

From: Ruddle, Tony [Tony.Ruddle@stanwell.com]
Sent: Thursday, 17 April 2014 3:08 PM
To: NAYLOR Gillian
Subject: Moreton Resources Limited (Formerly Cougar Energy Limited): MDL 385

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Gillian,

Are you able to provide a written update to me on any progress in the issues raised in the email below as discussed in our last phone call?

Also, could you please confirm that the Environmental Authority MIN100656507 taking effect from 7 July 2011 is the current EA

Cheers

Tony

Tony Ruddle
Manager Land & Property
Corporate Services
Stanwell Corporation Limited

Tel (07) 3228 4455 | Mobile 0412 445544
GPO Box 800, Brisbane, QLD 4001
www.stanwell.com

From: Ruddle, Tony
Sent: Wednesday, 19 February 2014 11:32 AM
To: Mark Venz
Subject: Moreton Resources Limited (Formerly Cougar Energy Limited): MDL 385

Hi Mark,

I refer to previous communication between the Department of Environment and Heritage Protection (the Department) and Stanwell in relation to the UCG Pilot Plant and infrastructure constructed by Moreton Resources (Cougar) on Stanwell owned lots on Bellbird Road Kingaroy.

In your most recent communication on 28 August (Ref CTS 16798/13), the Department advised that the Environmental Authority (EA) was under amendment and that the conditions in the EA were being negotiated. Representatives from Moreton Resources advise that they are still waiting on a response from the Department. Could you please provide me with an update on the status of the EA? This information is relevant to Stanwell with regards to the negotiation of a Conduct and Compensation Agreement (CCA).

I have also been advised by Moreton Resources that a draft Rehabilitation Plan (Rehabilitation Plan Kingaroy USG Pilot Plant dated August 2013) was submitted to the Department for approval. Has the Department assessed the plan? Again the timings for rehabilitation of the site and any ongoing disturbances will need to be taken into consideration for the CCA.

Please do not hesitate to let me know if you have any questions.

Kind Regards

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RTI DL RELEASE - EHP

From: Ruddle, Tony [Tony.Ruddle@stanwell.com]
Sent: Monday, 28 April 2014 10:30 AM
To: NAYLOR Gillian
CC: VENZ Mark
Subject: Moreton Resources Limited (Formerly Cougar Energy Limited): MDL 385

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Gillian,
I refer to our phone call on the 11 march 2014 and the email sent to yourself on 17 April 2014, regarding MDL 385 granted to Cougar Energy (Moreton Resources) and the email dated 19 February 2014 to Mark Venz.

As you are aware, Stanwell is the background land holder for the Moreton Resources UCG Pilot Plant located on Bellbird Road Kingaroy. Currently, Stanwell is in negotiations with Moreton Resources to sign a Compensation and Conduct Agreement, however there is some confusion over the Environmental Authority. Could you please confirm that the EA MIN100656507 taking effect from 7 July 2011 is the current EA, and that until the amendment process is completed this EA remains in effect?

Cheers

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From: Ruddle, Tony
Sent: Thursday, 17 April 2014 3:09 PM
To: 'Gillian.Naylor@ehp.qld.gov.au'
Subject: Moreton Resources Limited (Formerly Cougar Energy Limited): MDL 385

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From: NAYLOR Gillian [Gillian.Naylor@ehp.qld.gov.au]
Sent: Friday, 4 July 2014 9:33 AM
To: Ruddle, Tony
Subject: RE: Moreton Resources Limited (Formerly Cougar Energy Limited): MDL 385
Attachments: LETTER to Mr Ruddle.pdf; EPPR00450013.pdf

Hi Tony,

Please find attached correspondence relating to the Moreton Resources UCG pilot plant in Kingaroy. We amended the EA on 5 June 2014, a copy of which is also attached to this email.

Apologies for not sending this to you earlier – we've had a few staffing absences over the last few weeks to see that it hadn't been sent. The original will be in the mail shortly.

If you have any questions relating to this amendment, or the site in general, I would be happy to talk you through it.

Kind regards,

Gillian Naylor

Team Leader, Energy Assessment | Energy Resources and Enforcement
Environmental Services and Regulation
Department of Environment and Heritage Protection
Level 7 | 400 George Street | Brisbane
Tel 07 3330 5620
www.ehp.qld.gov.au (<http://www.ehp.qld.gov.au/>)
ehp-email-signature

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RTI DL RELEASE - EHP

Ref MDL385 / EPPR00450013



Department of
**Environment and
Heritage Protection**

20 June 2014

Tony Ruddle
Manager Land & Property, Corporate Services
Stanwell Corporation Limited
GPO Box 800
BRISBANE QLD 4001

Dear Mr Ruddle

I refer to your previous enquiries about Moreton Resources Limited's (formerly Cougar Energy Limited) UCG pilot plant in Kingaroy.

Please be advised that EHP amended the environmental authority EPPR00450013 (formerly MIN00656507) on 5 June 2014, a copy of which is enclosed with this letter. The amended environmental authority (EA) requires Moreton Resources to continue its rehabilitation of the UCG pilot plant site by requiring the ongoing monitoring of groundwater quality of aquifers within the vicinity of the plant.

Moreton Resources will be required to complete the decommissioning and rehabilitation of the UCG pilot site as required by the conditions of the EA before it is able to surrender the EA.

If you require any further information in regards to this matter, please call Gillian Naylor, Team Leader with the department on (07) 3330 5620.

Yours sincerely

Sch 4 - Signature

Kate Wall
Manager, Energy Assessment
Department of Environment and Heritage Protection

Att/Enc. Environmental Authority EPPR00450013 granted and issued to Moreton Resources on 5 June 2014.

Permit¹

Environmental Protection Act 1994

Environmental authority

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

Permit¹ number: EPPR00450013

Project Name: MDL385 Kingaroy

Environmental authority takes effect 5 June 2014.

The anniversary date of this environmental authority is **30 April**. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Moreton Resources Pty Ltd ABN: 75 060 111 784	Unit 3, 269 Abbotsford Road BOWEN HILLS QLD 4006

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Schedule 2A – 10 – investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit	MDL 385

Release

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation

Additional information for applicants

Environmentally relevant activities

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

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority 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 if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.

Section 78B(2) RTI Act	5/06/2014
Signature	Date

Kate Wall

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

Enquiries:

Energy Assessment
Department of Environment
and Heritage Protection

7th Floor, 400 George Street
GPO Box 2454
BRISBANE QLD 4001

Phone: (07) 3330 5683
Fax: (07) 3330 5634

Release

Date Granted – 5 June 2014

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 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*
- *Mineral Resources Act 1989*
- *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 impact on water levels or pressure heads in groundwater aquifers in or surrounding formations. There are obligations to minimise or mitigate any such impact under other Queensland Government and Commonwealth Government legislation.

This environmental authority consists of the following schedules:

Schedule A	General Conditions
Schedule B	Air
Schedule C	Water
Schedule D	Noise
Schedule E	Waste
Schedule F	Land
Schedule G	Community
Schedule H	Dams
Schedule I	Definitions

SCHEDULE A – GENERAL CONDITIONS

Prevent and / or Minimise Likelihood of Environmental Harm

- (A1-1) In carrying out the activities to which this approval relates, you must take all reasonable and practicable measures to prevent and / or to minimise the likelihood of environmental harm being caused. Any activity that, if carried out incompetently or negligently may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this approval.

NOTE: This approval does not authorise environmental harm unless a condition contained within this approval explicitly authorises that harm. Where there is no condition or the approval is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

Financial Assurance

- (A2-1) Prior to any changes in activities which would result in an increase to the maximum significant disturbance since financial assurance was last given to the administering authority, the holder of the environmental authority must amend the financial assurance and give the administering authority the increased amount of financial assurance.

Maintenance of Measures, Plant and Equipment

- (A3-1) The holder must:
- (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and
 - (a) maintain such measures, plant and equipment in a proper condition; and
 - (b) operate such measures, plant and equipment in a proper manner.

Monitoring

- (A4-1) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
- (A4-2) Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.

Notification of Emergencies and Incidents

- (A5-1) As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority, the administering authority must be notified of the release by telephone or facsimile.

Storage and Handling of Flammable and Combustible Liquids

- (A6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Definitions

- (A7-1) Words and phrases used throughout this environmental authority are defined in Attachment A – Definitions. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.

Scope of Approved Underground Coal Gasification Activities

- (A8-1) All underground coal gasification activities on site are limited to decommissioning, rehabilitation, care and maintenance of the site.

Contingency Procedures for Emergency Environmental Incidents

- (A9-1) Petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents, which include, but are not necessarily limited to:
- (a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity;
 - (b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity;
 - (c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring;
 - (d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;
 - (e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land;
 - (f) training of staff to enable them to effectively respond; and
 - (g) procedures to notify the administering authority, local government and any potentially impacted landholder.

Exploration Drilling

- (A10-1) Exploration activities within the Mineral Development Licence (MDL) must be undertaken in accordance with all Standard Environmental Conditions contained in the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

SCHEDULE B – AIR

Dust nuisance

- (B1-1) The release of dust or particulate matter or both resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B1-2) 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.

Odour nuisance

- (B2-1) Notwithstanding any other condition of this approval, the release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B2-2) When requested by the administering authority, odour 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.
- (B2-3) If monitoring indicates Condition (B2-1) is not being met then the environmental authority holder must:
 - (a) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance; and
 - (b) address the complaint including the use of appropriate dispute resolution if required.

Operation of Fuel Burning or Combustion Equipment

- (B3-1) The operation of fuel burning or combustion equipment that is capable of burning more than 500 kg of fuel in an hour is not authorised.

SCHEDULE C – WATER

Release to Waters

- (C1-1) With the exception of releases of stormwater in accordance with Condition (C4-1), contaminants must not be released to any waters (including groundwater outside the underground coal gasification working cavity) or the bed and banks of any waters.

Water Management System

- (C2-2) Water must be managed to prevent incident stormwater and stormwater run-off from contacting general refuse and regulated wastes at the site.
- (C2-2) Water must be managed to divert upstream run-off away from disturbed areas, or areas containing wastes or contaminants.
- (C2-3) Water from disturbed areas must be captured and managed in accordance with condition (C4-1) to (C4-3).

Erosion Protection Measures and Sediment Controls

- (C3-1) All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment. Reasonable and practicable measures are outlined in "Soil and Erosion Control. Engineering Guidelines for Queensland Construction Sites", June 1996 published by the Institution of Engineers, Australia Queensland Division.
- (C3-2) Erosion control and sediment control structures must be maintained at all times during the periods of construction, plant operation, decommissioning and any necessary rehabilitation. The structures must be checked, repaired or replaced as required after each rain event.
- (C3-3) There must be no disturbance to, filling or obstruction of any part of any watercourse.

Stormwater Management

- (C4-1) There must be no release of stormwater runoff that has been in contact with any contaminants at the site to any waters, roadside gutter or stormwater drain, unless it complies with the following quality characteristics:
- (a) the pH value must not be less than 6.5 and not more than 9.0;
 - (b) the concentration of dissolved oxygen must not be less than 6 milligrams per litre;
 - (c) the concentration of suspended solids must not exceed 50 milligrams per litre if an overflow is caused by rainfall and 30 milligrams per litre at all other times;
 - (d) the concentration of total dissolved solids suspended solids must not exceed 1000 milligrams per litre; and
 - (e) the release must not produce any slick or other visible evidence of oil or grease, contain visible floating oil, grease, scum, litter or other objectionable matter nor contain other contaminants in concentrations that adversely affects the environmental values of the receiving environment.

- (C4-2) Ponds or other structures used for the collection and /or treatment of stormwater runoff from disturbed areas must be appropriately sized and effectively maintained to avoid releases. Such maintenance measures must include, but not be limited to, the removal of settled solids as often as necessary to maintain the required capacity.
- (C4-3) Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from any pits or other structures used for the storage or treatment of contaminants or wastes.

Water Quality Sampling Methodology

- (C5-1) The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the Department of Environment and Heritage Protection's Water Quality Sampling Manual.

Flammable and Combustible Liquids

- (C6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Spillage Control

- (C7-1) Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such wastes, contaminants or material to any external storm water drainage system, roadside gutter or waters. To remove any doubt this condition does not apply to hosing, sweeping, etc of areas and oily materials that drain to an oily-water management system.

Maintenance and cleaning of vehicles

- (C8-1) The maintenance and cleaning of vehicles and any other equipment or plant must be carried out in areas that prevent contaminants being released into any waters

Protection of Groundwater Values

- (C9-1) A groundwater monitoring program must be developed and implemented to characterise background water quality levels within aquifers.
- (C9-2) The groundwater monitoring program required by condition (C9-1) must be consistent with Schedule B6 of the 'National Environment Protection (Assessment of Site Contamination) Measure 1999'.
- (C9-3) The groundwater monitoring program required by condition (C9-1) must be developed by a person possessing appropriate qualifications and experience in hydrogeology and groundwater monitoring program design.

- (C9-4) The groundwater monitoring required by condition (C9-1) must include the monitoring of each of the water quality characteristics identified in Schedule C – Table 2 (Groundwater Monitoring Requirements) at each of the bores identified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-5) The groundwater monitoring required by condition (C9-1) must be undertaken at the minimum frequencies specified for each bore and water quality characteristic specified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-6) On any occasion that groundwater samples are obtained as part of the groundwater monitoring program required by conditions (C9-1), the standing water levels must be measured and recorded to an accuracy of 0.01 metres relative to Australian Height Datum (AHD) for each sample.
- (C9-7) Groundwater levels within the vicinity of the underground coal gasification plant must be monitored and groundwater draw down fluctuations in excess of 2 m per year, not resulting from the pumping of licensed bores, must be notified within 14 days to the administering authority following completion of monitoring.

Schedule C – Table 2 (Groundwater Monitoring Requirements)

Bore (Target Layer)	Water Quality Characteristic	Units	Minimum Frequency
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	mg/L	Every three months and following any rainfall event exceeding 100mm in any 24 hour period
	pH	pH units	
	Sulphate	mg/L	
	Ammonia	mg/L	
	Phenols (speciated)	µg/L	
	Total Petroleum Hydrocarbons (speciated)	µg/L	
	BTEX (speciated)	µg/L	
	Polycyclic Aromatic Hydrocarbons (speciated)	µg/L	
	Fluoride	mg/L	
	Cadmium	mg/L	
	Arsenic	mg/L	
	Lead	mg/L	
	Zinc	mg/L	
T5037 (Lateritic Clay) T5038 (Upper Basalt) T5066 (Lower Basalt)	Total Dissolved Salts	mg/L	Annually and following any rainfall event exceeding 100mm in any 24 hour period
	pH	pH units	
	Sulphate	mg/L	
	Ammonia	mg/L	

- (C9-8) The results of each round of groundwater sampling required by condition (C9-1) must be provided to the administering authority within one month of the completion of sampling.

- (C9-9) An interpretation of the groundwater monitoring results required by condition (C9-8) must be provided to the administering authority with the results required by condition (C9-8).
- (C9-10) The interpretation of groundwater monitoring results required by condition (C9-9) must include a comparison with the relevant 80th percentile water quality values specified in Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters) relevant to that bore and water quality characteristic, if available.
- (C9-11) If a relevant 80th percentile water quality value for that bore and water quality characteristic is not specified in Schedule B – Table 3 (80th Percentile Water Quality Values for Specified Parameters), then the interpretation required by condition (C9-9) must include a comparison of the groundwater monitoring results with the background water quality levels characterised in condition (C9-1).
- (C9-12) All sampling of groundwater required by this environmental authority must be undertaken in accordance with the most recent version of the Australian Government Geoscience Australia guidelines, Groundwater Sampling and Analysis – A Field Guide.

Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters)

Bore (Target Layer)	Quality characteristic	80 th Percentile Water Quality Values
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	740 mg/L
	pH	8.2 pH units
	Sulphate	154mg/L
	Ammonia	0.18 mg/L
	Cadmium	0.0003 mg/L
	Arsenic	0.003 mg/L
	Zinc	0.014 mg/L
T5037 (Lateritic clay)	Total Dissolved Salts	2265 mg/L
	pH	6.3 pH units
	Sulphate	120 mg/L
	Ammonia	0.06 mg/L
T5038 (Upper Basalt)	Total Dissolved Salts	1873 mg/L
	pH	7.8 pH units
	Sulphate	67 mg/L
	Ammonia	0.07 mg/L
T5066 (Lower Basalt)	Total Dissolved Salts	1700 mg/L
	pH	7.9 pH units
	Sulphate	167 mg/L
	Ammonia	0.16 mg/L

SCHEDULE D — NOISE

Noise nuisance

- (D1-1) Noise from the activities must not cause an environmental nuisance at any sensitive place.
- (D1-2) 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 in the opinion of an authorised officer is neither frivolous nor vexatious nor based on mistaken belief) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (D1-3) Noise Monitoring must include:
- (a) background noise level;
 - (b) L_{Amax} , adj, 15 mins or where they can be justified as appropriate, L_{A10} , adj, 15 mins and L_{A1} , adj, 15 mins;
 - (c) the level and frequency of occurrence of impulsive or tonal noise;
 - (d) atmospheric conditions including wind speed and direction;
 - (e) effects due to extraneous factors such as traffic noise; and
 - (f) location, date and time of recording.
- (D1-4) In the event of a complaint about noise environmental nuisance that the administering authority considers is not frivolous or vexatious, the environmental holder is to develop a noise management plan within two (2) weeks of being advised in writing of the complaint. The noise management plan must address at least, but not be limited to, the following matters:
- (a) identification of component noise sources and activities at the place(s) which impact on noise sensitive areas;
 - (b) the measured and/or predicted level of these noise sources and activities at noise sensitive places;
 - (c) the reasonable and practicable control or abatement measures that can be undertaken to reduce identified intrusive noise sources;
 - (d) the level of noise at noise sensitive places that would be achieved from implementing these measures;
 - (e) the handling of future noise complaints;
 - (f) community liaison and consultation; and
 - (g) training of staff in noise management practices.
- (D1-5) Upon the completion of the noise management plan it must be submitted to the administering authority within 14 days for its review and comment.
- (D1-6) The activities must be carried out by such reasonable and practicable means necessary to prevent the emission of noise that constitutes an environmental nuisance. The reasonable and practicable measures adopted may include but not necessarily be limited to the following noise abatement measures:
- (a) ensure that any equipment to be used is assessed for potential noise nuisance impacts and appropriately attenuated;
 - (b) ensure that all plant and equipment is operated and maintained in a proper and efficient manner;

- (c) ensure that engine cowlings and high efficiency silencers are fitted to all the engines of all plant and equipment identified as impacting on noise sensitive receivers;
- (d) ensure that noise generating activities are not undertaken in close proximity to noise sensitive places or commercial places;
- (e) ensure that, where required, noise abatement barriers are sited such that they effectively intercept the sound transmission path between the sources of noise and receptor premises;
- (f) locate access routes within the premises as far away from sensitive places as is practical having regard to operational convenience; and
- (g) where operation of reversing beepers is likely to cause environmental nuisance, taking measures to ensure mitigation of the nuisance, for example by de-tuning the reversing beepers, replacing the reversing beepers with other warning devices and/or replacing reversing beepers with alternative reversing beepers which adjust their noise level output in accordance with the prevailing background noise level.

