

Environmental Protection Act 1994

Non – Code Compliant Level 2 Environmental Authority (chapter 5A activities)

DERM Permit¹ Number: PEN201696810

Under section 309X of the *Environmental Protection Act 1994* this permit is issued to:

Principal Holder

**Carbon Transport and Storage Corporation
(CTSCo) Pty Ltd
Suite 7 Level 10
320 Adelaide Street
Brisbane 4000**

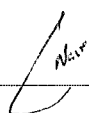
in respect to carrying out a Level 2 chapter 5A activity(ies) as per Section 23 of the *Environmental Protection Regulation 2008* on the relevant resource authorities listed below:

Project Name	Resource Authority Type(s) and Number(s)
Carbon Transport and Storage Corporation Pty Appraisal Project	8

This environmental authority takes effect from 27 January 2011.

The anniversary date of this environmental authority is 27 January.

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



27 JANUARY 2011
Date

Delegate of Administering Authority
Department of Environment and Resource Management

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

Additional advice about the approval

1. This approval pursuant to the *Environmental Protection Act 1994* does not remove the need to obtain any additional approval for this activity which might be required by other State and/or Commonwealth legislation. Other legislation administered by DERM for which a permit may be required includes but is not limited to the:
 - *Aboriginal Cultural Heritage Act 2003*;
 - The contaminated land provisions of the *Environmental Protection Act 1994*;
 - *Nature Conservation Act 1992*;
 - *Forestry Act 1959*;
 - *Water Supply (Safety and Reliability) Act 2008*; and
 - *Water Act 2000*.

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

2. This environmental authority consists of the following Schedules

Schedule A	General Conditions
Appendix B	Definitions
Appendix C	Map of location
Appendix D	Environmentally Sensitive Areas

SCHEDULE A GENERAL CONDITIONS

Condition 1

- (a) This environmental authority does not authorise the carrying out of CO₂ injection tests on EPQ8 ;
- (b) For the purpose of assessing the feasibility of GHG stream storage, the environmental authority authorises the following activities; drilling of GHG appraisal wells, water production and injection test injection test(s) and geophysical survey.

Condition 2

The environmental authority holder must provide written notification to the administering authority within 10 business days of commencement and completion of water production and injection tests on EPQ8

Condition 3 – Significant disturbance

The holder of this environmental authority must ensure that:

- (a) GHG activities do not cause more than 0.1% of the total land area on the relevant GHG permit areas (excluding pipeline licences) that constitute the GHG storage exploration project, to be significantly disturbed at any one time;
- (b) Prior to conducting GHG storage 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 is proposed to take place. The assessment must be submitted to the administering authority at any time upon request;
- (c) The assessment required by Condition 3 (b) 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 (ESA's) and the presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992*; and
- (d) A record of the assessment required by Conditions 3(b) and 3 (c) must be kept and submitted to the administering authority upon request.

Condition 4 – Work program and development plan

The holder of this environmental authority must submit to the administering authority:

- (a) a copy of the initial work program, later work programs and any amendments to work programs when submitted to the Department of Employment, Economic Development and Innovation (DEEDI) under the *Greenhouse Gas Storage Act 2009* for GHG Permits; or
- (b) a copy of the initial development plan, later development plans and any amendments to development plans when submitted to the DEEDI under the GHG Act for GHG storage exploration leases.

Condition 5 – Financial assurance

The holder or proposed holder of this environmental authority must:

- (a) calculate a **financial assurance** as required by the administering authority; and
- (b) attach a completed Schedule of Disturbance to the original and any amended work program or development plan; and
- (c) provide to the administering authority the financial assurance in the amount and form required by the administering authority at the time of submission of any original, later or amended work program or development plan; and maintain the financial assurance until the administering authority is satisfied that no claim is likely to be made on the assurance.

Condition 6 – Category A, B and C Environmentally Sensitive Areas (ESA)

The holder of this environmental authority must ensure that GHG storage exploration activities:

- (a) are not conducted in any Category A, B or C ESA;
- (b) are not conducted within 200m of any category A, B or C ESAs (protection zone); and
- (c) do not involve activities other than **limited GHG storage exploration activities** within 1km of a category A ESA, or within 500m of a listed category B or C ESA (buffer zone).

Note: Indicative ESA mapping is available on the Department of Environment and Resource Management website at

http://www.derm.qld.gov.au/ecoaccess/maps_of_environmentally_sensitive_areas.php.

Condition 7

Limited GHG storage exploration activities carried out in accordance with Condition 6 (c) must be preferentially located in pre-existing areas of clearing or significant disturbance to the greatest practicable extent.

Condition 7A

Despite Condition 6, limited green house gas exploration activities may be undertaken within 200m of, or in the following specified Category C ESAs:

- (a) 'Of Concern' regional ecosystem (RE);
- (b) State Forests;
- (c) Timber Reserves;

provided that they do not overlap with any other Category A, B or C ESA or their associated protection zone.

