Permit

Environmental Protection Act 1994

Environmental authority P-EA-100218669

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

Environmental authority number: P-EA-100218669

Environmental authority takes effect on a date to be decided later.

Environmental authority holder(s)

Name(s)	Registered address
CALDERA LITHIUM PTY LTD	18 King William St GREENWICH NSW 2065

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Non-Scheduled - Mining Activity - Exploration Permit Mineral (EPM)	EPM28262
Non-Scheduled - Mining Activity - Exploration Permit Mineral (EPM)	EPM28289

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:

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- 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

Permit and Licence Management
Department of Environment and 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 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)

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access state controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Conditions of environmental authority

Conditions of approval for this environmental authority are:

- All reasonable steps must be taken to ensure the activity complies with the eligibility criteria.
- The eligibility criteria and standard conditions contained within the attached document(s) entitled:
  - Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2

End of conditions.

END OF ENVIRONMENTAL AUTHORITY

Permit

Eligibility criteria and standard conditions for exploration and mineral development projects—Version 2

This document provides eligibility criteria and standard conditions for exploration and mineral development licence activities. Eligibility criteria are to be used for making a standard or variation application for an environmental authority. Standard conditions are to be used in an environmental authority (standard or variation application) or where necessary and desirable on an environmental authority (site specific application).

Eligibility criteria

Eligibility criteria are constraints set to ensure environmental risks associated with the operation of the environmentally relevant activity (ERA) are able to be managed by the standard conditions. Eligibility criteria set out the circumstances in which a standard or variation application for an environmental authority can be made.

Standard conditions

Standard conditions are the minimum operating requirements an environmental authority holder must comply with.

Standard applications

If an applicant can meet all of the eligibility criteria, they can make a standard application for an environmental authority that is subject to all standard conditions. Applicants are required to complete a 'Standard application form'.

Variation applications

If an applicant can meet all of the eligibility criteria but needs to vary one or more of the standard conditions to suit their operational needs, then they can make a variation application for an environmental authority. Applicants are required to complete a 'Variation application form'.

Site specific applications

Applicants who cannot meet the eligibility criteria must make a site specific application for an environmental authority. Applicants are required to complete a 'Site specific application form'.

Amendment applications

If the holder of an environmental authority needs to amend a standard condition in the issued environmental authority, then the holder must submit an ‘Amendment application form’.

Application forms

The relevant application forms can be downloaded from the Queensland Government’s Business and Industry Portal at www.business.qld.gov.au/ea.

Definitions

Some terms used in this document are defined in Appendix 2.

References to other documents

References in this document to laws, regulations, standards, policies, programs, guidelines and similar documents and instruments are to the current version of those documents and instruments, as amended or

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replaced from time to time.

Uranium mining

The Queensland Government has determined that mining activities associated with uranium do not meet the eligibility criteria for this code of environmental compliance. This determination is based on an environmental impact statement (EIS) being triggered for uranium mining activities as they are defined as the “introduction of novel or unproven resource extraction process, technology or activities”. A standard application for mining activities associated with uranium therefore cannot be made. As such a site specific application is required for all mining activities associated with uranium.

Version history

Version	Effective date	Description of changes
2.00	31 March 2016	Minor amendments to remove outdated legislative requirements and references. Publication number changed from EM586 to ESR/2016/1985.

Eligibility criteria

a) The mining activity does not, or will not, at any one time, cause more than 10ha of land to be significantly disturbed;

b) the mining activity is not, or will not be, carried out in a category A environmentally sensitive area or a category B environmentally sensitive area;

c) the mining activity is not, or will not be, carried out under an environmental authority under which either of the following is, or is to be, authorised—

   i. an environmentally relevant activity to which a section of schedule 2 of the Environmental Protection Regulation 2008 applies and for which there is an aggregate environmental score;

   ii. a resource activity, other than a mining activity, that is an ineligible ERA;

d) the mining activity is not, or will not be, carried out in a strategic environmental area, unless—

   i. the mining activity is authorised under an environmental authority for a mining activity relating to a mining claim, an environmental authority for a mining activity relating to an exploration permit or an environmental authority for a mining activity relating to a mineral development licence; or

   ii. the mining activity involves alluvial mining and is, or will be, carried out at a place that is not in a designated precinct in a strategic environmental area; or

   iii. the mining activity involves clay pit mining, dimension stone mining, hard rock mining, opal mining or shallow pit mining and is, or will be, carried out at a place that is not in a designated precinct in a strategic environmental area.

e) the mining activity does not, or will not, at any one time, cause more than 5000m^2 of land to be disturbed at a camp site;

f) no more than 20m^3 of any substance is, or will be, extracted from each kilometre of a riverine area affected by the mining activity in a year.

Standard conditions

Schedule A – General conditions
Financial Assurance
A1: The holder of the environmental authority must submit the required amount of financial assurance to the administering authority prior to carrying out any activities on the mining tenement. If the activities that are being carried out by the holder of the environmental authority are altered so as to cause a change in the category of total area of disturbance shown in Appendix 4 - Form 3: Schedule of Rehabilitation Costs, the holder of the environmental authority must submit an application to amend their financial assurance to the administering authority. If an application is lodged to transfer the environmental authority to another person or company, the proposed transferee must submit the required financial assurance prior to the transfer taking effect.
Note 1 - Financial assurance must be calculated in accordance with Form 3: Schedule of Rehabilitation Costs in Appendix 4 of this environmental authority. Note 2 - Chapter 5, Part 12, Division 2 of the *Environmental Protection Act 1994* requires that the holder of the environmental authority gives the administering authority a financial assurance in a form acceptable to the administering authority. When necessary, the holder of the environmental authority must submit an application to amend their financial assurance under section 302 of the *Environmental Protection Act 1994*. The holder of the environmental authority must lodge a single financial assurance with the District Mining Registrar, Department of Natural Resources and Mines. The financial assurance will consist of two components: (i) An amount to cover the potential costs to the Department of Environment and Heritage Protection of rehabilitating areas disturbed by mining activities should the environmental authority holder failure to do so; and (ii) An amount to cover the potential costs to the Department of Natural Resources and Mines of restoring property improvements disturbed by mining activities and the failure of the tenure holder to pay rents and royalties.
Land disturbance
A2: The holder of the environmental authority must ensure that the area and duration of disturbance to land and vegetation is minimised. Not more than 1000m^2 can be disturbed at any one location, excluding campsites.
Note 3 – To minimise the area and duration of disturbance to land and vegetation the following measures or similar measures can be used: - avoid disturbing large and/or mature trees; - select specific trees to be cleared and avoid causing damage to surrounding vegetation; - where practical leave the rootstock intact to promote regeneration and regrowth.

Note 4 – Before carrying out activities on the tenement refer to the Technical Guideline 'Good Relations with Landowners' and the Department of Mines and Energy Code of Conduct, 'Procedure for Sound Landholder/Explorer Relations'.
Air quality
A3: The holder of the environmental authority must not cause an unreasonable release of dust.
Note 5 - To prevent the unreasonable release of dust, the following measures or similar measures can be used: – altering work practices to avoid or minimise the generation of dust; – scheduling activities for times when they will have least impact; – spraying water on roads and tracks; – revegetating disturbed areas as soon as practicable; – leaving or creating wind breaks or screening; and – installing pollution control equipment (e.g. fitting bag filters or a cyclone to dust generating equipment).
Noise emissions
A4: The holder of the environmental authority must not cause unreasonable noise at a noise sensitive place.
Note 6 - To prevent causing unreasonable noise at a noise sensitive place the following measures or similar measures can be used: – construct and maintain noise barriers and enclosures around noisy equipment or along the noise transmission path; – implement noise reduction measures at noise sensitive places; – provide and maintain low noise equipment; – carry out routine maintenance on fans to minimise bearing noise; – repair or replace defective mufflers of vehicles and plant with suitable effective mufflers; and – limit the hours of operation of the project to between the hours of 7am to 6pm Monday to Saturday. Note 7 - If aircraft are being used for mining activities operate them so as to minimise disturbance to livestock (e.g. helicopters).
Erosion and Sediment Control
A5: The holder of the environmental authority must design, install and maintain adequate banks and/or diversion drains to minimise the potential for storm water runoff to enter disturbed areas.

