

## Permit<sup>1</sup>

*Environmental Protection Act 1994*

### Environmental authority

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

**Permit<sup>1</sup> number: EPPG00959813**

**Environmental authority takes effect on 10-MAR-2015.**

The anniversary date of this environmental authority remains 05 March.

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                            |
|-------------------------|-----------------------------------------------|
| Ausam Resources Pty Ltd | Level 7, 283 George Street<br>SYDNEY NSW 2000 |

#### Environmentally relevant activity and location details

| Environmentally relevant activity(ies) | Location(s) |
|----------------------------------------|-------------|
| Petroleum - other than site specific   | ATP470      |

#### 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,

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



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.



Signature

10/03/2015

Date

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

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### **Obligations under the *Environmental Protection Act 1994***

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

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

### **Additional advice about the approval**

1. This approval pursuant to the Environmental Protection Act 1994 does not remove the need to obtain any additional approval for this activity which might be required by other State and/or Commonwealth legislation. Other legislation administered by Department of Environment and Heritage Protection (EHP) for which a permit may be required includes but is not limited to the:

- Aboriginal Cultural Heritage Act 2003;
- The contaminated land provisions of the Environmental Protection Act 1994;
- Nature Conservation Act 1992;
- Forestry Act 1959;
- Water Supply (Safety and Reliability) Act 2008; and
- Water Act 2000.

2. This environmental authority, issued under the Environmental Protection Act 1994, for the carrying out of a non-code compliant level 2 petroleum activity(ies) is not an authority to impact on water levels or pressure heads in groundwater aquifers in, or surrounding, target formations. There will be obligations to minimise or mitigate any such impact under other Queensland Government and Australian Government legislation.

3. This environmental authority does not authorise environmental harm unless a condition contained in this environmental authority explicitly authorises that harm. Where there is no condition, the lack of a condition shall not be construed as authorising harm.

4. This environmental authority does not authorise the taking of protected animals or the tampering with an animal breeding place as defined under the Nature Conservation Act 1992 and its regulations.

5. Where a term is not defined in this environmental authority, the definition in the Environmental Protection Act 1994, its regulations and Environmental Protection Policies, then the Acts Interpretation Act 1954 then the Macquarie Dictionary then the Petroleum and Gas (Production and Safety) Act 2004 or its regulations must be used in that order.

### **Condition 1 – Significant disturbance**

The holder of the environmental authority must ensure that petroleum activities do not cause more than 4 ha of any land to be significantly disturbed at a petroleum works site at any one time.

### **Condition 2 – Work program and development plans**

The applicant for or holder of the environmental authority must submit to the administering authority a copy of the original or any amended work program or development plan the granted petroleum authority 8 business days before commencing activities or additional or varied activities covered by the program or plan.

### **Condition 3 – Financial assurance**

The holder of the environmental authority must:

- (a) calculate a financial assurance in accordance with the Schedule of Rehabilitation Costs (in Appendix C) and Schedule of Disturbance (in Appendix D) of this environmental authority;
- (b) attach the Schedule of Disturbance to the original or any amended Work Program or Development Plan;
- (c) provide to the administering authority the financial assurance in the amount and form required by the administering authority at the time of submission of the original or any amended work program or development plan; and
- (d) maintain the financial assurance until the administering authority is satisfied that no claim is likely to be made on the assurance.

### **Condition 4 – Environmentally sensitive areas**

The holder of the environmental authority must ensure that:

- (a) petroleum activities are not conducted within a Category A or B environmentally sensitive area; and
- (b) petroleum activities do not cause a significant disturbance within 1km of a Category A environmentally sensitive area or within 500m of a Category B environmentally sensitive area;
- (c) petroleum activities are not conducted in a Category C environmentally sensitive area unless there is a written agreement to enter the area for those activities from the relevant administering authority;
- (d) if the relevant administering authority gives written permission to conduct petroleum activities in a Category C environmentally sensitive area with conditions that are in conflict with the standard environmental conditions of this environmental authority – the holder must as a minimum comply with the standard environmental conditions (except for condition 4(c)); and
- (e) staff, contractors or agents carrying out petroleum activities on a petroleum authority are aware of the location of any relevant Category A, B or C environmentally sensitive areas within the authority.

### **Condition 6 – Land management**

The holder of the environmental authority must:

- (a) minimise disturbance to land in order to prevent land degradation; and

- (b) ensure that for land that is to be significantly disturbed by petroleum activities, the top layer of the soil profile is removed and
  - i. stockpiled in a manner that will preserve its biological and chemical properties; and
  - ii. used for rehabilitation purposes (refer Condition 18).

### **Condition 7 – Vegetation management**

The holder of the environment authority must:

- (a) prevent or minimise disturbance to vegetation by petroleum activities;
- (b) manage the effects of clearing to prevent the loss of biodiversity, maintain ecological processes and prevent land degradation;
- (c) The holder of the environmental authority must not clear:
  - i. in, or within 50 metres of, the high bank of a watercourse;
  - ii. in, or within 50 metres of, the static high water mark of wetlands, lakes or springs;
  - iii. in a way that isolates clumps or dissects corridors of vegetation;
  - iv. on slopes greater than 5%;
  - v. on dispersible soils; and
  - vi. in existing or potential discharge areas.;
- (d) when clearing in areas with a high probability of acid sulfate soils, comply with an acid sulfate soil environmental management plan prepared in accordance with the State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulfate Soils and Guideline.

### **Condition 8 – Protection of riverine areas**

The holder of the environmental authority must:

- (a) ensure that there is no significant disturbance in riverine areas containing permanent water, except where necessary for the construction and/or maintenance of roads, tracks and pipelines that are essential for carrying out the authorised petroleum activities and no reasonable alternative location is feasible; and
- (b) minimise disturbance of all other riverine areas.

### **Condition 9 – Erosion and sedimentation control**

The holder of the environmental authority must prevent or minimise:

- (a) erosion of areas disturbed by petroleum activities; and
- (b) sedimentation of any waters as a result of petroleum activities.

### **Condition 10 – Dust Management**

The holder of the environmental authority (petroleum activities) must ensure that dust or particulate matter or both resulting from a petroleum activity does not cause an environmental nuisance at any sensitive place or commercial place.

**Condition 11 - Noise management**

(a) Noise emitted from any aspect of petroleum activities must not exceed the noise levels, specified in the table below, at any sensitive place or commercial place.

| Time period | Noise level at a sensitive place measured as the Adjusted Maximum Sound Pressure Level LA, max adjT  |
|-------------|------------------------------------------------------------------------------------------------------|
| 7am – 6pm   | Background noise level plus 5 dB(A)                                                                  |
| 6pm – 10pm  | Background noise level plus 5 dB(A)                                                                  |
| 10pm – 7am  | Background noise level plus 3 dB(A)                                                                  |
| Time period | Noise level at a commercial place measured as the Adjusted Maximum Sound Pressure Level LA, max adjT |
| 7am – 6pm   | Background noise level plus 10 dB(A)                                                                 |
| 6pm – 10pm  | Background noise level plus 10 dB(A)                                                                 |
| 10pm – 7am  | Background noise level plus 8 dB(A)                                                                  |

General note: In no case is the background noise level, LA90, 15 mins to be less than 25 dB(A). In the event that measured background noise level is less than 25 dB(A), then 25 dB(A) is to be used.