Condition 7B

Where limited GHG exploration storage activities are proposed to be undertaken within 200m of, or in the Category C ESAs specified in Condition 7A, the holder of this environmental authority must:

- (a) be able to demonstrate that no reasonable or feasible alternative exists; and
- (b) where the ESA is a State Forest or Timber Reserve:
 - i. obtain written approval from the authority responsible for the administration of the *Forestry Act 1959*;
 - ii. comply with all restrictions and conditions contained within the approval required under Condition 7B, subsection (b) (i);
 - iii. where the conditions of the approval required under Condition 7B, subsection (b) (i) conflict with the conditions of this environmental authority, comply with the conditions of this environmental authority; and
 - iv. provide a copy of the written approval required under Condition 7B, subsection (b) (i) to the administering authority upon request.

Condition 7C

Where limited GHG storage exploration activities are undertaken within 200m of, or in the Category C ESAs specified in Condition 7A, disturbance to land must only be located and carried out in areas according to the following order of preference:

- (a) pre-existing cleared areas or significantly disturbed areas less than 200m from a Category C ESA;
- (b) undisturbed areas less than 200m from a Category C ESA;
- (c) pre-existing areas of significant disturbance within a Category C ESA (e.g. areas where significant clearing or thinning has been undertaken within a RE, and/or areas containing high densities of weed or pest species which has inhibited re-colonisation of native regrowth);
- (d) areas where clearing of a Category C ESA is unavoidable.

Condition 7D

Notwithstanding Condition 7A to 7C, where limited GHG storage exploration activities are undertaken within 200m of, or in a Category C ESAs specified in Condition 7A, any vegetation clearing must not exceed any of the following areas:

- (a) if the disturbance relates to an 'Of Concern' RE, 5% of the remnant unit of 'Of Concern' RE as ground truthed and mapped before any activity commences as per Condition 3 (b) and 3 (c) of this environmental authority for the life of the project; and
- (b) more than 30m² for the construction of a sump; or
- (c) six (6) metres in width for tracks; or
- (d) twelve (12) metres in width for pipeline construction purposes.

Condition 7E

For each well site within 200m of, or in a Category C ESA specified in Condition 7A, all reasonable and practical measures must be taken to minimise the area cleared, which must include but not be limited to, for each well site, a risk assessment to determine the minimum amount of disturbance possible.

Condition 7F

Details of any significant disturbance to land undertaken within 200m of, or in a Category C ESA specified in Condition 7A must be kept and submitted to the administering authority upon request.

Condition 7G

If the assessment required by Conditions 3(b) and 3 (c) indicates that an ecosystem mapped as 'Endangered' or 'Of Concern' RE by the Queensland Herbarium should be in a lower conservation value classification and the holder of this environmental authority wishes to undertake activities as if the ecosystem is of the lower conservation value they must notify the administering authority in writing before any significant disturbance to land takes place.

Condition 8

If, within the 20 business days following the lodgement of the notification under Condition 7G the administering authority notifies the holder of this environmental authority, in writing, that the RE mapping requires further validation, then significant disturbance to land in the mapped RE are prohibited until the administering authority provides written advice that significant disturbance to land may proceed.

Condition 9 – Heritage places and archaeological artefacts

The holder of this environmental authority must take all reasonable and practicable measures to avoid impacting upon places of known or potential cultural heritage significance whilst carrying out GHG storage exploration activities.

Condition 10 – Clearing vegetation

The holder of this environmental authority, when carrying out (a) GHG storage exploration activity(ies) must avoid, minimise or mitigate (in order of preference) any impacts on areas of vegetation or other areas of ecological value and avoid clearing mature trees.

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

Condition 11

In the carrying out of the GHG storage exploration activities the holder of this environmental authority must not clear vegetation or place fill, in or within:

- (a) 200 metres from any natural significant **wetland**;
- (b) 100 metres from any natural wetland, **lakes** or **springs**; or
- (c) 100 metres of the **high bank** of any other watercourse.

Condition 12

The holder of this environmental authority, must ensure that clearing of remnant vegetation shall not exceed ten (10) metres in width for the purpose of establishing tracks and 20 metres in width for dual carriageway roads unless otherwise approved by the administering authority in writing.

Condition 13

The holder of this environmental authority must not clear vegetation or place fill:

- (a) in a way which significantly isolates, fragments or dissects tracts of vegetation resulting in a reduction in the current level of ecosystem functioning, ecological connectivity (i.e. stepping stone or contiguous bioregional/local corridor networks) and/or results in an increase in threatening processes (e.g. potential impacts associated with edge effects or introduced species);
- (b) on dispersible soils or highly erodible soils;
- (c) on slopes greater than 10% for activities other than pipelines and wells; or
- (d) in discharge areas.

Condition 14

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

Condition 15 – Topsoil management

Except in areas of highly erodible soils, topsoil must be:

- (a) removed from an area prior to other significant disturbance commencing in the area;
- (b) stockpiled in a manner that will minimise erosion and preserve its biological and chemical integrity; and
- (c) used only for on-site rehabilitation purposes.

