

Permit

Environmental Protection Act 1994

Environmental authority EPML00502913

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

Environmental authority number: EPML00502913

Environmental authority takes effect on 06 February 2015.

The anniversary date of this environmental authority is 06 February each year.

Environmental authority holder(s)

Name(s)	Registered address
QPHOS PTY LTD	Level 1 261 Queen Street BRISBANE QLD 4001

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Ancillary 60 - Waste disposal - 2(a) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) - less than 2000t	ML90191
Schedule 3 - 21 - A mining activity that is an ineligible ERA, other than a mining activity mentioned in items 9 to 20	ML90191

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

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

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

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

The anniversary day of this environmental authority is the same day each year as the original take effect date unless you apply to change the anniversary day. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

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

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

Permits and Licensing/Operational Support
Department of Environment Science
GPO Box 2454, Brisbane QLD 4001
Phone: 1300 130 372 (Option 4)
Email: palm@des.qld.gov.au

Privacy statement

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able to take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

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duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Conditions of environmental **authority**

Location: Paradise North DSO Mine, approximately 135 kilometres north, north-west of Mount Isa
ML90191

Relevant activities:

ERA number	ERA description (refer to Schedule 2, <i>Environmental Protection Regulation 2008</i>)	Aggregate environmental score
60(2)(a)	Waste disposal - operating a facility for disposing of, in a year, the following quantity of general waste - 50t to 2000t	13
ERA number	ERA description (refer to Schedule 6, <i>Environmental Protection Regulation 2008</i>)	Aggregate environmental score
Mining— ML other — 2Q Site Specific	Mining activities that are ineligible ERAs, other than mining activities mentioned in items 9 to 19	136

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

This environmental authority incorporates the following schedules:

- Schedule A General
- Schedule B Air
- Schedule C Water
- Schedule D Noise & Vibration
- Schedule E Waste
- Schedule F Land
- Schedule G Definitions
- Schedule H Maps/Plans

Schedule A - General

Activity

- A1 This environmental authority does not authorise environmental harm unless a condition contained within this authority explicitly authorises that harm. Where there is not a condition or the environmental authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.
- A2 The environmental authority holder 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 condition;
 - c) operate such measures, plant and equipment in a proper manner.
- A3 No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration increases, or is likely to increase, the risk of environmental harm caused by the mining activities.
- A4 All instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority must be calibrated, and appropriately operated and maintained.
- A5 Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available these records any time in the form requested by the administering authority.
- A6 Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
- A7 All analyses and tests required to be conducted under this environmental authority must be carried out by a laboratory that has NATA certification for such analyses and tests, except as otherwise authorised by the administering authority.

Risk management

- A8 The environmental authority holder must develop and implement a risk management system for mining activities which conforms to the Australian Standard for Risk Management (AS/NZ 4360:2004) or the latest edition of the Australian Standard for Risk Management.

Financial assurance

- A9 Prior to the commencement of mining activities under this environmental authority, the environmental authority holder must provide a financial assurance of an amount and in a form determined in accordance with the Queensland Department of Environment and Resource Management Guideline "*Financial assurance for mining activities*", as approved and requested by the administering authority.
- A10 The financial assurance must remain in force until the administering authority notifies the holder of this environmental authority that it is satisfied that no claim on the assurance will be required.

Emergency **response** / contingency planning

- All An emergency response/contingency plan must be developed and contained within the current plan of operations and must be implemented to respond to emergency events and incidents.
- A12 The emergency response/contingency plan required under condition All must address the following matters as a minimum:

- a) response procedures to be implemented to prevent environmental harm arising from emergency events and incidents;
- b) response procedures to minimise the extent and duration of environmental harm caused by emergency events and incidents;
- c) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused by the emergency events and incidents;
- d) the resources to be used in response to an emergency events or incidents;
- e) procedures to investigate the cause of any emergency events and incidents, including releases of contaminants off site, and where necessary, implement remedial actions to reduce the likelihood of recurrence of similar events;
- f) the provision and availability of documented procedures to staff attending any emergency events and incidents to enable them to effectively respond;
- g) training of staff that will be called upon to respond to emergency events or incidents to enable them to effectively respond;
- h) timely and accurate reporting of the circumstance and nature of emergency events and incidents to the administering authority in accordance with conditions A13 to A15;
- i) procedures for accessing monitoring points during incidents; and
- j) procedures to notify any person who may be affected by the event within 24 hours of the occurrence with the following information to be provided at a minimum:
 - (i) the location of the release;
 - (ii) the date and time of the release;
 - (iii) the estimated quantity and type of any substances (if available concentrations) involved in the emergency event or incident; and
 - (iv) the potential impacts to environmental values caused by the release.