A6: The holder of the environmental authority must design, install and maintain adequate erosion and sediment control structures wherever necessary to prevent or minimise erosion of disturbed areas and the sedimentation of any watercourse, waterway, wetland or lake.
Note 8 - When designing and constructing sediment ponds refer to the "Engineering Guidelines for Queensland Construction Sites" Soil Erosion and Sediment Control. Note 9 – Regularly clean out sediment traps, ponds and drains and maintain them in effective working order, until erosion stability has been achieved in disturbed areas. Note 10 – The capacity of sediment traps, ponds, drains and banks should not be reduced below 70% of their design capacity.
Topsoils and overburden management
A7: The holder of the environmental authority must ensure that topsoil is removed and stockpiled prior to carrying out any mining activity. Prevent or minimise the mixing and erosion of topsoil and overburden stockpiles.
Note 11 - To separate topsoil and overburden and to prevent or minimise the erosion of these stockpiles the following measures or similar measures can be used: – identify topsoil and overburden layers before stripping topsoil; – store topsoil and overburden in separate stockpiles; – install silt fences or bunding around the stockpiles; – where practical reuse topsoil stockpiles within 12 months; – establish and maintain a temporary cover crop on stockpiles; and – limit the height of topsoil stockpiles to 2 metres.
Hazardous contaminants
A8: The holder of the environmental authority must plan and conduct activities on site to prevent any potential or actual release of a hazardous contaminant.
Note 12 - Section 442 of the *Environmental Protection Act 1994* makes it an offence to release a prescribed contaminant. A prescribed contaminant is a contaminant prescribed by an Environmental Protection Policy. Note 13 - Section 443 of the *Environmental Protection Act 1994* makes it an offence to cause or allow a contaminant to be placed in a position where it could reasonably be expected to cause serious or material environmental harm or environmental nuisance.
A9: The holder of the environmental authority must ensure that spills of hazardous contaminants are cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such contaminants to any watercourse, waterway, groundwater, wetland or lake.

Note 14 - If a mining lease becomes Significantly Disturbed Land because it is contaminated, it ceases to be significantly disturbed land if a Suitability Statement is issued for the land. Refer to Chapter 7, Part 8 of the *Environmental Protection Act 1994*. Note 15 – A Site Management Plan approved under Chapter 7, Part 8 of the *Environmental Protection Act 1994* may be required by the administrating authority for sites recorded on the Environmental Management Register or the Contaminated Land Register. Such sites may include acid producing waste rock stockpiles or tailings dams containing acid producing wastes.
A10: The holder of the environmental authority must, where practical, separate acid producing waste rock from benign waste rock.
A11: The holder of the environmental authority must dispose of acid producing waste rock in an excavation or pit and backfill as soon as practical. Backfill the excavation or pit containing acid producing waste rock with benign, low permeability material and seal the excavation or pit with a compacted capping layer at least 1m thick.
Note 16 – The owner or occupier of a mining lease must notify the administering authority if they become aware that a Notifiable Activity listed in Schedule 4 of the *Environmental Protection Act 1994*, is being carried out on the land within 30 days, by giving notice to the administering authority in the approved form. For example, an exploration or mineral development project that generates waste materials that contain hazardous contaminants must notify the administrating authority that this activity is being carried out. Refer to section 371 of the *Environmental Protection Act 1994*. Note 17 – For detailed information on the management of acid mine waste material refer to the "Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland", Part B, 'Assessment and Management of Acid Drainage' and the 'Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils (ASS) in Queensland'.
Nature conservation
A12: The holder of the environmental authority must prevent the spread of Declared Plants by ensuring that all vehicles and machinery are adequately cleaned before taking the vehicles and machinery out of a Declared Plant Area.
Note 18 - Every precaution should be taken to ensure there is no dispersal of Parthenium weed or the seed of any other declared plant within the meaning of the *Land Protection (Pest and Stock Route Management) Act 2002* as a result of mining activities or as a result of access to the area of the mining tenement. Note 19 – The Department of Agriculture and Fisheries provided Pest Fact sheets for declared plants in Queensland as well as clean down procedures for vehicles and machinery working in declared plant areas. For advice on declared plant areas contact the Department of Agriculture and Fisheries or your Local Government.
A13: The holder of the environmental authority must not carry out activities in a category A or B environmentally sensitive area. Activities involving machinery must not be carried out within 1km of a category A environmentally sensitive area or within 500m of category B environmentally sensitive

area. Prior to carrying out activities in a category C environmentally sensitive area, consult with the relevant administering authority and the Environmental Protection Agency. If it is determined through the consultation that additional conditions are necessary, the holder must comply with those conditions.

Note 20 – Refer to Appendix 3 - Environmentally sensitive areas.

A14: The holder of the environmental authority must not carry out activities within 100m of a Historical, Archaeological or Ethnographic site.

Note 21 – Refer to the *Aboriginal Cultural Heritage Register* established under the *Aboriginal Cultural Heritage Act 2003* and the *Queensland Heritage Act 1992*. Prior to carrying out any activities on the mining tenement, the holder of the environmental authority should consult with the administrating authority if a site has the potential to be designated as a historical, archaeological or ethnographic site.

Prescribed environmentally relevant activities

1. **A15:** The holder of the environmental authority must not carry out the following prescribed environmentally relevant activities (ERA) on the mining tenement: ERA 61 Waste incineration and thermal treatment at threshold 1 - incinerating waste vegetation, clean paper or cardboard;
2. ERA 52 Battery Recycling – operating a facility for receiving, and recycling or reprocessing, any type of battery; and
3. ERA 59 Tyre Recycling – operating a facility on a commercial basis for receiving and recycling or receiving and reprocessing 1000 or more equivalent passenger units of tyres, or parts of tyres, in a year. (The relevant activity does not include retreading tyres).

Schedule B – Activity based conditions

Roads and tracks

B1: The holder of the environmental authority must consult with the landowner prior to establishing any new roads and tracks.

Note 22 - Refer to the Technical Guidelines in appendix 6 when planning and constructing all new roads and tracks.

Note 23 - Repair all damage to existing private roads and tracks resulting from mining activities, so that they are as trafficable as they were prior to any damage.

B2: When constructing new roads and tracks, the holder of the environmental authority must ensure that the area and duration of disturbance to land, vegetation and watercourses is minimised.

Note 24 - When planning and constructing new roads and tracks the following measures or similar measures can be used to minimise the area and duration of disturbance of land, vegetation and watercourses:

– wherever possible use or upgrade existing roads and tracks; – construct roads and tracks along natural grades; – minimise the width of roads and tracks; – minimise the number of crossings in riverine areas; – construct crossings in riverine areas in a stable section of the bed; – avoid constructing roads or tracks that run straight down the bank to the crossing; – do not disadvantage other users of existing public roads & tracks; – construct a bed level causeway, a culvert or a bridge where natural bed conditions within a watercourse will not carry the intended traffic load or where crossing of the bed will generate a significant increase in turbidity; – minimise the number of cuts and fills in riverine areas; – position cuts and fills in riverine areas to minimise risk of erosion from subsequent flood events; – position crossings to prevent flow being directed towards the banks and provide erosion resistance to the bed and banks downstream of a crossing for a distance equal to the width of the normal flow channel; – do not create any downstream or upstream drops at the lip of culverts or causeways; – regularly clean out culverts, bridges and causeways to prevent flow being impeded or redirected; and – construct in-stream crossings outside of main fish migration periods.
Campsites
B3: The holder of the environmental authority must consult with the landowner prior to establishing any campsites.
B4: When establishing a campsite, the holder of the environmental authority must ensure that the area and duration of disturbance to land, vegetation and watercourses is minimised.

Note 25 - When establishing and maintaining campsites the following measures or similar measures can be used to minimise the area and duration of disturbance to land, vegetation and watercourses:

- locate campsites at least 100m from any riverine areas;
- only disturb the minimum area necessary for the safe functioning of the campsite;
- install an appropriate human waste disposal facility (e.g. portable self-contained toilets, pit toilets, septic tanks);
- use absorption trenches, transpiration beds or spray irrigation to dispose of grey water; and
- locate all disposal areas at least 100m distance from any watercourse, waterway, groundwater recharge area, wetland or lake.

Note 26 – With regard to on site waste water management refer to the Environmental Protection (Water) Policy 2008.

Waste management

B5: The holder of the environmental authority must not directly or indirectly release waste from the project area to any watercourse, waterway, groundwater, wetland or lake.

Note 27 - When managing waste materials the following strategy should be adopted:

- avoid creating excess waste;
- reuse waste materials;
- recycle waste;
- create and utilise energy from waste;
- treat waste; and
- dispose of waste (e.g. provide rubbish containers on site).

Note 28 - Where practicable take all General Waste to a Licensed General Waste Disposal Facility.

B6: The holder of the environmental authority must not dispose of more than 50 tonnes of general waste on the mining tenement per year.

Note 29 -The holder of the environmental authority may bury up to 50 tonnes of general waste on the mining tenement per year. When burying general waste the following measures or similar measures should be used:

- locate the waste pit so as to ensure that the waste will not contaminate any watercourse, waterway, groundwater, wetland or lake;
- divert stormwater runoff from entering the pit;
- crush drums and other containers to reduce the volume of waste;
- make the pit safe and protect it from scavengers;
- backfill the pit when the level of rubbish in the pit is not less than 1m below the surface; and

- sufficiently overfill the pit to allow for settlement.

