Permit

Environmental Protection Act 1994

Environmental Authority EPML01188313

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

Environmental authority number: EPML01188313

Environmental authority takes effect on 21 May 2026.

The anniversary date of this environmental authority is 03 September each year.

Environmental authority holder

Name	Registered address
North Queensland Tungsten Pty Ltd	Level 4, 46 Colin Street, WEST PERTH WA 6005

Environmentally relevant activity and location details

Environmentally relevant activities	Locations
Schedule 3 9 A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance	ML20535 ML20536 ML20537 ML20538 ML20566 ML20567 ML20576
Schedule 3 19 - Mining metal ore, other than a metal ore mentioned in items 11, 12, 14, 15, 16,17 or 18	
Ancillary 08 - Chemical Storage 1 - Storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a)	
Ancillary 08 - Chemical Storage 3 - Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	
Ancillary 08 - Chemical Storage 4 - storing 200t or more of chemicals that are solids or gases, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)	
Ancillary 08 - Chemical Storage 5 - storing 200 cubic metres or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection	

Environmentally relevant activities	Locations
(1)(d)	
Ancillary 14 - Electricity generation 2(a) - Generating electricity by using a fuel, other than gas, at a rated capacity of 10MW electrical to 150MW electrical	
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	
Ancillary 31 - Mineral processing 2(b) - Processing, in a year, the following quantities of mineral products, other than coke - more than 100,000t	
Ancillary 61 - Thermal waste reprocessing and treatment 1(a) - Thermally reprocessing or treating, in a year, the following quantity of general waste - not more than 5,000t	
Ancillary 63 - Sewage Treatment 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	

Additional information for applicants

Environmentally relevant activities

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

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

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

Mobile and temporary activities

If you operate a mobile and temporary 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.

Signature

21 May 2026

Date

Giles Bezzina

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

Enquiries:

Minerals Business Centre
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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

This environmental authority incorporates the following schedules:

Schedule A	General
Schedule B	Air
Schedule C	Land and Rehabilitation
Schedule D	Water
Schedule E	Regulated Structures
Schedule F	Sewage
Schedule G	Waste
Schedule H	Noise and Vibration
Schedule I	Definitions
Schedule J	Figures

Location: Located approximately 23km north-west of Mount Carbine on ML20535, ML20536, ML20537, ML20538, ML20566, ML20567 and ML20576.

Relevant activities:

ERA 8(1)	Storing a total of 50 tonnes or more of chemicals of dangerous goods Class 1 or Class 2, division 2.3 under subsection (1)(a).
ERA 8(3)	Storing more than 500m3 of chemicals of Class C1 or C2 combustible liquids under AS 1940 or dangerous goods under Class 3 under subsection (1)(c).
ERA 8(4)	Storing 200 tonnes or more of chemicals that are solids or gases, other than chemicals mentioned in items 1 to 3, under subsection (1)(d).
ERA 8(5)	Storing 200m3 or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d).
ERA 14(2)(a)	Generating electricity by using a fuel, other than gas, at a rated capacity of 10MW electrical to 150MW electrical.
ERA 15(1)	Fuel burning consists of using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour.
ERA 31(2)(b)	Processing, in a year, more than 100,000 tonnes of mineral products, other than coke.
ERA 61(1)(a)	Incinerating or thermally treating, in a year, less than 5,000 tonnes.
ERA 63(1)(a)(i)	Operating sewage treatment works, other than no release works, with a total daily peak design capacity of 21-100 EP – where treated effluent is discharged from the works to an infiltration trench or through an irrigation system.
ERA 9	Drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance.
ERA 19	Mining metal ore, other than a metal ore mentioned in item 11, 12, 14, 15, 16, 17 or 18.

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

SCHEDULE A – GENERAL

Activity

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 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Schedule J – Figure 1 (Project Infrastructure Layout).

A3 The holder of this environmental authority must:

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

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

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

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

Monitoring

A4 Except where specified otherwise in another condition of this authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than 5 years.

A5 An environmental monitoring program, sufficient to demonstrate compliance with the conditions of this environmental authority, must be developed by an appropriately qualified person and implemented by 1 March 2028.

A6 All analyses and tests required to be conducted under this environmental authority must be carried out by an appropriately qualified person and analysed by a laboratory that has NATA accreditation for such analyses and test, expect as otherwise authorised by the administering authority.

A7 Monitoring and analyses required by this environmental authority must be undertaken in accordance with the requirements of the administering authority's latest guidelines, unless otherwise agreed by the administering authority in writing.

Risk Management

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

Notification of Emergencies, Incidents and Exceptions

A9 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.

A10 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:

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

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

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

Complaints

A11 The holder of this environmental authority must record all environmental complaints received about the mining activity including the following details:

(a) Name, address and contact number for 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.

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

Third Party Reporting

A13 The holder of this environmental authority must:

(a) within one (1) year of the commencement of mineral processing on the licenced place, obtain from a suitably qualified and experienced third party a report on compliance with the conditions of this environmental authority;

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

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

A14 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must:

(a) comply with the amended or changed standard, policy or guideline within (2) years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to a regulated structure referred to in a condition of Schedule D of this environmental authority, the time specified in that condition; and

(b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.

Investigation

A15 If monitoring results indicate an exceedance of any quality objectives specified in a condition of this environmental authority, the holder of this environmental authority must notify the administering authority in accordance with condition A11 and:

(a) complete an investigation to identify the potential cause of the exceedance;

(b) if the investigation demonstrates that the exceedance is not attributable to the mining activities, then no further action is required; or

(c) if the cause of the exceedance is inconclusive or attributable to the mining activities, provide a written report to the administering authority within 3 months of the date of receiving the monitoring results showing an exceedance, outlining:

(i) all pertinent details of the investigation carried out; and

(ii) actions taken or planned to minimise environmental harm.

Exploration

A16 Disturbance from exploration activities carried out on the mining lease must not exceed 21 hectares.

A17 All exploration activities carried out on the mining lease must comply with each of the Standard Environmental Conditions contained in the most recent version of "*Eligibility criteria and standard conditions for exploration and mineral development projects*" (ESR/2016/1985). To the extent that any Standard Environmental Condition is inconsistent with a provision of this authority, the provision of this authority will prevail.

END OF CONDITIONS FOR SCHEDULE A

SCHEDULE B – AIR

General

B1 Unless authorised by this environmental authority, the release of noxious or offensive odour, dust or any other airborne contaminant resulting from the mining activity must not cause environmental harm beyond the boundary of the licensed place.

Point Source Releases to Air

B2 Releases to the atmosphere resulting from the incineration of explosives packaging must be undertaken in accordance with the Standard Operating Procedure for incineration of explosives packaging required by condition B3 and must:

(a) be a release from the incineration of only explosive boxes and handling material (no other wastes are permitted to be incinerated on site);

(b) be from the release point shown in Schedule B – Table B1 (Point Source Release of Contaminants);

(c) be in accordance with the criteria shown in Schedule B – Table B1; and

(d) be directed vertically upwards, with no impedance.

Schedule B – Table B1 (Point Source Release of Contaminants)

Release Point	Contaminant released	Maximum mesh size
TBA[1]	Ash only	1cm

1. Release point location to be nominated in the standard operating procedure required by condition B3.

B3 A Standard Operating Procedure for incineration of explosives packaging must be lodged with the administering authority at least one (1) month prior to undertaking the incineration.

Dust and Particulate Matter Monitoring

B4 Dust and particulate matter must not exceed the following levels at any sensitive or commercial place:

(a) Dust deposition of 120 milligrams per square metre per day, averaged over 1 month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method.

(b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, 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 - PM_{10} high volume sampler with size-selective inlet - Gravimetric method, or

(ii) Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} low volume sampler—Gravimetric method.

(c) 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 – LAND AND REHABILITATION

Land and Rehabilitation Objectives

C1 Unless authorised by this environmental authority contaminants that will or may cause environmental harm must not be directly or indirectly released to land.

