Permit

Environmental Protection Act 1994

Environmental authority EPML00712113

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

Environmental authority number: EPML00712113

Environmental authority takes effect on 16 August 2021

Environmental authority holder(s)

Name	Registered address
Mt Rawdon Operations Pty Ltd	Level 24, 175 Liverpool Street Sydney NSW 2000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 16: Mining gold ore	ML1231, ML1259, ML50119, ML100059, ML1192, ML1203, ML1204, ML1206, ML1210
Ancillary 08 - Chemical Storage 2: Storing 50t or more of chemicals of dangerous goods class 6, division 6.1 under subsection (1)(b)	ML1231, ML1259, ML50119, ML100059, ML1192, ML1203, ML1204, ML1206, ML1210
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-ii) 21 to 100EP otherwise	ML1231, ML1259, ML50119, ML100059, ML1192, ML1203, ML1204, ML1206, ML1210
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML1231, ML1259, ML50119, ML100059, ML1192, ML1203, ML1204, ML1206, ML1210

Environmentally relevant activity/activities	Location(s)
Ancillary 60 - Waste disposal 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) (a) less than 50,000t	ML1231, ML1259, ML50119, ML100059, ML1192, ML1203, ML1204, ML1206, ML1210

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

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

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

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

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

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

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

Tbibbs	16 August 2021
Signature	Date

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

Enquiries:
Minerals Business Centre
Department of Environment and Science

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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)

Conditions of environmental authority

Schedule A - General
Schedule B - Air
Schedule C - Waste Management
Schedule D - Noise
Schedule E - Water
Schedule F - Biodiversity
Schedule G - Land and Rehabilitation
Schedule H - Regulated Structures
Schedule I - Definitions
Schedule J - Maps and Plans

Schedule A – General

A1 This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.

A2 Contaminants with the potential to cause environmental harm must not be released directly or indirectly to the receiving environment, except as permitted under the conditions of this environmental authority.

A3 The environmental authority holder must ensure that the activity is carried out in accordance with *Table A1*.

Table A1 - Authorised disturbance ('Table A1')

Mine domain[1]	Mine feature name	Sub-domain Area (ha)	Maximum disturbance area (ha)	Location (GDA94)	
				Central Peg Coordinates	
Borrow Pit	Clay Borrow	3.92	50.06	375917.3566	7205686.401
	Cleared/ Topsoil Stripped	0.69		375097.6334	7205778.725
	Combined Borrow Pit and Topsoil Stockpile Area	42.06		374905.2775	7206062.352
	NAF Rock Borrow	3.40		374946.7038	7203876.49
Infrastructure	Core Yard	0.62	58.84	376361.9136	7205364.685
	Environment Experiment Hardstand	1.21		375938.9904	7203935.688
	Explosive Magazine	0.89		374381.736	7204749.723
	Future Infrastructure Area	3.57		375266.7654	7204918.881
	Helipad	0.50		375857.7162	7205906.014
	Mining Operations	1.62		375431.4463	7205293.051
	MRT Training Area	1.60		376440.5676	7205541.877
	Orica	3.72		376230.5201	7206132.951
	Pipelines	3.23		376491.5331	7205807.7
	Pit Laydown Area	1.99		374975.2669	7204317.504
	Powerlines	13.95		376654.3306	7204939.469
	Processing Plant	14.15		374976.4789	7204691.297

Mine domain[1]	Mine feature name	Sub-domain Area (ha)	Maximum disturbance area (ha)	Location (GDA94)	
				Central Peg Coordinates	
	Run of Mine	5.19		375191.6661	7204619.238
	South Pit Hardstand	2.35		375313.9339	7203682.747
	Landfill Area	2.65		376229	7206201
	Landfill Area	1.60		376441	7205542
North WRD	Batters	42.07	103.92	376091.7812	7204673.925
	Capping System	52.87		375870.012	7204714.79
	Cleared/ Topsoil Stripped	2.38		376434.7224	7204599.618
	Existing capping system	6.60		376236.3995	7204544.26
Pit	Pit Crest	71.35	71.35	375457.4643	7204185.751
Roads	Cleared/ Topsoil Stripped	1.43	27.90	376025.3423	7205491.726
	Roads	21.32		375301.0168	7204920.848
	Roads (Non FA)	5.16		375941.6944	7206192.787
Topsoil	Topsoil Stockpiles	13.03	13.16	375651.3175	7204954.727
	Cleared/ Topsoil Stripped	0.13		376013.885	7203870.728
TSF	Batter	45.02	203.92	374840.955	7205719.538
	Bench	22.87		374845.7628	7205731.64
	Capping System	127.72		374633.5691	7205383.006
	Cleared/ Topsoil Stripped	3.31		374285.3654	7205301.36
	PAF Dump	5		374119.470	7205140.050
Water Management	Cleared/ Topsoil Stripped	0.19	53.82	375569.1878	7206148.086
	Drains	13.56		375277.4524	7204868.76
	SD1	2.21		375280.9449	7206122.717
	SD2	0.66		375603.3949	7206359.127
	SD3	3.85		375373	7206203
	South Dam	6.20		374641.5086	7204642.337

Mine domain[1]	Mine feature name	Sub-domain Area (ha)	Maximum disturbance area (ha)	Location (GDA94)	
				Central Peg Coordinates	
	WD1	9.36		376034.6416	7205481.253
	WD2	4.85		376389.4565	7205250.938
	WD3	2.74		376650.6981	7204537.494
	WD4	3.73		376555.9628	7204223.605
	West Dam	6.29		374749.0942	7203761.15
	Effluent irrigation area	0.18		374946	7204814
West WRD	Approved, but currently undisturbed	16.72	59.14	374310.2317	7204036.078
	Batters	8.17		374630.2096	7204016.993
	Capping System	27.32		374632.1548	7204298.308
	Cleared/ Topsoil Stripped	6.94		374381.7234	7204132.821

[1] Mine domains depicted is *Schedule J, Map 1 – Location of authorised disturbance* and *Map 2A – Infrastructure locations*

A4 The holder of this environmental authority must:

a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;

b) maintain such measures, plant and equipment in a proper and efficient condition;

c) operate such measures, plant, and equipment in a proper and efficient manner; and

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

Monitoring

A5 Except where specified in another condition of this environmental authority, all monitoring data, records and reports required by this environmental authority or related to environmental management of the activities must be:

a) carried out by an appropriately qualified person, periodically reviewed and updated as required to reflect operational or environmental changes;

b) kept for a period of not less than five (5) years;

c) provided to the administering authority in the specified format within 10 business days of a request; and

d) undertaken in accordance with the most recent version of any applicable standard or guideline for the activity

A6 The following information must be recorded in relation to all monitoring required under a condition of this environmental authority:

a) the date and time when the sample was taken;

b) the location where the sample was taken; and

c) any other pertinent details of relevance to interpreting the sampling results (*i.e.* stream flow, wind conditions or any unusual observations such as odour or colouration).

A7 The environmental authority holder must implement all reasonable measures necessary to conduct monitoring required under a condition of this environmental authority.

Note: 'Reasonable measures' could include establishing and maintaining safe all-weather access to a monitoring location by upgrading roads/tracks, use of suitable automated sampling devices, developing alternative routes or utilising alternative transport.

Financial assurance

A8 Financial assurance must be lodged with the administering authority in the amount, the form and within the time required by the administering authority.

Risk management

A9 The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management, by **23 June 2017.**

Notification of emergencies, incidents, and exceptions

A10 The environmental authority holder must notify the administering authority within 24 hours of becoming aware of any emergency, incident, sample result or event which does or may contravene a condition of this environmental authority.

A11 Within 10 business days following the initial notification of an emergency, event or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:

a) results and interpretation of any samples taken and analysed;

b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and

c) proposed actions to prevent a recurrence of the emergency or incident.

Complaints

A12 The holder of this environmental authority must record all environmental complaints received about the mining activities including:

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

A13 When requested by the administering authority, the environmental authority holder must undertake specified monitoring within the timeframe nominated by the administering authority, to investigate any complaint related to the activity.

Third-party reporting

A14 The holder of this environmental authority must:

a) by **8 January 2018**, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority;

b) obtain further such reports at regular intervals, not exceeding three (3) yearly intervals, from the completion of the report referred to above; and

c) provide each report to the administering authority within 90 days of its completion

END OF CONDITIONS FOR SCHEDULE A

Schedule B – Air

B1 The release of noxious or offensive odour, dust or any other airborne contaminant resulting from the activities must not cause environmental nuisance or harm.

END OF CONDITIONS FOR SCHEDULE B

Schedule C - Waste Management

C1 All waste generated as part of the mining activities must be disposed of in a lawful manner at an off-site facility, with the exception of:

a) waste rock and tailings, which must be characterised, handled and disposed of in accordance with condition **C4** of this environmental authority;

b) timber pallets;

c) general waste disposed of into the waste disposal trench facility as per condition **C2**;

d) waste rock determined not to be potentially acid forming may be disposed into the West Waste Rock Dump; and

e) tyres, subject to condition **C3**.

Note: *The only waste authorised to be burnt on site is explosive boxes, so long as the burning does not cause environmental harm.*

C2 General waste must only be disposed of into the waste disposal trench facility of ML1259 and identified in *Schedule J Map 2A – Site Infrastructure.*

C3 Subject to demonstrating to the administering authority that no other use higher in the waste management hierarchy can be practicably implemented, waste tyres generated from mining activities may be disposed of on site in the North Waste Rock Dump and the West Waste Rock Dump.