Note 30 – The holder of the environmental authority may dispose of limited regulated waste to a licensed general waste disposal facility provided the annual volume of limited regulated waste does not exceed 10% of the annual volume of general waste (e.g. tyres).

Service, Maintenance and Storage Areas

B7: The holder of the environmental authority must not directly or indirectly release fuels, oils, lubricants or other contaminants to any watercourse, waterway, groundwater, wetland or lake.

Note 31 - To prevent the direct or indirect release of fuels, lubricants or other contaminants to any watercourse, waterway, groundwater, wetland or lake the following measures or similar measures can be used:

- maintain all refuelling equipment in good working order;
- use groundsheets or drip trays to capture spillage during maintenance of machinery and vehicles;
- locate all fuel storages within an impermeable bund;
- ensure all liquid containment, including fuel tank bunds and process water ponds, have a volume at least equal to the design volume plus an additional 10% of that volume; and
- where practical, undertake all refuelling and routine maintenance of vehicles within designated service areas.

B10: The holder of the environmental authority must ensure that all chemical, fuel and oil storage facilities less than 10 000L on a mining tenement, must be designed and operated in accordance with Australian Standard 1940 – 'The storage and handling of flammable and combustible liquids', Section 2, Minor Storage.

B11: The holder of the environmental authority must ensure that:

1. all chemical, fuel and oil storage facilities of more than 10 000L on a mining tenement, must be bunded to contain at least one hundred percent of the volume of the largest container, plus twenty-five percent of the storage capacity of the largest container up to a maximum of 10,000L, together with ten percent of the storage capacity beyond 10,000L; and
2. the facility must be operated and maintained in accordance with the Australian Standard 1940 – "The Storage and Handling of flammable and combustible liquids".

Drilling, Excavating and Sampling

B12: The holder of the environmental authority must ensure:

1. all marker pegs are marked with contrasting colour so as to be clearly visible;
2. all marker pegs are removed from the tenement at the completion of exploration activities;
3. all permanent markers (example, concrete plugs or steel plates) are installed at ground level and made safe.

B13: When drilling, excavating or sampling, the holder of the environmental authority must ensure that the area and duration of disturbance to land and vegetation is minimised.

Note 32 - When drilling, excavating or sampling the following measures or similar measures can be used to minimise the area and duration of disturbance to land and vegetation:

- consider seasonal influences, such as rainfall before excavating or establishing a drill site;
- construct drill pads no larger than necessary to safely accommodate the drilling rigs and ancillary equipment;
- use excavators or backhoes wherever possible in preference to bulldozers; and
- use drilling fluids and other process fluids which are non-toxic.

Note 33 - Prior to working in riverine areas refer to the "Technical Guidelines for the Environmental Management of Mining and Exploration in Queensland", Part B, "Exploration and Mining in Watercourses".

Note 34 - Install and maintain adequate warning signs, fences and rock bunds to exclude people, livestock and native animals from excavations and shafts.

Note 35 - Provide safe access to water for livestock and native animals by:

- providing hard surfaces around water storage areas; and
- fencing off any soft areas around the edge of water storage areas.

B14: The holder of the environmental authority must not drill, excavate or clear vegetation:

1. in standing waters, wetlands or lakes; or
2. on the sloped banks or within 3m of the top of the bank or 5m of the toe of the bank; or
3. within, or on the levee banks of the normal flow channel.

Note 36 - For representative diagrams that define the different landform elements that make up a watercourse refer to Figure 1 - Cross Section Through a Watercourse and Figure 2 – Plan View of a Watercourse.

B15: The holder of the environmental authority must not directly or indirectly release wastewater to any watercourse, waterway, groundwater, wetland or lake.

Note 37 - To prevent the direct or indirect release of waste water to any watercourse, waterway or groundwater, wetland or lake the following measures or similar measures can be used:

- where practical recycle all waste water (e.g. recycle waste water for drilling water);
- use waste water for dust suppression;
- discharge waste water onto benign overburden or waste rock heaps for absorption; and
- discharge wastewater to an evaporation pond.

Note 38 - With regard to the on site management of water refer to the Environmental Protection (Water) Policy 2008.

Exploration drill holes
B16: The holder of the environmental authority must decommission all non-artesian drill holes, apart from those still required for monitoring purposes as soon as practical, but no later than 6 months after the hole was drilled by undertaking the following actions: 1. where practical dispose of all unused drill chips to the hole or to a sump pit and; 2. cap the hole at a depth that is appropriate for the previous land use of the area (unless the land owner stipulates a future use which requires the cap to be placed deeper); and 3. backfill the hole above the cap with soil or material similar to the surrounding soil or material.
Note 39 - The following depths are considered as appropriate for capping: - surface level in rock outcrops; and - at least 1m below the surface on land used for cropping; and - at least 300 mm below the surface on other land.
B17: The holder of the environmental authority must isolate non-artesian aquifers where a drill hole intersects more than one water bearing strata by casing or plugging the hole as soon as practical after the hole is no longer required, but no later than 2 months after the hole was drilled, apart from those holes that are still required for monitoring purposes if: 1. the flow difference between aquifers exceeds 500 L/hour; and 2. the difference in electrical conductivity of water is greater than 10% of the lower value.
B18: Conditions 16 and 17 do not apply to a non-artesian exploration drill hole if: 1. the land owner and the explorer have agreed that it should be left for conversion to a water bore; and 2. the landowner gives a written undertaking to accept responsibility for the hole; and 3. the details of the agreement and the drill hole (such as its GPS location and the drill logs showing the water bearing strata and flow rates) are provided to the Department of Natural Resources and Mines within 30 days of the land owner giving the undertaking; and 4. the hole is temporarily capped so as to prevent possible ingress of surface waters and associated sediments and pollutants.
Note 40 - Drill holes that are to be converted to a water bore must be done so by a licensed water bore driller.
B19: The holder of the environmental authority must ensure that exploration drill holes that strike artesian flows of water that exceeds 500 L/hour for seven days must be either:

1. decommissioned as soon as practical, but no later than 1 month after the hole was drilled, apart from holes that are still required for monitoring or evaluation purposes. Refer to Report No. SW4 – "Minimum Construction Requirements for Water Bores in Australia", (ARMCANZ 1997); or 2. capped to allow for future conversion into a controlled artesian bore by a licensed water bore driller; or 3. converted into a controlled artesian bore by a licensed water bore driller, provided that: (a) the land owner has undertaken in writing to accept responsibility for the drill hole; and (b) the explorer provides details of the agreement and the drill hole to the Department of Natural Resources and Mines within 30 days of obtaining the landowner's agreement.
Note 41 - Provisions apply under the Water Act 2000 with respect to the utilisation of ground water from boreholes in Proclaimed Areas (which include all Artesian Basin areas) and the rehabilitation of boreholes.
B20: The holder of the environmental authority must ensure that exploration drill holes that are to be retained for future mineral resource evaluation purposes are cased and capped. Holes to be retained for more than three years must be capped with steel casing and appropriately identified.
Gridlines and Geophysical Surveys
B21: The holder of the environmental authority must plan and determine the final position of gridlines and geophysical lines in consultation with the landowner.
B22: When constructing gridlines and geophysical lines, the holder of the environmental authority must ensure that the area and duration of disturbance to land and vegetation is minimised.

Note 42 - When constructing gridlines and geophysical lines the following measures or similar measures can be used to ensure that the area and duration of disturbance to land and vegetation is minimised:

- conduct surveying of gridlines on foot;
- use existing gates, tracks, roads and seismic lines;
- before deciding on the location of new seismic lines, record the location of all underground or surface pipelines, cables, power lines, etc. and avoid these areas;
- in planning for drilling and sampling activities, where possible, ensure the activities occur at least 100m from riverine areas;
- construct seismic lines that do not exceed the width necessary to safely undertake the survey;
- use Global Positioning Systems (GPS), or other techniques, to reduce the need for line of sight clearing;
- maintain buffer widths of at least 25m between all disturbed areas;
- minimise the use of bulldozers and excavators when cutting gridlines and/or seismic lines; and
- notify landowners at least 24 hours prior to detonating seismic explosives.

Monitoring, reporting and emergency response procedures

B23: The holder of the environmental authority must record and notify the administering authority of any emergency or incident which demonstrates non-compliance with the standard environmental conditions.

Note 43 - A notification of any emergency or incident which demonstrates non-compliance to the standard environmental conditions cannot be used in evidence in any further action taken by the administrating authority as a result of the notification.

Note 44 - To demonstrate ongoing compliance with the standard environmental conditions, the holder complete Form 1, ‘Monitoring and Record Keeping Summary’ and establish programs to monitor project activities and maintain monitoring records for review by the administrating authority.