C2 Land outside the authorised disturbance area specified in condition A2 of this environmental authority must not be disturbed or contaminated.

C3 When carrying out the mining activity the holder of this environmental authority must:

(a) avoid, minimise or mitigate (in order of preference) any impacts on areas of ecological value;

(b) minimise the risk of injury, harm; or entrapment of wildlife and stock;

(c) minimise disturbance to land that may otherwise result in land degradation; and

(d) if significant disturbance to land is unavoidable, the holder of this environmental authority must clear vegetation in a way that maintains connectivity.

C4 Land disturbance by mining must be progressively rehabilitated in accordance with the most recent edition of the administering authority's guideline *" Rehabilitation Requirements for Mining Projects (EM1122)"* to ensure areas disturbed by mining are rehabilitation to state that:

(a) is non-polluting;

(b) is geo-technically and geochemically stable with no subsidence or erosion gullies for at least (3) years;

(c) has established groundcover to ensure erosion is minimised;

(d) has established vegetation of floristic species composition found in analogue sites and which are not weed species;

(e) maintenance requirements for rehabilitated land (with exception of the pit and waste rock dump) is no greater than that required for the land prior to its disturbance caused by carrying out the mining activity (ies); and

(f) is safe to humans and wildlife.

Biodiversity

C5 Prior to commencement of vegetation clearing, the holder of this environmental authority must:

(a) engage an appropriately qualified person to undertake a comprehensive flora survey in accordance with the latest version of the administering authority's *Guidelines for Flora Survey and Assessment in Northern Queensland*; and

(b) provide a report, in accordance with the latest version of the administering authority's *Guidelines for Flora Survey and Assessment in Northern Queensland*, to the administering authority.

C6 If the report required by condition C5 indicates the presence of prescribed native wildlife and breeding places, an appropriately qualified spotter/catcher must be engaged to work ahead of vegetation clearing.

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

C7 In the event of identification of rare or threatened species on the licensed place, a diagrammatic representation of the species occurrence relative to the mining activity together with a management and monitoring strategy for species conservation must be prepared and implemented and submitted to the administering authority.

Biodiversity Offsets

C8 The holder of this environmental authority must provide an offset for impacts on state significant biodiversity values, in accordance with *Queensland Biodiversity Offset Policy.* The biodiversity offset must be consistent with the offset identified in the Biodiversity Offset Strategy (as per condition C9) and must be provided:

(a) prior to impacting on state significant biodiversity values; or

(b) where a land based offset is to be provided; within twelve (12) months of the later of either or the following:

(i) the date of issues of this environmental authority; or

(ii) the relevant stage identified in the Biodiversity Offset Strategy submitted under condition C9; or

(c) where an offset payment is to be provided, within four (4) months of the later of either of the following:

(i) the date of issue of this environmental authority; or

(ii) the relevant state identified in the Biodiversity Offset Strategy submitted under condition C9.

C9 Biodiversity Offset Strategy must be developed and submitted to the administering authority thirty (30) day; or a lesser time period agreed to by the administering authority; prior to impacting on state significant biodiversity values.

C10 If the report required by condition C8 indicates the presence of prescribed native wildlife and breeding places, an appropriately qualified spotter/catcher must be engaged to work ahead of vegetation clearing.

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

Infrastructure

C11 All buildings, structures, mining equipment and plant erected and/or used for the mining activities must be removed from the site prior to surrender, except where agreed in writing by the administering authority and the landowner.

Cover System and Rehabilitation Trials

C12 By 1 March 2031, the environmental authority holder must commence trials to establish a suitable cover methodology and revegetation strategy on the licensed place including but not limited to the waste rock and dried process residue structure.

C13 By 1 March 2032, and once every two (2) years thereafter, the environmental authority holder must submit a report to the administering authority detailing the findings of the cover and revegetation trials.

C14 By 1 March 2036, the environmental authority holder must submit to the administering authority a report nominating the best performing cover system and revegetation methodology based on the results from trials required in condition C12.

END OF CONDITIONS FOR SCHEDULE C

SCHEDULE D - WATER

Contaminant Release to Waters

D1 The release of contaminants to waters must:

(a) only occur during flow events in the receiving waters;

(b) only occur from a release points specified in Schedule D - Table D1 (Contaminant Release Points) and identified in Schedule J - Figure 2 (Contaminant Release Points); and

(c) be monitored at each release point and at the monitoring frequency specified in Schedule D - Table D1 (Contaminant Release Points) for the total daily volume of water released and for each parameter specified in Schedule D - Table D3 (Receiving Water and Sediment Quality Objectives).

Schedule D – Table D1 (Contaminant Release Points)

Release Point	Description of Release	Receiving Water	Release Point Location (GDA94)		Monitoring frequency
			Easting	Northing	
TBA[1]	Water Supply Dam Spillway	Desailly Creek	TBA[1]	TBA[1]	For all parameters, one (1) sample must be taken within twelve (12) hours of a release event commencing and for release events with duration of greater than twenty-four (24) hours, samples must be taken daily for one (1) week and once a week thereafter until the release event ceases.
TBA[1]	Environment Dam 1 Spillway	Campbell Creek	TBA[1]	TBA[1]	
TBA[1]	Environment Dam 2 Spillway	Campbell Creek	TBA[1]	TBA[1]	
TBA[1]	Environment Dam 3 Spillway	Campbell Creek	TBA[1]	TBA[1]	
TBA[1]	Environment Dam 4 Spillway	Desailly Creek	TBA[1]	TBA[1]	

1. Detail to be provided to the administering authority in accordance with condition D14.

D2 At the time of release from the authorised release points specified in Schedule D – Table D1 (Contaminant Release Points) the water flow volume in the respective receiving water must be at a volume that provides the adequate dispersion of contaminants required to meet the quality objectives specified in Schedule D – Table D3 (Receiving Water and Sediment Quality Objectives) at the locations specified in Schedule D – Table D4 (Receiving Waters Monitoring Locations).

D3 End of pipe quality objectives for water contaminated by mining activities when monitored at the location and frequency defined in Schedule D – Table D1 (Contaminant Release Points) must not exceed the release quality objectives defined in Schedule D – Table 2 (Release Quality Objectives).

Schedule D – Table D2 (Release Quality Objectives)

Parameter[1]	**Release Quality Objectives (mg/L unless otherwise specified)**
pH (pH units)	6.0[2] or 20th percentile of reference site concentration, whichever is lower. 7.5[2] or 80th percentile of reference site concentration, whichever is higher.
EC (µS/cm)	5000[3]
Dissolved oxygen	For interpretative purposes only
Sulphate	20 x 80th percentile of reference site concentration
Fluoride	Default value[6] or 20 x 80th percentile of reference site concentration
Major cations Major anions	For interpretive purposes only
Aluminium	1.1[2] or 20 x 80th percentile of reference site concentration whichever is higher
Arsenic[4]	0.26[2] or 20 x 80th percentile of reference site concentration whichever is higher
Boron	7.4[2] or 20 x 80th percentile of reference site concentration whichever is higher
Cadmium	0.004[2] or 20 x 80th percentile of reference site concentration whichever is higher
Cobalt	0.028[2] or 20 x 80th percentile of reference site concentration
Copper	0.028[2] or 20 x 80th percentile of reference site concentration whichever is higher
Lead	0.068[2] or 20 x 80th percentile of reference site concentration whichever is higher
Molybdenum	0.68[2] or 20 x 80th percentile of reference site concentration
Nickel	0.22[2] or 20 x 80th percentile of reference site concentration whichever is higher
Selenium	0.10[2] or 20 x 80th percentile of reference site concentration whichever is higher
Tungsten	80th percentile of reference site concentration
Uranium	0.01[2] or 20 x 80th percentile of reference site concentration whichever is higher
Zinc	0.16[2] or 20 x or 80th percentile of reference site concentration whichever is higher
Total Hardness	For interpretive purposes only
Total petroleum hydrocarbons	No detectable film or odour

1. For water quality objectives parameters, all metals and metalloids must be measured and reported as both total (unfiltered) and dissolved (field filtered) levels.