C4 All waste rock and tailings must be:

a) *geochemically characterised* and disposed of in a manner that minimises the potential generation and/or release of contaminants to the receiving environment;

b) where the geochemical characteristics of waste rock is uncertain, this material must be treated as *potentially acid forming, saline mine drainage* or *neutral mine drainage* forming until demonstrated otherwise; and

c) details pertaining to meeting the requirements of this condition must be recorded and retained until this environmental authority is surrendered

Sewage Treatment

C5 Condition **C6** take effect from **23 June 2018.**

C6 The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in *Table C1*.

Table C1 – Treated sewage contaminant release limits ('Table C1')

Contaminant	Unit	Release limit	Limit type	Frequency
5 day Biochemical oxygen demand (BOD)[1]	mg/L	20	Maximum	Monthly
Total suspended solids	mg/L	30	Maximum	Monthly
Nitrogen	mg/L	30	Maximum	Monthly
Phosphorus	mg/L	15	Maximum	Monthly
E-coli	Organisms/100ml	1000	Maximum	Monthly
pH	pH units	6.0 – 9.0	Range	Monthly

C7 Treated sewage effluent may only be released to land from the following locations:

a) within the nominated irrigation area identified in *Table A1;*

b) other land for the purpose of dust suppression and/or firefighting

C8 The application of treated effluent to land must be carried out in a manner such that:

a) vegetation is not damaged

b) there is no surface ponding of effluent

c) there is no run-off or over spray of effluent

C9 All sewage effluent released to land must be monitored at the frequency and for the contaminants specified in *Table C1.*

C10 The daily volume of effluent releases must be measured and documented.

C11 When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent such as during or following rain events, measures must be taken to store or lawfully dispose of effluent.

C12 Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their *general environmental duty* whilst using the treated sewage effluent.

END OF CONDITIONS FOR SCHEDULE C

Schedule D – Noise

Noise limits

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

Table D1 – Noise limits ('Table D1')

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	9am to 6pm	6pm to 10pm	10pm to 9am
$L_{Aeq, adj, 15 mins}$	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Table D1 – Noise limits notes:

1. CV = Critical Value

2. AV = Adjustment Value

3. To calculate noise limits in Table D1:

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.

Airblast overpressure nuisance

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

Table D2 – Blasting noise limits ('Table D2')

Blasting noise limits	**Sensitive or commercial blasting noise limits place limits**		
	Monday to Friday 7am to 6pm **Saturday, Sunday and Public Holidays 9am – 6pm** **Open Cut Pits and Underground Workings**	**Monday to Friday 6pm to 7am** **Saturday, Sunday and Public Holidays 6pm – 9am** **Open Cut Pits**	**Monday to Friday 6pm to 7am** **Saturday, Sunday and Public Holidays 6pm – 9am** **Underground Workings**
Airblast overpressure	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time	No blasting	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time
Ground vibration peak particle velocity	5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	No blasting	5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time

Monitoring and reporting

D3 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 LA90

c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels

d) atmospheric conditions including temperature, relative humidity and wind speed and directions

e) effects due to any extraneous factors such as traffic noise

f) location, date, and time of monitoring

g) if the complaint concerns low frequency noise, Max LpLIN,T and one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.

Note: *Noise and blast monitoring as required by the administering authority in accordance with Schedule A - condition* ***A13.***

END OF CONDITIONS FOR SCHEDULE D

Schedule E – Water

E1 All determinations of the quality of contaminants released must be made in accordance with methods prescribed in the latest edition of the Environmental Protection Agency Water Quality Sampling Manual, and carried out on samples that are representative.

E2 Contaminants must not be released to any waters or the bed and banks of any waters other than releases of stormwater in compliance with condition **E4**. For the purpose of this condition only, "waters" does not include stormwater channels from:

a) the waste rock dump area to the waste rock dump containment dams WD1, WD2, WD3, WD4; West Dam, South Dam South; and

b) the Tailings Storage Facility to Sediment Dam 3 (and includes Sediment Dam 1); and

c) the Process Water Dam to South Dam.

E3 The holder of this authority must implement a Storm Water Management Plan that must include, but may not be limited to, measures to:

a) prevent incident stormwater and stormwater run-off from contacting wastes or contaminants; and

b) divert upstream run-off away from disturbed areas, or areas containing wastes or contaminants; and

c) capture and manage run-off from disturbed areas (including waste rock dump areas); and

d) manage pit water (including that resulting from inflow of groundwater).

E4 Stormwater impacted by the mining activities may only be discharged from the Containment locations listed in *Table E1* and must comply with the contaminant limits defined in *Table E2*.

E5 Stormwater released from the Containment locations listed in *Table E1* must be monitored at the locations and frequencies defined in *Table E1* for the parameters shown in *Table E2*.

E6 All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.

E7 Erosion control and sediment control structures must be maintained at all times and repaired or replaced as required after each rainfall event.

E8 In the event that a release from any dam spillway is necessary the release must be controlled or managed in such a manner that prevents erosion of any watercourse or areas affected or potentially affected by the release.

E9 Receiving waters potentially impacted by the release of stormwater impacted by mining activities, seepage from site dams or potentially impacted ground water must be monitored at the locations and frequencies defined in *Table E3*, for the water quality parameters listed in *Table E4*.

Table E1 - Containment Dams monitoring locations and frequency ('Table E1')

Impacted stormwater release location	Monitoring Frequency
Spillway of Waste Rock Dump containment dam WD1	In the event of a release from the dam spillway
Spillway of Waste Rock Dump containment dam WD2	In the event of a release from the dam spillway
Spillway of Waste Rock Dump containment dam WD3	In the event of a release from the dam spillway
Spillway of Waste Rock Dump containment dam WD4	In the event of a release from the dam spillway
Spillway of Sediment Dam 3 located in headwaters of Rawdon Creek	In the event of a release from the dam spillway
Spillway of West Waste Rock Dump containment Dam – West Dam	In the event of a release from the dam spillway

Table E2 - Containment Dams contaminant release limits ('Table E2')

Water quality parameter	Units	Release Limit for WD1, WD2, WD3, WD4, and Spillway of Sediment Dam 3.	Release Limits for West Dam
Total Suspended Solids	mg/L	Must not exceed 1200 mg/L or 10% greater than a background value[1] of the receiving waters whichever is the greater.	Within 10% greater than background value of the receiving water.
pH	pH units	6.0 – 9.0 (range)	6.0 – 9.0 (range)
Total Dissolved Solids	mg/L	<1000	<900
Sulfate	mg/L	<100	<100
Copper	mg/L	<0.04	<0.0025
Zinc	mg/L	<0.15	<0.031
Arsenic	mg/L	<0.05	<0.01
Cadmium	mg/L	<0.005	<0.0008
WAD Cyanide	mg/L	<0.007	<0.007

Note 1: A "background value" for a quality characteristic is the value of the quality characteristic measured on the same day at a background sampling and in-situ monitoring point in the receiving waters not affected by the release situated further than 20 metres up-current from the release point into Twelve Mile Creek and Swindon Creek.

E10 In the event that monitoring results, as interpreted by a suitably qualified person, indicate an impact in terms of contaminant levels in downstream monitoring sites compared to levels found in upstream monitoring sites, then the environmental authority holder must complete an investigation into the source, cause or extent of environmental harm being caused, or the extent of environmental harm likely to be caused, and provide this to the administering authority within one (1) month of receiving the analysis results.

For the purposes of this condition, a suitably qualified person is someone possessing appropriate qualifications and experience in the field of surface water monitoring program design monitoring and data analysis and who can competently make recommendations about these matters.

In assessing the monitoring results the suitably qualified person must give consideration to relevant methodology and water quality criteria specified by the Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand in Australian Guidelines for Water Quality Monitoring and Reporting, 2000 and Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2000 or more recent editions of the documents.

Table E3 - Receiving waters monitoring locations and frequency ('Table E3')

Monitoring point	Classification	Easting (AMG)	Northing (AMG)	Monitoring frequency
Perry River Downstream	Downstream	378842	7208200	Monthly[1], in the event of flow in the receiving waters
Swindon Creek Downstream	Downstream	375038	7207001	Monthly[1], in the event of flow in the receiving waters
Rawdon Creek Downstream	Downstream	375890	7206438	Monthly[1], in the event of flow in the receiving waters
Twelve Mile Creek Downstream	Downstream	377113	7206554	Monthly[1], in the event of flow in the receiving waters
Mingham Creek Downstream	Downstream	375320	7202870	Monthly[1], in the event of flow in the receiving waters
Swindon Creek Upstream	Upstream	373410	7205443	Monthly[1], in the event of flow in the receiving waters
Twelve Mile Creek Upstream	Upstream	377298	7204777	Monthly[1], in the event of flow in the receiving waters
Perry River Upstream	Upstream	374746	7207281	Monthly[1], in the event of flow in the receiving waters

Monitoring point	Classification	Easting (AMG)	Northing (AMG)	Monitoring frequency
Mingham Creek Upstream	Upstream	374586	7203135	Monthly[1], in the event of flow in the receiving waters

1. Where possible monitoring should coincide with groundwater monitoring

Table E4 - Receiving water monitoring requirements ('Table E4')

Water quality parameter	Units
Total Suspended Solids	mg/L
pH	pH units
Total Dissolved Solids	mg/L
Sulfate	mg/L
Copper	mg/L
Zinc	mg/L
Arsenic	mg/L
Cadmium	mg/L
Cyanide (as WAD cyanide)	mg/L
Major Ions[1]	mg/L
Electrical Conductivity	µS/cm
Nitrate	mg/L
Hardness	-

1. Major ions to be sampled include sodium, fluoride, potassium, calcium, magnesium, chloride, bicarbonate and carbonate

E11 The Tailings Storage Facility must be monitored for the water quality parameters indicated and at the frequency specified in *Table E5.*

E12 In the event that monitoring conducted in accordance with condition **E11** indicates the water quality within the Tailings Storage Facility does not comply with the contaminant limits defined in *Table E5*, implement all reasonable and practicable measures to prevent access by all livestock and minimise access by native fauna to the dam.

