Permit

Environmental Protection Act 1994

Environmental authority EPPG00878413

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

Environmental authority number: EPPG00878413

Environmental authority takes effect on 28 April 2021

Environmental authority holder(s)

Name(s)	Registered address
CNOOC Coal Seam Gas Company Pty Ltd	Level 34 123 Eagle Street BRISBANE CITY QLD 4000 Australia
Tokyo Gas QCLNG Pty Ltd	Level 21 Exchange Plaza 2 The Esplanade PERTH WA 6000
AUSTRALIA PACIFIC LNG PTY LIMITED	Level 4 139 Coronation Drive MILTON QLD 4064 Australia
BG International Ltd	Level 30 275 George Street BRISBANE CITY QLD 4000 Australia
SGA (QUEENSLAND) PTY LIMITED	Level 30 275 George St BRISBANE CITY QLD 4000 Australia
QGC PTY LIMITED	Level 30 275 George Street BRISBANE CITY QLD 4000 Australia

Queensland Government

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Ancillary 14 - Electricity Generation 1: Generating electricity by using gas at a rated capacity of 10MW electrical or more Schedule 3 03: A petroleum activity that is likely to have a significant impact on a category A or B environmentally sensitive area Ancillary 08 - Chemical Storage 5: storing 200 cubic metres or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d) Schedule 3 06: A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam Schedule 3 08: A petroleum or GHG storage activity, other than items 1 to 7, that includes an activity from Schedule 2 with an AES Ancillary 64 - Water treatment 3: Treating 10ML or more raw water in a day Ancillary 60 - Waste disposal 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) (d) more than 200,000t Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-ii) more than 100 but not more than 1500EP otherwise Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ATP632, PL179, PL180, PL211, PL212, PL228, PL229, PL263, PPL176, PPL2014

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

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

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

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

Date issued: 28 April 2021

Enquiries:
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Department of Environment and Science

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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)

Contents of Environmental Authority

Conditions of environmental authority

Schedule A - General

(A1) This authority does not authorise environmental harm unless a condition contained within this authority explicitly authorises that harm. Where there is no condition or the authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

(A2) In carrying out petroleum activities the holder of this authority must prevent and / or minimise the likelihood of environmental harm being caused.

(A3) All plant and equipment must be maintained and operated in their proper and effective condition.

(A7) A **third party auditor**, nominated by the holder of this environmental authority and accepted by the administering authority, must audit compliance with the conditions of this environmental authority at a minimum frequency of every three **years**.

(A8) Notwithstanding condition (A7), the holder of this environmental authority may, prior to undertaking the third party audit, negotiate with the administering authority the scope and content of the third party audit.

Note: Where minimal petroleum activities have been undertaken on a tenure, the negotiation of the scope of the third party audit may also include the postponing of the third party audit to an agreeable time between the holder of this environmental authority and the administering authority. In this event, the timeframe in condition (A7) must be amended to reflect the postponement.

(A9) An audit report must be prepared by the **third party auditor** presenting the findings of each audit carried out.

(A10) The **third party auditor** must **certify** the findings in the audit report.

(A11) The holder of this environmental authority must immediately act upon any recommendations arising from the audit report by:

(a) investigating any non-compliance issues identified; and

(b) as soon as reasonably practicable, implementing measures or taking necessary action to ensure compliance with the requirements of this environmental authority.

(A12) The holder of this environmental authority must attach to the audit report, a written response to the audit report detailing the actions taken or to be taken on stated dates:

(a) by the holder to ensure compliance with this environmental authority; and

(b) to prevent a recurrence of any non-compliance issues identified.

(A13) The audit report required by condition (A9) and the written response to the audit report required by condition (A12) must be submitted with the subsequent annual return.

(A14) The financial cost of the third party audit is to be borne by the holder of this environmental authority.

(A15) Petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents which include, but are not necessarily limited to:

(a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity;

(b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity;

(c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring;

(d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;

(e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land;

(f) training of staff to enable them to effectively respond; and

(g) procedures to notify the administering authority, local government and any potentially impacted landholder.

(A16) All monitoring must be undertaken by a suitably qualified person.

(A17) If requested by the administering authority in relation to investigating a complaint, monitoring must be commenced within 10 business days.

(A18) All laboratory analyses and tests must be undertaken by a laboratory that has NATA accreditation for such analyses and tests.

(A19) Notwithstanding condition (A18), where there are no NATA accredited laboratories for a specific analyte or substance, then duplicate samples must be sent to at least two separate laboratories for independent testing or evaluation.

(A20) Monitoring and sampling must be carried out in accordance with the requirements of the following documents (as relevant to the sampling being undertaken), as amended from time to time:

(a) for waters and aquatic environments, the Queensland Government's Monitoring and Sampling Manual 2009 – *Environmental Protection (Water) Policy 2009;*

(b) for groundwater, *Groundwater Sampling and Analysis – A Field Guide* (2009:27 GeoCat #6890.1);

(c) for noise, the Environmental Protection Regulation 2008;

(d) for air, the *Queensland Air Quality Sampling Manual* and/or Australian Standard 4323.1:1995 *Stationary source emissions method 1: Selection of sampling positions*, as appropriate for the relevant measurement;

(e) for soil, the *Guidelines for Surveying Soil and Land Resources, 2nd edition* (McKenzie et al. 2008), and/or the *Australian Soil and Land Survey Handbook, 3rd edition* (National Committee on Soil and Terrain, 2009); and

(f) for dust, Australian Standard AS3580.

(A21) A certification must be prepared by a suitably qualified person within 30 business days of completing every plan, procedure, program and report required to be developed under this environmental authority, which demonstrates that:

(a) relevant material, including current published guidelines (where available) have been considered in the written document;

(b) the content of the written document is accurate and true; and

(c) the document meets the requirements of the relevant conditions of the environmental authority.

(A22) All plans, procedures, programs, reports and methodologies required under this environmental authority must be written and implemented.

(A23) All documents required to be developed under this environmental authority must be kept for five years.

(A24) All documents required to be prepared, held or kept under this environmental authority must be provided to the administering authority upon written request within the requested timeframe.

(A25) A record of all complaints must be kept including the date, complainant's details, source, reason for the complaint, description of investigations and actions undertaken in resolving the complaint.

(A26) Testing, evaluating, developing and using natural underground reservoirs for petroleum storage or to store **prescribed storage gases** is not authorised under this environmental authority.

(A27) In addition to the requirements under Chapter 7, Part 1, Division 2 of the *Environmental Protection Act 1994*, the administering authority must be notified through the Pollution Hotline and in writing, as soon as possible, but within 48 hours of becoming aware of any of the following events:

(a) any unauthorised significant disturbance to land;

(b) potential or actual loss of structural or hydraulic integrity of a dam;

(c) when the level of the contents of any regulated dam reaches the mandatory reporting level;

(d) when a regulated dam will not have available storage to meet the design storage allowance on 1 November of any year;

(e) potential or actual loss of well integrity ;

(f) when the seepage trigger action response procedure required under condition (C39)(g) is or should be implemented ;

(g) unauthorised releases of any volume of prescribed contaminants to waters;

(h) unauthorised releases of volumes of contaminants, in any mixture, to land greater than:

i. 200 L of hydrocarbons; or

ii. 200 L of stimulation additives; or

iii. 500 L of stimulation fluids; or

iv. 1 000 L of brine; or

v. 5 000 L of untreated coal seam gas water; or

vi. 5 000 L of raw sewage; or

vii. 10 000 L of treated sewage effluent.

(i) the use of restricted stimulation fluids

(j) groundwater monitoring results from a landholder's active groundwater bore monitored under the stimulation impact monitoring program which is a 10% or greater increase from a previous baseline value for that bore and which renders the water unfit for its intended use; and

(k) monitoring results where two out of any five consecutive samples do not comply with the relevant limits in the environmental authority.

Schedule B - Water

(B1) **Contaminants** must not be directly or indirectly released to any **waters** except as permitted under this environmental authority.

(B2) In the carrying out of the petroleum activity(ies) the holder of this environmental authority must not 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**.

(B3) Despite Condition (B2), the infrastructure (and associated activities necessary for construction, operational and maintenance purposes) specified in Schedule B, Table 1 – Authorised Petroleum Activity(ies) Disturbance may be located as specified in Schedule B, Table 1 – Authorised Petroleum Activity(ies) Disturbance.

Schedule B, Table 1 – Authorised Petroleum Activity(ies) Disturbance

Tenure	Description of Infra-structure	Max Disturbance Foot-print (ha)	No.	Protection Zone	Coordinates			
					W intersection	N intersection	E intersection	S Intersection
PL179	Argyle #123	1	1	Associated buffer of a wetland	-26.844472 150.421388	-26.844086 150.422297	-26.844902 150.422727	-26.845287 150.421818
PL179	Argyle #124	1	1	Associated buffer of a wetland	-26.840954 150.429909	-26.840095 150.430217	-26.840371 150.431174	-26.84123 150.430866
PL179	Argyle #125	1	1	Associated buffer of a wetland	-26.8468 150.435	-26.8464 150.436	-26.8472 150.437	-26.8476 150.436
PL179	Argyle #126	1	1	Associated buffer of a wetland	-26.8465 150.441	-26.8457 150.441	-26.8459 150.442	-26.8468 150.442
PL211	Berwyndale #38 Well pad	0.6	1	Associated buffer of a wetland and within 100m of a watercourse	-26.8144 150.2568	-26.8137 150.2572	-26.8145 150.2578	-26.8149 150.2557
PL179	Argyle #3 well pad	0.64	1	Within 100m of a watercourse	-26.8730 150.4338	-26.8724 150.4339	-26.8725 150.4349	-26.8731 150.4348
PL179	Argyle #4 well pad	0.78	1	Within 100m of a watercourse	-26.8643 150.4259	-26.8639 150.4266	-26.8647 150.4272	-26.8650 150.4265

(B4) The holder of this environmental authority must not excavate or place **fill** in a way that adversely interferes with the flow of water in a **watercourse**, **wetland** or **spring**, including works that divert the course of flow of the water or works that impound the water.

(B5) Despite Conditions (B2) and (B4), linear **infrastructure** activities such as those relating to the construction of pipelines, access tracks, powerlines, communication cables and roads may be undertaken within 200 m of and in a **wetland**, **lake** or **spring**, or within 100 m of and in a **watercourse** where there is no reasonable and practicable alternative (e.g. **trenchless methods**) for:

(a) a maximum period of 10 **business days**; or

(b) such other time as is permitted by any relevant statutory Code or Guideline for undertaking works in a watercourse, provided:

(i) the relevant statutory Code and/or Guideline is complied with; and

(ii) the administering authority is notified and provided details of the relevant statutory Code and/or Guideline under which the works may extend beyond 10 **business days**; and

(iii) the administering authority is notified prior to the commencement of the works beyond the 10 day period; or

(c) such other time as the agreed to in writing by the administering authority; and

(i) If activities are to be undertaken in a watercourse in accordance with condition (B5)(b) or (B5)(c) the holder of the environmental authority must notify the administering authority in writing prior to the commencement of the period beyond the 10 **business days**; and

(ii) The holder of the environmental authority must ensure that all activities undertaken in watercourses in accordance with condition (B5) are conducted in accordance with the following order of preference – 1. Conducting works in times of no flow; and 2. conducting works in times of flow but in a way that does not (a) cause a permanent adverse impact to the flow of water within the watercourse; or (b) permanently impound water; or (c) permanently divert the course of flow of water.

Note - *Examples of relevant Codes or Guidelines include the Code for self-assessable development (Temporary waterway barrier works) September 2010 and the Guideline – activities in a water course, lake or spring associated with mining activities – v.2 December 2010*

(B6) The linear **infrastructure** activities such as those relating to the construction of pipelines, access tracks, powerlines, communication cables and roads resulting in **significant disturbance** to the **bed and banks** of a **watercourse**, **lake**, **wetland** or **spring** must:

(a) only be undertaken where necessary for the construction and/or maintenance of the linear infrastructure types included in condition (B5), that are essential for carrying out the authorised petroleum activities and no reasonable or practicable alternative location exists;

(b) be no greater than the minimum area necessary for the purpose of the significant disturbance;

(c) be designed and undertaken by a **suitably qualified person** taking into account the matters listed in the 'Planning Activities' and 'Impact Management' sections of the Department of Environment and Resource Management's "*Guideline – Activities in a watercourse, lake or spring associated with mining operation"* December 2010, as amended from time to time; and

(d) upon cessation of the petroleum activities or works, commence **rehabilitation** immediately.

(B7) Sediment control measures must be implemented to minimise any increase in water turbidity due to carrying out the petroleum activity(ies) in the **bed and banks** of a **watercourse**, **lake**, **wetland**, or a

spring.

(B8) Routine, regular and frequent visual monitoring must be undertaken while carrying out construction work and / or any maintenance of completed works in a **watercourse**, **lake**, **wetland** or **spring**.

(B9) If, due to the petroleum activity(ies), water turbidity increases in the **watercourse**, **lake**, **wetland** or **spring** outside contained areas, works must cease and the sediment control measures must be rectified to limit turbidity before the petroleum activity(ies) recommences.

(B10) 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.

Note: Locations and details of River Improvement Areas and River Improvement Trusts are provided in the Schedule to the River Improvement Trust Regulation 2013.

(B11) Where the petroleum activity(ies) is carried out on floodplain areas, 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.

(B12) 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**.

(B13) **Restricted stimulation fluids** must not be used in **stimulation**.

(B14) Polycyclic aromatic hydrocarbons or products that contain polycyclic aromatic hydrocarbons must not be used in stimulation fluids in concentrations above the reporting limit.

(B15) Oil based drilling muds must not be used in the carrying out of the petroleum activity(ies).

(B16) Synthetic based drilling muds must not be used in the carrying out of the petroleum activity(ies).

(B17) Accurate and current material safety data sheets for all fluids used in **stimulation** activities must be published on the environmental authority holder's website.

(B18) Prior to undertaking well **stimulation** activities, the holder of this environmental authority must develop a risk assessment to ensure that stimulation activities are managed to prevent environmental harm.

