treated, reused, or released in accordance with the conditions of this environmental authority; (d) roofing or minimising the size of areas where contaminants or wastes are stored or handled; (e) using alternate materials and or processes (such as dry absorbents) to clean up spills that will minimise the generation of contaminated waters; (f) erosion and sediment control structures are placed to minimise erosion of disturbed areas and prevent the contamination of any waters; (g) procedures to ensure that erosion and sediment control structures are maintained and adequate storage is available in sediment dams in accordance with design criteria; and (h) training of staff that will be responsible for maintenance and operations of sediment and erosion control structures.
(G34)	A copy of the erosion and sediment control plan and/or a review of the erosion and sediment control plan must be provided to the administering authority on request.
(G35)	Erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment and contamination of storm water.
(G36)	Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.
(G37)	Any certified design plans for regulated dams on the mining lease(s) must be consistent with the erosion and sediment control plan.
Groundwater	

(G38)	The extraction of groundwater must not cause environmental harm to any groundwater dependant ecosystem.
(G39)	Groundwater quality must be monitored at the locations specified in **Table G9 - Groundwater monitoring locations and frequency**.
(G40)	Groundwater quality must be monitored at the frequencies specified in **Table G9 - Groundwater monitoring locations and frequency**.
(G41)	Groundwater standing water level must be monitored at the locations specified in **Table G9 - Groundwater monitoring locations and frequency**.
(G42)	Groundwater standing water level must be monitored at the frequencies specified in **Table G9 - Groundwater monitoring locations and frequency**.
(G43)	Groundwater quality must be monitored for the quality characteristics identified in **Table G10 - Groundwater quality limits** for the aquifer in which the bore is located.

Table G9 – Groundwater monitoring locations and frequency

Monitoring Point	Location (GDA94 MGA zone 54)		Surface RL (m)[1]	Screened interval (m)	Monitoring Frequency
	Northing	Easting			Standing Water Level andGroundwater Quality
Compliance Bores					
RMB01	7719620	427989	216.2	24-36	Quarterly
RMB02	7715788	433127	224.2	18-108	
RMB03	7713809	435886	211.63	12-54	
RMB04	7714787	434054	216.471	18-72	
RMB05	7713314	431141	227.3	6-34	
RMB06	7712964	437395	202	28-36	
PAFCMB01	7712952	433291	224.431	6-32	
PAFCMB02	7712966	432875	234.726	6-32	
PAFCMB03	7713534	433138	219.64	6-32	
PAFCMB04	7713860	432781	228.064	8-32	
TSFCMB01	7716613	437682	203.486	6-34	
TSFCMB02	7715005	439358	208.364	6-34	
TSFCMB05	7715119	437603	213.520	28-40	
TSFCMB04	7716154	439377	198.803	6-34	
Observation Bores					
CMB01	7714503	433469	226.799	19-303	Quarterly
CMB02	7713961	433982	217.181	18-303	
CMB03	7713568	433898	223.209	18-305	
CMB04	7713812	433574	216.626	12-305	
CMB05	7713971	433454	219.858	18-303	
CMB06	7714056	433411	217.709	18-142	
CMB07	7714142	433326	219.145	22-305	

CMB08	7712952	433834	226.194	21-301
CMB09	7713627	433360	218.347	12-305
CMB10	7713277	433411	229.51	18-273
CMB11	7712985	434156	227.235	6-170
CMB12	7713886	432958	225.576	12-105