Condition 16 – Drilling operations

All waste fluids and muds resulting from drilling and exploration activities must be contained in an appropriately constructed dam or containment structure for disposal, remediation or reuse where applicable.

Condition 17

Oil and synthetic based drilling muds are not authorised to be used under this environmental authority.

Condition 18 – Spill response

A spill response plan must be developed for all pipelines and other plant or equipment under this environmental authority carrying liquids that have the potential to cause environmental harm. The plan must address the following:

- (a) monitoring and detection systems;
- (b) notification and reporting procedures (internal and external);
- (c) call-out procedures and contact lists;
- (d) measures required to halt the spill (i.e. control of pumps, valves etc);
- (e) spill containment procedures;
- (f) procedures to safely recover the spilt material;
- (g) clean up and rehabilitation procedures;
- (h) requirements for the remediation or disposal of contaminated soil;
- (i) personnel responsibilities;
- (j) equipment requirements, location, storage, maintenance and transport;
- (k) communications and logistics; and
- (l) incident investigation procedures.

Condition 19

Workforce training must be conducted in spill response and recovery procedures within one month of an employee commencing on the job and annually thereafter and records of this training must be kept and submitted to the administering authority upon request.

Condition 20 – Contaminant release

Contaminants that are likely to cause environmental nuisance, or serious or material environmental harm, must not be released directly or indirectly to land or waters unless explicitly authorised in this environmental authority.

Condition 21

As soon as the holder of this environmental authority becomes aware of any release not in accordance with this environmental authority, the release must be stopped, promptly rectified using appropriate equipment and remediation methods and all reasonable actions must be taken to prevent a recurrence of the release. The holder of this environmental authority must report in writing to the administering authority any findings and actions taken within 20 business days of the release.

Condition 22 – Bunding

Any container such as a tank or drum that contains material that has the potential to cause material or serious environmental harm if **released** to the environment must be appropriately labelled and be contained in a **bunded** area. Volumes of liquid less than 1000L may be stored without bunding if:

- (a) recovery of any spilt material is possible;
- (b) containers or drums are stored undercover on an impervious base;
- (c) the storage is occurring at least 50m from any waters; and
- (d) absorbent material is readily available for clean up if necessary.

Individual drums may be temporarily stored on spill containment pallets.

Condition 23

The net capacity of a bunded compound in a storage facility must be at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas.

Condition 24

If an automatic fire sprinkler system is installed in or over any bunded tank or drum storage compound, the capacity of the on-site containment must be increased to include the output from the sprinkler system over a 20 minute period.

Condition 25

If the material to be bunded is contained in drums (or other small containers) the bunded area must contain at least 25% of the total volume of the stored product.

Condition 26

The bund floor and wall must be built of materials impervious to the contents of any tank or container within the bund and be capable of preventing the migration of any spillage or leakage outside the bund wall to the environment.

Condition 27

Wall type bunds at tank storage facilities must be at least 0.5 metres high and not exceed 1.5 metres high. The distance between a tank and the bund wall must be at least 1 metre.

Condition 28

A collection sump must be provided in the bund floor and the floor must be graded in such a way that liquids collect in the sump. The sump must not be connected to a sewer drainage system or any waters.

Condition 29

The bund must be designed to minimise rainwater collection. Removal of accumulated rainwater must be done with a manually operated pump, baling from the sump or via a locked valve. Rainwater from the bund must meet water quality criteria for the intended use or receiving environment prior to release.

Condition 30

All pipework must be sited above ground and go over the bund walls where possible. Pumps must still be able to operate when the bund is full of liquid.

Condition 31

Piping and pumping facilities must be arranged so that the potential for leaks to escape the confines of the bund is minimised.

Condition 32 – Flammable and combustible liquids

Flammable and combustible liquids, including petroleum products, must be stored and handled in accordance with the latest edition of Australian Standard 1940 – The storage and handling of flammable and combustible liquids.

Condition 33 – Notification

The holder of this environmental authority must:

- (a) telephone DERM's Pollution Hotline (1300 130 372) and affected landholders or their nominated representatives as soon as practicable, but within 24 hours, after becoming aware of any release of contaminants not in accordance with the conditions of this environmental authority or any event where environmental harm has been caused or threatened; and
- (b) notify the administering authority in writing within 14 days of the initial notification.

Condition 34 – Erosion and sediment control

Erosion protection and sediment control measures must be designed, implemented and maintained to minimise erosion and the release of sediment resulting from carrying out the GHG storage exploration activities.

Condition 35 – Protection of watercourses, wetlands and springs

Unless otherwise approved under relevant legislation, the holder of this environmental authority must not:

- (a) excavate or place **fill** in a way that 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;
- (b) undertake activities that take water from a watercourse, wetland or spring; or
- (c) undertake activities that take **overland flow water** using works that are mentioned as assessable development in a water resource plan under the *Water Act 2000*.

