Department of Environment and Resource Management

Environmental Protection Act 1994

Level 2 Environmental Authority

Chapter 5A petroleum activity

DERM Permit[1] Number: PEN202227011

Under section 310M of the *Environmental Protection Act 1994* this permit is issued to:

Principal Holder:
Patrick James Fennell
C/- Roger Meaney
60 Fourteenth Avenue
Eden Park VIC 3757

ABN:26 160 773 634

In respect to carrying out a level 1 chapter 5A activity(ies) as per Section 23 of the *Environmental Protection Regulation 2008* on the relevant resource authorities listed below:

Project Name	Relevant Resource Authority(ies)
N/A	ATP792

This environmental authority takes effect from 2 September 2011.

The anniversary date of this environmental authority is *2 September 2011.*

This environmental authority is subject to the attached schedule of conditions.

A. F. Rahman.

2 Sept. 2011
Date

Ahmad Rahman
Delegate of Administering Authority
Department of Environment and Resource Management

[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Department of Environment and Resource Management.

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 the Department of Environment and Resource Management 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*;
   - *Forestry Act 1959;*
   - *Nature Conservation Act 1992*;
   - *Water Act 2000*;
   - *Water Supply (Safety and Reliability) Act 2008.*

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

2. This approval, issued under the *Environmental Protection Act 1994*, for the carrying out of a level 2 petroleum activity(ies) is not an authority to impact on water levels or pressure heads in groundwater aquifers in or surrounding coal seams. The holder of this environmental authority will have obligations to minimise or mitigate any such impact under other Queensland Government and Australian Government legislation.

3. This environmental authority consists of the following schedules

Schedule A	General Conditions
Schedule B	Water
Schedule C	Land
Schedule D	Disturbance to Land
Schedule E	Environmental Nuisance
Schedule F	Air
Schedule G	Waste
Schedule H	Rehabilitation
Schedule I	Community Issues
Schedule J	Notification
Schedule M	Definitions

SCHEDULE A – GENERAL CONDITIONS

Authorised Petroleum Activities

(A1) In the carrying out of the petroleum activity(ies), the holder of this environmental authority must not exceed the number and maximum size for each of the specified petroleum activities listed in Schedule A, Table 1 – Authorised Petroleum Activities for each petroleum tenure.

Schedule A, Table 1 – Authorised Petroleum Activities

Resource Authority Number	Petroleum Activity	Number of Existing Petroleum activities	Number of Proposed Petroleum activities	Maximum size (where applicable)
ATP792	Seismic (kilometres)		70km	70km
	Total wells		2	50m x 50m per well
	- Exploration Wells (indicative)		2	50m x 50m per well

Prevent or Minimise Likelihood of Environmental Harm

(A2) 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.

Maintenance of Measures, Plant and Equipment

(A3) The holder of the environmental authority must:

(a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
(b) maintain such measures, plant and equipment in their proper and effective condition; and
(c) operate such measures, plant and equipment in a proper and effective manner.

(A4) No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration materially increases, or is likely to increase, the environmental harm caused by the petroleum activity(ies).

Financial Assurance

(A5) The holder of this environmental authority must:

(a) provide to the administering authority financial assurance in the amount and form required from time to time by the administering authority; and
(b) review and maintain the amount of financial assurance based on the maximum disturbance from the proposed petroleum activity(ies).

(A6) Subject to condition (A5), the holder of this authority must revise the estimate of financial assurance every year on the anniversary date of this authority.

(A7) In accordance with (A6), the revised calculation of the financial assurance must be provided to the administering authority on the anniversary date of this authority.

(A8) The calculation of financial assurance must be in accordance with the Department of Environment and Resource Management's Guideline "Financial assurance for petroleum activities", as amended from time to time.

(A9) The financial assurance is to remain in force until the administering authority is satisfied that no claim is likely to be made on the assurance.

Underground Gas Storage

(A10) Testing, evaluating, developing and using natural underground reservoirs for petroleum storage or to store **prescribed storage gases** is not authorised under this environmental authority.

Monitoring

(A11) The holder of this environmental authority must develop and implement a monitoring program for all monitoring required by the conditions of this environmental authority.

(A12) All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this environmental authority must be calibrated, operated and maintained effectively in accordance with the manufacturer's specifications.

(A13) All laboratory analyses and tests required to be conducted under this environmental authority must be carried out by a laboratory that has **NATA accreditation** for such analyses and tests, except as otherwise authorised by the administering authority.

(A14) Any management or monitoring plans, systems, programs or procedures required to be developed and implemented by a condition of this environmental authority must be reviewed for performance and amended as required but not less than once every three (3) **years** in accordance with the requirements for the particular plans, systems, programs and procedures in the conditions of this environmental authority.

(A15) If monitoring conducted in accordance with this environmental authority indicates a condition or contaminant level has caused, or has potential to cause, environmental harm, the holder of this environmental authority must, as soon as is practicable, take the necessary actions to rectify the condition or contaminant level so as to avoid or minimise environmental harm.

Documentation and Records Management

(A16) A record of all **documents** required by this environmental authority must be:

a) kept for a minimum of five (5) **years**; and

b) be made available to an **authorised person** upon request.

(A17) The holder of this environmental authority must develop all **documents** required under this environmental authority in a way that is consistent with the requirements of this environmental authority.

SCHEDULE B – WATER

(B1) This environmental authority does not authorise the construction of any dams.

Contaminant Release

(B2) Contaminants must not be directly or indirectly released to any **waters** except as permitted under this environmental authority.

Sewage Treatment Works

(B3) The **construction** and operation of sewage treatment works is authorised if:

(a) the total daily peak design capacity is less than 21 **equivalent persons**; or
(b) it is operated as a no-release works.

Watercourses, Wetlands and Springs

(B4) In the carrying out of the petroleum activity(ies) the holder of this environmental authority must not excavate, clear vegetation or place **fill**, in or within:

(a) 200 metres from any **wetland**, **lake** or **spring**; or
(b) 100 metres of the **high bank** of any other **watercourse**.

(B5) All measures must be taken to minimise adverse impacts to, or reversal of, any river improvement works carried out in River Improvement Areas by Queensland's River Improvement Trusts.

Floodplains

(B6) Where the petroleum activity(ies) is carried out on **floodplains**, the holder of this environmental authority must ensure that the petroleum activity(ies) does not:

(a) concentrate flood flows in a way that will or may cause or threaten an adverse environmental impact; or
(b) divert flood flows from natural drainage paths and alter flow distribution; or
(c) increase the local duration of floods; or
(d) increase the risk of detaining flood flows; or
(e) pose an **unacceptable risk** to the safety of persons from flooding; or
(f) pose an **unacceptable risk** of damage to property from flooding.

Groundwater

(B7) The extraction of groundwater as part of the petroleum activity(ies) from underground aquifers must not directly or indirectly cause environmental harm to any **watercourse**, **lake**, **wetland** or **spring**.

SCHEDULE D — LAND

General

(D1) Contaminants must not be directly or indirectly released to land except as permitted under this environmental authority.

Chemical and Fuel Storage

(D2) All explosives, hazardous chemicals, corrosive **substances**, toxic substances, gases, dangerous goods, flammable and combustible liquids (including petroleum products and associated piping and **infrastructure**) must be stored and handled in accordance with the relevant Australian Standard where such is available.

(D3) Notwithstanding the requirements of any Australian Standard, any liquids stored on site that have the potential to cause environmental harm must be stored in, or serviced by, an effective

containment system that is impervious to the materials stored and managed to prevent the release of liquids to **waters** or land.