Table E5 - Water quality limits for Tailings Storage Facility ('Table E5')

Water Quality Parameter	Units	Contaminant limit	Monitoring frequency
WAD Cyanide	mg/L	50	Quarterly
Arsenic	mg/L	0.5	Quarterly
Sulfate	mg/L	1000	Quarterly
Copper	mg/L	0.5	Quarterly
Zinc	mg/L	20	Quarterly
Lead	mg/L	0.1	Quarterly

E13 The design storage allowance on 1st November of each year for all regulated dams constructed or operated within the operational land must comply with *Table E6*.

Table E6 - Storage design[1] for regulated dams ('Table E6')

Dam	Design Storage Allowance[2] Critical Wet Period	Spillway Critical Design Storm[3]	Mandatory[4] Reporting Level
Tailings Storage Facility	1: 200 Year AEP 4-month wet season plus process inputs for the 4-month wet season	1: 10000 Year AEP	1: 100 Year AEP
Sediment Dam 3	1:20 Year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP
WD1	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP
WD2	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP
WD3	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP
WD4	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP
Process Water Pond	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP

Dam	Design Storage Allowance[2] Critical Wet Period	Spillway Critical Design Storm[3]	Mandatory[4] Reporting Level
South Dam South	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP
South Dam North	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP
West Dam	1:20 year AEP 4-month wet season	1:1000 Year AEP	1:10 Year AEP

NOTE: AEP means Annual Exceedance Probability – being the probability that at least one event as specified will occur in a particular year.

[1] *Calculations are to be carried out in accordance with the guideline titled Site Water Management within the Technical Guidelines for Environmental Management of Exploration and Mining in Queensland (DME 1995).*

[2] *The design storage allowance on 1st November of each year for any regulated dam constructed within the operational land must be sufficient to contain the run-off from the critical wet period - plus the volume of any other inputs to the storage facility during that critical wet period, as part of operations. Such inputs could be tailings, contaminated site waters, process waters, and any other materials.*

[3] *The critical storm has a duration that produces the peak discharge for the catchment.*

[4] *The level below spillway crest that can accommodate runoff from a 72-hour storm at the specified AEP, or the wave allowance at the specified AEP - whichever level is lower.*

E14 The spillway for any regulated dam, constructed or operated within the operational land must be designed and maintained to withstand the peak flow from the spillway capacity critical design storm defined in *Table E6.*

E15 In the event that a release from a Regulated Dam spillway or the Tailings Storage Facility spillway is required, environmental harm from the discharge must be avoided. This may include controlling the release to prevent erosion of sediment deposition in downstream watercourses, and ensuring that plant and infrastructure, chemical and fuel storages are not located in the flow path of any potential discharge.

E16 The holder of the environmental authority must mark the mandatory reporting level defined in *Table E6* on the spillway of all regulated dams within the operational land.

NOTE: The mandatory reporting level may also be marked and measured within the decant pond of the regulated dam. However, the mandatory reporting level within the decant pond must be compared to the mandatory reporting level on the spillway on a regular basis to ensure accuracy.

E17 The holder of the environmental authority must notify the administering authority when the pondage level of any regulated dam, reaches the mandatory reporting level defined in *Table E6*.

Groundwater

E18 Contaminants are not authorised to be released directly or indirectly to any groundwater.

E19 Groundwater must be monitored at the locations and frequencies specified in *Table E7.*

E20 Groundwater in all bores specified in *Table E7* must be monitored for the contaminants identified in *Table E8*.

E21 Groundwater measured at any compliance bore specified in *Table E7* must not exceed Limit A for any contaminant specified in *Table E8* or *Table E9* on any five (5) consecutive sampling occasions**.**

E22 Groundwater measured at any compliance bore specified in *Table E7* must not exceed Limit B for any contaminant specified in *Table E8* or *Table E9* on any three (3) consecutive sampling occasions**.**

Table E7 - Groundwater monitoring locations and frequency ('Table E7')

Monitoring Point [1]	**Location (MGA94 – Zone 56)**		**Aquifer**	**Surface RL [2] (m)**	**Depth RL [2] (m)**	**Screened interval RL [2] (m)**	**Monitoring Frequency**	
	Easting	**Northing**					**Standing Water Level RL [2] (m)**	**Ground-water Quality**
Operational Management Bores[5]								
Tailings Storage Facility								
MRMB29	375255	7206291	TBA	121.14	22	Records not available	Monthly	Quarterly
MRMB45	375060	7204704	Fractured Rock	152.60	39	33-39		
MRMB46	375348	7205133	Fractured Rock	151.34	39	26-35		
MRMB69	374430	7204749	Fractured Rock	135.50	36	29.5-36		
Twelve Mile Creek								

Monitoring Point [1]	Location (MGA94 – Zone 56)		Aquifer	Surface RL [2] (m)	Depth RL [2] (m)	Screened interval RL [2] (m)	Monitoring Frequency	
	Easting	Northing					Standing Water Level RL [2] (m)	Ground-water Quality
MRMB26	376281	7205684	Records not available	114.34	12	Records not available	Monthly	Quarterly
Waste Rock Dump								
MRMB60	376577	7204529	Fractured Rock	131.00	36	27-35	Monthly	Quarterly
MRMB27	376504	7205417	Regolith	111.62	46	Records not available		
MRMB25	376169	7205682	Regolith/ Fractured Rock	115.82	48	Records not available		
Interpretation Bore[6]								
MRMB37	377492	7204116	Fractured rock	122.74	50	25-49	Monthly	Quarterly
Compliance Bores[3]								
TSF North – Swindon Creek								
MRMB13	374164	7206247	Regolith/ Fractured rock	125.11	29.99	18-30	Monthly	Quarterly
MRMB54	374473	7207154	Fractured rock	125.12	31	17.1-29.5		
MRMB52	375103	7207188	Fractured rock	112.51	31	17.1-29.5		
MRPB2	373568	7205655	Fractured rock	149.92	49	36-49	Monthly	Quarterly

Monitoring Point [1]	Location (MGA94 – Zone 56)		Aquifer	Surface RL [2] (m)	Depth RL [2] (m)	Screened interval RL [2] (m)	Monitoring Frequency	
	Easting	Northing					Standing Water Level RL [2] (m)	Ground-water Quality
TSF North – Unnamed Creek								
MRMB40	375135	7206605	Fractured rock	121.72	43.5	25-43	Monthly	Quarterly
MRMB55	375956	7205939	Basement	127.60	31	25-31		
MRMB53	375403	7207005	Fractured rock	111.88	25	17.7 – 23.9		
MRMB66	375834	7206885	Basement	127.34	30	27-30		
MRMB74	376301	7206896	Basement	108.6	42	36-42		
Twelve Mile Creek								
MRMB38	377096	7206635	Fractured rock	104.20	41	13-40	Monthly	Quarterly
MRMB61	376731	7204473	Fractured rock	128.00	31	25-31		
MRMB62	376572	7203977	Fractured rock	148.00	37	26-35		
MRMB77	376752	7205786	Fractured rock	107.70	15.5	9.5-15.5		
MRMB78	376952	7204828	Fractured rock	113.51	29	17-29		
West Dam – Mingham Creek								
MRMB75	375401	7202922	Basement	98.7	30	24-30	Monthly	Quarterly
MRMB76	375155	7203435	Fractured rock	106.14	16.5	10.5-16.5		
Operational Bores[4]								
TSF North East – Rawdon Creek								

Monitoring Point [1]	Location (MGA94 – Zone 56)		Aquifer	Surface RL [2] (m)	Depth RL [2] (m)	Screened interval RL [2] (m)	Monitoring Frequency	
	Easting	Northing					Standing Water Level RL [2] (m)	Ground-water Quality
MRMB39	375856	7206535	Fractured rock	112.42	24	23-41	Monthly	Quarterly
MRMB21	375618	7206377	Regolith/ Fractured rock	116.34	34.9	23-35		
TSF North – Unnamed creek								
MRMB30	374892	7206410	Records not available	127.89	30.36	Records not available	Monthly	Quarterly
MRMB48	375466	7205964	Fractured rock	130.73	39	30-39		
Waste Rock Dump								
MRPB1	376644	7205033	Records not available	114.39	35	Records not available	Monthly	Quarterly
MRMB59	376199	7203734	Fractured rock	176.00	31	24-30		
MRMB49	375650	7205571	Basement	145.36	32	17-30		
MRMB63	376558	7205270	Fractured rock	128.00	25	19-22.5		
Twelve Mile Creek								
MRMB64	376325	7205993	Basement	125.00	43	35-41	Monthly	Quarterly
MRMB67	376399	7206366	Basement	127.10	30	27-30		
MRMB68	376140	7205997	Basement	134.90	30	27-30		
TSF North – Swindon Creek								

