Permit

Environmental Protection Act 1994

Environmental Authority EPVL00864413

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

Environmental authority number: EPVL00864413

Environmental authority takes effect on 25 September 2026.

The anniversary date of this environmental authority is 28 October each year.

Environmental authority holder

Name	Registered address
Huntore Australia Pty Ltd	Lot 1 Veteran Road, MOUNT GARNET QLD 4872

Environmentally relevant activity and location details

Environmentally relevant activities	Locations
Schedule 3 19: Mining metal ore, other than a metal ore mentioned in items 11, 12, 14, 15, 16,17 or 18 ERA 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (a) 1000t to 100,000t.	ML4349 ML20547

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).

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Mobile and temporary activities

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

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

Contaminated land

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

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

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

Take effect

Please note that, in accordance with section 200(1) 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, in accordance with section 200(2) of the EP Act, the day that the EA takes effect may not be before:

(a) if the authority is for a resource activity—the day the relevant tenure is granted to the applicant; or

(b) if a development permit for a material change of use of premises under the *Planning Act 2016* is necessary for carrying out an activity that related to the authority—the day the development permit takes effect; or

(c) if an SDA Approval under the *State Development and Public Works Organisation Act 1971* is necessary for carrying out an activity that relates to the authority—the day the approval takes 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 EA.

	25 September 2026
Signature	Date

Giles Bezzina

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

Enquiries:

Minerals Business Centre
PO Box 7230, Cairns QLD 4870
Phone: (07) 4222 5352
Email: MineralsBusiness@detsi.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this EA, 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 restore the environment (section 319C)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443).

Other permits required

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

Obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

Matters of national environmental significance (MNES) are regulated under the Commonwealth EPBC Act rather than under state legislation. You may need to submit a referral if your project potentially impacts any matters protected under the EPBC Act. For more information on self-assessments, and referral and assessment processes, please visit the Australian Government Department of Climate Change, Energy, the Environment and Water's website at www.dcceew.gov.au/environment/epbc/advice.

Obligations under the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003* (the Cultural Heritage Acts)

The Cultural Heritage Acts require anyone who carries out a land-use activity to exercise a duty of care. This 'duty of care' means land users must take all reasonable and practicable measures to ensure their activity does not harm Aboriginal or Torres Strait Islander cultural heritage, and applies to any activity where Aboriginal or Torres Strait Islander cultural heritage is located. For more information on your obligations under this legislation, please visit the Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism webpage at, www.dwatsipm.qld.gov.au.

Conditions of environmental authority

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 – Authorised mining activities and locations** and the locations detailed in **Schedule I – Map 1 Location of authorised disturbance** and **Map 2 - Location of authorised disturbance around the TSF**.

Table A1 – Authorised mining activities and locations

Mine Domain	Mine feature name	Location (centroid)		Maximum disturbance area (ha)
		Latitude	Longitude	
Mine area	Dalcouth Pit	17°34.541'S	145° 9.219'E	5.28
	Waste Dump	17° 34.614'S	145° 9.112'E	5.87
	ROM Pad	17°34.757'S	145°9.454'E	1.33
	Process Plant	17°34.771'S	145°9.378'E	0.13
	Administration area	17°34.726'S	145°9.281'E	0.36
	Mine infrastructure area (MIA)	17°34.623'S	145° 9.184'E	0.48
	Topsoil Stockpiles	17° 34.453'S	145° 9.251'E	2.52
		17° 34.543'S	145° 9.07'E	
	Mine work areas	17°34.610'S	145°9.206'E	13.3
	Transport infrastructure	17°34.651'S	145°9.230'E	
	Laydown Area	17°34.429'S	145°9.537'E	
	Haul road	17°34.625'S	145°9.223'E	
	Other access roads	17°34.648'S	14°9.278'E	
Tailings Storage Facility (TSF)	Existing TSF	17°34.797'S	145°9.280'E	2.34
	Stage 1 New TSF (including wall, spillway and diversion)	17°34.708'S	145°9.524'E	5.81
Water Infrastructure	Settling pond and embankment	17°34.676'S	145°9.467'E	1.51
	Plant pond	17°34.795'S	145°9.342'E	0.10
Total				**39.03**

A4 The holder of this environmental authority must install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;

(a) Maintain such measures, plant and equipment in a proper and efficient condition;

(b) Operate such measures, plant and equipment in a proper and efficient manner; and

(c) 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;
(b) Kept for a period of not less than five years; and
(c) Provided to the administering authority in the specified format within 10 business days of a request.

A6 The following information must be recorded in relation to all monitoring required under the conditions of the environmental authority:

(a) The date and time at which the sample was taken;
(b) The location or monitoring point at which the sample was taken;
(c) The results of all monitoring and details of any exceedances of the conditions of this environmental authority;
(d) 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).

Risk management

A7 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, 3 months prior to the commencement of mining activities.

Notification of emergencies, incidents and exceptions

A8 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.

Complaints

A9 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.

Third-party reporting

A10 The holder of this environmental authority must:

(a) Within one year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority;

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

(c) Provide each report to the administering authority within 90 days of its completion.

Exploration

A11 All exploration activities carried out on the mining leases must comply with each of the standard environmental conditions contained in the latest version of the *Eligibility criteria and standard conditions for exploration and mineral development projects.*

Third-party ore

A12 Ore from ML4190, ML20678, ML20140, and ML20655 is authorised to be received, stored and processed under this environmental authority, provided:

(a) All activities comply with the requirements specified in this environmental authority; and

(b) Geochemical assessments are undertaken on three (3) ore samples for every 10,000 tonnes of ore to be processed from each ML; and

(c) Assessments are undertaken to evaluate the likelihood to produce acid and metalliferous drainage, alkaline and/or saline mine drainage. Additional geochemical testing must be conducted for samples classified as uncertain; and

(d) Assessments are undertaken to determine the availability and mobility of the metals/metalloids listed in Table E2*.

**Note: Reference to Table E2 is a reference to the quality characteristics and not the contaminant limits.*

A13 Records must be kept of the geochemical assessments and the quantity of ore received from ML4190, ML20678, ML20140, and ML20655 in accordance with condition A5.

End of Conditions for Schedule A

Schedule B – Air

General

B1 Air emissions resulting from mining activities must not cause environmental harm to any sensitive place or commercial place.