(b) The method of measurement and reporting of noise levels must be in accordance with most recent edition of the Environmental Protection Agency (EPA) Noise Measurement Manual.

**Condition 12 – Waste Management**

The holder of the environmental authority must:

- (a) ensure that petroleum activities do not result in the release or likely release of a contaminant to land or waters that results in material or serious environmental harm, unless the release is explicitly authorised under the Environmental Protection Act 1994; and
- (b) as soon as practicable, remove and dispose of all regulated waste to a licensed waste disposal facility or recycling facility.

**Condition 13 - Sewage Treatment and Disposal for Temporary Camps**

The holder of this environmental authority must ensure that:

- (a) plant and equipment used for sewage treatment or disposal is installed, maintained and operated in a proper and efficient manner;
- (b) untreated sewage effluent is not released to waters ;
- (c) the disposal of sewage effluent does not cause the contamination of any water used for drinking or domestic purposes or manufacturing purposes or for consumption by animals;
- (d) where sewage sludge is buried on land the sludge is covered with at least 250mm of soil and where practicable located above known flood levels;
- (e) irrigation of sewage effluent on land must be in accordance with National Water Quality Guidelines – Use of Reclaimed Water;

- (f) surface ponding of effluent on land disposal area(s) shall be minimised and managed in a way that does not cause nuisance; and
- (g) public access to any sewage effluent land disposal area must be denied during the release of contaminants to the land and until the irrigation/disposal area has dried.

### **Condition 14 – Storage of hazardous substances, fuel and oil**

The holder of the environmental authority must ensure that the storage of all flammable and combustible liquids:

- (a) are within an on-site containment system;
- (b) are controlled in a manner that prevents material or serious environmental harm;
- (c) are maintained in accordance with Section 2.3 for minor storages and Section 5.8 for storages above 10 000 L of AS 1940 Storage and Handling of Flammable and Combustible Liquids; and
- (d) are equipped with measures, appropriate to the risks to the surrounding environment, to minimise the risk of spills and ensure early detection of spills.

### **Condition 15 – Spills and clean up action**

Notwithstanding the other conditions of this environmental authority, if a hazardous contaminant is released to waters or land, the holder of the environmental authority must:

- (a) take immediate action to stop any further release;
- (b) take immediate action to contain the hazardous contaminant to the affected area, taking particular care to protect environmentally sensitive areas;
- (c) restore or rehabilitate the environment to its condition before the release occurred; and
- (d) take necessary action to prevent a recurrence of the release.

### **Condition 16 – Associated Water**

(a) The holder of the environmental authority must ensure that associated water that, at the time it is produced is a hazardous waste, as determined from Table 1 of Appendix B of this environmental authority, is not released to land or waters, other than to an evaporation pond constructed and managed in accordance with Appendix B.

(b) The holder of the environmental authority must ensure that associated water that, at the time it is produced is not a hazardous waste, is not released to land or waters other than to an appropriate evaporation pond.

(c) Despite (a) and (b) the holder of the environmental authority may apply to the administering authority to amend this environmental authority to allow associated water to be released to a containment for domestic or stock purposes managed by the land owner/occupier, provided the owner/occupier has:

- i. given written permission to the holder for discharge to the containment;
- ii. given written advice to the administering authority about the proposed storage and use; and
- iii. given an assurance to the administering authority that the associated water will not be released to land or waters in a way that has the potential to cause material or serious environmental harm.

(d) Despite (a) and (b) the holder of the environmental authority may apply to the administering authority to amend this environmental authority to allow associated water that meets a nominated set of water quality standards (after treatment if necessary) to:

(a) be released to land or waters; or be used for a specified purpose, provided the potential user has given written advice about the proposed use and environmental safeguards that will be implemented to prevent material or serious environmental harm.

(e) If the associated water complies with a Notice of decision to approve a resource for beneficial use under section 66L of the Environmental Protection (Waste Management) Regulation 2000 it can be used in accordance with the Notice for the stated type of use(s).

### **Condition 17 – Dams and Evaporation Ponds**

The holder of the environmental authority must ensure all dams and evaporation ponds:

(a) are designed, constructed, operated, maintained and decommissioned in accordance with the criteria outlined in Appendix B; and

(b) are not located within 100m of any natural drainage feature (i.e. watercourse, waterway, wetland or lake).

The holder of the environmental authority must:

(a) provide safe access for livestock and wildlife where contained water has appropriate quality; or

(b) construct and maintain bunds and/or fences sufficient to exclude livestock.

### **Condition 18 – Rehabilitation**

As soon as practicable and within 6 months (or longer period agreed in writing with the administering authority) of the completion of petroleum activities causing significant disturbance to land, the holder of the environmental authority must:

(a) remediate contaminated land (e.g. evaporation ponds containing hazardous waste) in accordance with Environmental Protection Act 1994 requirements;

(b) reshape all significantly disturbed land to a stable landform similar to that of surrounding undisturbed areas; and

(c) on all significantly disturbed land, take all reasonable and practicable measures to:

i. re-establish surface drainage lines;

ii. reinstate the top layer of the soil profile; and

iii. promote establishment of vegetation of the same species and density of cover to that of the surrounding undisturbed areas.

### **Condition 19 – Infrastructure**

All Infrastructure, constructed by or for the holder of the environmental authority, including water storage structures, must be removed by the holder from the site and the site rehabilitated according to condition 18, prior to surrender of the petroleum authority, except where it is to remain with the written agreement of the administering authority and post petroleum authority landowner/holder.

### **Condition 20 – Monitoring and complaints**

The holder of the environmental authority must:

- (a) develop and implement a monitoring program that will demonstrate compliance with this environmental authority;
- (b) document the monitoring and inspections carried out under the program and any actions taken;
- (c) when the administering authority advises the holder of a complaint alleging nuisance (e.g. caused by dust or noise), investigate the complaint and advise the administering authority of the action proposed or undertaken in relation to the complaint;
- (d) if the administering authority is not satisfied with the proposed or completed action, undertake monitoring or other action requested by the administering authority;
- (e) maintain a record of complaints and incidents causing environmental harm, and actions taken in response to the complaint or incident; and
- (f) retain the record of complaints required by this condition for 5 years.

### **Condition 21 - Notification**

The holder of the environmental authority must record and initially notify the administering authority as soon as practicable of any emergency or incident that causes non-compliance with the standard environmental conditions.

## DEFINITIONS

**AS 2885** Australian Standard Pipelines – Gas and Liquid Petroleum

**Associated water** for this environmental authority is underground water produced from a petroleum well during the course of or resulting from carrying out petroleum activities. Associated water may be potable, suitable for stock purposes, saline, high in fluoride, contaminated by hydrocarbons, and/or otherwise contaminated by a hazardous contaminant. It may be classified as a hazardous waste (See Appendix B).