Condition 36 – Activities in a watercourse, wetland or spring

Significant disturbance to the **bed or banks** of a watercourse or wetland, or to a spring must:

- (a) only be caused where necessary for the construction, operation and/or maintenance of roads, tracks and pipelines that are essential for carrying out other authorised GHG storage exploration activities and no reasonable alternative location is feasible; and
- (b) be no larger than the minimum area necessary for the purpose; and
- (c) be designed by an appropriately qualified person; and
- (d) be undertaken and maintained by a person with appropriate skills who has been informed of the design and is appropriately supervised; and
- (e) have rehabilitation commencing as soon as reasonably practicable upon cessation of the relevant authorised GHG storage exploration activities.

Condition 37

Sediment control measures must be implemented to minimise any increase in water turbidity due to carrying out Green House Gas Storage Exploration in the bed or banks of a watercourse or wetland or in a spring.

Condition 38

Routine visual monitoring must be undertaken while carrying out Green House Gas Storage Exploration in a watercourse, wetland or spring. If, due to the GHG storage exploration activities, water turbidity increases in the watercourse, wetland or spring outside contained areas, works must cease and the sediment control measures must be rectified before activities recommence.

Condition 39 Produced Water

The holder of the environmental authority must ensure that water produced during water injection testing is not released to land or waters, other than to an appropriate containment facility required by this authority.

Condition 40

Produced water may be temporarily contained in suitably designed and built storage tanks on site prior to reinjection

Condition 41 Groundwater

If the holder of this environmental authority becomes aware that environmental harm is caused or threatened to be caused, as a result of injection activities, injection must cease immediately.

Condition 42

If water is produced or injected as part of green house gas storage exploration activities, a Water Management Plan addressing the following matters must be developed and submitted to DERM prior to commencement of any GHG storage exploration activities involving water injection tests:

- Estimated volumes and rates of water to be produced and injected;
- A description of the physical, chemical and biological components and their concentrations of the water to be produced;
- How and where the water will be produced, aggregated, stored and kept separate from other **waters** until it is, treated to the quality of the receiving aquifer and reinjected into the source aquifer;
- Where water is proposed to be **treated**, describe the treatment process and demonstrate that the injection fluid has inconsequential reactivity with the target formation and native groundwater it will come into contact with;
- The characteristics of the receiving environment;
- Identify the water quality impact zone and the hydraulic impact zone².
- Identify any injection wells, all existing bores, springs, environmental assets and watercourses connected to groundwater, faults and other geologic features that occur within the water quality impact zone and the hydraulic impact zone.
- Identify the environmental values (EVs) and water quality objectives of the potential water quality impact zone of the target formation in accordance with the *Environmental Protection (Water) Policy 1997* and the *Queensland Water Quality Guidelines 2006*;
- Assess the potential for migration of injection fluid or native groundwater out of the target formation through wells, bores, springs, connected watercourses, faults or other geologic features likely to impact on other aquifers.

² For details on defining the water quality impact zone and the hydraulic impact zone, refer to Chapter 7.3 of the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2) Managed Aquifer Recharge.

- A risk assessment³ identifying potential hazards, their inherent risk, preventative measures for the management of potential hazards and after consideration of the preventative measures, the residual risk of the potential hazards. Potential hazards include but are not limited to:
 - a) Impacts on water quality within the water quality impact zone within the target formation and surrounding aquifers;
 - b) impact on physical integrity of the aquifer or geological formation due to reactions between injection fluid, aquifer material and native groundwater;
 - c) the potential for migration of injected fluid or native groundwater out of the target formation during the injection operations;
 - d) over-pressurisation of target formation and its impact on surrounding aquifers;
 - e) impacts on users or resources;
 - f) impacts on other aquifers of environmental, economic or social importance; and
 - g) impacts on groundwater-dependent ecosystems.
- A groundwater monitoring program that is sufficient for the prediction and early detection of any detrimental impacts on the receiving environment from the injection activity. The program must include but not be limited to:
 - Operational monitoring to manage potential hazards identified in the risk assessment (including details on sampling and analysis methods (including frequency and locations) and quality assurance and control).
 - Verification to assess performance of the injection activities, preventative measures and compliance.
- **Control measures** that will be implemented for each water management option (storage, treatment and reinjection) to prevent or control the release of a contaminant or waste to the environment;
- The indicators or other criteria against which the performance of the water management practices will be assessed;
- Procedures that will be adopted to regularly review the monitoring program and to report to management and the administering authority should unforeseen or non-compliant monitoring results be recorded;
- Procedures that will be implemented to prevent unauthorised environmental harm from unforeseen or non-compliant monitoring results; and
- Procedures for dealing with accidents, spills, failure of containment structures, and other incidents that may arise in the course of the produced water management practices and result in the unexpected release of contaminants or waste to the environment.