Dust and particulate matter monitoring

B2 The environmental authority holder shall ensure that dust and particulate matter emissions generated by the mining activities do not cause exceedances of the following levels when measured at any sensitive or commercial place:

(a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of *Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method*.

(b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either:

i. *Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet – Gravimetric method*, or

ii. *Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric method*.

(c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM2.5) suspended in the atmosphere of 25 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of *AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM (sub)2.5 (/sub) low volume sampler—Gravimetric method*.

(d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of *AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method*.

End of Conditions for Schedule B

Schedule C – Waste Management

General

C1 All general waste generated in conducting the mining activities must be disposed of in a lawful manner at an off-site facility, with the exception of waste rock and tailings, which must be characterised, handled and disposed of in accordance with the Waste Management Plan (WMP).

C2 The environmental authority holder must maintain and implement a Waste Management Plan (WMP), which includes:

(a) Effective characterisation of mine waste to predict under the proposed placement and disposal strategy the quality of runoff and seepage generated concerning potentially environmentally significant effects including salinity, acidity, alkalinity and dissolved metals, metalloids and non-metallic inorganic substances;

(b) A program of progressive sampling and characterisation to identify dispersive and non-dispersive material, salinity, acid and alkali producing potential, and metals concentrations of mine waste;

(c) A material balance and disposal plan demonstrating how potentially acid forming mine waste will be identified, selectively placed and/or encapsulated to minimise potential generation of acid and metalliferous drainage;

(d) Where relevant, a sampling program to verify encapsulation and/or placement of potentially acid forming mine waste;

(e) How often the performance of the plan will be assessed;

(f) The indicators or other criteria of which the performance of the plan will be assessed; and

(g) A rehabilitation strategy for mine waste.

C3 All mine waste with the potential to generate contaminants, including potentially acid forming material must be:

(a) Identified, quantified and selectively disposed of in a manner that minimises the potential generation and/or release of contaminants to the receiving environment;

(b) Where there is uncertainty as to whether mine waste is potentially acid forming, this material must be treated as potentially acid 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.

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 – Noise limits** to be exceeded at a sensitive place or commercial place.

Table D1 – Noise limits

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

Table D1 – Noise limits notes:

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

Airblast overpressure nuisance

D2 Blasting must:

(a) Only be undertaken between 7am to 6pm; and

(b) Not cause an exceedance of the limit for air blast overpressure or ground vibration peak particle velocity specified in **Table D2 – Blasting noise limits** at a sensitive place or commercial place.

Table D2 – Blasting noise limits.

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

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; and

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

End of Conditions for Schedule D

Schedule E – Water

Receiving surface water environment monitoring

E1 The receiving waters must be monitored at the locations specified in **Table E1 - Surface waters reference and compliance monitoring sites.**

Table E1 – Surface waters reference and compliance monitoring sites.

Monitoring sites	Monitoring site description	Location		Monitoring Frequency
		Easting (GDA94 – Zone 55)	Northing (GDA94 – Zone 55)	
Reference sites				
SW10[3]	Upstream Copper Creek	304127	8056133	Monthly
SW4[2]	Upstream Males Gully	305840	8056772	
SW4a[2]	Upstream Mayday Creek	305630	8055650	
SW11[2]	Upstream Males Gully	305190	8056045	
SW12	Un-named watercourse	305077	8055840	
Compliance sites				
SW3	Copper Creek	303595	8055564	Monthly
SW1[1]	Spillway of the existing tailings storage facility (TSF)	304105	8055230	
SW8	Compliance point in Males Creek downstream of the existing TSF	303898	8055283	
SW9	Boundary compliance point in Males Gully	303366	8055166	
SW29	Clean Water Dam 2	304288	8055582	

[1]SW1 sample is to be taken from discharge along the existing TSF spillway.

[2] Sites SW4, SW4a, SW11 and SW12 are Reference Sites for Compliance Sites SW1, SW8, SW9 and SW29.

[3]Site SW10 is a Reference Site for Compliance Site SW3 and SW9.

E2 The receiving waters must be monitored at the frequency specified in **Table E1 - Surface waters reference and compliance monitoring sites.**

E3 The receiving waters must be monitored for the contaminants listed in **Table E2 - Receiving waters quality objectives.**

Table E2 - Receiving waters quality objectives

Contaminant[1]	Unit	SW1, SW8		SW3		SW9		SW29	
		Water quality objective	Compliance limit	Water quality objective	Compliance limit	Water quality objective	Compliance limit	Water quality objective	Compliance limit
pH	pH units	-	6 -7.9[4]	-	6 -8.0[4]	-	6 -7.9[4]	-	6.0-7.9[4]
Electrical conductivity[6]	µS/cm	106[2]	185[4]	90[4]	106[2]	106[2]	170[4]	190[3]	204[4]
Turbidity[6]	NTU	70[3]	96[4]	61[3]	73[4]	60[3]	100[4]	12[3]	24[4]
Sulphate	mg/L	2[2]	8.2[4]	1.2[4]	2[2]	2[2]	3[4]	-	2[2]
Fluoride	mg/L	0.3[3]	0.67[4]	0.33[3]	0.4[4]	0.66[3]	0.88[4]	0.76[3]	0.94[4]
Aluminium	mg/L	0.02[3]	0.6[4]	2.1[3]	6.9[4]	1.4[3]	3.2[4]	0.91[3]	1.1[4]
Arsenic	mg/L	0.009[4]	0.013[5]	0.011[4]	0.013[5]	0.008[3]	0.013[5]	0.009[3]	0.01[4]
Cadmium	mg/L	0.001[3]	0.003[4]	-	0.0002[5]	0.001[3]	0.002[4]	-	0.0002[5]
Chromium	mg/L	-	0.001[5]	0.001[3, 5]	0.002[4]	0.001[3, 5]	0.002[4]	-	0.001[5]
Cobalt	mg/L	0.005[3]	0.007[4]	-	0.0014[5]	0.003[3]	0.005[4]	-	0.0014[5]
Copper	mg/L	0.18[3]	0.342[4]	0.012[4]	0.03[2]	0.13[3]	0.19[4]	0.0034[3]	0.005[4]
Lead	mg/L	0.01[3]	0.022[4]	0.002[4]	0.0034[5]	0.005[3]	0.012[4]	-	0.0034[5]
Manganese	mg/L	0.023[3]	0.059[4]	0.012[3]	0.05[4]	0.014[3]	0.05[4]	0.037[3]	0.06[4]
Mercury (inorganic)	mg/L	0.001[3]	0.002[4]	0.0001[4]	0.0006[5]	-	0.001[4]	-	0.0006[5]
Nickel	mg/L	0.003[4]	0.011[5]	0.002[4]	0.011[5]	0.003[4]	0.011[5]	-	0.011[5]