2. Twenty times higher than ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems Tables 3.3.4 and Table 3.4.1 (*high reliability* trigger values) and *moderate* or *low* reliability trigger values (Section 8.3) if no value available in Table 3.4.1.
3. Twenty times higher than ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems Table 3.3.5 for EC.
4. Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the WQO is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element.
5. Based on ANZECC (2000) stock water quality guidelines.
6. A trigger value for Fluoride (for which no default value is provided in Table 3.4.1) derived using the methods described in ANZECC 2000 Section 8.3.4.4.

D4 The release of contaminants from the authorised activity to surface waters must not exceed the contaminant limits for each water quality objective stated in Schedule D – Table D3 (Receiving Water and Sediment Quality Objectives) when measured at the compliance point stated in Schedule D – Table D4 (Receiving Waters Monitoring Locations).

Schedule D – Table D3 (Receiving Water and Sediment Quality Objectives)

Parameter[1]	**Water Quality Objective[1] (mg/L unless otherwise specified)**	**Sediment[2] Quality Objective (mg/kg unless otherwise specified)**
pH (pH units)	6.0[3] or 20th percentile of reference site concentration, whichever is lower. 7.5[3] or 80th percentile of reference site concentration, whichever is higher.	Not applicable
EC (µS/cm)	250[4] or 80th percentile of reference site concentration whichever is higher	
Dissolved oxygen	For interpretative purposes only	
Sulphate	80th percentile of reference site concentration	2 x 80th percentile of reference site concentration
Fluoride	Default Value[7] or 80th percentile of reference site concentration	2 x 80th percentile of reference site concentration
Major cations	For interpretive purposes only	Not applicable
Major anions		
Aluminium	0.055[5] or 80th percentile of reference site concentration whichever is higher	2 x 80th percentile of reference site concentration
Arsenic[5]	0.013[3] or 80th percentile of reference site concentration whichever is higher	70[6] or 2 x 80th percentile of reference site concentration or whichever is higher
Boron	0.37[3] or 80th percentile of reference site concentration whichever is higher	2 x 80th percentile of reference site concentration
Cadmium	0.0002[5] or 80th percentile of reference site concentration whichever is higher	106 or 2 x 80th percentile of reference site concentration whichever is higher
Cobalt	0.0014[3] or 80th percentile of reference site concentration	2 x 80th percentile of reference site concentration
Copper	0.0014[3] or 80th percentile of reference site concentration whichever is higher	270[6] or 2 x 80th percentile of reference site concentration whichever is higher
Lead	0.0034[3] or 80th percentile of reference site concentration whichever is higher	220[6] or 2 x 80th percentile of reference site concentration whichever is higher
Molybdenum	0.034[3] or 80th percentile of reference site concentration	2 x 80th percentile of reference site concentration
Nickel	0.011[3] or 80th percentile of reference site concentration whichever is higher	52[6] or 2 x 80th percentile of reference site concentration whichever is higher
Selenium	0.005[3] or 80th percentile of reference site concentration whichever is higher	2 x 80th percentile of reference site concentration
Tungsten	80th percentile of reference site concentration	2 x 80th percentile of reference site concentration
Uranium	0.0005[3] or 80th percentile of reference site concentration	2 x 80th percentile of reference site concentration
Zinc	0.008[3] or 80th percentile of reference site	410[6] or 2 x 80th percentile of reference

Parameter[1]	Water Quality Objective[1] (mg/L unless otherwise specified)	Sediment[2] Quality Objective (mg/kg unless otherwise specified)
	concentration whichever is higher	site concentration whichever is higher
Total Hardness	For interpretive purposes only	Not applicable
Particle size distribution	For interpretive purposes only	
Total petroleum hydrocarbons	No detectable film or odour	Not applicable

1. For water quality objectives parameters, all metals and metalloids must be measured and reported as both total (unfiltered) and dissolved (field filtered) levels.
2. All stream sediment sampling must be undertaken in accordance with AS 5667.12 *Guidance on Sampling of Bottom Sediments of 1998*.
3. ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems Tables 3.3.4 and Table 3.4.1 (high reliability trigger values) and moderate or low reliability trigger values (Section 8.3) if no value available in Table 3.4.1.
4. ANZECC/ARMCANZ (2000) values for upland and lowland rivers Table 3.3.5.
5. Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the WQO is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element. This does not apply to sediment analysis.
6. ANZECC (2000) Interim Sediment Quality Guidelines – ISQG – high values based on total sediments (dry weight).
7. A trigger value for Fluoride (for which no default value is provided in Table 3.4.1) derived using the methods described in ANZECC 2000 Section 8.3.4.4.

Note: Where the 80th percentile of a water quality objective (WQO)/sediment quality objective (SQO) is exceeded at a receiving water site and the reference site also exceeds this concentration during the release/flow event, the value of the reference site applies as the WQO/SQO for the duration of the event.

Schedule D – Table D4 (Receiving Waters Monitoring Locations)

Monitoring Point	Description	Coordinates (GDA94)	
		Easting	Northing
Receiving Water Locations			
D2	Small pond (Dam 1) adjacent to admin and storage area footprint. Upstream of Dam 2.	275550	8192863
ED3	On small waterway, downstream of processing plant runoff dam.	274147	8193786
NWC1	On small tributary of ”Northwest Creek” between proposed Open Pit and north-east intake of proposed Water Supply Dam.	273100.1	8193039
Des 3	On West Creek at project boundary	272277	8190890
ED9	Small unnamed creek adjacent to accommodation area.	273146	8195912
ED10	Small unnamed creek adjacent to accommodation area.	272313	8195952
WD1	On “Central Creek” adjacent to GW3	273148	8196100
Reference Points			
UD7	50 m upstream of access road crossing on upper tributary of Desailly Creek, south-west of the project area (Reference site for Desailly Catchment)	271688.5	8189561
ED8	50 m upstream of minor track crossing of upper tributary of Campbell Creek, north-west of project area (Reference site for Prospect catchment).	274151.2	8194924
W1	On upper West Creek, southern project area (Reference site for upper catchment of Desailly Catchment).	274334	8190271
Compliance Points			

Monitoring Point	Description	Coordinates (GDA94)	
		Easting	Northing
D1	On “Northwest Creek” at outlet of proposed Water Supply Dam	272079	8191889
Cam 1	On upper Campbell Creek. Approximately on mining lease boundary and downstream of Environmental Dam.	274474.8	8194176
ED11	On upper tributary of Campbell Creek, approximately 1 km from WRD eastern perimeter. Approximately on mining lease boundary and downstream of Environmental Dam 2.	275141.5	8193511
ED2	On upper tributary of Campbell Creek, southern catchment. Approximately on mining lease boundary and downstream of Environmental Dam 3.	273084	8193396

Receiving Environment Monitoring Program (REMP)

D5 The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) sufficient to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. For the purposes of the REMP, the receiving environment is the waters of (Desailly Creek, North West, Central Creek, South Creek, Prospect Creek, Campbell Creek) and connected or surrounding waterways within 15km downstream of the licensed place. At minimum, the REMP must include:

(a) Monitoring of all parameters specified in Schedule D - Table 3 (Receiving Water and Sediment Quality Objectives) at all locations specified in Schedule D - Table 4 (Receiving Waters Monitoring Locations) and at the following minimum frequency:

(i) for receiving waters sediment quality, biannually (once at the end of the wet season and once at the end of the dry season); and

(ii) or water quality of receiving waters during a release or flow event, one sample must be taken within twelve (12) hours of the event commencing. Where release or flow events have duration of greater than twenty-four (24) hours, samples must be taken daily for one (1) week and once a week thereafter until the release or flow event ceases.