(B19) The **stimulation** risk assessment must include, but not necessarily be limited to:

(a) a process description of the stimulation activity to be applied, including equipment and a comparison to best international practice;

(b) provide details of where, when and how often stimulation is to be undertaken on the tenures covered by this environmental authority;

(c) a geological model of the field to be stimulated including geological names, descriptions and depths of the target coal seam gas producing formation(s);

(d) naturally occurring geological faults;

(e) seismic history of the region (e.g. earth tremors, earthquakes);

(f) proximity of overlying and underlying aquifers;

(g) description of the depths that aquifers with environmental values occur, both above and below the target coal seam gas producing formation;

(h) the environmental values of groundwater in the area;

(i) description of overlying and underlying formations in respect of porosity, permeability, hydraulic conductivity, faulting and fracture propensity;

(j) consideration of barriers or known direct connections between the target coal seam gas producing formation and the overlying and underlying aquifers;

(k) a description of the well mechanical integrity testing program;

(l) process control and assessment techniques to be applied for determining extent of stimulation activities (e.g. microseismic measurements, modelling etc);

(m) practices and procedures to ensure that the stimulation activities are designed to be contained within the barriers of the target coal seam gas producing formation having regard to its identification under Condition (B19)(j);

(n) locations of landholders' **active** groundwater **bores**;

(o) groundwater **transmissivity**, flow rate, hydraulic conductivity and direction(s) of flow;

(p) a description of the chemicals used in stimulation activities (including estimated total mass, estimated composition, chemical abstract service numbers and properties), their mixtures and the resultant compounds that are formed after stimulation;

(q) a mass balance estimating the concentrations and absolute masses of chemicals that will be reacted, returned to the surface or left in the target coal seam gas producing formation subsequent to stimulation;

(r) an environmental hazard assessment of the chemicals used including their mixtures and the resultant chemicals that are formed after stimulation including:

  (i) toxicological and ecotoxicological information of chemicals used;

  (ii) information on the persistence and bioaccumulation potential of the chemicals used; and

  (iii) identification of the stimulation fluid chemicals of potential concern derived from the risk assessment;

(s) an environmental hazard assessment of use, formation of, and detection of polycyclic aromatic hydrocarbons in stimulation activities;

(t) an environmental hazard assessment of leaving stimulation chemicals in the target coal seam gas producing formation for extended periods subsequent to stimulation;

(u) human health exposure pathways to operators and the regional population;

(v) risk characterisation of environmental impacts based on the environmental hazard assessment; and

(w) potential environmental or health impacts which may result from stimulation activities including but not limited to water quality, air quality (including suppression of dust and other airborne **contaminants**), noise and vibration.

(B20) The **stimulation** risk assessment must be carried out for every well or group of wells in an area of like geological and hydrogeological characteristics to be stimulated, prior to stimulation activities being carried out at that well.

(B21) **Stimulation** activities must not negatively affect water quality at:

(a) any **active** landholders' groundwater **bores** (subject to access being permitted by the landholder) that are located within a two kilometre horizontal radius from the location of the stimulation initiation point; and

(b) any active landholders' groundwater bores within 200 metres vertically of the stimulation initiation point; and

(c) any other bore that could potentially be adversely impacted by the stimulation activity(ies) in accordance with the findings of the risk assessment required by conditions (B18) and (B19).

(B22) **Stimulation** activities must not cause the connection of the target coal seam gas producing formation and another aquifer.

(B23) The holder of this authority must ensure the internal and external mechanical integrity of the well system prior to well **stimulation** such that there is:

(a) no significant leakage in the casing, tubing, or packer; and

(b) no significant fluid movement into another aquifer through vertical channels adjacent to the well **bore** hole.

(B24) Practices and procedures must be in place to detect, as soon as practicable, any fractures that cause the connection of a target coal seam gas producing formation and another aquifer.

Note: Detection measures will need to be determined through the risk assessment and could include microseismic monitoring, tracer analysis and water quality signature analysis.

(B25) Rectification measures must be taken immediately if the holder of this environmental authority either becomes aware that **stimulation** activities have resulted in a change in water quality at any **bore** identified in condition (B21) or that stimulation activities have caused the connection of the target coal seam gas producing formation and another aquifer.

(B26) The release of **contaminants** to **waters** must only occur from the release points specified in *Schedule B Table 2 – Contaminant Release Points, Sources and Receiving Waters*.

Schedule B, Table 2 – Contaminant Release Points, Sources and Receiving Waters

Release Point	Latitude (decimal degrees) (GDA94)*	Longitude (decimal degrees) (GDA94)*	Contaminant Source and Location	In-situ Monitoring and Sampling Point	Receiving waters description	Release Flow Recording Frequency
RP 1 – Outlet of release pipe to Wieambilla Creek	-26.934464	150.421787	Treated Reverse Osmosis (RO) permeate from the Water Treatment Plant (WTP) located on PL 228	S1 – Inlet of transfer/release pipeline to Wieambilla Creek S2 – Outlet of release pipeline to Wieambilla Creek	Wieambilla Creek	Continuous

* Exact locations of the release structure may vary slightly depending on final geotechnical investigations and detailed engineering design.

(B27) The release of **contaminants** to **waters** must not exceed the release limits stated in *Schedule B Table 3 – Contaminant Release Limits for Release Point RP1* when measured at the in situ monitoring and sampling points specified in *Schedule B Table 2* for each quality characteristic.

Schedule B, Table 3 – Contaminant Release Limits for Release Point RP1

Release Point	Physicochemical Parameters	Release Limits	Limit Type	Monitoring frequency	Sampling Point
RP1	Electrical conductivity (µS/cm)	300	Maximum	Daily during release	S1
RP1	pH (pH Unit)	6.5 – 8.5	Range	Daily during release	S1
RP1	Dissolved oxygen (mg/L)	4	Minimum	Daily during release	S2
RP1	Temperature (ºC)	26	Maximum	Daily during release	S2
RP1	Suspended Solids (mg/L)	45	Maximum	Monthly during release	S1
RP1	Calcium (mg/L)	2 – 13	Range	Weekly during release	S1
RP1	Chloride (mg/L)	142	Maximum	Weekly during release	S1
RP1	Fluoride (mg/L)	1	Maximum	Weekly during release	S1
RP1	Magnesium (mg/L)	2 – 10	Range	Weekly during release	S1
RP1	Sodium (mg/L)	75	Maximum	Weekly during release	S1
RP1	Sulphate (mg/L)	4.6	Maximum	Weekly during release	S1

RP1	Chlorophyll-a (µg/L)	N/A	N/A	Monitor in REMP	As per QGC REMP
RP1	Hardness (mg/L)	72	Maximum	Weekly during release	S1
RP1	Alkalinity (mg/L)	17.5	Minimum	Weekly during release	S1
RP1	SAR	4	Maximum	Weekly during release	S1
RP1	Ammonia (mg/L)	0.9	Maximum	Weekly during release	S1
RP1	Boron (mg/L)	1	Maximum	Weekly during release (Monitor in REMP and report against ANZECC Trigger Value of 0.37mg/L)	S1

(B28) In situ monitoring and sampling points must be in a location and state to allow the monitoring and sampling to be undertaken in all conditions (including flooding).

(B29) The release of **contaminants** to **waters** from the release points must be monitored at the locations specified in *Schedule B Table 2* for each quality characteristics and at the frequency specified in *Schedule B Table 3*.

(B30) The release of **contaminants** to **waters** must only be treated RO permeate from the WTP that includes any required cation and anion adjustment to meet release quality requirements.

(B31) The holder must install, operate and maintain a stream flow gauging stations as specified in *Schedule B Table 4*.

Schedule B, Table 4 – Gauging Stations, Flow Recording

Gauging Station Number	Receiving Water Description	Gauging Station Location	Flow Recording Frequency
GS1	Wieambilla Creek	Immediately upstream of RP1	Continuous
GS2	Wieambilla Creek	8.4km downstream from RP1 at culvert crossing on Kogan – Condamine Road.	Continuous

(B32) Stream flow records from stream flow gauging stations GS1 and GS2 must be kept and made available to the administering authority upon request.

(B33) Notwithstanding any other condition of this environmental authority, the release of **contaminants** to Wieambilla Creek authorised under the conditions of this authority must not cause the **contaminant**

release flow in Wieambilla Creek (in normal conditions) to extend beyond stream flow gauging station GS2. "Normal conditions" means the flow in Wieambilla Creek is 0 ML/d at GS1.

(B34) The volume of release of **contaminants** to **waters** through the release point(s) must not exceed 12ML/d.

(B35) The maximum volume of release of **contaminants** to **waters** that may be released under the environmental authority must not exceed 3,492 ML during the period from 26 July 2010 to 11 May 2012.

(B36) The quantity of release of **contaminants** to **waters** from each release point must be measured and recorded at the monitoring point(s) and at the frequency specified in *Schedule B Table 2*. Records must be kept and made available to the administering authority upon request.

(B37) The quality of release of **contaminants** to **waters** from each release point must be measured and recorded at the monitoring point(s) in *Schedule B Table 2* and at the frequency specified in *Schedule B Table 3*. Records must be kept and made available to the administering authority upon request.

(B38) Release of **contaminants** to **waters** must be undertaken so as not to cause erosion of the **bed and banks** of the receiving waters, or cause a material build up of sediment in such waters.

(B39) The release of **contaminants** to **waters** must cease by 11 May 2012, or as soon as the **beneficial use** pipeline to Chinchilla Weir is approved and commissioned, whichever is the lesser period.

(B40) If the release limits defined in *Schedule B Table 3* are exceeded, the holder of the environmental authority must notify the administering authority within 24 hours of receiving the results.

(B41) If the release of **contaminants** to Wieambilla Creek authorised under the conditions of this authority cause the contaminant release flow in Wieambilla Creek (in normal conditions) to extend to stream flow gauging station GS2, the holder of the environmental authority must notify the administering authority within 24 hours of becoming aware of this event. "Normal conditions" means the flow in Wieambilla Creek is 0 ML/d at GS1.

(B42) The environmental authority holder must, within 28 days of notification (as per condition B40) of a release that exceeds the conditions of this environmental authority, provide a report to the administering authority detailing:

(a) the reason for the release;

(b) the location of the release;

(c) all water quality monitoring results;

(d) any general observations;

(e) all calculations;

(f) measures taken to prevent a repeat of the exceedence taking place; and

(g) any other matters pertinent to the water release event.

(B43) A REMP which has been **certified by a suitably qualified person** must be developed and implemented to monitor and record the effects of the release of **contaminants** on the receiving environment whilst contaminants are being discharged, with the aims of identifying and describing the

extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water.

(B44) For the purposes of the REMP the receiving environment is defined as the **waters** of the Wieambilla Creek and connected waterways downstream of the release point, to the confluence of Wieambilla Creek with the Condamine River and connected waterways.

(B45) The REMP must be maintained by a **suitably qualified person** possessing appropriate qualifications and experience in the field of hydrology and surface water monitoring program design.

(B46) The REMP must address but not be limited to the following:

(a) description of potentially affected receiving **waters** including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality);

(b) description of applicable environmental values, including but not limited to:

(i) hydrology (flow, duration, periodicity, connectivity with groundwater systems;

(ii) physiochemical properties;

(iii) aquatic ecosystem parameters including flora and fauna habitat; and

(iv) geomorphological features;

(c) description of water quality objectives to be achieved (i.e. as scheduled pursuant to the *Environmental Protection (Water) Policy 2009*);

(d) any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed;

(e) water quality targets within the receiving environment to be achieved, and clarification of **contaminant** concentrations or levels indicating adverse environmental impacts during the REMP;

(f) monitoring for any potential adverse environmental impacts caused by the release;

(g) monitoring of stream flow and hydrology (including but not limited to, stream flow at GS1 and GS2 in *Schedule B Table 4*);

(h) consideration of sodic soils and potential for water course bank slumping;

(i) monitoring of contaminants should consider the limits specified in *Schedule B Table 3 – Contaminant Release Limits for Release Point RP1* to assess the extent of the compliance of concentrations with water quality objectives and / or the ANZECC & ARMCANZ Water Quality Guidelines 2000 for slightly to moderately disturbed ecosystems;

(j) monitoring of physical chemical parameters as a minimum those specified in *Schedule B Table 3 – Contaminant Release Limits for Release Point RP1* (in addition to dissolved oxygen saturation);

(k) monitoring biological indicators (for macroinvertebrates in accordance with the AusRivAS methodology) and metals / metalloids in sediments in accordance with the ANZECC & ARMCANZ Water Quality Guidelines 2000 and “A Guide To The Application Of The ANZECC & ARMCANZ Water Quality Guidelines In The Minerals Industry” (BATLEY et al) and / or **Australian / New Zealand Standard 5667.12,** as amended from time to time;

(l) monitoring of a selection of invertebrate species (minimum of three from the local receiving environment) to assess ecosystem health in respect to the availability of

calcium and magnesium (necessary for the formation of exo-skeletal structures (e.g. zoo- and phytoplankton, diatoms);

(m) the methods for analysis and interpretation all monitoring results;

(n) the locations of monitoring points (including the locations of proposed background and downstream impacted sites for each release point);

(o) the frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within two **years** (depending on wet season flows) in accordance with the "Queensland Water Quality Guidelines 2009" as amended from time to time. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;

(p) specify sampling and analysis methods and quality assurance and control;

(q) any historical data sets to be relied upon;

(r) description of the statistical basis on which conclusions are drawn,

(s) any **analogue** control or reference sites; and

(t) recording of planned and unplanned releases to **watercourse**s, procedures for event monitoring, monitoring methodology used and procedure to establish background surface water quality.

(B47) The REMP must be prepared and submitted in writing to the administering authority prior to any release.

(B48) If, within 20 **business days** of the date upon which the REMP is submitted to the administering authority under condition (B47), the administering authority gives written notice that the REMP does not comply with a condition of this environmental authority, then the release of **contaminants** to **waters** is prohibited until the administering authority provides written advice that the release may proceed.

(B49) The holder of this environmental authority must implement the REMP.

(B50) The release of **contaminants** directly or indirectly to **waters**:

(a) must not produce any visible plume within receiving waters; nor

(b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

(B51) A measuring device/ **meter** must be installed prior to commencement of release of treated **coal seam gas water** and its installation must comply with the Department of Environment and Heritage Protection "Standards and specifications for measuring/metering disposal of treated coal seam gas water", as amended from time to time.

(B52) Upon practical completion of the **meter** installation, the holder of this environmental authority must provide a completed "Meter Installation Form", as amended from time to time, signed by the installer and the holder of this environmental authority confirming that the installation complies with the manufacturer's specifications and/or national standards and / or the Department of Environment and Heritage Protection "Standards and specifications for measuring /metering disposal of treated **coal seam gas water**" as amended from time to time, whichever is applicable.

Note: The Draft standards and specifications for measuring/metering disposal of treated coal seam gas water is available from the administering authority upon request.

(B53) The holder of this environmental authority must measure and record daily:

(a) the volume released to **waters** from each release point at the monitoring point(s) in *Schedule B Table 2 – Contaminant Release Points, Sources and Receiving Waters*;

(b) the release rate.

(B54) The holder of this environmental authority must provide the administrative authority with safe access to facilitate inspections.

(B55) The holder of this environmental authority must comply with any instructions issued by the administrative authority relevant to the operation of the pump and **meter** installation.

(B56) The holder of this environmental authority must notify the administering authority within five **business days** of any **meter** malfunction or maintenance of the meter.

(B57) The holder of this environmental authority must arrange for the repair or replacement of a malfunctioning **meter** within five **business days** of becoming aware of the malfunction and provide a repair and/or maintenance completion report within 10 business days of the repair or maintenance.