(D4) Where no relevant Australian Standard is available for the chemical and / or fuel storage activity, the following requirements apply:

(a) storage tanks must be **bunded** so that the capacity and **construction** of the **bund** is sufficient to contain at least 110 % of a single storage tank or 100 % of the largest storage tank plus 10 % of the second largest storage tank in multiple storage areas; and
(b) drum storages must be **bunded** so that the capacity and **construction** of the **bund** is sufficient to contain at least 25 % of the maximum design storage volume within the **bund**.

(D5) All containment systems must be designed to minimise rainfall collection within the system.

Pipelines

(D6) This EA does not authorise the construction of any pipelines.

SCHEDULE E - DISTURBANCE TO LAND

General

(E1) Prior to conducting petroleum activities that involve **significant disturbance to land**, an assessment must be undertaken of the condition, type and ecological value of soils and vegetation in such areas where the activity is proposed to take place.

(E2) The assessment required by condition (E1) must be undertaken by a **suitably qualified person** and include the carrying out of field validation surveys, observations and mapping of any **Category A, B or C Environmentally Sensitive Areas**, **wetlands** and the presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992*.

(E3) The assessment required by condition (E1) must include, but not necessarily be limited to:

(a) baseline soils quality data and maps for the soil units to be disturbed as provided for in the Soils Management Plan;
(b) identification of the vegetation communities present (including species composition and regional ecosystem type[1] for native vegetation communities) within each area(s) to be disturbed;
(c) data representing each vegetation community present within each area(s) to be rehabilitated including:
    (i) flora species richness and diversity;
    (ii) structural data including woody stem count densities for dominant species within each stratum; and
    (iii) percent foliage cover (accounting for seasonal variation and excluding **pests**);
(d) data regarding habitat features, including but not necessarily limited to:
    (i) organic litter cover (%); and
    (ii) trees with hollows ≥10cm diameter (count and number per hectare);
    (iii) hollow bearing logs (count and number per hectare); and
    (iv) fallen woody material (total length of logs ≥ 10 cm diameter per hectare and number of logs ≥ 10cm diameter per hectare); and
(e) a map or series of maps of suitable scale displaying the distributing of vegetation communities.

[1] Regional ecosystem type should be established using the most current version of the Qld Government's *"Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland"*. Assessment of the vegetation communities should be sufficient to establish any inherent variation within a single regional ecosystem type.

(E4) If the assessment required by conditions (E1) to (E3) indicates that that an Environmentally Sensitive Area or wetland is incorrectly identified through State mapping, or is present and not identified by State mapping, the holder of this environmental authority must advise the administering authority in writing before any **significant disturbance to land** takes place.

(E5) If, within the 20 **business days** following the lodgement of the notification under condition (E4) the administering authority notifies the holder of this environmental authority, in writing, that further validation of the Environmentally Sensitive Area or wetland is required, then **significant disturbance to land** within the relevant area is prohibited until the administering authority provides written advice that **significant disturbance to land** may proceed.

(E6) The holder of this environmental authority, when carrying out the petroleum activity(ies) must:

(a) in order of preference, avoid, minimise or mitigate any impacts on areas of vegetation or other areas of ecological value;
(b) minimise disturbance to land that may otherwise result in land degradation;
(c) ensure that for land that is to be **significantly disturbed** by the petroleum activity(ies):
  (i) the top layer of the soil profile is removed;
  (ii) soils is stockpiled in a manner that will preserve its biological and chemical properties; and
  (iii) soils are used for **rehabilitation** purposes;
(d) avoid **clearing** mature trees; and
(e) prior to carrying out field based **petroleum activities**, make all relevant staff, contractors or agents carrying out those petroleum activities, aware of the location of any **Category A, B** or **C Environmentally Sensitive Areas**, **wetlands** and presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992* and the requirements of this environmental authority.

Note: This environmental authority does not authorise the taking of protected plants, protected animals or the tampering with animal breeding places as defined under the Nature Conservation Act 1992 *and relevant approvals will need to be obtained.*

(E7) Despite condition (E6), **significant disturbance to land** caused by the carrying out of the petroleum activity(ies) must not involve **clearing** vegetation or placing **fill**:

(a) in a way which significantly isolates, fragments or dissects tracts of vegetation resulting in a reduction in the current level of **ecosystem functioning**, ecological connectivity (i.e. stepping stone or contiguous bioregional / local corridor networks) and / or results in an increase in **threatening processes**;
(b) on slopes greater than 10 % for the petroleum activity(ies) other than for pipelines and wells; or
(c) in **discharge areas**.

(E8) Where petroleum activities are undertaken within **high value regrowth** or **remnant vegetation** that is other than a **Category A, B or C Environmentally Sensitive Area** and their associated protection zones, the holder of this environmental authority must be able to demonstrate that no reasonable or practicable alternative exists and for lineal **infrastructure**, that **significant disturbance to land** does not exceed the following areas:

(a) 18 meters in width for dual carriage way roads;
(b) six (6) metres in width for access tracks not associated with a water or gas line; or
(b) for pipelines, including provision for a utility corridor and access track:
  (i) 12 metres width for a single water or gas gathering line; or
  (ii) 18 metres width for a trench with one water gathering line and one parallel gas gathering pipeline; or
  (iii) 25 metres width for multiple trenches where there are three (3) parallel gas or water gathering lines; and
  (iv) seven (7) metres width for any additional trench for a water or gas line.

(E9) Documentation demonstrating compliance with the requirements of condition (E8) must be prepared by the holder of this environmental authority before any disturbance to land takes place.

(E10) Cleared vegetation must be stockpiled in a manner that facilitates respreading or salvaging and does not impede vehicle, stock or wildlife movements.

Disturbance to Land – Environmentally Sensitive Areas

(E11) Petroleum activities must not be carried out in **Category A, B** or **C Environmentally Sensitive Areas**.

Or if the applicant requires access to Endangered or Of Concern Regional Ecosystems, State Forests or Timber Reserves:

(E12) Petroleum activities must be carried out in accordance with Schedule E, Table 1 – Petroleum Activities in Environmentally Sensitive Areas

Schedule E, Table 1 – Petroleum Activities in Environmentally Sensitive Areas

ESA Category	Within the ESA	Primary protection zone of the ESA	Secondary protection zone of the ESA
Category A ESAs	No petroleum activities permitted.	Only **low impact petroleum activities** permitted.	Only **limited petroleum activities** permitted. Subject to conditions (E12) and (E16).
Category B ESAs excluding 'Endangered' Regional Ecosystems	Only **low impact petroleum activities** permitted.	Only **low impact petroleum activities** permitted.	Only **limited petroleum activities** permitted. Subject to conditions (E12) and (E16).
Category B ESAs that are 'Endangered' Regional Ecosystems	Only **limited petroleum activities** permitted. Subject to conditions (E12) to (E15) inclusive.	Only **limited petroleum activities** permitted. Subject to conditions (E12) to (E15) inclusive.	Petroleum activities permitted.
Category C ESAs excluding 'Of Concern' Regional Ecosystems, State Forests and Timber Reserves	Only **low impact petroleum activities** permitted.	Only **low impact petroleum activities** permitted.	Only **limited petroleum activities** permitted. Subject to conditions (E12) and (E16).
Category C ESAs that are State Forests, Timber Reserves and 'Of Concern' Regional Ecosystems	Only **limited petroleum activities** permitted. Subject to conditions (E12) to (E15) inclusive.	Only **limited petroleum activities** permitted. Subject to conditions (E12) to (E15) inclusive.	Petroleum activities permitted.