(b) Monitoring of suitable biological indicators of aquatic ecosystem health.

D6 A REMP design document that addresses the requirements of the REMP must be prepared by 1 March 2028 and must be provided to the administering authority upon request.

D7 A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administering authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

Groundwater

D8 The holder of this environmental authority must not release contaminants to groundwater.

D9 The construction, maintenance and management of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

D10 Groundwater quality and water table level (m AHD) must be monitored at the locations and frequency specified in Schedule D - Table D5 (Groundwater Monitoring Locations) and identified in Schedule J – Figure 4 (Groundwater Monitoring Locations) for all parameters listed in Schedule D - Table D6 (Groundwater Quality Objectives).

Schedule D – Table D5 (Groundwater Monitoring Locations)

Monitoring Point	Coordinates (GDA94)		Surface RL[1]	Monitoring Frequency
	Easting	Northing		
Compliance Bores[2]				
Shallow				
GW1A	272085	8191889	647	Upon commencement of mining activities: One (1) sample every three (3) months for groundwater quality; and One (1) sample every month for groundwater level.
GW7	274399	8191475	844	
GW10	274684	8193391	727	
Deep				
GW1	272085	8191884	647	Upon commencement of mining activities: One (1) sample every three (3) months for groundwater quality; and One (1) sample every month for groundwater level.
GW3	273163	8191667	677	
GW4	275470	8192802	714	
GW5	274409	8193067	737	
GW7A	274399	8191475	TBA[3]	
GW8	275070	8193199	720	
GW11	275113	8193503	699	
GW12	274672	8191276	801	

Reference Bores[2]				
Shallow				
GW6	273682	8193477	803	Upon commencement of mining activities: One (1) sample every three (3) months for groundwater quality; and One (1) sample every month for groundwater level.
Deep				
GW2	272455	8193329	691	Upon commencement of mining activities: One (1) sample every three (3) months for groundwater quality; and One (1) sample every month for groundwater level.
GW6A	273682	8193477	TBA[3]	

1. RL must be measured to the nearest 0.05 metres from the top of the bore casing in m AHD.
2. All groundwater monitoring bores must be constructed and operated in accordance with methods prescribed in the latest edition of the Agriculture and Resource Management Council of Australia and New Zealand manual titled *Minimum Construction Requirements for Water Bores in Australia*.
3. Detail to be provided to the administering authority in accordance with condition D15.

D11 Results of monitoring of groundwater from compliance bores identified in Table D5 (Groundwater Monitoring Locations), must not exceed any of the limits defined in Table D6 (Groundwater Quality Objectives).

Schedule D – Table D6 (Groundwater Quality Objectives)

Parameter[1]	Shallow Groundwater Quality Objectives (mg/L unless otherwise specified)	Deep Groundwater Quality Objectives (mg/L unless otherwise specified)
pH (pH units)	6.0 – 7.5[2]	Reference site concentration
EC (µS/cm)	250[2] or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Sulphate	80th percentile[4] of reference site concentration	Reference site concentration
Fluoride	Default Value[5] or 80th percentile[4] of reference site concentration	Reference site concentration
Major cations	For interpretive purposes only	
Major anions		
Aluminium	0.055[3] or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Arsenic[4]	0.013[3] or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Boron	0.37[3] or 80th percentile[4] of reference site	Reference site concentration

Parameter[1]	Shallow Groundwater Quality Objectives (mg/L unless otherwise specified)	Deep Groundwater Quality Objectives (mg/L unless otherwise specified)
	concentration whichever is higher	
Cadmium	0.0002[3] or percentile[4] of reference site concentration whichever is higher	Reference site concentration
Cobalt	0.0014[3] or 80th percentile[4] of reference site concentration	Reference site concentration
Copper	0.0014[3] or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Lead	0.0034[3] o or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Molybdenum	0.034[3] or 80th percentile[4] of reference site concentration	Reference site concentration
Nickel	0.011[3] or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Selenium	0.005[3] or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Tungsten	80th percentile[4] of reference site concentration	Reference site concentration
Uranium	0.0005[3] or 80th percentile[4] of reference site concentration	Reference site concentration
Zinc	0.008[3] or 80th percentile[4] of reference site concentration whichever is higher	Reference site concentration
Total Hardness	For interpretive purposes only	
Total petroleum hydrocarbons	No detectable film or odour	

1. All metals and metalloids must be measured and reported.
2. ANZECC/ARMCANZ (2000) values for upland and lowland rivers Table 3.3.5.
3. ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems Tables 3.3.4 and Table 3.4.1 (high reliability trigger values) and moderate or low reliability trigger values (Section 8.3) if no value available in Table 3.4.1.
4. WQOs based on 80th percentiles of reference site concentrations derived in accordance with ANZECC/ARMCANZ (2000).
5. A trigger value for Fluoride (for which no default value is provided in Table 3.4.1) derived using the methods described in ANZECC 2000 Section 8.3.4.4.

Water Management Plan

D12 A Water Management Plan must be developed by an appropriately qualified person and implemented by 1 March 2028. The Water Management Plan must be reviewed annually to assess the adequacy of the plan, ensure actual and potential environmental impacts are managed, and identify any necessary amendments to the plan to ensure compliance with this environmental authority.

Erosion and Sediment Control

D13 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented, to minimise erosion, contamination of stormwater and the release of sediment to receiving waters.

D14 Where 'TBA' is referenced within Table D1 (Contaminant Release Points), details are to be provided to the administering authority prior to the construction of the relevant structures in Table D1 (Contaminant Release Points) via an environmental authority amendment application.

D15 Where 'TBA' is referenced within Table D5 (Groundwater Monitoring Locations), details are to be provided to the administering authority no later than 3 months after the construction of the groundwater monitoring bores via an environmental authority amendment application.

END OF CONDITIONS FOR SCHEDULE D

SCHEDULE E – REGULATED STRUCTURES

Assessment of Hazard Category

E1 The hazard category of any structure must be assessed by a suitably qualified and experienced person:

(a) In accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*; and

(b) In any of the following situations:

(i) Prior to the design and construction of the regulated structure; or

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

E2 A hazard assessment report and certification must be prepared for any regulated structure assessed and the report may include a hazard assessment for more than one regulated structure.

E3 The holder of this environmental authority must, on receipt of a hazard assessment report and certification, provide to the administering authority one paper copy and one electronic copy of the hazard assessment report and certification.

E4 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*.

E5 The holder of this environmental authority must take reasonable and practical measures so that each regulated structure associated with the mining activity is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.

Design and Construction of a Regulated Structure

E6 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.*

E7 Construction of a regulated structure is prohibited unless the holder of this environmental authority has:

(a) Submitted a hazard category assessment report and certification to the administering authority;

(b) Commissioned a suitably qualified and experienced person to prepare a design plan for the regulated structure; and

(c) Received the certification from a suitably qualified and experienced person for the design plan and the associated operating procedures in compliance with the relevant conditions of this environmental authority.

E8 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*.

E9 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*; and

(b) be designed and constructed with due consideration given to ensuring that the design integrity will 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.

E10 The design plan for a regulated structure must include, but is not limited to:

(a) certification that the design plan;

(i) is in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures,* including subsidiary certifications if necessary; and

(ii) addresses the requirements in condition D2-5 (b) to (h).

(b) a design report which provides:

(i) a description of all the documents which constitute the design plan;

(ii) a statement of:

a) the applicable standards including engineering criteria, industry guidelines, relevant legislation and regulatory documents, relied upon in preparing the design plan;

b) all relevant facts and data used in preparing the design plan, including any efforts made to obtain necessary facts and data, and any limitations or assumptions to facts and data used in preparing the design plan;

c) the hazard category of the regulated structure; and

d) setting out the reasoning of the suitably qualified and experienced person who has certified the design plan, as to how the design plan provides the necessary required performance.