1 RL must be measured at the top of the bore casing to the nearest 5cm.

Table G10 – Groundwater quality limits

Contaminant	Unit	Compliance Bores						Observation Bores
		RMB02, RMB03, RMB04, RMB05, RMB06		PAFCMB01, PAFCMB02, PAFCMB03, PAFCMB04		TSFCMB01, TSFCMB02, TSFCMB04, TSFCMB05		CMB01, CMB02, CMB03, CMB04, CMB05, CMB06, CMB07, CMB08, CMB09, CMB10, CMB11, CMB12
		Limit A[1]	Limit B[2]	Limit A[1]	Limit B[2]	Limit A[1]	Limit B[2]	
pH	pH units	6.0 – 7.5	6.0 – 8.5	6.0 – 7.5	6.0 – 8.5	6.0 – 7.5	6.0 – 8.5	For interpretive purposes.
Electrical conductivity	µS/cm	4,106	5,102	1,435	1,880	1,145	1,462	
Sulfate (SO_4^{2-})	mg/L	530	680	140	230	200	330	
Aluminium	µg/L	-	55[3]	-	55[3]	-	55[3]	
Arsenic (as V)	µg/L	-	13[3]	-	13[3]	-	13[3]	
Boron	µg/L	690	810	-	370[3]	364	650	
Chromium	µg/L	-	1[3]	-	1[3]	-	1[3]	
Cobalt	µg/L	1	2	1	2	2	3	
Copper	µg/L	5	9	2	3	2	4	
Iron	µg/L	728	2,280	4,000	8,000	110	260	
Lead	µg/L	-	3.4[3]	-	3.4[3]	-	3.4[3]	
Manganese	µg/L	-	1900[3]	-	1900[3]	-	1900[3]	
Nickel	µg/L	-	11[3]	-	11[3]	-	11[3]	
Selenium	µg/L	-	5[3]	-	5[3]	-	5[3]	
Silver	µg/L	-	0.05[3]	-	0.05[3]	-	0.05[3]	
Uranium	µg/L	44	58	13	30	26	41	
Zinc	µg/L	19.8	36.15	13	33	18	30	
Hardness	For interpretive purposes							
Major ions – calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride.	For interpretive purposes							
Turbidity (NTU)	For interpretive purposes							
Suspended Solids	For interpretive purposes							

1. Limit A derived from site specific values, using dissolved concentration of metals (80th percentiles).
2. Limit B derived from site specific values, using dissolved concentration of metals (95th percentiles).
3. ANZECC (2000) trigger levels for aquatic ecosystems for slightly to moderately disturbed ecosystems.

(G44)	Groundwater measured from any compliance bore specified in **Table G9 - Groundwater monitoring locations and frequency** must not exceed the corresponding Limit A specified in **Table G10 – Groundwater quality limits** on any five consecutive sampling occasions**.**
(G45)	Groundwater measured from any compliance bore specified in **Table G9 - Groundwater monitoring locations and frequency** must not exceed the corresponding Limit B specified in **Table G10 – Groundwater quality limits** on any three consecutive sampling occasions**.**
(G46)	If groundwater measured from any compliance bore specified in **Table G9 - Groundwater monitoring locations and frequency** exceeds the corresponding Limit B specified in **Table G10 – Groundwater quality limits** on any one sampling occasion the environmental authority holder must resample the groundwater within the compliance bore for all exceeding parameters within ten business days of receipt of results.
(G47)	Groundwater quality at the observation bores specified in **Table G9 – Groundwater monitoring locations and frequency** must be maintained or improved.
(G48)	The holder of this environmental authority must complete an annual monitoring report by **1 August** each year and submit this report to the administering authority upon request. The report must be prepared by an appropriately qualified person and must address the following requirements as a minimum: (a) analyses of groundwater chemistry and hydrogeological data for all groundwater monitoring bores; (b) discuss the effectiveness of the current groundwater monitoring regime and any improvements that could be made to ensure early detection of impacts to groundwater; (c) ensure that all potential groundwater impacts due to the mining activity are identified and monitored. Where potential groundwater impacts are identified, mitigation strategies must be described; (d) include a conceptual groundwater model that is reviewed, updated and validated once every 2 years in accordance with findings of the groundwater monitoring; (e) changes in groundwater levels plotted as a function of time to identify seasonal patterns and possible draw-down effects; (f) groundwater elevation contours and flow direction; and (g) interpretation and discussion of groundwater monitoring data.
(G49)	By **15 November 2019,** a Groundwater Management Program must be developed, documented and implemented by appropriately qualified persons.
(G50)	The construction, maintenance and decommissioning of groundwater monitoring bores must be undertaken in a manner that: (a) prevents contaminants entering the groundwater; and (b) ensures the integrity of the bores to obtain representative groundwater samples from the target aquifer; and (c) maintains the hydrogeological environment within the aquifer.

(G51)	A bore drill log must be kept for each reference, compliance and observation groundwater monitoring bore which includes: (a) bore identification reference and geographic coordinate location; (b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details; (c) standing groundwater level and water quality parameters including physical parameters and results of laboratory analysis for the possible trigger parameters; (d) lithological data and stratigraphic interpretation by an appropriately qualified person to identify important features associated with groundwater monitoring; and (e) target aquifer formation of the bore.
(G52)	Monitoring and sampling must be carried out in accordance with written procedures and must address the requirements of the latest version of the following documents unless otherwise approved by the administering authority: (a) for groundwater, Groundwater Sampling and Analysis – A Field Guide (2009:27 GeoCat#6890.1) and Australian Standard AS/NZS 5667.11:1998 Water Quality – Sampling – Guidance on sampling of groundwaters.