Selenium	mg/L	0.001[4]	0.005[7]	0.003[4]	0.005[7]	0.003[4]	0.005[7]	-	0.005[7]
Silver	mg/L	-	0.002[4]	0.0001[3]	0.0009[4]	-	0.002[4]	-	0.00005[5]
Zinc	mg/L	0.01[3]	0.024[4]	0.008[5]	0.02[5]	0.014[4]	0.02[5]	0.008[5]	0.02[5]
Hardness	mg/L	For interpretation purposes only							
Major cations and Anions	mg/L								

[1]All samples for metals/metalloids must be analysed for both the total (from analysis of an unfiltered sample) and dissolved (from analysis of a field filtered sample) fractions. Limits for metals and metalloids apply to dissolved results, unless otherwise stated.

[2]Environmental Protection (Water) Policy 2009 Herbert River Basin Environmental Values and Water Quality Objectives.

[3]80th percentile surface water data. Measured as 'dissolved'.

[4]95th percentile surface water data. Measured as 'dissolved'.

[5]ANZECC (2000) trigger levels for 95% aquatic ecosystem protection for slightly to moderately disturbed ecosystems.

[6] Water quality objectives and compliance limits based off laboratory results.

[7] ANZECC (2000) trigger levels for 99% aquatic ecosystem protection for slightly to moderately disturbed ecosystems. Measured as 'total'.

E4 If a water quality objective measured at a compliance site specified in **Table E1 – Surface waters reference and compliance monitoring sites** exceeds any water quality objective specified in **Table E2 - Receiving waters quality objectives** during a monitoring event required under condition **E1** the holder of this environmental authority must compare this result to the applicable upstream reference site(s) and:

(a) If the contaminant concentration measured at the compliance site is equal to or less than the contaminant concentration measured at the applicable upstream reference site(s), no further action is required; or

(b) If the contaminant concentration measured at the compliance site is greater than the contaminant concentration measured at the applicable upstream reference site(s) complete an investigation into the potential for environmental harm and provide a written report to the administering authority's pollution hotline within 90 days, outlining:

(i) Details of the investigations carried out; and

(ii) Actions taken to prevent environmental harm.

*Note: Where a contaminant level exceedance has occurred and is under investigation in accordance with **E4**, no further reporting is required for subsequent exceedance events of that contaminant during the course of the investigation.*

E5 Water quality at the compliance sites listed in **Table E1 – Surface waters reference and compliance monitoring sites** must not exceed any compliance limit specified in **Table E2 - Receiving waters quality objectives.**

E6 Monitoring and sampling must be carried out in accordance with written procedures and must address the requirements of the latest version of the following documents unless otherwise approved by the administering authority:

(a) For 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) and Australian Standard AS/NZS 5667.11:1998 Water Quality – Sampling – Guidance on sampling of groundwaters;

(c) For subterranean aquatic fauna, the Guideline for the Environmental Assessment of Subterranean Aquatic Fauna.

Groundwater

E7 The holder of this environmental authority must not release contaminants to groundwater.

E8 Groundwater quality and standing water level must be monitored at the locations and frequencies specified in **Table E3 - Groundwater monitoring locations and frequency.**

Table E3 – Groundwater monitoring locations and frequency

Monitoring Bore	Coordinates (MGA94 Zone 55)		Surface RL (m)[1]	Screened interval RL (m)	Hydrostratigraphic unit	Monitoring Frequency
	Easting	Northing				
Interpretation Monitoring Bores						
MB2	305195	8056085	742	16 – 22	Hodgkinson Formation	Quarterly
MB3	307009	8055921	762	25 – 31	Hodgkinson Formation	
MB4	306163	8056927	777	40 - 52	Hodgkinson Formation	
MB13	305110	8055880	752	25 - 35	Hodgkinson Formation	
Compliance Monitoring Bores						
MB1	303565	8055354	707	16 - 22	Hodgkinson Formation	Quarterly
MB5	303911	8055490	729	35 - 48	Hodgkinson Formation	
MB6	303850	8056032	727	13 - 19	Hodgkinson Formation	
MB7	303916	8055778	726	18 - 40	Hodgkinson Formation	
MB8	304080	8055641	740	30 - 42	Hodgkinson Formation	
MB9	304319	8055592	731	5 - 7	Alluvial	
MB10	304019	8055944	733	23 - 47	Hodgkinson Formation	
MB11	304176	8055858	756	36 - 48	Hodgkinson Formation	
MB12	304292	8056030	749	31 - 42	Hodgkinson Formation	
SB1	304384	8055540	735	4 - 10	Weathered Hodgkinson Formation	

Monitoring Bore	Coordinates (MGA94 Zone 55)		Surface RL (m)[1]	Screened interval RL (m)	Hydrostratigraphic unit	Monitoring Frequency
	Easting	Northing				
SB2	304408	8055568	734	3 - 6	Weathered Hodgkinson Formation	
SB3	304424	8055595	731	4 - 7	Weathered Hodgkinson Formation	
SB4	304483	8055609	734	1.5 - 5	Weathered Hodgkinson Formation	
SB5	304503	8055586	738	2 - 6	Weathered Hodgkinson Formation	

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

E9 Groundwater quality must be monitored for the quality characteristics identified in **Table E4 – Groundwater quality objectives.**