(iii) documentation of hydrological analyses and estimates required to determine all elements of the design including volumes and flow capacities;

(iv) detailed criteria for the design, operation, maintenance and decommissioning of the regulated structure, including any assumptions; and

(v) design, specification and operational rules for any related regulated structures and systems used to prevent failure scenarios;

(c) drawings showing the lines and dimensions, and locations of built regulated structures and land forms associated with the regulated structure;

(d) consideration of the interaction of the pit design with the regulated structure design;

(e) an operational plan that includes:

(i) normal operating procedures and rules (including clear documentation and definition of process inputs in the Design Storage Allowance (DSA); and

(ii) 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.

(f) a plan for the decommissioning and rehabilitation of the regulated structure at the end of its operational life;

(g) details of reports on investigations and studies done in support of the design plan; and

(h) any other matter required by the suitably qualified and experienced person.

E11 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; and

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

E12 Where a regulated structure is to be managed as part of an integrated containment system and the DSA volume is to be shared across the integrated containment system, the design and operating rules for the system as a whole must be documented in a system design plan that is certified by a suitably qualified and experienced person.

E13 The system design plan must contain:

(a) the design plans;

(b) the 'as constructed' plans;

(c) the operational rules for each individual regulated structure that forms part of the integrated system;

(d) the standards of serviceability and accessibility of water transfer equipment or regulated structures; and

(e) the operational rules for the system as a whole.

Operation of a Regulated Structure

E14 Operation of a regulated structure is prohibited unless:

(a) the holder of this environmental authority has submitted to the administering authority:

(i) one paper copy and one electronic copy of the design plan and certification of the design plan in accordance with condition E11;

(ii) a set of 'as constructed' drawings and specifications;

(iii) certification of those 'as constructed drawings and specifications' in accordance with condition E12; and

(iv) 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 in accordance with condition E13.

(b) the requirements of this environmental authority relating to the construction of the regulated structure have been met; and

(c) relevant details for the regulated structure have been included in Schedule E - Table E1 (Location of Regulated Structures) and Schedule E - Table E2 (Basic Details of Regulated Structures) of this environmental authority.

Schedule E – Table E1 (Location of Regulated Structures)

Column 1	Column 2	Column 3	Column 4
Name of Regulated Structure	**Location (GDA94 MGA Zone 54)[1]**		**Description**
	Easting	**Northing**	
Process Water Pond	TBA[2]	TBA[2]	ML20535
Run Off Dam	TBA[2]	TBA[2]	ML20535
Waste Rock and Dried Process Residue Disposal Structure	TBA[2]	TBA[2]	ML20535

1. A minimum of three (3) control points are required to constrain the location of all activities associated with the regulated structure. Additional infrastructure which forms part of any regulated structure (which is not required to be located within the control points) may include appurtenant works consisting of dried process residue discharge pipelines, seepage collection systems, runoff diversion bunds, containment systems, pressure relief wells, decant and recycle water systems.

2. Detail to be provided to the administering authority in accordance with condition E36.

Schedule E — Table E2 (Basic Details of Regulated Structures)

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Name of regulated structure	**Hazard category**	**Surface area at spillway (ha)**	**Maximum volume at spillway (m^3)**	**Maximum depth at spillway (m)**	**Spillway Level (mAHD)**	**Use**
Process water pond	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]	Storage of process water
Run Off Dam	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]	Storage of process water
Waste Rock and Dried Process Residue Disposal Structure	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]	Dried process residue and waste rock

1. Detail to be provided to the administering authority in accordance with condition E36 and to be determined in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*.

E15 Each regulated structure must be maintained and operated in a manner that is consistent with the current design plan, the current operational plan, and the associated certified 'as constructed' drawings for the duration of its operational life until decommissioned and rehabilitated.

E16 The holder of this environmental authority must take reasonable and practicable control measures to prevent harm to persons, livestock or wildlife through the construction and operation of a regulated structure. Reasonable and practicable measures may include, but are not limited to:

(a) the secure use of fencing, bunding or screening; and

(b) escape arrangements for trapped livestock and fauna.

Mandatory Reporting Level

E17 The mandatory reporting level (MRL) must be marked on a regulated structure in such a way that during routine inspections of that regulated structure, it is clearly observable.

E18 The holder of this environmental authority 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.

E19 The holder of this environmental authority must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated structure.

Annual Inspection Report

E20 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

E21 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed:

(a) against the most recent hazard assessment report and design plan (or system design plan);

(b) against recommendations contained in previous annual inspection reports;

(c) against recognised regulated structure safety deficiency indicators;

(d) for changes in circumstances potentially leading to a change in hazard category;

(e) for conformance with the conditions of this environmental authority;

(f) for conformance with the 'as constructed' drawings;

(g) for the adequacy of the available storage in each regulated structure, 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 regulated structure (or network of linked containment systems); and

(h) for evidence of conformance with the current operational plan.

E22 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.

E23 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*.

E24 The holder of this environmental authority must:

(a) upon receipt of the annual inspection report, consider the report and its recommendations and take action to ensure that the regulated structure will safely perform its intended function; and

(b) within twenty (20) business days of receipt of the annual inspection report, notify the administering authority in writing, of the recommendations of the inspection report and the actions being taken to ensure the integrity of each regulated structure.

E25 A copy of the annual inspection report must be provided to the administering authority upon request within ten (10) business days.

Design Storage Allowance

E26 On 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 DSA volume for the regulated structure (or network of linked containment systems).

E27 The holder of this environmental authority 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.

E28 The holder of this environmental authority 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.

Performance Review

E29 The holder of this environmental authority 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.

E30 The holder of this environmental authority must take action to modify its water management or linked containment system so as to ensure that the regulated structure or linked containment system will perform in accordance with the requirements of this environmental authority, for the subsequent November to May period.

Transfer Arrangements

E31 The holder of this environmental authority must provide a copy of any reports, documentation and certifications prepared under this environmental authority, including but not limited to any Register of Regulated Structures, hazard assessment, design plan and other supporting documentation, to a new holder of this environmental authority and the administering authority on transfer of this environmental authority.

Decommissioning and Rehabilitation

E32 Prior to the cessation of the mining activity, each regulated structure must be decommissioned such that:

(a) ongoing environmental harm is minimised by the regulated structure by:

(i) becoming a safe site for humans and animals at the completion of rehabilitation;

(ii) becoming a stable landform, that no longer contains flowable substances and minimises erosion impacts;

(iii) not allowing for acid mine drainage; and

(iv) being approved or authorised under relevant legislation for a beneficial use; or

(v) being a void authorised by the administering authority to remain after decommissioning.

(b) the regulated structure is compliant with all other relevant rehabilitation requirements of this environmental authority.

Regulated Structures Location and Performance

E33 Each regulated structure named in column 1 of Schedule E – Table E1 (Location of Regulated Structures) must be wholly located within the control points noted in columns 2 and 3 of Schedule E -Table E1 (Location of Regulated Structures).

E34 Each regulated structure named in column 1 of Schedule E — Table E2 (Basic Details of Regulated Structures), must be consistent with the details noted in columns 2 through to and including column 7 of Schedule E — Table E2 (Basic Details of Regulated Structures).

E35 Each regulated structure named in column 1 of Schedule E – Table E3 (Hydraulic Performance of Regulated Structures), must meet the hydraulic performance criteria noted in columns 2 through to and including column 4 of Schedule E – Table E3 (Hydraulic Performance of Regulated Structures).

Schedule E – Table E3 (Hydraulic Performance of Regulated Structures)

Column 1	Column 2	Column 3	Column 4
Name of Regulated Structure	**Spillway Capacity**	**Design Storage Allowance**	**Mandatory Reporting Level**
Process water pond	TBA[1]	TBA[1]	TBA[1]
Run off dam	TBA[1]	TBA[1]	TBA[1]
Waste Rock and Dried Process Residue Disposal Structure	TBA[1]	TBA[1]	TBA[1]

1. Detail to be provided to the administering authority in accordance with condition E36 and to be determined in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*

E36 Where 'TBA' is referenced within Table E1 (Location of Regulated Structures), Table E2 (Basic Details of Regulated Structures) and Table E3 (Hydraulic Performance of Regulated Structures), details must be provided prior to the construction of the regulated structures via an environmental authority amendment application.