RTI DL RELEASE - EHP

SCHEDULE E – WASTE

General

- (E1-1) Waste must not be released to the environment, stored, transferred or disposed of contrary to any condition of this environmental authority.
- (E1-2) Except as otherwise provided by the conditions of this authority, all disposal of waste generated in carrying out the approved activities must be to a proper and appropriate facility that is authorised to accept such waste.

Regulated Waste Handling

- (E2-1) All regulated waste (including sewage) must be removed from the site by a person who holds an appropriate approval to transport such waste under the provisions of the *Environmental Protection Act 1994 (Qld)* or equivalent interstate legislation, and must be disposed of at a facility authorised to accept such waste.

RTI DL RELEASE - EPP

SCHEDULE F – LAND

Preventing Contaminated Land

- (F1-1) There must be no releases of contaminants to land that may cause the land to become contaminated land.

Decommissioning of the Underground Coal Gasification Facility

- (F2-1) A decommissioning procedure must be developed for the underground coal gasification pilot plant.
- (F2-2) The procedure required by condition (F2-1) must:
- (a) detail steps that will be taken to cease combustion /gasification of coal underground;
 - (b) detail tests that will be completed during and following the shutdown process to confirm that combustion and/or pyrolysis of coal has ceased; and
 - (c) ensure that on shutdown the cavity is flushed using proven processes to ensure removal of residual pollutants.
- (F2-3) The procedure detailed in condition (F2-1) must be implemented immediately on cessation of the underground coal gasification trial or if otherwise requested by the administering authority.

Rehabilitation Criteria

- (F3-1) Prior to commencing activities authorised by this approval, the following surveys must be undertaken for any areas to be disturbed:
- (a) survey of topsoil to determine its suitability for use in rehabilitation;
 - (b) survey of land suitability;
 - (c) baseline ground level surveys;
 - (d) survey of flora, fauna and nature conservation values; and
 - (e) survey of cultural heritage values.
- (F3-2) All areas disturbed as a result of the approved activities must be rehabilitated to a stable, non-polluting landform with a self-sustaining vegetation cover in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria), and must comply with the maximum distance between erosion control structures specified in Schedule F – Table 2 (Maximum distance between erosion control structures***).
- (F3-3) Progressive rehabilitation in accordance with the conditions of this schedule must commence as soon as areas become available within the operational land.

Final Land Use and Rehabilitation Plan

- (F4-1) The holder of this environmental authority must develop and implement a Final Land Use and Rehabilitation Plan to ensure that all areas disturbed by approved activities will be suitably rehabilitated in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria) and the other conditions of this environmental authority. The Plan must include, but is not limited to the following:
- (a) disturbance type;

- (b) disturbance area;
- (c) pre and post mine land descriptions;
- (d) pre mine and post mine land suitability;
- (e) proposed vegetation species;
- (f) a description of rehabilitation management techniques incorporating works and monitoring programs and timetables (including monitoring subsidence of ground within disturbed areas for at least 12 months following cessation of underground coal gasification);
- (g) indicators for success; and
- (h) keeping of appropriate records of rehabilitation measures implemented including taking of photographs demonstrative of rehabilitation achieved and the preparation of annual rehabilitation progress reports. A summary of the annual rehabilitation progress report must be submitted to the administering authority with each annual return.

(F4-2) The holder of this authority must submit a copy of the Final Land Use and Rehabilitation Plan, as required by condition (F5-1), to the administering authority, and in finalising the plan must have due regard to comments made by the administering authority.

(F4-3) This plan must be submitted on or before 1 March 2011 or within 3 months following the cessation of the underground coal gasification trial; whichever occurs first.

Grazing Pasture / Agricultural Crops Outcome

(F5-1) Areas which are to be rehabilitated to productive land use, including but not limited to cropping, forestry or grazing, must comply with the following outcomes:

- (a) generate vegetation with projective cover, species composition and species distribution similar to what existed prior to disturbance; and
- (b) landforms are stable and have been reshaped as close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification;
- (c) topsoil on rehabilitated areas is reinstated to a depth that is consistent with the depth of topsoil on the site prior to the commencement of activities associated with the underground coal gasification; and
- (d) measures of productivity (e.g. sustainable dry matter production of pasture species, sustainable yield for crop species) are similar to what existed prior to underground coal gasification activities.

(F5-2) Prior to surrendering this authority, an investigation into rehabilitated areas must be conducted and a report submitted to the administering authority proposing acceptance criteria to meet the outcomes specified in condition (F3-2) and Schedule F – Table 1 (Landform Design and Suitability Criteria).

Schedule F – Table 1 (Landform Design and Suitability Criteria)

Disturbance		Post-mine land capability class	Maximum Final Slope	Final Land Use Description
Type	Estimated Area (ha)			
All disturbed areas	1 hectare	The same as existed prior to underground coal gasification	As close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification	The same as existed prior to underground coal gasification, unless otherwise negotiated with the landowner.

Schedule F – Table 2 (Maximum distance between erosion control structures)

Slope range (%)	Maximum distances between erosion control structures (m)
0 - 5	150
6 - 10	100
11 - 15	70
> 15	25

- (F5-3) Notwithstanding the maximum distances stipulated in Schedule F Table 2, where the land is rehabilitated for a final land use of agriculture, contour banks must be installed in consultation with the landowner and as per local practice.

Infrastructure

- (F6-1) All infrastructure constructed by or for the environmental authority holder including water storage structures, must be removed from the site prior to mining lease surrender, except where agreed in writing by the post-mining land owner / holder.

Weed Management

- (F7-1) 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*.

SCHEDULE G – COMMUNITY

Complaint response

- (G1-1) All complaints received must be recorded including details of complainant, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

RTI DL RELEASE - EHP

SCHEDULE H – DAMS

All Dams

- (H1-1) The holder of this environmental authority must ensure that each dam is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.
- (H1-2) The hazard category of each dam must be assessed by a suitably qualified and experienced person at least once per year, based on documented evidence sufficient to define or confirm the current nature and extent of environmental consequences for potential failure of that dam.
- (H1-3) Where the hazard category of a dam is assessed as significant or high, the holder of the environmental authority must act immediately to ensure:
- (a) the administering authority is advised of the current details of that dam, including:
 - i. the assessed hazard category of that dam,
 - ii. sufficient points of latitude and longitude in the current Australian geodetic datum to form a perimeter around that dam and its associated works,
 - iii. the maximum surface area, maximum volume, maximum depth of that dam; and
 - (b) that dam meets the hydraulic performance required of the assessed hazard category within twelve months of that assessment.
- (H1-4) The condition of dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a suitably qualified and experienced person. The methods of monitoring and frequency of monitoring shall be as assessed by that suitably qualified and experienced person, based on the hazard category and particular circumstances of each dam.
- (H1-5) In the event of early signs of loss of structural or hydraulic integrity, the holder of this environmental authority must immediately take action to prevent or minimize any actual or potential environmental harm, and report in writing any findings and actions taken to the administering authority within 28 days of that event.
- (H1-6) The holder of this environmental authority must not abandon any dam but must decommission each dam such that ongoing environmental harm is prevented.
- (H1-7) As a minimum, decommissioning must be conducted such that each dam:
- (a) either:
 - i. has become a stable landform, that no longer contains flowable substances, or
 - ii. has been approved or authorised under relevant legislation for a beneficial use and is subject to legally enforceable conditions of management, or
 - iii. is a void authorised by the administering authority to remain after decommissioning subject to legally enforceable conditions of management; and,
 - (b) complies with the rehabilitation requirements of this environmental authority.

Regulated Dams - Location and Basic Specifications

- (H2-1) The location of the regulated dam authorised under this environmental authority must be defined by control points which are shown and tabulated in the Design Plan for the dam. Sufficient control points

consisting of latitudes and longitudes in the current Australian geodetic datum must be provided to form a perimeter around the dam and its associated works.

- (H2-2) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the basic specifications in Schedule H - Table 1, below.

Schedule H – Table 1 (Location of Regulated dams)

Name of Regulated Dam	Hazard Category	Maximum Surface Area of Dam	Maximum Volume of Dam (m ³)	Maximum Depth of Dam (m)	Purpose of Dam
Cougar Energy Production Water Dam	Significant	10,000m ²	25,000m ³	2.5m	To receive and evaporate contaminated by-product water from the underground coal gasification process.

- (H2-3) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the hydraulic specifications in Schedule H - Table 2, below.

Schedule H – Table 2 (Hydraulic Performance of Regulated Dams)

Name of Regulated Dam	Spillway Capacity or Diversion Capacity (Levees) AEP	Design Storage Allowance (Dams other than Levees) AEP	Mandatory Reporting Level (Dams other than Levees) AEP
Cougar Energy Production Water Dam	0.001	0.02	0.01 for 72hr storm event.

Regulated Dams – Certification and Operation

- (H3-1) Documentation required by the conditions in this schedule must be kept available for inspection by the regulating authority for a period of seven years after the conclusion of the environmentally relevant activity in respect of which this environmental authority has been granted.
- (H3-2) The holder of this environmental authority must not commence construction of a regulated dam unless:
- the holder has submitted to the administering authority two copies of a design plan, together with the certification of a suitably qualified and experienced person that the design of the regulated dam is fit for the purpose for that dam stated in that plan, and compliant in all respects with this environmental authority, and
 - at least 28 days has passed since the submission of the design plan, or the regulating authority has advised the holder that the design plan is compliant with this condition.
- (H3-3) When construction or modification of any regulated dam is complete, or within 12 months of dam becoming a regulated dam by virtue of a hazard assessment, the holder of this environmental authority must submit to the administering authority two copies of a set of 'as constructed' drawings,

together with the certification by a suitably qualified and experienced person that the dam 'as constructed' is fit for the purpose stated in the hazard assessment and the design plan if the latter exists, and compliant in all respects with this environmental authority.

- (H3-4) The holder of this environmental authority must ensure that there is always a current operational plan for each regulated dam, which may form part of other plans required by legislation.
- (H3-5) The operational plan shall at least cover all matters relevant to the operation and maintenance of the regulated dam so that it is compliant in all respects with this environmental authority.
- (H3-6) The holder of this environmental authority must ensure that, where a current operational plan covers decommissioning and rehabilitation, those operations are consistent with the objectives in any design plan for the dam.
- (H3-7) The holder of this environmental authority must notify the administering authority immediately of the level in any regulated dam reaching the mandatory reporting level (MRL), and confirm in writing within seven days.

Regulated Dams - Annual Inspection and Report

- (H4-1) The holder of this environmental authority must arrange for each regulated dam to be inspected annually by a suitably qualified and experienced person, in accordance with the following conditions.
- (H4-2) At each annual inspection, the condition of each regulated dam must be assessed, including the structural, geotechnical and hydraulic adequacy of the dam and the adequacy of the works with respect to dam safety, and any recommended actions conveyed immediately to the holder of this environmental authority.
- (H4-3) The holder of this environmental authority must immediately act upon recommendations arising from an annual inspection on condition and adequacy of a dam.
- (H4-4) At each annual inspection, the adequacy of the available storage against the design storage allowance specified must be assessed and, if a mandatory reporting level is required, it must be determined and marked on each regulated dam.
- (H4-5) A final assessment of adequacy of available storage in each regulated dam must be based on a dam level observed within the month of October, accepted as valid by the suitably qualified and experienced person, and resulting in an estimate of the level in that dam as at 1 November.
- (H4-6) For each annual inspection, two copies of a report certified by the suitably qualified and experienced person, including any recommended actions to be taken to ensure the integrity of each regulated dam, must be provided to the administering authority by 1 December.

Preventing Access by Livestock and Native Fauna

- (H5-1) The environmental authority holder must implement measures to prevent access by all livestock and minimise access by fauna to the production water evaporation dam.

SCHEDULE I – DEFINITIONS

“accepted engineering standards” in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments, and relevant Australian and New Zealand Standards.

“acceptance criteria” means the measures by which actions implemented are deemed to be complete. The acceptance criteria indicate the success of the decommissioning and rehabilitation outcomes or remediation of areas which have been significantly disturbed by the environmentally relevant activities. Acceptance criteria may include information regarding:

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- 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 mycorrhizal 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.

“administering authority” means the Department of Environment and Heritage Protection or its successor.

“AEP” means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.

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

- (a) exactly what has been assessed and the precise nature of that assessment;
- (b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- (c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

“associated works” in relation to a dam, means:

- (a) operations of any kind and all things constructed, erected or installed for that dam; and
- (b) any land used for those operations.

"beneficial use" in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

- (a) of benefit to that owner in that it adds real value to their business or to the general community,
- (b) in accordance with relevant provisions of the Environmental Protection Act 1994,
- (c) sustainable by virtue of written undertakings given by that owner to maintain that dam, and the transfer and use have been approved or authorised under any relevant legislation.

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

- (a) exactly what is being certified and the precise nature of that certification.
- (b) the relevant legislative, regulatory and technical criteria on which the certification has been based;
- (c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

"commercial place" means a place used as an office or for business or commercial purposes.

"construction" in relation to a dam includes building a new dam and modifying or lifting an existing dam.

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances; and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void, and any associated works; but does *not* mean a fabricated or manufactured tank or container designed to a recognised standard. To avoid any doubt, a levee, dyke or bund is a dam.

"design plan" is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include 'as constructed' drawings.

"design storage allowance" or **"DSA"** means the minimum storage required in a dam at the first of November each year in order to meet the hydraulic performance requirements.

"declared plant area" means areas designated by the Department of Natural Resources or Local Government as areas infested with plants declared under section 69 of the *Rural Lands Protection Act 1985* (section 70 (3) lists the categories of declared plants).

"dwelling" means any of the following structures or vehicles that is principally used as a residence-

- a house, unit, motel, nursing home or other building or part of a building;
- a caravan, mobile home or other vehicle or structure on land;
- a water craft in a marina.

"environmental authority" means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

"flowable substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

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

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"infrastructure" means water storage dams, roads and tracks, buildings and other structures built for the purpose and duration of the conduct the environmentally relevant activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams, waste dumps, voids, or stockpiles and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

"intrusive noise" means noise that, because of its frequency, duration, level, tonal characteristics, impulsiveness or vibration -

- is clearly audible to, or can be felt by, an individual; and
- annoys the individual.

In determining whether a noise annoys an individual and is unreasonably intrusive, regard must be given to Australian Standard 1055.2 - 1997 Acoustics - Description and Measurement of Environmental Noise Part 2 - Application to Specific Situations.

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

" $L_{A10, adj, 10 mins}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response.

" $L_{A1, adj, 10 mins}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response

" $L_{A, max adj, T}$ " means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"levee" means a dam, dyke or bund that is designed only to provide for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from unplanned releases from other works of infrastructure, during the progress of those stormwater or flood flows or those unplanned releases; and does not store any significant volume of water or flowable substances at any other times.

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"mg/L" means milligrams per litre.

"noxious" means harmful or injurious to health or physical well being.

"nuisance sensitive place" includes -

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

- a motel, hotel or hostel; or
- a kindergarten, school, university or other 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 thoroughfare, park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes.

and includes a place within the curtilage of such a place reasonably used by persons at that place.

"odour" means organoleptic attribute perceptible by the olfactory organ on sniffing certain volatile substances.

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive.

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

"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.

"regulated dam" means any dam in the significant or high hazard category as assessed using the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the Environmental Protection Regulation 1998 (whether or not it has been treated or immobilised), and includes:

- for an element - any chemical compound containing the element; and
- anything that has contained the waste.

"restoration" means the replacement of structural habitat complexity, ecosystem processes, services and function from a disturbed or degraded site to that of a pre-determined or analogue site. For the purposes of pipelines, restoration applies to final rehabilitation after pipeline decommissioning.

"site" means the place to which this environmental authority relates.

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

"stable" has the meaning in Schedule 5 of the Environmental Protection Regulation 2008 and, for a site, means the rehabilitation and **restoration** of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

"suitably qualified and experienced person" in relation to dams means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 1988, OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; AND the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

- (a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- (b) a total of five years of suitable experience and demonstrated expertise in at least four of the following categories, with the 'geomechanics of dams' category being compulsory:
- geomechanics of dams with particular emphasis on stability, geology and geochemistry.
 - investigation, design or construction of dams.
 - operation and maintenance of dams.
 - 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.
 - dam safety.

"this authority" means this environmental authority.

"this approval" means this environmental authority.

"void" means any man-made, open excavation in the ground.

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

"watercourse" means a river, creek or stream in which water flows permanently or intermittently—

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

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

but, in any case, only—

(c) unless a regulation under paragraph (d), (e) or (f) declares otherwise—at every place upstream of the point (**point A**) to which the high spring tide ordinarily flows and reflows, whether due to a natural cause or to an artificial barrier; or

(d) if a regulation has declared an upstream limit for the watercourse—the part of the river, creek or stream between the upstream limit and point A; or

(e) if a regulation has declared a downstream limit for the watercourse—the part of the river, creek or stream upstream of the limit; or

(f) if a regulation has declared an upstream and a downstream limit for the watercourse—the part of the river, creek or stream between the upstream and the downstream limits.

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

"you" means the holder of this Environmental Authority.

End of Conditions

From: WALL Kate
Sent: Wednesday, 9 July 2014 4:52 PM
To: Sch 4 - Personal information
Cc: VENZ Mark
Subject: Moreton Resources Environmental Authority

Sch 4 - Personal information

I am following up on our telephone conversation this afternoon regarding the Moreton Resource's environmental authority.

As discussed this afternoon, in regards to your request for a copy of the Final Land Use and Rehabilitation Plan, you will need to make a request under the *Right to Information Act 2009* (the RTI Act). This is because the plan is not a document listed in section 540 of the *Environmental Protection Act 1994*. To assist you when making your request, I have included some advice on the RTI process below.

To make your request, you will need to follow the process outlined under the RTI Act and pay the associated application fee of \$43.15. The application must be made using either the attached form (Right to Information and Information Privacy Access Application), or in writing via letter or email. Your application should include the following information:

- sufficient information to identify the document being requested;
- an address to which the document can be sent; and
- an application fee of \$43.15

Please note that EHP also has the discretion to charge an additional processing fee if the agency spends more than 5 hours processing the application, which amounts to \$6.70 for each 15 minute period spent processing the application. EHP may also charge 25 cents per A4 page if you wish to receive a black and white photocopy of the document. No charge will apply to access documents on CD/DVD.

RTI applications must be processed within 25 business days of receipt. A further 10 business days can be added if consultation with third parties are required.

There is more information on the RTI process, on the EHP website and can be found here:

<http://www.ehp.qld.gov.au/about/rti/index.html> . Alternatively you can contact the Right to Information Services unit of EHP via:

GPO Box 2454

Brisbane, QLD 4001

Phone: 3330 6111

Fax: 3033 0930

Email: rtiservices@ehp.qld.gov.au

I have also looked into the authorisation of exploration activities on the environmental authority. As we discussed, the

environmental authority does allow exploration activities provided they occur in accordance with *Code of Environmental Compliance for Exploration and Mineral Development Projects*. The authorisation for exploration activities is not new and the recent amendment to the environmental authority did not add the approval of exploration activities.

I will continue to look into what contaminants were flushed out as part of the cavity flushing process and about what happened to the sludge or residue from the bottom of the dam after evaporation.