Monitoring Point [1]	Location (MGA94 – Zone 56)		Aquifer	Surface RL [2] (m)	Depth RL [2] (m)	Screened interval RL [2] (m)	Monitoring Frequency	
	Easting	Northing					Standing Water Level RL [2] (m)	Ground-water Quality
MRMB12	374545	7206538	Regolith	119.03	30	5-27	Monthly	Quarterly
MRMB65	374926	7206745	Basement	122.70	30	27-30		
MRMB43	373880	7205740	Fractured rock	137.70	37.5	24-37.5		
MRMB41	374809	7206896	Fractured rock	113.04	40.5	22-40		
MRMB42	374804	7206892	Fractured rock	113.06	16.8	7-16		
MRMB44	373878	7205736	Fractured rock	138.00	13	10-13		
West Dam								
MRMB36	374800	7203578	Fractured rock	108.73	49	36-49	Monthly	Quarterly
MRMB70	374482	7203728	Fractured rock	147.50	42	32.5-42		
MRMB72	374799	7203590	Basement	127.50	22	15.5-22		
MRMB71	374632	7203643	Basement	133.50	39	32.5-39		

1. Bores depicted in *Schedule J, Figure 2B– Groundwater monitoring network*.
2. RL measurement to be taken from top of bore casing to the nearest 1 centimetre.
3. Compliance bores – groundwater monitoring limits in Table E8 and Table E9 apply.
4. Operational bores – groundwater monitoring limits in Table E8 and Table E9 do not apply, groundwater quality must be maintained or improved at these sites.
5. Operational management bores – for interpretation purposes, groundwater monitoring limits in Table E8 and Table E9 do not apply.
6. Interpretation bores – located outside of potential influence of the activity and used for comparative and interpretative purposes, groundwater monitoring limits in Table E8 and Table E9 do not apply.

Table E8 – Groundwater monitoring limits ('Table E8')

Contaminant[1] (mg/L unless specified otherwise)		Limits[10]	
		Limit A	**Limit B**
pH[5]		6.5 -7.5	-
Aluminium[2]		-	0.055
Arsenic	All bores except MRMB61, MRMB76, MRMB77 and MRMB78 [2]	-	0.013
	MRMB76 and MRMB78 [6,7]	0.05	0.08
	MRMB77 [6,7]	0.15	0.19
	MRMB61 [6,7]	0.015	0.02
Boron[2]		-	0.37
Cadmium	All bores except MRMB61, MRMB62 and MRMB78 [2]	-	0.0002
	MRMB78 [6,7]	0.0005	0.0006
	MRMB61 and MRMB62 [6,7]	0.0006	0.0009
Chromium[2]		-	0.001
Copper [6,7]	All bores except MRMB61, MRMB62 and MRMB77 [6,7]	0.001	0.004
	MRMB77 [6,7]	0.006	0.008
	MRMB61 and MRMB62 [6,7]	0.004	0.005
Lead[2]		-	0.0034
Manganese[2]		-	1.9
Selenium[2]		-	0.005
Zinc	All bores except MRMB61, MRMB62 and MRMB78 [6,7]	0.01	0.02
	MRMB78 [6,7]	0.04	0.05
	MRMB61 and MRMB62 [6,7]	0.035	0.077
Nitrate [6,7]	All bores except MRMB61 and MRMB62 [6,7]	0.02	0.04
	MRMB61 and MRMB62 [6,7]	0.04	0.06

Contaminant[1] (mg/L unless specified otherwise)		Limits[10]	
		Limit A	Limit B
WAD Cyanide [3,4]		-	0.5
Cyanide (as un-ionised HCN, measured as [CN]) [2]		-	0.007
Iron	MRMB52 [6,7]	1.5	1.6
	MRMB13, MRMB53, MRMB54 and MRPB2 [6,7]	0.8	0.9
	MRMB75 [6,7]	4	4.9
	All other compliance bores [6,7]	0.3	0.65
Major ions[8]		For interpretation purposes	
Hardness[9]			

1. All metals and metalloids must be measured as dissolved and total, limits apply to the dissolved fraction (dissolved is from analysis of a filtered sample).
2. ANZG (2018) for 95% protection of species (freshwater).
3. WAD CN is Weak Acid Dissociable Cyanide, measured as an indicator of the bio-available cyanide.
4. The International Cyanide Management Code (2009), Section 4.5.
5. Derived from site specific values, using 20th and 80th percentile.
6. Limit A derived from site specific values (80th percentile).
7. Limit B derived from site specific values (95th percentile).
8. Major ions to be sampled include sodium, fluoride, potassium, calcium, magnesium, chloride, bicarbonate and carbonate.
9. For each sampling event, hardness adjustment for selected metals in freshwaters can be undertaken in accordance with ANZG (2018).
10. An amendment application can be made at any time under the *Environmental Protection Act 1994* to update dataset used to derive site specific limits for compliance bores, based on natural variations.

Table E9 – Bore specific Groundwater Monitoring limits ('Table E9')

Monitoring Point and Contaminant	Limits	
	Limit A[1]	Limit B[2]
Sulfate (SO_4^{2-}) mg/L		
MRMB74	390	399
MRMB75	793	846
MRMB37	503	532
MRMB62	336	376

Monitoring Point and Contaminant	Limits	
	Limit A[1]	**Limit B[2]**
MRMB61	197	205
MRMB13	272	296
MRMB53	183	194
MRMB40	75	83
MRMB52	69	75
MRPB2	229	242
MRMB38	305	358
MRMB54	106	116
MRMB76	162	165
MRMB78	586	615
MRMB66	195	206
MRMB55	23	25
Electrical Conductivity (µS/cm)		
MRMB74	10894	11042
MRMB75	10352	10451
MRMB37	6852	6952
MRMB62	5780	5926
MRMB61	5792	5834
MRMB13	4561	4765
MRMB53	4490	4561
MRMB40	3826	3922
MRMB52	3018	3072
MRPB2	2774	2820
MRMB38	2311	2427
MRMB54	2309	2386
MRMB76	1742	1768

Monitoring Point and Contaminant	Limits	
	Limit A[1]	**Limit B[2]**
MRMB78	10840	11105
MRMB66	1396	1434
MRMB55	1552	1611

1. Limit A derived from site specific values (80th percentile).
2. Limit B derived from site specific values (95th percentile).

E23 If groundwater measured at any compliance bore specified in *Table E7* exceeds any corresponding contaminant Limit B specified in *Table E8* or *Table E9* on one (1) sampling occasion the environmental authority holder must:

a) Resample the groundwater within the compliance bore for all exceeding contaminants within 10 business days.

E24 Groundwater quality at operational bores specified in *Table E7* must be maintained or improved.

E25 A bore log must be completed for each groundwater monitoring bore constructed after **1 August 2008** which includes:

a) bore identification reference and geographic coordinate location; and

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; and

c) standing groundwater level; and

d) lithological data, stratigraphic interpretation by an appropriately qualified person to identify important features associated with groundwater monitoring; and

e) target formation of the bore.

*Note: All existing bores must have a bore drill log that meets a); and where available include information required under b), c), d) and e) of condition **E25.***

E26 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.

Note: Decommissioning of groundwater monitoring bores must meet a) and c) of condition **E26.*

E27 Monitoring and sampling must be carried out in accordance with the requirements of the latest version of the following documents unless otherwise approved by the administering authority:

a) for waters and aquatic environments, the Queensland Government's Monitoring and Sampling Manual 2009 – *Environmental Protection (Water) Policy 2009*
b) for groundwater, *Groundwater Sampling and Analysis – A Field Guide* (2009:27 GeoCat#6890.1);
c) for subterranean aquatic fauna, the *Guideline for the Environmental Assessment of Subterranean Aquatic Fauna*.

E28 A Seepage Management Plan must be developed and implemented by **24 September 2018**.

E29 The Seepage Management Plan required under condition **E28** must be developed by a suitably qualified person.

E30 The Seepage Management Plan required under condition **E28** must at a minimum include control measures to:

a) prevent the release of seepage to groundwater in the receiving environment; and
b) prevent seepage migration into surface waters.

E31 By **22 March 2018**, a Groundwater Monitoring and Management Program must be developed by an appropriately qualified person.

E32 By **22 June 2018**, the Groundwater Monitoring and Management Program required under condition **E31** must be implemented.

E33 The Groundwater Monitoring and Management Program required by condition **E31** must:

a) identify potential sources, causes and extent of contaminant seepage and disturbance to groundwater from the activity; and
b) ensure that all potential groundwater impacts due to the activity are identified, mitigated, and monitored in accordance with the conditions of the environmental authority; and
c) ensure that adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives:
    i. detect any impacts to groundwater levels due to the activity; and
    ii. detect any impacts to groundwater quality due to the activity; and
    iii. detect any impacts caused by contaminant seepage on surface water quality; and
    iv. detect and analyse short- and long-term trends in groundwater quality at operational bores at an annual frequency; and
    v. determine compliance with conditions **E18**, **E19, E20, E21, E22** and **E24**; and
d) include a review process to identify improvements to the program; and
e) include an appropriate quality assurance and quality control program; and
f) assess the success of the seepage management system required under conditions **E28** and **E30** and determine if any additional mitigation measures are required for the adequate management of seepage; and

g) include a groundwater model which includes an assessment of current seepage rates and predicted post-mining seepage rates; and
h) have consideration for any comments provided by the administering authority.

E34 The Groundwater Monitoring and Management Program must be reviewed by **24 June 2019**, then every 2 years by an appropriately qualified person. The review must include:

a) an assessment that the Groundwater Monitoring and Management Program continues to meet the requirements stated in condition **E33**; and
b) a review of all the historical groundwater data against the limits specified in *Table E8 and Table E9*; and
c) a review of the ionic balance of all on site water storages including tailings storage and comparison against historical groundwater data; and
d) a review of the conceptual groundwater model and details of any adjustment made.