END OF CONDITIONS FOR SCHEDULE E

SCHEDULE F - SEWAGE

F1 The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in Schedule F - Table F1 (Contaminant release limits to land).

Schedule F – Table F1 (Contaminant release limits to land)

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
Total Nitrogen	mg/L	30	Maximum	Monthly
Total Phosphorus	mg/L	15	Maximum	Monthly
E Coli	Organisms/100ml	1000	Maximum	Monthly
pH	pH units	6.0-9.0	Range	Monthly

F2 Treated sewage effluent may only be released to land in accordance with the conditions of this approval:

(a) Within the nominated area(s) identified in Schedule J - Figure 3 (Sewage Treatment Plant and Effluent Disposal); and

(b) On other land for the purpose of dust suppression and/or fire fighting.

F3 The application of treated effluent to land must be carried out in a manner such that:

(a) Vegetation is not damaged

(b) There is no surface ponding of effluent

(c) There is no run off of effluent.

F4 If areas irrigated with effluent are accessible to employees or the general public, prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.

F5 All sewage effluent released to land must be monitored at the frequency and for the parameters specified in Schedule F – Table F1 (Contaminants release limits to land).

F6 The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.

F7 When circumstances prevent the irrigation or beneficial reused of treated sewage effluent such as during or following rain events, waters must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent.

F8 A minimum area of three (3) hectares of land, excluding any necessary buffer zones, must be utilised for the irrigation and/or beneficial reuse of treated sewage effluent.

F9 Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty under section 319 of the *Environmental Protection Act 1994* whilst using the treated sewage effluent.

F10 Sewage treatment infrastructure must be fitted with stand-by pumps and pump-failure alarms as well as high level alarms to warn of imminent overflow.

END OF CONDITIONS FOR SCHEDULE F

SCHEDULE G - WASTE

General

G1 All general and regulated waste other than authorised under condition G2 will be removed from the licenced place to a facility that is lawfully able to accept the waste.

G2 The only waste that can be disposed at the licenced place is waste generated from the North Queensland Tungsten Pty Ltd operation and is limited to:

(a) Waste rock;

(b) Dried process residue; and

(c) Incinerated explosive boxes.

G3 Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.

G4 The holder of this environmental authority may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.

Tyre Storage and Disposal

G5 Tyres stored awaiting disposal or transport for take-back and recycling or waste-to-energy options – must be stockpiled in volumes and managed to reduce environmental harm.

G6 Fire prevention measures must be implemented including the removal of all combustible materials, including grass and vegetation, within a 10m radius of any tyre storage area.

Waste Rock and Dried Process Residue Disposal

G7 The holder of this environmental authority must develop and implement a waste rock and dried process residue disposal management plan.

These procedures must include provisions for:

(a) containment of dried process residue;

(b) the management of seepage and leachates both during operation and the foreseeable future;

(c) the control of fugitive emissions to air;

(d) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of dried process residue disposal;

(e) maintaining records of the relative locations of any other waste stored within the dried process residue disposal;

(f) rehabilitation strategy;

(g) monitoring of rehabilitation, research and/or trails to verify the requirements and methods for decommissioning and final rehabilitation of dried process residue disposal, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.

G8 Waste rock and dried process residue disposal must not occur on the licensed place unless the environmental authority holder has submitted to the administering authority a Waste Rock and Dried Process Residue Disposal Management Plan.

G9 The waste rock and dried process residue disposal Management Plan required in condition G10 must be independently certified by a Registered Professional Engineer of Queensland (RPEQ) who has a minimum of ten (10) years of demonstrated expertise in the design and rehabilitation of waste rock dumps in Queensland.

G10 The waste rock and dried process residue disposal management plan must be certified by an appropriately qualified person, to ensure the plan has addressed the requirements of this environmental authority in accordance with best practice environmental management.

G11 The wet season waste rock and dried process residue disposal structure cover must be constructed and managed to prevent the infiltration of water into the waste rock and dried process residue disposal structure.

Mineral Concentrate Storage and Handling

G12 Mineral concentrate storage, handling and loading facilities must be constructed, maintained and operated in a manner that prevents any unauthorised release of contaminants to the receiving environment.

END OF CONDITIONS FOR SCHEDULE G

SCHEDULE H – NOISE AND VIBRATION

Noise and Vibration

H1 The holder of this environmental authority must ensure that noise and vibration from the mining activity does not cause environmental harm beyond the boundary of the licenced place.

END OF CONDITIONS FOR SCHEDULE H

SCHEDULE I – DEFINITIONS

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.

"80th percentile of reference" must be determined in accordance with QWQG (2009) and ANZECC (2000) methodology. Reference sites are specified in Schedule D - Table D4 (Receiving Waters Monitoring Locations).

"administering authority" means:

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

(b) for another matter - the chief executive.

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

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

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

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

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

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

(a) exactly what has been assessed and the precise nature of that determination;

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

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

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

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

(a) operations of any kind and all things constructed, erected or installed for that dam; and

(b) any land used for those operations.

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

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

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

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

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

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

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

"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 (eg via spillway).

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

'dried process residue" means the thickened and filtered tailings that are produced as a result of processing ore.

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

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

"flow event" in regards to receiving waters, means stream flow resulting in the flux of waters between permanent pools in Gunpowder Creek adjacent to the mining activities.

"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.

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

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

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

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

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

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

“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.

"low hazard dam" means any dam that is not a high or significant hazard category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*; and

"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* published by the administering authority.

“major anions” in regards to water quality monitoring, includes at minimum the carbonate ion (CO_3^{2-}), bicarbonate ion (HCO_3^-) and chloride ion (Cl^-).

“major cations” in regards to water quality monitoring, includes at minimum the sodium ion (Na+), potassium ion (K+), magnesium ion (Mg^2+) and calcium ion (Ca^2+).

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

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

(a) clay if mined for use for its ceramic properties, kaolin and bentonite;

(b) magnetite;

(c) metal or metalloid compounds, including but not limited to compounds containing gold, copper, silver, lead, nickel, and zinc.

(d) foundry sand;

(e) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil therefrom;

(f) limestone if mined for use for its chemical properties;

(g) marble;

(h) mineral oil or gas extracted or produced from shale or coal by in situ processes;

(i) peat;

(j) salt including brine;

(k) shale from which mineral oil may be extracted or produced;

(l) silica, including silica sand, if mined for use for its chemical properties;

(m) rock mined in block or slab form for building or monumental purposes;

but does not include—

(n) living matter;

(o) petroleum within the meaning of the *Petroleum Act 1923*;

(p) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form;

(q) water.

"operational plan" for a dam means a document that amongst other things sets out procedures and criteria to be used for operating a dam during a particular time period. The operational plan as defined herein may form part of a plan of operations or plan otherwise required in legislation.

"prescribed native wildlife" for the purposes of this environmental authority, means native wildlife (including plants) listed as near threatened, vulnerable or endangered, under the *Nature Conservation (Wildlife) Regulation 2006.*

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

"receiving environment" in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. In relation to releases as defined in this environmental authority, the receiving environment can be further defined as any waters beyond the boundary of ML4867 AND/OR ML4919.

"reference site" specified in Schedule D - Table D3 (Receiving Waters Monitoring Locations).

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

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

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

"sensitive place" means;

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

"spotter/catcher" means a person who holds a rehabilitation permit in accordance with section 207 of the *Nature Conservation (Wildlife Management) Regulation 2006* for the purpose of care and rehabilitation of a sick, injured or orphaned protected animal, or a protected animal whose habitat has been, or will be, destroyed by human activity or a natural disaster.

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

“structure” means dam or levee.