Note: Approvals may be required under the Forestry Act 1959 *where the petroleum activity(ies) is proposed to be carried out in ESAs that are State Forests or Timber Reserves.*

Indicative Environmentally Sensitive Area mapping is available on the Department of Environment and Resource Management website at:
http://www.derm.qld.gov.au/ecoaccess/maps_of_environmentally_sensitive_areas.php.

(E13) **Low impact** or **limited petroleum activities** carried out within an ESA, **primary protection zone** or **secondary protection zone** must not be conducted in those areas where there is overlap with another ESA or **primary protection zone** where **low impact** or **limited petroleum activities** are not authorised.

(E14) Where **limited petroleum activities** are undertaken within the **primary protection zone** of, or within 'Endangered' or 'Of Concern' Regional Ecosystems, State Forests or Timber Reserves, the holder of this environmental authority must be able to demonstrate that no reasonable or practicable alternative exists and that **significant disturbance to land** only be located, and carried out in areas according to the following order of preference:

(a) pre-existing cleared areas or **significantly disturbed land** within the **primary protection zone** of an 'Of Concern' Regional Ecosystem, State Forest or Timber Reserve;
(b) pre-existing cleared areas or **significantly disturbed land** within the **primary protection zone** of an 'Endangered' Regional Ecosystem;
(c) undisturbed areas within the **primary protection zone** of an 'Of Concern' Regional Ecosystem, State Forest or Timber Reserve;
(d) undisturbed areas within the **primary protection zone** of an 'Endangered' Regional Ecosystem;
(e) pre-existing areas of significant disturbance within an 'Of Concern' Regional Ecosystem, State Forest or Timber Reserve (e.g. areas where significant **clearing** or thinning has been undertaken within the Regional Ecosystem, and / or areas containing high densities of weed or **pest** species which has inhibited re-colonisation of native regrowth);
(f) pre-existing areas of significant disturbance within an 'Endangered' Regional Ecosystem (e.g. areas where significant **clearing** or thinning has been undertaken within the Regional Ecosystem and / or areas containing high densities of weed or **pest** species which has inhibited re-colonisation of native regrowth);
(g) areas where **clearing** of an 'Of Concern' Regional Ecosystem, State Forest or Timber Reserve is unavoidable; and
(h) areas where **clearing** of an 'Endangered' Regional Ecosystem is unavoidable.

(E15) Documentation demonstrating compliance with the requirements of condition (E13) must be prepared by the holder of this environmental authority before any disturbance to land takes place.

(E16) For **limited petroleum activities** undertaken within the **primary protection zone** of, or within 'Endangered' or 'Of Concern' Regional Ecosystems, State Forests or Timber Reserves, vegetation **clearing** must not exceed any of the following areas:

(a) for the life of the project and before any activity commences, if the disturbance relates to an 'Endangered' or 'Of Concern' Regional Ecosystem, 10 % of the **remnant unit** of 'Endangered' or 'Of Concern' Regional Ecosystem as ground truthed and mapped as per conditions (E1) to (E3) of this environmental authority; and
(b) 6 metres in width for access tracks not associated with a water or gas line; or
(c) for lineal **infrastructure**, including provision for a utility corridor and access track:
  (i) 12 metres width for a single water or gas gathering line; or
  (ii) 18 metres width for a trench with one water gathering line and one parallel gas gathering pipeline; or
  (iii) 25 metres width for multiple trenches where there are three (3) parallel gas or water gathering lines; and
  (iv) seven (7) metres width for any additional trench for a water or gas line.

(E17) The record of the assessment required by conditions (E1) to (E3) and the extent of **significant disturbance to land** in the following areas must be submitted to the administering authority with each annual return:

(a) the **primary protection zone** of, or within an 'Endangered' or 'Of Concern' Regional Ecosystem, State Forest or Timber Reserve; and
(b) in the **secondary protection zone** of ESAs; and
(c) other **remnant vegetation** areas; and
(d) **wetlands**.

(E18) **Limited petroleum activities** carried out within in the **secondary protection zone** must be located in pre-existing areas of **clearing** or significant disturbance to the greatest practicable extent and must avoid the **clearing** of mature trees where possible.

Offsets

(E19) The holder of this environmental authority must enter in to an environmental offset agreement with the administering authority where **significant disturbance to land** with **State significant biodiversity values** cannot be avoided or minimised.

(E20) The environmental offset agreement must be entered in to within six (6) **months** after submitting the record of significant disturbance required by condition (E16), unless otherwise agreed to by the administering authority.

(E21) The holder of this environmental authority must implement any environmental offset agreement entered in to in accordance with conditions (E18) and (E19) as soon as practicable after finalisation.

SCHEDULF – ENVIRONMENTAL NUISANCE

Odour, dust and other airborne nuisance

(F1) The release of odour, dust or any other airborne contaminant(s), or light from the petroleum activity(ies) must not cause an environmental nuisance at any **sensitive place**.

Nuisance monitoring (other than noise)

(F2) When the administering authority advises the holder of this environmental authority of a complaint alleging nuisance other than noise, the holder must investigate the complaint as soon as practicable.

(F3) The holder of this environmental authority must advise the administering authority in writing of the action proposed or undertaken to resolve the complaint within three (3) **business days** of completing the complaint investigation.

(F4) When requested by the administering authority, the holder of this environmental authority must undertake monitoring as specified by the administering authority, within a reasonable and practical timeframe nominated by the administering authority to investigate any complaint of environmental nuisance at any **sensitive place**.

(F5) The results of the investigation (including an analysis and interpretation of the monitoring results) and the abatement measures implemented must be provided to the administering authority within five (5) **business days** of receiving the advice under condition (F4), unless a longer time is agreed to in writing by the administering authority.

(F6) If monitoring in accordance with condition (F4) indicates that emissions exceed the limits set in this environmental authority or are causing environmental nuisance, then the holder of this environmental authority must:

(a) address the complaint including the use of alternative dispute resolution services if required; and / or
(b) implement abatement or attenuation measures so that the authorised petroleum activity(ies) does not result in further environmental nuisance.

Noise

(F7) A Noise Management Plan which has been **certified** by a **suitably qualified person** must be developed prior to the commencement of the petroleum activity(ies) authorised by this environmental authority.

(F8) The Noise Management Plan must include, but not necessarily be limited to:

(a) a commitment by the Chief Executive Officer for the holder of this environmental authority, or their delegate, to ensure adequate allocation of staff and resources to the establishment and operation of the Noise Management Plan;
(b) definition of roles, responsibilities and authorities within the staffing of the Noise Management Plan;
(c) delivery of training to staff and contractors and maintenance of competencies;
(d) risk / constraint analysis methods to be undertaken prior to any new operation (e.g. drill site) or installation of new equipment that has the potential to create noise nuisance;
(e) procedures and methods to undertake assessments to determine compliance with the noise limits in Schedule F, Table 1 – Noise limits at Sensitive Receptors in the event of a **valid complaint** being received and when there are no **alternative arrangements** in place, taking in to account any tonal or **impulsive noise** impacts;
(f) procedures for handling noise complaints;
(g) community liaison and consultation procedures including but not limited to consultation for when night time petroleum activities (i.e. between 10:00 pm and 6:00 am) are likely to exceed 25 dBA;
(h) procedures for managing records associated with all aspects of the Noise Management Plan including standardised forms for recording monitoring results and complaints;
(i) details of petroleum activities and measured and / or predicted noise levels of noise sources associated with those activities;
(j) reasonable and practicable control or abatement measures (including relocating the activity, altering the hours of operation, or having an alternate arrangement in place with any potentially affected person) that can be undertaken to ensure compliance with the noise limits in Schedule F, Table 1 – Noise limits at Sensitive Receptors;
(k) the level of noise at **sensitive receptors** that would be achieved from implementing the measures detailed under condition (F8)(j); and
(l) mediation processes to be used in the event that noise complaints are not able to be resolved.