Note 45 - To demonstrate compliance complete Form 2, ‘Emergency Response Table’. Provide and maintain appropriate emergency response equipment and inform all operational personnel, contractors and visitors of emergency procedures

Note 46 - Observe the provisions and regulations under the *Fire and Emergency Services Act 1990* and the *Mining and Quarrying Safety and Health Act 1999.*

Rehabilitation
B24: In Riverine Areas, the holder of the environmental authority must complete the Rehabilitation Processes on all areas disturbed by mining activities, apart from those areas currently being utilised for mining activities, as soon as practical and prior to the onset of the wet season.
Note 47 - **Condition B24** is to ensure that there is adequate erosion protection in riverine areas prior to the onset of the wet season. In Queensland the wet season is generally considered to be from November to April each year.
B25: For all other areas on the mining tenement, the holder of the environmental authority must complete the rehabilitation processes on all areas disturbed by mining activities, apart from those areas currently being utilised for mining activities, as soon as practical and at least within six months of the completion of works in those areas.
Note 48 – Where practical undertake progressive rehabilitation of disturbed areas.
B26: The holder of the environmental authority must backfill all excavations, drill holes or sampling sites as soon as practical following the completion of exploration activities.
B27: Condition B26 does not apply to any excavations, drill holes or sampling sites that are to remain after the completion of exploration activities, by agreement with the land owner.
B28: The holder of the environmental authority must rehabilitate areas disturbed by mining activities to a stable landform similar to that of surrounding undisturbed areas.
Note 49 - When rehabilitating disturbed areas refer to the “Technical Guidelines for the Environmental Management of Mining and Exploration in Queensland”, Part D, ‘Geo-technical Slope Stability’.
B29: The holder of the environmental authority must spread seeds or plant species that will promote vegetation of a similar species and density of cover to that of the surrounding undisturbed areas or vegetation that is appropriate for providing erosion control and stabilisation of the disturbed areas.
Note 50 - To revegetate disturbed areas the following measures or similar measures can be used: – for areas which have become compacted during the project, break up the soil surface to a depth – that is suitable for establishing vegetation; and – spread stockpiled topsoil over disturbed areas to a depth that is suitable as a rooting medium for – the revegetation process; and – provide suitable nutrient conditions for planting by using fertiliser if necessary; and – collect and store native seeds to be used in rehabilitation.

Note 51 - When revegetating disturbed areas, the holder of the environmental authority should plant native species endemic to the area and location in the landscape (e.g. if clearing has occurred in a riverine area, revegetate the disturbed area using local riverine species). Note 52 - Vegetation used to provide erosion protection and stabilise disturbed areas in the short term should be comprised of sterile, short-lived species (e.g. a cover crop). However, the long term aim of revegetating any disturbed area is to establish a stable vegetation community that is similar to that of the surrounding undisturbed areas or endemic species. Note 53 - The environmental authority holder is not liable for rehabilitating disturbed areas that existed prior to the grant of the tenure unless those areas are disturbed during the term of the tenure.
B30: For any Mine Infrastructure to remain after all mining activities have ceased, the holder of the environmental authority must obtain the written agreement of the land owner stating they will take over responsibility for that infrastructure.
B31: The holder of the environmental authority must complete rehabilitation of disturbed areas to the satisfaction of the administrating authority.
Note 54 - **Condition B31** is a requirement of the *Environmental Protection Act 1994*. The environmental authority holder must submit a Final Rehabilitation Report (FRR) and a compliance statement prior to the cancellation or expiry of the mining tenement. The surrender of the environmental authority will not be granted until the administrating authority has accepted the FRR and the compliance statement.

Appendix 1: General obligations under the *Environmental Protection Act 1994*

Responsibilities under the Environmental Protection Act 1994

Separate to the requirements of standard conditions, the holder of the environmental authority must also meet their obligations under the *Environmental Protection Act 1994*, and the regulations made under that Act. For example, the holder must be aware of the following provisions of the *Environmental Protection Act 1994.*

General environmental duty

Section 319 of the *Environmental Protection Act 1994* states that we all have a general environmental duty. This means that we are all responsible for the actions we take that affect the environment. We must not carry out any activity that causes or is likely to cause environmental harm unless we take all reasonable and practicable measures to prevent or minimise the harm. To decide what meets your general environmental duty, you need to think about these issues:

- the nature of the harm or potential harm
- the sensitivity of the receiving environment
- the current state of technical knowledge for the activity
- the likelihood of the successful application of the different measures to prevent or minimise environmental harm that might be taken
- the financial implications of the different measures as they would relate to the type of activity.

It is not an offence not to comply with the general environmental duty, however maintaining your general environmental duty is a defence against the following acts:

(a) an act that causes serious or material environmental harm or an environmental nuisance

(b) an act that contravenes a noise standard

(c) a deposit of a contaminant, or release of stormwater run-off, mentioned in section 440ZG. More information is available on the Department of Environment and Heritage Protection website www.ehp.qld.gov.au.

Duty to notify

Section 320 of the *Environmental Protection Act 1994* explains the duty to notify. The duty to notify applies to all persons and requires a person or company to give notice where serious or material environmental harm is caused or threatened. Notice must be given of the event, its nature and the circumstances in which the event happened. Notification can be verbal, written or by public notice depending on who is notifying and being notified.

The duty to notify arises where:

- a person carries out activities or becomes aware of an act of another person arising from or connected to those activities which causes or threatens serious or material environmental harm
- while carrying out activities a person becomes aware of the happening of one or both of the following events:
  - the activity negatively affects (or is reasonably likely to negatively affect) the water quality of an aquifer
  - the activity has caused the unauthorised connection of 2 or more aquifers.

For more information on the duty to notify requirements refer to the department's *Guideline: Duty to notify of environmental harm (EM467)*.

Notifiable activities

It is a requirement under the *Environmental Protection Act 1994* that if an owner or occupier of land

becomes aware that a Notifiable Activity (as defined by Schedule 4 of the *Environmental Protection Act 1994*) is being carried out on the land or that the land has been affected by a hazardous contaminant, they must, within 22 business days after becoming so aware, give notice to the administering authority.

Some relevant offences under the *Environmental Protection Act 1994*

Non-compliance with a condition of an environmental authority (section 430)

Section 430 of the *Environmental Protection Act 1994* requires that a person who is the holder of, or is acting under, an environmental authority must not wilfully contravene, or contravene a condition of the authority.

Environmental authority holder responsible for ensuring conditions complied with (section 431)

Section 431 of the *Environmental Protection Act 1994* requires that the holder of an environmental authority must ensure everyone acting under the authority complies with the conditions of the authority. If another person acting under the authority commits an offence against section 430, the holder also commits an offence, namely, the offence of failing to ensure the other person complies with the conditions.

Causing serious or material environmental harm (sections 437–39)

Material environmental harm is environmental harm that is not trivial or negligible in nature. It may be great in extent or context or it may cause actual or potential loss or damage to property. The difference between material and serious harm relates to the costs of damages or the costs required to either prevent or minimise the harm or to rehabilitate the environment. Serious environmental harm may have irreversible or widespread effects or it may be caused in an area of high conservation significance. Serious or material environmental harm excludes environmental nuisance.

Causing environmental nuisance (section 440)

Environmental nuisance is unreasonable interference with an environmental value caused by aerosols, fumes, light, noise, odour, particles or smoke. It may also include an unhealthy, offensive or unsightly condition because of contamination.

Depositing a prescribed water contaminant in waters (section 440ZG)

Prescribed contaminants include a wide variety of contaminants listed in Schedule 9 of the *Environmental Protection Act 1994*.

It is your responsibility to ensure that prescribed contaminants are not left in a place where they may or do enter a waterway, the ocean or a stormwater drain. This includes making sure that stormwater falling on or running across your site does not leave the site contaminated. Where stormwater contamination occurs you must ensure that it is treated to remove contaminants. You should also consider where and how you store material used in your processes onsite to reduce the chance of water contamination.

Placing a contaminant where environmental harm or nuisance may be caused (section 443)

A person must not cause or allow a contaminant to be placed in a position where it could reasonably be expected to cause serious or material environmental harm or environmental nuisance.

Some relevant offences under the Waste Reduction and Recycling Act 2011

Littering (section 103)

Litter is any domestic or commercial waste and any material a person might reasonably believe is refuse, debris or rubbish. Litter can be almost any material that is disposed of incorrectly. Litter includes cigarette butts and drink bottles dropped on the ground, fast food wrappers thrown out of the car window, poorly secured material from a trailer or grass clippings swept into the gutter. However, litter does not include any gas, dust, smoke or material emitted or produced during, or because of, the normal operations of a building, manufacturing, mining or primary industry.

Illegal dumping of waste (section 104)

Illegal dumping is the dumping of large volumes of litter (200L or more) at a place. Illegal dumping can also include abandoned vehicles.