Notification of emergencies, incidents and exceptions

- A13 The authority holder must notify the administering authority of the following events by telephone or facsimile as soon as possible (no later than six (6) hours) after becoming aware of:
- a) 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; or
 - b) any monitoring result that indicates an exceedance of any environmental authority limit.
- A14 The notification in condition A13 must include, but not be limited to, the following:
- a) the environmental authority number and name of the holder;
 - b) the name and telephone number of the designated contact person;
 - c) the location of the emergency event, incident or exceedance;
 - d) the date and time of the emergency event, incident or exceedance;
 - e) the time the holder of the environmental authority became aware of the emergency event, incident or exceedance;
 - f) the estimated quantity and type of substances involved in the emergency event, incident or exceedance;
 - g) the actual or potential cause of the emergency event, incident or exceedance;
 - h) a description of the nature and effects of the emergency event, incident or exceedance, including any environmental risks, any risks to public health and any risks to livestock;
 - i) immediate actions taken to prevent or mitigate any further environmental harm caused by the emergency event, incident or exceedance; and
 - j) what notification of persons who may be affected by the event has occurred and/or is being undertaken.
- A15 Within fourteen (14) days following the initial notification of an emergency event, incident or exceedance further written advice must be provided to the administering authority, including the following:
- a) results and interpretation of any samples taken and analysed;
 - b) outcomes of actions taken at the time to prevent unlawful environmental harm; and
 - c) proposed actions to prevent a recurrence of the emergency event, incident or exceedance.

Complaints

A16 Records must be kept of all environmental complaints received about the mining activities 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 complaint;
- g) any abatement measures implemented; and
- h) person responsible for resolving the complaint

This information must be made available for inspection by the administering authority on request.

A17 When requested by the administering authority, the environmental authority holder must undertake relevant specified monitoring within a period of 4 weeks to investigate any complaint of environmental harm at any sensitive place or commercial place. The results of the *investigation* (including an analysis and interpretation of the monitoring results) and abatement measures implemented must be provided to the administering authority within fourteen (14) days of completion of the investigation.

Third party auditing

A18 Compliance with the conditions of this environmental authority must be audited by an appropriately qualified third party auditor, within one year of the submission of the first plan of operations and again each year of operation afterwards.

A19 Upon receipt of the final third party audit report, the environmental authority holder must submit a copy to the administering authority.

A20 The third party auditor must certify the independent findings of the audit in the report.

A21 The financial cost of the third party audit is the responsibility of the holder of this environmental authority.

A22 The holder of this environmental authority must immediately act upon any recommendations arising from the audit report by:

- a) investigating any non-compliance issues identified; and
- b) as soon as practicable, implementing measures or taking necessary action to ensure compliance with the requirements of this environmental authority.

A23 Subject to condition A22, and not more than three (3) months following the submission of the audit report to the administering authority, the holder of this environmental authority must provide a written report to the administering authority addressing the:

- a) actions taken by the holder to ensure compliance with this environmental authority; and
- b) actions taken to prevent a recurrence of any non-compliance issues identified.

Transitions to new standards

A24 Where a condition requires compliance with a standard published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority the holder must:

- a) comply with the amended or changed standard within 2 years, unless a different period is specified in the amended standard or relevant legislation; and
- b) Until compliance with the amended or changed standard can be achieved, continue to remain in compliance with the standard that was current immediately prior to the relevant amendment or change.

Exploration

- A25 All exploration activities carried out on the mining leases must comply with each of the Standard Environmental Conditions contained in the most recent version of the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

Cultural heritage

- A26 In the carrying out of the mining activity the holder of this environmental authority must not adversely impact on the cultural heritage values of any place registered on the Queensland Heritage Register.

Schedule B - Air

General

- B1 The release of noxious or offensive odour or any other airborne contaminant resulting from the mining activities must not cause environmental harm at any sensitive place or commercial place.

Nuisance

- B2 When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- B3 The environmental authority holder must ensure that dust generated by the mining activities does not cause any of the following criteria at any sensitive place or commercial place to be exceeded:
- 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 AS 3580.10.1 *Methods of sampling and analysis of ambient air — Determination of particulate matter - Deposited matter - Gravimetric method*;
 - b) total suspended particulates (TSP) of 130 micrograms per cubic metre expressed as a 24 hour average, when monitored in accordance with any method for measuring TSP recommended in the latest edition of the administering authority *Air Quality Sampling Manual*.
 - c) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 150 micrograms per cubic meter over a 24 hour averaging time, when monitored in accordance with the most recent version of Australian Standard AS 3580.9.6 *Determination of suspended particulate matter — PM10 high volume sampler with size selective inlet - Gravimetric method*.
 - d) total suspended particulates (TSP) of 200 micrograms per cubic metre expressed as a one hour average, when monitored in accordance with any method for measuring TSP recommended in the latest edition of the administering authority's *Air Quality Sampling Manual*.
- B4 If monitoring indicates the limits in condition B3 have been exceeded, the environmental authority holder must undertake an investigation to identify the cause of the exceedance. If the exceedance is found to be attributable to the mining activities, the environmental authority holder must implement dust abatement measures so that emissions of dust generated by the mining activities do not exceed limits listed in condition B3.