(B58) Prior to undertaking any **stimulation** activity, the holder of this environmental authority must undertake a baseline **bore** assessment of the quality of:

(a) all **active** landholders' groundwater bores (subject to access being permitted by the landholder) that are located within a two kilometre horizontal radius from the location of the stimulation initiation point; and

(b) all active land holders' ground water bores identified pursuant to (B58(a)), and within 200 metres vertically, of the stimulation initiation point; and

(c) any other bore that could potentially be adversely impacted by the stimulation activity(ies) in accordance with the findings of the risk assessment required by conditions (B19) and (B20).

(B59) Prior to undertaking **stimulation** activities at a well, the holder of this environmental authority must have sufficient water quality data to accurately represent the water quality in the well to be stimulated. The data must include as a minimum the results of analyses for the parameters in condition (B60).

(B60) Baseline **bore** and well assessments must include relevant analytes and physico-chemical parameters to be monitored in order to establish baseline water quality and must include, but not necessarily be limited to:

(a) pH;

(b) electrical conductivity [μS/m];

(c) total suspended solids [mg/L];

(d) evolved (produced) gas (i.e. methane, carbon dioxide, hydrogen sulphide) mg/L;

(e) alkalinity (bicarbonate, carbonate, hydroxide and total as $CaCO_3$) [mg/L];

(f) sodium adsorption ratio (SAR);

(g) anions (chloride, fluoride, sulphate) [mg/L];

(h) cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L];

(i) dissolved metals (including but not necessarily being limited to: aluminium, barium, borate (boron), cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc) [μg/L];

(j) total arsenic [μg/L];

(k) total petroleum hydrocarbons [μg/L];

(l) **BTEX** (as benzene, toluene, ethylbenzene, and total xylene) [μg/L];

(m) polycyclic aromatic hydrocarbons (including but not necessarily being limited to: naphthalene, phenanthrene, benzo[a]pyrene) [μg/L];

(n) sodium hypochlorite [mg/L];

(o) sodium hydroxide [mg/L];

(p) formaldehyde [mg/L]; and

(q) gross alpha or gross beta or radionuclides by gamma spectroscopy [Bq/L].

(B61) If sampling required by conditions (B58) and (B59) indicates that Total Xylene exceeds 75 ppb, then the holder of this environmental authority must undertake further speciation for levels of ortho-xylene, para-xylene, and meta-xylene.

(B62) A Stimulation Impact Monitoring Program which has been **certified by a suitably qualified person** must be developed prior to the carrying out of **stimulation** activities.

(B63) The Stimulation Impact Monitoring Program must be able to detect adverse impacts to water quality from **stimulation** activities and must consider the findings of the risk assessment required by conditions (B19) and (B20) that relate to stimulation activities and must include, as a minimum, monitoring of:

(a) the stimulation fluids to be used in stimulation activities at sufficient frequency and which sufficiently represents the quantity and quality of the fluids used; and

(b) flow back waters from stimulation activities at sufficient frequency and which sufficiently represents the quality of that flow back water; and

(c) flow back waters from stimulation activities at sufficient frequency and accuracy to demonstrate that 150 % of the volume used in stimulation activities has been extracted from the stimulated well;

(d) all **active** landholders' groundwater **bores** (subject to access being permitted by the landholder) that are:

(i) within a two kilometre horizontal radius from the location of the stimulation initiation point; and

(ii) that draw water from the target coal seam gas producing formation; or

(iii) within 200 vertical meters of the stimulation initiation point; and

(e) any other bore that could potentially be adversely impacted by the stimulation activities in accordance with the findings risk assessment required by conditions (B19) and (B20).

(B64) The Stimulation Impact Monitoring Program must provide for monitoring of:

(a) analytes and physico-chemical parameters relevant to baseline **bore** and well assessments to enable data referencing and comparison including, but not necessarily being limited to the analytes and physico-chemical parameters in condition (B60); and

(b) any other analyte or physico-chemical parameters that will enable detection of adverse water quality impacts and the inter-connection with a non-target aquifer as a result of **stimulation** activities including chemical compounds that are actually or potentially formed by chemical reactions with each other or coal seam materials during stimulation activities.

(B65) The Stimulation Impact Monitoring Program must provide for monitoring of the **bores** in condition (B63)(d) at the following minimum frequency:

(a) monthly for the first six **months** subsequent to the **stimulation** activities being undertaken; then

(b) annually for the first five **years** subsequent to the stimulation activities being undertaken or until analytes and physico-chemical parameters listed in condition (B60) are not detected in concentrations above baseline bore monitoring data on two consecutive monitoring occasions.

(B66) The Stimulation Impact Monitoring Program must provide for impact monitoring of the quality of water in:

(a) all **active** landholders' groundwater **bores** (subject to access being permitted by the landholder) that are located within a two kilometre horizontal radius from the location of the **stimulation** initiation point; and

(b) all active landholders ground water bores identified pursuant to (a) and within 200 metres vertically of the stimulation initiation point; and

(c) any other bore that could potentially be adversely impacted by the stimulation activity(ies) in accordance with the findings risk assessment required by conditions (B19) and (B20).

(B67) The monitoring of **bores** required by condition (B66) must be carried out at least:

(a) monthly for the first six **months** subsequent to the **stimulation** activity(ies) being undertaken; then

(b) annually for the first five **years** subsequent to the stimulation activity(ies) being undertaken or until analytes and physico-chemical parameters listed in condition (B60)(b), (B60)(l) – (B60)(q) are not detected in concentrations above baseline bore monitoring data on two consecutive monitoring occasions.

Note: Monthly monitoring required by condition (B67)(a) may need to be extended beyond six months depending on the outcomes of the risk assessment and the transmissivity of groundwater in the area.

(B68) The holder of this environmental authority must implement the Stimulation Impact Monitoring Program.

(B69) The results of the Stimulation Impact Monitoring Program must be made available to any potentially affected landholder upon request by that landholder.

Schedule C - Regulated Structures

(C1) The **consequence category** of any structure must be **assessed** by **suitably qualified and experience person** in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* at the following times:

(a) prior to the design and **construction** of the structure, if it is not an **existing structure**; or

(b) prior to any change in its purposed or the nature of its stored contents.

(C2) A **consequence assessment** report and **certification** must be prepared for each **structure assessed** and the report may include a **consequence assessment** for more than one **structure**.

(C3) **Certification** must be provided by the **suitably qualified and experienced person** who undertook the **assessment**, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

(C4) Conditions (C5) to (C9) inclusive do not apply to existing structures.

(C5) All **regulated structures**[1] [2] must be designed by, and **constructed** [1] [2] under the supervision of, a **suitably qualified and experienced person** in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

(C6) **Construction** of a **regulated structure**[1] [2] is prohibited unless the **holder** has submitted a **consequence category assessment** report and **certification** to the administering authority has been **certified** by a **suitably qualified and experience person** for the **design** and **design plan** and the associated operating procedures in compliance with the relevant condition of this **authority**.

(C7) **Certification** must be provided by the **suitably qualified and experience person** who oversees the preparation of the **design plan** in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, and must be recorded in the Regulated Dams/Levees register.

(C8) **Regulated Structures** must:

(a) be designed and **constructed** in accordance with and conform on the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);*

(b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:

(i) floodwaters from entering the **regulated dam** from any **watercourse** or drainage line; and

(ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.

(c) have the floor and sides of the **dam** designed and **constructed** to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or

[1] Construction of a dam includes modification of an existing dam – refer to definitions

[2] Certification of design and construction may be undertaken by different persons

sides of the **dam** during the operational life of the **dam** and for any period of decommissioning and rehabilitation of the **dam**.

(C9) All **brine dams** must:

(a) be designed with a floor and sides of material that will contain the wetting front and any entrained contaminants within the bounds of the containment system during its operational life including any period of decommissioning and rehabilitation; and

(b) have a system that will detect any passage of the wetting front or entrained contaminants through the floor or sides of the dam; and

(c) have a system for the collection and proper disposal of any contaminants that move beyond the bounds of the containment system.

(C10) **Certification** by the **suitably qualified and experienced person** who supervises the **construction** must be submitted to the administering authority on the completion of **construction** of the **regulated structure**, and state that:

(a) the 'as constructed' drawings and specifications meet the original intent of the **design plan** for that **regulated structure**;

(b) **construction** of the **regulated structure** is in accordance with the **design plan**.

(C11) Operation of a **regulated structure**, except for an **existing structure**, is prohibited:

(a) the **holder** has submitted to the administering authority:

(i) one paper copy and one electronic copy of the **design plan** and **certification** of the '**design plan**' in accordance with condition (C6); and

(ii) a set of 'as constructed' drawings and specifications; and

(iii) **certification** of those 'as constructed drawings and specifications' in accordance with condition (C10); and

(iv) where the **regulated structure** is to be managed as part of an integrated containment system for the purpose of sharing the **DSA** volume across the system, a copy of the certified **system design plan**;

(v) the requirements of this authority relating to the **construction** of the **regulated structure** have been met;

(vi) the **holder** has entered the details required under this **authority**, into a **Register of Regulated Dams**; and

(vii) there is a current **operational plan** for the **regulated structures**.

(C12) For existing structures that are **regulated structures**:

(a) where the **existing structure** that is a **regulated structure** is to be managed as part of an integrated containment system for the purpose of sharing the **DSA** volume across the system, the **holder** must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified **system design plan** including that **structure**; and

(b) there must be a current **operational plan** for the existing structures.

(C13) Each **regulated structure** must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current **operational plan** and, if applicable, the current **design plan** and associated **certified** 'as constructed' drawings.

(C14) Conditions (C15) to (C18) inclusive only apply to Regulated Structures which have not been **certified** as low **consequence category** for 'failure to contain – overtopping'.

(C15) The **Mandatory Reporting Level** (the **MRL**) must be marked on a **regulated dam** in such a way that during routine inspections of that **dam**, it is clearly observable.

(C16) The **holder** must, as soon as practical and within 48 hours of becoming aware, notify the administering authority when the level of the contents of a **regulated dam** reaches the **MRL**.

(C17) The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the **regulated dam**.

(C18) The **holder** must record any changes to the **MRL** in the Register of Regulated Structures.

(C19) The **holder** must assess the performance of each **regulated dam** or linked containment system over the preceding November to May period based on actual observations of the available storage in each **regulated dam** or linked containment system taken prior to 1 July of each year.

(C20) By 1 November of each year, storage capacity must be available in each **regulated dam** (or network of linked containment systems with a shared **DSA** volume), to meet the **Design Storage Allowance** (**DSA**) volume for the **dam** (or network of linked containment systems).

(C21) The **holder** must, as soon as possible and within 48 hours of becoming aware that the **regulated dam** (or network of linked containment systems) will not have the available storage to meet the **DSA** volume on 1 November of any year, notify the administering authority.

(C22) The **holder** must, immediately on becoming aware that a **regulated dam** (or network of linked containment systems) will not have the available storage to meet the **DSA** volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the **regulated dam** or linked containment systems.

(C23) Each **regulated structure** must be inspected each calendar year by a **suitably qualified and experienced person**.

(C24) At each annual inspection, the condition and adequacy of all components of the **regulated structure** must be **assessed** and a **suitably qualified and experienced person** must prepare an **annual inspection report** containing details of the **assessment** and include recommended actions to ensure the integrity of the **regulated structure**.

(C25) The **suitably qualified and experienced person** who prepared the **annual inspection report** must **certify** the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

(C26) The **holder** must:

(a) within 20 business days of receipt of the **annual inspection report**, provide to the administering authority:

i. the recommendations section of the **annual inspection report**; and

ii. if applicable, any actions being taken in response to those recommendations; and

(b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the **annual inspection report** from the **holder**, provide this to the administering authority within 10 business days of receipt of the request.

(C27) The **holder** must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, **consequence assessment**, **design plan** and other supporting documentation, to a new **holder** on transfer of this **authority**.

(C28) A **Register of Regulated Dams** must be established and maintained by the **holder** for each **regulated dam**.

(C29) The **holder** must provisionally enter the required information in the **Register of Regulated Dams** when a **design plan** for a **regulated dam** is submitted to the administering authority.

(C30) The **holder** must make a final entry of the required information in the **Register of Regulated Dams** once compliance with condition (C11) and (C12) has been achieved.

(C31) The holder must ensure that the information contained in the **Register of Regulated Dams** is current and complete on any given day.

(C32) All entries in the **Register of Regulated Dams** must be approved by the chief executive officer for the **holder** of this **authority**, or their delegate, as being accurate and correct.

(C33) The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the **Register of Regulated Dams**, in the electronic format required by the administering authority.

(C34) All existing structures that have not been **assessed** in accordance with either the **Manual** or the former *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* must be **assessed** and **certified** in accordance with the **Manual** within six months of amendment of the authority adopting this schedule.

(C35) All existing structures must subsequently comply with the timetable for any further assessments in accordance with the **Manual** specified in *Schedule C, Table 1 - Transitional requirements for existing structures*, depending on the **consequence category** for each **existing structure assessed** in the most recent previous **certification** for that **structure**.

Schedule C, Table 1 – Transitional hydraulic performance requirements for existing structures

Transition period required for existing structures to achieve the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Dams*			
Compliance with Criteria	High	Significant	Low
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review **consequence** assessment every 7 years.
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review **consequence** assessment every 7 years.
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review **consequence** assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing)	Within 5 years or as per compliance requirements (e.g. TEP timing)	Review **consequence** assessment every 5 years.

(C36) *Schedule C, Table 1 – Transitional hydraulic performance requirements for existing structures* ceases to apply for a **structure** once any of the following events has occurred:

(a) it has been brought into compliance with the **hydraulic performance** criteria applicable to the **structure** under the **Manual**; or

(b) it has been decommissioned; or

(c) it has been **certified** as no longer being **assessed** as a **regulated structure**.

(C37) **Certification** of the transitional **assessment** required by conditions (C34) and (C35) (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

(C38) A seepage monitoring program must be developed by a **suitably qualified person** which is commensurate with the site-specific risks of contaminant seepage from containment facilities, and which requires and plans for detection of any seepage of contaminants to groundwater as a result of storing contaminants by 11 November 2015.

(C39) The seepage monitoring program required by condition (C38) must include but not necessarily be limited to:

(a) identification of the containment facilities for which seepage will be monitored;

(b) identification of trigger parameters that are associated with the potential or actual contaminants held in the containment facilities;

(c) identification of trigger concentration levels that are suitable for early detection of contaminant releases at the containment facilities;

(d) installation of background monitoring sites where groundwater quality will not have been affected by the petroleum activities authorised under this environmental authority to use as reference sites for determining impacts;

(e) installation of seepage monitoring bores that:

i. are within formations potentially affected by the containment facilities authorised under this environmental authority (i.e. within the potential area of impact);

ii. provide for the early detection of negative impacts prior to reaching **groundwater dependent ecosystems**, landholder's active groundwater bores, or water supply bores; and

iii. provide for the early detection of negative impacts prior to reaching migration pathways to other formations (i.e. faults, areas of unconformities known to connect two or more formations);

(f) monitoring of groundwater at each background and seepage monitoring bore at least quarterly for the trigger parameters identified in condition (C39)(b);

(g) seepage trigger action response procedures for when trigger parameters and trigger levels identified in condition (C39)(b) and condition (C39)(c) trigger the early detection of seepage, or upon becoming aware of any monitoring results that indicate potential groundwater contamination;

(h) a rationale detailing the program conceptualisation including assumptions, determinations, monitoring equipment, sampling methods and data analysis; and

(i) provides for annual updates to the program for new containment facilities **constructed** in each **annual return period**.