(F9) The holder of this environmental authority must implement the Noise Management Plan.

(F10) Prior to undertaking petroleum activities that will result in **short-term**, **medium-term** or **long term noise events** that are likely to impact on a sensitive receptor, the holder of this environmental authority must model or calculate any potential noise emissions from the relevant petroleum activity(ies) to ensure that noise emissions will not exceed the noise levels specified in Schedule F, Table 1 – Noise limits at Sensitive Receptors.

(F11) The emission of noise from the petroleum activity(ies) authorised under this environmental authority must not result in levels greater than those specified in Schedule F, Table 1 – Noise limits at Sensitive Receptors in the event of a **valid complaint** about noise being made to the administering authority.

Schedule F, Table 1 – Noise Limits at Sensitive Receptors

Time Period	Metric	Short Term Noise Event	Medium Term Noise Event	Long Term Noise Event
7:00 am – 6:00 pm	$L_{Aeq,adj,15\ min}$	45 dBA	43 dBA	40 dBA
6:00 pm – 10:00 pm	$L_{Aeq,adj,15\ min}$	40 dBA	38 dBA	35 dBA

10:00 pm – 6:00 am	$L_{Aeq,adj,15\ min}$	28 dBA	28 dBA	28 dBA
	Max $L_{pA,\ 15\ mins}$	55 dBA	55 dBA	55 dBA
6:00 am – 7:00 am	$L_{Aeq,adj,15\ min}$	40 dBA	38 dBA	35 dBA

1. The noise limits in Table 1 have been set based on the following deemed **background noise levels** (L_{ABG}):

7:00 am - 6:00 pm: *35 dBA*

6:00 pm – 10:00 pm: *30 dBA*

10:00 pm – 6:00 am: *25 dBA*

6:00 am – 7:00 am: *30 dBA*

(F12) If the noise subject to a complaint is tonal or impulsive, the adjustments detailed in Schedule F, Table 2 – Adjustments to be Added to Noise Levels at Sensitive Receptors are to be added to the measured noise level(s) to derive $L_{Aeq,\ adj,\ 15\ min}$.

Schedule F, Table 2 – Adjustments to be Added to Noise Levels at Sensitive Receptors

Noise Characteristic	Adjustment to Noise
Tonal characteristic is just audible	+ 2 dBA
Tonal characteristic is clearly audible	+ 5 dBA
Impulsive characteristic is just audible	+ 2 dBA
Impulsive characteristic is clearly audibly	+ 5 dBA

Low Frequency Noise

(F13) Notwithstanding condition (F11), emission of any low frequency noise must not exceed the following limits in the event of a **valid complaint** about low frequency noise being made to the administering authority:

(a) 60 dB(C) measured outside the **sensitive receptor**; and
(b) the difference between the external A-weighted and C-weighted noise levels is no greater than 20 dB; or
(c) 50 dB(Z) measured inside the **sensitive receptor**; and
(d) the difference between the internal A-weighted and Z-weighted noise levels is no greater than 15 dB.

Noise Monitoring

(F14) The holder of this environmental authority must undertake noise monitoring as soon as practicable when requested by the administering authority.

(F15) The holder of this environmental authority must report the results of noise monitoring to the administering authority within three (3) **business days** of completion of the monitoring event.

(F16) Noise monitoring and recording must include, but not necessarily be limited to:

(b) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and T=15 mins);
(c) $L_{Aeq\ adj,\ 15\ mins}$;
(c) **background noise level** as $L_{A\ 90,\ 15\ mins}$;
(d) **Max** $L_{pA,\ 15\ mins}$;
(e) the level and frequency of occurrence of **impulsive** or tonal noise and any adjustment and penalties to measured noise levels levels;
(f) atmospheric conditions including temperature, relative humidity and wind speed and directions;
(g) effects due to any extraneous factors such as traffic noise;
(h) location, date and time of monitoring;
(i) if the complaint concerns low frequency noise, **Max** $L_{pZ,\ 15\ mins}$; and

(h) if the complaint concerns low frequency noise, one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range for both the noise source and the background noise in the absence of the noise source.

(F17) The method of measurement and reporting of noise levels and background sound pressure levels must comply with the Department of Environment and Resource Management's "Noise Measurement Manual" 2000 or **Australian Standard 1055**, as amended from time to time.

Vibration and Blasting

(F18) A Blast Management Plan must be developed in accordance with **Australian Standard 2187** by a **suitably qualified person** prior to each blasting activity.

(F29) The Blast Management Plan must include measures to minimise the likelihood of any adverse effects being caused by airblast overpressure and / or ground borne vibrations at any **sensitive receptor** and demonstrate current best practice environmental management.

(F20) All blasting must be carried out in a proper manner by a **suitably qualified person**.

(F22) All blasting must be carried out in accordance with the Blast Management Plan.

(F21) Noise from blasting operations must not exceed an airblast overpressure level of 120 dB (linear peak) at any time, when measured at or extrapolated to any **sensitive receptor**.

(F22) Ground-borne vibration peak particle velocity caused by blasting operations must not exceed 10 mm/s at any time, when measured at or extrapolated to any **sensitive receptor**.

Blast and Vibration Monitoring

(F23) Monitoring and recording of the air blast overpressure and ground borne vibration of every blast must be undertaken.

(F24) Blast and vibration monitoring must include but not necessarily be limited to:

(a) maximum instantaneous charge;
(b) location of the blast within the site (including any bench level);
(c) airblast overpressure level (dB Linear Peak);
(d) peak particle velocity (mm / s);
(e) location, date and time of recording;
(f) measurement instrumentation and procedure;
(g) meteorological conditions for blast monitoring (including temperature, relative humidity, temperature gradient, cloud cover, wind speed and direction); and
(h) distances from the blast site to potentially noise-affected buildings or structures.

SCHEDULE H – WASTE

General

(H1) All general waste must only be removed from the site and sent to a recycling facility or disposal facility licensed to accept the waste under the *Environmental Protection Act 1994*.

(H2) All regulated waste must only be removed from the site by a person who holds a current authority to transport such waste under the provisions of the *Environmental Protection Act 1994* and sent to a recycling facility or disposal facility licensed to accept the waste.

(H3) Waste must not be burned on the site, unless it is vegetation and is authorised in writing under the *Forestry Act 1959*.

(H4) All waste fluids and muds resulting from drilling and exploration petroleum activities must be contained in a properly lined containment structure for disposal, remediation or reuse where applicable.

AHR

SCHEDULE I – REHABILITATION

Progressive Rehabilitation for Significantly Disturbed Land

(I1) Progressive **rehabilitation** of **significantly disturbed land** caused by the carrying out of the petroleum activity(ies) (other than constructing pipelines) which is not required for the ongoing conduct of the petroleum activity(ies) must commence as soon as practicable, but not longer than nine (9) **months** following the completion of any **construction** or operational works associated with the petroleum activity(ies).