Condition 43 Water Injection Cessation Report

- (GB1) The holder of this environmental authority must, within 60 business days of the completion of injection activities, submit an injection cessation report to the administering authority that includes but is not limited to:
- (a) volumes of fluid injected at each well;
 - (b) a risk assessment statement providing details on identified hazards including their inherent risk, summary of the results from the verification monitoring, preventative measures and the residual risk; and
 - (c) a monitoring report outlining the methods and results of verification monitoring undertaken to assess the performance of the injection activities and preventative measures for identified hazards.

Condition 44– Release of contaminants to the atmosphere

The release of **noxious** or **offensive** odour, dust, particulate matter or any other airborne contaminant resulting from the GHG storage exploration activities must not cause environmental nuisance at any sensitive place or commercial place.

Condition 45 – Noise management

If the holder of this environmental authority receives a complaint as defined in Condition 57 about noise from the GHG storage exploration activities at a **sensitive place** or **commercial place**, the holder of this environmental authority must conduct an appropriate investigation and must implement remedial action if the noise from the GHG storage exploration activities exceeds the noise limits at the sensitive place or commercial place in Table 1 – Noise Limits.

Table 1 – Noise limits

Sensitive place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and public holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
L _{A90} , adj, 15 mins	lesser of bg+3 or 48	bg+0	bg+0	bg+0	bg+0	bg+0
L _{A10} , adj, 15 mins	lesser of bg+5 or 50	lesser of bg+5 or 45	bg+0	lesser of bg+5 or 45	lesser of bg+5 or 40	bg+0
L _{A1} , adj, 15 mins	lesser of bg+1 or 55	lesser of bg+10 or 50	lesser of bg+5 or 45	lesser of bg+10 or 50	lesser of bg+10 or 45	lesser of bg+5 or 40
Commercial place						
Noise level dB(A) measured as:	Monday to Saturday			Sundays and public holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
L _{A90} , adj, 15 mins	lesser of bg+5 or 50	bg+0	bg+0	lesser of bg+3 or 43	bg+0	bg+0
L _{A10} , adj, 15 mins	lesser of bg+10 or 55	lesser of bg+10 or 50	lesser of bg+5 or 45	lesser of bg+10 or 50	lesser of bg+10 or 45	lesser of bg+5 or 40
L _{A1} , adj, 15 mins	lesser of bg+15 or 60	lesser of bg+15 or 55	lesser of bg+10 or 50	lesser of bg+15 or 55	lesser of bg+15 or 50	lesser of bg+10 or 45

- bg = **background noise level**
- In the event that measured bg is less than 25 dB(A), then 25 dB(A) is to be substituted for the measured level.
- If the background is higher than the number shown on the second line in any box, the limit is to be background plus 0.

Condition 46

The method of measurement and reporting of noise levels must comply with the latest edition of the Department of Environment and Resource Management's (Environmental Protection Agency's) Noise Measurement Manual or the most recent version of *AS1055 Acoustics – Description and measurement of environmental noise*.

Condition 47 -Vibration management

The holder of the environmental authority must:

- (a) Submit to DERM a list and map of locations where the seismic work will be undertaken prior to the commencement of seismic work;
- (b) Undertake visual monitoring of any infrastructure potentially impacted by seismic work during and after seismic activities, to ensure that no damage has been caused;
- (c) Undertake peak particle velocity monitoring during seismic activities to ensure that ground-borne vibration peak particle velocities caused by seismic operations, when measured at or extrapolated to 50 metres from any noise sensitive or commercial place, does not exceed more than 5mm per second;
- (d) Notify DERM of the commencement date of each location prior to the commencement of seismic activity;
- (e) Notify DERM of the cessation of seismic work at each location;
- (f) Submit to DERM results of any monitoring undertaken for each location within five (5) days from the completion of such monitoring;
- (g) Submit to DERM a final report upon completion of the seismic activity confirming that no damage has been caused to any infrastructure.

Condition 48 – General waste management

Where practicable, general waste generated in carrying out the GHG storage exploration activities must be reused, recycled or removed to a facility that can lawfully accept the waste under the *Environmental Protection Act 1994*.

Condition 49

If no viable alternative exists, solid general waste may be disposed of on site at a facility designed to receive waste at a rate of less than 50t per year only if it is:

- (a) disposed of into a waste disposal trench;
- (b) consolidated, compacted and covered with a layer of inert material following placement of the waste into the trench;
- (c) managed in a way that prevents scavenging and access by vermin;
- (d) managed in a way that prevents or contains wind blown litter; and
- (e) managed in a way that prevents or controls **leachate** generated from the activity.

Condition 50

Waste, including vegetation, must not be burnt.

Condition 51 – Regulated waste

Regulated waste must be removed and transported from the site by a person who holds a current authority to transport such wastes to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*.

Condition 52

Regulated waste generated in carrying out the GHG storage exploration activities can be temporarily stored on site awaiting removal provided:

- (a) it is stored in a place and circumstance in which there is minimal risk of causing contamination to land or waters or a fire hazard; and
- (b) each container of regulated waste stored awaiting movement off site is clearly marked to identify the contents.