(C40) A bore drill log must be completed for each seepage monitoring bore in condition (C39) which must include:

(a) bore identification reference and geographical coordinate location;

(b) specific **construction** information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details;

(c) standing groundwater level and water quality parameters including physical parameter and results of laboratory analysis for the possible trigger parameters;

(d) lithological data, preferably a stratigraphic interpretation to identify the important features including the identification of any aquifers; and

(e) target formation of the bore.

Schedule D – Land

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

(D2) Prior to conducting petroleum activities that involve **significant disturbance to land**, an assessment must be undertaken of the condition, type and ecological value of any vegetation in such areas where the activity(ies) is proposed to take place.

(D3) The assessment required by condition (D2) 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** and the presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992*.

(D4) If the assessment required by conditions (D2) and (D3) indicates that a **Regional Ecosystem** mapped as Endangered or Of Concern by the Queensland Herbarium should be in a different conservation value classification, the holder of this environmental authority must advise the administering authority in writing before any **significant disturbance to land** takes place.

(D5) If, within the 20 **business** days following the lodgement of the notification under condition (D4) the administering authority notifies the holder of this environmental authority, in writing, that the **Regional Ecosystem** mapping requires further validation, then **significant disturbance to land** in the mapped **Regional Ecosystem** is prohibited until the administering authority provides written advice that significant disturbance to land may proceed.

(D6) The holder of this environmental authority, when carrying out the petroleum activity(ies) must:

- (a) avoid, minimise or mitigate (in order of preference) impacts on areas of vegetation or other areas of ecological value;
- (b) avoid significant isolation, fragmentation or dissection of tracts of vegetation that may result in a reduction in the current level of **ecosystem functioning**, ecological connectivity (i.e. stepping stone or contiguous bioregional/local corridor networks) and/or resulted in an increase in **threatening processes** (e.g. potential impacts associated with edge effects or introduced species);
- (c) minimise disturbances to land that may otherwise result in land degradation;
- (d) ensure that for land that is to be **significantly disturbed** by the petroleum activities:
  - (i) the top layer of the soil profile is preserved;
  - (ii) soils are stockpiled in a manner that preserve their biological and chemical properties;
  - (iii) soils are used for **rehabilitation** purposes; and
- (e) avoid or minimise the **clearing** of mature trees.

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 Regulations and relevant approvals will need to be obtained.

(D7) Despite condition (D6), **significant disturbance to land** caused by the carrying out of the petroleum activity(ies) must not involve **clearing** vegetation or placing **fill**:

(a) on slopes greater than 10% for the petroleum activity(ies) other than for pipelines, wells, access tracks, power lines, communication cables, roads and other **infrastructure** approved by the administering authority in writing; or

(b) in **discharge areas**.

(D8) **Clearing** of **remnant vegetation** shall not exceed 10 metres in width for the purpose of establishing tracks or 20 metres in width for dual carriageway roads.

(D9) Cleared vegetation must be stockpiled in a manner that facilitates respreading or salvaging and does not impede vehicle, stock or wildlife movements.

(D10) The holder of this environmental authority must ensure that the petroleum activities are only conducted in accordance with *Schedule D Table 1 – Environmentally Sensitive Areas (ESAs)* below for each of the ESA categories and associated primary and **secondary protection zones**.

Schedule D, Table 1 – Environmentally Sensitive Areas (ESAs)

ESA Category	Within the ESA	Primary Protection Zone (PPZ) of the ESA	Secondary Protection Zone (SPZ) of the ESA
All Category A ESAs	No petroleum activities permitted.	Only low impact petroleum activities permitted.	Only limited petroleum activities permitted subject to (D12) and (D13).
Category B ESAs excluding 'Endangered' regional ecosystems	Only low impact petroleum activities permitted subject to (D13).	Only low impact petroleum activities permitted subject to (D13).	Only limited petroleum activities permitted subject to (D12) and (D13).
Category B ESAs: 'Endangered' regional ecosystems	Only limited petroleum activities permitted subject to (D13), (D14), (D15), (D16) and (D17).	Only limited petroleum activities permitted subject to (D13), (D14), (D15), (D16) and (D17).	Petroleum activities permitted.
Category C ESAs excluding 'Of Concern' regional ecosystems, State Forests and Timber Reserves	Only low impact petroleum activities permitted subject to (D13).	Only low impact petroleum activities permitted subject to (D13).	Only limited petroleum activities permitted subject to (D12) and (D13).
Category C ESAs: State Forests, Timber Reserves and 'Of Concern' regional ecosystems	Only limited petroleum activities permitted subject to (D12), (D13), (D1)4, (D15) and (D16).	Only limited petroleum activities permitted subject to (D12), (D1)3 (D14), (D15) and (D16).	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 Environmentally Sensitive Areas that are State Forests or Timber Reserves.

Note: Indicative Environmentally Sensitive Area mapping is available on the Department of Environment and Heritage Protection website.

(D11) Despite Condition (D10), the **infrastructure** (and associated activities necessary for construction, operational and maintenance purposes) specified in *Schedule D, Table 2 – Authorised Petroleum Activities Disturbance* is permitted in the location specified in *Schedule D, Table 2 – Authorised Petroleum Activities Disturbance.*

Schedule D, Table 2 – Authorised Petroleum Activity(ies) Disturbance

Tenure	Description of Infrastructure	Location
PL263	Matilda John RoW Low Point Drain 1 (LPD1)	NW corner: E232764, N7018486 NE corner: E232792, N7018483 SE corner: E232791, N7018483 SW corner: E232762, N7018472 Category C ESA and its primary protection zone.
PL263	Matilda John RoW Low Point Drain 2 (LPD2)	NW corner: E235415, E7018300 NE corner: E235446, N7018297 SE corner: E235445, N7018283 SW corner: E235413, N7018286 Category C ESA and its primary protection zone.
PL263	Matilda John Gas and Water Gathering Lines	Entry Point: E234885, N7018335 Exit Point: E237182, N7017823 Entry Point: E235757, N7019162 Exit Point: E237188, N7018107 Entry Point: E234885, N7018335 Exit Point: E237182, N7017823 Entry Point: E234885, N7018335 Exit Point: E236167, N7016801 Entry Point: E236746, N7018102 Exit Point: E237186, N7017998 Category C ESA and its primary and secondary protection zone
PL263	Lauren Well #112	NW corner: E235938.7, N7018615.0 NE corner: E236034.5, N7018647.0 SE corner: E236066.5, N7018552.3 SW corner: E235971.6, N7018520.4 Category C ESA and its primary and secondary protection zone

Tenure	Description of Infrastructure	Location
PL263	Lauren Well #124	NW corner: E236645.7, N7018295.6 NE corner: E236744.7, N7018284.3 SE corner: E236734.6, N7018185.1 SW corner: E236634.8, N7018195.4 Category C ESA and its primary and secondary protection zone
PL263 and PL180	PPL176 (Matilda John FCS Trunkline) Maximum RoW width 25m	Entry Point: E237132, N7018990 Exit Point: E235940, N7015862 Category C ESA and its primary and secondary protection zones.
PL263	Matilda-John Well #102	NW Corner: E228256, N7019706 NE Corner: E228356, N7019706 SE Corner: E228356, N7019606 SW Corner: E228256, N7019606 Category C ESA
PL263	Matilda-John Well #103	NW Corner: E229112, N7019396 NE Corner: E229211, N7019385 SE Corner: E229201, N7019285 SW Corner: E229100, N7019296 Category C ESA
PL263	Matilda-John Well #104	NW Corner: E229903, N7019691 NE Corner: E230003, N7019679 SE Corner: E229991, N7019579 SW Corner: E229891, N7019591 Category C ESA
PL263	Matilda-John Well #110	NW Corner: E227351, N7019452 NE Corner: E227448, N7019431 SE Corner: E227426, N7019332 SW Corner: E227329, N7019354 Primary protection zone of Category C ESA
PL263	Matilda-John Well #111	NW Corner: E228090, N7019084 NE Corner: E228189, N7019072 SE Corner: E228177, N7018973 SW Corner: E228078, N7018984 Category C ESA

Tenure	Description of Infrastructure	Location
PL263	Matilda-John Well #112	NW Corner: E228917, N7018799 NE Corner: E229017, N7018788 SE Corner: E229005, N7018688 SW Corner: E228905, N7018700 Category C ESA
PL263	Matilda-John Well #122	NW Corner: E228270, N7018381 NE Corner: E228369, N7018367 SE Corner: E228354, N7018267 SW Corner: E228255, N7018281 Category C ESA
PL263	Matilda-John Well #123	NW Corner: E228982, N7018200 NE Corner: E229052, N7018153 SE Corner: E228950, N7018099 SW Corner: E228925, N7018117 Primary protection zone of Category C ESA
PL263	Access tracks and gathering lines for: Matilda John Well #110, Matilda John Well #102, Matilda John Well #111 Matilda John Well #122, Matilda John Well #103, Matilda John Well #112, Matilda John Well #123 and Matilda John Well #104	Entry to PPZ: E227530, N7018281 Entry to ESA: E227430, N7019177 Entry to PPZ: E228238, N7017996 Entry to ESA: E228252, N7018196 Entry to ESA: E228906, N7018300 Entry to PPZ: E229603, N7018924 Entry to ESA: E229402, N7018946 Entry to PPZ: E229860, N7019056 Entry to ESA: E229894, N7019342
PL263	Matilda-John Well #180	NW Corner: E227509, N7014578 NE Corner: E227607, N7014563 SE Corner: E227592, N7014463 SW Corner: E227493, N7014479 Primary protection zone of Category C ESA

Tenure	Description of Infrastructure	Location
PL263	Matilda-John Well #190	NW Corner: E227496, N7013856 NE Corner: E227596, N7013856 SE Corner: E227596, N7013756 SW Corner: E227496, N7013756 Category C ESA
PL263	Matilda-John Well #200	NW Corner: E227483, N7013081 NE Corner: E227583, N7013080 SE Corner: E227583, N7012981 SW Corner: E227483, N7012981 Category C ESA
PL263	Matilda-John Well #201	NW Corner: E228378, N7012797 NE Corner: E228477, N7012777 SE Corner: E228457, N7012679 SW Corner: E228358, N7012699 Primary protection zone of Category C ESA
PL263	Matilda-John Well #221	NW Corner: E227523, N7011505 NE Corner: E227623, N7011495 SE Corner: E227611, N7011394 SW Corner: E227511, N7011406 Primary protection zone of Category C ESA
PL263	Access tracks and gathering lines for: Matilda John Well #190, Matilda John Well #180 and Matilda John Well #200	Entry to PPZ: E227498, N7014614 Entry to ESA: E227467, N7014412 Entry to ESA: E227656, N 7012421 Entry to PPZ: E227688, N 7012223
PL263	Access tracks and gathering lines for Matilda John Well #201	Entry to PPZ: E228467, N7012629
PL263	Access tracks and gathering lines for existing Matilda John Well #07	Entry to PPZ: E228710, N7013763 Entry to ESA: E228545, N7013594

Tenure	Description of Infrastructure	Location
PL263	Access tracks and gathering lines for Matilda John Well #221	Entry to PPZ: E227633, N7011558
PL263	Matilda-John Well #120	NE Corner: E235074, N7019127 SE Corner: E235067, N7019069 SW Corner: E235022, N7019074 Primary protection zone of Category C ESA
PL263	Matilda-John Well #131	NW Corner: E234900, N7018287 NE Corner: E234999, N7018277 SE Corner: E234989, N7018177 SW Corner: E234896, N7018187 WNW Point: E 234894, N7018232 Category C ESA WNW Corner: E234894, N7018232 SE Corner: E234896, N7018187 SW Corner: E234890, N7018187 Primary protection zone of Category C ESA
PL263	Lauren Well #147	NW Corner: E236148, N7017756 NE Corner: E236240, N7017716 SE Corner: E236200, N7017624 SW Corner: E236108, N7017665 Category C ESA
PL263	Lauren Well #148	NW Corner: E235352, N7017607 NE Corner: E235451, N7017595 SE Corner: E235440, N7017496 SW Corner: E235341, N7017507 Category C ESA
PL263	Access tracks and gathering lines for Matilda John Well #131	Entry to PPZ: E234698, N7018341 Entry to ESA: E234897, N7018321
PL263	Access tracks and gathering lines for Lauren Well #147	Entry to PPZ: E236125, N7016805 Entry to ESA: E236215, N7017021

Tenure	Description of Infrastructure	Location
PL263	Access tracks and gathering lines for Lauren Well #148	Entry to PPZ: E234867, N7017633 Entry to ESA: E235087, N7017612
PL201, PL212 & PL263	PPL176 (UIC) Maximum RoW width 39m	Entry Point: E232831, N7023525 Exit Point: E235805, N7020101 Category C ESA and its primary protection zone
PL247	PPL176 (UIC) Maximum RoW width 37m	Entry Point: E230838, N7040158 Exit Point: E230822, N7039412 Category C ESA and its primary protection zone
PL 229	Workspace 1	Corner points: E248134, N7026156; E248143, N7026159; E248152, N7026108; E248142, N7026107. Category C ESA PPZ and Category B ESA PPZ
PL 229	Workspace 2	Corner points: E248160, N7026007; E248170, N7026009; E248181, N7025960; E248171, N7025958. Category C ESA PPZ and Category B ESA PPZ
PL228	Lauren FCS trunkline RoW	Entry Point: E246205, N7011302 Exit Point: E246730, N7010969 Category C ESA and its primary protection zone
PL228	Lauren FCS trunkline RoW	Entry Point: E250302, N7010460 Exit Point: E251092, N7010525 Category C ESA and its primary protection zone
PL228	Kate (Fairfield) Watercourse Crossing Workspaces	NW corner E245577 N7009731.84 NE corner E245626.63 N7009737.9 SW corner E245580.64 N7009702.06 SE corner E245630.27 N7009708.12 NW corner E245647.67 N7009740.47 NE corner E245697.3 N7009746.53 SW corner E245651.3 N7009710.69 SE corner E245700.94 N7009716.75

Tenure	Description of Infrastructure	Location
		Category C ESA
PL228	Orana Pond Complex, cells 2, 3 & 4	Protection zone entry points: E248870, N7015823 E249950, N7015719
PL228	Kenya WTP to Wieambilla Creek Treated Water Pipeline	Entry point: E248191, N7017471 Exit point: E247991, N7017490 Entry point: E247147, N7017362 Exit point: E246764, N7017558 Entry point: E246764, N7017558 Exit point: E246497, N7017514 Entry point: E245147, N7017868 Termination point: E243999, N7018201
PL180 & PL228	Argyle Gas Trunkline – Argyle FCS to Kenya CPP	Northern Entry Point: E248537, N7019505 Southern Exit Point E248027, N7017857
PL180 & PL228	Low impact petroleum activities	The Argyle Gas Trunkline right of way Northern Entry Point: E248537, N7019505 Southern Exit Point: E248027, N7017857