(I2) Progressive **rehabilitation** of **significantly disturbed land** caused by the carrying out of the petroleum activity(ies) must be undertaken in accordance with the Schedule of Disturbance as submitted to the administering authority as part of the financial assurance calculations.

(I3) Progressive **rehabilitation** of **significantly disturbed land** caused by the carrying out of the petroleum activity(ies) must:

(a) remediate any contaminated land (e.g. contaminated soils, decommissioned **dams** containing salt);
(b) reshape all **significantly disturbed land** to a **stable** landform;
(c) reprofile all **significantly disturbed land** to original contours;
(d) on all **significantly disturbed land**:
  (i) re-establish surface drainage lines;
  (ii) reinstate the top layer of the soil profile;
  (iii) establish groundcover to ensure that erosion is minimised;
  (iv) establish vegetation of floristic species composition found in **analogue sites**;
(e) undertake **rehabilitation** in a manner such that any actual and potential **acid sulfate soils** in or on the site are either not disturbed, or submerged, or are treated to prevent and / or minimise environmental harm.

Final Acceptance Criteria for Significantly Disturbed Land

(I4) All **significantly disturbed land** caused by the carrying out of the petroleum activity(ies) must be rehabilitated to meet the following final acceptance criteria:

(a) <u>For all land use(s):</u>

  (i) all **significantly disturbed land** is reinstated to the pre-disturbed soil suitability class;
  (ii) the landform is safe for humans and fauna;
  (iii) the landform is **stable** with no subsidence or erosion gullies for at least three (3) **years**;
  (iv) all **significantly disturbed land** is reinstated so that the distribution of vegetation communities represents the **analogue site**;
  (v) the water quality of any residual **void** or water bodies constructed by the petroleum activity(ies) meets criteria for subsequent uses and does not have potential to cause environmental harm;
  (vi) there is no ongoing contamination to **waters**;
  (vii) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the petroleum activity(ies).

(b) <u>Additional requirements for sites that are being reinstated to native ecosystems:</u>

  (i) each vegetation community must be re-established so that each of the following **rehabilitation** parameters are maintained for at least three (3) **years**:

(ii) the rehabilitated site shows distinct and progressive re-establishment of the various strata which characterise the vegetation community in the **analogue site**;

(iii) all dominant species within each strata are re-established at densities equivalent to that of the **analogue site**;

(iv) not withstanding (I10)(b)(i) and (I10)(b)(ii), a minimum of 70% **species richness** and **species diversity** is observed when compared to the relevant **analogue site**;

(v) a minimum of 50% **foliage cover** is observed when compared to the relevant **analogue site**;

(vi) each vegetation community must be rehabilitated and maintained until it can be demonstrated that it is resilient and self-sustaining; and

(vii) percent organic litter cover, count and density of hollow bearing logs and nest boxes (as replacement for trees with hollows ≥10cm diameter) and fallen woody material (total length of logs ≥ 10 cm diameter per hectare and number of logs ≥ 10cm per hectare) have been installed at numbers and densities no lower than the **analogue site**.

(I5) Notwithstanding condition (I7), all buried pipelines must be decommissioned in accordance with the requirements of **Australian Standard 2885**, as amended from time to time.

Monitoring of Progressive Rehabilitation

(I6) Regular maintenance and at least yearly monitoring of rehabilitated areas must take place to measure compliance with condition (I3) and (I6).

Monitoring of Final Rehabilitation Success

(I7) Final acceptance criteria are deemed to be met when monitoring of rehabilitated areas demonstrate compliance with the requirements of condition (I7) for three (3) consecutive **years**.

Rehabilitation Reporting for Relinquishment of Part of an Authority to Prospect Area

(I8) Prior to relinquishing part of an authority to prospect area, the holder of this environmental authority must prepare a rehabilitation report which specifically relates to the area to be relinquished and which:

(a) reports on the condition of the area to be relinquished against the requirements of conditions (I4) and (I5) of this environmental authority; and

(b) includes the results of all rehabilitation monitoring undertaken in the area to be relinquished in accordance with the Rehabilitation Monitoring Program and conditions (I9) and (I10) of this environmental authority.

(I9) The report required under condition (I11) must be submitted to the administering authority twenty (20) **business days** prior to the relinquishment notice being lodged with the administering authority of the *Petroleum and Gas (Production and Safety) Act 2004.*

SCHEDULE J

Well Drilling

(J1) **Oil based drilling muds** must not be used in the carrying out of the petroleum activity(ies).

(J2) **Synthetic based drilling muds** must not be used in the carrying out of the petroleum activity(ies).

(J3) **Stimulation** activities are not permitted.

SCHEDULE K – COMMUNITY ISSUES

(K1) The holder of this environmental authority must maintain a record of all **valid complaints** and incidents causing environmental harm, and actions taken in response to the **valid complaint** or incident.

(K2) The holder of this environmental authority must record the following details for all **valid complaints** received:

(a) name, address and contact number for valid complainant;
(b) time and date of **valid complaint**;
(c) reasons for the complaint as stated by the valid complainant;
(d) investigations undertaken in response to the **valid complaint**;
(e) conclusions formed;
(f) actions taken to resolve the **valid complaint**;
(g) any abatement measures implemented to mitigate the cause of the **valid complaint**; and
(h) name and contact details of the person responsible for resolving the **valid complaint**.

SCHEDULE L - NOTIFICATION PROCEDURES

(L1) The holder of this environmental authority must telephone the Department of Environment and Resource Management's Pollution Hotline (telephone: 1300 130 372) and any affected landholder, occupier or their nominated representative as soon as reasonably practicable, but within 24 hours after becoming aware of:

(a) a release of contaminants as provided for in condition (L3); or
(b) any event where environmental harm (excluding environmental nuisance) has been caused or may be caused; or
(d) any result from baseline **bore or** well water impact monitoring that exceeds a water quality objective for the protection of an environmental value of that water resource.

(L2) Notwithstanding condition (L1), the holder of this environmental authority must telephone the Department of Environment and Resource Management's Pollution Hotline (telephone: 1300 130 372) as soon as reasonably practicable, but within 24 hours after becoming aware of:

(a) any non-compliance with any condition of this environmental authority other than in relation to a release of contaminants; or

(L3) Subject to condition (L1), the holder of this environmental authority must report spills of contaminants (including but not limited to hydrocarbons and formation water) of the following volumes or kind:

(a) releases of any volume of contaminants to water;
(b) releases of volumes of contaminants to land greater than:
  (i) 200L of hydrocarbons; or
  (ii) 5 000 L of formation water;
(c) releases of any volumes of contaminants where potential serious or material environmental harm has occurred or may occur.

(L4) The notification of emergencies or incidents as required by conditions (L1), (L2) and (L3) must include but not be limited to the following information:

(a) the environmental authority number and name of the holder;
(b) the tenure type and number where the emergency or incident occurred;
(c) the name and telephone number of the designated contact person;
(d) the location of the emergency or incident;
(e) the date and time that the emergency or incident occurred;
(f) the date and time the holder of this environmental authority became aware of the emergency or incident;
(g) details of the nature of the event and the circumstances in which it occurred;
(h) the estimated quantity and type of any contaminants involved in the incident;

(i) the actual or potential suspected cause of the emergency or incident;
(j) a description of the land use at the site of the emergency or incident (e.g. grazing, pasture, forest etc) and / or the name of any relevant **waters** and other environmentally sensitive features;
(k) a description of the possible impacts from the emergency or incident;
(l) a description of whether stock and / or wildlife were actually or potentially exposed to any contaminants released and measures taken to prevent access for the duration of the emergency or incident;
(m) any sampling conducted or proposed, relevant to the emergency or incident;
(n) landholder details and details of landholder consultation;
(o) immediate actions taken to control the impacts of the emergency or incident and how environmental harm was mitigated at the time of the emergency or incident; and
(p) whether further examination / root cause analysis is required and if so, the expected date by when this examination will be completed and reported to the administering authority.