Table E4 – Groundwater quality objectives

Quality Characteristic	Unit	MB1		MB5		MB6		MB7		MB8		MB9		MB10		MB11		MB12	
		Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B
pH	pH	-	6.8-7.7	-	7.3-8.0	-	7.0-7.8	-	7.1-7.8	-	7.1-7.8	-	6.9-7.8	-	6.9-7.8	-	7.1-7.8	-	7.1-7.8
EC	µS/cm	860	880	870	910	966	1090	-	1200	780	790	462	557	1400	1500	1100	1150	-	1200
Sulfate	mg/L	-	9.6	4.2	4.6	6.1	7.9	24	26	4.0	4.3	1.5	2.4	61	69	20	22	40	43
Fluoride	mg/L	-	2.6	2.8	3.0	3.8	4.2	-	3.1	3.5	3.7	-	0.55	2.8	3.0	3.8	4.1	4.3	4.5
Aluminium	mg/L	-	0.055[2]	-	0.055[2]	0.116	0.328	-	0.055[2]	-	0.055[2]	0.015	0.025	0.027	0.037	0.030	0.035	0.026	0.030
Arsenic	mg/L	-	0.013[2]	-	0.020	0.050	0.061	0.022	0.029	-	0.013[2]	-	0.013[2]	0.062	0.074	-	0.013[2]	0.016	0.024
Cadmium	mg/L	0.004	0.006	-	0.0002[2]	-	0.0002[2]	-	0.0002[2]	-	0.0002[2]	-	0.0002[2]	-	0.0002[2]	0.0003	0.0005	0.0002	0.0003
Chromium	mg/L	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]
Cobalt	mg/L	-	0.0014[2]	-	0.0014[2]	0.0017	0.002	-	0.0014[2]	-	0.0014[2]	-	0.0014[2]	0.0066	0.0080	-	0.0014[2]	-	0.0016
Copper	mg/L	0.0019	0.0046	0.0029	0.0035	0.0039	0.005	0.002	0.0032	0.005	0.0077	-	0.0014[2]	0.0019	0.0021	0.0022	0.0031	0.0026	0.0053
Lead	mg/L	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]
Manganese	mg/L	-	0.00002	0.0004	0.00046	0.0011	0.0013	-	0.00021	0.00037	0.00048	0.00024	0.00027	0.0015	0.0019	0.00018	0.00024	0.001	0.0011
Mercury (inorganic)	mg/L	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]
Nickel	mg/L	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]
Selenium (total)	mg/L	-	0.005[2]	-	0.005[2]	-	0.005[2]	-	0.005[2]	-	0.005[2]	-	0.005[2]	-	0.005[2]	-	0.005[2]	-	0.005[2]
Silver	mg/L	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]
Zinc	mg/L	0.010	0.018	0.010	0.023	0.018	0.024	0.012	0.021	0.016	0.027	0.013	0.015	0.019	0.031	0.013	0.016	0.011	0.017
Major ions (Calcium, chloride, potassium, magnesium, sodium, bicarbonate, carbonate)	mg/L	For interpretive purposes																	

Table E4 – Groundwater quality objectives (Continued)

Quality Characteristic	Unit	SB1		SB2		SB3		SB4		SB5	
		Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B	Limit A	Limit B
pH	pH	-	7.6-8.0	-	7.8-8.1	-	6.8-7.6	-	7.4-8.1	-	6.5-8.0
EC	µS/cm	1,440	1,500	3,700	4,300	686	725	2,860	2,900	-	997[5]
Sulfate	mg/L	5.7	6.3	31	66	1.8	4.2	39	81	-	12[5]
Fluoride	mg/L	6.7	6.9	14	15.9	2.7	3.4	5.9	6.5	-	0.55[5]
Aluminium	mg/L	0.030	0.041	0.028	0.031	0.024	0.035	0.055[2]	0.070	-	0.055[2]
Arsenic	mg/L	-	0.013[2]	0.042	0.066	0.028	0.036	0.270	0.370	-	0.013[2]
Cadmium	mg/L	-	0.0002[2]	-	0.0002[2]	-	0.0002[2]	-	0.0002[2]	-	0.0002[2]
Chromium	mg/L	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]	-	0.001[2]
Cobalt	mg/L	-	0.0014[2]	0.005	0.006	0.018	0.020	0.003	0.005	-	0.0014[2]
Copper	mg/L	0.0026	0.0038	0.0022	0.0038	0.005	0.0066	0.0021	0.0037	-	0.0051[4]
Lead	mg/L	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]	-	0.0034[2]
Manganese	mg/L	0.12	0.15	12	16.5	100	120	11	13	-	1,9[2]
Mercury (inorganic)	mg/L	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]	-	0.0006[2]
Nickel	mg/L	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]	-	0.011[2]
Selenium (total)	mg/L	-	0.005[4]	-	0.005[4]	-	0.005[4]	-	0.005[4]	-	0.005[4]
Silver	mg/L	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]	-	0.00005[2]
Zinc	mg/L	0.015	0.024	0.018	0.029	0.024	0.029	0.010	0.013	-	0.029[4]
Major ions (Calcium, chloride, potassium, magnesium, sodium, bicarbonate, carbonate)	mg/L	For interpretive purposes									

- All metals and metalloids must be measured as 'dissolved' (from analysis of a field filtered sample) and total (unfiltered).
- Limits for metals and metalloids apply to dissolved results, unless otherwise stated.
- Limit A values have been derived from 80th percentile bore specific data.
- Limit B values have been derived from 95th percentile bore specific data.
- [2]ANZG (2018) Aquatic ecosystem protection for moderately disturbed system (95% protection)
- [3] Limit derived from 95th percentile of background groundwater quality for all Hodgkinson Formation bores.
- * SB05 site-specific based on and 95th percentile of SB01, SB02, SB03 and SB04.
- [4] ANZECC (2000) trigger levels for 99% aquatic ecosystem protection for slightly to moderately disturbed ecosystems. Measured as 'total'

E10 Groundwater measured from any monitoring bore specified in **Table E3 - Groundwater monitoring locations and frequency** must not exceed the corresponding Limit A specified in **Table E4 – Groundwater quality objectives** on any **five** consecutive sampling occasions.

E11 Groundwater measured from any monitoring bore specified in **Table E3 - Groundwater monitoring locations and frequency** must not exceed the corresponding Limit B specified in **Table E4 – Groundwater quality objectives** on any **three** consecutive sampling occasions.

E12 Conditions E10 and E11 apply to bores SB1, SB2, SB3, SB4 and SB5 from the date that mineral processing recommences on site. All other conditions continue to apply.

E13 Within 10 business days of recommencing mineral processing on site, the holder of this environmental authority must provide written notification to the administering authority.