Tenure	Description of Infrastructure	Location
PL228 & PL180	Kenya Water Trunkline and Fibre Optic Cables	Entry Point: E249028, N7013730 Exit Point: E249077, N7014320 Entry Point: E248942, N7014670 Exit Point: 248802, N7015040 Entry Point: E249962, N7012030 Exit Point: E248931, N7012900 Primary protection zone of a Category B and C ESA.
PL212	Berwyndale South Well #174	NW Corner: E232389, N7021664 NE Corner: E232487, N7021643 SE Corner: E232466, N7021545 SW Corner: E232368, N7021567 Category C ESA
PL212	Berwyndale South Well #175	NW Corner: E233195, N7021735 NE Corner: E233295, N7021736 SE Corner: E233294, N7021636 SW Corner: E233194, N7021635 Category C ESA and its primary protection zone.
PL212	Berwyndale South Well #184	NW Corner: E231586, N7021297 NE Corner: E231607, N7021297 SE Corner: E231608, N7021197 SW Corner: E231581, N7021197 Primary protection zone of Category C ESA
PL212	Berwyndale South Well #185	NW Corner: E232238, N7020941 NE Corner: E232335, N7020921 SE Corner: E232315, N7020822 SW Corner: E232217, N7020843 Category C ESA
PL212	Berwyndale South Well #186	NW Corner: E232879, N7020910 NE Corner: E232979, N7020910 SE Corner: E232979, N7020809 SW Corner: E232879, N7020809 Category C ESA

Tenure	Description of Infrastructure	Location
PL212	Berwyndale South Well #187	NW Corner: E233586, N7021009 NE Corner: E233606, N7021009 SE Corner: E233608, N7020909 SW Corner: E233586, N7020909 Category C ESA
PL212	Berwyndale South Well #160	NW Corner: E233460, N7023114 NE Corner: E233560, N7023114 SE Corner: E233560, N7023014 SW Corner: E233460, N7023014 Category C ESA
PL212	Berwyndale South Well #167	NW Corner: E232634, N7022371 NE Corner: E232646, N7022372 SE Corner: E232645, N7022368 Primary protection zone of Category C ESA
PL212	Berwyndale South Well #180	NW Corner: E228414, N7020424 NE Corner: E228419, N7020424 SE Corner: E228408, N7020323 SW Corner: E228405, N7020324 Primary protection zone of Category C ESA
PL212	Berwyndale South access tracks and gathering lines	Entry Point: E228601, N7021239 Junction Point: E228618, N7021113 Entry Point: E228898, N7021116 Exit Point: E228424, N7021124 Entry Point: E228347, N7020917 Exit Point: E228346, N7020479 Primary protection zone of Category C ESA
PL212	Berwyndale South access tracks and gathering lines	Entry Point: E231581, N7021181 Junction Point: E232377, N7021144 Entry Point: E232183, N7020139 Exit Point: E232662, N7022374 Entry Point: E232424, N7021178 Exit Point: E233602, N7021163

Tenure	Description of Infrastructure	Location
		Entry Point: E232979, N7020910 Junction Point: E232973, N7021149 Entry Point: E233593, N7021620 Exit Point: E233294, N7021661 Category C ESA and its primary protection zone
PL211	Berwyndale 61 Workspace	NW Corner: E234237.59, N7034564.99 NE Corner: E234288.78, N7034508.64 SE Corner: E234247.68, N7034417.3 SW Corner: E234191.46, N7034323.11 Category B ESA and its primary protection zone
PL211	Berwyndale 125 Workspace	NW Corner: E232972.05, N7029595.87 NE Corner: E232987.55, N7029592.14 SE Corner: E232995.58, N7029519.27 SW Corner: E232953.79, N7029497.56 Category C ESA and its primary protection zones
PL201	PPL176 (UIC) Maximum RoW width 48m	Entry Point: E230371, N7030582 Exit Point: E231778, N7030221 Category B ESA and its primary protection zone
PL201 and PL211	PPL176 (UIC) Maximum RoW width 48m	Entry Point: E232000, N7029818 Exit Point: E231844, N7028925 Category C ESA and its primary protection zone
PL211	PPL176 (UIC) Maximum RoW width 48m	Entry Point: E230067, N7032741 Exit Point: E230244, N7031896 Category B ESA and its primary protection zone
PL211	Berwyndale #56 Workspace 1	Corner points: E228162, N7033706: E228169, N7033749; E228144, N7033762; E228080, N7033773. Category B ESA PPZ

Tenure	Description of Infrastructure	Location
PL211	Berwyndale #56 Workspace 2	Corner points: E228254, N7033556; E228262, N7033652; E228193, N7033662. Category B ESA PPZ
PL211	Berwyndale #128 Workspace 1	Corner points: E227389, N7032031; E227390, N7032026; E227248, N7032010; E227249, N7032005. Category C ESA PPZ
PL211	Berwyndale #128 Workspace 2	Corner points: E227263, N7031906; E227362, N7031921; E227362, N7031916; E227263, N7031902. Category C ESA PPZ
PL211	Berwyndale Geldard Borrow Pit	Corner points: E228095, N7032951; E228092, N7032941; E228074, N7032915; E228089, N7032884; E228089, N7032858; E228106, N7032848; E228111, N7032825; E228117, N7032811; E228119, N7032792; E228226, N7032762; E228257, N7032767; E228276, N7032780; E228306, N7032755; E228334, N7032753; E228362, N7032749; E228386, N7032740; E228409, N7032744; E228416, N7032848. Category B ESA PPZ

Tenure	Description of Infrastructure	Location
PL180	Lauren FCS trunkline RoW	Entry Point: E240049, N7015209 Exit Point: E240671, N7014951 Category B ESA and its primary protection zone
PL180	Lauren FCS trunkline RoW	Entry Point: E243693, N7013974 Exit Point: E244144, N7013929 Category B ESA and its primary protection zone
PL180	PPL176 (UIC) Maximum RoW width 39m	Entry Point: E237716, N7019416 Exit Point: E238524, N7019121 Entry Point: E240798, N7018954 Exit Point: E242349, N7018732 Category B ESA and its primary protection zone, and Category C ESA and its primary protection zone.
PL180	PPL176 (Kate FCS Trunkline) Maximum RoW width 30m	Entry Point: E243755, N7018301 Exit Point: E244584, N7016294 Primary protection zone of a Category B ESA.
PL180	Kate Field Compressor Station	NW corner: E245416, N7013740 NE corner: E245527, N7013720 SE corner: E245478, N7013330 SW corner: E245374, N7013340 Primary protection zone of Category B ESA
PL180	Cabbareena workspace 1	NW Corner: E237224.14, N7012789.09 NE Corner: E237232.72, N7012783.95 SE Corner: E237172.25, N7012683.06 SW Corner: E237163.67, N7012688.2 Category C ESA
PL180	Cabbareena workspace 2	Corners: NW Corner: E237215.38, N7012725.72 NE Corner: E237223.96, N7012720.58 SE Corner: E237217.74, N7012710.21 SW Corner: E237209.17, N7012715.35 Category C ESA
PL180	Lauren workspace 1a	NW Corner: E237548.6, N7012192.3 NE Corner: E237606.4, N7012188.2

Tenure	Description of Infrastructure	Location
		SE Corner: E237613.3, N7012161.3 SW Corner: E237549.2, N7012182.3 Primary protection zone of Category C ESA
PL180	Lauren workspace 1b	NW Corner: E237574.6, N7012152.6 NE Corner: E237587.6, N7012160.3 SE Corner: E237671.5, N7012019.4 SW Corner: E237658.5, N7012011.7 Category C ESA and its primary protection zone
PL180	Lauren workspace 2a	NW Corner: E237126.5, N7012315.9 NE Corner: E237136.5, N7012316.1 SE Corner: E237126.9, N7012293.2 SW Corner: E237136.9, N7012293.4 Primary protection zone of Category C ESA
PL180	Lauren workspace 2b	NW Corner: E237150.9, N7012339.4 NE Corner: E237160.9, N7012338.2 SE Corner: E237176.4, N7012250.8 SW Corner: E237170.6, N7012242.6 Primary protection zone of Category C ESA
PL179	Argyle Robinson Borrow Pit A	Corners: E246301, N7024338; E246297, N7024213; E246417, N7024168; E246430, N7024171; E246446, N7024170; E246451, N7024334; E246442, N7024343; E246395, N7024335. Category B ESA PPZ
PL179	Argyle Robinson Borrow Pit B	Corners: E246577, N7024253; E246580, N7024182; E246626, N7024200; E246660, N7024206; E246690, N7024184;

Tenure	Description of Infrastructure	Location
		E246693, N7024249. Category B ESA PPZ
PL 179	Workspace 3	Corner points: Corner: E244296, N7025421; Corner: E244335, N7025453; Corner: E244367, N7025414; Corner: E244328, N7025382. Category C ESA PPZ and Category B ESA PPZ
PL 179	Workspace 4	Corner points: E244865, N7024559; E244876, N7024569; E244921, N7024522; E244899, N7024522. Category C ESA PPZ and Category B ESA PPZ
PL 179	Workspace 5	Corner points: E244871, N7025796; E244911, N7025826; E244941, N7025786; E244901, N7025756. Category C ESA PPZ and Category B ESA PPZ
PL179	Workspace 6	Corner points E244649 N7025618 E244657 N7025626 E244689 N7025647 E244661 N7025619 E244651 N7025613 Category C ESA and its Primary Protection Zone

Note: Coordinates are as per Zone 56, GDA 94 datum.

(D12) **Limited petroleum activities** carried out in the **secondary protection zone** in accordance with condition (D10) must be preferentially located in pre-existing areas of **clearing** or **significant disturbance** to the greatest practicable extent and avoid the **clearing** of mature trees where possible.

(D13) Low impact or **limited petroleum activities** carried out within an environmentally sensitive area, **primary protection zone** or **secondary protection zone** as authorised under condition (D10) must not be conducted where there is overlap with another environmentally sensitive area or primary protection zone where low impact or limited petroleum activities are not authorised.

(D14) Where **limited petroleum activities** are proposed to be undertaken within the **primary protection zone** of, or in the **Category B and C Environmentally Sensitive Area** as authorised in condition (D10), the holder of this environmental authority must be able to demonstrate that no reasonable or practicable alternative exists and that 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 a Category C Environmentally Sensitive Area;

(b) pre-existing cleared areas or significantly disturbed land within the primary protection zone of a Category B Environmentally Sensitive Area;

(c) undisturbed areas within the primary protection zone of a Category C Environmentally Sensitive Area;

(d) undisturbed areas within the primary protection zone of a Category B Environmentally Sensitive Area;

(e) pre-existing areas of significant disturbance within a Category C Environmentally Sensitive Area (e.g. areas where significant **clearing** or thinning has been undertaken within a **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 a Category B Environmentally Sensitive Area (e.g. areas where significant clearing or thinning has been undertaken within a 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 a Category C Environmentally Sensitive Area is unavoidable; and

(h) areas where clearing of a Category B Environmentally Sensitive Area is unavoidable.

(D15) Notwithstanding conditions (D11) and (D13), where **limited petroleum activities**, and other activities authorised in *Schedule D, Table 2 – Authorised Petroleum Activities Disturbance* are proposed to be undertaken within the **primary protection zone** of, or in a **Category B or C Environmentally Sensitive Area** specified in condition (D10), any vegetation **clearing** must not exceed any of the following areas:

(a) for the life of the project and before any activity(ies) 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 (D2) and (D3) of this environmental authority;

(b) six metres in width for tracks;

(c) 15 metres if there are one or two parallel gas or water gathering lines;

(d) 20 metres if there are three, four or five parallel gas or water gathering lines;

(e) 25 metres if there are six, seven of eight parallel gas or water gathering lines;

(f) 30 metres if there are greater than eight parallel gas or water gathering lines;

(g) 30 metres if there are one or two gas and water trunk lines, underground 33 kV power lines and fibre optic cables in parallel;

(h) 30 plus an additional four metres for every additional gas or water trunk lines in parallel with the initial one or two gas or water trunk lines, underground 33 kV powerlines and fibre optic cable; or

(i) disturbance in the corridor described for the **Upstream Infrastructure Corridor**.

(D16) For each well site within the **primary protection zone** of, or in a **Category B or C Environmentally Sensitive Area** specified in condition (D10), all reasonable and practical measures must be taken to minimize the area cleared which must include but not be limited to, for each well site, ranked constraints mapping and a risk assessment which considers safety and environmental impacts.

(D17) Details of any **significant disturbance to land** undertaken within the **primary protection zone** of, or in a **Category B or C Environmentally Sensitive Area**, along with a record of the assessment required by conditions (D2) and (D3) must be kept and submitted to the administering authority with each annual return.

(D18) The environmental authority holder must enter in to an environmental offset agreement with the administering authority where disturbance to land caused by the carrying out of the petroleum activities will have a remaining adverse environmental impact on an environmental value.

(D19) The environmental offset agreement must be entered in to within six months after submitting the record of disturbance required by condition (D17), unless otherwise agreed to by the administering authority.

(D20) The environmental authority holder must implement any environmental offset agreement entered in to in accordance with conditions (D18) and (D19) as soon as practicable after finalisation.

Note: Offset requirements will be determined in accordance with principles and guidelines of the "Queensland Government Environmental Offsets Policy" June 2008 and the 'Queensland Biodiversity Offset Policy' becomes available.

(D21) Top soil must be managed in a manner that preserves its biological and chemical properties.

(D22) Land that has been significantly disturbed by the petroleum activities must be managed to ensure that mass movement, gully erosion, rill erosion, sheet erosion and tunnel erosion do not occur on that land.

(D23) Acid sulfate soils must be treated and managed in accordance with the latest edition of the *Queensland Acid Sulfate Soil Technical Manual*.

(D24) Measures to prevent fauna being harmed from entrapment must be implemented during the construction and operation of well infrastructure, dams and pipeline trenches.

(D25) Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable.

(D26) Pipeline operation and maintenance must be in accordance, to the greatest practicable extent, with the relevant section of the APIA Code of Environmental Practice: Onshore Pipelines (2009).

(D27) Pipeline trenches must be backfilled and topsoils **reinstated** within three **months** after pipe laying.

(D28) **Reinstatement** and **revegetation** of the pipeline right of way must commence within 6 months after cessation of petroleum activities for the purpose of pipeline construction.

(D29) Backfilled, reinstated and revegetated pipeline trenches and right of ways must be:

(a) a **stable** landform

(b) re-profiled to a level consistent with surrounding soils

(c) re-profiled to original contours and established drainage lines; and

(d) vegetated with groundcover which is not a **declared pest species**, and which is established and **growing**.