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

**Development plan** - Under the P & G Act holders of petroleum authorities must submit a development plan for a petroleum lease or proposed petroleum lease. The plan gives detailed information about the nature and extent of activities to be carried out under the relevant lease.

**Discharge area is:**

- (a) that part of the land surface where groundwater discharge produces a net movement of water out of the groundwater; and
- (b) identified by an assessment process consistent with the document: Salinity Management Handbook, Queensland Department of Natural Resources, 1997; or
- (c) identified by an approved salinity hazard map held by the Department of Natural Resources and Mines.

**Dissects corridors** of vegetation means clearing vegetation that results in a break more than 50 metres wide across a corridor.

**Dispersible soils** are soils in which clay material disintegrates into particles less than 2 microns across. This can be observed within 24 hours when soil crumbs are submerged in distilled water.

**End** means the stopping of the particular activity that has caused a significant disturbance in a particular area. It refers to, among other things, the end of a seismic survey or the end of a drilling operation. It does not refer to the end of all related activities such as rehabilitation. In other words, it does not refer to: the “completion” of the particular activity, the time at which the petroleum authority ends or the time that the land in question ceases to be part of an authority. Under the APPEA Code “completion” refers to the point at which the particular survey, program or operation has been rehabilitated and abandoned.

**Environmental nuisance** is unreasonable interference or likely interference with an environmental value caused by:

- (a) noise, dust, odour, light; or
- (b) an unhealthy, offensive or unsightly condition because of contamination; or
- (c) another way prescribed by regulation.

**Essential habitat** means an area identified as essential habitat for a species of wildlife listed as endangered, vulnerable, rare, or near threatened under the Nature Conservation Act 1992 on a map prepared by the chief executive officer of the Environmental Protection Agency and certified by the chief executive officer of the Department of Natural Resources and Mines for the purposes of the Vegetation Management Act 1999.

**Evaporation pond** means a dam or interceptor pond constructed outside a watercourse, wetland or waterway by excavating a pit and constructing a wall around the pit with the excavated material. Natural surface flow is excluded from the pond.

**Environmentally sensitive area** (as determined from the EPA GIS data base) means a location, however large or small, that has environmental values that contribute to maintaining biological diversity and integrity, have intrinsic or attributed scientific, historical or cultural heritage value, or are important in providing amenity, harmony or sense of community.

**Financial assurance** means a security deposit, either cash or a bank guarantee, held by the administering authority to cover the potential costs of rehabilitating areas significantly disturbed by the petroleum activities.

**Flow line** is a small diameter pipeline through which fluids move on a petroleum lease before being sold.

**Gathering line** is a pipeline to convey crude oil or gas from a production facility to a processing plant, compressor station, flow line or transmission pipeline.

**Hazardous contaminant** means a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause serious or material environmental harm because of—

- (a) its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity or flammability; or
- (b) its physical, chemical or infectious characteristics.

**High bank** - The defining bank is the terrace or bank or, if no bank is present, the point on the active floodplain, which confines the average annual peak flows.

**Land degradation includes the following:**

- (a) soil erosion;
- (b) rising water tables;
- (c) the expression of salinity;
- (d) mass movement by gravity of soil or rock;
- (e) stream bank instability; and
- (f) a process that results in declining water quality.

**LA max, adj, T** is the adjusted average maximum A-weighted sound pressure level measured over a time period T. The maxima must be measured on a sound level meter with a frequency-weighting that corresponds to perceived loudness ("A" weighting) and the meter must be set to the "fast" response time-weighting. The measured values are to be adjusted upwards by 2 dB(A) to 5 dB(A) if the noise source has tonal characteristics. The measuring period must be in excess of five minutes. The arithmetic average of the adjusted maxima, after eliminating any extraneous noise peaks, is the measure used to characterise the noise environment. (This measure will generally be similar to a percent exceedance of 10% or less. Refer to Australian Standard AS1055.)

**Licensed waste disposal facility** is a facility approved under a development approval and operated by a holder of a registration certificate for environmentally relevant activity item number 75 under Schedule 1 of the Environmental Protection Regulation 1998.

**Permanent infrastructure** includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads, pipelines etc), which is to be left by agreement with the landowner.

**Petroleum activity** is defined in the EP Act as an activity:

- (a) authorised on a petroleum tenure granted under the Petroleum Act 1923; or
- (b) authorised on a petroleum authority granted under the Petroleum and Gas (Production and Safety) Act 2004; or
- (c) exploring for or mining minerals under a licence, permit, pipeline licence, primary licence, secondary licence or special prospecting authority granted under the Petroleum (Submerged Lands) Act 1982; or
- (d) rehabilitating or remediating environmental harm because of an activity mentioned in paragraphs (a) to (c); or
- (e) action taken to prevent environmental harm because of an activity mentioned in paragraphs (a) to (d); or
- (f) required under a condition of an environmental authority (petroleum activities); or
- (g) required under a condition of an environmental authority (petroleum activities) that has ended or ceased to have effect, if the condition:
  - i. continues to apply after the authority has ended or ceased to have effect; and
  - ii. has not been complied with.

**Petroleum authority** includes Authority to Prospect, Petroleum Lease, Data Acquisition Authority, Water Monitoring Authority, Petroleum Facility Licence, Survey Licence and Pipeline Licence issued or granted under the Petroleum Act 1923 or Petroleum and Gas (Production and Safety) Act 2004.

**Petroleum project** is all petroleum activities conducted on one or more petroleum authorities as a single integrated operation. To be a single integrated operation, the activities must be:

- carried out under the day to day management of a single responsible person, for example, a site or operations manager;
- operationally interrelated;
- operated in a way that leads to a lower risk of environmental harm being caused by the activities; and
- carried out at two or more places at or about the same time, and the

places where they are carried out are separated by distances short enough to make feasible the integrated day to day management of the activities.

**Petroleum works site** is a separate location on the area subject to a petroleum authority where certain petroleum activities are undertaken; including a well site, production facilities, evaporation pond, compressor site and campsite. The following petroleum activities are excluded from the definition of petroleum works site: roads and tracks, seismic survey lines, and non-licensed gathering systems.

**Potential discharge area** - Low lying parts of the landscape (relative to adjacent terrain) where groundwater movements are within 2-5m of the land surface and the landscape may be subject to upward movement of groundwater in the future.

**Release** of a contaminant into the environment, includes –

- (a) to deposit, discharge, emit or disturb the contaminant; and
- (b) to cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and
- (c) to fail to prevent the contaminant from being deposited, discharged, emitted or disturbed; and
- (d) to allow the contaminant to escape; and
- (e) to fail to prevent the contaminant from escaping.

**Riverine area** refers to the land confined to the flood flow channel of a watercourse.

**Sediment pond** means a bunded or excavated structure used to contain and settle waterborne sediment running off significantly disturbed areas.

**Sediment trap** means a device used to filter waterborne sediment running off significantly disturbed areas. This may include silt fences, hay bales or grassed strips.