Ore Transport

- B5 The environmental authority holder must take all action necessary to secure loads (ie. ore) prior to transporting materials off site to ensure emissions or spillage of any material from vehicles or other transport infrastructure does not occur.

Weather station

- B6 The environmental authority holder must establish an automatic weather station to continuously measure and record wind speed, wind direction, temperature and rainfall.
- B7 The automatic weather station must be installed in accordance with the latest edition of the Bureau of Meteorology guideline Observation specifications No.20a 3.1 Guidelines for the positioning and exposure of meteorological instruments and observing facilities.

Schedule C - Water

Release to waters

- C1 Contaminants must not be released directly or indirectly to any waters.

Receiving environment monitoring program (REMP)

- C2 A REMP must be developed, implemented and included in the plan of operations, to monitor and record the effects of the mining activities on the receiving environment, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving waters. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.

For the purposes of the REMP, the receiving environment is the waters of the Thornton River catchment.

- C3 The REMP must address (but not necessarily be limited to) the following:
- a) description of potentially affected receiving waters (surface waters and groundwaters) including key communities and reference water quality and sediment characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality); and
 - b) description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the Environmental Protection (Water) Policy 2008); and
 - c) any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed; and
 - d) clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP.
 - e) monitoring for any potential adverse environmental impacts caused by the mining activities;
 - f) monitoring of stream flow and hydrology;
 - g) monitoring of toxicants including heavy metals should consider assess the extent of the compliance of concentrations with water quality objectives and the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems;
 - h) monitoring of physical chemical parameters including pH, electrical conductivity, dissolved oxygen, total suspended solids, turbidity and nutrients.
 - i) monitoring biological indicators (for macroinvertebrates in accordance with the AusRivas methodology) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 *Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages;
 - j) the locations of monitoring points which are reference/upstream and downstream of the mining activities;
 - k) the frequency or scheduling of sampling and analysis sufficient to determine site specific reference values within 2 years (depending on wet season flows) in accordance with the *Queensland Water Quality Guidelines* 2006. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;
 - l) specify sampling and analysis methods and quality assurance and control;
 - m) any historical datasets to be relied upon;
 - n) description of the statistical basis on which conclusions are drawn; and
 - o) any spatial and temporal controls to exclude potential confounding factors.
- C4 A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions C3 must be prepared and submitted in writing to the administering authority within 2 years of the submission of the first plan of operations for the project.

Monitoring of Water Storage Quality

- C5 Water storages stated in Table C1 (Water storage monitoring) must be monitored for the water quality characteristics specified in Table C2 (On site water storage contaminant limits) at the monitoring locations and at the monitoring frequency specified in Table C1.
- C6 In the event that waters storages defined in Table C1 exceed the contaminant limits defined in Table C2, the holder of the environmental authority must implement measures to prevent access to waters by all livestock and minimise access by native fauna.

Table C1 (Water storage monitoring)

Water Storage Description (as per EMPlan)	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Monitoring Location	Frequency of Monitoring
Environmental dam 1	7835404	301863	within impoundment	Quarterly
Environmental dam 2	7835912	302100	within impoundment	Quarterly
Environmental dam 3	7836700	301376	within impoundment	Quarterly
<i>Sediment</i> dam 1	7836485	301318	within impoundment	Quarterly
Sediment dam 2	7836762	302210	within impoundment	Quarterly
Sediment dam 3	7836700	301215	within impoundment	Quarterly
Sediment dam 4	7836130	301372	within impoundment	Quarterly
Sediment dam 5	7835742	301537	within impoundment	Quarterly
Sediment dam 6	7835400	301535	within impoundment	Quarterly

Table C2 (Onsite water storage contaminant limits)

Parameter	Unit	Test Value	Contaminant Limit
pH	pH unit	Acceptable range	Greater than 5, less than 9 ¹
EC	µS/cm	Maximum	5971 ¹
Sulphate	mg/L	Maximum	1000 ¹
Fluoride	mg/L	Maximum	2 ¹
Arsenic	mg/L	Maximum	0.5
Cadmium	mg/L	Maximum	0.01'
Copper	mg/L	Maximum	1 ¹
Lead	mg/L	Maximum	0.1 ¹
Nickel	mg/L	Maximum	1'
Zinc	mg/L	Maximum	20'

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

Note: Analysis for total metal concentrations.

Water monitoring

- C7 All determinations of water quality must be:
- performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;
 - made in accordance with methods prescribed in the latest edition of the monitoring and sampling manual issued by the administering authority;
 - collected from the monitoring locations nominated in this environmental authority; and
 - carried out on representative samples.