(D30) **Pipeline waste water**, may be released to land provided that it:

(a) can be demonstrated it meets the **acceptable standards for release to land**; and

(b) is released in a way that does not result in visible scouring or erosion or pooling or run-off or vegetation die-off.

(D31) The holder of this environmental authority must ensure that coal seam gas produced water is contained, is not released to land or waters and is only used for purposes specifically authorised:

(a) under this environmental authority; or

(b) under the *Petroleum and Gas (Production and Safety) Act 2004*; or

(c) under the *Petroleum Act 1923*; or

(d) under the an approval of resource for beneficial use as provided for under the *Waste Reduction and Recycling Act 2011*.

(D32) Produced water that is supplied or used under separate authorisation and in accordance with condition (D31) is not further regulated under conditions of this authority.

(D33) Produced water may be re-used in:

(a) Drilling and well hole activities; or

(b) **Stimulation** activities.

(D34) Produced water may be used for dust suppression provided the following criteria are met:

(a) the amount of dust suppressant applied should not exceed the amount required to effectively suppress dust; and

(b) the application of dust suppressant must:

i. not cause on-site ponding or runoff;

ii. be directly applied to the area being dust suppressed;

iii. not harm vegetation surrounding the area being dust suppressed; and

iv. not cause visible salting.

(D35) Despite condition (A18) and condition (A19), on-line monitoring equipment is appropriate for pH and total dissolved solids (TDS) measurements, where they are operated in accordance with condition (A3).

(D36) Produced water may be transferred to a third party to be used for the following purposes, subject to condition (D37):

(a) coal washing;

(b) dust suppression;

(c) construction;

(d) landscaping and revegetation, subject to compliance with condition (D40)(a), condition (D40)(b) and condition (D40)(c); and

(e) industrial and manufacturing operations, subject to compliance with condition (D42)(a).

(D37) If the responsibility of produced water is given or transferred to a third party in accordance with condition (D36), the holder of the environmental authority must ensure:

(a) the responsibility of the produced water is given or transferred in accordance with a written agreement (third party agreement);

(b) the third party is made aware of the General Environmental Duty under section 319 of the *Environmental Protection Act 1994.*

(D38) Produced water may be used for dust suppression provided the following criteria are met:

(a) the amount of dust suppressant applied should not exceed the amount required to effectively

(b) suppress dust; and

(c) the application of dust suppressant must:

(i) not cause on-site ponding or runoff

(ii) be directly applied to the area being dust suppressed

(iii) not harm vegetation surrounding the area being dust suppressed; and

(iv) not cause visible salting.

(D39) Produced water may be used for construction purposes provided the use:

(a) does not result in runoff from the construction site; and

(b) does not harm vegetation surrounding the construction site.

(D40) Produced water may be used for landscaping and revegetation provided the following criteria are met:

(a) total dissolved solids (TDS) does not exceed 1000mg/L;

(b) pH range is between 6.0 and 9.5;

(c) does not contain any substances in concentrations that may be toxic to plant growth;

(d) the amount of resource applied should not exceed what is required to effectively undertake landscaping or revegetation activities; and

(e) the application of the resource must:

(i) not cause on-site ponding or runoff;

(ii) be directly applied to the area being landscapes or revegetated;

(iii) not harm vegetation surrounding the area being landscaped or revegetated; and

(iv) not cause visible salting.

(D41) If there is any indication that any of the circumstances in condition (D38), condition (D39), condition (D40)(e)(i), condition (D40)(e)(iii) or condition (D40)(e)(iv), is occurring the use must cease immediately, the administering authority notified as soon as possible, but within 48 hours of becoming aware and the affected area must be remediated without delay.

(D42) Produced water may be used for industrial and manufacturing operations provided the following criteria are met:

(a) pH range is between 6.0 to 9.5; and

(b) the resource is not directly or indirectly released to land.

(D43) Produced water may be used for research and development provided the resource is not directly or indirectly released to land.

(D44) Produced water may be used for domestic stock, stock intensive and incidental land management provided the following criteria are met:

(a) the water quality of the resource complies with the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC and ARMCANZ 2000) Volume 1: Chapter 4.3, Table 4.3.1, 4.3.2 and 4.3.3; and

(b) stock and stock intensive drinking water is limited to watering livestock mentioned in Table 4.3.1 of *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC and ARMCANZ 2000) Volume 1: Chapter 4.3.

(D45) Water quality criteria listed in condition (D40), condition (D42) and condition (D44) must be undertaken and include, at a minimum:

(a) in situ fortnightly sampling for pH and total dissolved solids (TDS); and

(b) initially **monthly** for other water quality parameters, and then six monthly after three consecutive detects which are less than 50 percent of the relevant parameter.

(D46) Despite condition (A18), in situ monitoring equipment is appropriate for pH and total dissolved solids (TDS) measurements, where they are operated in accordance with condition (A3).

(D47) Treated sewage effluent or greywater from a treatment system with a daily peak design capacity of less than 1500 EP may be released to land provided it:

(a) is to a fenced and signed **contaminant** release area(s);

(b) does not contain any properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm;

(c) does not result in pooling or run-off or aerosols or spray drift or vegetation die-off;

(d) minimises deep drainage below the root zone of any vegetation;

(e) does not adversely affect the quality of shallow aquifers;

(f) does not adversely impact soil quality; and

(g) is to a contaminant release area(s) that is kept vegetated with groundcover, that is:

(i) not a **declared pest species**; and

(ii) kept in a viable state for transpiration and nutrient uptake.

(D48) Sewage pump stations must be fitted with a stand-by pump and a visible or audible high-level alarm. All alarms must be able to operate without mains power.

(D49) All nominated locations and minimum **contaminant** release areas of land in Condition (D47) for sewage treatment works with a daily peak design capacity of greater than 100 EP must be determined using the Model for Effluent Disposal using Land Irrigation (MEDLI) program or recognised equivalent.

(D50) A copy of the MEDLI program (or recognised equivalent) required in Condition (D49) must be submitted to the administering authority.

(D51) If, within 20 **business days** following the submission of the MEDLI program results the administering authority provides comments on the submission, the holder of the environmental authority must:

(a) have due regard to that comment in the finalisation of the amended MEDLI program results; and

(b) submit the finalised amended MEDLI program results within 40 **business days** after the administering authority provided comments; and

(c) implement the amended MEDLI program results.

(D52) All treated sewage effluent or greywater released to land from a treatment system with a daily peak design capacity of greater than 100 EP must be in accordance with the **contaminant** release limits stated in Schedule D, *Table 3 – Treated Sewage Effluent Release Limits to Land* and the conditions of this environmental authority.

Schedule D, Table 3 – Treated Sewage Effluent Release Limits to Land

Quality Characteristic / Contaminant	Sampling and In Situ Measurement Point Location	Unit	Limit Type	Release Limit	Frequency
5-day Biochemical oxygen demand (BOD)	Release pipe from sewage treatment plant	mg/L	maximum	20	Quarterly
TSS		mg/L	maximum	30	
E. coli		CFU [3] / 100 mL	80th percentile [4]	1000	
		CFU / 100 mL	maximum	10,000	
EC		-	monitor only	-	Monthly in situ monitoring
pH		-	range	6.0–9.0	

(D53) If the water quality assessment required by Condition (D52) demonstrates that the water is not suitable for release to land, then water must be collected and disposed of at an appropriate facility.

[3] CFU = coliform forming units.

[4] Based on at least 5 samples with not less than 30 minutes between samples.

Schedule E - Environmental Nuisance

(E1) 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**.

(E2) Prior to the commencement of each petroleum activity authorised by this environmental authority, an Interim Noise Management Plan is required to be in place for that activity, which

(a) minimises noise impacts resulting from petroleum activities; and

(b) ensures compliance with *Schedule E, Table 1 – Noise Limits at Sensitive Receptors* as $L_{Aeq\ adj}$.

Note: Where there is a conflict between the contents of Interim Noise Management Plan and the conditions of this environmental authority, the conditions of this environmental authority prevail.

(E3) A Final Noise Management Plan, **certified by a suitably qualified person** must be developed by 14 October 2011 and must have due regard to the Department of Environment and Resource Management's procedural guide "Coal Seam Gas Industry – Control of Noise from Gasfield Petroleum Activities" 2011, as amended from time to time.

(E4) The Final 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 E 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 at **sensitive receptors**;

(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 E 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 (E4)(j); and

(l) mediation processes to be used in the event that noise complaints are not able to be resolved.

(E5) The holder of this environmental authority must implement the Final Noise Management Plan by 14 October 2011.

(E6) 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 E Table 1 – Noise Limits at Sensitive Receptors*.

(E7) 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 E Table 1 – Noise Limits at Sensitive Receptors* in the event of a **valid complaint** about noise being made to the administering authority.

Schedule E, 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
Drilling activities undertaken from 10:00pm – 7:00am	$L_{Aeq,adj,15\ min}$	30 dBA (measured indoors at any **sensitive receptor**)		

Notes:

1. L_{Aeq} and Max L_{pA} are to be measured over any 15 minute period
2. 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 *10:00 pm – 6:00 am: 25 dBA*

6:00 pm – 10:00 pm: 30 dBA *6:00 am – 7:00 am: 30 dBA*

3. Reference should also be made to the Coal Seam Gas Procedural Guide – Control of Noise from Gasfield Activities for the determination of the noise limits.

(E8) If the noise subject to a complaint is tonal or impulsive, the adjustments detailed in *Schedule E 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 E, 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

Note: Where the application of a tonal or impulsive adjustment as per Table 2 is unclear or is in dispute, refer to AS1055.1 Section 6.6 for a quantitative methodology to confirm the applicability of noise adjustments.

(E9) Where alternative arrangements are in place with an affected person(s) at a **sensitive receptor** as referred to by condition (E4)(j), the noise limits in *Schedule E Table 1 – Noise Limits at Sensitive Receptors* do not apply at that **sensitive receptor** for the duration for which the alternative arrangements are in place.

(E10) Notwithstanding Condition (E7), 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 internal A-weighted and C-weighted noise levels is no greater than 20dB; 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.

(E11) A Blast Management Plan must be developed in accordance with **Australian Standard 2187** by a **suitably qualified person** prior to each blasting activity.

(E12) 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.

(E13) All blasting must be carried out in a proper manner by a **suitably qualified person**.

(E14) All blasting must be carried out in accordance with the Blast Management Plan.

(E15) 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**.

(E16) 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**.

Schedule F - Air

(F1) The operation of fuel burning or combustion facilities must not result in ground level concentrations of **contaminants** exceeding the maximum limits specified in *Schedule F, Table 1 – Maximum Ground Level Concentration of Contaminants to Air*.

Schedule F, Table 1 – Maximum Ground Level Concentration of Contaminants to Air

Contaminant	EPP Air Quality Objective / Maximum Ground Level Concentration at 0^0 Celsius	Units	Averaging Time
Nitrogen Dioxide	250	$\mu g/m^3$	1 hour
Nitrogen Dioxide	33	$\mu g/m^3$	1 year
Sulphur Dioxide	570	$\mu g/m^3$	1 hour
Sulphur Dioxide	230	$\mu g/m^3$	1 day
Sulphur Dioxide	22	$\mu g/m^3$	1 year
Carbon Monoxide	11	mg/m^3	8 hours

(F2) An air receiving environment monitoring program (AREMP) must be developed to demonstrate compliance with the limits in *Schedule F, Table 1 – Maximum Ground Level Concentration of Contaminants to Air.*

(F3) The AREMP must include, but not necessarily be limited to:

- (a) the delineation of the relevant air shed(s);
- (b) the identification of background reference sites and impact monitoring sites within the relevant air shed(s), including **sensitive places;**
- (c) a monitoring program to be carried out annually that:
  - (i) includes background reference and impact monitoring sites;
  - (ii) includes an assessment of meteorological conditions (wind speed and direction);
  - (iii) is sufficient to determine compliance with the limits listed in *Schedule F, Table 1 – Maximum Ground Level Concentration of Contaminants to Air;*
  - (iv) identifies the effects of the authorised **contaminants** released to air in the relevant air shed(s);
  - (v) is representative of when the fuel burning or combustion facilities are operating under maximum operating conditions for the annual period;
- (d) an assessment of the condition of each fuel burning or combustion facility, and

(e) a description of other significant point sources in the air shed and surrounding land use including **sensitive places.**

(F4) An AREMP report must be written annually which includes the information required by condition (F3) and an assessment of the extent to which monitoring data for ground level concentrations complies with the air **contaminant** limits listed in *Schedule F, Table 1 – Maximum Ground Level Concentration of Contaminants to Air*.

(F5) Where monitoring data indicates that ground level concentrations listed in *Table 1 – Maximum ground level concentration of contaminants to air* have not been met, the AREMP report required by condition (F4) must also include an assessment of:

(a) the extent to which the values of the air environment in the relevant air shed(s) are being protected;

(b) an assessment of whether **contaminant** releases to the air environment are consistent with the air management hierarchy in the Environmental Protection (Air) Policy 2008; and

(c) any corrective actions that have been implemented or proposed to be implemented to become consistent with the air management hierarchy and achieve compliance with *Schedule F, Table 1 – Maximum Ground Level Concentration of Contaminants to Air.*

(F6) A statement of compliance prepared by a **suitably qualified person** must accompany each AREMP report required by condition (F4) and if applicable, condition (F5) stating:

(a) whether the AREMP as mostly recently implemented complies with the requirements of conditions (F2), (F3), (F9), and (A16);

(b) that, to the best of the suitably qualified person's knowledge, the assessment required by condition (F4) and if applicable, condition (F5) is true, correct and complete; and

(c) that, to the best of the suitably qualified person's knowledge, all information provided as part of the statement of compliance, including attachments, is true, correct and complete.

(F7) Where condition (F5) applies, the **documents** required by conditions (F4), (F5) and (F6) must be given to the administering authority within five **business days** after the AREMP report is written.

(F8) If requested by the administering authority in relation to investigating a complaint, monitoring must be commenced within 10 **business days**.

(F9) Monitoring and sampling must be carried out in accordance with the requirements of the Queensland Air Quality Sampling Manual and/or Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions, as amended from time to time and as appropriate for the relevant measurement.

Schedule G - Waste

(G1) Measures must be implemented so that waste is managed in accordance with the waste and resource management hierarchy and the waste and resource management principles.

(G2) Waste, including waste fluids, but excluding waste used in closed-loop systems, must be transported off-site (or to a re-use site) for lawful re-use, remediation, recycling or disposal, unless the waste is specifically authorised by conditions of this environmental authority to be disposed of or used on site.

(G3) **Waste fluids**, other than **flare precipitant** stored in **flare pits**, or **residual drilling material** or drilling fluids stored in **sumps**, must be contained in either:

- (a) an above ground container; or
- (b) a **structure** which contains the wetting front.

(G4) If sumps are used to store residual drilling material or drilling fluids, they must only be used for the duration of drilling activities.

(G5) Residual drilling material can only be disposed of on-site:

- (a) by mix-bury-cover method if the residual drilling material meets the approved quality criteria; or
- (b) if it is certified by a suitably qualified third party as being of acceptable quality for disposal to land by the proposed method and that environmental harm will not result from the proposed disposal.