Schedule H – Sewage Treatment	
Condition number	**Condition**
Sewage Treatment – Effluent Release to Land	
(H1)	Treated sewage effluent must only be dispersed to land within the nominated areas, and through the effluent disposal methods identified in Table H1- Onsite Sewage Treatment Systems.

Table H1 – Onsite Sewage Treatment Systems

Treatment Plant	Effluent Treatment System	Effluent Disposal Method	Coordinates (GDA94 MGA zone 54)	
			Northing	Easting
Maintenance Depot	Septic Tank	Distribution Trenches	7716312	433491
Exploration Complex	Septic Tank	Distribution Trenches	7716402	433455
Guard House	Septic Tank	Evapotranspiration Beds	7716600	433378
Process Plant	Aerated Wastewater Treatment System	Dedicated Subsurface Irrigation or Evapotranspiration Beds	7713796	435113
Project Office/Warehouse	Septic Tank	Evapotranspiration Beds	7713690	435035
Mining Offices	Dual Septic Tank	Evapotranspiration Beds	7715649	433795

(H2)	All effluent treatment systems identified in Table H1 – Onsite Sewage Treatment Systems must be designed, operated and maintained in accordance with the relevant Australian Standard.

Schedule I – Definitions/Acronyms	
Words and phrases used throughout this Environmental Authority are defined below except where identified in the *Environmental Protection Act 1994* or subordinate legislation. Where a definition for a word or term used in this Environmental Authority is sought and the term is not defined in this schedule, regard should be given to the Macquarie Dictionary and definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies.	
Acceptance criteria	Means the measures by which actions implemented are deemed to be complete. The acceptance criteria indicate the success of the decommissioning and rehabilitation outcomes or remediation of areas which have been significantly disturbed by the environmentally relevant activities. Acceptance criteria may include information regarding: (a) stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage; (b) control of geochemical and contaminant transport processes; (c) quality of runoff waters and potential impact on receiving environment; (d) vegetation establishment, survival and succession; (e) vegetation productivity, sustained growth and structure development; (f) fauna colonisation and habitat development; (g) ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes; (h) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration; (i) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development; (j) resilience of vegetation to disease, insect attack, drought and fire; (k) vegetation water use and effects on ground water levels and catchment yields.
Acid mine drainage (AMD)	Means any contaminated release emanating from a mining operation formed through a series of chemical and biological reaction, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining operations.
Acid rock drainage	Means any contaminated release emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining activities.
AEP	Means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.
Airblast overpressure	Means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dBL).
Ambient (or total) noise	At a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

Assessed	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 determination has been based; (c) the relevant data and facts on which the determination 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 determination 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.
Bunded	Means within bunding consistent with Australian Standard 1940.
Certification, certifying or **certified**	By a suitably qualified and experienced person in relation to a design plan or an annual report regarding dams, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time: (a) exactly what is being certified and the precise nature of that certification; (b) the relevant legislative, regulatory and technical criteria on which the certification has been based; (c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and (d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.
Chemical	Means: (a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth); or (b) a dangerous good under the dangerous goods code; or (c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 1997*;

	(d) 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.
Commercial place	Means a work place used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees accommodation or public roads.
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 purposes of preparing a design plan.
Contaminant	A contaminant can be: (a) a gas, liquid or solid; or (b) an odour; or (c) an organism (whether alive or dead), including a virus; or (d) energy, including noise, heat, radioactivity and electromagnetic radiation; or (e) a combination of contaminants.
Contaminate	Means to render impure by contact or mixture.
Contaminated	Means the substance has come into contact with a contaminant.
Control measure	Means any action or activity that can be used to prevent or eliminate a hazard or reduce it to an acceptable level.
Dam	Means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. 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.