Condition 53

A record of all regulated waste (excluding trackable waste) must be kept detailing the following information:

- (a) date of pickup of waste;
- (b) description of waste;
- (c) quantity of waste;
- (d) origin of waste; and
- (e) destination of waste.

Condition 54– Sewage

Disposal of sewage effluent must not cause environmental nuisance or material or serious environmental harm.

Condition 55

Sewage treatment works on the site must not exceed a combined peak design capacity to treat sewage of more than 21 **equivalent persons**.

Condition 56 – Monitoring

The holder of this environmental authority must:

- (a) develop a monitoring program that will demonstrate compliance with the conditions of the environmental authority;
- (b) document monitoring and inspections carried out under the monitoring program and any actions taken; and
- (c) record, compile and keep for a minimum of seven (7) years all monitoring results and data.

Condition 57 - Complaints

The holder of this environmental authority must:

- (a) when the administering authority advises the holder of a complaint that the administering authority does not consider to be frivolous, vexatious or based on a mistaken belief alleging nuisance (e.g. caused by dust or noise), investigate the complaint and advise the administering authority of the action proposed or undertaken in relation to the complaint;
- (b) if the administering authority is not satisfied with the proposed or completed action, undertake monitoring or other action requested by the administering authority; and
- (c) maintain a record of complaints and incidents causing environmental harm and actions taken in response to the complaints or incidents for a minimum of seven (7) years.

Condition 58- Rehabilitation

As soon as practicable after the **end** of GHG storage exploration activities that have caused significant disturbance to land, the holder of this environmental authority must:

- (a) remediate contaminated land caused by GHG storage exploration activities in accordance with EP Act requirements and this authority; and
- (b) undertake works to establish a safe, **stable**, non polluting landform similar to that of surrounding undisturbed areas, including where relevant:
 - i. backfilling any **voids** and trenches;
 - ii. neutralising and /or encapsulating any acid producing or potentially acid producing material;
 - iii. removing or encapsulating in low permeability material saline residues from evaporation ponds;
 - iv. re-establishing surface drainage lines;
 - v. minimising the potential for slumping, subsidence or erosion;
 - vi. reinstating the top layer of the soil profile;
 - vii. respraying any cleared vegetation; and
 - viii. promoting establishment of vegetation of similar species composition and density of cover to the surrounding undisturbed land;

unless the holder of this environmental authority has the written consent of the landowner/holder and the administering authority.

Condition 59– Maintenance of land rehabilitation

Monitoring and maintenance of rehabilitated areas must take place to ensure and demonstrate:

- (a) the stability of landforms;
- (b) that erosion control measures remain effective;
- (c) that stormwater runoff and seepage from rehabilitated areas does not negatively affect the environmental values of any waters;
- (d) that plants show healthy growth and recruitment is occurring; and
- (e) that rehabilitated areas are free of any **declared pest plants**.

Condition 60 – Rehabilitation Success

Rehabilitation can be considered successful when the site can be managed for its designated land use (either similar to that of surrounding undisturbed areas or as otherwise agreed in a written document with

the landowner/holder and the administering authority) without any greater management input than for other land in the area being used for a similar purpose and there is evidence that the rehabilitation has been successful for at least three (3) years.

Condition 61– Infrastructure

All above ground **infrastructure** used for the GHG storage exploration activities must be removed prior to surrender of this environmental authority, except where it is to remain under a resource authority pursuant to *Greenhouse Gas Storage Act 2009* or with the written agreement of the administering authority and the post GHG authority landowner/holder.

Condition 62– Transition of GHG Authority

The holder of this environmental authority must take responsibility for the rehabilitation of any disturbance to land undertaken as part of a GHG storage exploration activity on a GHG authority that has been transitioned (all or in part) due to the grant of a new resource authority over that land which now forms part of the current project.

Condition 63

The holder of this environmental authority must ensure that records containing construction dates of existing and future GHG infrastructure are available to the administering authority upon request.

END OF CONDITIONS

APPENDIX B – 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 *Petroleum and Gas (Production and Safety) Act 2004* and its regulations must be used in that order. **Accepted engineering standards**, in relation to dams, means those standards of design, **construction**, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments and relevant Australian and New Zealand Standards.

Administering authority means:

- a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 of the *Environmental Protection Act 1994* – the local government; or
- b) for all other matters – the Chief Executive of the Department of Environment and Resource Management; or
- c) another State Government Department, Authority, Storage Operator, Board or Trust, whose role is to administer provisions under other enacted legislation.

Appropriately 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.

Archaeological artefact means:

- (a) any artefact that is evidence of an aspect of Queensland's history, whether it is located in, on or below the surface of land, and not
- (b) a thing that is Aboriginal cultural heritage under the *Aboriginal Cultural Heritage Act 2003* or Torres Strait Islander cultural heritage under the *Torres Strait Islander Cultural Heritage Act 2003*.