Groundwater management program

E14 The Groundwater Management Program must be developed, documented and implemented by appropriately qualified persons.

E15 The Groundwater Management Program must:

(a) Identify potential sources of contamination to groundwater from the activity; and
(b) Ensure that all potential groundwater impacts due to the activity are identified, monitored and mitigated; and
(c) Document sampling and monitoring methodology; and
(d) 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;
    ii. detect any impacts to groundwater quality due to the activity;
    iii. determine compliance with condition E8; and
    iv. determine trends in groundwater quality; and
(e) Include an appropriate quality assurance and quality control program; and
(f) Include a conceptual groundwater model; and
(g) Include a review process to identify improvements to the program that addresses any comments provided by the administering authority.

E16 The Groundwater Management Program must be reviewed and updated to ensure it meets the requirements specified in condition E15 on an annual basis by an appropriately qualified person.

E17 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.

E18 A bore drill log must be kept for each groundwater monitoring bore which includes:

(a) Bore identification reference and geographic coordinate location;
(b) Specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details;

(c) Standing groundwater level and water quality parameters including physical parameters and results of laboratory analysis for the possible trigger parameters;
(d) Lithological data and stratigraphic interpretation by an appropriately qualified person to identify important features associated with groundwater monitoring; and
(e) Target aquifer formation of the bore.

Receiving environment monitoring program

E19 The environmental authority holder must develop, document and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to environmental values of receiving waters. The REMP must include at minimum:

(a) Monitoring the effects of the mining activities on the receiving environment periodically under natural flow conditions and while contaminants are being released (if applicable);

(b) Encompass the waters of Herbert River and connected or surrounding waterways within 2.5km downstream of the mining activities;

(c) Identification of all environmental values of receiving waters;

(d) An assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current environmental authority conditions to protect downstream environmental values; and

(e) Application of biological monitoring if required to determine whether the mining activities are being conducted in a manner that enhances or protects the environmental values of receiving waters;

E20 A report outlining the findings of the REMP, including all monitoring results and any interpretations or assumptions relied upon, must be prepared by an appropriately qualified person annually and submitted to the Administering Authority on request.

Water management

E21 A Water Management Plan must be developed by an appropriately qualified person, documented and implemented for all stages of the mining activity. The Water Management Plan should be developed in accordance with Department of Environment and Science guideline *Preparation of water management plans for mining activities* and include:

(a) A study of the source of contaminants;

(b) A water balance model for the site;
(c) A water management system for the site;
(d) Measures to manage and prevent saline drainage;
(e) Measures to manage and prevent acid rock drainage;
(f) Contingency procedures for emergencies; and
(g) A program for monitoring and review of the effectiveness of the water management plan.

Erosion and sediment control

E22 An Erosion and Sediment Control Plan must be developed, documented and implemented by an appropriately qualified person for all stages of the mining activities to minimise erosion and the release of sediment to receiving waters.

Water reuse

E23 Water that can meet a use may be piped or trucked or transferred by some other means (transferred water) and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party for the purpose of:

a. Supplying stock water subject to compliance with the quality release limits specified in **Table E5: Stock water release limits**; or

b. Supplying irrigation water subject to compliance with quality release limits in **Table E6: Irrigation water release limits**; or

c. Supplying water for dust suppression for stock purposes only, subject to compliance with the quality release limits specified in **Table E5: Stock water release limits.**

E24 If the responsibility for water transferred under condition **E23** is given or transferred to another person or party, then:

a. The responsibility for the transferred water must only be given or transferred in accordance with a written agreement (the third-party agreement); and

b. The third-party agreement must include a commitment from the person utilising the transferred water to use it for the purpose for which it has been given, in such a way as to prevent environmental harm or public health incidents and specifically make the third-party aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994*, environmental sustainability of the water disposal and protection of environmental values of waters; and

c. The third-party agreement must be signed by all parties to the agreement.

E25 Information about the transferred water must be recorded and be made available to the administering authority on request in a report, including:

a. The approved use of the transferred water referred to in condition **E23**;

b. The quantity (volume) of water transferred;

c. The details for the third-party that will receive the transferred water;

d. The quality of the transferred water in accordance with quality release limits for the purpose as described in condition **E23**;

e. The locations where the quality of the water to be transferred was measured; and

f. The date of the transfer.

E26 The environmental authority holder must keep a register of all third-party agreements for water reuse under condition **E24** and make copies available to the administering authority on request.

E27 The transferred water must not be released directly to or supplied indirectly via a stream, river, weir, or any other natural watercourse.

E28 An Aquatic Fauna Recovery Plan for the existing TSF must be developed by an appropriately qualified person and implemented prior to the water volume being reduced below 20ML.

Table E5: Stock water release limits

Quality characteristic	Units	Maximum*
pH	pH units	6.5 – 9.0
Electrical Conductivity	µS/cm	5,970^
Calcium	mg/L	1000
Nitrate	mg/L	400
Nitrite	mg/L	30
Sulfate	mg/L	1000
Total dissolved solids	mg/L	4000^
Aluminium	mg/L	5
Arsenic	mg/L	0.5
Cadmium	mg/L	0.01
Chromium	mg/L	1
Cobalt	mg/L	1
Copper	mg/L	1
Fluoride	mg/L	2
Lead	mg/L	0.1
Mercury	mg/L	0.002
Nickel	mg/L	1
Selenium	mg/L	0.02
Zinc	mg/L	20

*ANZECC & ARMCANZ (2000) water quality guidelines for livestock drinking water.

^Species specific value determined in accordance with ANZECC & ARMCANZ (2000) water quality guidelines for livestock drinking water.

Table E6: Irrigation water release limits

Quality characteristic	Units	Maximum*
pH	pH units	6.5 – 9.0
Electrical Conductivity	µS/cm	5,000^
Chloride	mg/L	700
Sodium	mg/L	460
Aluminium	mg/L	5
Arsenic	mg/L	0.1
Cadmium	mg/L	0.01
Chromium	mg/L	0.1
Cobalt	mg/L	0.05
Copper	mg/L	0.2
Fluoride	mg/L	2
Lead	mg/L	2
Manganese	mg/L	0.2
Mercury	mg/L	0.002
Nickel	mg/L	0.2
Selenium	mg/L	0.02
Zinc	mg/L	2
Nitrogen	mg/L	5

**ANZECC & ARMCANZ (2000) water quality guidelines for long term irrigation.*

^Species specific value determined in accordance with ANZECC & ARMCANZ (2000) water quality guidelines for long term irrigation.