(L5) Within 10 **business days** following the initial notification, unless a longer time is agreed to by the administering authority, a written report must be provided to the administering authority, including the following (where relevant to the emergency or incident):

(a) the information required by condition (L4);
(b) the root cause of the emergency or incident;
(c) the confirmed quantities and types of any contaminants involved in the incident;
(d) results and interpretation of any analysis of samples taken at the time of the emergency or incident (including the analysis results of any impact monitoring);
(e) a final assessment of the impacts from the emergency or incident including any actual or potential environmental harm that has occurred or may occur in the longer term as a result of the release;
(f) the success or otherwise of actions taken at the time of the incident to prevent or minimise environmental harm;
(g) results and current status of landholder consultation, including commitment to resolve any outstanding issues / concerns; and
(h) actions and / or procedural changes to prevent a recurrence of the emergency or incident.

(L6) Within 10 **business days** following the initial notification of an emergency or incident or receipt of monitoring results indicating any significant changes in groundwater quality caused by the petroleum activity(ies), then the analysis results indicating these changes, including any proposed actions to mitigate the changes in groundwater quality information must be submitted to the administering authority.

(L7) If groundwater contamination caused by the petroleum activity(ies) is encountered, the following must be reported to satisfy requirements under condition (L6):

(a) the level of environmental harm caused as a result of such contamination to soils and groundwater;
(b) the conduct of a geodetic survey of all monitoring **bores** to determine the relative water surface elevations of each bore and reported in metres relative to the **AHD**; and
(c) the determination of groundwater flow direction, groundwater flow rate and hydraulic conductivity.

SCHEDULE M - DEFINITIONS

Note: Terms which are defined in this environmental authority are ***bolded*** *throughout. 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.*

"acid sulfate soils" means soil or sediment containing highly acidic soil horizons or layers affected by the oxidation of iron sulfides (*actual acid sulfate soils*) and / or soil or sediment containing iron sulfides or other sulfidic material that has not been exposed to air and oxidised (*potential acid sulfate soils*). The term acid sulfate soil generally includes both actual and potential acid sulfate soils. Actual and potential acid sulfate soils are often found in the same soil profile, with actual acid sulfate soils generally overlying potential acid sulfate soil horizons.

"active" for the purposes of landholders' groundwater bores means bores that are able to continue to provide a reasonable yield of water in terms of quantity for the bores authorised purpose or use.

"AHD" means Australian Height Datum and is the datum used for the determination of elevations in Australia. The determination uses a national network of benchmarks and tide gauges and sets mean sea level at zero elevation.

"analogue site" means an area of land which contains values and characteristics representative of an area to be rehabilitated prior to disturbance. Such values must encompass land use, topographic, soil, vegetation and other ecological characteristics. Analogue sites can be the pre-disturbed site of interest where significant surveying effort has been undertaken to establish benchmark parameters such as that ground truthing assessment required under the Land Schedule of this environmental authority.

"analytes" means a chemical parameter determined by either physical measurement in the field or by laboratory analysis.

"annual exceedance probability or **AEP"** is the probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.

"appraisal well" means a petroleum well to test the potential of one (1) or more natural underground reservoirs for producing or storing petroleum. For clarity, an appraisal well does not include an exploration well.

"Australian Standard 1055" means Australian Standard 1055.1:1997 "Description and Measurement of Environmental Noise – General procedures".

"Australian Standard 2187" means Australian Standard 2187.0:1998 "Explosives—Storage, transport and use, Part 0", Australian Standard 2187.1:1998 "Explosives—Storage, transport and use Part 1" and Australian Standard 2187.2:2006 "Explosives—Storage and use, Part 2" or any updated versions that becomes available from time to time.

"Australian Standard 2885" means Australian Standard 2885.0:2008 "Pipelines – Gas and Liquid Petroleum General Requirements", Australian Standard 2885.1:2007 "Pipelines – Gas and Liquid Petroleum Design and Construction" and Australian Standard 2885.3:2001 "Pipelines – Gas and Liquid Petroleum Operation and Maintenance", or any updated versions that becomes available from time to time.

"Australian Standard 4323" means Australian Standard 4323.1:1995 "Stationary source emissions method 1: Selection of sampling positions".

"Australian / New Zealand Standard 5667.11" means Australian / New Zealand Standard 5667.11: 1998 "Water Quality – Sampling – Guidance on sampling at Groundwaters".

"Australian / New Zealand Standard 5667.12" means Australian / New Zealand Standard 5667.12:1999 "Guidance on Sampling of Bottom Sediments" for permanent, semi-permanent water holes and water storages".

"authorised person" means a person holding office as an authorised person under an appointment under the *Environmental Protection Act 1994* by the chief executive or chief executive officer of a local government.

"background noise level" means the sound pressure level, measured in the absence of the noise under investigation, as the $L_{A90,T}$ being the A-weighted sound pressure level exceeded for 90 percent of the measurement time period T of not less than 15 minutes, using Fast response.

"bed and banks" for a watercourse or wetland means land over which the water of the watercourse or wetland normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater.

"black earth" means a type of soil, also known as vertosols and is a soil order of the Australian Soil Classification. These are clay soils with shrink / swell properties that display strong cracks when dry and / or lenticular structural aggregates at depth. They have high soil fertility and a large water holding capacity.

"bore" means a water observation bore or a water supply bore that is either sub-artesian or artesian.

"brine" means saline water with a total dissolved solid concentration greater than 40 000 mg/l.

"bund or bunded" in relation to spill containment systems for fabricated or manufactured tanks or containers designed to a recognised standard means an embankment or wall of brick, stone, concrete or other impervious material which may form part or all of the perimeter of a compound and provides a barrier to retain liquid. Since the bund is the main part of a spill containment system, the whole system

(or bunded area) is sometimes colloquially referred to within industry as the bund. The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also used for fire protection, product recovery and process isolation.

"business day" has the meaning in the *Acts Interpretation Act 1954* and means a day that is not—
- a Saturday or Sunday; or
- a public holiday, special holiday or bank holiday in the place in which any relevant act is to be or may be done.

"BTEX" means benzene, toluene, ethylbenzene, ortho-xylene, para-xylene, meta-xylene and total xylene..

"Category A Environmentally Sensitive Area" means any area listed in Section 25 of the *Environmental Protection Regulation 2008.*

"Category B Environmentally Sensitive Area" means any area listed in Section 26 of the *Environmental Protection Regulation 2008.*

"Category C Environmentally Sensitive Area" means any of the following areas:
- Nature Refuges as defined under the *Nature Conservation Act 1992*;
- Koala Habitat Areas as defined under the *Nature Conservation (Koala) Conservation Plan 2006*;
- State Forests or Timber Reserves as defined under the *Forestry Act 1959*;
- Declared catchment areas under the *Water Act 2000*;
- Resources reserves under the *Nature Conservation Act 1992;*
- An area identified as "Essential Habitat" or "Essential Regrowth Habitat" under the *Vegetation Management Act 1999* for a species of wildlife listed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992*; or
- Of Concern Regional Ecosystems identified in the database maintained by the Department of Environment and Resource Management called 'RE description database' containing Regional Ecosystem numbers and descriptions.