**Sensitive place** means

- (a) a dwelling, mobile home or caravan park, residential marina or other residential place;
- (b) a motel, hotel or hostel;

- (c) a kindergarten, school, university or other educational institution;
- (d) a medical centre or hospital;
- (e) a protected area;
- (f) a park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organized entertainment.

**Significantly disturbed land** and **significant disturbance** means land that is:

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

Examples of a disturbance to land:

- (a) areas where soil has been compacted, removed, covered, exposed or stockpiled;
- (b) areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion;
- (c) areas where land use suitability or capability has been diminished;
- (d) areas within a watercourse, waterway, wetland or lake where petroleum activities occur and human intervention is necessary to restore or stabilise the disturbed area;
- (e) areas submerged by hazardous waste storage and dam walls in all cases;
- (f) areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after petroleum activities have ceased; or
- (g) areas where land has become contaminated land and a suitability statement has not been issued.

However, for the purpose of this environmental authority the following areas are not significantly disturbed:

- (a) areas off the petroleum authority (e.g. roads or tracks which provide access to the petroleum authority).
- (b) areas previously significantly disturbed which have been rehabilitated to the administering authority's satisfaction.
- (c) areas under permanent infrastructure.
- (d) areas that were significantly disturbed prior to the grant of the environmental authority, unless those areas are re-disturbed by the holder of the environmental authority during the term of the authority.
- (e) minor disturbances such as drill sumps and minor respreading of soil on GPS located seismic lines.

**Stable** means geo-technical stability of the rehabilitated landform where instability related to the excessive settlement and subsidence caused by consolidation / settlement of the wastes deposited, and sliding / slumping instability has ceased.

**State wildlife corridor** means an area identified as State wildlife corridor on a map prepared by the chief executive officer of the Environmental Protection Agency and certified by the chief executive officer of the Department of Natural Resources and Mines for the purposes of the Vegetation Management Act 1999. The map showing areas of State wildlife corridor is available in digital form from NR&M. Areas of State wildlife corridor are also depicted on regional ecosystem maps available from NR&M or the EPA's website at <http://www.epa.qld.gov.au/REMAPS>.

**Static high water mark** means the settled ordinary water level that occurs under average meteorological conditions. It is less than extreme levels that can be caused by storm surges.

**Top soil** means the top layer of soil, alluvium or weathered rock that forms a suitable plant growth medium. Top soil should be non-crusting and low in salinity.

**Turkey's nest dam** - A dam constructed outside a watercourse, wetland or waterway by excavating a pit and constructing a wall around the pit with the excavated material. Natural surface flow is excluded from the dam.

**Waters** includes river, stream, lake, wetland, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

**Waterlogging** is the saturation of soil by soil water.

**Work program** - Under the P & G Act holders of petroleum authorities are required to submit a work program for an authority to prospect. The program gives detailed information about the nature and extent of activities to be carried out under the authority.

**APPENDIX A - ENVIRONMENTALLY SENSITIVE AREAS**

| <b>Category A - Environmentally Sensitive Areas</b>                                                                                                                                                                                                                                                      |                                                               |                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------|
| <b>LAND AREA<br/>CLASSIFICATION</b>                                                                                                                                                                                                                                                                      | <b>ADMINISTERING<br/>LEGISLATION</b>                          | <b>ADMINISTERING<br/>AUTHORITY</b>                |
| <ul style="list-style-type: none"> <li>National Parks (Scientific);</li> <li>National Parks;</li> <li>National Parks (Aboriginal Land);</li> <li>National Parks (Torres Strait Islander Land);</li> <li>National Parks (Recovery);</li> <li>Conservation Parks; and</li> <li>Forest Reserves.</li> </ul> | Nature Conservation Act 1992                                  | Environmental Protection Agency (EPA)             |
| <ul style="list-style-type: none"> <li>Restricted Areas that include Constructed Water Reservoirs</li> </ul>                                                                                                                                                                                             | Mineral Resources Act 1989                                    | Department of Natural Resources and Mines (NR&M)  |
| <ul style="list-style-type: none"> <li>Marine Parks (other than general use zones)</li> </ul>                                                                                                                                                                                                            | Marine Parks Act 1982                                         | EPA                                               |
| <ul style="list-style-type: none"> <li>Wet Tropics Area</li> </ul>                                                                                                                                                                                                                                       | Wet Tropics World Heritage Protection and Management Act 1993 | Wet Tropics Management Authority (WTMA)           |
| <ul style="list-style-type: none"> <li>Great Barrier Reef Marine Park Region</li> </ul>                                                                                                                                                                                                                  | Great Barrier Reef Marine Park Act 1975 (Cth)                 | Great Barrier Reef Marine Park Authority (GBRMPA) |

| Category B – Environmentally Sensitive Areas                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                        |                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------|
| LAND AREA<br>CLASSIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                  | ADMINISTERING<br>LEGISLATION                                           | ADMINISTERING<br>AUTHORITY             |
| <ul style="list-style-type: none"> <li>Coordinated Conservation Areas;</li> <li>Wilderness Areas;</li> <li>World Heritage Management Areas;</li> <li>International Agreement Areas;</li> <li>An area of Critical Habitat or Major Interest identified under a Conservation Plan; and</li> <li>Areas subject to an Interim Conservation Order</li> </ul>                                                                                      | Nature Conservation Act 1992                                           | EPA                                    |
| <p>An area subject to following conventions:</p> <ul style="list-style-type: none"> <li>Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 23 June 1979);</li> <li>Convention on Wetlands of International Importance, especially as Waterfowl Habitat (RAMSAR, 2 February 1971); and</li> <li>Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris, 16 November 1972).</li> </ul> | International Conventions                                              | EPA                                    |
| <ul style="list-style-type: none"> <li>General Use Zones of a Marine Park</li> </ul>                                                                                                                                                                                                                                                                                                                                                         | Marine Parks Act 1982                                                  | EPA                                    |
| <ul style="list-style-type: none"> <li>An Area to the Seaward Side of the Highest Astronomical Tide</li> </ul>                                                                                                                                                                                                                                                                                                                               | Nil                                                                    | EPA                                    |
| <ul style="list-style-type: none"> <li>Place of cultural heritage significance;</li> <li>Protected area;</li> <li>Registered place; and</li> <li>Restricted zone</li> </ul>                                                                                                                                                                                                                                                                  | Queensland Heritage Act 1992                                           | EPA                                    |
| <ul style="list-style-type: none"> <li>Designated Landscape Area (other than the area known as the 'Stanbroke Pastoral Holding').</li> </ul>                                                                                                                                                                                                                                                                                                 | Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987 | EPA                                    |
| <ul style="list-style-type: none"> <li>Feature Protection Area;</li> <li>State Forest Park; and</li> <li>Scientific Area.</li> </ul>                                                                                                                                                                                                                                                                                                         | Forestry Act 1959                                                      | EPA                                    |
| <ul style="list-style-type: none"> <li>Fish Habitat Area; and</li> <li>A place in which a marine plant is situated.</li> </ul>                                                                                                                                                                                                                                                                                                               | Fisheries Act 1994                                                     | Department of Primary Industries (DPI) |
| <ul style="list-style-type: none"> <li>Endangered Regional Ecosystems (ERE) *</li> </ul>                                                                                                                                                                                                                                                                                                                                                     | Nil                                                                    | EPA                                    |