Responsibilities under other legislation

An environmental authority pursuant to the *Environmental Protection Act 1994* does not remove the need to obtain any additional approval for the activity that might be required by other State and/or Commonwealth legislation. Other legislation for which a permit may be required includes but is not limited to the:

- Aboriginal *Cultural Heritage Act 2003*
- contaminated land provisions of the *Environmental Protection Act 1994*
- Fisheries *Act 1994*
- Forestry *Act 1959*
- Nature *Conservation Act 1992*
- Petroleum *and Gas (Production and Safety) Act 2004 / Petroleum Act 1923*
- Queensland *Heritage Act 1992*
- Sustainable *Planning Act 2009*
- *Water Supply (Safety and Reliability) Act 2008*
- *Water Act 2000*

Applicants are advised to check with all relevant statutory authorities and comply with all relevant legislation.

An environmental authority for petroleum activities is not an authority to negatively impact on water levels or pressure heads in groundwater aquifers in or surrounding formations. There are obligations to minimise or mitigate any such negative impact under other Queensland Government and Commonwealth Government legislation.

Appendix 2: Definitions

Term	Definition
Administering authority	Means: (a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 of the *Environmental Protection Act 1994*; or (b) for all other matters – the Chief Executive of the Department of Environment and Heritage Protection; or (c) another State Government Department, Authority, Storage Operator, Board or Trust, who's role is to administer provisions under other enacted legislation
Annual exceedence probability (AEP)	For a given rainfall event the AEP is the probability that the event will be exceeded within a one year period. The AEP is usually expressed as a one in 'n' (years) or a percentage.
Approved form	Means a form approved by the administrating authority.
Archaeological site	A site that has physical evidence of the past, which has the potential to increase our knowledge of earlier human occupation, activities and events.
Artesian drill hole	An exploration drill hole from which water freely flows at a rate of greater than 500 L/hour for at least 7 days after being drilled.
Banks	The feature which confines major flows within a watercourse. They are steeper than a terrace and are generally of a slope greater than 1:1 on outer bends. Refer to Figure 1 – Cross Section through a Watercourse.
Bund	(a) An earth mound or similar structure (e.g. a concrete block wall), whether impervious or not, constructed to contain spilled material (e.g. petrol, diesel, oil etc.); or (b) a structure to prevent or reduce soil erosion.
Campsite	The area encompassing any dwelling, amenities (e.g. toilet block, power generator), sewage or general waste disposal facility and includes the office area and vehicle parking areas associated with a temporary or permanent mining camp.
Contaminant	The *Environmental Protection Act 1994* defines, under Section 11, a contaminant as: (a) a gas, liquid or solid; or (b) an odour; or (c) an organism (whether alive or dead), including a virus; or (d) energy, including noise, heat, radioactivity and electromagnetic

	radiation; or (e) a combination of contaminants.
Contamination	Section 10 of the *Environmental Protection Act 1994* defines contamination of the environment is the release (whether by act or omission) of a contaminant into the environment.
Contaminated land	Schedule 4 of the *Environmental Protection Act 1994* defines contaminated land as land contaminated by a hazardous contaminant. (See below for a definition of hazardous contaminant.)
Contaminated land register	Means the register kept by the administrating authority under section 541 of the *Environmental Protection Act 1994*.
Contour banks	Are mounds of earth constructed along the contours of the land to reduce the amount and velocity of run-off down the slope.
Costeaning	The digging of a trench or pit across the seam or ore body for exposing, sampling and mapping of the ore body.
Culvert	A covered channel or a pipe of large diameter conveying water below ground level. Also applies to a tunnel through which water is pumped or permitted to flow.
Declared plant area	Areas designated by the Department of Agriculture and Fisheries or Local Government as areas infested with plants declared under *Land Protection (Pest and Stock Route Management) Act 2002.*
Declared plant -	A plant that has been declared under the *Land Protection (Pest and Stock Route Management) Act 2002.*
Density of cover	In reference to trees and/or shrubs, it means the number of trees or shrubs in a specified area (e.g. 50 trees per square kilometre). With reference to understorey plant species (e.g. grasses and forbs), it means the percentage of surface area covered by a particular species.
Designated service area	Is a nominated site, selected and managed to minimise contamination of land or water, where the majority of services or maintenance of machinery or plant is to be conducted.
Disturbed	Any area that has had its natural state altered by the action or interference of carrying out an activity associated with the exploration project.
Environment	Section 8 of the *Environmental Protection Act 1994* defines the environment as: (a) ecosystems and their constituent parts, including people and communities; and (b) all natural and physical resources; and (c) the qualities and characteristics of locations, places and areas,

	however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and (d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c).
Environmental authority	Means a licence or approval issued by the administrating authority under the *Environmental Protection Act 1994*.
Environmental management register	Means the register kept by the administrating authority under section 541 of the *Environmental Protection Act 1994*.
Environmental nuisance	Section 15 of the *Environmental Protection Act 1994* defines environmental nuisance as “unreasonable interference or likely interference with an environmental value” caused by: (a) aerosols, fumes, light, noise, odour, particles or smoke ; or (b) an unhealthy, offensive or unsightly condition because of contamination; or (c) another way prescribed by regulation. (e.g. unreasonable noise or dust emissions)”
Environmental protection policy	Means an environmental protection policy approved under chapter 2 of the *Environmental Protection Act 1994*.
Environmental relevant activity	Means an activity prescribed by regulation as an environmental relevant activity.
Environmentally sensitive areas	Refers to locations, however large or small, that have environmental values that contribute to maintaining biological diversity and integrity, have intrinsic or attributed scientific, historical or cultural heritage value, or are important in providing amenity, harmony or sense of community. Refer to Appendix 3.
Environmental value	Section 9 of the *Environmental Protection Act 1994* defines an environmental value as: (a) a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or (b) another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation (e.g. water suitable for swimming in or drinking).
Ethnographic site	An archaeological site of particular importance to the study of a cultural group.
Final rehabilitation report	Means a final rehabilitation report prepared under section 264 of the *Environmental Protection Act 1994*. The report assesses the extent to which the standard environmental conditions and any additional conditions of the environmental authority have been met.

Financial assurance	Means a security deposit, either cash or a bank guarantee, that is held by the administrating authority to cover the potential: (a) costs to rehabilitate areas disturbed by mining activities; and (b) costs to restore property improvements disturbed by mining activities; and (c) failure of the tenure holder to pay rents and royalties.
Flood flow channel	For a representative drawing of a flood flow channel refer to Figure 1¬ 'Cross Section Through a Watercourse' and Figure 2 – 'Plan View of a Watercourse'.
General waste	Schedule 12 of the Environmental Protection Regulation 2008 defines general waste as "means waste other than regulated waste". Waste rock, overburden and the contents of tailings dams are not included in the definition of general waste for the purposes of these conditions.
Guidelines for livestock drinking water	Recommended water quality guidelines for livestock drinking water. Refer to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 1992.
Hazardous contaminant	Schedule 4 of the Environmental Protection Act 1994 defines a hazardous contaminant as "a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause serious or material environmental harm because of: (a) its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity, flammability; or (b) its physical, chemical or infectious characteristics (e.g.: spills of mercury, cyanide, petrol, diesel or oil)".
Historical site	A site containing objects from the past that allows the study of the way people lived and worked at that place in the past.
Infrastructure	Project infrastructure includes roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, pipelines, powerlines, airstrips, helipads etc., which are constructed or installed specifically for the project.
Lake	A natural or artificial body of water, either permanent or intermittent.
Landowner	Schedule 4 of the *Environmental Protection Act 1994* defines the owner of the land as – 1. The **"owner"** of land is— (a) for freehold land—the person recorded in the freehold land register as the person entitled to the fee simple interest in the land; or (b) for land held under a lease, licence or permit under an Act—the person who holds the lease, licence or permit;

	or (c) for trust land under the *Land Act 1994*—the trustees of the land; or (d) for Aboriginal land under the *Aboriginal Land Act 1991*—the persons to whom the land has been transferred or granted; or (e) for Torres Strait Islander land under the *Torres Strait Islander Land Act 1991*—the persons to whom the land has been transferred or granted; or (f) for land for which there is a native title holder under the *Native Title Act 1993 (Cwlth)* —each registered native title party in relation to the land. 2. Also, a mortgagee of land is the owner of the land if— (a) the mortgagee is acting as a mortgagee in possession of the land and has the exclusive management and control of the land; or (b) the mortgagee, or a person appointed by the mortgagee, is in possession of the land and has the exclusive management and control of the land.
Licensed general waste disposal facility	A site authorised by the administrating authority to receive general waste or limited regulated waste (e.g. a rubbish dump).
Limited regulated waste	Schedule 12 of the *Environmental Protection Regulation* 2008, defines limited regulated waste. The only limited regulated wastes relevant to mining projects are asbestos and tyres.