Water management plan

- C8 A water management plan must be developed, implemented and included in the plan of operations, that provides for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority.
- C9 The water management plan must be developed in accordance with the administering authority guideline for *Preparation of Water Management Plans for Mining Activities* or any updates of that document that become available from time to time and must include at least the following components:
- Contaminant source study;
 - site water balance and model;
 - water management system;
 - saline and metalliferous drainage prevention and management measures;
 - acid rock drainage prevention and management measures (if applicable);
 - emergency and contingency planning; and
 - monitoring and review.
- C10 Each year the holder of the environmental authority must undertake a review of the water management plan prior to the wet season (no later than 1 November) and a further review following the wet season (no later than 1 May the following year) to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented.

- C11 A copy of the water management plan and/or a review of the water management plan must be provided to the administering authority upon request.

Saline, acid rock, metalliferous and nutrient rich drainage

- C12 The holder of this environmental authority must ensure proper and effective measures are taken to prevent The generation and/or release of saline, acid rock, metalliferous and/or nutrient rich drainage.

Stormwater and water sediment controls

- C13 An erosion and sediment control plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to prevent erosion and the release of sediment to receiving waters and the contamination of stormwater.
- C14 The erosion and sediment control plan must be included in the plan of operations, and provides for at least the following stormwater management functions:
- a) prevent or minimise the contamination of stormwater;
 - b) diverting uncontaminated stormwater run-off around areas disturbed by mining activities or where contaminants or wastes are stored or handled;
 - c) contaminated stormwater runoff, incident rainfall and leachate is collected; and treated, reused, or released in accordance with the conditions of this environmental authority;
 - d) roofing or minimising the size of areas where contaminants or wastes are stored or handled;
 - e) using alternate materials and or processes (such as dry absorbents) to clean up spills that will minimise the generation of contaminated waters, and;
 - f) erosion and sediment control structures are placed to minimise erosion of disturbed areas and prevent the contamination of any waters.
 - g) procedures to ensure that erosion and sediment control structures are maintained and adequate storage is available in sediment dams in accordance with design criteria.
 - h) training of staff that will be responsible for maintenance and operations of sediment and erosion control structures.
- C15 Erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment and contamination of storm water.
- C16 The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.
- C17 Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to prevent the release of wastes, contaminants or materials to any stormwater drainage system or *receiving* waters.

Sewage Treatment

- C18 All sewage effluent generated at the site must be contained in holding tanks before being removed from the site by a licensed contractor and taken to a facility able to receive such wastes.
- C19 Sewage effluent must not be released to any land or waters.

Schedule D — Noise and Vibration

- D1 Noise from *the mining activity* must not cause environmental harm at any sensitive place or commercial place.
- D2 In the event of a complaint about noise from the mining activities, the noise from the mining activities must not exceed the noise limits stated in Table D1 (Noise limits).

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 _a 90,adj, 15 mins	Lesser of b/g + 3 or 48	Lesser of big + 0 or 40	Lesser of b/g + 0 or 40	Lesser of big + 0 or 40	Lesser of big + 0 or 40	Lesser of b/g + 0 or 40
L _a 90,adj, 15 mins	Lesser of big + 5 or 50	Lesser of big + 5 or 45	Lesser of b/g + 5 or 40	Lesser of b/g + 5 or 45	Lesser of b/g + 5 or 40	Lesser of big + 5 or 35
L _a 90,adj, 15 mins	Lesser of big + 10 or 55	Lesser of big + 10 or 50	Lesser of big + 5 or 45	Lesser of big + 10 or 50	Lesser of big + 10 or 45	Lesser of big + 5 or 40
Commercial place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and public holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
L _a 90,adj, 15 mins	Lesser of big + 5 or 50	Lesser of big + 0 or 45	Lesser of big + 0 or 40	Lesser of big + 3 or 43	Lesser of b/g + 0 or 40	Lesser of big + 0 or 40
L _a 90,adj, 15 mins	Lesser of big + 10 or 55	Lesser of big + 10 or 50	Lesser of big + 5 or 45	Lesser of big + 10 or 50	Lesser of big + 10 or 45	Lesser of big + 5 or 40
L _a 90,adj, 15 mins	Lesser of big + 15 or 60	Lesser of big + 15 or 55	Lesser of big + 10 or 50	Lesser of big + 15 or 55	Lesser of big + 15 or 50	Lesser of b/g + 10 or 45

b/g — background noise level.

- D3 When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- D4 Noise monitoring and recording must include the following descriptors, characteristics and matters:
- LAN T (where N equals the statistical levels of 1, 10 and 90 and T = 15 minutes);
 - Background Noise L_a, T
 - The level and frequency of occurrence of impulsive or tonal and any adjustment penalties to statistical levels;
 - Atmospheric conditions including temperature, relative humidity and wind speed and directions;

- e) Effects due to any extraneous factors such as traffic noise;
- l) Location, date and time of monitoring;
- g) If the complaint concerns low frequency noise, Max $Sp_{i,k}$; and
- h) If the complaint concerns low frequency noise, one third octave band measurements in dB(LIN) for centre frequencies in the 10 - 200 Hz range.