\* **Important Note:** Regional ecosystem classification is determined according to the Queensland Herbarium

**Biodiversity Status** Classification. Information on ERE's is maintained by the EPA on the Regional Ecosystem Description Database.

| Category C – Environmentally Sensitive Areas                                                                                                                                                                            |                                                                                                      |                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| LAND AREA<br>CLASSIFICATION                                                                                                                                                                                             | ADMINISTERING<br>LEGISLATION                                                                         | ADMINISTERING<br>AUTHORITY                            |
| Nature Refuges and Resource Reserves                                                                                                                                                                                    | Nature Conservation Act 1992                                                                         | EPA                                                   |
| <ul style="list-style-type: none"> <li>Declared Catchment Areas;</li> <li>Declared Irrigation and Irrigation Undertaking Areas;</li> <li>Water Reservoirs and Drainage Areas.</li> </ul>                                | Water Act 2000 and various<br>Water Board Acts                                                       | NR&M and/ or Relevant<br>Storage Operator or<br>Board |
| <ul style="list-style-type: none"> <li>River Improvement Areas</li> </ul>                                                                                                                                               | River Improvement Trust Act<br>1940                                                                  | NR&M and the Relevant<br>River Trust                  |
| <ul style="list-style-type: none"> <li>The Designated Landscape Area - Stanbroke Pastoral Holding</li> </ul>                                                                                                            | Aboriginal Cultural Heritage Act<br>2003<br><br>Torres Strait Islander Cultural<br>Heritage Act 2003 | EPA                                                   |
| Areas under Part 5 Division 2 of the Aboriginal Cultural Heritage Act 2003 and Torres Strait Islander Cultural Heritage Act 2003                                                                                        | Aboriginal Cultural Heritage Act<br>2003<br><br>Torres Strait Islander Cultural<br>Heritage Act 2003 | NR&M                                                  |
| <ul style="list-style-type: none"> <li>State Forest or Timber Reserves</li> </ul>                                                                                                                                       | Forestry Act 1959                                                                                    | EPA                                                   |
| <ul style="list-style-type: none"> <li>DPI Research Sites</li> </ul>                                                                                                                                                    | Nil                                                                                                  | DPI                                                   |
| <ul style="list-style-type: none"> <li>Areas of land occupied by the Bureau of Sugar Experiment Stations.</li> </ul>                                                                                                    | Sugar Industry Act 1999                                                                              | DPI                                                   |
| <ul style="list-style-type: none"> <li>Critical Areas and Public Purpose Reserves</li> </ul>                                                                                                                            | Land Act 1994                                                                                        | NR&M                                                  |
| <ul style="list-style-type: none"> <li>An area subject to a State Planning Policy that the policy declares is in need of environmental protection.</li> </ul>                                                           | Integrated Planning Act 1997                                                                         | EPA                                                   |
| <ul style="list-style-type: none"> <li>Erosion Prone Areas under Coastal Management Plans and Coastal Management Control Districts</li> </ul>                                                                           | Coastal Protection and<br>Management Act 1995                                                        | EPA                                                   |
| <ul style="list-style-type: none"> <li>“Declared Areas”</li> </ul>                                                                                                                                                      | Vegetation Management Act<br>1999                                                                    | NR&M                                                  |
| <ul style="list-style-type: none"> <li>An area identified as “Essential Habitat” for a species of wildlife listed as endangered, vulnerable, rare, or near threatened under the Nature Conservation Act 1992</li> </ul> | Nature Conservation Act 1992                                                                         | EPA                                                   |
| <ul style="list-style-type: none"> <li>State Wildlife corridor</li> </ul>                                                                                                                                               | Vegetation Management Act<br>1999                                                                    | NR&M                                                  |

**Important Note:** Regional ecosystem classification is determined according to the Queensland Herbarium

**Biodiversity Status** Classification. Information on ERE's is maintained by the EPA on the Regional Ecosystem Description Database.

## APPENDIX B - CRITERIA FOR DAMS AND EVAPORATION PONDS

Containments built on land subject to a Petroleum Authority as level 2 petroleum activities can be used for raw water storage, storage and evaporation of contaminated waters, containment of associated water that is saline or contains hydrocarbons, storage of process waters, or the containment of contaminated solids formed from such waters.

They are classified as:

- Hazardous dams containing hazardous waste; or
- Low hazard dams.

Hazardous dams containing hazardous waste are those, which cannot comply with the assessment criteria presented in Tables 1 and 2. High hazard dams containing hazardous waste, or dams which could impact on life or property on collapse or failure, are not permitted under this code and will require either site-specific conditions or will be conditioned under a level 1 environmental authority.

### Determination if dam contains hazardous waste.

The assessment process for the determination if a dam contains a hazardous waste is dependent on whether the dam contents, including liquor and total solids can comply with the hazardous contaminant limits listed in Table 1 below. If the content of the dam cannot comply with the limits in Table 1, then the dam contains a hazardous waste.

**Table 1 – Determination if content of dam is hazardous waste**

| Contaminant 1 | Liquor 2            | Total solids 3,4             |
|---------------|---------------------|------------------------------|
| Arsenic       | 0.5 mg/l            | 250 mg/kg                    |
| Boron         | 5.0 mg/l            | 15,000 mg/kg                 |
| Cadmium       | 10µg/l              | 100mg/kg                     |
| Cobalt        | 1.0 mg/l            | 500 mg/kg                    |
| Copper        | 1.0 mg/l            | 5,000 mg/kg                  |
| Lead          | 0.1 mg/l            | 300 mg/kg                    |
| Mercury       | 2µg/l               | 75 mg/kg                     |
| Nickel        | 1.0 mg/l            | 3,000 mg/kg                  |
| Zinc          | 20 mg/l             | 35,000 mg/kg                 |
| Chloride      | 2,500 mg/l          |                              |
| Fluoride      | 2.0 mg/l            |                              |
| Selenium      | 0.02 mg/l           |                              |
| Sulphate      | 1,000 mg/l          |                              |
| Cyanide       | 10 mg/              | 2,500 mg/kg                  |
| pH            | Between 5.5 and 9.0 | Net acid generation of pH <4 |

|                                  |                              |  |
|----------------------------------|------------------------------|--|
| Nitrite                          | 30 mg/l                      |  |
| Nitrate                          | 400 mg/l                     |  |
| TDS                              | 4000 mg/l                    |  |
| Aromatic Hydrocarbons            | 600 µg/l                     |  |
| Polycyclic Aromatic Hydrocarbons | 16µg/l                       |  |
| Naphthalene                      | 0.2 µg/l -                   |  |
| Benzo (a) pyrene                 |                              |  |
| Phenol                           | 320 µg/l                     |  |
| Polychlorinated Biphenyls        | 0.3 µg /l                    |  |
| Aroclor 1242                     | 0.1 µg /l                    |  |
| Aro 1254                         |                              |  |
| TPH                              | 10 mg/l (or no visible film) |  |
| Blue green Algae (Microcystis)   | 11,000 cells/ml -            |  |

1. Metals should be analysed in accordance with recognised test methods by a NATA certified laboratory.
2. Applies to the liquid contents in a dam generally available to the environment (for example, water available to birds and animals)
3. Total solids include suspended and colloidal solids.
4. Applies to the solids in the dam.