Decommissioned infrastructure waste	Means non-putrescible waste arising from construction or demolition activities carried out as part of the decommissioning of infrastructure and consisting of any of the following, alone or in any combination: (a) construction paper, plasterboard and cardboard; (b) intact or partially disassembled electronic equipment; (c) timber; (d) scrap metal; (e) glass; (f) aggregate, concrete, bricks, pavers, ceramics and tiles; and (g) polyethylene water pipes.
Design plan	Is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include all investigation and design reports, plans and specifications sufficient to hand to a contractor for construction, and planned decommissioning and rehabilitation outcomes; so as to address all hazard scenarios that would be identified by a properly conducted hazard assessment for the structure. Documentation must be such that a 'suitable qualified and experienced person' could conduct an independent review without seeking further information from the designer.
Design storage allowance or **DSA**	Means an available volume, estimated in accordance with the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995), that must be provided in a dam as at the first of November each year in order to prevent a discharge from that dam to a probability (AEP) specified in that guideline. The DSA is estimated based on 100% runoff of wet season rainfall at the relevant AEP, taking account of process inputs during that wet season, with no allowance for evaporation.
Domestic waste	Means waste, other than domestic clean-up waste, green waste, recyclable waste, interceptor waste or waste released to a sewer, produced as a result of the ordinary use or occupation of domestic premises.
Dwelling	Means any of the following structures or vehicles that is principally used as a residence: (a) A house, unit, motel, nursing homes or other building or part of a building; or (b) A caravan, mobile home or other vehicle or structure on land; or (c) A water craft in a marina.
Effluent	Treated waste water released from sewage treatment plants.
Environmental authority holder	Means the holder of this environmental authority.
Environmentally relevant activity	Means an environmentally relevant activity as defined under Section 18 of the *Environmental Protection Act 1994* and listed under Schedule 2 and Schedule 3 of the Environmental Protection Regulation 2019.

Flowable substance	Means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.
Foreseeable future	Is the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptable probability of failure before that time.
General waste	Means waste other than regulated waste.
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 Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).
Hazardous waste	Means a substance, whether liquid, solid or gaseous that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm.
Height of dam	Means the measurement of the difference in level between the natural bed of the watercourse at the downstream toe of the dam or, if the dam is not across a watercourse, between the lowest elevation of the outside limit of the dam and the top of the dam. In the case of a void, height means the difference in level between the lowest point in the bottom of the void and the level at the lowest point of overflow out of the void.
Infrastructure	Means water storage dams, roads and tracks, buildings and other structures built for the purpose and duration of the conduct of the environmentally relevant activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams, waste dumps, voids, or stockpiles and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of land.
Land capability	As defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.
Land suitability	As defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.
Land use	Term to describe the selected post mining use of the land, which is planned to occur after the cessation of mining operations.
Landfill	Means land used as a waste disposal site for lawfully putting solid waste on the land.
mg/L	Means milligrams per litre.

Mineral	Means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes: (a) Clay if mined for use for its ceramic properties, kaolin and bentonite; (b) Foundry sand; (c) Hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil therefrom; (d) Limestone if mined for use for its chemical properties; (e) Marble; (f) Mineral oil or gas extracted or produced from shale or coal by in situ processes; (g) Peat; (h) Salt including brine; (i) Shale from which mineral oil may be extracted or produced; (j) Silica, including silica sand, if mined for use for its chemical properties; (k) Rock mined in block or slab form for building or monumental purposes; But does *not* include: (l) Living matter; (m) Petroleum within the meaning of the *petroleum act 1923*; (n) Soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form; (o) Water.
Noxious	Means harmful or injurious to health or physical well being.
Offensive	Means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.
Operational plan	Means a document that amongst other things sets out procedures and criteria to be used for operating a dam during a particular time period. The operational plan as defined herein may form part of a plan of operations or plan otherwise required in legislation.
Probable maximum flood	Means is the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in a particular drainage area.
Process water	Means water used or produced during the mineral development activities.
Progressive rehabilitation	Means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.
Regulated dam	Means any dam in the significant or high hazard category as assessed using the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