I trust this information is of assistance, however please don't hesitate to contact me further should the need arise.

Cheers,

Kate Wall

Manager, Energy Assessment

Department of Environment and Heritage Protection

Telephone: 07 3330 5683 **Fax:** 07 3330 5634

[ehp-email-signature](#)



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RTI DL RELEASE - EHP



Department of
**Environment and
Heritage Protection**

Ref CTS 16798/13

28 AUG 2013

Ms Karesse Biggs
General Manager
Corporate Services
Stanwell Corporation Limited
GPO Box 800
BRISBANE QLD 4001

Dear Ms Biggs

Cougar Energy Limited: MDL385

Thank you for your letter dated 16 July 2013 concerning Cougar Energy Limited's (Cougar) Underground Coal Gasification (UCG) operations on MDL385 in which Stanwell Corporation Limited (Stanwell):

1. raises concerns about Cougar's ability to 'undertake and fully fund its required environmental rehabilitation';
2. seeks assurances from the department that Stanwell will not be held financially responsible for any 'UCG operational activities rehabilitation works required should Cougar not meet its obligations';
3. formally requests that all negotiations and agreements between Cougar and the department with respect to rehabilitation of the site, continuing/cessation of groundwater monitoring or Environmental Authority (EA) amendments be promptly communicated to Stanwell; and
4. having regard to the coming into effect of the Greentape legislative amendments, requests advice as to any procedures that will be in place should Cougar not complete its rehabilitation requirements by the date of expiry of MDL385 (28 February 2014).

In relation to each of the queries raised, the department responds as follows.

Whether Stanwell financially responsible should Cougar default

Cougar operates its activities pursuant to both MDL385 and EA MIN100656507.

Release

It is the EA, issued pursuant to the *Environmental Protection Act 1994* (EP Act) which requires that Cougar ensure that all areas disturbed by approved activities will be suitably rehabilitated.

In the event that Cougar fails to adequately rehabilitate its site, Cougar will not be able to surrender its EA and the department will remain empowered to use one or more of its statutory enforcement tools to ensure rehabilitation is achieved.

In the event that Cougar is unable and/or unwilling to achieve rehabilitation (for example because it has become unable to pay its debts) the department has the power to carry out the rehabilitation and may draw on the financial assurance provided to it by Cougar pursuant to its EA for the costs and expenses incurred.

The department and Cougar are currently discussing Cougar's obligations with a view to ensuring that all of its obligations under in its EA are satisfied.

I confirm that Stanwell will not be liable for rehabilitation of disturbance undertaken by Cougar on the site (should Cougar default) for the reason that Stanwell is not the holder of the EA. However, if Stanwell has accepted liability for infrastructure on the Cougar site (e.g. fencing) to remain following the surrender of the EA, it may be liable for rehabilitation works related to that infrastructure.

Disclosure of information

I note Stanwell's request that all negotiations and agreements between Cougar and the Department (including changes to groundwater monitoring conditions and EA amendments) be communicated to Stanwell.

At Stanwell's request, the department will endeavour to ensure that information to which Stanwell is publically entitled is made available to it at the earliest possible opportunity so as to avoid any unnecessary inconvenience or delay. In certain circumstances, it may, however, be necessary for Stanwell to apply for access under the *Right to Information Act* 2009.

The procedure should Cougar not decommission and rehabilitate prior to the expiration of its Mineral Development Licence

Cougar is required pursuant to its EA to fully decommission and rehabilitate the underground cavity so as to ensure the removal of all residual contaminants attributed to UCG processes from the cavity and from groundwater impacted by the UCG.

Release

Further, as stated, the EA remains in effect until the department grants a surrender of the EA under section 266 of the Act. A full surrender of an EA is only granted when the department is satisfied that the rehabilitation of the site meets the requirements of the EP Act. This requirement would not be affected in the event the MDL is not renewed.

The provisions for surrenders and financial assurance have not substantially changed following the Greentape amendments which came into effect on 31 March 2013.

Should you have any further enquiries, please contact Mr Mark Venz, Director, Energy Assessment, of the Department on telephone (07) 3330 5534.

Yours sincerely



Andrew Chesterman
Director-General

RTI DL RELEASE - EHP

Release

Frangi Spilsbury

From: Nanango Electorate Office <NANANGO@parliament.qld.gov.au>
Sent: Friday, 15 November 2013 2:48 PM
To: Environment; Frangi Spilsbury
Subject: Nanango Electorate Office - Further Questions from Kingaroy Concerned Citizens Group re: Cougar Plant

Dear Frangi,

Please find below an email from Marilyn Stephens of the Kingaroy Concerned Citizens Group. This is a follow-up to their AGM Deb attended last month and the information which was provided to them at the meeting (many thanks for all your help that, it was great!) Could you help at all with the following questions which Mrs Stephens has posed:

There were some points in the presentation that you gave that we were to put in writing for further clarification. On reading the information sheet that you provided that night, you quoted from the Department of Environment and Heritage Protection; stage four: "Plug and abandonment of all water monitoring and production wells and final shaping of the soil."

We would like reassurance that "all water monitoring and production wells" includes those that are off the actual Cougar site, on neighbouring properties.

"Currently the EA requires groundwater monitoring until bores show levels consistent with background levels for a continuous period of not less than six months."

When does this six month period begin?

Who will carry out the actual testing, EHP or Cougar?

What will be the range /extent of the contaminants tested? (Benzene and toluene must be included)

Any help much appreciated.
Kind regards
Belinda

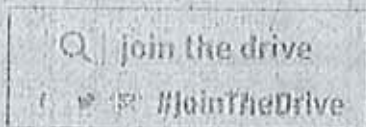
Belinda Pennell
Electorate Officer for
Deb Frecklington MP – Member for Nanango
T: 07 4162 1381 Freecall: 1800 816 261 Fax: 4162 4774
Email: nanango@parliament.qld.gov.au

**Deb Frecklington MP**
MEMBER FOR NANANGO
Shop 2/34A Alford Street, Kingaroy Qld 4610 • PO Box 1158 Kingaroy Qld 4610
P 4162 1381 E nanango@parliament.qld.gov.au F 4162 4774



Release

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WHAT WOULD
YOU SAY TO
SAVE A LIFE?

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From: Marilyn Stephens [mailto:kingaroyccg@gmail.com]
Sent: Monday, 11 November 2013 9:16 PM
To: Nanango Electorate Office
Subject: Thanks and some questions

Member for Nanango,

Ms Deb Frecklington,

KINGAROY Qld 4610

11 November, 2013

Dear Deb,

On behalf of the members of the Kingaroy Concerned Citizens Group, may I formally thank you for taking the chair at our AGM and for then presenting the group with a comprehensive explanation of the "state of play" with Cougar and the present position of the various regional plans and strategic cropping land. We understand how very busy you are and we do appreciate the time and effort taken to prepare for our meeting.

There were some points in the presentation that you gave that we were to put in writing for further clarification. On reading the information sheet that you provided that night, you quoted from the Department of Environment and Heritage Protection; stage four: "Plug and abandonment of all water monitoring and production wells and final shaping of the soil."

We would like reassurance that "all water monitoring and production wells" includes those that are off the actual Cougar site, on neighbouring properties.

"Currently the EA requires groundwater monitoring until bores show levels consistent with background levels for a continuous period of not less than six months."

When does this six month period begin?

Who will carry out the actual testing, EHP or Cougar?

What will be the range /extent of the contaminants tested? (Benzene and toluene must be included)

Thank you , in advance, for your time and effort in researching these topics.

Release

Yours sincerely,

Marilyn Stephens.

Secretary

Kingaroy Concerned Citizens Group

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RTI DL RELEASE - EIP

Release

Shaw Gary

From: Shaw Gary on behalf of DLO EHP
Sent: Tuesday, 22 October 2013 2:32 PM
To: frangi.spilsbury@ministerial.qld.gov.au
Subject: Cougar Energy

Importance: High

Hi Frangi

Re: Cougar Energy

Below is advice from the department.

Gary

Gary Shaw
Departmental Liaison Officer
Department of Environment and Heritage Protection
Level 13
400 George Street BRISBANE

Tel: 07 - 3330 6250 Fax: 07 - 3330 6306
E-mail: Gary.Shaw@ehp.qld.gov.au
visit us at <http://www.ehp.qld.gov.au/>

From: Wecker Benton
Sent: Tuesday, 22 October 2013 2:05 PM
To: DLO EHP
Cc: Shaw Gary; Butler Hamish; Lenz Anne; Prowse Petrina
Subject: FW: Cougar Energy
Importance: High

Hi Gary,

Please see below dot points related to Cougar Energy and the decommissioning of the plant at Kingaroy.

This is approved by Dean Ellwood.

Thanks Hamish and Petrina for the quick turnaround.

Thanks,

Benton

Update on Cougar Energy and the decommissioning of the UCG plant at Kingaroy

- Deborah Frecklington MP, Member for Nanango is scheduled to speak at the Kingaroy Concerned Citizens Group (KCCG) Annual General Meeting on 23rd October 2013.
- Mrs Frecklington has asked for the Department of Environment and Heritage Protection (EHP) to provide an update on Cougar Energy's Kingaroy Underground Coal Gasification (UCG) site following the sentencing of Cougar Energy in the Brisbane Magistrate's Court on 24 September 2013.

- On 15 October 2013, Cougar Energy lodged an application with EHP for the amendment of the environmental authority (EA) for the Kingaroy UCG site.
- The application relates to the decommissioning and rehabilitation of the Kingaroy UCG site, which Cougar Energy plans to complete in 4 stages as follows:
 1. Removal of the evaporation pond and reshaping of the top soil to follow the site's natural land form
 2. Removal of pipe work and the gas processing plant including the control room and compressor shed
 3. Removal of concrete bunds, pipe supports and roads and further reshaping of the site
 4. Plug and abandonment of all water monitoring and production wells and final reshaping of the soil
- Specifically, the application seeks the removal of conditions from the environmental authority that it considers are no longer relevant to the current activities at the site, such as the conditions relating to the flaring of gas and the monitoring of air emissions.
- The application also seeks EHP's approval for the residual levels of contaminants in the gasification chamber to be consistent with the relevant protection level of aquatic ecosystems at 95% as described in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000).
- Currently, the EA requires groundwater monitoring to continue until all monitoring bores show contaminant levels that are consistent with background levels for a continuous period of not less than six months.
- EHP is required to determine whether all of the application requirements for the amendment of the EA have been met as required by section 226 of the *Environmental Protection Act 1994*.
- Following that, EHP must decide whether the proposed amendments to the EA constitute a major amendment or a minor amendment (i.e., the assessment level decision).
- If the amendment is a major amendment, EHP will then decide whether the application is required to be publically notified. EHP may also request that additional information be provided should it be required.
- If the amendment application is a minor amendment, the application will not be required to undergo a public notification period, and EHP must make a decision on the application within 20 business days of making the assessment level decision.
- Cougar Energy Limited registered a name change to become Moreton Resources Limited on 19 September 2013.

From: Shaw Gary **On Behalf Of** DLO EHP
Sent: Monday, 21 October 2013 2:05 PM
To: ESR
Cc: Corro EHP ESR DDG
Subject: Cougar Energy
Importance: High

Hi Benton

Re: Cougar Energy

Mrs Deb Frecklington MP, Member for Nanango is scheduled to meet with the Kingaroy Concerned Citizens Group on 23rd October – she is the guest speaker at their upcoming AGM.

They've asked her to talk about an update on Cougar Energy and the decommissioning of the plant at Kingaroy.

Please provide dot points in response to this query with any information further to this media release
<http://statements.qld.gov.au/Search?q=cougar>

Please provide advice by 4pm Tuesday, 22 October 2013.

Apologies for the tight turnaround.

Thanks
Gary

Gary Shaw
Departmental Liaison Officer
Department of Environment and Heritage Protection
Level 13
400 George Street BRISBANE

Tel: 07 - 3330 6250 Fax: 07 - 3330 6306
E-mail: Gary.Shaw@ehp.qld.gov.au
visit us at <http://www.ehp.qld.gov.au/>

From: Frangi Spilsbury [<mailto:Frangi.Spilsbury@ministerial.qld.gov.au>]
Sent: Monday, 21 October 2013 1:48 PM
To: Shaw Gary
Cc: Troy Collings; Fiona Procter
Subject: FW: Nanango Electorate Office - UCG enquiry

Hi Gary

I just discussed this with Troy - could I please request dot points in response to the below query with any information further to this media release <http://statements.qld.gov.au/Search?q=cougar>

Could you please provide by COB tomorrow? Apologies for the tight turnaround.

Frangi

From: Ainsley Brownlie
Sent: Monday, 21 October 2013 12:56 PM
To: Nanango; Frangi Spilsbury
Subject: FW: Nanango Electorate Office - UCG enquiry

Hi Frangi

As discussed on Friday, Nanango EO are seeking an update on the Cougar Energy site at Kingaroy.

I've been informed that EHP are best placed to provide information about this matter. As such, could you take it from here?

Thanks

Ainsley



Ainsley Brownlie
Administration Officer / Backbench Liaison Officer
Office of the Hon. Andrew Cripps MP | Minister for Natural Resources and Mines
Phone: 07 3227 7538 | Fax: 07 3224 2491 | MobileSch 4 - Personal information
QMEC Building | 61 Mary Street | Brisbane | QLD 4000

From: Nanango Electorate Office [<mailto:NANANGO@parliament.qld.gov.au>]
Sent: Tuesday, 15 October 2013 2:30 PM
To: Ainsley Brownlie
Subject: Nanango Electorate Office - UCG enquiry

Hi Ainsley,

Deb is scheduled to meet with the Kingaroy Concerend Citizens Group on 23rd October – she is the guest speaker at their upcoming AGM.

They've asked her to talk about an update with Cougar Energy and the decommissioning of the plant at Kingaroy. Could you provide any advice on where that is up to?

Thanks

Belinda

Belinda Pennell
Electorate Officer for
Deb Frecklington MP – Member for Nanango
T: 07 4162 1381 Freecall: 1800 816 261 Fax: 4162 4774
Email: nanango@parliament.qld.gov.au

<< OLE Object: Picture (Device Independent Bitmap) >>

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RTI DL RELEASE - EHP



Hon Andrew Powell MP
Minister for Environment and Heritage Protection

Ref CTS 28159/13

05 DEC 2013

Mrs Deb Frecklington MP
Member for Nanango
PO Box 1158
KINGAROY QLD 4610

Level 13
400 George Street Brisbane 4000
GPO Box 2454 Brisbane
Queensland 4001 Australia
Telephone +61 7 3239 0844
Facsimile +61 7 3224 2496
Email environment@ministerial.qld.gov.au

Dear Mrs Frecklington *Deb*

Thank you for your email dated 15 November 2013 seeking further information following your meeting with the Kingaroy Concerned Citizens Group.

In answer to Ms Stephen's questions, I am advised as follows.

Firstly, in relation to whether Cougar Energy Ltd will plug and abandon all water monitoring and production wells, including those that are on neighbouring properties when decommissioning and rehabilitating the site, I am informed that Cougar Energy currently has an application with the Department of Environment and Heritage Protection (EHP) to amend its environmental authority (EA), and that the amendments proposed will ensure that all wells used for groundwater monitoring are plugged and abandoned including:

- exploration wells within the area of its mining development licence;
- production / injection wells within the area of the pilot plant; and
- groundwater monitoring wells on neighbouring properties.

In relation to Ms Stephens' query concerning the commencement date of Cougar Energy's current EA condition requiring that groundwater monitoring continue until the sampled levels are consistent with background levels for a continuous period of six months, I am advised that there is no stated commencement date. The EA requires that the monitoring continue for as long as is necessary for Cougar Energy to be able to demonstrate that it has achieved the required quality levels for a continuous six-month period.

In relation to the query concerning whether Cougar Energy or EHP will carry out the groundwater monitoring, I can advise that Cougar Energy or external consultants engaged by Cougar Energy, have been carrying out the monitoring pursuant to the EA requirements. Whilst EHP has undertaken groundwater monitoring at the Kingaroy Underground Coal Gasification pilot plant in the past, it is not currently undertaking any monitoring of its own. Cougar Energy has been regularly providing groundwater monitoring data to the department for its review.

Finally, in relation to the range of contaminants required to be tested, and in particular whether benzene and toluene are included, I can confirm that the current EA requires the sampling of, among other parameters, the BTEX suite of contaminants which include benzene and toluene.

Release

Cougar Energy's application presently with the department also proposed changes to its groundwater sampling regime based on results obtained to date and the requirement of its Monitored Natural Attenuation program that EHP has endorsed. The department is yet to decide Cougar Energy's application and expects to do so in the early stages of 2014.

I hope this information is of assistance when replying to your constituent. Should you have any further enquiries, please contact my Chief of Staff, Mr Troy Collings on 3719 7330.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'A. Powell', is written over a horizontal line.

ANDREW POWELL MP
Minister for Environment and Heritage Protection

RTI DL RELEASE - EHP

Hon Andrew Powell MP
Minister for Environment and Heritage Protection
Level 13
400 George Street Brisbane 4000
GPO Box 2454 Brisbane
Queensland 4001 Australia
Email environment@ministerial.qld.gov.au



Dear Minister Powell

Re: Cougar Energy Site ref CTS 28159/13

The Kingaroy Concerned Citizens Group received a letter from your Department dated 5 December 2013 regarding our questions for the future of the site of the failed Cougar Energy UCG pilot plant.

This group has been led to believe that the site would be closed down and rehabilitated work on the site started with continuing monitoring of water by the end of March 2014.

To this date there has been no work to our knowledge carried out to effect this rehabilitation. Given the project was closed down by the then Department of Environment and Resource Management in July 2010. We believe that it is reasonable to expect that work would have begun on the site by this stage.

Advice received from your Department indicates Cougar Energy made an application to amend the EA in October 2013. It appears that this has not yet happened and the company is still operating under the EA issued on 07/07/11.

Given the recommendations made by the Ombudsman's* report on this failed project we would ask if your Department can:

1. Provide us with a copy of the amended EA
2. Advise us the date when site rehabilitation is required to begin.
3. A proposed date for the completion of site rehabilitation of the sites
4. List of monitoring proposed for the site and the time period this monitoring will occur.
5. Plan for the future of the unused monitoring sites on neighbouring private land.

As a community group we would appreciate your early attention to the issues with this site and have them resolved as soon as practicable.

Regards

Sch 4 - Signature

17/5/14

Marilyn Stephens

Secretary

Kingaroy Concerned Citizens Group

184 Weeks Road

KINGAROY, Q 4610

Recommendation 11

The Director-General of DEHP ensure copies of relevant project documents including environmental authorities, assessment reports and environmental management

plans are freely available to the public.

*Report of the Queensland Ombudsman, The Underground Coal Gasification Report
An investigation into the approval and oversight of the Kingaroy underground coal gasification project
September 2012.

*Copy to Deb Trickleington
Member for Nanango.*

RTI DL RELEASE - EHP

Permit¹

Environmental Protection Act 1994

Environmental authority

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

Permit¹ number: EPPR00450013

Project Name: MDL385 Kingaroy

Environmental authority takes effect 5 June 2014.