End of Conditions for Schedule E

Schedule F – Land

Chemical and flammable or combustible liquids

F1 Spillage of all chemicals, waste oils and flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.

F2 All piping and infrastructure associated with the loading and unloading of petroleum and diesel products must be designed, constructed and maintained in accordance with the latest edition of AS1940—The storage and handling of flammable and combustible liquids.

F3 All waste materials, explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the current Australian standard. Where no relevant Australian Standard exists, all materials must be stored within an effective on-site containment system that prevents contamination of land or waters.

Impacts to prescribed environmental matters

F4 Significant residual impacts to prescribed environmental matters, are not authorised under this environmental authority or the *Environmental Offsets Act 2014.*

F5 Records demonstrating that each impact to a prescribed environmental matter did not, or is not likely to, result in a significant residual impact to that matter must be:

(a) Completed by an appropriately qualified person; and

(b) Kept for the life of the environmental authority.

End of Conditions for Schedule F

Schedule G – Regulated Structures

G1 The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* at the following times:

(a) Prior to the design and construction of the structure, if it is not an existing structure; or

(b) If it is an existing structure, prior to the adoption of this schedule; or

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

G2 A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.

G3 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Design and construction of a regulated structure.

G4 All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

G5 Construction of a regulated structure is prohibited unless:

(a) The holder has submitted a consequence category assessment report and

(b) Certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.

G6 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, and must be recorded in the Regulated Dams/Levees register.

G7 Regulated structures must:

(a) Be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);*

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

i. Floodwaters from entering the regulated dam from any watercourse or drainage line; and

ii. Possible erosion by floodwaters arising from any watercourse or drainage line.

G8 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

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

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

Operation of a regulated structure

G9 Operation of a regulated structure**,** except for an existing structure, is prohibited unless the holder has submitted to the administering authority:

(a) One paper copy and one electronic copy of the design plan and certification of the 'design plan',

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

(c) Certification of those 'as constructed drawings and specifications',

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

(e) The requirements of this authority relating to the construction of the regulated structure have been met;

(f) The holder has entered the details required under this authority, into a Register of Regulated Dams; and

(g) There is a current operational plan for the regulated structures.

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

Mandatory reporting level

G11 The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.

G12 The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

G13 The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated structure.

G14 The holder must record any changes to the MRL in the Register of Regulated Structures.

Design storage allowance.

G15 The 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 taken prior to **1 July** of each year.

G16 By **1 November** of each year, storage capacity must be available in each regulated structure, to meet the Design Storage Allowance (DSA) volume for the dam.

G17 The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated structure will not have the available storage to meet the DSA volume on **1 November** of any year, notify the

administering authority.

G18 The holder must, immediately on becoming aware that a regulated structure 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.

Annual inspection report

G19 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

G20 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.

G21 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

G22 The holder must:

(a) Within 20 business days of receipt of the annual inspection report, provide to the administering authority:

i. The recommendations section of the annual inspection report; and

ii. If applicable, any actions being taken in response to those recommendations; and

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

Transfer arrangements

G23 The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

Decommissioning and rehabilitation

G24 Regulated structures must not be abandoned but be either:

(a) Decommissioned and rehabilitated; or

(b) Be left in-situ for a beneficial use(s) provided that:

i. It no longer contains contaminants that will migrate into the environment; and

ii. It contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and

(c) The holder of the environmental authority and the landholder agree in writing that the:

i. Dam will be used by the landholder following the cessation of the environmentally relevant

activity(ies); and

ii. The landholder is responsible for the dam, on and from an agreed date.

G25 Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform and final land use in accordance with the latest version of PRCP Schedule P-PRCP-100762062.

Hydraulic performance of regulated structures

G26 All regulated structures must be specified in **Table G1 – Regulated structures hydraulic performance criteria.**

G27 Each regulated structure specified in **Table G1 – Regulated structures hydraulic performance criteria** must meet the applicable hydraulic performance criteria listed in **Table G1 – Regulated structures hydraulic performance criteria** for that structure.

Table G1 – Regulated structures hydraulic performance criteria

Regulated structure	Consequence category	Hydraulic performance criteria		
		Spillway Capacity	Design Storage Allowance (DSA)[1]	Mandatory Reporting Level (MRL)
New TSF	Significant	1: 1,000 AEP rainfall event	1:20 AEP 3-month wet season plus process inputs	1:10 AEP 72-hour duration storm event
Existing TSF	Significant	1: 1,000 AEP rainfall event	N/A	N/A

[1] Must be achieved on 1 November of each year.

G28 The New TSF must be constructed and operated in a manner that prevents the release of contaminants to receiving waters and includes at minimum a:

a) Low permeability liner system that prevents the release of contaminants from the New TSF; and

b) Leak detection system capable of identifying any release of seepage from the New TSF.

G29 The hydraulic performance criteria specified in this environmental authority 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 G

Schedule H - Definitions

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

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 (dBL).

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.

Annual exceedance probability or AEP means the probability that at least one event in excess of a particular magnitude will occur in any given year.

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

Appropriately qualified person means a person who has professional qualifications, training, skills 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:

(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, with reference to the water schedule means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

Blasting means the use of explosive materials to fracture:

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

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

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

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

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

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

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

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

Chemical means:

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

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

(c) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997, or

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

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

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

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

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

iv. a fertiliser for agricultural, horticultural or garden use, or

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

vi. manufacture of plastic or synthetic rubber.

Commercial place means a 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.

Construction or constructed, in relation to watercourse diversions, is the process of building, or modifying an existing diversion, but does not include investigations and testing necessary for the purpose of preparing a design plan.

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

Consequence category means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*. The relevant category is specified in **Table G1 – Regulated structures hydraulic performance criteria.**

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

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

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

(a) required information under a functional design

(b) the location, function and description of geomorphic and riparian vegetation features within the proposed watercourse diversion

(c) results from hydrologic, hydraulic and sediment transportation modelling used in the design of the diversion

(d) a revegetation and vegetation management plan (a revegetation plan) for the diversion

(e) engineering drawings depicting the physical attributes and dimensions of the diversion

(f) (if relevant) the staged development of a permanent watercourse diversion including the proposed use of temporary watercourse diversions with identified lifespans

(g) all investigation and other reports relied on by the design

(h) plans and specifications sufficient to complete construction and revegetation in accordance with the design.