END OF CONDITIONS FOR SCHEDULE E

Schedule F – Biodiversity

Biodiversity offsets

F1 Significant residual impacts to prescribed environmental matters, are not authorised under this environmental authority or the *Environmental Offsets Act 2014.*

F2 The offset area identified in the document *Biodiversity Offsets Strategy – Mt Rawdon Operations* (NRC, May 2013) must be managed in accordance with the approved *Offset Area Management Plan* (MRO ENV PRO 0243 Offset Area Management Plan, February 2016), so that:

a) the proposed management continues to benefit the offset area; and

b) where the intended management strategies are required to change, the Offset Area Management Plan is updated to reflect the required management changes and submitted for endorsement to the administering authority.

F3 Reporting of the offset area's progress to the administering authority must occur in accordance with the reporting framework outlined in the *Biodiversity Offsets Strategy – Mt Rawdon Operations* (NRC, May 2013) and must ensure that it:

a) reports progress of offsetting requirements.

b) demonstrates whether or not the offsetting requirements are being met.

c) identifies any changes to offset delivery during the reporting period; and

d) is available for auditing by a third party to identify where investigation and/or compliance action is required by the department.

F4 Impacts on State Significant Biodiversity Values, in accordance with the *Biodiversity Offsets Strategy – Mt Rawdon Operations* (NRC, May 2013) must not occur before the following is provided to the administering authority:

a) the bank guarantee details (financial institution, account number and account name) for the holding of offset area management funds; and

b) evidence that adequate management costs are held by the nominated bank guarantee, within 4 months of the environmental authority being issued.

Livestock or native fauna mortalities

F5 Livestock or native fauna mortalities in or around areas containing cyanide must be reported to the administering authority within 24 hours of observation. The report must state the probable cause of death and include actions that will be taken to prevent the likelihood of livestock or native fauna deaths in future. WAD cyanide levels at the nearest monitoring point to the deceased animal must be reported to the administering authority.

*Note: The intent of condition **F5** is for the reporting of native fauna deaths only as a result of cyanide exposure.*

END OF CONDITIONS FOR SCHEDULE F

Schedule G – Land and Rehabilitation

G1 The environmental authority holder must rehabilitate all land disturbed by the mining activities in a manner that ensures rehabilitated areas achieve the following rehabilitation objectives:

a) safe for humans and wildlife;

b) non-polluting;

c) stable;

d) able to sustain an agreed post-mining land-use;

e) revegetated with species endemic to the area with no declared pest species; and

f) compliant with all conditions of this environmental authority

G2 A Final Land Use Rehabilitation Plan ('FLURP') that describes how the rehabilitation objectives in condition **G1** will be achieved must be developed, documented and implemented for all stages of the mining activity by **8 January 2018** The FLURP must at minimum include:

a) schematic representation of the proposed final land form inclusive of site drainage features;

b) details of proposed slope design and erosion and sediment controls;

c) proposed cover designs for encapsulation of waste material, including performance criteria;

d) proposed re-vegetation methods inclusive of plant species selection, propagation methods and establishment of suitable plant growth medium (*i.e.* top soil);

e) materials balance for all rehabilitation requirements including available top soil and material suitable for encapsulating waste in accordance with the proposed encapsulation methodology;

f) geotechnical, geochemical and hydrological studies necessary to demonstrate likely success of proposed rehabilitation methodology to achieve the required rehabilitation outcomes;

g) an investigation of proposed residual voids including potential for generation/mobilisation of contaminants, potential pathways for release of contaminants to waters (including groundwater) and a long-term void water balance model; and

h) a rehabilitation monitoring program sufficient to identify if required rehabilitation outcomes have been achieved.

G3 Rehabilitation in accordance with condition **G2** must commence progressively in accordance with the plan of operations.

G4 Residual voids (including open pits and underground workings) must not cause any serious or material environmental harm, other than the environmental harm constituted by the existence of the residual void itself, subject to any other condition within this environmental authority.

G5 All explosives, flammable or corrosive substances, hazardous chemicals, toxic substances, gases and dangerous goods must be stored and handled in accordance with:

a) the current Australian Standard where applicable; or

b) where no relevant Australian Standard exists, store such materials within an on-site containment system sufficient to prevent release to the receiving environment.

G6 Minimise the potential for contamination of land by hazardous contaminants.

G7 All previous disturbance on mining lease ML80095, as depicted in *Schedule J – Map 3* must be rehabilitated in accordance with conditions **G1** and **G2** of this environmental authority.

END OF CONDITIONS FOR SCHEDULE G

Schedule H – Regulated Structures

H1 The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* at the following times:

a) prior to the construction of the structure, if it is not an existing structure; or

b) if it is an existing structure, by **23 June 2017**; or

c) prior to any change in its purpose or the nature of its stored contents.

H2 A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.

H3 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

Design and construction of a regulated structure

H4 Conditions **H5** to **H9** inclusive do not apply to existing structures.

H5 All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

H6 Construction of a regulated structure is prohibited unless the environmental authority holder has submitted to the administering authority and 28 days have elapsed, the following:

a) a consequence category assessment report, as required by condition **H2**, and

b) the suitably qualified and experienced person certified design and design plan; and

c) the associated suitably qualified and experienced person certified operating procedures.

H7 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*, and must be recorded in the Regulated Structures register.

H8 Regulated structures must:

a) be designed and constructed in accordance with and conform to the requirements of the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).*

b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:

i) floodwaters from entering the regulated structure from any watercourse or drainage line; and

ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.

H9 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority within 10 days of the completion of construction of the regulated structure, and state that:

a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure.

b) construction of the regulated structure is in accordance with the design plan.

Operation of a regulated structure

H10 Operation of a regulated structure, except for an existing structure, must not commence unless the environmental authority holder has submitted to the administering authority:

a) One paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition **H7**, and

b) A set of 'as constructed' drawings and specifications, and

c) Certification of those 'as constructed drawings and specifications' in accordance with condition **H9**, and

d) Where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the design storage allowance (DSA) volume across the system, a copy of the certified system design plan;

e) A statement that confirms:

i. The requirements of this authority relating to the construction of the regulated structure have been met;

ii. The details required under this authority, have been entered into a Register of Regulated Structures; and

iii. There is a current operational plan for the regulated structures.

H11 For existing structures that are regulated structures:

a) where the existing structure that is a regulated structure is managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the environmental authority holder must submit to the administering authority within three (3) months of the commencement of this condition a copy of the certified system design plan including that structure; and

b) There must be a current operational plan for the existing structures.

H12 Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

Mandatory reporting level

H13 Conditions **H14** to **H17** inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

H14 The Mandatory Reporting Level (the MRL) specified in *Table H1* must be marked on a regulated structure in such a way that during routine inspections of that structure, it is clearly observable.

Note: *The mandatory reporting level may also be marked and measured within the decant pond of the regulated dam. However, the mandatory reporting level within the decant pond must be compared to the mandatory reporting level on the spillway on a regular basis to ensure accuracy.*

H15 The environmental authority holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated structure reaches the MRL.

H16 The environmental authority holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated structure.

H17 The environmental authority holder must record any changes to the MRL in *Table H1* and in the Register of Regulated Structures.

Design storage allowance

H18 The environmental authority holder must assess the performance of each regulated structure or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated structure or linked containment system taken prior to 1 July of each year.

H19 By 1 November of each year, storage capacity must be available in each regulated structure (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the structure (or network of linked containment systems), as specified in *Table H1*.

H20 The environmental authority holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated structure (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

H21 The environmental authority holder must, immediately on becoming aware that a regulated structure (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated structure or linked containment systems.

Annual inspection report

H22 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

H23 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions, if applicable, to ensure the integrity of the regulated structure.

H24 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

H25 The environmental authority holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority:

a) The recommendations section of the annual inspection report; and

b) If applicable, any details of any actions being taken in response to those recommendations.

Transfer arrangements

H26 The environmental authority holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

Decommissioning and rehabilitation

H27 Regulated structures and structures must not be abandoned but must be decommissioned and rehabilitated to achieve compliance with conditions **G1** and **G2** of this environmental authority.

Transitional Arrangements

H28 All existing structures that have not been assessed in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* must be assessed and certified in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* by **23 June 2017.**

Hydraulic performance of regulated structures

H29 Each regulated structure authorised by this environmental authority as specified in *Table A1 Authorised Disturbance*, must meet the hydraulic performance criteria listed in *Table H1* for that structure.