The anniversary date of this environmental authority is **30 April**. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Moreton Resources Pty Ltd ABN: 75 060 111 784	Unit 3, 269 Abbotsford Road BOWEN HILLS QLD 4006

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Schedule 2A – 10 – investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit	MDL 385

Release

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation



Additional information for applicants

Environmentally relevant activities

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

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority 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 if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.

Section 78B(2) RTI Act	5/06/2014
Signature	Date

Kate Wall

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

Enquiries:

Energy Assessment
Department of Environment
and Heritage Protection

7th Floor, 400 George Street
GPO Box 2454
BRISBANE QLD 4001

Phone: (07) 3330 5683
Fax: (07) 3330 5634

Release

Date Granted – 5 June 2014

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 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*
- *Mineral Resources Act 1989*
- *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 impact on water levels or pressure heads in groundwater aquifers in or surrounding formations. There are obligations to minimise or mitigate any such impact under other Queensland Government and Commonwealth Government legislation.

This environmental authority consists of the following schedules:

Schedule A	General Conditions
Schedule B	Air
Schedule C	Water
Schedule D	Noise
Schedule E	Waste
Schedule F	Land
Schedule G	Community
Schedule H	Dams
Schedule I	Definitions

SCHEDULE A – GENERAL CONDITIONS

Prevent and / or Minimise Likelihood of Environmental Harm

- (A1-1) In carrying out the activities to which this approval relates, you must take all reasonable and practicable measures to prevent and / or to minimise the likelihood of environmental harm being caused. Any activity that, if carried out incompetently or negligently may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this approval.

NOTE: This approval does not authorise environmental harm unless a condition contained within this approval explicitly authorises that harm. Where there is no condition or the approval is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

Financial Assurance

- (A2-1) Prior to any changes in activities which would result in an increase to the maximum significant disturbance since financial assurance was last given to the administering authority, the holder of the environmental authority must amend the financial assurance and give the administering authority the increased amount of financial assurance.

Maintenance of Measures, Plant and Equipment

- (A3-1) The holder must:
- (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and
 - (a) maintain such measures, plant and equipment in a proper condition; and
 - (b) operate such measures, plant and equipment in a proper manner.

Monitoring

- (A4-1) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
- (A4-2) Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.

Notification of Emergencies and Incidents

- (A5-1) As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority, the administering authority must be notified of the release by telephone or facsimile.

Storage and Handling of Flammable and Combustible Liquids

- (A6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Definitions

- (A7-1) Words and phrases used throughout this environmental authority are defined in Attachment A – Definitions. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.

Scope of Approved Underground Coal Gasification Activities

- (A8-1) All underground coal gasification activities on site are limited to decommissioning, rehabilitation, care and maintenance of the site.

Contingency Procedures for Emergency Environmental Incidents

- (A9-1) Petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents, which include, but are not necessarily limited to:
- (a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity;
 - (b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity;
 - (c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring;
 - (d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;
 - (e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land;
 - (f) training of staff to enable them to effectively respond; and
 - (g) procedures to notify the administering authority, local government and any potentially impacted landholder.

Exploration Drilling

- (A10-1) Exploration activities within the Mineral Development Licence (MDL) must be undertaken in accordance with all Standard Environmental Conditions contained in the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

SCHEDULE B – AIR

Dust nuisance

- (B1-1) The release of dust or particulate matter or both resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B1-2) 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.

Odour nuisance

- (B2-1) Notwithstanding any other condition of this approval, the release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B2-2) When requested by the administering authority, odour 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.
- (B2-3) If monitoring indicates Condition (B2-1) is not being met then the environmental authority holder must:
 - (a) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance; and
 - (b) address the complaint including the use of appropriate dispute resolution if required.

Operation of Fuel Burning or Combustion Equipment

- (B3-1) The operation of fuel burning or combustion equipment that is capable of burning more than 500 kg of fuel in an hour is not authorised.

SCHEDULE C – WATER

Release to Waters

- (C1-1) With the exception of releases of stormwater in accordance with Condition (C4-1), contaminants must not be released to any waters (including groundwater outside the underground coal gasification working cavity) or the bed and banks of any waters.

Water Management System

- (C2-2) Water must be managed to prevent incident stormwater and stormwater run-off from contacting general refuse and regulated wastes at the site.
- (C2-2) Water must be managed to divert upstream run-off away from disturbed areas, or areas containing wastes or contaminants.
- (C2-3) Water from disturbed areas must be captured and managed in accordance with condition (C4-1) to (C4-3).

Erosion Protection Measures and Sediment Controls

- (C3-1) All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment. Reasonable and practicable measures are outlined in "Soil and Erosion Control. Engineering Guidelines for Queensland Construction Sites", June 1996 published by the Institution of Engineers, Australia Queensland Division.
- (C3-2) Erosion control and sediment control structures must be maintained at all times during the periods of construction, plant operation, decommissioning and any necessary rehabilitation. The structures must be checked, repaired or replaced as required after each rain event.
- (C3-3) There must be no disturbance to, filling or obstruction of any part of any watercourse.

Stormwater Management

- (C4-1) There must be no release of stormwater runoff that has been in contact with any contaminants at the site to any waters, roadside gutter or stormwater drain, unless it complies with the following quality characteristics:
- (a) the pH value must not be less than 6.5 and not more than 9.0;
 - (b) the concentration of dissolved oxygen must not be less than 6 milligrams per litre;
 - (c) the concentration of suspended solids must not exceed 50 milligrams per litre if an overflow is caused by rainfall and 30 milligrams per litre at all other times;
 - (d) the concentration of total dissolved solids suspended solids must not exceed 1000 milligrams per litre; and
 - (e) the release must not produce any slick or other visible evidence of oil or grease, contain visible floating oil, grease, scum, litter or other objectionable matter nor contain other contaminants in concentrations that adversely affects the environmental values of the receiving environment.

- (C4-2) Ponds or other structures used for the collection and /or treatment of stormwater runoff from disturbed areas must be appropriately sized and effectively maintained to avoid releases. Such maintenance measures must include, but not be limited to, the removal of settled solids as often as necessary to maintain the required capacity.
- (C4-3) Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from any pits or other structures used for the storage or treatment of contaminants or wastes.

Water Quality Sampling Methodology

- (C5-1) The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the Department of Environment and Heritage Protection's Water Quality Sampling Manual.

Flammable and Combustible Liquids

- (C6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Spillage Control

- (C7-1) Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such wastes, contaminants or material to any external storm water drainage system, roadside gutter or waters. To remove any doubt this condition does not apply to hosing, sweeping, etc of areas and oily materials that drain to an oily-water management system.

Maintenance and cleaning of vehicles

- (C8-1) The maintenance and cleaning of vehicles and any other equipment or plant must be carried out in areas that prevent contaminants being released into any waters

Protection of Groundwater Values

- (C9-1) A groundwater monitoring program must be developed and implemented to characterise background water quality levels within aquifers.
- (C9-2) The groundwater monitoring program required by condition (C9-1) must be consistent with Schedule B6 of the 'National Environment Protection (Assessment of Site Contamination) Measure 1999'.
- (C9-3) The groundwater monitoring program required by condition (C9-1) must be developed by a person possessing appropriate qualifications and experience in hydrogeology and groundwater monitoring program design.

- (C9-4) The groundwater monitoring required by condition (C9-1) must include the monitoring of each of the water quality characteristics identified in Schedule C – Table 2 (Groundwater Monitoring Requirements) at each of the bores identified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-5) The groundwater monitoring required by condition (C9-1) must be undertaken at the minimum frequencies specified for each bore and water quality characteristic specified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-6) On any occasion that groundwater samples are obtained as part of the groundwater monitoring program required by conditions (C9-1), the standing water levels must be measured and recorded to an accuracy of 0.01 metres relative to Australian Height Datum (AHD) for each sample.
- (C9-7) Groundwater levels within the vicinity of the underground coal gasification plant must be monitored and groundwater draw down fluctuations in excess of 2 m per year, not resulting from the pumping of licensed bores, must be notified within 14 days to the administering authority following completion of monitoring.

Schedule C – Table 2 (Groundwater Monitoring Requirements)

Bore (Target Layer)	Water Quality Characteristic	Units	Minimum Frequency
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	mg/L	Every three months and following any rainfall event exceeding 100mm in any 24 hour period
	pH	pH units	
	Sulphate	mg/L	
	Ammonia	mg/L	
	Phenols (speciated)	µg/L	
	Total Petroleum Hydrocarbons (speciated)	µg/L	
	BTEX (speciated)	µg/L	
	Polycyclic Aromatic Hydrocarbons (speciated)	µg/L	
	Fluoride	mg/L	
	Cadmium	mg/L	
	Arsenic	mg/L	
	Lead	mg/L	
	Zinc	mg/L	
T5037 (Lateritic Clay) T5038 (Upper Basalt) T5066 (Lower Basalt)	Total Dissolved Salts	mg/L	Annually and following any rainfall event exceeding 100mm in any 24 hour period
	pH	pH units	
	Sulphate	mg/L	
	Ammonia	mg/L	

- (C9-8) The results of each round of groundwater sampling required by condition (C9-1) must be provided to the administering authority within one month of the completion of sampling.

- (C9-9) An interpretation of the groundwater monitoring results required by condition (C9-8) must be provided to the administering authority with the results required by condition (C9-8).
- (C9-10) The interpretation of groundwater monitoring results required by condition (C9-9) must include a comparison with the relevant 80th percentile water quality values specified in Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters) relevant to that bore and water quality characteristic, if available.
- (C9-11) If a relevant 80th percentile water quality value for that bore and water quality characteristic is not specified in Schedule B – Table 3 (80th Percentile Water Quality Values for Specified Parameters), then the interpretation required by condition (C9-9) must include a comparison of the groundwater monitoring results with the background water quality levels characterised in condition (C9-1).
- (C9-12) All sampling of groundwater required by this environmental authority must be undertaken in accordance with the most recent version of the Australian Government Geoscience Australia guidelines, Groundwater Sampling and Analysis – A Field Guide.

Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters)

Bore (Target Layer)	Quality characteristic	80 th Percentile Water Quality Values
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	740 mg/L
	pH	8.2 pH units
	Sulphate	154mg/L
	Ammonia	0.18 mg/L
	Cadmium	0.0003 mg/L
	Arsenic	0.003 mg/L
	Zinc	0.014 mg/L
T5037 (Lateritic clay)	Total Dissolved Salts	2265 mg/L
	pH	6.3 pH units
	Sulphate	120 mg/L
	Ammonia	0.06 mg/L
T5038 (Upper Basalt)	Total Dissolved Salts	1873 mg/L
	pH	7.8 pH units
	Sulphate	67 mg/L
	Ammonia	0.07 mg/L
T5066 (Lower Basalt)	Total Dissolved Salts	1700 mg/L
	pH	7.9 pH units
	Sulphate	167 mg/L
	Ammonia	0.16 mg/L

SCHEDULE D — NOISE

Noise nuisance

- (D1-1) Noise from the activities must not cause an environmental nuisance at any sensitive place.
- (D1-2) 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 in the opinion of an authorised officer is neither frivolous nor vexatious nor based on mistaken belief) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (D1-3) Noise Monitoring must include:
- (a) background noise level;
 - (b) L_{Amax} , adj, 15 mins or where they can be justified as appropriate, L_{A10} , adj, 15 mins and L_{A1} , adj, 15 mins;
 - (c) the level and frequency of occurrence of impulsive or tonal noise;
 - (d) atmospheric conditions including wind speed and direction;
 - (e) effects due to extraneous factors such as traffic noise; and
 - (f) location, date and time of recording.
- (D1-4) In the event of a complaint about noise environmental nuisance that the administering authority considers is not frivolous or vexatious, the environmental holder is to develop a noise management plan within two (2) weeks of being advised in writing of the complaint. The noise management plan must address at least, but not be limited to, the following matters:
- (a) identification of component noise sources and activities at the place(s) which impact on noise sensitive areas;
 - (b) the measured and/or predicted level of these noise sources and activities at noise sensitive places;
 - (c) the reasonable and practicable control or abatement measures that can be undertaken to reduce identified intrusive noise sources;
 - (d) the level of noise at noise sensitive places that would be achieved from implementing these measures;
 - (e) the handling of future noise complaints;
 - (f) community liaison and consultation; and
 - (g) training of staff in noise management practices.
- (D1-5) Upon the completion of the noise management plan it must be submitted to the administering authority within 14 days for its review and comment.
- (D1-6) The activities must be carried out by such reasonable and practicable means necessary to prevent the emission of noise that constitutes an environmental nuisance. The reasonable and practicable measures adopted may include but not necessarily be limited to the following noise abatement measures:
- (a) ensure that any equipment to be used is assessed for potential noise nuisance impacts and appropriately attenuated;
 - (b) ensure that all plant and equipment is operated and maintained in a proper and efficient manner;

- (c) ensure that engine cowlings and high efficiency silencers are fitted to all the engines of all plant and equipment identified as impacting on noise sensitive receivers;
- (d) ensure that noise generating activities are not undertaken in close proximity to noise sensitive places or commercial places;
- (e) ensure that, where required, noise abatement barriers are sited such that they effectively intercept the sound transmission path between the sources of noise and receptor premises;
- (f) locate access routes within the premises as far away from sensitive places as is practical having regard to operational convenience; and
- (g) where operation of reversing beepers is likely to cause environmental nuisance, taking measures to ensure mitigation of the nuisance, for example by de-tuning the reversing beepers, replacing the reversing beepers with other warning devices and/or replacing reversing beepers with alternative reversing beepers which adjust their noise level output in accordance with the prevailing background noise level.

RTI DL RELEASE - EHP

SCHEDULE E – WASTE

General

- (E1-1) Waste must not be released to the environment, stored, transferred or disposed of contrary to any condition of this environmental authority.
- (E1-2) Except as otherwise provided by the conditions of this authority, all disposal of waste generated in carrying out the approved activities must be to a proper and appropriate facility that is authorised to accept such waste.

Regulated Waste Handling

- (E2-1) All regulated waste (including sewage) must be removed from the site by a person who holds an appropriate approval to transport such waste under the provisions of the *Environmental Protection Act 1994 (Qld)* or equivalent interstate legislation, and must be disposed of at a facility authorised to accept such waste.

RTI DL RELEASE - EPP

SCHEDULE F – LAND

Preventing Contaminated Land

- (F1-1) There must be no releases of contaminants to land that may cause the land to become contaminated land.

Decommissioning of the Underground Coal Gasification Facility

- (F2-1) A decommissioning procedure must be developed for the underground coal gasification pilot plant.
- (F2-2) The procedure required by condition (F2-1) must:
- (a) detail steps that will be taken to cease combustion /gasification of coal underground;
 - (b) detail tests that will be completed during and following the shutdown process to confirm that combustion and/or pyrolysis of coal has ceased; and
 - (c) ensure that on shutdown the cavity is flushed using proven processes to ensure removal of residual pollutants.
- (F2-3) The procedure detailed in condition (F2-1) must be implemented immediately on cessation of the underground coal gasification trial or if otherwise requested by the administering authority.

Rehabilitation Criteria

- (F3-1) Prior to commencing activities authorised by this approval, the following surveys must be undertaken for any areas to be disturbed:
- (a) survey of topsoil to determine its suitability for use in rehabilitation;
 - (b) survey of land suitability;
 - (c) baseline ground level surveys;
 - (d) survey of flora, fauna and nature conservation values; and
 - (e) survey of cultural heritage values.
- (F3-2) All areas disturbed as a result of the approved activities must be rehabilitated to a stable, non-polluting landform with a self-sustaining vegetation cover in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria), and must comply with the maximum distance between erosion control structures specified in Schedule F – Table 2 (Maximum distance between erosion control structures***).
- (F3-3) Progressive rehabilitation in accordance with the conditions of this schedule must commence as soon as areas become available within the operational land.

Final Land Use and Rehabilitation Plan

- (F4-1) The holder of this environmental authority must develop and implement a Final Land Use and Rehabilitation Plan to ensure that all areas disturbed by approved activities will be suitably rehabilitated in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria) and the other conditions of this environmental authority. The Plan must include, but is not limited to the following:
- (a) disturbance type;

- (b) disturbance area;
- (c) pre and post mine land descriptions;
- (d) pre mine and post mine land suitability;
- (e) proposed vegetation species;
- (f) a description of rehabilitation management techniques incorporating works and monitoring programs and timetables (including monitoring subsidence of ground within disturbed areas for at least 12 months following cessation of underground coal gasification);
- (g) indicators for success; and
- (h) keeping of appropriate records of rehabilitation measures implemented including taking of photographs demonstrative of rehabilitation achieved and the preparation of annual rehabilitation progress reports. A summary of the annual rehabilitation progress report must be submitted to the administering authority with each annual return.

(F4-2) The holder of this authority must submit a copy of the Final Land Use and Rehabilitation Plan, as required by condition (F5-1), to the administering authority, and in finalising the plan must have due regard to comments made by the administering authority.

(F4-3) This plan must be submitted on or before 1 March 2011 or within 3 months following the cessation of the underground coal gasification trial; whichever occurs first.

Grazing Pasture / Agricultural Crops Outcome

(F5-1) Areas which are to be rehabilitated to productive land use, including but not limited to cropping, forestry or grazing, must comply with the following outcomes:

- (a) generate vegetation with projective cover, species composition and species distribution similar to what existed prior to disturbance; and
- (b) landforms are stable and have been reshaped as close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification;
- (c) topsoil on rehabilitated areas is reinstated to a depth that is consistent with the depth of topsoil on the site prior to the commencement of activities associated with the underground coal gasification; and
- (d) measures of productivity (e.g. sustainable dry matter production of pasture species, sustainable yield for crop species) are similar to what existed prior to underground coal gasification activities.

(F5-2) Prior to surrendering this authority, an investigation into rehabilitated areas must be conducted and a report submitted to the administering authority proposing acceptance criteria to meet the outcomes specified in condition (F3-2) and Schedule F – Table 1 (Landform Design and Suitability Criteria).

Schedule F – Table 1 (Landform Design and Suitability Criteria)

Disturbance		Post-mine land capability class	Maximum Final Slope	Final Land Use Description
Type	Estimated Area (ha)			
All disturbed areas	1 hectare	The same as existed prior to underground coal gasification	As close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification	The same as existed prior to underground coal gasification, unless otherwise negotiated with the landowner.

Schedule F – Table 2 (Maximum distance between erosion control structures)

Slope range (%)	Maximum distances between erosion control structures (m)
0 - 5	150
6 - 10	100
11 - 15	70
> 15	25

- (F5-3) Notwithstanding the maximum distances stipulated in Schedule F Table 2, where the land is rehabilitated for a final land use of agriculture, contour banks must be installed in consultation with the landowner and as per local practice.

Infrastructure

- (F6-1) All infrastructure constructed by or for the environmental authority holder including water storage structures, must be removed from the site prior to mining lease surrender, except where agreed in writing by the post-mining land owner / holder.

Weed Management

- (F7-1) 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*.