Material environmental harm	Section 16 of the *Environmental Protection Act 1994* defines material environmental harm as: 1. material environmental harm is environmental harm (other than environmental nuisance)¬ (a) that is not trivial or negligible in nature, extent or context; or (b) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the threshold amount but less than the maximum amount; or (c) that results in costs of more than the threshold amount but less than the maximum amount being incurred in taking appropriate action to ¬ i. prevent or minimise the harm; and ii. rehabilitate or restore the environment to its condition before the harm. In this section ¬ "maximum amount" means the threshold amount for serious environmental harm. "threshold amount" means $5 000 or, if a greater amount is prescribed by regulation, the greater amount.
Mine	Section 6A of the *Mineral Resources Act 1989*, defines mining as – (1) **"Mine"** means to carry on an operation with a view to, or for the purpose of (a) winning mineral from a place where it occurs; or (b) extracting mineral from its natural state; or (c) disposing of mineral in connection with, or waste substances resulting from, the winning or extraction. (2) For subsection (1), extracting includes the physical, chemical, electrical, magnetic or other way of separation of a mineral. (3) Extracting includes, for example, crushing, grinding, concentrating, screening, washing, jigging, tabling, electro winning, solvent extraction electro winning (SX-EW), heap leaching, flotation, fluidised bedding, carbon-in-leach (CIL) and carbon-in-pulp (CIP) processing. (4) However, extracting does not include (a) a process in a smelter, refinery or anywhere else by which mineral is changed to another substance; or (b) testing or assaying small quantities of mineral in teaching institutions or laboratories, other than laboratories

	situated on a mining lease; or (c) an activity, prescribed under a regulation, that is not directly associated with winning mineral from a place where it occurs. (5) For subsection (1), includes the disposal of tailings and waste rock. A regulation under subsection (4)(c) may prescribe an activity by reference to the quantities of minerals extracted or to any other specified circumstances.
Native vegetation	Vegetation that occurs naturally in a certain area.
Noise sensitive place	Means any of the following places – (a) a dwelling; (b) a library, childcare centre, kindergarten, school, college, university or other educational institution; (c) a hospital, surgery or other medical institution; (d) a protected area or an area identified under a conservation plan as a critical habitat or an area of major interest, under the *Nature Conservation Act 1992*; (e) a marine park under the *Marine Parks Act 2004*; and (f) a park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment).
Normal flow channel	For a representative drawing of a normal flood flow channel of a water course refer to Figure 1 – 'Cross Section Through a Watercourse' and Figure 2 - 'Plan View of a Watercourse'.
Notifiable activity	Means an activity in schedule 3 of the *Environmental Protection Act 1994*.
Outer bends	For a representative drawing of an outer bend of a watercourse refer to Figure 1 – "Cross Section Through a Watercourse" and Figure 2 – "Plan View of a Watercourse".
Overburden	Material overlying a mineral ore deposit, up to but not including the topsoil.
Referable dam	The *Water Resources Act 1989* defines referable dams as (a) works or proposed works that include or would include a barrier whether permanent or temporary that does or could or would impound, divert or control water, which barrier (i) is more than 8 m in height and has a storage capacity of more than 500 ML; or (ii) is more than 8 m in height and has a storage capacity of more than 250 ML and a catchment area that is more

	than 3 times its maximum surface area or full supply level; (b) works (i) that consist of or include or would consist of or include a barrier whether permanent or temporary that does or could or would impound, divert or control water or hazardous waste, other than a barrier defined in paragraph (a); (ii) other than a barrier whether permanent or temporary that does or could or would impound, contain, divert or control hazardous waste; declared by the chief executive by notification published in the gazette to be a referable dam by reason of the danger to life or property that could or would eventuate upon the collapse or failure of or the escape of hazardous waste from those works and includes the storage areas created by the works but does not include a tank constructed of steel or concrete or a combination of those materials. The term does not include a weir, other than a weir that has a variable flow control structure on the crest of the weir.
Regulated waste	Section 65 of the *Environmental Protection Regulation 2008,* defines mining as – 1) Regulated waste is waste that— (a) is commercial or industrial waste, whether or not it has been immobilised or treated; and (b) is of a type, or contains a constituent of a type, mentioned in schedule 7, part 1. 2) Waste prescribed under subsection (1) includes— (a) for an element—any chemical compound containing the element; and (b) anything that contains residues of the waste. 3) However, waste is not regulated waste if it is mentioned in schedule 7, part 2.
Rehabilitation processes	The measures and actions taken to achieve rehabilitation outcomes, including any or all of the following: (a) removing all unwanted infrastructure; (b) backfilling mine excavations (e.g. pits) and capping drill holes; (c) reshaping the land surface to a stable landform similar to that of surrounding undisturbed areas; (d) spreading of topsoil; (e) spreading seed or planting seedlings to promote revegetation; (f) benching ridge cuts and removing any overhanging material.

Riverine area	Refers to the land adjoining and associated with watercourses, including the bed, banks, adjoining terraced land and riparian vegetation. Refer to Figure 1 – "Cross Section Through a Watercourse".
Sediment pond	A bunded or excavated structure used to contain and settle waterborne sediment running off disturbed areas.
Sediment trap	A device used to filter waterborne sediment running off disturbed areas. May include silt fences, hay bales or grassed strips.
Serious environmental harm	Section 17 of the *Environmental Protection Act 1994* defines serious environmental harm as 1) serious environmental harm (other than environmental nuisance) (a) that is irreversible, of a high impact or widespread; or (b) caused to – (i) an area of high conservation value; (ii) an area of special significance, such as the Great Barrier Reef World Heritage Area; (c) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the threshold amount; or (d) that results in costs of more than the threshold amount being incurred in taking appropriate action to— (i) prevent or minimise the harm; and (ii) rehabilitate or restore the environment to its condition before the harm. 2) In this section - **"Threshold amount"** means $50 000 or, if a greater amount is prescribed by regulation, the greater amount.
Significantly disturbed land	Land is significantly disturbed if – (a) it is contaminated land; or (b) it has been disturbed and human intervention is needed to rehabilitate it. Significantly disturbed land includes: – 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 project 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 has ceased; or – areas where land has been contaminated. However, the following areas are <u>not</u> 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 objectives 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 Department of Environment and Heritage Protection; – disturbances that pre-existed the grant of the tenure unless those areas are disturbed during the term of the tenure.
Site management plan	Means a site management plan approved under chapter 7, part 8 of the *Environmental Protection Act 1994*.

Standard criteria	Are defined in schedule 4 of the *Environmental Protection Act 1994*. They are: (a) the following principles of environmental policy as set out in the Intergovernmental Agreement on the Environment— (i) the precautionary principle; (ii) intergenerational equity; (iii) conservation of biological diversity and ecological integrity; and (b) any applicable Commonwealth or State government plans, standards, agreements or requirements about environmental protection or ecologically sustainable development; and (c) any applicable environmental impact study, assessment or report; and (d) the character, resilience and values of the receiving environment; and (e) all submissions made by the applicant and submitters; and (f) best practice environmental management for activities under any relevant instrument, or proposed instrument, as follows—; (i) an environmental authority; (ii) a transitional environmental program; (iii) an environmental protection order; (iv) a disposal permit; (v) a development approval; and (g) the financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) as they would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument; and (h) the public interest; and (i) any applicable site management plan; and (j) any relevant integrated environmental management system or proposed integrated environmental management system; and (k) any other matter prescribed under a regulation.
Standard environmental conditions	For an environmental authority, means the standard environmental conditions approved for the authority under Chapter 5A Part 1 of the *Environmental Protection Act 1994.*
Standard mining activity	Means a mining activity decided to be a standard activity under section 151 of the Environmental Protection Act 1994.
Suitability statement	The *Environmental Protection Act 1994* defines a suitability statement as: for land, means a statement about the uses and activities for which

	the land is suitable.
Technical guidelines	Guidelines that indicate best practice environmental management.
Topsoil	The surface layer of a soil profile, which is usually more fertile, darker in colour, better structured and supports greater biological activity than underlying layers. The surface layer may vary in depth depending on soil forming factors, including parent material, location and slope, but generally is not greater than about 300mm in depth from natural surface.
Unreasonable noise	Section 18 of the Environmental Protection (Noise) Policy 1997 defines unreasonable noise as noise that: (a) causes unlawful environmental harm; and (b) is unreasonable, having regard to the following matters: (i) its characteristics; (ii) its intrusiveness; (iii) the time at which it is made; (iv) where it can be heard; (v) other noises ordinarily present at the place where it can be heard; and (c) is not declared to be reasonable in Schedule 2 of the Environmental Protection (Noise) Policy 1997 'Reasonable Noise Levels'.
Unreasonable release of a contaminant to the air environment	means a release of odours, dust, smoke or other atmospheric contaminants, that: (a) cause unlawful environmental harm; and (b) is unreasonable having regard to the following matters: (i) its characteristic; (ii) its intrusiveness; (iii) other releases of contaminants at the place affected by the release; (iv) where the effect of the release of the contaminants can be noticed; or (v) the order in which the person releasing the contaminant started to carry out the activity from which the release is made and persons affected by the release started to carry out other activities that may be affected by the release of the contaminant.
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 clear bed and banks and evidence of biological dependence.