(G6) Records must be kept to demonstrate compliance with condition (G4) and (G5).

(G7) Green waste may be used on-site for either rehabilitation or sediment and erosion control, or both.

(G8) Vegetation waste may be burned if it relates to a state forest, timber reserve or forest entitlement area administered by the *Forestry Act 1959* and a permit has been obtained under the *Fire and Rescue Service Act 1990*.

(G9) The holder of this environmental authority may transport treated **coal seam gas water**, **raw coal seam gas water**, **coal seam gas water concentrate** or **brine** to be stored, treated and used in accordance with any other environmental authority to allow for the aggregation and management of wastes.

(G10) Following the completion of the petroleum activity(ies), any residual **brine** and / or solid salt present in any **dam** must be removed and transported to a facility that can lawfully reuse, recycle or dispose of such waste under the *Environmental Protection Act 1994*.

Schedule H - Rehabilitation

(H1) A Rehabilitation Plan must be developed by a **suitably qualified person** and must include the:

- (a) **rehabilitation** goals; and
- (b) procedures to be undertaken for rehabilitation that will:
  - (i) achieve the requirements of conditions (H2) to (H8), inclusive; and
  - (ii) provide for appropriate monitoring and maintenance.

(H2) **Significantly disturbed areas** that are no longer required for the on-going petroleum activities, must be rehabilitated within 12 **months** (unless an exceptional circumstance in the area to be rehabilitated (e.g. a flood event) prevents this timeframe being met) and be maintained to meet the following **acceptance criteria**:

- (a) contaminated land resulting from petroleum activities is remediated and rehabilitated
- (b) the areas are:
  - (i) non-polluting;
  - (ii) a **stable** landform; and
  - (iii) re-profiled to contours consistent with the surrounding landform.
- (c) surface drainage lines are re-established;
- (d) top soil is reinstated; and
- (e) either:
  - (i) groundcover, that is not a **declared pest species**, is growing; or
  - (ii) an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.

(H3) All **significantly disturbed areas** caused by petroleum activities which are not **being or intended to be utilised by the landholder or overlapping tenure holder**, must be rehabilitated to meet the following final **acceptance criteria** measured either against the highest ecological value **adjacent land use** or the **pre-disturbed land use**:

- (a) greater than or equal to 70% of native ground cover species richness;
- (b) greater than or equal to the total per cent of ground cover;
- (c) less than or equal to the percent species richness of declared plant pest species; and
- (d) where the adjacent land use contains, or the pre-clearing land use contained, one or more **regional ecosystem**(s), then at least one regional ecosystem(s) from the same broad vegetation group, and with the equivalent biodiversity status or a biodiversity status with a higher conservation value as any of the regional ecosystem(s) in either the adjacent land or pre-disturbed land, must be present.

(H4) Where **significant disturbance to land** has occurred in an environmentally sensitive area, the following final **rehabilitation** criteria as measured against the pre-disturbance biodiversity values assessment (required by conditions (D2) and (D3)) must be met:

- (a) greater than or equal to 70% of native ground cover species richness;
- (b) greater than or equal to the total per cent ground cover;
- (c) less than or equal to the per cent species richness of declared plant pest species;

(d) greater than or equal to 50% of organic litter cover;

(e) greater than or equal to 50% of **total density of coarse woody material**; and

(f) all **predominant species** in the **ecologically dominant layer**, that define the pre-disturbance **regional ecosystem**(s) are present.

(H5) Conditions (H2), (H3) and (H4) continue to apply after this environmental authority has **ended** or ceased to have effect.

(H6) Prior to relinquishing all or part of an authority to prospect area, a **rehabilitation** report must be prepared which specifically relates to the area to be relinquished and demonstrates condition (H2), (H3) and (H4) has been met.

(H7) The report required under condition (H6) must be submitted to the administering authority at least 40 **business days** prior to the relinquishment notice being lodged with the administering authority for the *Petroleum and Gas (Production and Safety) Act 2004*.

(H8) Where there is a **dam** (including a **low consequence dam**) that is **being or intended to be utilised by the landholder or overlapping tenure holder**, the dam must be decommissioned to no longer accept inflow from the petroleum activity(ies) and the contained water must be of a quality suitable for the intended on-going uses(s) by the landholder or overlapping tenure holder.

Definitions

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

"acceptable standards for release to land" means wastewater of the following quality as determined by monitoring results or by characterisation:

- electrical conductivity (EC) not exceeding 3000 µS/cm
- sodium adsorption ratio (SAR) not exceeding 8
- pH between 6.0 and 9.0
- heavy metals (measured as total) meets the respective short term trigger value in section 4.2.6, Table 4.2.10—Heavy metals and metalloids in Australian and New Zealand Guidelines for Fresh and Marine Water Quality
- does not contain biocides.

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

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- vegetation establishment, survival and succession;
- vegetation productivity, sustained growth and structure development;
- fauna colonisation and habitat development;
- ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- effects of various establishment treatments such as deep ripping, **topsoil** handling, seeding and fertiliser application on vegetation growth and development;
- resilience of vegetation to disease, insect attack, drought and fire;
- vegetation water use and effects on ground water levels and catchment yields.

"acid sulfate soils" means a soil or soil horizon which contains sulfides or an acid soil horizon affected by oxidation of sulfides.

"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.

"adjacent land use(s)" means the ecosystem function adjacent to an area of significant disturbance, or where there is no ecosystem function, the use of the land. An adjacent land use does not include an adjacent area that shows evidence of edge effect.

"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.

"alternative arrangement" means a written agreement between the holder of this environmental authority and an affected or potentially affected person at a sensitive receptor for a defined noise nuisance impact and may include an agreed period of time for which the arrangement is in place. An agreement for alternative arrangements may include, but not necessarily be limited to a range of noise abatement measures to be installed at a sensitive receptor and / or provision of alternative accommodation for the duration of the defined noise nuisance impact.

"analogue site" means an undisturbed area of land against which land significantly disturbed by the carrying out of petroleum activities may be compared.

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

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

"annual inspection report" means an **assessment** prepared by a **suitably qualified and experienced person** containing details of the **assessment** against the most recent **consequence assessment** report and **design plan** (or **system design plan**); against recommendations contained in previous annual inspections reports:

- against recognised dam safety deficiency indicators;
- for changes in circumstances potentially leading to a change in **consequence category**;
- for conformance with the conditions of this authority;
- for conformance with the 'as constructed' drawings;
- for the adequacy of the available storage in each **regulated dam**, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the **dam** (or network of linked containment systems);
- evidence of conformance with the current **operational plan**.

"annual return period" means the most current 12-month period between two anniversary dates.

"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.

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

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

"approved quality criteria" for the purposes of residual drilling materials, means the residual drilling material meet the following quality standards:

Part A In all cases:

Parameter	Maximum concentration
pH	6–10.5 (range)
Electrical Conductivity	20dS/m (20,000µS/cm)
Chloride*	8000mg/L

*Chloride analysis is only required if an additive containing chloride was used in the drilling process. The limits in Part A must be measured in the clarified filtrate of oversaturated solids prior to mixing.

Part B If any of the following metals are a component of the drilling fluids, then for that metal:

Parameter	Maximum concentration
Arsenic	20mg/kg
Selenium	5mg/kg
Boron	100mg/kg
Cadmium	3mg/kg
Chromium (total)	400mg/kg
Copper	100mg/kg
Lead	600mg/kg

The limits in Part B and Part C refer to the post soil/by-product mix.

Part C If a hydrocarbon sheen is visible, the following hydrocarbon fractions:

TPH	Maximum concentration
C6-C10	170mg/kg
C10-C16	150mg/kg
C16-C34	1300mg/kg
C34-C40	5600mg/kg
Total Polycyclic Aromatic Hydrocarbons (PAHs)	20mg/kg
Phenols (halogenated)	1mg/kg
Phenols (non-halogenated)	60mg/kg
Monocyclic aromatic hydrocarbons *(Total sum of benzene, toluene, ethyl benzene, xylenes (includes ortho, para and meta xylenes) and styrene)*	7mg/kg
Benzene	1mg/kg

"associated water" means underground water taken or interfered with, if the taking or interference happens during the course of, or results from, the carrying out of another authorised activity under a petroleum authority, such as a petroleum well, and includes waters also known as produced formation water. The term includes all contaminants suspended or dissolved within the water.

"associated works" in relation to a dam, means:
- operations of any kind and all things **constructed**, erected or installed for that dam; and
- any land used for those operations.

"Australian Standard 3580" means any of the following publications:
- AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter—Gravimetric method.
- AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet—Gravimetric method
- AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter— PM10 low volume sampler—Gravimetric sampler.

"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" means of any waters, has the meaning in Schedule 12 of the Environmental Protection Regulation 2008 and—
(a) includes an area covered, permanently or intermittently, by tidal or non-tidal waters; but
(b) does not include land adjoining or adjacent to the bed that is from time to time covered by floodwater.

"Being or intended to be utilised by the landholder or overlapping tenure holder for significantly disturbed land" means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the holder of the environmental authority identifying that the landholder or the overlapping tenure holder has a preferred use of the land such that rehabilitation standards for revegetation by the holder of the environmental authority are not required.
For dams, means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the holder of the environmental authority identifying that the landholder or the overlapping tenure holder has a preferred use for the dam such that rehabilitation standards for revegetation by the holder of the environmental authority are not required.

"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.

"brine dam" means a **regulated dam** that is designed to receive, contain or evaporate brine.

"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 12, Part 1, section 1 of the *Environmental Protection Regulation 2008.*

"Category B Environmentally Sensitive Area" means any area listed in Section 12, Part 1, section 2 of the *Environmental Protection Regulation 2008.*

"Category C Environmentally Sensitive Area" means any of the following areas:
- nature refuges as defined in the conservation agreement for that refuge 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*
- regional parks (previously known as resource reserves) under the *Nature Conservation Act 1992*
- an area validated as 'essential habitat' or 'essential regrowth habitat' from ground-truthing surveys in accordance with the *Vegetation Management Act 1999* for a species of wildlife listed as endangered or vulnerable under the *Nature Conservation Act 1992*
- of concern regional ecosystems' that are remnant vegetation and identified in the database called 'RE description database' containing regional ecosystem numbers and descriptions.

"certification" means **assessment** and approval must be undertaken by a **suitably qualified and experienced person** in relation to any **assessment** or documentation required by this **Manual**, including design plans, 'as constructed' drawings and specifications, **construction**, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

"certified" or "certification" in relation to any matter other than a **design plan**, 'as constructed' drawings or an annual report regarding dams, means a Statutory Declaration by a **suitably qualified person** or **suitably qualified third party** accompanying the written document stating:
- the person's qualifications and experience relevant to the function;
- that the person has not knowingly included false, misleading or incomplete information in the document
- that the person has not knowingly failed to reveal any relevant information or document to the administering authority
- that the document addresses the relevant matters for the function and is factually correct; and
- that the opinions expressed in the document are honestly and reasonably held.

"certifying, certify or certified" have a corresponding meaning as **'certification'**.

"clearing" has the meaning in the dictionary of the *Vegetation Management Act 2000* and for vegetation—
(a) means remove, cut down, ringbark, push over, poison or destroy in any way including by burning, flooding or draining; but
(b) does not include destroying standing vegetation by stock, or lopping a tree.

"closed-loop systems" means using waste on site in a way that does not release waste or contaminants in the waste to the environment.

"coal seam gas water" means underground water brought to the surface of the earth, or moved underground in connection with exploring for, or producing coal seam gas.

"coal seam gas water concentrate" means the concentrated saline water waste stream from a water treatment process that does not exceed a total dissolved solid concentration of 40 000 mg/L.

"coal seam gas evaporation dam" is defined as a impoundment, enclosure or structure that is designed to be used to hold coal seam gas water for evaporation.

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

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

"consequence category" means a category, either low, significant or high, into which a **dam** is **assessed** as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

"construction or constructed" in relation to a **dam** includes building a new **dam** and modifying or lifting an **existing dam** but does not include investigations and testing necessary for the purposes of preparing a **design plan**.

"contaminant" is:
(a) a gas, liquid or solid; or
(b) an odour; or
(c) an organism (whether alive or dead), including a virus; or
(d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
(e) a combination of contaminants.

"control measure" has the meaning in section 47 of the Environmental Protection Regulation 2008 and means a device, equipment, structure, or management strategy used to prevent or control the release of a contaminant or waste to the environment.

"dam" means a land-based structure or a **void** that is designed to contains, diverts or controls **flowable substances**, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or **void** and **associated works**. A dam does *not* mean a fabricated or manufactured tank or container, designed and **constructed** to an Australian Standard that deals with strength and structural integrity of that tank or container.

"dam crest volume" means the volume of material that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls without regard to flows entering or leaving (e.g. via a spillway).

"declared pest species" has the meaning in the Land Protection (Pest and Stock Route Management) Regulation 2003 and is a live animal or plant declared to be a declared pest under section 36 (Declaring Pests by Regulation) or section 37(2) (Declaring Pest under Emergency Pest Notice) of that Act and includes reproductive material of the animal or plant.

"design plan" is a document setting out how all identified **consequence** scenarios are addressed in the planned design and operation of a **regulated structure**.

"design storage allowance or DSA" means an available volume, estimated in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Structures (EM635)*, published by the administering authority, must be provided in a **dam** as at 1 November each year in order to prevent a discharge from that **dam** to an **annual exceedance probability** (AEP) specified in that **Manual**.

"development well" means a petroleum well which produces or stores petroleum. For clarity, a development well does not include an appraisal well.

"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).

"ecologically dominant layer" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means the layer making the greatest contribution to the overall biomass of the site and the vegetation community (NLWRA 2001). This is also referred to as the ecologically dominant stratum or the predominant canopy in woody ecosystems.

"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.

"environmental harm" has the meaning in section 14 of the *Environmental Protection Act 1994* and means any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance.
Environmental harm may be caused by an activity—
(a) whether the harm is a direct or indirect result of the activity; or
(b) whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors.

"environmental management plan" means an environmental management document to be submitted during the application process for a level 1 environmental authority (petroleum activities).

"environmental nuisance" has the meaning in section 15 of the *Environmental Protection Act 1994 and means* unreasonable interference or likely interference with an environmental value caused by—
(a) aerosols, fumes, light, noise, odour, particles or smoke; or
(b) an unhealthy, offensive or unsightly condition because of contamination; or
(c) another way prescribed by regulation.

"equivalent person or EP" has the meaning under section 3 of the Planning Guidelines For Water Supply and Sewerage, 2005, published by the Queensland Government. It is calculated in accordance with Schedule 2, Section 63(4) of the Environmental Protection Regulation 2008 where:
- EP = V/200 where V is the volume, in litres, of the average dry weather flow of sewage that can be treated at the works in a day; or
- EP = M/2.5 where M is the mass, in grams, of phosphorus in the influent that the works are designed to treat as the inlet load in a day.