Table H1 – Hydraulic performance criteria ('Table H1')

Name of Regulated Structure	Consequence Category	Spillway Critical Design Storm Capacity		Design Storage Allowance[2] (DSA)		Mandatory Reporting Level[4] (MRL)		Purpose of structure
		Design Criteria	mAHD	Design Criteria	mAHD	Design Criteria	mAHD	
Tailings Storage Facility[6]	High	1:10000 year AEP	174.0	1: 200 Year AEP 4 month wet season plus process inputs for the 4 month wet season	172.0	1: 100 year AEP	173.5	Tailings Storage and PAF waste storage
Sediment Dam 3	Significant	1:1000 year AEP	118.5	1:20 Year AEP 4 month wet season	116.6	1:10 Year AEP	116.6	TSF Seepage Collection
WD1	Significant	1:1000 year AEP	126.0m	1:20 year AEP 4 month wet season	123.5	1:10 Year AEP	124.5	North WRD Runoff Containment
WD2	Significant	1:1000 year AEP	119.2m	1:20 year AEP 4 month wet season	118.3	1:10 Year AEP	118.8	North WRD Runoff Containment

Name of Regulated Structure	Consequence Category	Spillway Critical Design Storm Capacity		Design Storage Allowance[2] (DSA)		Mandatory Reporting Level[4] (MRL)		Purpose of structure
		Design Criteria	mAHD	Design Criteria	mAHD	Design Criteria	mAHD	
WD3	Significant	1:1000 year AEP	125.0m	1:20 year AEP 4 month wet season	124.2	1:10 Year AEP	124.7	North WRD Runoff Containment
WD4	Significant	1:1000 year AEP	133.5m	1:20 year AEP 4 month wet season	132.3	1:10 Year AEP	133.0	North WRD Runoff Containment
Process Water Pond	Significant	1:1000 year AEP	154.7m	1:20 year AEP 4 month wet season	N/A	1:10 Year AEP	N/A	Process Water Buffer Storage
South Dam South[5]	Significant	1:1000 year AEP	TBA	1:20 year AEP 4 month wet season	TBA	1:10 Year AEP	TBA	West WRD Runoff Containment
South Dam North[5]	Significant	1:1000 year AEP	TBA	1:20 year AEP 4 month wet season	TBA	1:10 Year AEP	TBA	Process Plant Runoff Containment

Name of Regulated Structure	Consequence Category	Spillway Critical Design Storm Capacity		Design Storage Allowance[2] (DSA)		Mandatory Reporting Level[4] (MRL)		Purpose of structure
		Design Criteria	mAHD	Design Criteria	mAHD	Design Criteria	mAHD	
South Dam[5]	Significant	1:1000 year AEP	143.9m	1:20 year AEP 4 month wet season	138.9	1:10 Year AEP	142.6	Process Plant Runoff, Containment of Pit Dewatering, and TSF Seepage
West Dam	Significant	1:1000 year AEP	122.5m	1:20 year AEP 4 month wet season	115.0	1:10 Year AEP	120.3	West WRD Runoff Containment, Containment of Pit Dewatering

NOTE: AEP means Annual Exceedance Probability – being the probability that at least one event as specified will occur in a particular year.

[1] *Calculations are to be carried out in accordance with the guideline titled Site Water Management within the Technical Guidelines for Environmental Management of Exploration and Mining in Queensland (DME 1995).*

[2] *The design storage allowance on 1st November of each year for any regulated dam constructed within the operational land must be sufficient to contain the run-off from the critical wet period - plus the volume of any other inputs to the storage facility during that critical wet period, as part of operations. Such inputs could be tailings, contaminated site waters, process waters, and any other materials.*

[3] *The critical storm has a duration that produces the peak discharge for the catchment.*

[4] *The level below spillway crest that can accommodate runoff from a 72 hour storm at the specified AEP, or the wave allowance at the specified AEP - whichever level is lower*

[5] *South Dam is an existing site structure, approved for division into South Dam South and South Dam North*

[6] *TSF is approved for Stage 5 Life of Mine lifts, Stages 5A to 5F, with a final lift approval to RL193.0m*

H30 The hydraulic performance criteria specified in *Table H1* are the minimum mandatory performance requirements; regulated structures must be managed in a manner that ensures compliance with all conditions of this environmental authority.

END OF CONDITIONS FOR SCHEDULE H

Schedule I - Definitions

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

Word / Phrase	Definition
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 mining 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 rock drainage	Means any contaminated discharge emanating from a mining activity formed through a series of chemical and/or biological reactions.

Word / Phrase	Definition
Administering authority	Is the agency that administers the environmental authority provisions under the *Environmental Protection Act 1994*.
Airblast overpressure	Means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dB).
Annual exceedance probability or AEP	The probability that at least one event in excess of a particular magnitude will occur in any given year.
Annual inspection report	means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan): a) Against recommendations contained in previous annual inspections reports; b) Against recognised dam safety deficiency indicators; c) For changes in circumstances potentially leading to a change in consequence category; d) For conformance with the conditions of this authority; e) For conformance with the 'as constructed' drawings; f) For the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems); g) For evidence of conformance with the current operational plan.
Appropriately qualified person	Means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.
Assessed or assessment	By a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

Word / Phrase	Definition
	(a) exactly what has been assessed and the precise nature of that determination; (b) the relevant legislative, regulatory and technical criteria on which the assessment has been based; (c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and (d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.
Associated works	In relation to a dam, means: a) Operations of any kind and all things constructed, erected or installed for that dam; and b) Any land used for those operations.
Authority	Means an environmental authority or a development approval.
Background noise level	means either: • $L_{A90, T}$ being the A-weighted sound pressure level exceeded for 90 percent of the time period not less than 15 minutes, using Fast response, or • $L_{abg, T}$ being the arithmetic average of the minimum readings measured in the absence of the noise under investigation during a representative time period of not less than 15 minutes, using Fast response.
Blasting	Means the use of explosive materials to fracture: • Rock, coal and other minerals for later recovery; or • Structural components or other items to facilitate removal from a site or for reuse.
Certification	Means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

Word / Phrase	Definition
Certifying, certify or certified	By an appropriately qualified and experienced person in relation to a design plan or an annual report regarding dams/structures, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time: a) exactly what is being certified and the precise nature of that certification b) the relevant legislative, regulatory and technical criteria on which the certification has been based c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts 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*; or d) A drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or e) Any substance used as, or intended for use as – i. A pesticide, insecticide, fungicide, herbicide, rodenticide, nematicide, 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

Word / Phrase	Definition
	f) A substance used for, or intended for use for – i. Mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or ii. Manufacture of plastic or synthetic rubber.
Commercial place	Means a workplace used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees' accommodation or public roads.
Construction or constructed	In relation to a regulated structure includes building a new regulated structure and lifting or otherwise modifying an existing regulated structure, but does not include investigations and testing necessary for the purpose of preparing a design plan.
Consequence	In relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.
Consequence category	Means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.
Dam	Means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and **associated works**.
Design plan	Is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.
Design storage allowance or DSA	Means an available volume, estimated in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.
Designer	For the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

Word / Phrase	Definition
EM Plan	Means the environmental management plan report titled Mt Rawdon Gold Project: Environmental Management Plan and dated February 2006. Although legally the environmental authority is the enforceable document, not the EM Plan, if there was any need for interpretation of the conditions, then the interpretation should be in the context of the EM Plan.
Environmental authority holder	Means the holder of this environmental authority or any other works conducted by another entity on the approved leases.
Environmental offset	Has the meaning in section 7 of the *Environmental offsets Act 2014*.
Existing structure	Means a structure that was in existence prior to the adoption of this schedule of conditions under the authority.
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 risk 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 risk of failure before that time.
Hazard category	Means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.
Hazardous waste	Means any substance, whether liquid, solid or gaseous, that tends to destroy life or impair or endanger health.
Holder	Means: a) Where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or b) Where this document is a development approval, any person who is the registered operator for that development approval.

Word / Phrase	Definition
Hydraulic performance	Means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).*
Infrastructure	Means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities.
$L_{A\ 10,\ adj,\ 15\ mins}$	Means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 15 minute measurement period, using Fast response.
$L_{A\ 1,\ adj,\ 15\ mins}$	Means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 15 minute measurement period, using Fast response.
$L_{A,\ max\ adj,\ 15\ mins}$	Means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 15 minute period, using Fast response.
Land	In the 'land schedule' of this document means land excluding waters and the atmosphere.
Land capability	As defined in the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland (DME 1995)*.
Land use	Term to describe the selected post mining use of the land, which is planned to occur after the cessation of mining operations.
Leachate	Means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.
Levee	Means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

Word / Phrase	Definition
Maintained	With regards to groundwater quality, means no trending increase measured over three (3) consecutive sampling events in accordance with condition **E25**, or five (5) consecutive sampling events in accordance with condition **E26** in the concentration of any contaminant specified in *Table E10.*
Mandatory reporting level or MRL	Means a warning and reporting level determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority.
Manual	Means the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority.
Metalliferous mine drainage	Means any waters, contaminated with metals / metalloids or other contaminants as a result of the mining activities.
Modification or modifying	See definition of 'construction'.
N/A	Means not applicable.
Natural Flow	Natural flow is defined as a flow event caused as a result of a local rainfall event, within a defined catchment area, and measured within the same receiving waters.
Non-acid producing (NAP)	Rock that when exposed to an oxidising environment will not produce acid solutions. Compare with "ore or waste rock characterised as having acid forming potential.
Neutral mine drainage	Has the same meaning as metalliferous mine drainage.
Operational management bore	Means a bore located within the operational seepage management footprint, as shown in *Schedule J, Figure 2B– Groundwater monitoring network*.
Operational seepage management footprint	Means the area depicted by bores specified as operational management bores in *Table E7* and depicted in *Schedule J, Figure 2B– Groundwater monitoring network*.
Ore or waste rock characterised as having acid forming potential	Means any rock with either a Net Acid Producing Potential of greater than 5 kg of H_2SO_4/tonne or a Net Acid Generation oxidation pH of less than 4.5 (pH unit).