SCHEDULE G – COMMUNITY

Complaint response

- (G1-1) All complaints received must be recorded including details of complainant, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

RTI DL RELEASE - EHP

SCHEDULE H – DAMS

All Dams

- (H1-1) The holder of this environmental authority must ensure that each dam is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.
- (H1-2) The hazard category of each dam must be assessed by a suitably qualified and experienced person at least once per year, based on documented evidence sufficient to define or confirm the current nature and extent of environmental consequences for potential failure of that dam.
- (H1-3) Where the hazard category of a dam is assessed as significant or high, the holder of the environmental authority must act immediately to ensure:
- (a) the administering authority is advised of the current details of that dam, including:
 - i. the assessed hazard category of that dam,
 - ii. sufficient points of latitude and longitude in the current Australian geodetic datum to form a perimeter around that dam and its associated works,
 - iii. the maximum surface area, maximum volume, maximum depth of that dam; and
 - (b) that dam meets the hydraulic performance required of the assessed hazard category within twelve months of that assessment.
- (H1-4) The condition of dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a suitably qualified and experienced person. The methods of monitoring and frequency of monitoring shall be as assessed by that suitably qualified and experienced person, based on the hazard category and particular circumstances of each dam.
- (H1-5) In the event of early signs of loss of structural or hydraulic integrity, the holder of this environmental authority must immediately take action to prevent or minimize any actual or potential environmental harm, and report in writing any findings and actions taken to the administering authority within 28 days of that event.
- (H1-6) The holder of this environmental authority must not abandon any dam but must decommission each dam such that ongoing environmental harm is prevented.
- (H1-7) As a minimum, decommissioning must be conducted such that each dam:
- (a) either:
 - i. has become a stable landform, that no longer contains flowable substances, or
 - ii. has been approved or authorised under relevant legislation for a beneficial use and is subject to legally enforceable conditions of management, or
 - iii. is a void authorised by the administering authority to remain after decommissioning subject to legally enforceable conditions of management; and,
 - (b) complies with the rehabilitation requirements of this environmental authority.

Regulated Dams - Location and Basic Specifications

- (H2-1) The location of the regulated dam authorised under this environmental authority must be defined by control points which are shown and tabulated in the Design Plan for the dam. Sufficient control points

consisting of latitudes and longitudes in the current Australian geodetic datum must be provided to form a perimeter around the dam and its associated works.

- (H2-2) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the basic specifications in Schedule H - Table 1, below.

Schedule H – Table 1 (Location of Regulated dams)

Name of Regulated Dam	Hazard Category	Maximum Surface Area of Dam	Maximum Volume of Dam (m ³)	Maximum Depth of Dam (m)	Purpose of Dam
Cougar Energy Production Water Dam	Significant	10,000m ²	25,000m ³	2.5m	To receive and evaporate contaminated by-product water from the underground coal gasification process.

- (H2-3) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the hydraulic specifications in Schedule H - Table 2, below.

Schedule H – Table 2 (Hydraulic Performance of Regulated Dams)

Name of Regulated Dam	Spillway Capacity or Diversion Capacity (Levees) AEP	Design Storage Allowance (Dams other than Levees) AEP	Mandatory Reporting Level (Dams other than Levees) AEP
Cougar Energy Production Water Dam	0.001	0.02	0.01 for 72hr storm event.

Regulated Dams – Certification and Operation

- (H3-1) Documentation required by the conditions in this schedule must be kept available for inspection by the regulating authority for a period of seven years after the conclusion of the environmentally relevant activity in respect of which this environmental authority has been granted.
- (H3-2) The holder of this environmental authority must not commence construction of a regulated dam unless:
- the holder has submitted to the administering authority two copies of a design plan, together with the certification of a suitably qualified and experienced person that the design of the regulated dam is fit for the purpose for that dam stated in that plan, and compliant in all respects with this environmental authority, and
 - at least 28 days has passed since the submission of the design plan, or the regulating authority has advised the holder that the design plan is compliant with this condition.
- (H3-3) When construction or modification of any regulated dam is complete, or within 12 months of dam becoming a regulated dam by virtue of a hazard assessment, the holder of this environmental authority must submit to the administering authority two copies of a set of 'as constructed' drawings,

together with the certification by a suitably qualified and experienced person that the dam 'as constructed' is fit for the purpose stated in the hazard assessment and the design plan if the latter exists, and compliant in all respects with this environmental authority.

- (H3-4) The holder of this environmental authority must ensure that there is always a current operational plan for each regulated dam, which may form part of other plans required by legislation.
- (H3-5) The operational plan shall at least cover all matters relevant to the operation and maintenance of the regulated dam so that it is compliant in all respects with this environmental authority.
- (H3-6) The holder of this environmental authority must ensure that, where a current operational plan covers decommissioning and rehabilitation, those operations are consistent with the objectives in any design plan for the dam.
- (H3-7) The holder of this environmental authority must notify the administering authority immediately of the level in any regulated dam reaching the mandatory reporting level (MRL), and confirm in writing within seven days.

Regulated Dams - Annual Inspection and Report

- (H4-1) The holder of this environmental authority must arrange for each regulated dam to be inspected annually by a suitably qualified and experienced person, in accordance with the following conditions.
- (H4-2) At each annual inspection, the condition of each regulated dam must be assessed, including the structural, geotechnical and hydraulic adequacy of the dam and the adequacy of the works with respect to dam safety, and any recommended actions conveyed immediately to the holder of this environmental authority.
- (H4-3) The holder of this environmental authority must immediately act upon recommendations arising from an annual inspection on condition and adequacy of a dam.
- (H4-4) At each annual inspection, the adequacy of the available storage against the design storage allowance specified must be assessed and, if a mandatory reporting level is required, it must be determined and marked on each regulated dam.
- (H4-5) A final assessment of adequacy of available storage in each regulated dam must be based on a dam level observed within the month of October, accepted as valid by the suitably qualified and experienced person, and resulting in an estimate of the level in that dam as at 1 November.
- (H4-6) For each annual inspection, two copies of a report certified by the suitably qualified and experienced person, including any recommended actions to be taken to ensure the integrity of each regulated dam, must be provided to the administering authority by 1 December.

Preventing Access by Livestock and Native Fauna

- (H5-1) The environmental authority holder must implement measures to prevent access by all livestock and minimise access by fauna to the production water evaporation dam.

SCHEDULE I – DEFINITIONS

“accepted engineering standards” in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments, and relevant Australian and New Zealand Standards.

“acceptance criteria” means the measures by which actions implemented are deemed to be complete. The acceptance criteria indicate the success of the decommissioning and rehabilitation outcomes or remediation of areas which have been significantly disturbed by the environmentally relevant activities. Acceptance criteria may include information regarding:

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- 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 mycorrhizal 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.

“administering authority” means the Department of Environment and Heritage Protection or its successor.

“AEP” means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.

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

- (a) exactly what has been assessed and the precise nature of that assessment;
- (b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- (c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

“associated works” in relation to a dam, means:

- (a) operations of any kind and all things constructed, erected or installed for that dam; and
- (b) any land used for those operations.

"beneficial use" in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

- (a) of benefit to that owner in that it adds real value to their business or to the general community,
- (b) in accordance with relevant provisions of the Environmental Protection Act 1994,
- (c) sustainable by virtue of written undertakings given by that owner to maintain that dam, and the transfer and use have been approved or authorised under any relevant legislation.

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

- (a) exactly what is being certified and the precise nature of that certification.
- (b) the relevant legislative, regulatory and technical criteria on which the certification has been based;
- (c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

"commercial place" means a place used as an office or for business or commercial purposes.

"construction" in relation to a dam includes building a new dam and modifying or lifting an existing dam.

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances; and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void, and any associated works; but does *not* mean a fabricated or manufactured tank or container designed to a recognised standard. To avoid any doubt, a levee, dyke or bund is a dam.

"design plan" is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include 'as constructed' drawings.

"design storage allowance" or **"DSA"** means the minimum storage required in a dam at the first of November each year in order to meet the hydraulic performance requirements.

"declared plant area" means areas designated by the Department of Natural Resources or Local Government as areas infested with plants declared under section 69 of the *Rural Lands Protection Act* 1985 (section 70 (3) lists the categories of declared plants).

"dwelling" means any of the following structures or vehicles that is principally used as a residence-

- a house, unit, motel, nursing home or other building or part of a building;
- a caravan, mobile home or other vehicle or structure on land;
- a water craft in a marina.

"environmental authority" means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act* 1994.

"flowable substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

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

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"infrastructure" means water storage dams, roads and tracks, buildings and other structures built for the purpose and duration of the conduct the environmentally relevant activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams, waste dumps, voids, or stockpiles and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

"intrusive noise" means noise that, because of its frequency, duration, level, tonal characteristics, impulsiveness or vibration -

- is clearly audible to, or can be felt by, an individual; and
- annoys the individual.

In determining whether a noise annoys an individual and is unreasonably intrusive, regard must be given to Australian Standard 1055.2 - 1997 Acoustics - Description and Measurement of Environmental Noise Part 2 - Application to Specific Situations.

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

" $L_{A10, adj, 10 mins}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response.

" $L_{A1, adj, 10 mins}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response

" $L_{A, max adj, T}$ " means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"levee" means a dam, dyke or bund that is designed only to provide for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from unplanned releases from other works of infrastructure, during the progress of those stormwater or flood flows or those unplanned releases; and does not store any significant volume of water or flowable substances at any other times.

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"mg/L" means milligrams per litre.

"noxious" means harmful or injurious to health or physical well being.

"nuisance sensitive place" includes -

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

- a motel, hotel or hostel; or
- a kindergarten, school, university or other 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 thoroughfare, park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes.

and includes a place within the curtilage of such a place reasonably used by persons at that place.

"odour" means organoleptic attribute perceptible by the olfactory organ on sniffing certain volatile substances.

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive.

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

"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.

"regulated dam" means any dam in the significant or high hazard category as assessed using the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the Environmental Protection Regulation 1998 (whether or not it has been treated or immobilised), and includes:

- for an element - any chemical compound containing the element; and
- anything that has contained the waste.

"restoration" means the replacement of structural habitat complexity, ecosystem processes, services and function from a disturbed or degraded site to that of a pre-determined or analogue site. For the purposes of pipelines, restoration applies to final rehabilitation after pipeline decommissioning.

"site" means the place to which this environmental authority relates.

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

"stable" has the meaning in Schedule 5 of the Environmental Protection Regulation 2008 and, for a site, means the rehabilitation and **restoration** of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

"suitably qualified and experienced person" in relation to dams means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 1988, OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; AND the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

- (a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- (b) a total of five years of suitable experience and demonstrated expertise in at least four of the following categories, with the 'geomechanics of dams' category being compulsory:
- geomechanics of dams with particular emphasis on stability, geology and geochemistry.
 - investigation, design or construction of dams.
 - operation and maintenance of dams.
 - 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.
 - dam safety.

"this authority" means this environmental authority.

"this approval" means this environmental authority.

"void" means any man-made, open excavation in the ground.

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

"watercourse" means a river, creek or stream in which water flows permanently or intermittently—

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

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

but, in any case, only—

(c) unless a regulation under paragraph (d), (e) or (f) declares otherwise—at every place upstream of the point (**point A**) to which the high spring tide ordinarily flows and reflows, whether due to a natural cause or to an artificial barrier; or

(d) if a regulation has declared an upstream limit for the watercourse—the part of the river, creek or stream between the upstream limit and point A; or

(e) if a regulation has declared a downstream limit for the watercourse—the part of the river, creek or stream upstream of the limit; or

(f) if a regulation has declared an upstream and a downstream limit for the watercourse—the part of the river, creek or stream between the upstream and the downstream limits.

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

"you" means the holder of this Environmental Authority.

End of Conditions



Hon Andrew Powell MP
Minister for Environment and Heritage Protection

Ref CTS 12727/14

24 JUN 2014

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Ms Marilyn Stephens
Secretary
Kingaroy Concerned Citizens Group
184 Weeks Road
KINGAROY QLD 4610

Dear Ms Stephens

Thank you for your letter dated 17 May 2014 concerning the rehabilitation of the Cougar Energy (now Moreton Resources) UCG pilot site near Kingaroy.

I can advise that the Department of Environment and Heritage Protection granted an amendment of the environmental authority (EA) for the site on 5 June 2014. The amended EA (enclosed) requires Moreton Resources to continue its rehabilitation of the UCG pilot site, including requiring the ongoing monitoring of groundwater quality of aquifers within the vicinity of the plant.

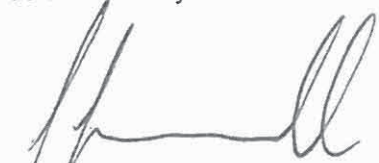
Moreton Resources has opted to use 'Monitored Natural Attenuation' (MNA) (that is, natural processes method) to return groundwater quality to background levels. While the department is supportive of this approach, the MNA process may take several years to return the whole site to the levels required by the EA. As a result, an end date by which the rehabilitation of the site must be completed has not been included in the amended EA.

Moreton Resources has demonstrated that groundwater quality has now returned to background levels at some monitoring bores and, as a result, these bores are no longer required to be monitored under the EA. 'Schedule C' of the enclosed EA details the bores that are required to be monitored, as well as the parameters and frequency by which that monitoring must occur.

Moreton Resources will be required to complete the rehabilitation of the UCG pilot site as required by the conditions of the EA before it is able to surrender the EA. In the meantime, Moreton Resources is continuing to discuss its plans for the site with the department and its neighbouring landholders.

I hope this information has been of assistance to you. Should you have further enquiries, please contact my Chief of Staff, Mr Troy Collings on 3719 7330.

Yours sincerely


ANDREW POWELL MP
Minister for Environment and Heritage Protection

Enc

Release

Department of Environment and Heritage Protection

Permit¹

Environmental Protection Act 1994

Environmental authority

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

Permit¹ number: EPPR00450013

Project Name: MDL385 Kingaroy

Environmental authority takes effect 5 June 2014.

The anniversary date of this environmental authority is 30 April. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Moreton Resources Pty Ltd ABN: 75 060 111 784	Unit 3, 269 Abbotsford Road BOWEN HILLS QLD 4006

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Schedule 2A – 10 – investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit	MDL 385

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation



Additional information for applicants

Environmentally relevant activities

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

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority 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 if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.

Section 78B(2) RTI Act	5/06/2014
Signature	Date

Kate Wall

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

Enquiries:

Energy Assessment
Department of Environment
and Heritage Protection

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BRISBANE QLD 4001

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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 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*
- *Mineral Resources Act 1989*
- *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 impact on water levels or pressure heads in groundwater aquifers in or surrounding formations. There are obligations to minimise or mitigate any such impact under other Queensland Government and Commonwealth Government legislation.

This environmental authority consists of the following schedules:

Schedule A	General Conditions
Schedule B	Air
Schedule C	Water
Schedule D	Noise
Schedule E	Waste
Schedule F	Land
Schedule G	Community
Schedule H	Dams
Schedule I	Definitions

SCHEDULE A – GENERAL CONDITIONS

Prevent and / or Minimise Likelihood of Environmental Harm

- (A1-1) In carrying out the activities to which this approval relates, you must take all reasonable and practicable measures to prevent and / or to minimise the likelihood of environmental harm being caused. Any activity that, if carried out incompetently or negligently may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this approval.

NOTE: This approval does not authorise environmental harm unless a condition contained within this approval explicitly authorises that harm. Where there is no condition or the approval is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

Financial Assurance

- (A2-1) Prior to any changes in activities which would result in an increase to the maximum significant disturbance since financial assurance was last given to the administering authority, the holder of the environmental authority must amend the financial assurance and give the administering authority the increased amount of financial assurance.

Maintenance of Measures, Plant and Equipment

- (A3-1) The holder must:
- (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and
 - (a) maintain such measures, plant and equipment in a proper condition; and
 - (b) operate such measures, plant and equipment in a proper manner.

Monitoring

- (A4-1) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
- (A4-2) Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.

Notification of Emergencies and Incidents

- (A5-1) As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority, the administering authority must be notified of the release by telephone or facsimile.

Storage and Handling of Flammable and Combustible Liquids

- (A6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Definitions

- (A7-1) Words and phrases used throughout this environmental authority are defined in Attachment A – Definitions. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.

Scope of Approved Underground Coal Gasification Activities

- (A8-1) All underground coal gasification activities on site are limited to decommissioning, rehabilitation, care and maintenance of the site.

Contingency Procedures for Emergency Environmental Incidents

- (A9-1) Petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents, which include, but are not necessarily limited to:
- (a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity;
 - (b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity;
 - (c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring;
 - (d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;
 - (e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land;
 - (f) training of staff to enable them to effectively respond; and
 - (g) procedures to notify the administering authority, local government and any potentially impacted landholder.

Exploration Drilling

- (A10-1) Exploration activities within the Mineral Development Licence (MDL) must be undertaken in accordance with all Standard Environmental Conditions contained in the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

SCHEDULE B – AIR

Dust nuisance

- (B1-1) The release of dust or particulate matter or both resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B1-2) 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.

Odour nuisance

- (B2-1) Notwithstanding any other condition of this approval, the release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B2-2) When requested by the administering authority, odour 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.
- (B2-3) If monitoring indicates Condition (B2-1) is not being met then the environmental authority holder must:
- (a) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance; and
 - (b) address the complaint including the use of appropriate dispute resolution if required.

Operation of Fuel Burning or Combustion Equipment

- (B3-1) The operation of fuel burning or combustion equipment that is capable of burning more than 500 kg of fuel in an hour is not authorised.

SCHEDULE C – WATER

Release to Waters

- (C1-1) With the exception of releases of stormwater in accordance with Condition (C4-1), contaminants must not be released to any waters (including groundwater outside the underground coal gasification working cavity) or the bed and banks of any waters.

Water Management System

- (C2-2) Water must be managed to prevent incident stormwater and stormwater run-off from contacting general refuse and regulated wastes at the site.
- (C2-2) Water must be managed to divert upstream run-off away from disturbed areas, or areas containing wastes or contaminants.
- (C2-3) Water from disturbed areas must be captured and managed in accordance with condition (C4-1) to (C4-3).

Erosion Protection Measures and Sediment Controls

- (C3-1) All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment. Reasonable and practicable measures are outlined in "Soil and Erosion Control. Engineering Guidelines for Queensland Construction Sites", June 1996 published by the Institution of Engineers, Australia Queensland Division.
- (C3-2) Erosion control and sediment control structures must be maintained at all times during the periods of construction, plant operation, decommissioning and any necessary rehabilitation. The structures must be checked, repaired or replaced as required after each rain event.
- (C3-3) There must be no disturbance to, filling or obstruction of any part of any watercourse.

Stormwater Management

- (C4-1) There must be no release of stormwater runoff that has been in contact with any contaminants at the site to any waters, roadside gutter or stormwater drain, unless it complies with the following quality characteristics:
- (a) the pH value must not be less than 6.5 and not more than 9.0;
 - (b) the concentration of dissolved oxygen must not be less than 6 milligrams per litre;
 - (c) the concentration of suspended solids must not exceed 50 milligrams per litre if an overflow is caused by rainfall and 30 milligrams per litre at all other times;
 - (d) the concentration of total dissolved solids suspended solids must not exceed 1000 milligrams per litre; and
 - (e) the release must not produce any slick or other visible evidence of oil or grease, contain visible floating oil, grease, scum, litter or other objectionable matter nor contain other contaminants in concentrations that adversely affects the environmental values of the receiving environment.