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

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

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

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

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

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

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

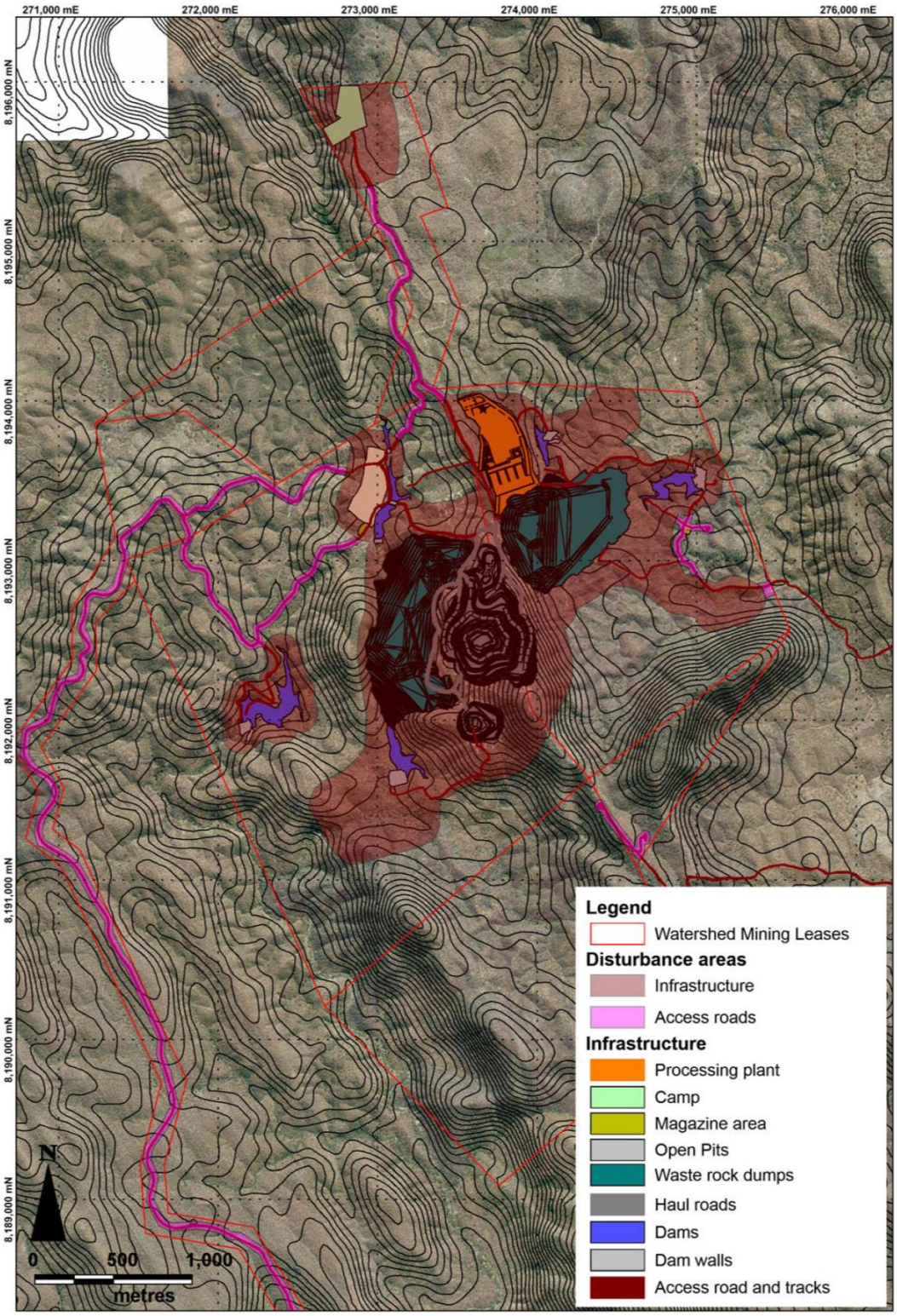
“water table level” means the top of the saturated zone of an unconfined aquifer (in m AHD), the standing water level.

“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.