- D5 If monitoring indicates the limits in condition D2 have been exceeded, the environmental authority holder must undertake an investigation to identify the cause of the exceedance. If the exceedance is found to be attributable to the mining activities, the environmental authority holder must implement abatement measures so that emissions of noise generated by the mining activities do not exceed limits listed in condition D2.
- D6 The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's noise measurement manual.

Schedule E - Waste

Waste management plan

- E1 A waste management program in accordance with Part 5 of the *Environmental Protection (Waste Management) Policy 2000* must be developed, implemented and maintained for the site. The waste management program must include:
- a) a description of the mining activities that may generate waste;
 - b) the types and amounts of wastes generated by the mining activities;
 - c) a program for reusing, recycling or disposing of all wastes;
 - d) how the waste will be dealt with in accordance with the waste management hierarchy, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices in the waste management hierarchy (i.e. avoidance, reuse, recycling, energy recovery, disposal);
 - e) procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste management practices employed;
 - f) procedures for dealing with accidents, spills, and other incidents that may impact on the waste management;
 - g) details of any accredited management system employed, or planned to be employed, to deal with the waste;
 - h) how often the performance of the waste management practices will be assessed;
 - i) the indicators or other criteria on which the performance of the waste management practices will be assessed;
 - j) staff training and induction to the waste management plan.

Waste disposal facility

- E2 The only waste (other than waste rock) that is authorised to be disposed of at the site is putrescibles and domestic waste generated by the mining activities.
- E3 The wastes identified in condition E2 must only be disposed of in the waste disposal trench on mining lease 90191 and identified as "Landfill" in Schedule H — Map E1.
- E4 Putrescibles and domestic wastes deposited in the waste disposal trench must be consolidated, compacted and covered with a layer of inert material following placement of waste in the trench.
- E5 Litter control methods must be implemented at the waste disposal trench to ensure wind blown litter is not released from the waste disposal trench.
- E6 The waste disposal trench must be constructed and operated to ensure leachate is not generated including a system of diversion drains or embankments to divert stormwater away from any area where contact with wastes or contaminants may occur.
- E7 Completed waste disposal trenches must be capped with a low permeability material and compacted and contoured to effectively minimise water infiltration.
- E8 A record of the location of trenches used for waste disposal must be maintained.
- E9 Waste must not be burnt.

Regulated waste

- E10 Regulated waste must be removed and transported from the site by a person who holds a current approval to transport such wastes to a facility that is lawfully able to accept waste under the *Environmental Protection Act 1994*.

- E11 Regulated waste may be temporarily stored on site awaiting removal.
- E12 Each container of regulated waste stored awaiting movement off site must be clearly marked to identify the contents.
- E13 The regulated waste storage area must be designed so that there is more than one vehicular access point and that fire fighting equipment and resources are accessible no matter what the wind direction.
- E14 Tyres stored awaiting disposal or transport for take-back and recycling or waste-to-energy options must be stockpiled in stable stacks in volumes less than 500 equivalent passenger-tyre units (EPU), less than 3 metres in height and 200 square metres in area and at least 10m from any other tyre storage area or combustible or flammable material, including vegetation.
- E15 All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10m radius of any tyre storage area.
- E16 Where regulated waste is removed from the licensed place the holder of this environmental authority must ensure that:
- a) the removal and transport of such wastes, where it constitutes an environmentally relevant activity under the *Environmental Protection Regulation 1998*, is carried out by a person licensed for carrying out this activity to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*; and
 - b) records are kept of the following:
 - (i) the date, quantity and type of waste removed; and
 - (ii) name of the regulated waste transporters that removed the waste; and
 - (iii) the intended treatment/disposal destination of the waste.

Note: Records of documents maintained in compliance with a waste tracking system established under the *Environmental Protection Act 1994* or any other law for regulated waste will be deemed to satisfy this environmental authority condition.

- E17 If the holder of this environmental authority becomes aware that a person has removed regulated waste from the licensed place and disposed of the regulated waste in a manner which is not authorised by this environmental authority or improper or unlawful, then the holder of this environmental authority must, as soon as practicable, notify the administering authority of all relevant facts, matters and circumstances known concerning the disposal.

Waste rock

- E18 Waste rock and spoil disposal must not occur on the site unless:
- a) the holder of this environmental authority has submitted to the administering authority a waste rock and spoil disposal plan, together with the certification of an appropriately qualified person that the plan has addressed the requirements of condition E19 in accordance with best practice environmental management; and
 - b) the administering authority has approved the plan.
- E19 The waste rock and spoil disposal plan must include at least:
- a) effective characterisation of the waste rock and spoil 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 organic substances and nutrients;
 - b) a program of progressive sampling and characterisation to identify dispersive and non dispersive spoil, and the salinity, acid and alkali producing potential, metal and nutrient concentrations of waste rock;
 - c) a materials balance and disposal plan;
 - d) where relevant, a sampling program to verify encapsulation and/or placement of potentially acid forming and acid forming waste rock;

- e) how often the performance of the plan will be assessed;
- f) the indicators or other criteria on which the performance of the plan will be assessed;
- g)' rehabilitation strategy; and
- h) research trials to verify the requirements and methods for decommissioning and final rehabilitation of the placed materials, including the prevention and management of acid mine drainage, nutrient rich drainage, erosion minimisation and establishment of vegetation cover.