Archaeological investigation means a physical investigation of the place carried out by a person or persons with recognised qualifications, experience or standing in historical archaeology, mining history, cultural heritage management, or related discipline for the purpose of investigating, recording or conserving archaeological artefacts on the place.

Archaeological place means a place entered in the Queensland heritage register under Part 5 of the *Queensland Heritage Act 1992*.

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

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

Associated works in relation to a dam means:

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

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

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

Beneficial use means:

- (a) with respect to dams, that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:
 - i. of benefit to that owner in that it adds real value to their business or to the general community,
 - ii. in accordance with relevant provisions of the *Environmental Protection Act 1994*,
 - iii. sustainable by virtue of written undertakings given by that owner to maintain that dam, and
 - iv. the transfer and use have been approved or authorised under any relevant legislation; or
- (b) with respect to associated water, see **DERM's** *Coal Seam Gas Water Management Policy* and *Notice of decision to approve a resource for beneficial use – associated water* which can be accessed on Department of Environment and Resource Management's website at www.derm.qld.gov.au.

Bund or banded in relation to spill containment systems for fabricated or manufactured tanks or containers designed to a recognised standard means an embankment or wall of brick, stone, concrete or other impervious material which may form part or all of the perimeter of a compound and provides a barrier to retain liquid. Since the bund is the main part of a spill containment system, the whole system (or banded area) is sometimes colloquially referred to within industry as the bund. The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also used for fire protection, product recovery and process isolation.

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

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

Clearing means:

- (a) in relation to grass, scrub or bush - the removal of vegetation by disturbing root systems and exposing underlying soil (including burning), but does not include—
 - i the flattening or compaction of vegetation by vehicles if the vegetation remains living; or
 - ii the slashing or mowing of vegetation to facilitate access tracks; or
 - iii the clearing of noxious or introduced plant species; and
- (b) in relation to trees - cutting down, ringbarking, pushing over, poisoning or destroying in any way.

Commercial place means a work place used as an office or for business or commercial purposes which is not part of the GHG storage exploration activities and does not include employees accommodation or public roads.

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

CSG water means groundwater that is necessarily or unavoidably brought to the surface in the process of coal seam gas exploration or production. CSG water typically contains significant concentrations of salts, has a high sodium adsorption ratio (SAR) and may contain other contaminants that have the potential to cause environmental harm if released to land or waters through inappropriate management. CSG water is a waste, as defined under section 13 of the *Environmental Protection Act 1994*.

Cultural heritage significance means aesthetic, architectural, historical, scientific, social or other significance, to the present generation or past or future generations, as assessed against the following criteria:

- (a) the place is important in demonstrating the evolution or pattern of Queensland's history;
- (b) the place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage;
- (c) the place has potential to yield information that will contribute to an understanding of Queensland's history;
- (d) the place is important in demonstrating the principal characteristics of a particular class of cultural places;
- (e) the place is important because of its aesthetic significance;
- (f) the place is important in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) the place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.

Dam means a land-based structure (including a **levee**, dyke or bund) or a void that is intended or used to contain, divert or control **flowable substances**, and includes any substances that are thereby contained or controlled by that land-based structure or void and **associated works**. However, a dam does *not* mean a fabricated or manufactured tank or container designed to a recognised standard, nor does a dam mean a land-based structure where that structure is designed to an Australian Standard such as a bund designed for spill containment to AS1940.

Declared pest plants are listed in Schedule 2 of the *Land Protection (Pest and Stock Route Management) Regulation 2003*.

DERM means Queensland Department of Environment and Resource Management.

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

Discharge area is an area in the landscape where the net movement of groundwater is out of the aquifer. This may be expressed by waterlogging where groundwater discharges at the soil surface because of seepage or salting because of evaporation.

Dispersible soils are structurally unstable soils that readily break down into their constituent particles in water (e.g. the clay material disintegrates into particles less than 2 microns across within 24 hours when soil crumbs are submerged in distilled water). These soils are also known as sodic soils and have a high percentage of sodium ions (in soluble or exchangeable form).

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

End means the stopping of the particular activity that has caused a significant disturbance in a particular area. It refers to, among other things, the end of a seismic survey or the end of a drilling operation. It does not refer to the end of all related activities such as rehabilitation. In other words, it does not refer to the 'completion' of the GHG storage exploration activity, the time at which the GHG storage exploration authority ends or the time that the land in question ceases to be part of an authority.

Equivalent person means an equivalent person as defined in item 63 of Schedule 2 in the *Environmental Protection Regulation 2008*.

Evaporation pond means a dam specifically designed for the purpose of disposing of a liquid via evaporation.

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.

Financial assurance means a security deposit, either cash or a bank guarantee, held by the administering authority to cover the potential costs of preventing or minimising environmental harm from, or rehabilitating areas significantly disturbed by, the GHG storage exploration activities.