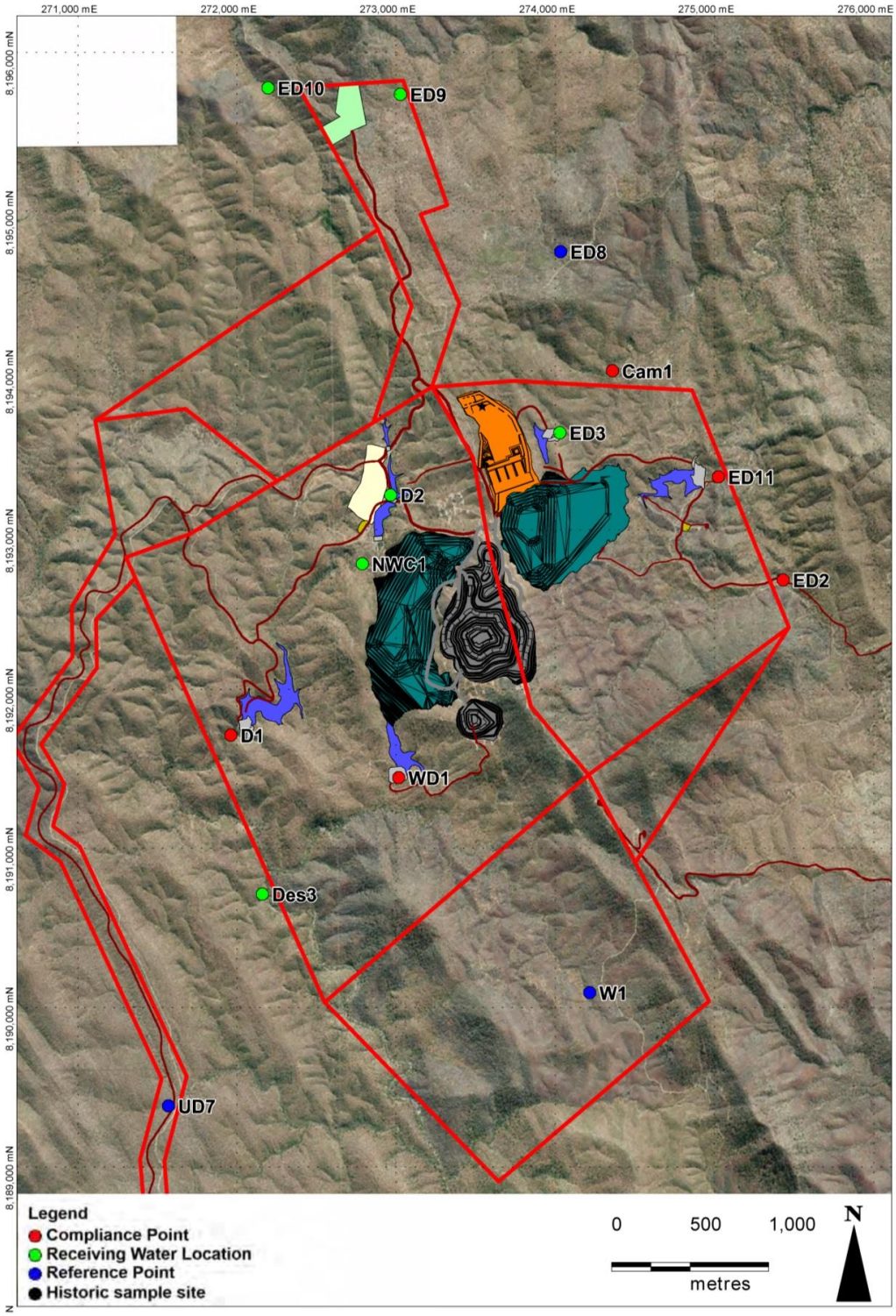
END OF CONDITIONS FOR SCHEDULE I

SCHEDULE J – APPROVED PLANS

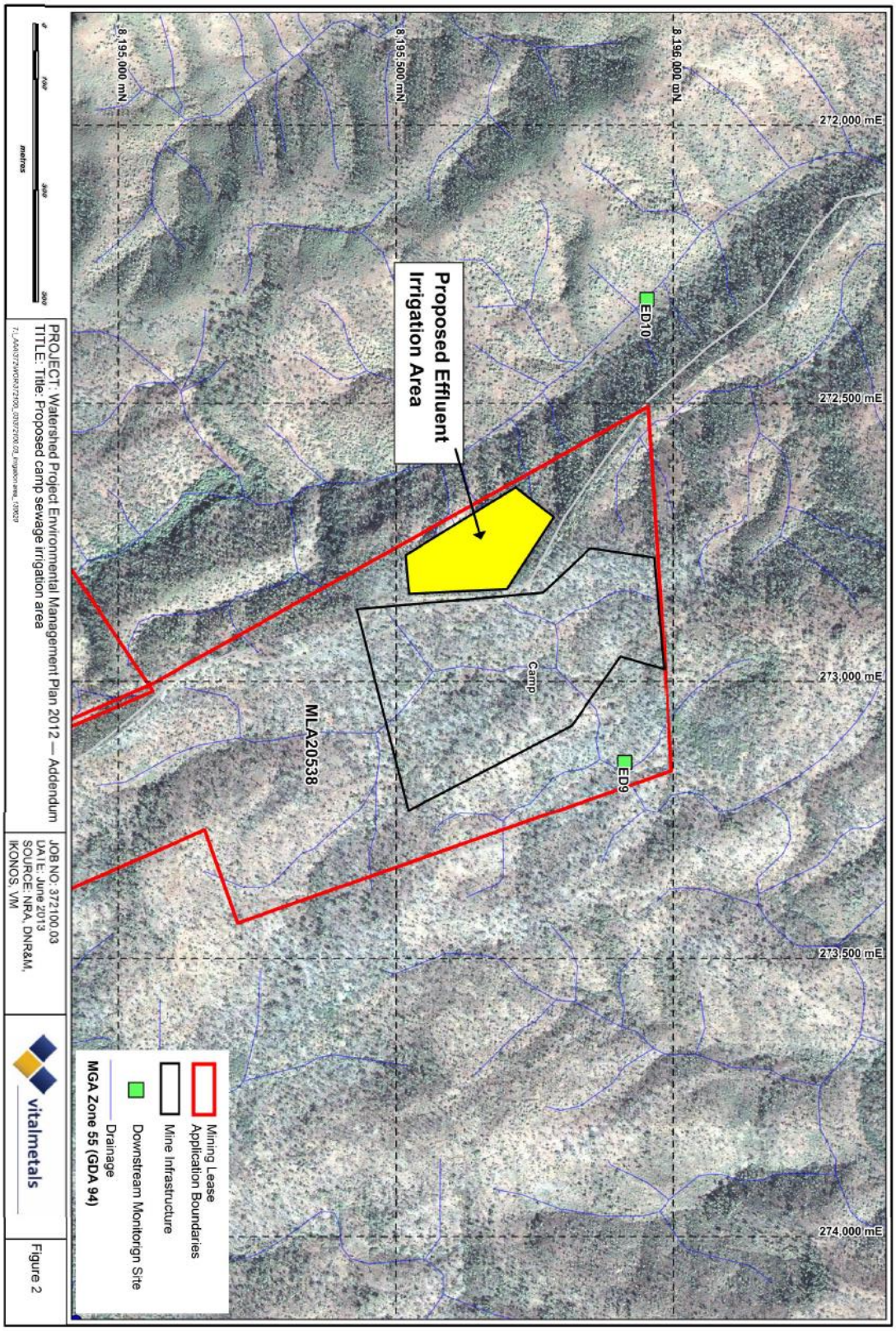
Schedule J – Figure 1 (Project Infrastructure Layout)



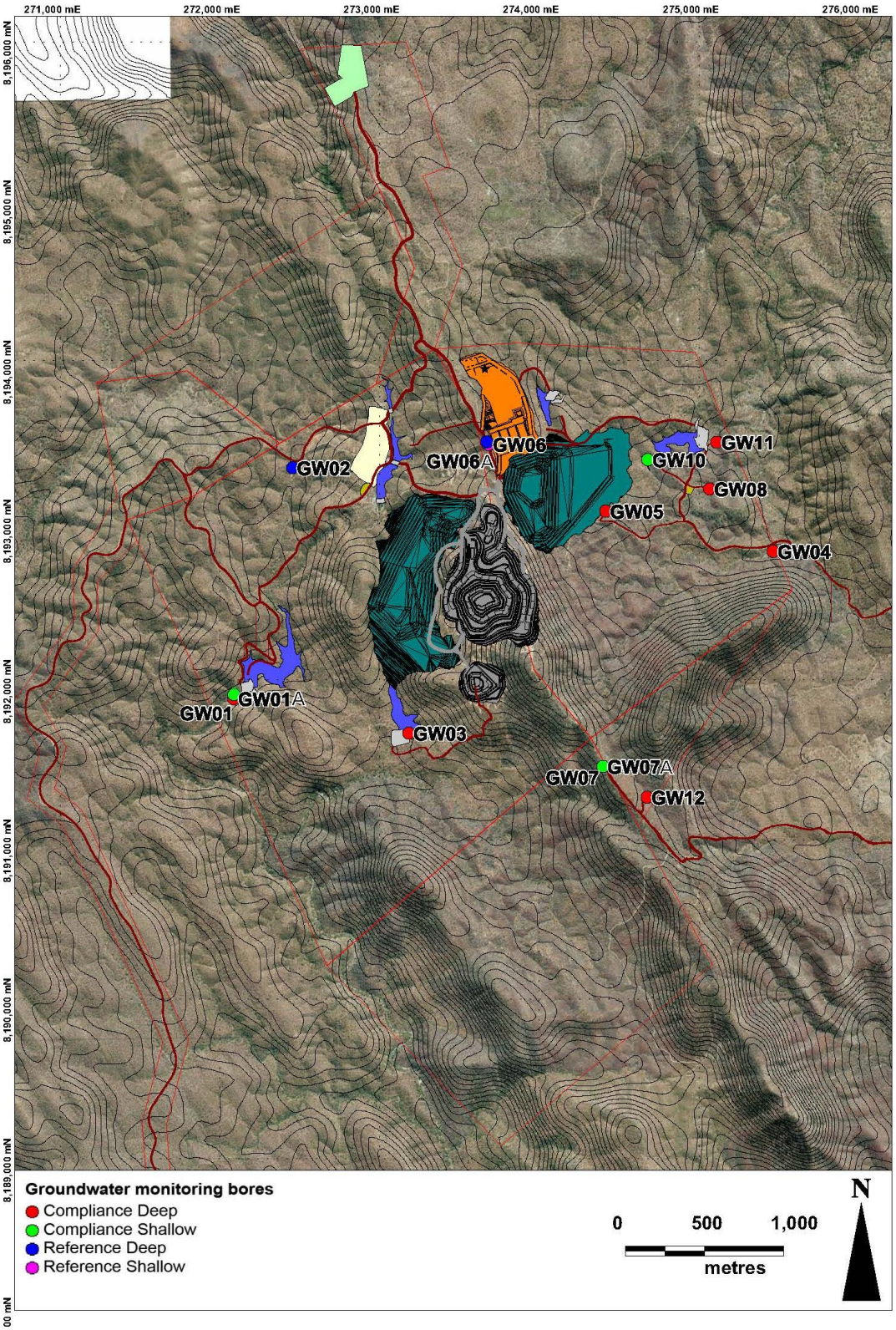
Schedule J - Figure 2 (Monitoring Locations)



Schedule J - Figure 3 (Sewage Treatment Plant and Effluent Disposal)



Schedule J – Figure 4 (Groundwater Monitoring Locations)



END OF PERMIT