Waterway	A naturally occurring feature where surface water runoff normally collects, such as a clearly defined swale or gully, but only flows in response to a local rainfall event.
Wetland	Are areas of permanent or periodic/intermittent inundation, whether natural or artificial, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6m. Wetlands typically include areas such as lakes, swamps, marshes, estuaries or mudflats.

Appendix 3: Environmentally sensitive areas

Category A Environmentally Sensitive Areas

Category A Environmentally sensitive areas are defined in Schedule 12, Part 1 of the *Environmental Protection Regulation 2008* and reproduced below.

A ***category A environmentally sensitive area*** means any of the following—

(a) any of the following under the *Nature Conservation Act 1992*—

(i) a national park;

(ii) a national park (Aboriginal land);

(iii) a national park (Torres Strait Islander land);

(iv) a national park (Cape York Peninsula Aboriginal land);

(v) a regional park (general);

(vi) a forest reserve;

(b) the wet tropics area under the *Wet Tropics World Heritage Protection and Management Act 1993*;

(c) the Great Barrier Reef Region under the *Great Barrier Reef Marine Park Act 1975* (Cwlth);

(d) a marine park under the *Marine Parks Act 2004*, other than a part of the park that is a general use zone under that Act.

Category B Environmentally Sensitive Areas

Category B Environmentally sensitive areas are defined in Schedule 12, Part 1 of the Environmental Protection Regulation 2008 and reproduced below.

A ***category B environmentally sensitive area*** means any of the following—

(a) any of the following areas under the *Nature Conservation Act 1992*—

(i) a coordinated conservation area;

(ii) an area of critical habitat or major interest identified under a conservation plan;

(iii) an area subject to an interim conservation order;

(b) an area subject to the following conventions to which Australia is a signatory—

(i) the 'Convention on the Conservation of Migratory Species of Wild Animals' (Bonn, 23 June 1979);

(ii) the 'Convention on Wetlands of International Importance, especially as Waterfowl Habitat' (Ramsar, Iran, 2 February 1971);

(iii) the 'Convention Concerning the Protection of the World Cultural and Natural Heritage' (Paris, 23 November 1972);

(c) a zone of a marine park under the *Marine Parks Act 2004*;

(d) an area to the seaward side of the highest astronomical tide;

(e) the following under the *Queensland Heritage Act 1992*—

(i) a place of cultural heritage significance;

(ii) a Queensland heritage place, unless there is an exemption certificate issued under that Act;

(f) an area recorded in the Aboriginal Cultural Heritage Register established under the *Aboriginal Cultural Heritage Act 2003*, section 46, other than the area known as the 'Stanbroke Pastoral Development Holding', leased under the Land Act 1994 by lease number PH 13/5398;

(g) a feature protection area, State forest park or scientific area under the *Forestry Act 1959*;

(h) a declared fish habitat area under the *Fisheries Act 1994*;

(i) a place in which a marine plant under the *Fisheries Act 1994* is situated;

(j) an endangered regional ecosystem identified in the database known as the 'Regional ecosystem

description database' kept by the department.

Category C Environmentally Sensitive Areas

LAND AREA CLASSIFICATION	ADMINISTERING LEGISLATION	ADMINISTERING AUTHORITY
Nature Refuges; and Resource Reserves	*Nature Conservation Act 1992*	Department of Environment and Heritage Protection
Declared Catchment Areas; Declared Irrigation and Irrigation Project Areas; and Water Reservoirs and Drainage Areas.	*Water Act 2000*, various Water Board Acts	Department of Natural Resources and Mines and/or Relevant Storage Operator or Board
River Improvement Areas	*River Improvement Trust Act 1940*	Department of Natural Resources and Mines and the Relevant River Trust
Designated Landscape Area (e.g. Stanbroke Pastoral Holding)	*Aboriginal Cultural Heritage Act 2003*	Department of Aboriginal and Torres Strait Islander Partnerships
Historic Mining Sites	Nil (Inter Departmental Notifications)	Department of Environment and Heritage Protection and the Department of Natural Resources and Mines
State Forest or Timber Reserves	*Forestry Act 1959*	Department of National Parks, Sport and Racing
DPI Research Sites	Nil (Inter Departmental Agreement)	Department of Agriculture and Fisheries
Critical Areas and Public Purpose Reserves	*Land Act 1994*	Department of Natural Resources and Mines
Areas under Coastal Management Plans and Control Districts	*Coastal Protection and Management Act 1995*	Department of Environment and Heritage Protection
An area subject to a State Planning Policy that the policy declares is in need of environmental protection.	*Sustainable Planning Act 2009*	Department of State Development, Infrastructure and Planning
Erosion Prone Areas and Coastal Management Control Districts	*Coastal Protection and Management Act 1995*	Department of Environment and Heritage Protection
Areas of land occupied by the Bureau of Sugar Experiment Stations to conduct research	*Sugar Industry Act 1999*	Department of Agriculture and Fisheries
Nature Refuges; and Resource Reserves	*Nature Conservation Act 1992*	Department of Environment and Heritage Protection
Declared Catchment Areas; Declared Irrigation and Irrigation	*Water Act 2000*, various Water Board Acts	Department of Natural Resources and Mines and/or

Project Areas; and Water Reservoirs and Drainage Areas.		Relevant Storage Operator or Board
River Improvement Areas	*River Improvement Trust Act 1940*	Department of Natural Resources and Mines and the Relevant River Trust

Environmental Authority No:
Project No:
Term of Plan (yrs):
Commencement Date

Appendix 4: Forms

Form 1: Monitoring and record keeping summary

Data and Information	Method of record keeping to be used				Frequency
	Site Plans	Journal	Photographs	Other	
Topsoil stripping and stockpiling (e.g. record topsoil stockpiles, location and age)					
Area disturbed and rehabilitation (e.g. map of the area of disturbance and photos of rehabilitation)					
Pre and post-mine landform (e.g. record photographs of the area prior to and following mining)					
Water discharge quality (e.g. note colour of discharge water from sediment dams)					
Dam maintenance (e.g. record of dam maintenance such as sediment removal)					
Record of complaints (e.g. air, noise, tracks etc.) (e.g. record in journal any complaints received by adjoining land owner, actions taken and the outcomes of the action)					
Site specific conditions (e.g. record of monitoring to demonstrate compliance with any site specific conditions)					
Remediation of contaminated land (e.g. record of current and remediated contaminated land)					
Waste Management (e.g. record of waste taken to a regulated waste collection depot)					

Data and Information	Method of record keeping to be used				Frequency
	Site Plans	Journal	Photographs	Other	
Rehabilitation quotes, estimates and actual costs					
Others – relevant to performance category					

Form 2: Emergency response table

Emergency situation	Who to contact in case of emergency situation occurring	Equipment required to be kept and maintained on site	Procedure to be followed in case of emergency situation occurring
Hydrocarbon spill causing serious or material environmental harm			
Chemical spill causing serious or material environmental harm			
Other			

Form 3: Schedule of rehabilitation costs

TOTAL AREA OF DISTURBANCE	REHABILITATION TYPES	
	LOW RISK Simple straightforward rehabilitation. Successful rehabilitation of analogous sites has previously been achieved	**HIGH RISK** Difficult rehabilitation (e.g. dispersive soils, steep topography, remoteness, sensitive areas, etc.)
Category 1 — Less than 1 hectare	$2,500	$5,000
Category 2 — 1 to 4 hectares	$10,000	$20,000
Category 3 — 4 to 10 hectares	$20,000	$40,000

Notes: The final assurance for each category are based on rehabilitating the maximum area in that category (e.g. financial assurance for 1 to 4 hectares is based on the cost of rehabilitating 4 hectares). The financial assurance for environmental authority with additional conditions attached allow that the operator to disturb more than 10ha, will be calculated using the above schedule with the additional area of disturbance calculated according to the relevant category. For example, the financial assurance for 18ha of low risk disturbance will be $40,000 (i.e. $20,000 for the first 10ha and another $20,000 for the extra 8ha because it is also in category 3).

Appendix 5: Watercourse figures

Figure 1: Cross section through a watercourse

Figure 1

(not to scale)

Cross section through a watercourse

showing sections of the banks of the flood flow channel where mining is not permitted.