- (C4-2) Ponds or other structures used for the collection and /or treatment of stormwater runoff from disturbed areas must be appropriately sized and effectively maintained to avoid releases. Such maintenance measures must include, but not be limited to, the removal of settled solids as often as necessary to maintain the required capacity.
- (C4-3) Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from any pits or other structures used for the storage or treatment of contaminants or wastes.

Water Quality Sampling Methodology

- (C5-1) The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the Department of Environment and Heritage Protection's Water Quality Sampling Manual.

Flammable and Combustible Liquids

- (C6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Spillage Control

- (C7-1) Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such wastes, contaminants or material to any external storm water drainage system, roadside gutter or waters. To remove any doubt this condition does not apply to hosing, sweeping, etc of areas and oily materials that drain to an oily-water management system.

Maintenance and cleaning of vehicles

- (C8-1) The maintenance and cleaning of vehicles and any other equipment or plant must be carried out in areas that prevent contaminants being released into any waters

Protection of Groundwater Values

- (C9-1) A groundwater monitoring program must be developed and implemented to characterise background water quality levels within aquifers.
- (C9-2) The groundwater monitoring program required by condition (C9-1) must be consistent with Schedule B6 of the 'National Environment Protection (Assessment of Site Contamination) Measure 1999'.
- (C9-3) The groundwater monitoring program required by condition (C9-1) must be developed by a person possessing appropriate qualifications and experience in hydrogeology and groundwater monitoring program design.

- (C9-4) The groundwater monitoring required by condition (C9-1) must include the monitoring of each of the water quality characteristics identified in Schedule C – Table 2 (Groundwater Monitoring Requirements) at each of the bores identified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-5) The groundwater monitoring required by condition (C9-1) must be undertaken at the minimum frequencies specified for each bore and water quality characteristic specified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-6) On any occasion that groundwater samples are obtained as part of the groundwater monitoring program required by conditions (C9-1), the standing water levels must be measured and recorded to an accuracy of 0.01 metres relative to Australian Height Datum (AHD) for each sample.
- (C9-7) Groundwater levels within the vicinity of the underground coal gasification plant must be monitored and groundwater draw down fluctuations in excess of 2 m per year, not resulting from the pumping of licensed bores, must be notified within 14 days to the administering authority following completion of monitoring.

Schedule C – Table 2 (Groundwater Monitoring Requirements)

Bore (Target Layer)	Water Quality Characteristic	Units	Minimum Frequency
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	mg/L	Every three months and following any rainfall event exceeding 100mm in any 24 hour period
	pH	pH units	
	Sulphate	mg/L	
	Ammonia	mg/L	
	Phenols (speciated)	µg/L	
	Total Petroleum Hydrocarbons (speciated)	µg/L	
	BTEX (speciated)	µg/L	
	Polycyclic Aromatic Hydrocarbons (speciated)	µg/L	
	Fluoride	mg/L	
	Cadmium	mg/L	
	Arsenic	mg/L	
	Lead	mg/L	
	Zinc	mg/L	
T5037 (Lateritic Clay)	Total Dissolved Salts	mg/L	Annually and following any rainfall event exceeding 100mm in any 24 hour period
T5038 (Upper Basalt)	pH	pH units	
T5066 (Lower Basalt)	Sulphate	mg/L	
	Ammonia	mg/L	

- (C9-8) The results of each round of groundwater sampling required by condition (C9-1) must be provided to the administering authority within one month of the completion of sampling.

- (C9-9) An interpretation of the groundwater monitoring results required by condition (C9-8) must be provided to the administering authority with the results required by condition (C9-8).
- (C9-10) The interpretation of groundwater monitoring results required by condition (C9-9) must include a comparison with the relevant 80th percentile water quality values specified in Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters) relevant to that bore and water quality characteristic, if available.
- (C9-11) If a relevant 80th percentile water quality value for that bore and water quality characteristic is not specified in Schedule B – Table 3 (80th Percentile Water Quality Values for Specified Parameters), then the interpretation required by condition (C9-9) must include a comparison of the groundwater monitoring results with the background water quality levels characterised in condition (C9-1).
- (C9-12) All sampling of groundwater required by this environmental authority must be undertaken in accordance with the most recent version of the Australian Government 'Geoscience Australia guidelines, Groundwater Sampling and Analysis – A Field Guide'.

Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters)

Bore (Target Layer)	Quality characteristic	80 th Percentile Water Quality Values
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	740 mg/L
	pH	8.2 pH units
	Sulphate	154mg/L
	Ammonia	0.18 mg/L
	Cadmium	0.0003 mg/L
	Arsenic	0.003 mg/L
	Zinc	0.014 mg/L
T5037 (Latent clay)	Total Dissolved Salts	2265 mg/L
	pH	6.3 pH units
	Sulphate	120 mg/L
	Ammonia	0.06 mg/L
T5038 (Upper Basalt)	Total Dissolved Salts	1873 mg/L
	pH	7.8 pH units
	Sulphate	67 mg/L
	Ammonia	0.07 mg/L
T5066 (Lower Basalt)	Total Dissolved Salts	1700 mg/L
	pH	7.9 pH units
	Sulphate	167 mg/L
	Ammonia	0.16 mg/L

SCHEDULE D — NOISE

Noise nuisance

- (D1-1) Noise from the activities must not cause an environmental nuisance at any sensitive place.
- (D1-2) 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 in the opinion of an authorised officer is neither frivolous nor vexatious nor based on mistaken belief) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (D1-3) Noise Monitoring must include:
- (a) background noise level;
 - (b) L_{Amax} , adj, 15 mins or where they can be justified as appropriate, L_A 10, adj, 15 mins and L_A 1, adj, 15 mins;
 - (c) the level and frequency of occurrence of impulsive or tonal noise;
 - (d) atmospheric conditions including wind speed and direction;
 - (e) effects due to extraneous factors such as traffic noise; and
 - (f) location, date and time of recording.
- (D1-4) In the event of a complaint about noise environmental nuisance that the administering authority considers is not frivolous or vexatious, the environmental holder is to develop a noise management plan within two (2) weeks of being advised in writing of the complaint. The noise management plan must address at least, but not be limited to, the following matters:
- (a) identification of component noise sources and activities at the place(s) which impact on noise sensitive areas;
 - (b) the measured and/or predicted level of these noise sources and activities at noise sensitive places;
 - (c) the reasonable and practicable control or abatement measures that can be undertaken to reduce identified intrusive noise sources;
 - (d) the level of noise at noise sensitive places that would be achieved from implementing these measures;
 - (e) the handling of future noise complaints;
 - (f) community liaison and consultation; and
 - (g) training of staff in noise management practices.
- (D1-5) Upon the completion of the noise management plan it must be submitted to the administering authority within 14 days for its review and comment.
- (D1-6) The activities must be carried out by such reasonable and practicable means necessary to prevent the emission of noise that constitutes an environmental nuisance. The reasonable and practicable measures adopted may include but not necessarily be limited to the following noise abatement measures:
- (a) ensure that any equipment to be used is assessed for potential noise nuisance impacts and appropriately attenuated;
 - (b) ensure that all plant and equipment is operated and maintained in a proper and efficient manner;

- (c) ensure that engine cowlings and high efficiency silencers are fitted to all the engines of all plant and equipment identified as impacting on noise sensitive receivers;
- (d) ensure that noise generating activities are not undertaken in close proximity to noise sensitive places or commercial places;
- (e) ensure that, where required, noise abatement barriers are sited such that they effectively intercept the sound transmission path between the sources of noise and receptor premises;
- (f) locate access routes within the premises as far away from sensitive places as is practical having regard to operational convenience; and
- (g) where operation of reversing beepers is likely to cause environmental nuisance, taking measures to ensure mitigation of the nuisance, for example by de-tuning the reversing beepers, replacing the reversing beepers with other warning devices and/or replacing reversing beepers with alternative reversing beepers which adjust their noise level output in accordance with the prevailing background noise level.

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SCHEDULE E – WASTE

General

- (E1-1) Waste must not be released to the environment, stored, transferred or disposed of contrary to any condition of this environmental authority.
- (E1-2) Except as otherwise provided by the conditions of this authority, all disposal of waste generated in carrying out the approved activities must be to a proper and appropriate facility that is authorised to accept such waste.

Regulated Waste Handling

- (E2-1) All regulated waste (including sewage) must be removed from the site by a person who holds an appropriate approval to transport such waste under the provisions of the *Environmental Protection Act 1994 (Qld)* or equivalent interstate legislation, and must be disposed of at a facility authorised to accept such waste.

RTI DL RELEASE EHP

SCHEDULE F – LAND

Preventing Contaminated Land

- (F1-1) There must be no releases of contaminants to land that may cause the land to become contaminated land.

Decommissioning of the Underground Coal Gasification Facility

- (F2-1) A decommissioning procedure must be developed for the underground coal gasification pilot plant.
- (F2-2) The procedure required by condition (F2-1) must:
- (a) detail steps that will be taken to cease combustion /gasification of coal underground;
 - (b) detail tests that will be completed during and following the shutdown process to confirm that combustion and/or pyrolysis of coal has ceased; and
 - (c) ensure that on shutdown the cavity is flushed using proven processes to ensure removal of residual pollutants.
- (F2-3) The procedure detailed in condition (F2-1) must be implemented immediately on cessation of the underground coal gasification trial or if otherwise requested by the administering authority.

Rehabilitation Criteria

- (F3-1) Prior to commencing activities authorised by this approval, the following surveys must be undertaken for any areas to be disturbed:
- (a) survey of topsoil to determine its suitability for use in rehabilitation;
 - (b) survey of land suitability;
 - (c) baseline ground level surveys;
 - (d) survey of flora, fauna and nature conservation values; and
 - (e) survey of cultural heritage values.
- (F3-2) All areas disturbed as a result of the approved activities must be rehabilitated to a stable, non-polluting landform with a self-sustaining vegetation cover in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria), and must comply with the maximum distance between erosion control structures specified in Schedule F – Table 2 (Maximum distance between erosion control structures***).
- (F3-3) Progressive rehabilitation in accordance with the conditions of this schedule must commence as soon as areas become available within the operational land.

Final Land Use and Rehabilitation Plan

- (F4-1) The holder of this environmental authority must develop and implement a Final Land Use and Rehabilitation Plan to ensure that all areas disturbed by approved activities will be suitably rehabilitated in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria) and the other conditions of this environmental authority. The Plan must include, but is not limited to the following:
- (a) disturbance type;

- (b) disturbance area;
 - (c) pre and post mine land descriptions;
 - (d) pre mine and post mine land suitability;
 - (e) proposed vegetation species;
 - (f) a description of rehabilitation management techniques incorporating works and monitoring programs and timetables (including monitoring subsidence of ground within disturbed areas for at least 12 months following cessation of underground coal gasification);
 - (g) indicators for success; and
 - (h) keeping of appropriate records of rehabilitation measures implemented including taking of photographs demonstrative of rehabilitation achieved and the preparation of annual rehabilitation progress reports. A summary of the annual rehabilitation progress report must be submitted to the administering authority with each annual return.
- (F4-2) The holder of this authority must submit a copy of the Final Land Use and Rehabilitation Plan, as required by condition (F5-1), to the administering authority, and in finalising the plan must have due regard to comments made by the administering authority.
- (F4-3) This plan must be submitted on or before 1 March 2011 or within 3 months following the cessation of the underground coal gasification trial; whichever occurs first.

Grazing Pasture / Agricultural Crops Outcome

- (F5-1) Areas which are to be rehabilitated to productive land use, including but not limited to cropping, forestry or grazing, must comply with the following outcomes:
- (a) generate vegetation with projective cover, species composition and species distribution similar to what existed prior to disturbance; and
 - (b) landforms are stable and have been reshaped as close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification;
 - (c) topsoil on rehabilitated areas is reinstated to a depth that is consistent with the depth of topsoil on the site prior to the commencement of activities associated with the underground coal gasification; and
 - (d) measures of productivity (e.g. sustainable dry matter production of pasture species, sustainable yield for crop species) are similar to what existed prior to underground coal gasification activities.
- (F5-2) Prior to surrendering this authority, an investigation into rehabilitated areas must be conducted and a report submitted to the administering authority proposing acceptance criteria to meet the outcomes specified in condition (F3-2) and Schedule F – Table 1 (Landform Design and Suitability Criteria).

Schedule F – Table 1 (Landform Design and Suitability Criteria)

Disturbance		Post-mine land capability class	Maximum Final Slope	Final Land Use Description
Type	Estimated Area (ha)			
All disturbed areas	1 hectare	The same as existed prior to underground coal gasification	As close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification	The same as existed prior to underground coal gasification, unless otherwise negotiated with the landowner.

Schedule F – Table 2 (Maximum distance between erosion control structures)

Slope range (%)	Maximum distances between erosion control structures (m)
0 - 5	150
6 - 10	100
11 - 15	70
> 15	25

- (F5-3) Notwithstanding the maximum distances stipulated in Schedule F Table 2, where the land is rehabilitated for a final land use of agriculture, contour banks must be installed in consultation with the landowner and as per local practice.

Infrastructure

- (F6-1) All infrastructure constructed by or for the environmental authority holder including water storage structures, must be removed from the site prior to mining lease surrender, except where agreed in writing by the post-mining land owner / holder.

Weed Management

- (F7-1) 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*.

SCHEDULE G – COMMUNITY

Complaint response

- (G1-1) All complaints received must be recorded including details of complainant, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

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SCHEDULE H – DAMS

All Dams

- (H1-1) The holder of this environmental authority must ensure that each dam is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.
- (H1-2) The hazard category of each dam must be assessed by a suitably qualified and experienced person at least once per year, based on documented evidence sufficient to define or confirm the current nature and extent of environmental consequences for potential failure of that dam.
- (H1-3) Where the hazard category of a dam is assessed as significant or high, the holder of the environmental authority must act immediately to ensure:
- (a) the administering authority is advised of the current details of that dam, including:
 - i. the assessed hazard category of that dam,
 - ii. sufficient points of latitude and longitude in the current Australian geodetic datum to form a perimeter around that dam and its associated works,
 - iii. the maximum surface area, maximum volume, maximum depth of that dam; and
 - (b) that dam meets the hydraulic performance required of the assessed hazard category within twelve months of that assessment.
- (H1-4) The condition of dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a suitably qualified and experienced person. The methods of monitoring and frequency of monitoring shall be as assessed by that suitably qualified and experienced person, based on the hazard category and particular circumstances of each dam.
- (H1-5) In the event of early signs of loss of structural or hydraulic integrity, the holder of this environmental authority must immediately take action to prevent or minimize any actual or potential environmental harm, and report in writing any findings and actions taken to the administering authority within 28 days of that event.
- (H1-6) The holder of this environmental authority must not abandon any dam but must decommission each dam such that ongoing environmental harm is prevented.
- (H1-7) As a minimum, decommissioning must be conducted such that each dam:
- (a) either:
 - i. has become a stable landform, that no longer contains flowable substances, or
 - ii. has been approved or authorised under relevant legislation for a beneficial use and is subject to legally enforceable conditions of management, or
 - iii. is a void authorised by the administering authority to remain after decommissioning subject to legally enforceable conditions of management; and,
 - (b) complies with the rehabilitation requirements of this environmental authority.

Regulated Dams - Location and Basic Specifications

- (H2-1) The location of the regulated dam authorised under this environmental authority must be defined by control points which are shown and tabulated in the Design Plan for the dam. Sufficient control points

consisting of latitudes and longitudes in the current Australian geodetic datum must be provided to form a perimeter around the dam and its associated works.

- (H2-2) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the basic specifications in Schedule H - Table 1, below.

Schedule H – Table 1 (Location of Regulated dams)

Name of Regulated Dam	Hazard Category	Maximum Surface Area of Dam	Maximum Volume of Dam (m ³)	Maximum Depth of Dam (m)	Purpose of Dam
Cougar Energy Production Water Dam	Significant	10,000m ²	25,000m ³	2.5m	To receive and evaporate contaminated by-product water from the underground coal gasification process.

- (H2-3) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the hydraulic specifications in Schedule H - Table 2, below.

Schedule H – Table 2 (Hydraulic Performance of Regulated Dams)

Name of Regulated Dam	Spillway Capacity or Diversion Capacity (Levees) AEP	Design Storage Allowance (Dams other than Levees) AEP	Mandatory Reporting Level (Dams other than Levees) AEP
Cougar Energy Production Water Dam	0.001	0.02	0.01 for 72hr storm event.

Regulated Dams – Certification and Operation

- (H3-1) Documentation required by the conditions in this schedule must be kept available for inspection by the regulating authority for a period of seven years after the conclusion of the environmentally relevant activity in respect of which this environmental authority has been granted.
- (H3-2) The holder of this environmental authority must not commence construction of a regulated dam unless:
- the holder has submitted to the administering authority two copies of a design plan, together with the certification of a suitably qualified and experienced person that the design of the regulated dam is fit for the purpose for that dam stated in that plan, and compliant in all respects with this environmental authority, and
 - at least 28 days has passed since the submission of the design plan, or the regulating authority has advised the holder that the design plan is compliant with this condition.
- (H3-3) When construction or modification of any regulated dam is complete, or within 12 months of dam becoming a regulated dam by virtue of a hazard assessment, the holder of this environmental authority must submit to the administering authority two copies of a set of 'as constructed' drawings,

together with the certification by a suitably qualified and experienced person that the dam 'as constructed' is fit for the purpose stated in the hazard assessment and the design plan if the latter exists, and compliant in all respects with this environmental authority.

- (H3-4) The holder of this environmental authority must ensure that there is always a current operational plan for each regulated dam, which may form part of other plans required by legislation.
- (H3-5) The operational plan shall at least cover all matters relevant to the operation and maintenance of the regulated dam so that it is compliant in all respects with this environmental authority.
- (H3-6) The holder of this environmental authority must ensure that, where a current operational plan covers decommissioning and rehabilitation, those operations are consistent with the objectives in any design plan for the dam.
- (H3-7) The holder of this environmental authority must notify the administering authority immediately of the level in any regulated dam reaching the mandatory reporting level (MRL), and confirm in writing within seven days.

Regulated Dams - Annual Inspection and Report

- (H4-1) The holder of this environmental authority must arrange for each regulated dam to be inspected annually by a suitably qualified and experienced person, in accordance with the following conditions.
- (H4-2) At each annual inspection, the condition of each regulated dam must be assessed, including the structural, geotechnical and hydraulic adequacy of the dam and the adequacy of the works with respect to dam safety, and any recommended actions conveyed immediately to the holder of this environmental authority.
- (H4-3) The holder of this environmental authority must immediately act upon recommendations arising from an annual inspection on condition and adequacy of a dam.
- (H4-4) At each annual inspection, the adequacy of the available storage against the design storage allowance specified must be assessed and, if a mandatory reporting level is required, it must be determined and marked on each regulated dam.
- (H4-5) A final assessment of adequacy of available storage in each regulated dam must be based on a dam level observed within the month of October, accepted as valid by the suitably qualified and experienced person, and resulting in an estimate of the level in that dam as at 1 November.
- (H4-6) For each annual inspection, two copies of a report certified by the suitably qualified and experienced person, including any recommended actions to be taken to ensure the integrity of each regulated dam, must be provided to the administering authority by 1 December.