Word / Phrase	Definition
Peak particle velocity (ppv)	Means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mms).
Percent slope	Means: $\frac{\text{Height difference (metres)}}{\text{Horizontal difference (metres)}}$ X100
Prescribed environmental matters	Has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of state environmental significant listed in Schedule 2 of the *Environmental Offsets Regulation 2014*.
Protected area	Means: • A protected area under the *Nature Conservation Act 1992*; or • A marine park under the *Marine Parks Act 1992*; or • A World Heritage Area.
Progressive rehabilitation	Means rehabilitation (defined below) undertaken progressively OR a staged approach to rehabilitation as mining operations are ongoing.
Receiving environment	in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to): a) a watercourse or surface waters b) groundwater
Receiving waters	Has the same meaning as receiving environment.
Reference site (or analogue site)	May reflect the original location, adjacent area or another area where rehabilitation success has been completed for a similar biodiversity. Details of the reference site may be as photographs, computer generated images and vegetation models etc.
Regional groundwater	Means the groundwater potentially impacted by mining activities on or around the site beyond the seepage capture systems implemented for the Tailings Storage Facility.

Word / Phrase	Definition
Register of Regulated Dams	Includes: a) Date of entry in the register; b) Name of the dam, its purpose and intended/actual contents; c) The consequence category of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*; d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam; e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings; f) For the regulated dam, other than in relation to any levees – i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam; ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area iii. Dam crest volume (megalitres); iv. Spillway crest level (metres AHD). v. Maximum operating level (metres AHD); vi. Storage rating table of stored volume versus level (metres AHD); vii. Design storage allowance (megalitres) and associated level of the dam (metres AHD); viii. Mandatory reporting level (metres AHD); g) The design plan title and reference relevant to the dam; h) The date construction was certified as compliant with the design plan; i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan; j) Details of the composition and construction of any liner; k) The system for the detection of any leakage through the floor and sides of the dam;

Word / Phrase	Definition
	l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year; m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority; Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.
Regulated dam	Means any dam in the significant or high consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority.
Regulated structure	Includes land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.
Rehabilitation	Means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.
Representative	Means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.
Residual void	Means an open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.
Saline mine drainage	Means the movement of waters, contaminated with salt(s), as a result of the mining activity.
Sediment dam	Means a structure for the capture and treatment of stormwater runoff contaminated only by sediments from disturbed areas and which discharge off-site once full.
Self-sustaining	Means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

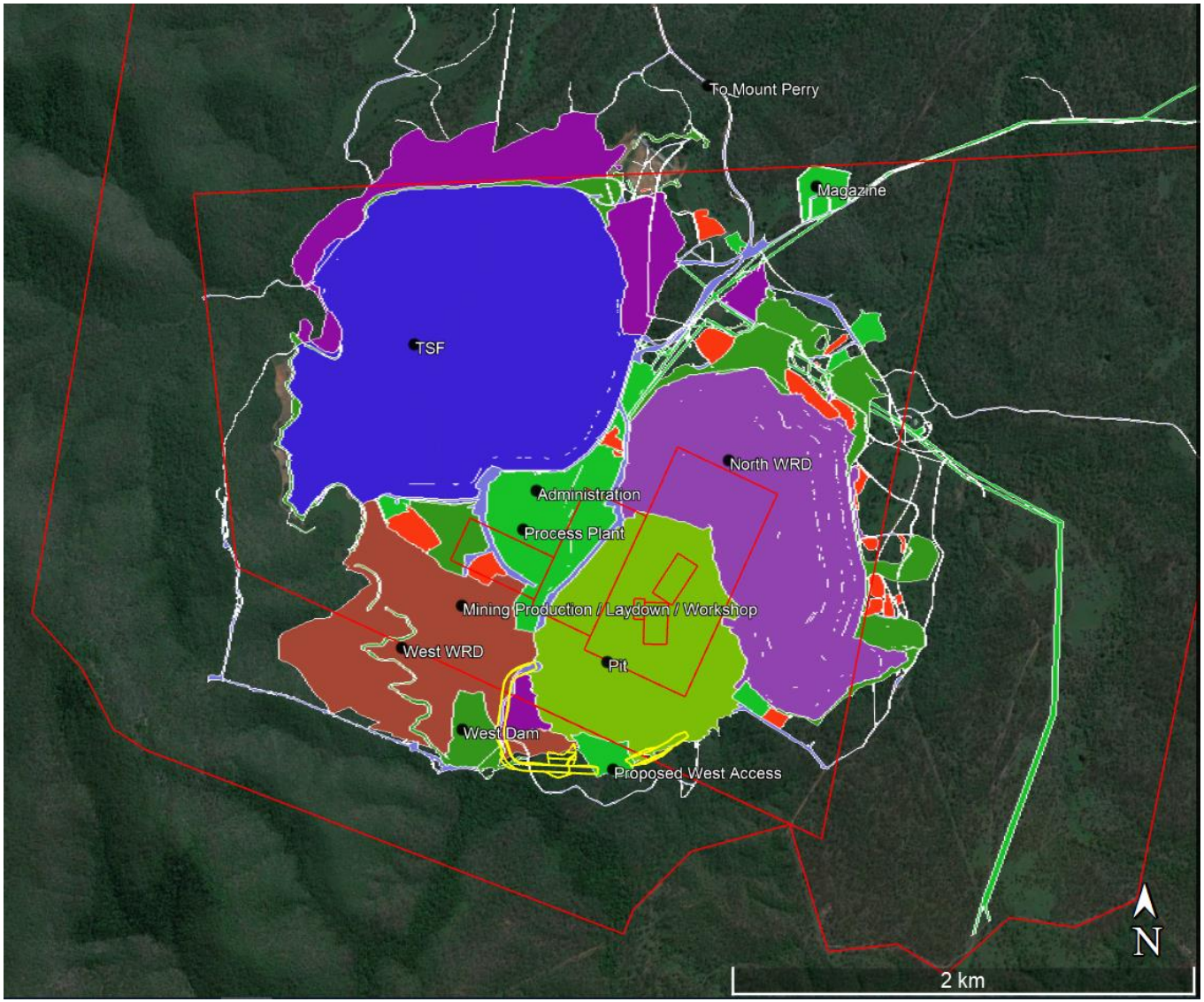
Word / Phrase	Definition
Sensitive place	Means: a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises, or b) a motel, hotel or hostel, or c) an educational institution, or d) a medical centre or hospital, or e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area, or f) a public park or gardens.
Spillway	Means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges form the dam, normally under flood conditions or in anticipation of flood conditions.
Stable	Means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.
Standing water level (potentiometric level)	means the level (m AHD) to which groundwater would rise (due to the static pressure in the system) from a partially or totally confined aquifer if allowed to equilibrate with atmospheric pressure (e.g., the level groundwater would rise to if the aquifer were penetrated by a bore).
Structure	Means any dam or levee
Suitably qualified and experienced person	in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience: a) For regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design. b) For regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Word / Phrase	Definition
	Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.
System design plan	Means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.
Tolerable limits	Means that a range of values could be accepted to achieve an overall environmental management objective (e.g. A range of settlement of a tailing capping could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation). Tolerable limits may be specified: a) By agreement between the proponent and the chief executive as an interim arrangement, b) By insertion of conditions as agreed above into this Environmental Authority, or c) By direction by the chief executive and insertion in this Environmental Authority as necessary.
Void	Means any constructed, open excavation in the ground.
Watercourse	Has the same meaning given in the *Water Act 2000*.
Waters	Includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater or any part-thereof.
Wet season	Means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