Design storage allowance or DSA means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority, that must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual. The applicable DSA for regulated

structures authorised under this environmental authority are detailed in **Table G1 – Regulated structures hydraulic performance criteria**.

Designer for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

Disturbance of land includes:

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

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

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

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

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

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

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

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

(b) areas previously disturbed which have achieved the rehabilitation outcomes

(c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions)

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

(e) disturbance that pre-existed the grant of the tenure.

EC means electrical conductivity.

Environmental offset has the meaning in section 7 of the *Environmental Offsets Act 2014*.

Equilibrium: A state where 'balance' is achieved despite changing variables.

Existing authority has the meaning in section 94 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.

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

(a) geomorphic and vegetation assessment of the existing watercourse

(b) hydrologic conditions of the existing watercourse

(c) the proposed watercourse diversion route

(d) results from hydrologic, hydraulic and sediment transportation modelling used in the design of the diversion.

Functionality means the purpose that something is designed or expected to fulfil.

Hazard category means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*.

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

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 (EM635)*.

Infrastructure means water storage dams, levees, roads and tracks, buildings and other structures built for the purpose of the mining activity.

Land in the 'land schedule' of this document means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term 'land' in this environmental authority relates to physical land and not to interests in land.

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

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

Levee means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable 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.

Licensed place means the mining activities carried out at the mining tenements.

Low consequence dam means any dam that is not a high or significant consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Low impact activities mean activities which do not result in the clearing of native vegetation, cause disruption to soil profiles through earthworks or excavation, or result in significant disturbance to land which cannot be rehabilitated immediately using hand tools after the activity is completed. Examples of such activities include but are not necessarily limited to soil surveys (excluding test pits), topographic surveys, cadastral surveys and ecological surveys, the installation of monitoring equipment provided that it is within the meaning of low impact and traversing land by car or foot via existing access tracks or routes or in such a way that does not result in permanent damage to vegetation.

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

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

Maximum extent of impacts means the total maximum, unabated, impact to a prescribed environmental matter that could occur over the whole-of-project life.

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

Mine waste includes any waste produced from mining activities and includes but is not limited to spoil, overburden, waste rock and tailings.

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

Modification or modifying (see definition of 'construction').

NATA means National Association of Testing Authorities, Australia.

Natural flow means the flow of water through waters caused by natural processes (*i.e.* rainfall in the catchment area and subsequent runoff into watercourses).

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

Operational plan includes:

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

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

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

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

Potentially acid forming (PAF) waste rock means potentially acid forming waste rock and includes any mined material with the potential for nett generation of acidity; where there is uncertainty regarding the materials acid-forming potential, it must be treated as PAF waste rock until demonstrated otherwise.

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

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) a marine park under the *Marine Parks Act 1992*, or

(b) a World Heritage Area.

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) Waters;

(b) Land;

(c) Air; and

(d) Any area that is not specified in Table A1 of this environmental authority.

Receiving waters means the waters into which this environmental authority authorises releases of contaminated water.

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

Register of Regulated Dams includes**:**

(a) Date of entry in the register;

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

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

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

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

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

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

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

iii. Dam crest volume (megalitres);

iv. Spillway crest level (metres AHD).

v. Maximum operating level (metres AHD);

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

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

viii. Mandatory reporting level (metres AHD);

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

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

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

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

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

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

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

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

Regulated 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.

Release event means a discharge of water contaminated by the mining activity.

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.

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

RL means reduced level, relative to mean sea level as distinct from depths to water.

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

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.

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

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

Structure means dam or levee.

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

An ***appropriate level of expertise*** includes:

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

- sufficient knowledge and experience to certify that where the **suitably qualified and experienced person** has relied on advice and information provided by other **persons with relevant expertise***:
    - they consider it reasonable to rely on that advice and information
    - the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to watercourse diversions.

Persons with relevant expertise include:

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

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.

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

the Act means the *Environmental Protection Act 1994*.

Void means any constructed, open excavation in the ground.

Water is defined under Schedule 4 of the *Water Act 2000.*

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means a river, creek or stream in which water flows permanently or intermittently—

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

(b) in an artificial channel that has changed the course of the watercourse.

Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

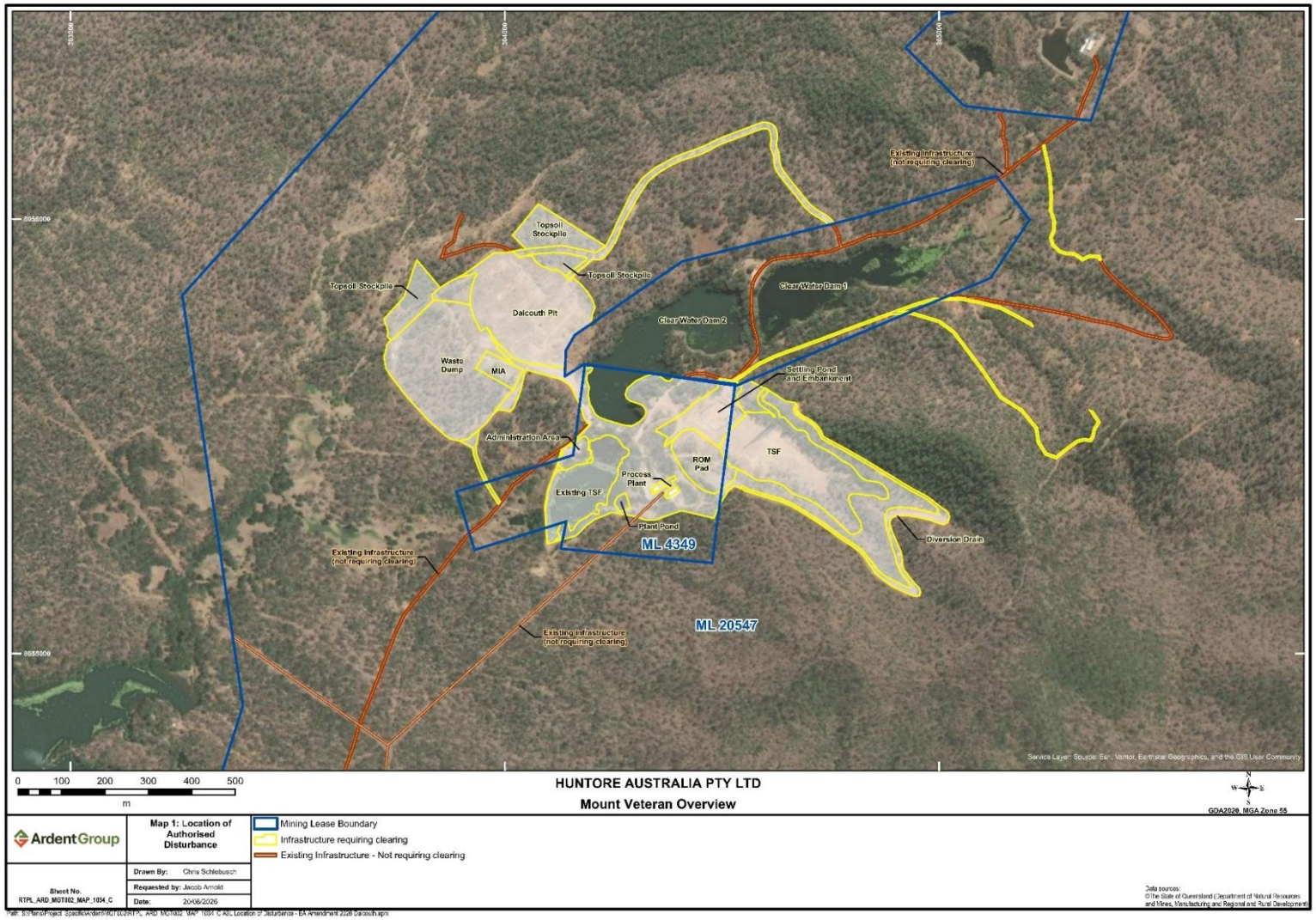
Water quality means the chemical, physical and biological condition of water.

Waters includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

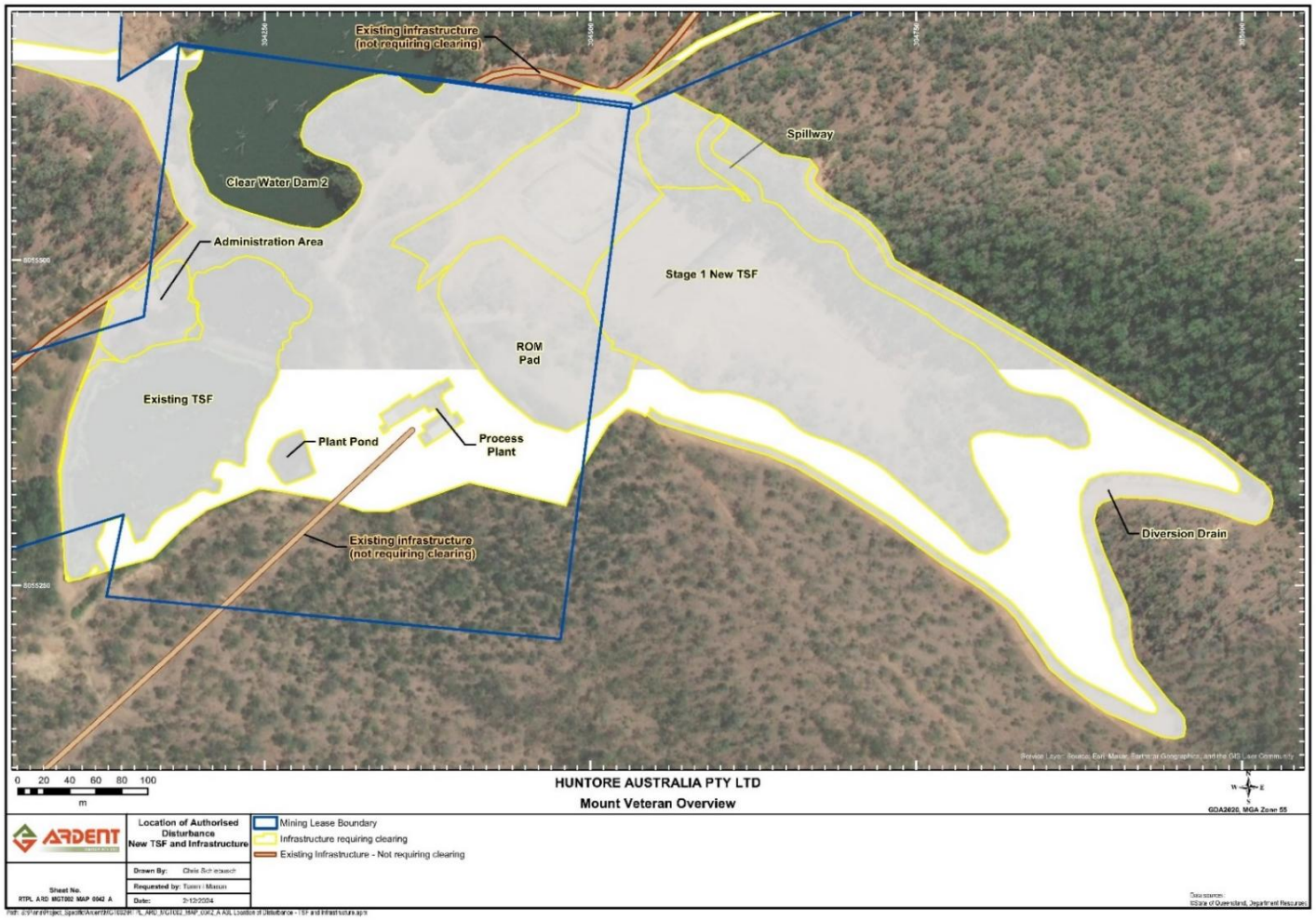
Wet season means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF SCHEDULE H

Schedule I – Figures



Map 1: Location of authorised disturbance



Map 2: Location of authorised disturbance around the TSF.

END OF SCHEDULE I

END OF ENVIRONMENTAL AUTHORITY