E20 All waste rock must be returned to the open pit at end of mine life.

Schedule F - Land

Rehabilitation

F1 Land disturbed by mining activities must be rehabilitated in accordance with Table F1 (Rehabilitation requirements) and the objectives of the Post Mine Land Use Plan required under condition F8.

Table F1 — (Rehabilitation **requirements**)

Land Unit	Tenure ID	Surface Area (Ha)	Rehabilitation Objectives		
			Post-mine Land use/Description	Post-mine Land Classification	Analogue Site Identification
Spoil Areas ¹	ML 90191	77	crazing	4	Sites to be rehabilitated to a standard nominated in the post mine land use plan developed in accordance with the conditions of this environmental authority.
Void and Ramps ²	ML 90191	19	Void	5	
Access Road	ML 90191	6	Road	5	
Infrastructure	ML 90191	15	Grazing	4	

¹ Spoil areas are identified as 'revegetated land' in Schedule H — Map E1

² Void and ramps are defined as "void" and "batter" in Schedule H — Map E1

- F2 All land subject to mining activities must be rehabilitated to:
- a stable landform and with a self-sustaining vegetation cover and species that are similar to adjoining undisturbed areas;
 - a safe landform, which is non-polluting, geo-chemically and geo-technically stable;
 - ensure that all land is reinstated to the pre-disturbed land use and suitability class;
 - ensure that the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance by mining activities; and
 - ensure that the water quality of any residual void or water bodies constructed by mining activities meets criteria for subsequent uses and does not have potential to cause environmental harm.
- F3 Maintenance of rehabilitated areas must take place to ensure and demonstrate:
- stability of landforms;
 - erosion control measures remain effective;
 - stormwater runoff and seepage from rehabilitated areas does not negatively affect the environmental values of any waters;
 - plants show healthy growth and recruitment is occurring; and
 - rehabilitated areas are free of any declared pest plants.
- F4 Rehabilitation *can* be considered *successful* when:
- the site can be managed for its designated land-use (e.g. similar to that of surrounding undisturbed areas);
 - no greater management input than for other land in the area being used for a similar purpose is required and there is evidence that the rehabilitation has been successful for at least three (3) years;
 - the rehabilitation is carried out in accordance with the goals, objectives indicators and completion criteria as specified in Table F1 (rehabilitation requirements) and in the post mine land use plan; and
 - written agreement is obtained from the landowner/holder and administering authority.
- F5 Areas that are available for rehabilitation must be identified in the current plan of operations.

- F6 Rehabilitation must commence progressively as soon as areas become available and in accordance with the plan of operations.
- F7 Topsoil and subsoils must be stripped separately and stockpiled ahead of *mining* and used in rehabilitation.
- F8 When topsoil is stored in stockpiles it should be in a manner that ensures stability. Measures must include:
- a) vegetating stockpiles; and
 - b) minimising the height of stockpiles; and
 - c) re-using stockpiles as soon as possible.
- F9 Rehabilitation will be assessed against analogue site(s) to be agreed upon with the administering authority and where possible will include species from *Eucalyptus camaldulensis*, *Eucalyptus leucophloia* and *Eucalyptus pruinosa* communities.

Pest management

- F10 In carrying out the mining activities the holder of this environmental authority must develop and implement an effective pest management program that includes but is not limited to the following:
- a) identification of pest species and infestation areas;
 - b) prevents the introduction and/or spread of pests;
 - c) control and management of pest outbreaks as a result of mining activities including measures to ensure that all vehicle movements are controlled to prevent the spread of declared weeds; and
 - d) strategies to prevent introduction of declared weeds to the mine site and surrounding areas.
- F11 A copy of the pest management program must be made available to the administering authority on request.

Post mine land use plan

- F12 The post mine land use plan must be included in the plan of operations and updated with each subsequent plan of operations, describing how the rehabilitation objectives in Table F1 (Rehabilitation requirements) will be achieved. The Post Mine Land Use Plan must include:

- a) schematic representation of final land form inclusive of drainage features;
- b) slope designs;
- c) cover design;
- d) drainage design;
- e) erosion controls proposed on reformed land;
- f) description of experimental design for monitoring of analogue and rehabilitated areas inclusive of statistical design;
- g) proposed revegetation criteria including:
 - (i) species diversity, abundance and composition,
 - (ii) projective cover,
 - (iii) dry matter production and
 - (iv) stocking rates to ensure self sustaining vegetation is maintained;
- h) proposed revegetation methods inclusive of plant species selection, re-profiling, resspreading soil, soil ameliorants/amendments, surface preparation and method of propagation;
- i) materials balance including available top soil and low permeability capping material;
- j) research program and associated milestones;
- k) geotechnical, geochemical and hydrological studies;
- l) chemical, physical and biological properties of soil and water;
- m) clear objectives and success criteria for the each land unit including establishment in accordance with outcomes stipulated in the administering authority's guideline for *Rehabilitation Requirements for Mining Projects*,
- n) measurable completion criteria for each rehabilitation indicator (for each land unit) that enables determination of rehabilitation success for each disturbance type (or land unit); and
- o) rehabilitation monitoring program which includes sufficient replication to enable statistical analysis of results at an acceptable power.

Post Closure Management Plan

- F13 A post closure management plan for the site must be developed and implemented for a nominal period of:
- a) at least thirty (30) years following final ore processing on-site; or
 - b) a shorter period if the site is proven to be geotechnically and geochemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants for the site will result in environmental harm.
- F14 The Post Closure Management Plan must include the following elements:
- a) operation and maintenance of:
 - (i) wastewater collection and reticulation systems;
 - (ii) wastewater treatment systems;
 - (iii) the groundwater monitoring network;
 - (iv) final cover systems; and
 - (v) vegetative cover.
 - b) monitoring of:
 - (i) surface water quality;
 - (ii) groundwater quality;
 - (iii) seepage rates;
 - (iv) erosion rates;
 - (v) the integrity and effectiveness of final cover systems; and
 - (vi) the health and resilience of vegetative cover.

Rehabilitation monitoring program

- F15 The holder of the environmental authority must conduct a rehabilitation monitoring program on at least a yearly basis, which must include sufficient spatial and temporal replication to enable scientifically justifiable conclusions as established under the rehabilitation program or other methodology to the satisfaction of the administering authority.

- F16 The rehabilitation monitoring program must be developed and included in the plan of operations and be implemented by a person nominated by the environmental authority holder possessing appropriate qualifications and experience in the field of mine site rehabilitation.

Storage and handling of flammable and combustible liquids

- F17 Alt explosive, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the relevant Australian Standard where such is available.
- F18 Flammable and combustible liquids, including petroleum products and associated piping and infrastructure must be stored and handles in accordance with the latest edition of Australian Standard 1940 — *The Storage and Handling of Flammable and Combustible Liquids*.
- F19 Notwithstanding the requirements of any Australian Standard, any liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land. Where no relevant Australian Standard is available, the following must be applied:
- a) storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and
 - b) All chemical product drum storages must be bunded so that the capacity of the bund is sufficient to contain at least 100% of the maximum design storage volume within the bund.
- F20 All containment systems for chemicals and flammable or combustible liquids must be designed to minimise rainfall collection within the system.
- F21 Spillage of any contaminant must be contained and rectified to prevent environmental harm.

Infrastructure

- F22 All infrastructure, mining equipment and plant erected and/or used for the mining activities, including water storage structures, must be removed from the licensed place prior to surrender, except where agreed in writing by the administering authority, landowner and the Minister administering the *Mineral Resources Act 1989*.

Contaminated land

- F23 Upon decommissioning the environmental authority holder must undertake a contaminated land assessment / investigation of the licensed place in accordance with the *administering authority's Guidelines row the Assessment & Management of Contaminated Land in Queensland*.

Residual void outcome

- F24 Residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself, and subject to any other condition within this environmental authority.
- F25 Mining voids must be managed during the operation and decommissioning phases to maximise the potential post mine beneficial uses, by consideration of the following:
- a) managing catchment into the void; and
 - b) ensuring geotechnical stability of final void.
- F26 Decommissioning strategies for the final voids must be provided in the plan of operations including the following information:

- a) management options for maximising final void water quality; and
- b) assessment of potential final void water quality.

F27 Decommissioning strategies for the final voids must be updated with each update of the plan of operations.

Schedule G - Definitions

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

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

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

“acid rock **drainage**” means any low pH waters, contaminated as a result of the mining activities.

“**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.

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

“background” means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

“commercial place” means a work place used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees’ accommodation or public roads.

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

“dam” means a containment or proposed containment whether permanent or temporary, which is designed to contain, divert or control flowable substances. However this does not include a fabricated or manufactured tank or container designed to a recognised standard.

“design plan” in the context of a dam design is the documentation required under the Code of Environmental Compliance for High Hazard Dams Containing Hazardous Waste to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, the procedures and criteria to be used for operating the dam and the decommissioning and rehabilitation objectives in terms procedures, works and outcomes at the end of dam life. The documents can include design and investigation reports, drawings, specifications and certifications.

“EC” means Electrical Conductivity.

“EMPlan” means Environmental Management Plan

“environmental authority holder” means the holder of this environmental authority.