"clearing" for vegetation means removing, cutting down, ringbarking, pushing over, poisoning or destroying in any way including by burning, flooding or draining; but does not include destroying standing vegetation by stock, or **lopping** a tree.

"discharge area" means:
- that part of the land surface where groundwater discharge produces a net movement of water out of the groundwater; and

- identified by an assessment process consistent with the document "Salinity Management Handbook" Queensland Department of Natural Resources, 1997, as amended from time to time; or
- identified by an approved salinity hazard map held by the Department of Environment and Resource Management.

"document" has the meaning in the *Acts Interpretation Act 1954* and means:
- any paper or other material on which there is writing; and
- any paper or other material on which there are marks; and
- figures, symbols or perforations having a meaning for a person qualified to interpret them; and
- any disc, tape or other article or any material from which sounds, images, writings or messages are capable of being produced or reproduced (with or without the aid of another article or device).

"ecosystem functioning" means the interactions between and within living and nonliving components of an ecosystem and generally correlates with the size, shape and location of an area of vegetation.

"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 petroleum activities such as rehabilitation. In other words, it does not refer to the 'completion' of the petroleum activity(ies), the time at which the petroleum authority ends or the time that the land in question ceases to be part of an authority.

"equivalent person or EP" means an equivalent person under volume 1, section 2 of the "Guidelines for Planning and Design of Sewerage Schemes", October 1991, published by the Water Resources Commission, Department of Primary Industries, Fisheries and Forestry.

"exploration well" means a petroleum well that is drilled to:
- explore for the presence of petroleum or natural underground reservoirs suitable for storing petroleum; or
- obtain stratigraphic information for the purpose of exploring for petroleum.

For clarity, an exploration well does not include an appraisal or development well.

"exploring for petroleum" means carrying out an activity for the purpose of finding petroleum or natural underground reservoirs as per section 14 of the *Petroleum and Gas (Production and Safety) Act 2004* for example including:
- conducting a geochemical, geological or geophysical survey;
- drilling a well;
- carrying out testing in relation to a well;
- taking a sample for chemical or other analysis.

"fill" means any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place but does not include material that forms a part of, or is associated with, a structure constructed in a watercourse, wetland or spring including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.

"floodplain" has the meaning in the *Water Act 2000* and means an area of reasonably flat land adjacent to a watercourse that—
- is covered from time to time by floodwater overflowing from the watercourse; and
- does not, other than in an upper valley reach, confine floodwater to generally follow the path of the watercourse; and
- has finer sediment deposits than the sediment deposits of any bench, bar or in-stream island in the watercourse.

"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.

"foliage cover" means the proportion of the ground, which would be shaded if sunshine came from directly overhead and is defined for each stratum. It includes branches and leaves and is similar to the crown type of Walker and Hopkins (1990) but is applied to a stratum or plot rather than an individual crown.

"foreseeable future" means the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the **end** of a 150 year foreseeable future with an acceptably low probability of failure before that time.

"high bank" means the defining terrace or bank or, if no bank is present, the point on the active floodplain, which confines the average annual peak flows in a watercourse.

"**high value regrowth**" vegetation means

- any of the following:
  - an endangered regional ecosystem;
  - an of concern regional ecosystem;
  - a least concern regional ecosystem; and
- have not been cleared since 31 December 1989; and
- is shown on a regrowth vegetation map.

"hub" means more than one unit of fuel burning or combustion equipment capable of burning fuel at a rate of at least 500 kg/hour individually or combined, located within five (5) km of any other fuel burning or combustion equipment capable of burning fuel at a rate of at least 500 kg/hour individually or combined.

"impulsive noise" means sound characterised by brief excursions of sound pressure (acoustic impulses) that significantly exceed the background sound pressure. The duration of a single impulsive sound is usually less than one second.

"infrastructure" means plant or works including for example, communication systems, compressors, powerlines, pumping stations, reservoirs, roads and tracks and tanks, equipment, buildings and other structures built for the purpose and duration of the conduct of the petroleum activity(ies) including temporary structures or structures of an industrial or technical nature, including, for example, mobile and temporary camps.

Infrastructure does not include other facilities required for the long term management of the impact of those petroleum activities or the protection of potential resources. Such other facilities include pipelines and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

"$L_{Aeq, adj, 15 mins}$" means the A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within any 15 minute period has the same square sound pressure as a sound level that varies with time.

"$L_{A 90, adj, 15 mins}$" means the A-weighted sound pressure level, adjusted for tonal character, that is equal to or exceeded for 90% of any 15 minutes sample period equal, using Fast response

"lake" means:
- a lagoon, swamp or other natural collection of water, whether permanent or intermittent; and
- the bed and banks and any other element confining or containing the water.

"levee" means a 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.

"limited petroleum activities" mean only the following petroleum activities:
- **well sites** not exceeding 1 hectare disturbance and multi-well sites not exceeding 1.5 hectare disturbance. Well sites may include the following infrastructure:
  - well pads;
  - water pumps and generators associated with well operations;
  - sumps for storing drilling muds;
  - flare pits;
- geophysical surveys (including seismic petroleum activities);
- ecological geological surveys (including seismic petroleum activities);
- gathering / flow pipelines from a well head to the initial compression facility;
- supporting access tracks; and

- communication and power lines that are necessary for the undertaking of petroleum activities and that are located within well sites, well pads and pipeline right of ways without increasing the disturbance area of petroleum activities.

For clarity, limited petroleum activities exclude and exclusions are not necessarily limited to:

- the construction of infrastructure for processing or storing petroleum or by-products;
- borrow pits;
- campsites / workforce accommodation;
- waste disposal; or
- other supporting infrastructure for the project (e.g. sewage treatment plants).

"long term noise event" is a noise exposure, when perceived at a sensitive receptor, persists for a period of greater than five (5) days, even when there are respite periods when the noise is inaudible within those five (5) days.

"lopping" a tree, means cutting or pruning its branches, but does not include—

(a)removing its trunk; and
(b)cutting or pruning its branches so severely that it is likely to die.

"low impact petroleum activities" means limited petroleum activities which do not result in the clearing of native vegetation, cause disruption to soil profiles through earthworks or excavation or result in significant disturbance to land. Examples of such activities include but are not necessarily limited to soil surveys, topographic surveys, cadastral surveys and ecological surveys and traversing land by car or foot via existing access tracks or routes or in such a way that does not result in permanent damage to vegetation.

"Max $L_{pZ,\ 15\ min}$" means the maximum value of the Z-weighted sound pressure level measured over 15 minutes.

"Max $L_{pA,\ 15\ min}$" means the absolute maximum instantaneous A-weighted sound pressure level, measured over 15 minutes.

"medium term noise event" is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than five (5) days and does not re-occur for a period of at least four (4) weeks. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a difference source or source location.

"meter" means a device for measuring, or giving an output signal proportional to, quantities of water passed and/or the rate of flow in a pipe."

"month" has the meaning in the Acts Interpretation Act 1954 and means a calendar month and is a period starting at the beginning of any day of one (1) of the 12 named months and ending—

- immediately before the beginning of the corresponding day of the next named month; or
- if there is no such corresponding day—at the end of the next named month.