### Determining the hazard category of dam containing hazardous waste

If any proposed dam containing a hazardous waste cannot comply with the acceptance criteria listed in Table 1 but can comply with the size and location criteria listed in Table 2, then the dam will be a hazardous dam containing hazardous waste. Similarly if the dam contains hazardous waste and exceeds the criteria in Table 2 then the dam will be a high hazard dam containing hazardous waste.

**Table 2 – Determination if dam containing hazardous waste is high hazard**

|             | Hazardous dam activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Criterion 1 | In the event of dam collapse, failure or overflow, flow from the dam would have one or more of the following actions; it would or could <ul style="list-style-type: none"> <li>• impact on occupied premises to a depth of more than 300 mm; or</li> <li>• flow to a sensitive or commercial place; or</li> <li>• flow to a riverine area containing permanent water; or</li> <li>• contaminate a water supply for human consumption;</li> </ul> or <ul style="list-style-type: none"> <li>• contaminate a water supply used for livestock.</li> </ul> |
| Criterion 2 | The dam is located within a: <ul style="list-style-type: none"> <li>• declared catchment or sub-artesian area; or</li> <li>• watercourse and the dam's surface area of water exceeds 1ha.</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |
| Criterion 3 | The dam has a surface area of water greater than 4 ha; or the dam has a volume of water greater than 20 mega litres.                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Table 3 summarises the process for the determination of what is the hazard category of dams on a site.

**Table 3 – Determination of dam hazard category**

| Dam liquor and total solid hazardous contaminant concentration | Dam location and size                                              | Type of dam                                                |
|----------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------|
| Dam contents do not exceed limits in Table 1                   | Dam location and size do not trigger criterion 1 listed in Table 2 | The dam is a low hazard dam                                |
| Dam contents exceed limits in Table 1                          | Dam location and size are below the criteria listed in Table 2     | The dam is a medium hazard dam containing hazardous waste. |
| Dam contents exceed limits in Table 1                          | Dam location and size are above the criteria listed in Table 2     | The dam is a high hazard dam (containing hazardous waste). |

### Design, construction, operation, maintenance and decommissioning criteria

Dams are engineering structures and must be designed by professional engineer(s) who would normally apply the criteria defined below. A professional engineer should also be consulted in the development of the decommissioning plan.

In order to comply with the conditions of this Code design, construction, operation, maintenance and decommissioning of dams containing hazardous waste must be in accordance with the following criteria and other requirements, as applicable, of the Queensland Small Dams Guideline 2005.

### Criteria for the design, construction, operation, maintenance and decommissioning of dams containing hazardous waste

Design:

- (a) Dams with a capacity up to 3000m<sup>3</sup> are best constructed as Turkey's Nest dams;
- (b) Dams should be located to have the smallest practical catchment area;
- (c) Dams must have a spillway capable of passing a design flood, defined as the peak discharge from a critical duration storm with an annual exceedence probability of 1% (i.e. 1 in 100 yr event) or lower;
- (d) The spillway should be located where practicable in the abutment of the dam or in the minimum height section of the dam;
- (e) Any spillway discharge should be contained within stable defined channels until it enters any natural watercourse or waterway;
- (f) For embankments built on stable foundations, not subject to draw down and out of uniform soil material, the batters shall be no steeper than those shown in the table below, unless otherwise shown to be stable:

| Embankment Soil Classification<br>(Universal soil classification) | Upstream Batter | Downstream Batter |
|-------------------------------------------------------------------|-----------------|-------------------|
| GC, SC                                                            | 2.5:1           | 2.0:1             |
| CL, ML                                                            | 3.5:1           | 2.5:1             |
| CH, MH                                                            | 3.5:1           | 2.5:1             |
| GW, GP, GM, SW, SP, SM                                            | Not suitable    | Not suitable      |

Note: The codes for the Universal Soil Classification (e.g. GC) are detailed in the Australian Standard AS 1726 1993 Geotechnical Site Investigation, Appendix A.

- (g) Where foundation material differs from the embankment fill material, the batters shall be chosen conservatively to be consistent with the weaker material classification.

**Construction:**

- (a) Embankments must be constructed in accordance with an engineering design and specification, which has considered the internal seepage pressures, flow velocities, material strength, stability and durability.
- (b) Fine grained soils used in embankment construction should be mechanically compacted when they are near or at the optimum moisture content (i.e. slightly plastic) to improve soil strength, minimise seepage and reduce the risk of piping failure
- (c) Where geo-membranes are used, ensure that they are placed, anchored and joined in accordance with the manufacturer's specification.
- (d) Where geo-membranes are used ensure that they are suitable to prevent leakage of the hazardous contaminants, which are contained within the dam.
- (e) Where geo-membranes are used for liners, filters or drains, ensure that the geo-membrane is in contact only with fine-grained soils to prevent punching or tearing of the membrane.
- (f) Embankments built out of pervious material must be constructed in accordance with an engineering design and specification, which has considered the internal seepage pressures and flow velocities.
- (g) Where foundation material differs from embankment fill material, the embankment should be constructed out of the material, which gives the flatter batter.
- (h) Prior to construction of an embankment, the foundation should be cleared of all:
  - vegetation (grass, shrubs and trees);
  - soils containing organic matter (roots);
  - cracked soils (stiff plastic soils);
  - pervious soils (sand, gravel)
  - pervious material in rock faults, joints or the rock foundation itself.
- (i) Prior to construction of an embankment, all transverse trenches, holes and other irregularities should be plugged or backfilled to create a generally undulating foundation for placement of the embankment.
- (j) Fine-grained soils used in embankment construction should have a consistent texture and be free from foreign matter such as branches, logs, gravels or boulders etc.
- (k) Fine-grained soils including dispersive soils should be placed in the centre of or towards the upstream faces of embankment dams.
- (l) Coarser grained soils and rock materials are to be placed to wards and on the outer faces of embankment dams to minimise erosion and breaching potential.
- (m) Dispersive and easily erodible soils should not be used on the outer faces of embankment dams.
- (n) Provide adequate measures to control seepage through the dam wall and the transmission of contaminants through underlying soil layers or rock stratum.
- (o) Embankment dams should be constructed with stable earth materials that will not decay or generate leachate or hazardous contaminants.

**Operation:**

- (a) The dam should be operated to maintain a minimum freeboard of 0.5m below the spillway level.

(b) To ensure that there is no leakage of hazardous wastes from any dam or evaporation pond associated with the petroleum activity a field based groundwater monitoring program must be established to ensure there is no contamination of any unsaturated perched systems or existing groundwater aquifers in the vicinity of the works. Three or more monitoring bores specifically designed for this purpose should be located in a cluster between the contaminant source and any environmentally sensitive place. The monitoring program should regularly record:

- i. water levels;
- ii. water quality;
- iii. flow rates; and
- iv. direction of flow.