Preventing Access by Livestock and Native Fauna

- (H5-1) The environmental authority holder must implement measures to prevent access by all livestock and minimise access by fauna to the production water evaporation dam.

SCHEDULE I – DEFINITIONS

“accepted engineering standards” in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments, and relevant Australian and New Zealand Standards.

“acceptance criteria” means the measures by which actions implemented are deemed to be complete. The acceptance criteria indicate the success of the decommissioning and rehabilitation outcomes or remediation of areas which have been significantly disturbed by the environmentally relevant activities. Acceptance criteria may include information regarding:

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- 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 mycorrhizal 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.

“administering authority” means the Department of Environment and Heritage Protection or its successor.

“AEP” means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.

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

- (a) exactly what has been assessed and the precise nature of that assessment;
- (b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- (c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

“associated works” in relation to a dam, means:

- (a) operations of any kind and all things constructed, erected or installed for that dam; and
- (b) any land used for those operations.

"beneficial use" in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

- (a) of benefit to that owner in that it adds real value to their business or to the general community,
- (b) in accordance with relevant provisions of the Environmental Protection Act 1994,
- (c) sustainable by virtue of written undertakings given by that owner to maintain that dam, and the transfer and use have been approved or authorised under any relevant legislation.

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

- (a) exactly what is being certified and the precise nature of that certification.
- (b) the relevant legislative, regulatory and technical criteria on which the certification has been based;
- (c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

"commercial place" means a place used as an office or for business or commercial purposes.

"construction" in relation to a dam includes building a new dam and modifying or lifting an existing dam.

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances; and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void, and any associated works; but does not mean a fabricated or manufactured tank or container designed to a recognised standard. To avoid any doubt, a levee, dyke or bund is a dam.

"design plan" is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include 'as constructed' drawings.

"design storage allowance" or **"DSA"** means the minimum storage required in a dam at the first of November each year in order to meet the hydraulic performance requirements.

"declared plant area" means areas designated by the Department of Natural Resources or Local Government as areas infested with plants declared under section 69 of the *Rural Lands Protection Act 1985* (section 70 (3) lists the categories of declared plants).

"dwelling" means any of the following structures or vehicles that is principally used as a residence-

- a house, unit, motel, nursing home or other building or part of a building;
- a caravan, mobile home or other vehicle or structure on land;
- a water craft in a marina.

"environmental authority" means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

"flowable substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

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

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"infrastructure" means water storage dams, roads and tracks, buildings and other structures built for the purpose and duration of the conduct the environmentally relevant activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams, waste dumps, voids, or stockpiles and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

"intrusive noise" means noise that, because of its frequency, duration, level, tonal characteristics, impulsiveness or vibration -

- is clearly audible to, or can be felt by, an individual; and
- annoys the individual.

In determining whether a noise annoys an individual and is unreasonably intrusive, regard must be given to Australian Standard 1055.2 - 1997 Acoustics - Description and Measurement of Environmental Noise Part 2 - Application to Specific Situations.

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

" $L_{A, adj, 10 mins}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response.

" $L_{A, 1, adj, 10 mins}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response

" $L_{A, max adj, T}$ " means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"levee" means a dam, dyke or bund that is designed only to provide for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from unplanned releases from other works of infrastructure, during the progress of those stormwater or flood flows or those unplanned releases; and does not store any significant volume of water or flowable substances at any other times.

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"mg/L" means milligrams per litre.

"noxious" means harmful or injurious to health or physical well being.

"nuisance sensitive place" includes -

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

- a motel, hotel or hostel; or
- a kindergarten, school, university or other 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 thoroughfare, park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes.

and includes a place within the curtilage of such a place reasonably used by persons at that place.

"odour" means organoleptic attribute perceptible by the olfactory organ on sniffing certain volatile substances.

"offensive" means causing offence or displeasure; is disagreeable to the sense, disgusting, nauseous or repulsive.

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

"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.

"regulated dam" means any dam in the significant or high hazard category as assessed using the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the Environmental Protection Regulation 1998 (whether or not it has been treated or immobilised), and includes:

- for an element - any chemical compound containing the element; and
- anything that has contained the waste.

"restoration" means the replacement of structural habitat complexity, ecosystem processes, services and function from a disturbed or degraded site to that of a pre-determined or analogue site. For the purposes of pipelines, restoration applies to final rehabilitation after pipeline decommissioning.

"site" means the place to which this environmental authority relates.

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

"stable" has the meaning in Schedule 5 of the Environmental Protection Regulation 2008 and, for a site, means the rehabilitation and restoration of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

"suitably qualified and experienced person" in relation to dams means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 1988, OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; AND the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

- (a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- (b) a total of five years of suitable experience and demonstrated expertise in at least four of the following categories, with the 'geomechanics of dams' category being compulsory:
- geomechanics of dams with particular emphasis on stability, geology and geochemistry.
 - investigation, design or construction of dams.
 - operation and maintenance of dams.
 - 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.
 - dam safety.

"this authority" means this environmental authority.

"this approval" means this environmental authority.

"void" means any man-made, open excavation in the ground.

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

"watercourse" means a river, creek or stream in which water flows permanently or intermittently—

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

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

but, in any case, only—

(c) unless a regulation under paragraph (d), (e) or (f) declares otherwise—at every place upstream of the point (*point A*) to which the high spring tide ordinarily flows and reflows, whether due to a natural cause or to an artificial barrier; or

(d) if a regulation has declared an upstream limit for the watercourse—the part of the river, creek or stream between the upstream limit and point A; or

(e) if a regulation has declared a downstream limit for the watercourse—the part of the river, creek or stream upstream of the limit; or

(f) if a regulation has declared an upstream and a downstream limit for the watercourse—the part of the river, creek or stream between the upstream and the downstream limits.

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

"you" means the holder of this Environmental Authority.

End of Conditions

Sch 4 - Personal information

Date Granted – 5 June 2014

Permit¹

Environmental Protection Act 1994

Environmental authority

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

Permit¹ number: EPPR00450013

Project Name: MDL385 Kingaroy

Environmental authority takes effect 5 June 2014.

The anniversary date of this environmental authority is **30 April**. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Moreton Resources Pty Ltd ABN: 75 060 111 784	Unit 3, 269 Abbotsford Road BOWEN HILLS QLD 4006

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Schedule 2A – 10 – investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit	MDL 385

Release

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation



Additional information for applicants

Environmentally relevant activities

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

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority 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 if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.

Section 78B(2) RTI Act	5/06/2014
Signature	Date

Kate Wall

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

Enquiries:

Energy Assessment
Department of Environment
and Heritage Protection

7th Floor, 400 George Street
GPO Box 2454
BRISBANE QLD 4001

Phone: (07) 3330 5683
Fax: (07) 3330 5634

Release

Date Granted – 5 June 2014

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 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*
- *Mineral Resources Act 1989*
- *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 impact on water levels or pressure heads in groundwater aquifers in or surrounding formations. There are obligations to minimise or mitigate any such impact under other Queensland Government and Commonwealth Government legislation.

This environmental authority consists of the following schedules:

Schedule A	General Conditions
Schedule B	Air
Schedule C	Water
Schedule D	Noise
Schedule E	Waste
Schedule F	Land
Schedule G	Community
Schedule H	Dams
Schedule I	Definitions

SCHEDULE A – GENERAL CONDITIONS

Prevent and / or Minimise Likelihood of Environmental Harm

- (A1-1) In carrying out the activities to which this approval relates, you must take all reasonable and practicable measures to prevent and / or to minimise the likelihood of environmental harm being caused. Any activity that, if carried out incompetently or negligently may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this approval.

NOTE: This approval does not authorise environmental harm unless a condition contained within this approval explicitly authorises that harm. Where there is no condition or the approval is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

Financial Assurance

- (A2-1) Prior to any changes in activities which would result in an increase to the maximum significant disturbance since financial assurance was last given to the administering authority, the holder of the environmental authority must amend the financial assurance and give the administering authority the increased amount of financial assurance.

Maintenance of Measures, Plant and Equipment

- (A3-1) The holder must:
- (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and
 - (a) maintain such measures, plant and equipment in a proper condition; and
 - (b) operate such measures, plant and equipment in a proper manner.

Monitoring

- (A4-1) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
- (A4-2) Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.

Notification of Emergencies and Incidents

- (A5-1) As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority, the administering authority must be notified of the release by telephone or facsimile.

Storage and Handling of Flammable and Combustible Liquids

- (A6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Definitions

- (A7-1) Words and phrases used throughout this environmental authority are defined in Attachment A – Definitions. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.

Scope of Approved Underground Coal Gasification Activities

- (A8-1) All underground coal gasification activities on site are limited to decommissioning, rehabilitation, care and maintenance of the site.

Contingency Procedures for Emergency Environmental Incidents

- (A9-1) Petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents, which include, but are not necessarily limited to:
- (a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity;
 - (b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity;
 - (c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring;
 - (d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;
 - (e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land;
 - (f) training of staff to enable them to effectively respond; and
 - (g) procedures to notify the administering authority, local government and any potentially impacted landholder.

Exploration Drilling

- (A10-1) Exploration activities within the Mineral Development Licence (MDL) must be undertaken in accordance with all Standard Environmental Conditions contained in the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

SCHEDULE B – AIR

Dust nuisance

- (B1-1) The release of dust or particulate matter or both resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B1-2) 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.

Odour nuisance

- (B2-1) Notwithstanding any other condition of this approval, the release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the approved activities must not cause an environmental nuisance at any nuisance sensitive place.
- (B2-2) When requested by the administering authority, odour 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 nuisance sensitive place. The results must be notified within 14 days to the administering authority following completion of monitoring.
- (B2-3) If monitoring indicates Condition (B2-1) is not being met then the environmental authority holder must:
- (a) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance; and
 - (b) address the complaint including the use of appropriate dispute resolution if required.

Operation of Fuel Burning or Combustion Equipment

- (B3-1) The operation of fuel burning or combustion equipment that is capable of burning more than 500 kg of fuel in an hour is not authorised.

SCHEDULE C – WATER

Release to Waters

- (C1-1) With the exception of releases of stormwater in accordance with Condition (C4-1), contaminants must not be released to any waters (including groundwater outside the underground coal gasification working cavity) or the bed and banks of any waters.

Water Management System

- (C2-2) Water must be managed to prevent incident stormwater and stormwater run-off from contacting general refuse and regulated wastes at the site.
- (C2-2) Water must be managed to divert upstream run-off away from disturbed areas, or areas containing wastes or contaminants.
- (C2-3) Water from disturbed areas must be captured and managed in accordance with condition (C4-1) to (C4-3).

Erosion Protection Measures and Sediment Controls

- (C3-1) All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment. Reasonable and practicable measures are outlined in "Soil and Erosion Control. Engineering Guidelines for Queensland Construction Sites", June 1996 published by the Institution of Engineers, Australia Queensland Division.
- (C3-2) Erosion control and sediment control structures must be maintained at all times during the periods of construction, plant operation, decommissioning and any necessary rehabilitation. The structures must be checked, repaired or replaced as required after each rain event.
- (C3-3) There must be no disturbance to, filling or obstruction of any part of any watercourse.

Stormwater Management

- (C4-1) There must be no release of stormwater runoff that has been in contact with any contaminants at the site to any waters, roadside gutter or stormwater drain, unless it complies with the following quality characteristics:
- the pH value must not be less than 6.5 and not more than 9.0;
 - the concentration of dissolved oxygen must not be less than 6 milligrams per litre;
 - the concentration of suspended solids must not exceed 50 milligrams per litre if an overflow is caused by rainfall and 30 milligrams per litre at all other times;
 - the concentration of total dissolved solids suspended solids must not exceed 1000 milligrams per litre; and
 - the release must not produce any slick or other visible evidence of oil or grease, contain visible floating oil, grease, scum, litter or other objectionable matter nor contain other contaminants in concentrations that adversely affects the environmental values of the receiving environment.

- (C4-2) Ponds or other structures used for the collection and /or treatment of stormwater runoff from disturbed areas must be appropriately sized and effectively maintained to avoid releases. Such maintenance measures must include, but not be limited to, the removal of settled solids as often as necessary to maintain the required capacity.
- (C4-3) Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from any pits or other structures used for the storage or treatment of contaminants or wastes.

Water Quality Sampling Methodology

- (C5-1) The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the Department of Environment and Heritage Protection's Water Quality Sampling Manual.

Flammable and Combustible Liquids

- (C6-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Spillage Control

- (C7-1) Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such wastes, contaminants or material to any external storm water drainage system, roadside gutter or waters. To remove any doubt this condition does not apply to hosing, sweeping, etc of areas and oily materials that drain to an oily-water management system.

Maintenance and cleaning of vehicles

- (C8-1) The maintenance and cleaning of vehicles and any other equipment or plant must be carried out in areas that prevent contaminants being released into any waters

Protection of Groundwater Values

- (C9-1) A groundwater monitoring program must be developed and implemented to characterise background water quality levels within aquifers.
- (C9-2) The groundwater monitoring program required by condition (C9-1) must be consistent with Schedule B6 of the 'National Environment Protection (Assessment of Site Contamination) Measure 1999'.
- (C9-3) The groundwater monitoring program required by condition (C9-1) must be developed by a person possessing appropriate qualifications and experience in hydrogeology and groundwater monitoring program design.

- (C9-4) The groundwater monitoring required by condition (C9-1) must include the monitoring of each of the water quality characteristics identified in Schedule C – Table 2 (Groundwater Monitoring Requirements) at each of the bores identified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-5) The groundwater monitoring required by condition (C9-1) must be undertaken at the minimum frequencies specified for each bore and water quality characteristic specified in Schedule C – Table 2 (Groundwater Monitoring Requirements).
- (C9-6) On any occasion that groundwater samples are obtained as part of the groundwater monitoring program required by conditions (C9-1), the standing water levels must be measured and recorded to an accuracy of 0.01 metres relative to Australian Height Datum (AHD) for each sample.
- (C9-7) Groundwater levels within the vicinity of the underground coal gasification plant must be monitored and groundwater draw down fluctuations in excess of 2 m per year, not resulting from the pumping of licensed bores, must be notified within 14 days to the administering authority following completion of monitoring.

Schedule C – Table 2 (Groundwater Monitoring Requirements)

Bore (Target Layer)	Water Quality Characteristic	Units	Minimum Frequency
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	mg/L	Every three months and following any rainfall event exceeding 100mm in any 24 hour period
	pH	pH units	
	Sulphate	mg/L	
	Ammonia	mg/L	
	Phenols (speciated)	µg/L	
	Total Petroleum Hydrocarbons (speciated)	µg/L	
	BTEX (speciated)	µg/L	
	Polycyclic Aromatic Hydrocarbons (speciated)	µg/L	
	Fluoride	mg/L	
	Cadmium	mg/L	
	Arsenic	mg/L	
	Lead	mg/L	
	Zinc	mg/L	
T5037 (Lateritic Clay) T5038 (Upper Basalt) T5066 (Lower Basalt)	Total Dissolved Salts	mg/L	Annually and following any rainfall event exceeding 100mm in any 24 hour period
	pH	pH units	
	Sulphate	mg/L	
	Ammonia	mg/L	

- (C9-8) The results of each round of groundwater sampling required by condition (C9-1) must be provided to the administering authority within one month of the completion of sampling.

- (C9-9) An interpretation of the groundwater monitoring results required by condition (C9-8) must be provided to the administering authority with the results required by condition (C9-8).
- (C9-10) The interpretation of groundwater monitoring results required by condition (C9-9) must include a comparison with the relevant 80th percentile water quality values specified in Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters) relevant to that bore and water quality characteristic, if available.
- (C9-11) If a relevant 80th percentile water quality value for that bore and water quality characteristic is not specified in Schedule B – Table 3 (80th Percentile Water Quality Values for Specified Parameters), then the interpretation required by condition (C9-9) must include a comparison of the groundwater monitoring results with the background water quality levels characterised in condition (C9-1).
- (C9-12) All sampling of groundwater required by this environmental authority must be undertaken in accordance with the most recent version of the Australian Government Geoscience Australia guidelines, Groundwater Sampling and Analysis – A Field Guide.

Schedule C – Table 3 (80th Percentile Water Quality Values For Specified Parameters)

Bore (Target Layer)	Quality characteristic	80 th Percentile Water Quality Values
P2 P3 T5058 T5061 (Source Zone)	Total Dissolved Salts	740 mg/L
	pH	8.2 pH units
	Sulphate	154mg/L
	Ammonia	0.18 mg/L
	Cadmium	0.0003 mg/L
	Arsenic	0.003 mg/L
	Zinc	0.014 mg/L
T5037 (Lateritic clay)	Total Dissolved Salts	2265 mg/L
	pH	6.3 pH units
	Sulphate	120 mg/L
	Ammonia	0.06 mg/L
T5038 (Upper Basalt)	Total Dissolved Salts	1873 mg/L
	pH	7.8 pH units
	Sulphate	67 mg/L
	Ammonia	0.07 mg/L
T5066 (Lower Basalt)	Total Dissolved Salts	1700 mg/L
	pH	7.9 pH units
	Sulphate	167 mg/L
	Ammonia	0.16 mg/L

SCHEDULE D — NOISE

Noise nuisance

- (D1-1) Noise from the activities must not cause an environmental nuisance at any sensitive place.
- (D1-2) 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 in the opinion of an authorised officer is neither frivolous nor vexatious nor based on mistaken belief) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (D1-3) Noise Monitoring must include:
- (a) background noise level;
 - (b) L_{Amax} , adj, 15 mins or where they can be justified as appropriate, L_{A10} , adj, 15 mins and L_{A1} , adj, 15 mins;
 - (c) the level and frequency of occurrence of impulsive or tonal noise;
 - (d) atmospheric conditions including wind speed and direction;
 - (e) effects due to extraneous factors such as traffic noise; and
 - (f) location, date and time of recording.
- (D1-4) In the event of a complaint about noise environmental nuisance that the administering authority considers is not frivolous or vexatious, the environmental holder is to develop a noise management plan within two (2) weeks of being advised in writing of the complaint. The noise management plan must address at least, but not be limited to, the following matters:
- (a) identification of component noise sources and activities at the place(s) which impact on noise sensitive areas;
 - (b) the measured and/or predicted level of these noise sources and activities at noise sensitive places;
 - (c) the reasonable and practicable control or abatement measures that can be undertaken to reduce identified intrusive noise sources;
 - (d) the level of noise at noise sensitive places that would be achieved from implementing these measures;
 - (e) the handling of future noise complaints;
 - (f) community liaison and consultation; and
 - (g) training of staff in noise management practices.
- (D1-5) Upon the completion of the noise management plan it must be submitted to the administering authority within 14 days for its review and comment.
- (D1-6) The activities must be carried out by such reasonable and practicable means necessary to prevent the emission of noise that constitutes an environmental nuisance. The reasonable and practicable measures adopted may include but not necessarily be limited to the following noise abatement measures:
- (a) ensure that any equipment to be used is assessed for potential noise nuisance impacts and appropriately attenuated;
 - (b) ensure that all plant and equipment is operated and maintained in a proper and efficient manner;

- (c) ensure that engine cowlings and high efficiency silencers are fitted to all the engines of all plant and equipment identified as impacting on noise sensitive receivers;
- (d) ensure that noise generating activities are not undertaken in close proximity to noise sensitive places or commercial places;
- (e) ensure that, where required, noise abatement barriers are sited such that they effectively intercept the sound transmission path between the sources of noise and receptor premises;
- (f) locate access routes within the premises as far away from sensitive places as is practical having regard to operational convenience; and
- (g) where operation of reversing beepers is likely to cause environmental nuisance, taking measures to ensure mitigation of the nuisance, for example by de-tuning the reversing beepers, replacing the reversing beepers with other warning devices and/or replacing reversing beepers with alternative reversing beepers which adjust their noise level output in accordance with the prevailing background noise level.