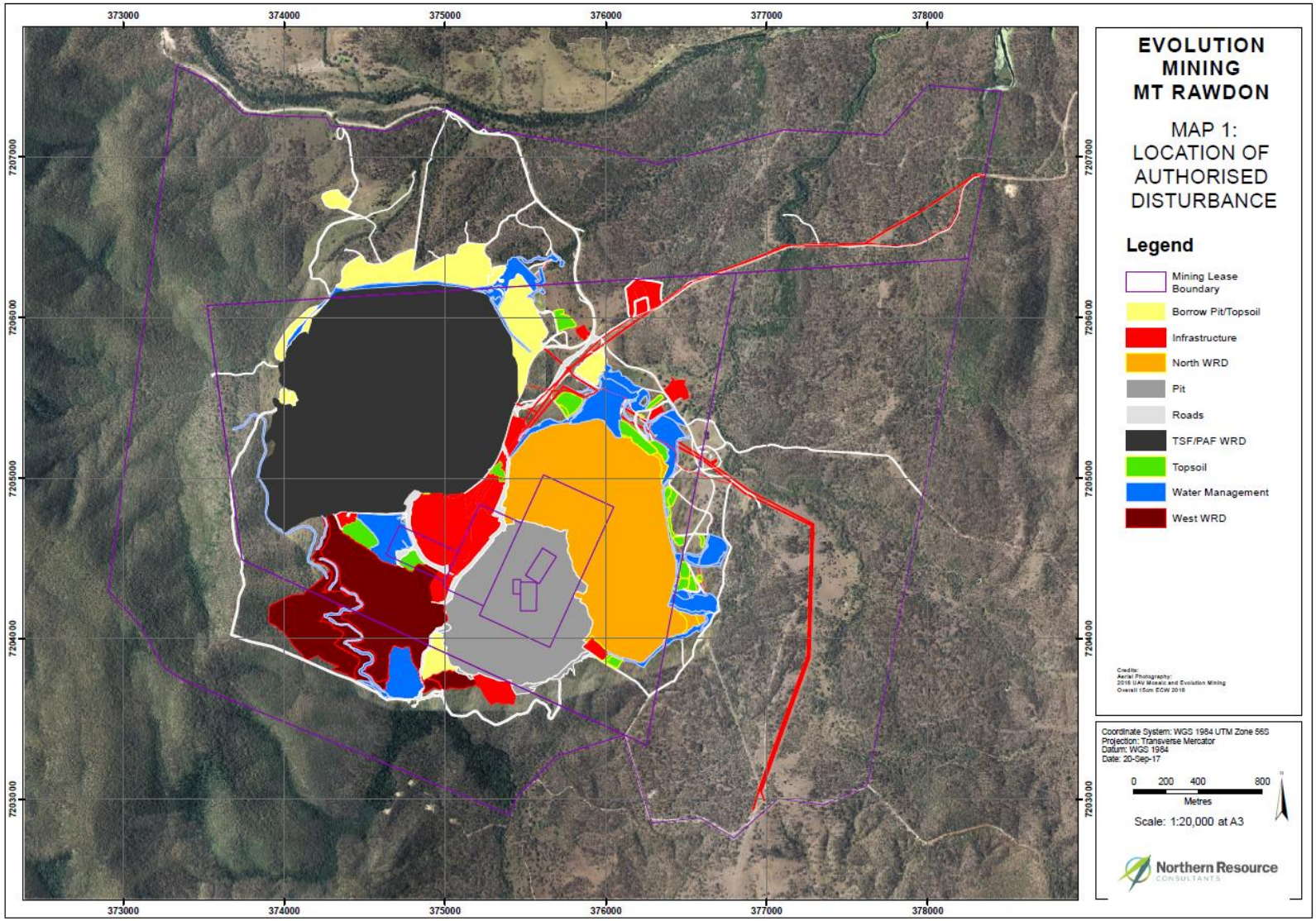
END OF SCHEDULE I

Schedule J – Maps and Plans

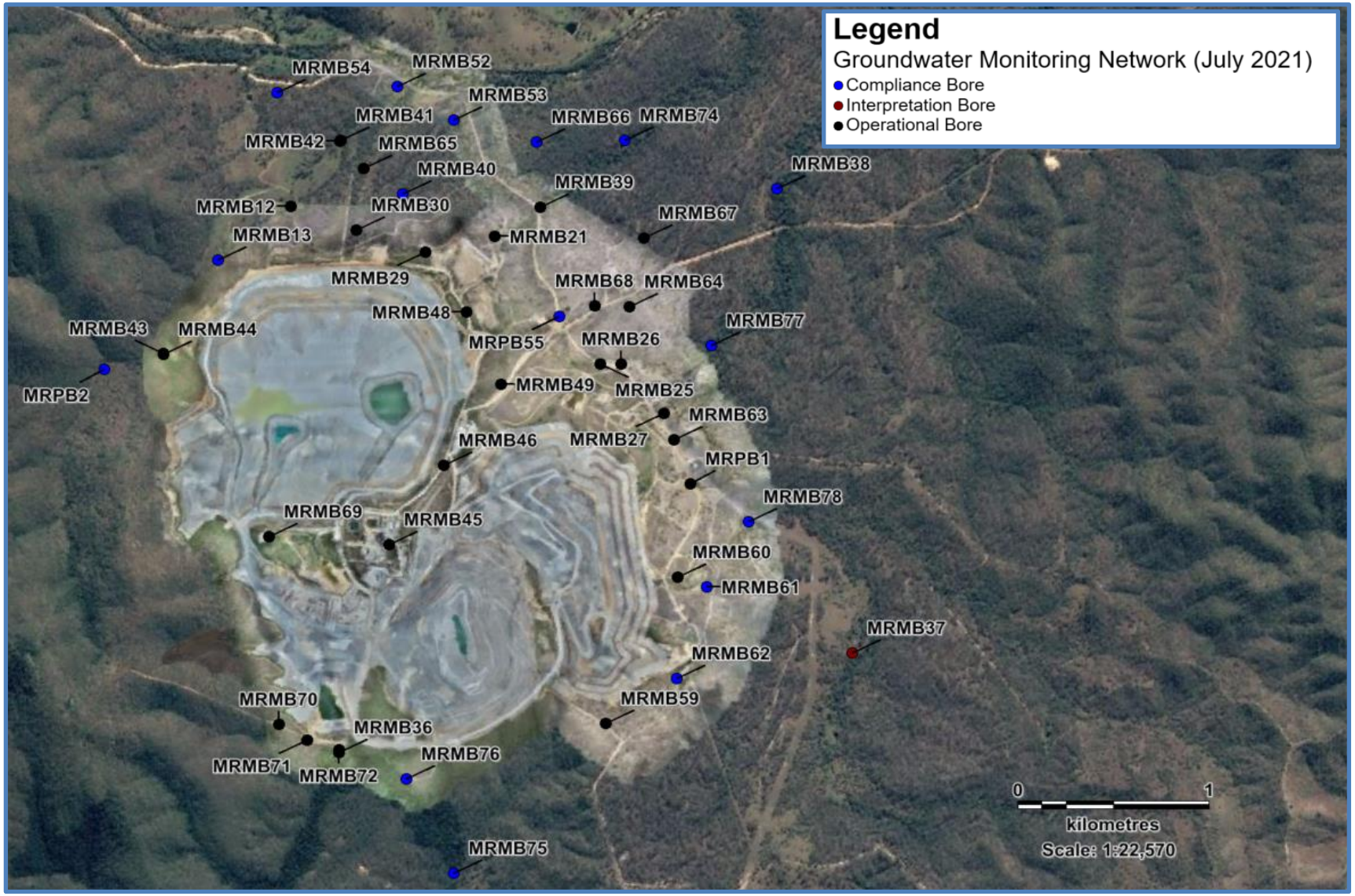
Map 1 – Location of authorised disturbance.



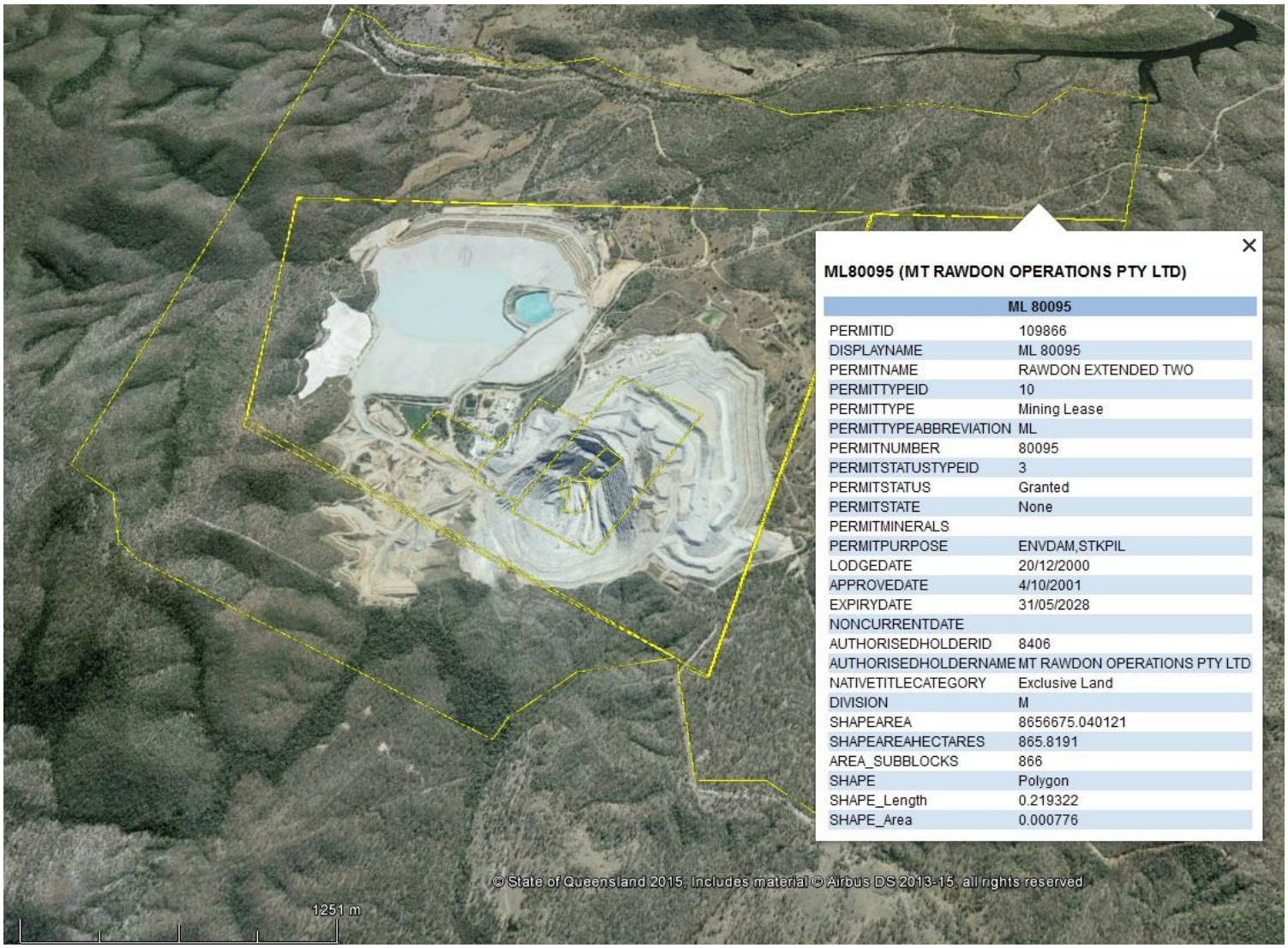
Map 2A – Infrastructure locations.



Map 2B – Groundwater monitoring network.



Map 3 - Mining disturbance on mining lease ML80095 (replaced with ML100059).



End of Schedule J

END OF PERMIT