(c) As far as practicable minimise seepage and return any contaminated seepage to the dam.

### **Maintenance:**

- (a) Maintain the erosion resistance of the downstream face of the dam to avoid surface scour, which may lead to failure of the wall;
- (b) Maintain the erosion resistance of the spillway to avoid scouring during the design flood;
- (c) Prevent the establishment of trees or shrubs on water containing embankments (roots initiate seepage paths);
- (d) Control of burrowing insects and animals (initiation of piping paths);
- (e) Repair active erosion and piping processes; and
- (f) During initial filling or commissioning, the dam should be monitored for leaks, seepages, embankment deformation or other signs of embankment distress.

### **Decommissioning:**

- (a) Removing (where possible) all remaining liquids in the dam (e.g. it is generally acceptable to evaporate the liquid if the dam is not to be left to the land owner / holder).
- (b) Remove (where possible) all contaminated solids from the dam and encapsulate in a purpose built storage facility, or
- (c) Encapsulate any residual contaminated solids in situ by capping with an appropriate capillary break and with one metre of clay or similar impermeable material;
- (d) Design, install and maintain adequate diversion drains or similar structures to protect or minimise the erosion of any exposed surfaces by stormwater runoff;
- (e) Design, install and maintain adequate surface drainage to prevent water ponding and infiltration into any contaminated materials;
- (f) Address contaminated site issues by referring to Condition 17 of this code;
- (g) Establish a monitoring program to determine the success of the decommissioning plan.
- (h) If required, remove the wall and rehabilitate the disturbed area in accordance with the rehabilitation conditions of this code; and
- (i) Rehabilitate the disturbed areas in accordance with the rehabilitation conditions of this code.

## APPENDIX C - SCHEDULE OF REHABILITATION COSTS

| OIL ACTIVITIES                                                                                                |                                       |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Activity Type                                                                                                 | Unit Cost                             |
| First well                                                                                                    | \$10,000                              |
| Subsequent wells                                                                                              | \$10,000                              |
| Activity in environmentally sensitive area *                                                                  | Site specific estimation              |
| Roads                                                                                                         | \$400 per km                          |
| Buried flow line construction                                                                                 | \$20,000 per gathering system project |
| Buried flow line in operation                                                                                 | \$500 per line                        |
| Flow lines – surface                                                                                          | \$500 per line, plus \$200 per km     |
| Borrow pit                                                                                                    | \$1,000 each                          |
| Evaporation pond                                                                                              | Site-specific estimation              |
| Storage tank                                                                                                  | \$5,000 per tank                      |
| Contaminated land survey                                                                                      | \$20,000 per facility                 |
| Sampling                                                                                                      | \$5,000 per facility                  |
| Bioremediation land farm                                                                                      | \$5,000 per facility                  |
| Infrastructure                                                                                                | Site specific estimation              |
| Seismic lines                                                                                                 | \$5,000 per seismic line survey       |
| Management fee                                                                                                | 20% (maximum \$20,000)                |
| * Including but not limited to exploration, appraisal, development activities and infrastructure developments |                                       |

| GAS ACTIVITIES (Including Coal Seam Gas wells >350m) |                                       |
|------------------------------------------------------|---------------------------------------|
| Activity Type                                        | Unit Cost                             |
| First well                                           | \$10,000                              |
| Subsequent wells                                     | \$5,000                               |
| Activity in environmentally sensitive area *         | Site specific estimation              |
| Roads                                                | \$400 per km                          |
| Buried flow line construction                        | \$20,000 per gathering system project |
| Buried flow line in operation                        | \$500 per line                        |
| Flow lines – surface                                 | \$200 per km                          |
| Borrow pit                                           | \$1,000 each                          |
| Containment pond (water)                             | Site specific estimation              |

| <b>GAS ACTIVITIES (Including Coal Seam Gas wells &gt;350m)</b>                                                |                                 |
|---------------------------------------------------------------------------------------------------------------|---------------------------------|
| <i>Activity Type</i>                                                                                          | <i>Unit Cost</i>                |
| Contaminated land survey                                                                                      | \$20,000 per facility           |
| Processing facility (small)                                                                                   | \$10,000 each                   |
| Processing facility (large)                                                                                   | Site specific estimation        |
| Compressor only                                                                                               | \$5,000 each                    |
| Seismic lines                                                                                                 | \$5,000 per seismic line survey |
| Management fee                                                                                                | 20% (maximum \$20,000)          |
| * Including but not limited to exploration, appraisal, development activities and infrastructure developments |                                 |

| <b>GAS ACTIVITIES (Coal Seam Gas wells &lt;350m)</b>                                                          |                                 |
|---------------------------------------------------------------------------------------------------------------|---------------------------------|
| <i>Activity Type</i>                                                                                          | <i>Unit Cost</i>                |
| First well                                                                                                    | \$10,000                        |
| Subsequent wells                                                                                              | \$1,000                         |
| Activity in environmentally sensitive area *                                                                  | Site specific estimation        |
| Roads                                                                                                         | \$400 per km                    |
| Flow lines - buried                                                                                           | \$500 per line                  |
| Flow lines - surface                                                                                          | \$200 per line                  |
| Borrow pit                                                                                                    | \$1,000 each                    |
| Containment pond (water)                                                                                      | Site specific estimation        |
| Contaminated land survey                                                                                      | \$20,000 per facility           |
| Processing facility (small)                                                                                   | \$10,000 each                   |
| Processing facility (large)                                                                                   | Site specific estimation        |
| Compressor only                                                                                               | \$5,000 each                    |
| Seismic lines                                                                                                 | \$5,000 per seismic line survey |
| Management fee                                                                                                | 20% (maximum \$20,000)          |
| * Including but not limited to exploration, appraisal, development activities and infrastructure developments |                                 |

**Note:** Rehabilitation cost estimates must be based on third party costs for rehabilitation of land that has been "significantly disturbed" and may be reviewed annually by the administering authority.

APPENDIX D – SCHEDULE OF DISTURBANCE (WORKED EXAMPLE ONLY)