RTI DL RELEASE - EHP

SCHEDULE E – WASTE

General

- (E1-1) Waste must not be released to the environment, stored, transferred or disposed of contrary to any condition of this environmental authority.
- (E1-2) Except as otherwise provided by the conditions of this authority, all disposal of waste generated in carrying out the approved activities must be to a proper and appropriate facility that is authorised to accept such waste.

Regulated Waste Handling

- (E2-1) All regulated waste (including sewage) must be removed from the site by a person who holds an appropriate approval to transport such waste under the provisions of the *Environmental Protection Act 1994 (Qld)* or equivalent interstate legislation, and must be disposed of at a facility authorised to accept such waste.

RTI DL RELEASE - EPP

SCHEDULE F – LAND

Preventing Contaminated Land

- (F1-1) There must be no releases of contaminants to land that may cause the land to become contaminated land.

Decommissioning of the Underground Coal Gasification Facility

- (F2-1) A decommissioning procedure must be developed for the underground coal gasification pilot plant.
- (F2-2) The procedure required by condition (F2-1) must:
- (a) detail steps that will be taken to cease combustion /gasification of coal underground;
 - (b) detail tests that will be completed during and following the shutdown process to confirm that combustion and/or pyrolysis of coal has ceased; and
 - (c) ensure that on shutdown the cavity is flushed using proven processes to ensure removal of residual pollutants.
- (F2-3) The procedure detailed in condition (F2-1) must be implemented immediately on cessation of the underground coal gasification trial or if otherwise requested by the administering authority.

Rehabilitation Criteria

- (F3-1) Prior to commencing activities authorised by this approval, the following surveys must be undertaken for any areas to be disturbed:
- (a) survey of topsoil to determine its suitability for use in rehabilitation;
 - (b) survey of land suitability;
 - (c) baseline ground level surveys;
 - (d) survey of flora, fauna and nature conservation values; and
 - (e) survey of cultural heritage values.
- (F3-2) All areas disturbed as a result of the approved activities must be rehabilitated to a stable, non-polluting landform with a self-sustaining vegetation cover in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria), and must comply with the maximum distance between erosion control structures specified in Schedule F – Table 2 (Maximum distance between erosion control structures***).
- (F3-3) Progressive rehabilitation in accordance with the conditions of this schedule must commence as soon as areas become available within the operational land.

Final Land Use and Rehabilitation Plan

- (F4-1) The holder of this environmental authority must develop and implement a Final Land Use and Rehabilitation Plan to ensure that all areas disturbed by approved activities will be suitably rehabilitated in accordance with Schedule F – Table 1 (Landform Design and Suitability Criteria) and the other conditions of this environmental authority. The Plan must include, but is not limited to the following:
- (a) disturbance type;

- (b) disturbance area;
- (c) pre and post mine land descriptions;
- (d) pre mine and post mine land suitability;
- (e) proposed vegetation species;
- (f) a description of rehabilitation management techniques incorporating works and monitoring programs and timetables (including monitoring subsidence of ground within disturbed areas for at least 12 months following cessation of underground coal gasification);
- (g) indicators for success; and
- (h) keeping of appropriate records of rehabilitation measures implemented including taking of photographs demonstrative of rehabilitation achieved and the preparation of annual rehabilitation progress reports. A summary of the annual rehabilitation progress report must be submitted to the administering authority with each annual return.

(F4-2) The holder of this authority must submit a copy of the Final Land Use and Rehabilitation Plan, as required by condition (F5-1), to the administering authority, and in finalising the plan must have due regard to comments made by the administering authority.

(F4-3) This plan must be submitted on or before 1 March 2011 or within 3 months following the cessation of the underground coal gasification trial; whichever occurs first.

Grazing Pasture / Agricultural Crops Outcome

(F5-1) Areas which are to be rehabilitated to productive land use, including but not limited to cropping, forestry or grazing, must comply with the following outcomes:

- (a) generate vegetation with projective cover, species composition and species distribution similar to what existed prior to disturbance; and
- (b) landforms are stable and have been reshaped as close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification;
- (c) topsoil on rehabilitated areas is reinstated to a depth that is consistent with the depth of topsoil on the site prior to the commencement of activities associated with the underground coal gasification; and
- (d) measures of productivity (e.g. sustainable dry matter production of pasture species, sustainable yield for crop species) are similar to what existed prior to underground coal gasification activities.

(F5-2) Prior to surrendering this authority, an investigation into rehabilitated areas must be conducted and a report submitted to the administering authority proposing acceptance criteria to meet the outcomes specified in condition (F3-2) and Schedule F – Table 1 (Landform Design and Suitability Criteria).

Schedule F – Table 1 (Landform Design and Suitability Criteria)

Disturbance		Post-mine land capability class	Maximum Final Slope	Final Land Use Description
Type	Estimated Area (ha)			
All disturbed areas	1 hectare	The same as existed prior to underground coal gasification	As close as practicable to the landform of the site prior to the commencement of activities associated with the underground coal gasification	The same as existed prior to underground coal gasification, unless otherwise negotiated with the landowner.

Schedule F – Table 2 (Maximum distance between erosion control structures)

Slope range (%)	Maximum distances between erosion control structures (m)
0 - 5	150
6 - 10	100
11 - 15	70
> 15	25

- (F5-3) Notwithstanding the maximum distances stipulated in Schedule F Table 2, where the land is rehabilitated for a final land use of agriculture, contour banks must be installed in consultation with the landowner and as per local practice.

Infrastructure

- (F6-1) All infrastructure constructed by or for the environmental authority holder including water storage structures, must be removed from the site prior to mining lease surrender, except where agreed in writing by the post-mining land owner / holder.

Weed Management

- (F7-1) 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*.

SCHEDULE G – COMMUNITY

Complaint response

- (G1-1) All complaints received must be recorded including details of complainant, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

RTI DL RELEASE - EHP

SCHEDULE H – DAMS

All Dams

- (H1-1) The holder of this environmental authority must ensure that each dam is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.
- (H1-2) The hazard category of each dam must be assessed by a suitably qualified and experienced person at least once per year, based on documented evidence sufficient to define or confirm the current nature and extent of environmental consequences for potential failure of that dam.
- (H1-3) Where the hazard category of a dam is assessed as significant or high, the holder of the environmental authority must act immediately to ensure:
- (a) the administering authority is advised of the current details of that dam, including:
 - i. the assessed hazard category of that dam,
 - ii. sufficient points of latitude and longitude in the current Australian geodetic datum to form a perimeter around that dam and its associated works,
 - iii. the maximum surface area, maximum volume, maximum depth of that dam; and
 - (b) that dam meets the hydraulic performance required of the assessed hazard category within twelve months of that assessment.
- (H1-4) The condition of dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a suitably qualified and experienced person. The methods of monitoring and frequency of monitoring shall be as assessed by that suitably qualified and experienced person, based on the hazard category and particular circumstances of each dam.
- (H1-5) In the event of early signs of loss of structural or hydraulic integrity, the holder of this environmental authority must immediately take action to prevent or minimize any actual or potential environmental harm, and report in writing any findings and actions taken to the administering authority within 28 days of that event.
- (H1-6) The holder of this environmental authority must not abandon any dam but must decommission each dam such that ongoing environmental harm is prevented.
- (H1-7) As a minimum, decommissioning must be conducted such that each dam:
- (a) either:
 - i. has become a stable landform, that no longer contains flowable substances, or
 - ii. has been approved or authorised under relevant legislation for a beneficial use and is subject to legally enforceable conditions of management, or
 - iii. is a void authorised by the administering authority to remain after decommissioning subject to legally enforceable conditions of management; and
 - (b) complies with the rehabilitation requirements of this environmental authority.

Regulated Dams - Location and Basic Specifications

- (H2-1) The location of the regulated dam authorised under this environmental authority must be defined by control points which are shown and tabulated in the Design Plan for the dam. Sufficient control points

consisting of latitudes and longitudes in the current Australian geodetic datum must be provided to form a perimeter around the dam and its associated works.

- (H2-2) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the basic specifications in Schedule H - Table 1, below.

Schedule H – Table 1 (Location of Regulated dams)

Name of Regulated Dam	Hazard Category	Maximum Surface Area of Dam	Maximum Volume of Dam (m ³)	Maximum Depth of Dam (m)	Purpose of Dam
Cougar Energy Production Water Dam	Significant	10,000m ²	25,000m ³	2.5m	To receive and evaporate contaminated by-product water from the underground coal gasification process.

- (H2-3) The following is the only regulated dam authorised under this environmental authority, and this dam is to accord with the hydraulic specifications in Schedule H - Table 2, below.

Schedule H – Table 2 (Hydraulic Performance of Regulated Dams)

Name of Regulated Dam	Spillway Capacity or Diversion Capacity (Levees) AEP	Design Storage Allowance (Dams other than Levees) AEP	Mandatory Reporting Level (Dams other than Levees) AEP
Cougar Energy Production Water Dam	0.001	0.02	0.01 for 72hr storm event.

Regulated Dams – Certification and Operation

- (H3-1) Documentation required by the conditions in this schedule must be kept available for inspection by the regulating authority for a period of seven years after the conclusion of the environmentally relevant activity in respect of which this environmental authority has been granted.
- (H3-2) The holder of this environmental authority must not commence construction of a regulated dam unless:
- the holder has submitted to the administering authority two copies of a design plan, together with the certification of a suitably qualified and experienced person that the design of the regulated dam is fit for the purpose for that dam stated in that plan, and compliant in all respects with this environmental authority, and
 - at least 28 days has passed since the submission of the design plan, or the regulating authority has advised the holder that the design plan is compliant with this condition.
- (H3-3) When construction or modification of any regulated dam is complete, or within 12 months of dam becoming a regulated dam by virtue of a hazard assessment, the holder of this environmental authority must submit to the administering authority two copies of a set of 'as constructed' drawings,

together with the certification by a suitably qualified and experienced person that the dam 'as constructed' is fit for the purpose stated in the hazard assessment and the design plan if the latter exists, and compliant in all respects with this environmental authority.

- (H3-4) The holder of this environmental authority must ensure that there is always a current operational plan for each regulated dam, which may form part of other plans required by legislation.
- (H3-5) The operational plan shall at least cover all matters relevant to the operation and maintenance of the regulated dam so that it is compliant in all respects with this environmental authority.
- (H3-6) The holder of this environmental authority must ensure that, where a current operational plan covers decommissioning and rehabilitation, those operations are consistent with the objectives in any design plan for the dam.
- (H3-7) The holder of this environmental authority must notify the administering authority immediately of the level in any regulated dam reaching the mandatory reporting level (MRL), and confirm in writing within seven days.

Regulated Dams - Annual Inspection and Report

- (H4-1) The holder of this environmental authority must arrange for each regulated dam to be inspected annually by a suitably qualified and experienced person, in accordance with the following conditions.
- (H4-2) At each annual inspection, the condition of each regulated dam must be assessed, including the structural, geotechnical and hydraulic adequacy of the dam and the adequacy of the works with respect to dam safety, and any recommended actions conveyed immediately to the holder of this environmental authority.
- (H4-3) The holder of this environmental authority must immediately act upon recommendations arising from an annual inspection on condition and adequacy of a dam.
- (H4-4) At each annual inspection, the adequacy of the available storage against the design storage allowance specified must be assessed and, if a mandatory reporting level is required, it must be determined and marked on each regulated dam.
- (H4-5) A final assessment of adequacy of available storage in each regulated dam must be based on a dam level observed within the month of October, accepted as valid by the suitably qualified and experienced person, and resulting in an estimate of the level in that dam as at 1 November.
- (H4-6) For each annual inspection, two copies of a report certified by the suitably qualified and experienced person, including any recommended actions to be taken to ensure the integrity of each regulated dam, must be provided to the administering authority by 1 December.

Preventing Access by Livestock and Native Fauna

- (H5-1) The environmental authority holder must implement measures to prevent access by all livestock and minimise access by fauna to the production water evaporation dam.

SCHEDULE I – DEFINITIONS

“accepted engineering standards” in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments, and relevant Australian and New Zealand Standards.

“acceptance criteria” means the measures by which actions implemented are deemed to be complete. The acceptance criteria indicate the success of the decommissioning and rehabilitation outcomes or remediation of areas which have been significantly disturbed by the environmentally relevant activities. Acceptance criteria may include information regarding:

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- 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 mycorrhizal 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.

“administering authority” means the Department of Environment and Heritage Protection or its successor.

“AEP” means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.

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

- (a) exactly what has been assessed and the precise nature of that assessment;
- (b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- (c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

“associated works” in relation to a dam, means:

- (a) operations of any kind and all things constructed, erected or installed for that dam; and
- (b) any land used for those operations.

"beneficial use" in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

- (a) of benefit to that owner in that it adds real value to their business or to the general community,
- (b) in accordance with relevant provisions of the Environmental Protection Act 1994,
- (c) sustainable by virtue of written undertakings given by that owner to maintain that dam, and the transfer and use have been approved or authorised under any relevant legislation.

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

- (a) exactly what is being certified and the precise nature of that certification.
- (b) the relevant legislative, regulatory and technical criteria on which the certification has been based;
- (c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

"commercial place" means a place used as an office or for business or commercial purposes.

"construction" in relation to a dam includes building a new dam and modifying or lifting an existing dam.

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances; and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void, and any associated works; but does *not* mean a fabricated or manufactured tank or container designed to a recognised standard. To avoid any doubt, a levee, dyke or bund is a dam.

"design plan" is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include 'as constructed' drawings.

"design storage allowance" or **"DSA"** means the minimum storage required in a dam at the first of November each year in order to meet the hydraulic performance requirements.

"declared plant area" means areas designated by the Department of Natural Resources or Local Government as areas infested with plants declared under section 69 of the *Rural Lands Protection Act* 1985 (section 70 (3) lists the categories of declared plants).

"dwelling" means any of the following structures or vehicles that is principally used as a residence-

- a house, unit, motel, nursing home or other building or part of a building;
- a caravan, mobile home or other vehicle or structure on land;
- a water craft in a marina.

"environmental authority" means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act* 1994.

"flowable substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

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

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"infrastructure" means water storage dams, roads and tracks, buildings and other structures built for the purpose and duration of the conduct the environmentally relevant activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams, waste dumps, voids, or stockpiles and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

"intrusive noise" means noise that, because of its frequency, duration, level, tonal characteristics, impulsiveness or vibration -

- is clearly audible to, or can be felt by, an individual; and
- annoys the individual.

In determining whether a noise annoys an individual and is unreasonably intrusive, regard must be given to Australian Standard 1055.2 - 1997 Acoustics - Description and Measurement of Environmental Noise Part 2 - Application to Specific Situations.

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

" $L_{A10, \text{adj}, 10 \text{ mins}}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response.

" $L_{A1, \text{adj}, 10 \text{ mins}}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response

" $L_{A, \text{max adj}, T}$ " means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"levee" means a dam, dyke or bund that is designed only to provide for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from unplanned releases from other works of infrastructure, during the progress of those stormwater or flood flows or those unplanned releases; and does not store any significant volume of water or flowable substances at any other times.

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"mg/L" means milligrams per litre.

"noxious" means harmful or injurious to health or physical well being.

"nuisance sensitive place" includes -

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

- a motel, hotel or hostel; or
- a kindergarten, school, university or other 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 thoroughfare, park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes.

and includes a place within the curtilage of such a place reasonably used by persons at that place.

"odour" means organoleptic attribute perceptible by the olfactory organ on sniffing certain volatile substances.

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive.

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

"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.

"regulated dam" means any dam in the significant or high hazard category as assessed using the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the Environmental Protection Regulation 1998 (whether or not it has been treated or immobilised), and includes:

- for an element - any chemical compound containing the element; and
- anything that has contained the waste.

"restoration" means the replacement of structural habitat complexity, ecosystem processes, services and function from a disturbed or degraded site to that of a pre-determined or analogue site. For the purposes of pipelines, restoration applies to final rehabilitation after pipeline decommissioning.

"site" means the place to which this environmental authority relates.

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

"stable" has the meaning in Schedule 5 of the Environmental Protection Regulation 2008 and, for a site, means the rehabilitation and **restoration** of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

"suitably qualified and experienced person" in relation to dams means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 1988, OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; AND the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

- (a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- (b) a total of five years of suitable experience and demonstrated expertise in at least four of the following categories, with the 'geomechanics of dams' category being compulsory:
- geomechanics of dams with particular emphasis on stability, geology and geochemistry.
 - investigation, design or construction of dams.
 - operation and maintenance of dams.
 - 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.
 - dam safety.

"this authority" means this environmental authority.

"this approval" means this environmental authority.

"void" means any man-made, open excavation in the ground.

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

"watercourse" means a river, creek or stream in which water flows permanently or intermittently—

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

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

but, in any case, only—

(c) unless a regulation under paragraph (d), (e) or (f) declares otherwise—at every place upstream of the point (**point A**) to which the high spring tide ordinarily flows and reflows, whether due to a natural cause or to an artificial barrier; or

(d) if a regulation has declared an upstream limit for the watercourse—the part of the river, creek or stream between the upstream limit and point A; or

(e) if a regulation has declared a downstream limit for the watercourse—the part of the river, creek or stream upstream of the limit; or

(f) if a regulation has declared an upstream and a downstream limit for the watercourse—the part of the river, creek or stream between the upstream and the downstream limits.

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

"you" means the holder of this Environmental Authority.

End of Conditions

Ref MDL385 / EPPR00450013



Department of
**Environment and
Heritage Protection**

20 June 2014

Tony Ruddle
Manager Land & Property, Corporate Services
Stanwell Corporation Limited
GPO Box 800
BRISBANE QLD 4001

Dear Mr Ruddle

I refer to your previous enquiries about Moreton Resources Limited's (formerly Cougar Energy Limited) UCG pilot plant in Kingaroy.

Please be advised that EHP amended the environmental authority EPPR00450013 (formerly MIN00656507) on 5 June 2014, a copy of which is enclosed with this letter. The amended environmental authority (EA) requires Moreton Resources to continue its rehabilitation of the UCG pilot plant site by requiring the ongoing monitoring of groundwater quality of aquifers within the vicinity of the plant.

Moreton Resources will be required to complete the decommissioning and rehabilitation of the UCG pilot site as required by the conditions of the EA before it is able to surrender the EA.

If you require any further information in regards to this matter, please call Gillian Naylor, Team Leader with the department on (07) 3330 5620.

Yours sincerely

Sch 4 - Personal information

Kate Wall
Manager, Energy Assessment
Department of Environment and Heritage Protection

Att/Enc. Environmental Authority EPPR00450013 granted and issued to Moreton Resources on 5 June 2014.