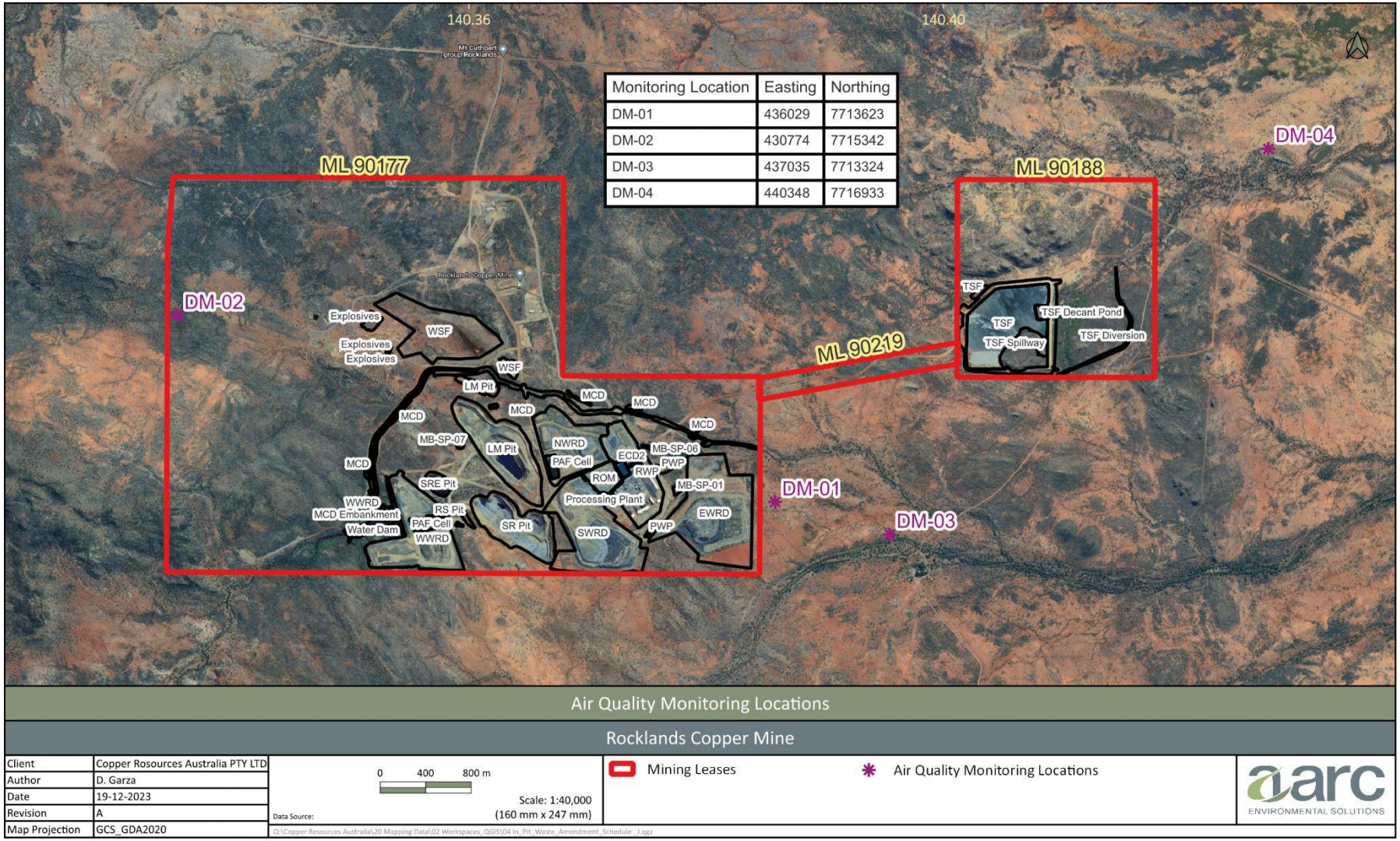
Regulated waste	Means non-domestic waste mentioned in schedule 7 of the *Environmental Protection Regulation 2008* (whether or not it has been treated or immobilised), and includes: (a) For an element – any chemical compound containing the element; and (b) Anything that has contained the waste.
Rehabilitation	The process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.
Residual void	Means an open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.
Sensitive place	Means: (a) A dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or (b) A motel, hotel or hostel; or (c) An educational institution; or (d) A medical centre or hospital; or (e) A protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage area; or (f) A public park or gardens.
Stable	In relation to land, means land form dimensions are and will remain within tolerable limits now and in the foreseeable future. Issues to be properly considered in regard to whether or not the landform is stable include geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.
Suitably qualified and experienced person	In relation to dams means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, or at the relevant time holds a 'deemed registration' within the meaning of the *Mutual Recognition (Queensland) Act 1992*; and has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below: (a) Knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and (b) A total of five years of demonstrated expertise in the geomechanics of dams with particular emphasis on stability, geology and geochemistry, and (c) A total of five years of demonstrated expertise in three of the following categories: • Investigation and design of dams. • Construction, operation and maintenance of dams. • Hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology. • Hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes. • Hydrogeology with particular reference to seepage, groundwater. • Solute transport processes and monitoring thereof.