This form is required to be lodged with the Initial Work Program or Development Plan. Where there is a change to the initial significant disturbance and rehabilitation liability advice submitted with a program/plan, this form is required to be updated and to accompany a submission of the relevant later Work Program or Development Plan

|                    |           |
|--------------------|-----------|
| Project name / ID  |           |
| Commencement date: | End date: |

| Activity category / Disturbance type                                                                                          | Unit rehabilitation cost (GST included) (from Schedule of Rehabilitation Costs) (A) | Existing significant disturbance at commencement of this Work Program/Development Plan (e.g. number of wells/ pits/ ponds) (B) | Maximum additional significant disturbance proposed during term of Work Program <sup>1</sup> or Development Plan <sup>1</sup> (C) | Rehabilitation of significant disturbance proposed during term of Program/Plan (D) | Maximum rehabilitation cost (B+C-D) x (A) |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------|
| First wells                                                                                                                   | \$10,000                                                                            |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Subsequent wells                                                                                                              | \$5,000                                                                             |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Borrow pits                                                                                                                   | \$1,000                                                                             |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Buried flow line construction                                                                                                 | \$20,000                                                                            |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Evaporation Pond                                                                                                              | \$25,000                                                                            |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Infrastructure                                                                                                                | \$7,000                                                                             |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Site Investigation Report                                                                                                     | \$20,000                                                                            |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Compressor Station                                                                                                            | \$5,000                                                                             |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Total rehabilitation liability for the term of the work program or development plan                                           |                                                                                     |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Maintenance and monitoring costs (20% of rehab costs to a maximum amount of \$20,000)                                         |                                                                                     |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| CPI (3% of total rehabilitation costs (compounded)) (This example is calculated for maximum disturbance in year 2)            |                                                                                     |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| GST (10% of above costs if not already included)                                                                              |                                                                                     |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |
| Financial assurance (Pay the difference between this amount and any financial assurance currently submitted for this project) |                                                                                     |                                                                                                                                |                                                                                                                                   |                                                                                    |                                           |

<sup>1</sup>Or as advised and attached with a submitted latter Work Program or Development Plan where there is a change to the initial significant disturbance and rehabilitation liability advice submitted with the Initial Work Program/Development Plan.

Certification

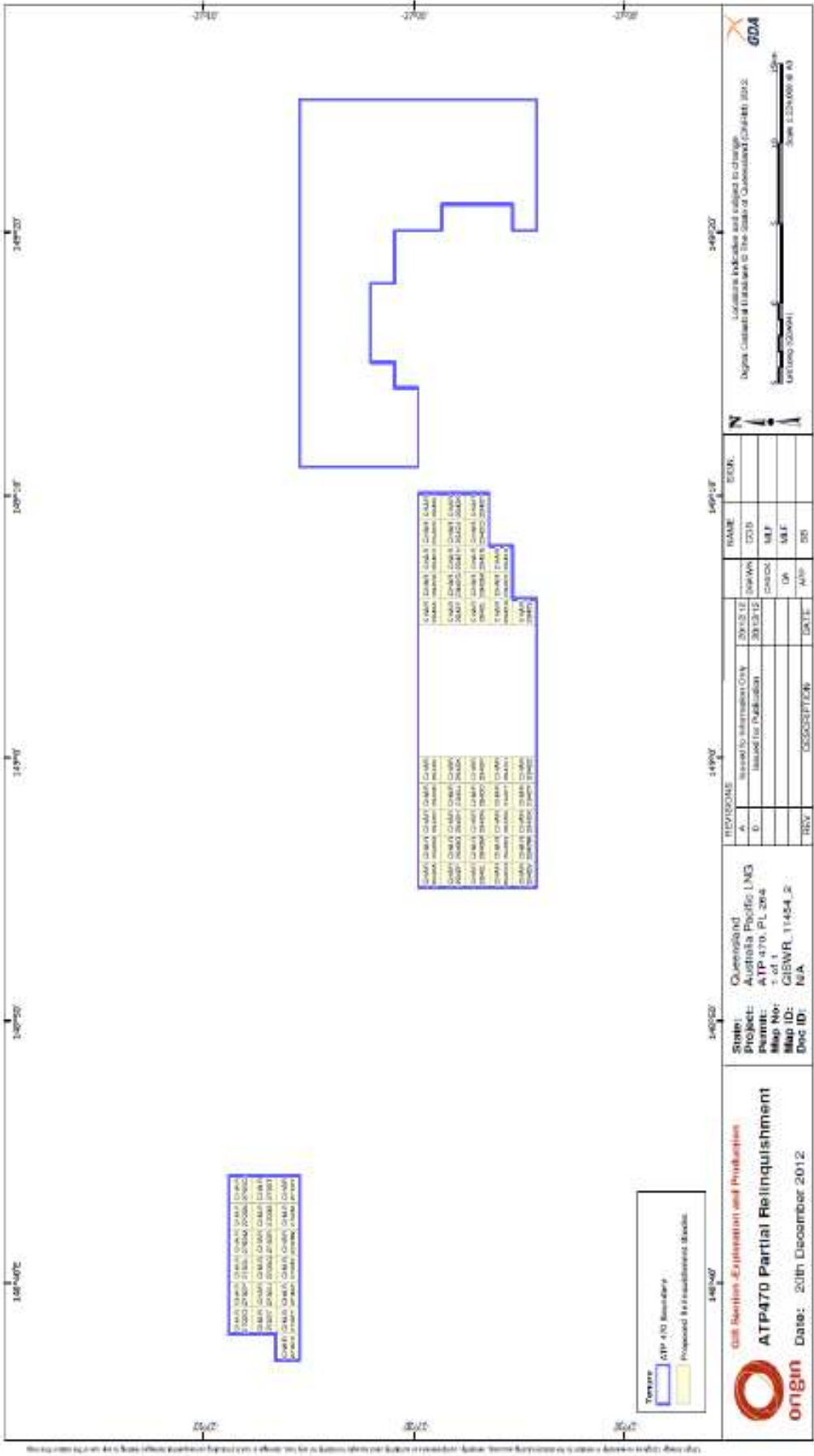
I/We (the current Environmental Authority holder) certify that: (select each to certify)

- ☐ The determination of this financial assurance is correct.
- ☐ The information I/we have provided on this form is accurate, complete and not misleading <sup>1</sup>.

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HOLDER NAME / COMPANY | <p>Please note:<br/>Where there is more than one holder, this certification may be signed by the holder authorized (in writing by all other holders) to sign on behalf of and to commit in all matters relevant to this environmental authority. Where the holder is a company, this form is to be signed by a person authorized (in writing) to sign for that company.<br/><sup>1</sup> It is an offence, under the <i>Environmental Protection Act 1984</i>, to give the administering authority information that is false, misleading or incomplete in any material particular. The maximum penalty for such action is 165 penalty units for an individual, or 825 penalty units where the applicant is a corporation (section 181B(3) of the <i>Penalties and Sentences Act 1992</i>).<br/>The current penalty unit value is \$75.00.</p> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

APPENDIX E – SURRENDERED BLOCKS

Blocks 2792 (O, P, T, U, X, Y, Z), 2793 (L, M, N, O, Q, R, S, T, V, W, X, Y), 2940 (A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z), 2942 (A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q, R, S, V) of ATP470 were surrendered on 16 January 2013 and are not the subject of this authority.



**APPENDIX F – BLOCKS COVERED BY THIS ENVIRONMENTAL AUTHORITY**

| Block Identification Map | Block Number | Sub-blocks                                                       |
|--------------------------|--------------|------------------------------------------------------------------|
| Charleville              | 2871         | B, C, D, E, G, H, J, K, M, N, O, P, R, S, T, U, W, X, Y          |
| Charleville              | 2872         | A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, T, U                |
| Charleville              | 2873         | All                                                              |
| Charleville              | 2941         | All                                                              |
| Charleville              | 2945         | A, B, C, D, E, G, H, J, K, M, N, O, P, R, S, T, U, V, W, X, Y, Z |

**END OF PERMIT**