"NATA accreditation" means accreditation by the National Association of Testing Authorities Australia.

"oil-based drilling mud" means mud where the base fluid is a petroleum product such as diesel fuel.

"populated area" includes towns and cities which have a populated of 200 or more people and with a minimum density of 40 people / km^2.

"prescribed storage gases" has the meaning provided in section 12 of the *Petroleum and Gas (Production and Safety) Act 2004.*

"primary protection zone" means an area within a 200 metre buffer from the boundary of any Category A, B or C Environmentally Sensitive Area.

"programmed and approved" means when the location of infrastructure has been approved by the authorised person(s) with the organisation(s).

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

"regrowth vegetation map" means a map certified by the chief executive as the regrowth vegetation map for the State and showing for the State:

- areas of regrowth vegetation, identified on the map as high-value regrowth vegetation, that—
  - are any of the following:
    (i) an endangered regional ecosystem;
    (ii) an of concern regional ecosystem;
    (iii) a least concern regional ecosystem; and
  - have not been cleared since 31 December 1989; and
- particular watercourses in the Burdekin, Mackay Whitsunday and Wet Tropics catchments, identified on the map as regrowth watercourses; and
- areas the chief executive decides under section 20AI to show on the map as high value regrowth vegetation.

"remnant unit" means a continuous polygon of remnant vegetation (as defined by the QLD Herbarium) representative of a single RE type or a single heterogeneous unit.

"remnant vegetation" means vegetation, part of which forms the predominant canopy of the vegetation—

- covering more than 50 % of the undisturbed predominant canopy; and
- averaging more than 70 % of the vegetation's undisturbed height; and
- composed of species characteristic of the vegetation's undisturbed predominant canopy cover.

"reporting limit" means the lowest concentration that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes, the reporting limit is selected as the lowest non-zero standard in the calibration curve. Results that fall below the reporting limit will be reported as "less than" the value of the reporting limit. The reporting limit is also referred to as the practical quantitation limit or the limit of quantitation.

"secondary protection zone" in relation to a Category A Environmentally Sensitive Area means an area within an 800 metre buffer from the boundary of a **primary protection zone**.

"secondary protection zone" in relation to a Category B or C Environmentally Sensitive Area means a area within a 300 metre buffer from the boundary of a **primary protection zone**.

"sensitive place" means:

- a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel; or
- a library, childcare centre, kindergarten, school, university or other educational institution;
- a medical centre, surgery or hospital; or
- a protected area; or
- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment; or
- a work place used as an office or for business or commercial purposes, which is not part of the petroleum activity(ies) and does not include employees accommodation or public roads.

"sensitive receptor" means an area or place where noise (including low frequency, vibration and blasting) is measured to investigate whether nuisance impacts are occurring and includes:

- a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel; or
- a library, childcare centre, kindergarten, school, university or other educational institution;
- a medical centre, surgery or hospital; or
- a protected area; or
- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment; or
- a work place used as an office or for business or commercial purposes, which is not part of the petroleum activity(ies) and does not include employees accommodation or public roads.

"short term noise event" is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than eight hours and does not re-occur for a period of at least seven (7)

days. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a different source or source location.

"significantly disturbed land or significant disturbance to land or significant disturbance" means disturbance to land as defined in section 28 of the *Environmental Protection Regulation 2008.*

"species richness" means the number of different species in a given area.

"species diversity" means the diversity within an ecological community that incorporates both species richness and the evenness of species' abundances.

"spring" means the land to which water rises naturally from below the ground and the land over which the water then flows.

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

"State significant biodiversity values" means those regional ecosystems, essential habitat, wetlands, watercourses, legally secured offset areas and connectivity areas provided in Appendix 1 of the "*Queensland Biodiversity Offset Policy*" (Department of Environment and Resource Management, 2011).

"stimulation" means a technique used to increase the permeability of a natural underground reservoir, including for example, hydraulic fracturing / hydrofraccing, fracture acidizing and the use of proppant treatments.

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

"synthetic based drilling mud" means a mud where the base fluid is a synthetic oil, consisting of chemical compounds which are artificially made or synthesised by chemically modifying petroleum components or other raw materials rather than the whole crude oil.

"threatening processes" means processes, features and actions that can have a detrimental effect upon the health and viability of an area of vegetation (e.g. altered hydrology, land use practices, invasion by pest and weed species, land degradation, edge effects and fragmentation).

"tolerable limits" means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values (e.g. a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing damage and limiting infiltration and percolation).

"top soil" means the surface (top) layer of a soil profile, which is more fertile, darker in colour, better structured and supports greater biological activity than underlying layers. The surface layer may vary in depth depending on soil forming factors, including parent material, location and slope, but generally is not greater than about 300 mm in depth from the natural surface.

"transmissivity" means the rate of flow of water through a vertical strip of aquifer which is one unit wide and which extends the full saturated depth of the aquifer.

"trenchless methods" means construction methods for the installation of pipelines and cables below the ground with minimal excavation. Trenchless methods can include, but not necessarily be limited to:

- moling
- pipe ramming method
- horizontal directional drilling
- utility tunneling, pipe jacking, auger boring
- microtunnelling and pipe jacking
- on-line replacement

"unacceptable risk" means those risks identified as unacceptable through a risk assessment that substantially conforms with Australian Standard 4360:2004 "Risk Management" or any updated version that becomes available from time to time.

"valid complaint" means a complaint the administering authority considers is not frivolous, nor vexatious, nor based on mistaken belief.

"void" means any man-made, open excavation in the ground (includes borrow pits, drill sumps, frac pits, flare pits, cavitation pits and trenches).

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

"watercourse" has the meaning provided in section 5 of the *Water Act 2000* and includes the bed and banks and any other element of a river, creek or stream confining or containing water.

"well infrastructure" means infrastructure required for the construction, completion and operation of a well including but not limited to cellar pits, and drill sumps.

"well site" means a maximum area of land disturbance for the purposes of constructing, installing and operating an exploration, appraisal or development well or such wells as part of a multi-well arrangement and includes well lease infrastructure.

"wetland" means a wetland as defined under the Queensland Wetlands Program and are areas of permanent or periodic / intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six (6) metres. To be classified as a wetland, the area must have one or more of the following attributes:

- at least periodically, the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

For the purposes of Chapter 5A activities, wetlands do not include springs and watercourse and those wetlands that are defined in the document entitled *"Wetland Mapping and Classification Methodology"* (Department of Environment and Resource Management, 2005) as:

- H2M1 Riverine or ex-riverine (lacustrine) water bodies associated with dams and weirs located in a channel;
- H2M3p Ponded pastures;
- H2M5 Palustrine / lacustrine water bodies where ecological character has changed due to gross mechanical disturbance (e.g. cropping);
- H2M6 Palustrine / lacustrine water bodies that have been converted, completely or mostly, to a ring tank or other controlled storage;
- H2M7 Riverine water bodies that have been converted mostly to canals or irrigation channels;
- H3C1 Artificial stand-alone water storages not within a natural water body or channel; or
- H3C2 Artificial Channel drain / canal –bore drains, swales, **bores** and irrigation channel overflows / ponding.

"year" means a period of 12 months.

"80th percentile" in relation to release limits means that not more than one (1) of the measured values is to exceed the stated release limit for any five (5) consecutive samples where:

- the consecutive samples are taken over a five (5) **month** period; and
- the consecutive samples are taken at approximately equal periods.

End of Environmental Authority