	(d) Dam safety.
Tolerable limits	Means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values. For example, a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation.
The holder	Means the holder of this environmental authority
Void	Means any constructed, open excavation in the ground.
Waste and resource management hierarchy	Retains its meaning under section 9 of the *Waste Reduction and Recycling Act 2011.*
Waste water	Means used water from the activity, process water or contaminated storm water.
Water quality	Means the chemical, physical and biological condition of water.
Waters	Includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

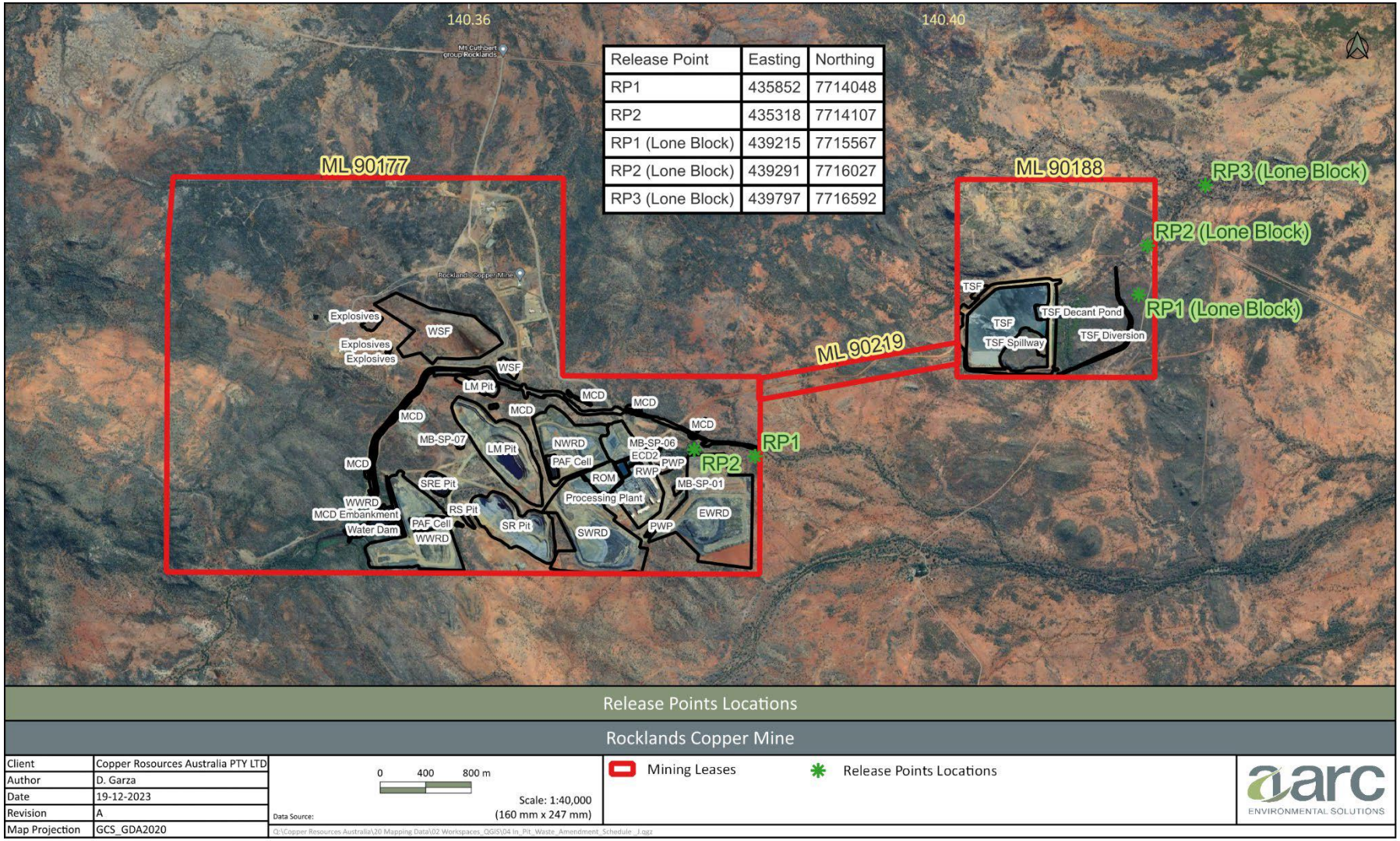
Schedule J – Plans

Plan 1 – General Area Plan

Plan 2 – Air Quality Monitoring Locations

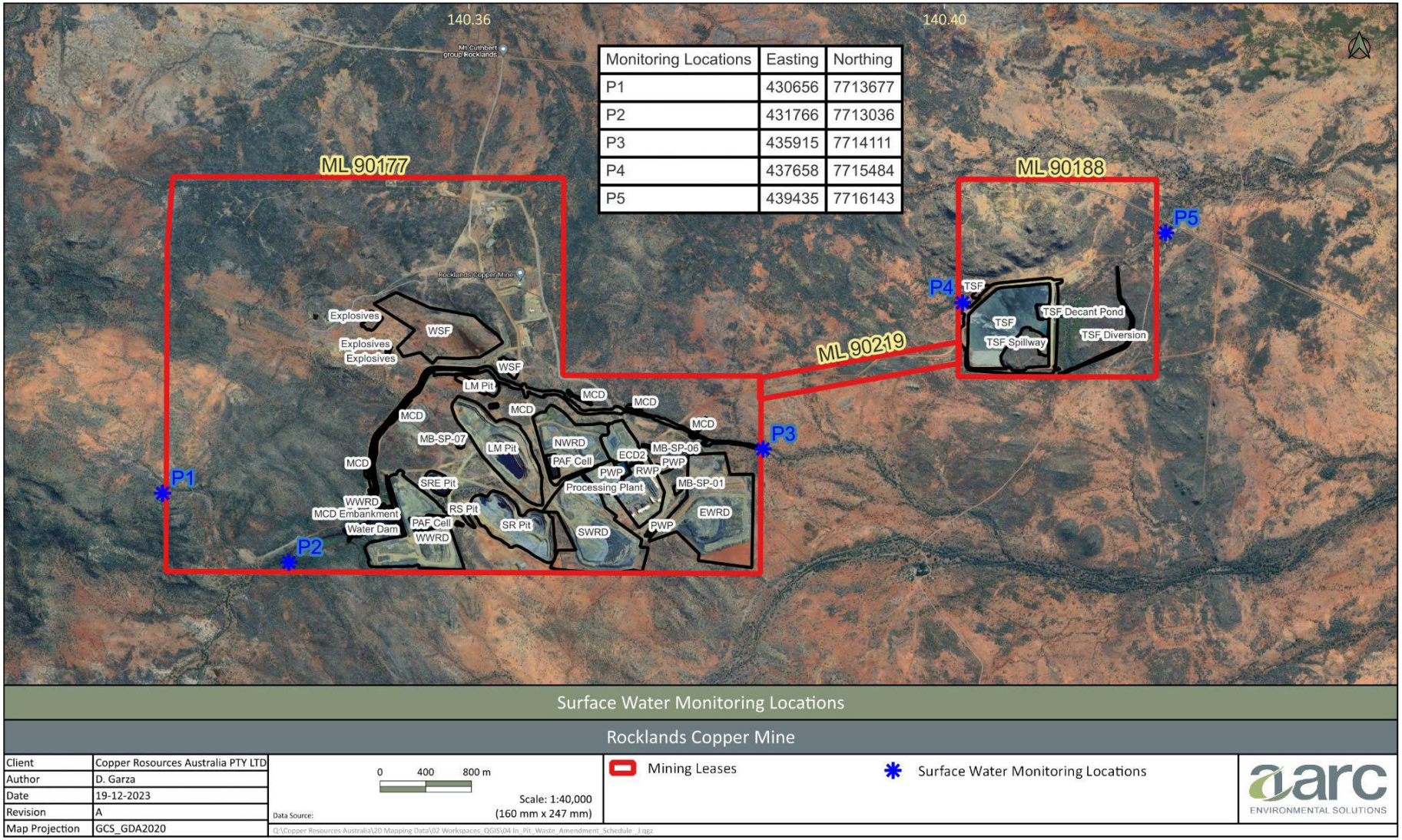


Plan 3 – Release Points Locations



Release Point	Easting	Northing
RP1	435852	7714048
RP2	435318	7714107
RP1 (Lone Block)	439215	7715567
RP2 (Lone Block)	439291	7716027
RP3 (Lone Block)	439797	7716592

Plan 4 – Surface Water Monitoring Locations



END OF ENVIRONMENTAL AUTHORITY