"existing structure" means a structure that prior to 11 August 2015 meets any or both of the following, a structure:
- with a design that is in accordance with the November 2013, Version 4, *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* and that is considerably in progress; and
- that is under considerable **construction** or that is **constructed**.

"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.

"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.

"flare pit" has the meaning in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635), and means containment area where any hydrocarbon that is discovered in an over-pressured reservoir during a drilling operation is diverted to, and combusted, The flare pit is only used during the drilling and work over process on a petroleum well.

"flare precipitant" means waste fluids which result from the operation of a flare.

"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.

"fuel burning or combustion facility" means a permanent fuel burning or combustion equipment which in isolation, or combined in operation, or which are interconnected, is, or are capable of burning more than 500 kg of fuel in an hour.

"GDA" means Geocentric Datum of Australia.

"green waste" means waste that is grass cuttings, trees, bushes, shrubs, material lopped from trees, untreated timber or other waste that is similar in nature but does not include declared pest species.

"greywater" means wastewater generated from domestic activities such as laundry, dishwashing, and bathing. Greywater does not include sewage.

"growing" means to increase by natural development, as any living organism or part thereof by assimilation of nutriment; increase in size or substance.

"groundwater dependent ecosystem (GDE)" means ecosystems which require access to groundwater on a permanent or intermittent basis to meet all or some of their water requirements so as to maintain their communities of plants and animals, ecological processes and ecosystem services.

"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.

"highly erodible soils" means very unstable soils that are generally described as Sodosols with hard setting, fine sandy loam to silty clay loam surfaces (solodics, solodised solonetz and solonetz) or soils with a dispersible layer located less than 25 cm deep or soils less than 25 cm deep.

"holder" means any person who is the holder of, or is acting under, this environmental authority.

"hydraulic integrity" refers to the capacity of a dam to contain or safely pass **flowable substances** based on its design.

"hydraulic performance" means the capacity of a **regulated dam** to contain or safely pass **flowable substances** based on the design criteria specified for the relevant **consequence** in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

"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, water storage dams, evaporation or storage ponds 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 dams other than water storage dams (e.g. evaporation dams), 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.

"landfill monocell" means a specialised, isolated landfill facility where a single specific waste type is exclusively disposed (i.e. salt).

"Landholder's active groundwater bore" 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. This term does not include monitoring bores owned by the administering authority of the *Water Act 2000*.

"levee" means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of **water** or **flowable substances** at any other times.

"limited petroleum activities" means activities undertaken for the purpose of extraction of coal seam gas. Limited petroleum activities may include:
- single well sites not exceeding 1 hectare of disturbance, and multi-well sites not exceeding 1.5 hectares of disturbance. Well sites may include:
    (a) well pads;
    (b) water pumps and generators associated with well operations;
    (c) sumps for storing drilling muds;
    (d) flare pits;
    (e) ponds used to contain and/or store stimulation fluid;
    (f) mobile camp sites associated with well sites for the purpose of establishing the limited petroleum activity, so long as the mobile camp site is established in previously disturbed areas.
- geophysical surveys (including seismic petroleum activities);
- ecological, geological, topographic and cadastral surveys, etc.;
- gas gathering lines;
- water gathering lines;
- supporting access tracks; and
- communication and power lines that are necessary for the undertaking of petroleum activities and can be 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 are not necessarily limited to:

- single well sites of disturbance greater than 1 hectare or multi-well sites of disturbance greater than 1.5 hectares;
- the construction of infrastructure for processing or storing petroleum or by-products;
- regulated dams;
- low hazard dams (excluding ponds used to contain and/or store stimulation fluid, and sumps for storing drilling muds if located within a well site, or immediately adjacent to a well site);
- borrow pits;
- compressor stations;
- campsites / workforce accommodation other than mobile campsites;
- power supplies;
- pipelines which are used to transport gas after the Field Compressor Stations (e.g. trunk pipelines, transmission pipelines or pipelines that require a pipeline licence)
- waste disposal; or
- other supporting infrastructure for the project (e.g. sewage treatment plants).

"linear infrastructure" means powerlines, pipelines, flowlines, roads and access tracks.

"liquid" means a substance which is flowing and offers no permanent resistance to changes of shape.

"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.

"low consequence dam" means any **dam** that is not a high or significant **consequence category** as **assessed** using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

"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.

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the criteria in the "*Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, published by the administering authority.

"manual" means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

"Map of referable wetlands" has the meaning in Schedule 12 of the Environmental Protection Regulation 2008 and means the 'Map of referable wetlands', a document approved by the chief executive on 4 November 2011 and published by the department, as amended from time to time by the chief executive under section 144D.

"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 (5) 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.

"mix-bury-cover method" means the stabilisation of residual drilling solids in the bottom of a sump by mixing with subsoil and which occurs in accordance with the following methodology:

- the base of the subsoil and residual solid mixture must be separated from the groundwater table by at least one metre of a continuous layer of impermeable subsoil material (kw=10–8m/s) or subsoil with a clay content of greater than 20%; and
- the residual solids is mixed with subsoil in the sump and cover; and
- the subsoil and residual solids is mixed at least three parts subsoil to one part waste (v/v); and
- a minimum of one metre of clean subsoil must be placed over the subsoil and residual solids mixture; and
- topsoil is replaced.

"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.

"operational plan" includes:

- normal operating procedures and rules (including clear documentation and definition of process inputs in the **DSA** allowance);
- contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

"pipeline waste water" means hydrostatic testing water, flush water or water from low point drains.

"predominant species" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a species that contributes most to the overall above-ground biomass of a particular stratum.

"pre-disturbed land use" means the function or use of the land as documented prior to significant disturbance occurring at that location.

"prescribed contaminants" has the meaning in section 440ZD of the *Environmental Protection Act 1994* and means:
(a) earth; or
(b) a contaminant prescribed under section 440ZF.

"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.

"produced water" has the meaning in Section 15A of the Petroleum and Gas (Production and Safety) Act 2004 and means CSG water or associated water for a petroleum tenure.

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

"regional ecosystem" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil. Regional ecosystems of Queensland were originally described in Sattler and Williams (1999). The Regional Ecosystem Description Database (Queensland Herbarium 2013) is maintained by Queensland Herbarium and contains the current descriptions of regional ecosystems.

"register of regulated dams" includes**:**

- Date of entry in the register;
- Name of the **dam**, its purpose and intended/actual contents;
- The **consequence category** of the dam as **assessed** using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*;
- Dates, names, and reference for the **design plan** plus dates, names, and reference numbers of all document(s) lodged as part of a **design plan** for the **dam**;
- Name and qualifications of the **suitably qualified and experienced person** who **certified** the **design plan** and 'as constructed' drawings;
- For the **regulated dam**, other than in relation to any levees –
    - The dimensions (metres) and surface area (hectares) of the **dam** measured at the footprint of the **dam**;
    - Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area;
    - **Dam** crest volume (megalitres);
    - Spillway crest level (metres **AHD**).
    - Maximum operating level (metres **AHD**);
    - Storage rating table of stored volume versus level (metres **AHD**);
    - **Design storage allowance** (megalitres) and associated level of the dam (metres
    - AHD);
    - **Mandatory reporting level** (metres **AHD**);
- The **design plan** title and reference relevant to the **dam**;
- The date **construction** was **certified** as compliant with the **design plan**;
- The name and details of **the suitably qualified and experienced person** who **certified** that the **constructed dam** was compliant with the **design plan**;
- Details of the composition and **construction** of any liner;
- The system for the detection of any leakage through the floor and sides of the dam;
- Dates when the **regulated dam** underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
- Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
- **Dam** water quality as obtained from any monitoring required under this authority as at 1 November of each year.

"regulated dam" means any **dam** in the significant or high **consequence category** as **assessed** using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, published by the administering authority, as amended from time to time.

"regulated structure" includes land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

"rehabilitation or rehabilitated" means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria and, where relevant, includes remediation of contaminated land. For the purposes of pipeline rehabilitation, rehabilitation includes reinstatement, revegetation and restoration.

"reinstate or reinstatement" for pipelines, means the process of bulk earth works and structural replacement of pre-existing conditions of a site (i.e. soil surface typography, watercourses, culverts, fences and gates and other landscape(d) features) and is detailed in the Australian Pipeline Industry Association (APIA) Code of Environmental Practice: Onshore Pipelines (2013).

"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.

"**residual drilling material**" means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

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

"**restricted stimulation fluids**" means fluids used for the purpose of stimulation, including fracturing, that contain the following chemicals, unless otherwise provided for under the *Environmental Protection Regulation 2008*:
- petroleum hydrocarbons containing benzene, ethylbenzene, toluene or xylene; or
- chemicals that produce, or are likely to produce, benzene, ethylbenzene, toluene or xylene as the chemical breaks down in the environment.

"restricted stimulation fluids" means restricted stimulation fluids as defined in the Environmental Protection Regulation 2008, or where it is not defined, means a fluid(s) used for the purpose of stimulation, including fracturing, that contain, produce or are likely to produce the following chemicals above the following concentrations:
- Benzene 1 part per billion (ppb);
- Toluene 180 ppb;
- Ethylbenzene 80 ppb;
- o-xylene 350 ppb;
- m-xylene 75 ppb;
- p-xylene 200 ppb.

"revegetation or revegetating or revegetate" means to actively re-establish vegetation through seeding or planting techniques in accordance with site specific management plans.

"secondary protection zone" in relation to a Category A or Category B ESA means an area within 100 metres from the boundary of the 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 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 or significant disturbance or significant disturbance to land or areas" has the meaning in Schedule 12, section 4 of the Environmental Protection Regulation 2008. Land is significantly disturbed if—

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

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

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

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

"statement of compliance" for a condition in an environmental authority has the meaning in section 208 of the *Environmental Protection Act 1994* and is a condition that requires the holder to give the administering authority a statement of compliance about a document or work relating to a relevant activity. The condition must also state—

(a) the criteria (the compliance criteria) the document or work must comply with; and
(b) that the statement of compliance must state whether the document or work complies with the compliance criteria; and
(c) the information (the supporting information) that must be provided to the administering authority to demonstrate compliance with the compliance criteria; and
(d) when the statement of compliance and supporting information must be given to the administering authority.

"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.

"structure" means a dam or **levee**.

"subterranean cave GDE" means:

- an area identified as a subterranean cave in the mapping produced by the Queensland Government and identified in the Queensland Government Information System, as amended from time to time; and
- a cave ecosystem which requires access to groundwater on a permanent or intermittent basis to meet all or some of their water requirements so as to maintain its communities of plants and animals, ecological processes and ecosystem services. Subterranean cave GDEs are caves dependent on the subterranean presence of groundwater. Subterranean cave GDEs have some degree of groundwater connectivity
- and are indicated by either high moisture levels or the presence of stygofauna, or both, referred to in the Queensland Government WetlandsInfo mapping program, as amended from time to time.

Note: the Subterranean GDE (caves) dataset can be displayed through the Queensland Government WetlandInfo mapping program.

Note: the Subterranean GDE (caves) dataset can be obtained from the Queensland Government Information System.

"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.

"suitably qualified and experienced person" in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- for **regulated dams**, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

"suitably qualified third party" means a person who:

- has qualifications and experience relevant to performing the function including but not limited to:
  - a bachelor's degree in science or engineering; and
  - 3 years' experience in undertaking soil contamination assessments; and
- is a member of at least one organisation prescribed in Schedule 8 of the Environmental Protection Regulation 2008; and
- not be an employee of, nor have a financial interest or any involvement which would lead to a conflict of interest with the holder(s) of the environmental authority.

"sump" means a pit in which waste residual drilling material or drilling fluids are stored only for the duration of drilling activities.

"system design plan" means a plan that manages an integrated containment system that shares the required **DSA** and/or ESS volume across the integrated containment system.

"third party auditor" means a suitably qualified person who is either a certified third party auditor or an internal auditor employed by the holder of the environmental authority and the person is independent of the day to day management and operation of the petroleum activity(ies) covered by this environmental authority

"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).

"topsoil" 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.

"total density of coarse woody material" means the total length of logs on the ground greater than or equal to 10cm diameter per hectare and number of logs on the ground greater than or equal to 10cm diameter per hectare.

"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 tunnelling, pipe jacking, auger boring

- microtunnelling and pipe jacking
- on-line replacement

"unacceptable risk" is when the results of a hazard assessment indicates that there is both a high consequence and a high likelihood of an event occurring such that the risk is classified as "high", "very high" or "extreme".

"Upstream Infrastructure Corridor" (UIC) means the linear infrastructure corridor linking the Ruby Central Processing Plant (CPP), Jordan CPP, Kenya Water Treatment Plant, Bellevue CPP and the Condamine Power Station. The UIC contains multiple linear infrastructure items running in parallel, including gas trunklines, water trunklines, gas gathering lines, water gathering lines, water distribution pipelines, above ground 132 kV power lines, below ground 33 kV power lines and fibre optic cable.

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

"void" means any constructed, open excavation in the ground.

"waste and resource management hierarchy" has the meaning provided in section 9 of the *Waste Reduction and Recycling Act 2011* and is the following precepts, listed in the preferred order in which waste and resource management options should be considered—
(a) AVOID unnecessary resource consumption
(b) REDUCE waste generation and disposal
(c) RE-USE waste resources without further manufacturing
(d) RECYCLE waste resources to make the same or different products
(e) RECOVER waste resources, including the recovery of energy
(f) TREAT waste before disposal, including reducing the hazardous nature of waste
(g) DISPOSE of waste only if there is no viable alternative.

"waste and resource management principles" has the meaning provided in section 4(2)(b) of the *Waste Reduction and Recycling Act 2011* and means the:
(a) polluter pays principle
(b) user pays principle
(c) proximity principle
(d) product stewardship principle.

"waste fluids" has the meaning in section 13 of the *Environmental Protection Act 1994* in conjunction with the common meaning of "fluid" which is "a substance which is capable of flowing and offers no permanent resistance to changes of shape". Accordingly, to be a waste fluid, the waste must be a substance which is capable of flowing and offers no permanent resistance to changes of shape.

"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 integrity" the ability of a well to contain the substances flowing through it.

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

"wetland" means:

- areas shown on the Map of referable wetlands which is a document approved by the chief executive on 4 November 2011 and published by the department, as amended from time to time by the chief executive under section 144D of the Environmental Protection Regulation 2008; and must also be

- areas defined under the Queensland Wetlands Program as 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, and possess 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.

The term wetland includes riverine, lacustrine, estuarine, marine and palustrine wetlands; and it does not include a Great Artesian Basin Spring or a subterranean wetland that is a cave or aquifer.

"Wild River Declaration" means a statutory instrument under the *Wild Rivers Act 2005*. A declaration lists the relevant natural values to be preserved and delineates certain parts of the wild river area and the different constraints that may apply in these areas. With reference to environmental authorities for petroleum, each declaration also specifies conditions to be included in a new authority if the activity is to be located within the wild river area.

"year" means a period of 12 months.

END OF ENVIRONMENTAL AUTHORITY