“**equivalent passenger unit**” is a unit of measurement based on the mass of a quantity of tyres, or parts of tyres. For a quantity of tyres, or parts of tyres, each 9.5kg of the tyres or parts is equivalent to 1 equivalent passenger unit.

“flowable substance” means matter or mixture of materials which can be forced to or otherwise flow under any conditions possible in a situation. It includes water, other liquids or a mixture that includes water or any other liquid or suspended solids.

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

“infrastructure” means water storage 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.

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

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

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

“mandatory reporting level” means the volume below the spillway crest, equivalent to the lower of the AEP, 72 hour storm or the AEP wave allowance (AEP is the annual exceedance probability).

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

“metaliferous mine drainage” means any waters, contaminated with metals / metalloids or other contaminants as a result of the mining activities.

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

- (a) clay if mined for use for its ceramic properties, kaolin and bentonite;
- (b) foundry sand;
- (c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil there from;
- (d) limestone if mined for use for its chemical properties;
- (e) marble;
- (f) mineral oil or gas extracted or produced from shale or coal by in situ processes;
- (g) peat;
- (h) salt including brine;
- (i) shale from which mineral oil may be extracted or produced;
- (j) silica, including silica sand, if mined for use for its chemical properties;
- (k) rock mined in block or slab form for building or monumental purposes;

but does not include—

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

“NATA” means National Association of Testing Authorities, Australia.

“natural flow” means the flow of water through waters caused by nature.

“offensive” means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

“oxide ore” means fully oxidised rock which has no acid forming potential.

“ore or waste rock characterised as having acid forming **potential**” means any rock with either a Net Acid Producing Potential of greater than 5 kg of H₂SO₄/tonne or a Net Acid Generation oxidation pH of less than 4.5 (pH unit).

“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 millimeters/second (mms⁻¹).

“protected area” means - a protected area under the *Nature Conservation Act 1992*, or

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

“**progressive** rehabilitation” means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

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

“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.

“**receiving environment**” means all groundwater, surface water, land, and sediments that are not disturbed areas authorised by this environmental authority.

“**receiving waters**” means all groundwater and surface water that are not disturbed areas authorised by this environmental authority.

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

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

“self sustaining” means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

“**sensitive place**” means;

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- an educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area; or
- a public park or gardens.

“significant disturbance” - includes land;

- (a) if it is contaminated land; or
- (b) it has been disturbed and human intervention is needed to rehabilitate it;
 - i. to a state required under the relevant environmental authority; or
 - ii. if the environmental authority does not require the land to be rehabilitated to a particular state - to its state immediately before the disturbance.

Some examples of disturbed land include:

- areas where soil has been compacted, removed, covered, exposed or stockpiled;
areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion; (vegetation & topsoil)
areas where land use suitability or capability has been diminished;
- areas within a watercourse, waterway, wetland or lake where mining activities occur;
- areas submerged by tailings or hazardous contaminant storage and dam walls in all cases;
areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after mining activities have ceased; or
- areas where land has been contaminated and a suitability statement has not been issued.

However, the following areas are not included:

- areas off lease (e.g. roads or tracks which provide access to the mining lease);
- areas previously significantly disturbed which have achieved the rehabilitation outcomes;
- by agreement with the EPA, areas previously significantly disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner. The agreement to leave permanent infrastructure must be recorded in the Landowner Agreement and lodged with the EPA;
- disturbances that pre-existed the grant of the tenure unless those areas are disturbed during the term of the tenure.

"site" means the Paradise North DSO project at mining lease 90191.

"spillway" means passage or outlet from the dam through which surplus water flows.

"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.

"suitably qualified and experienced person" means a person who is a Registered Professional Engineer of Queensland under the provisions of the *Professional Engineers Act 1988* or a Corporate Member of the Institution of Engineers Australia or holds equivalent professional qualifications and has the following:

- (a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- (b) at least a total of five years of suitable experience and demonstrated expertise in at least four of the following areas:
 - investigation, design or construction of dams;
 - operation and maintenance of dams;
 - geomechanics with particular emphasis stability; 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, erosion control, beach processes;
 - hydrogeology with particular reference to seepage, groundwater, solute transport processes and monitoring thereof; or
 - dam safety.

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

"trivial harm" means environmental harm which is not material or serious environmental harm and will not cause actual or potential loss or damage to property of an amount of, or amounts totaling more than \$5,000.

"saline mine drainage" The movement of waters, contaminated with salt(s), as a result of the mining activity.

"watercourse" - Means a river, creek or stream in which water flows permanently or intermittently in a visibly defined channel (natural, artificial or artificially improved) with:

- (c) continuous bed and banks;
- (d) an extended period of flow for some months after rain ceases, and
- (e) an adequacy of flow that sustains basic ecological processes and maintains biodiversity.

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, and groundwater and any part thereof.

"water release event" means release of any waters that are or maybe contaminated by the mining activity.

Schedule H — Maps/Plans

Map E1