Mining is not permitted in the areas shown as

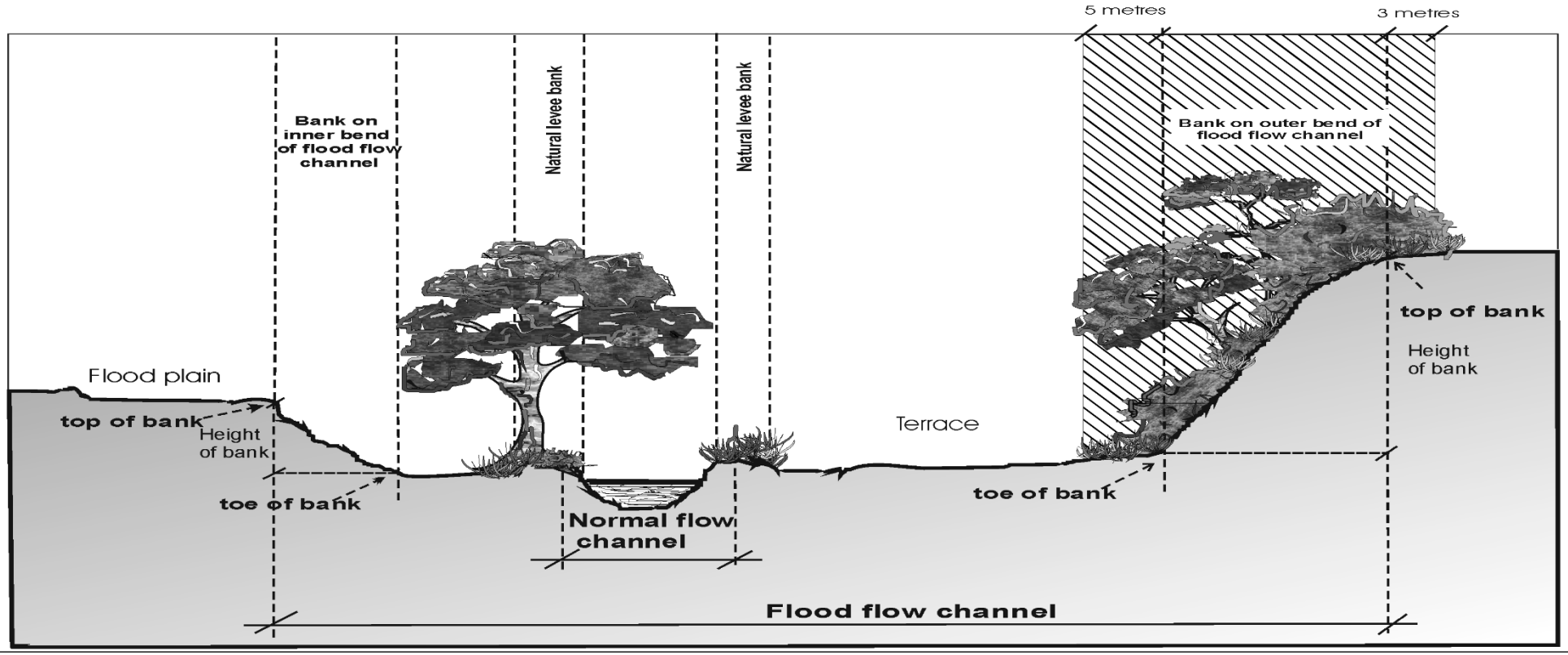
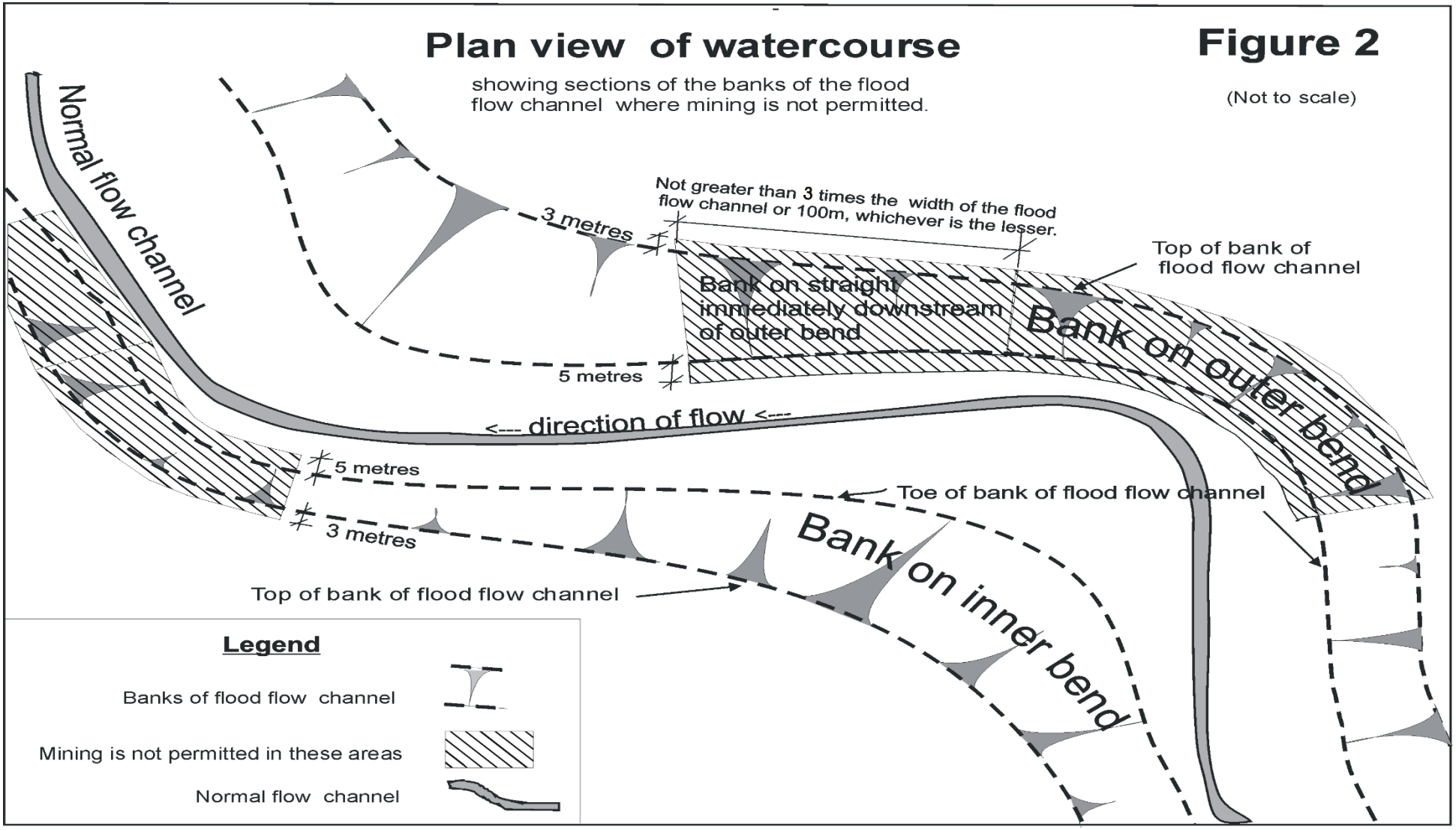


Figure 2: Plan of a watercourse


Plan view of watercourse
Figure 2
showing sections of the banks of the flood flow channel where mining is not permitted.
(Not to scale)
Normal flow channel
3 metres
Not greater than 3 times the width of the flood flow channel or 100m, whichever is the lesser.
Top of bank of flood flow channel
Bank on straight immediately downstream of outer bend
Bank on outer bend
5 metres
<--- direction of flow <---
5 metres
Toe of bank of flood flow channel
3 metres
Bank on inner bend
Top of bank of flood flow channel
Legend
Banks of flood flow channel
Mining is not permitted in these areas
Normal flow channel

Appendix 6: Technical guidelines

Australian Standard 1940 - The storage and handling of flammable and combustible liquids. Standards Australia (1993).

Australian Water Quality Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Environment and Conservation Council (1992).

Commonwealth Best Practice Environmental Management in Mining Guidelines, Environment Australia.

Dredging, Extraction and Spoil Disposal, Fish Habitat Management Operational Policy: FHMOP 004, Department of Primary Industries (1998).

Farm Water Supplies Design Manual, Department of Primary Industries, (1992).

Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils (ASS) in Queensland, Department of Natural Resources (1998).

Soil Erosion and Sediment Control - Engineering Guidelines for Queensland Construction Sites, The Institution of Engineers, Australia, Queensland Division (1996).

Technical Guidelines for Environmental Management of Exploration and Mining, Department of Mines and Energy, Queensland, 1995.

The Conservation Status of Queensland's Bioregional Ecosystems, Environmental Protection Agency (1999).

Prepared by: Resources Sector Regulation and Support, Department of Environment and Heritage Protection

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