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

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

GHG authority is an authority defined under the Greenhouse Gas Storage Act, 2009.

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

Hazard category means the level of hazard (low, significant or high) assigned to a dam as a result of an assessment against tables and other criteria in the latest version of the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* published by DERM.

Heritage place means any place that may be of **cultural heritage significance**, or any place with potential to contain **archaeological artefacts** that are an important source of information about Queensland's history.

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 25cm deep or soils less than 25cm deep.

Hydraulic performance means the capacity of a **regulated dam** to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (Version 1.0, 2008)* published on DERM's website under www.derm.qld.gov.au.

Infrastructure means water storage dams, roads and tracks, equipment, buildings and other structures built for the purpose and duration of the conduct of the GHG storage exploration activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams (e.g. evaporation ponds), pipelines and assets that have been decommissioned, rehabilitated and lawfully recognised as being subject to subsequent transfer with ownership of the land.

L_{A90, adj, 15 mins} means the A-weighted sound pressure level exceeded for 90 percent of the measurement time period of 15 minutes, adjusted for noise characteristics including tonality and impulsiveness and measured in the presence of the noise under investigation, using Fast Response.

Regulated waste means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 2008* (whether or not it has been treated or immobilised), and includes–

- (a) for an element – any chemical compound containing the element; and
- (b) anything that has contained the waste.

Release of a contaminant into the environment includes:

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

River Improvement Trust Asset Area means an area within a River Improvement Area declared under the *River Improvement Trust Act 1940* that is or has been subject to restoration or flood mitigation works. The locations and details of these areas can be obtained from the relevant River Improvement Trust.

Sensitive place means:

- (a) a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel;
- (b) a library, childcare centre, kindergarten, school, university or other educational institution;
- (c) a medical centre, surgery or hospital;
- (d) a protected area;
- (e) 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.

Significantly disturbed land or significant disturbance to land means land that is:

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

Examples of a significant disturbance to land:

- (a) areas where soil has been compacted, removed, covered, exposed or stockpiled;
- (b) areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion;
- (c) areas where land use suitability or capability has been diminished;
- (d) areas within a watercourse, wetland, or spring where GHG storage exploration activities have occurred causing the loss of habitat or a decline in ecological processes and requiring human intervention to restore or stabilise the disturbed area and/or protect the quality of the water downstream of the disturbance;
- (e) areas submerged by waste or water;
- (f) areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after GHG storage exploration activities have ceased; or
- (g) areas where land has become contaminated land and a suitability statement has not been issued.

L_{A10, adj, 15 mins} means the A-weighted sound pressure level exceeded for 10 percent of the measurement time period of 15 minutes, adjusted for noise character including tonality and impulsiveness and measured in the presence of the noise under investigation, using Fast Response.

L_{A1, adj, 15 mins} means the A-weighted sound pressure level exceeded for 1 percent of the measurement time period of 15 minutes, adjusted for noise character including tonality and impulsiveness and measured in the presence of the noise under investigation, using Fast Response.

Level 1 environmental authority means an environmental authority (chapter 5A activities) for a level 1 chapter 5A activity pursuant to section 23 of the *Environmental Protection Regulation 2008*.

Leachate means a liquid that contains soluble, suspended or miscible contaminants likely to have been derived from material which is stored, processed or disposed of on site and which the liquid has passed through or emerged from, or is likely to +have passed through or emerged from.

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

Limited GHG storage exploration activities mean activities including geophysical surveys (including seismic activities), well sites, well pads, sumps, flare pits, flow lines and supporting access tracks. Limited GHG storage exploration activities do not include the construction of production infrastructure for processing or storing petroleum or by-products, dams, compressor stations, campsites/workforce accommodation, power supplies, waste disposal or other supporting infrastructure for the project.

Limited regulated waste means any of the following regulated wastes, asbestos, clinical waste or quarantine waste that has been rendered non-infectious, fish processing waste, food processing waste, poultry processing waste, tyres or treatment tank sludge or residue produced in the carrying out of an activity in relation to sewage treatment and water supply activities.

Noxious means harmful or injurious to health or physical well being.

'Of concern' regional ecosystem means an 'of concern' regional ecosystem identified in the database maintained by the Department of Environment and Resource Management called 'Regional ecosystem description database' containing regional ecosystem numbers and descriptions. The database is available for inspection on the Department of Environment and Resource Management's website at www.epa.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/.

Offensive means causing unreasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

Overland flow water means water, including floodwater, flowing over land, other than in a watercourse or lake:

- (a) after having fallen as rain or in any other way; or
- (b) after rising to the surface naturally from underground.

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

Petroleum authority is:

- (a) a 1923 Act petroleum tenure granted under the *Petroleum Act 1923*; or
- (b) a resource authority granted under the *Petroleum and Gas (Production and Safety) Act 2004*; or
- (c) a licence, permit, pipeline licence, primary licence, secondary licence or special prospecting authority granted under the *Petroleum (Submerged Lands) Act 1982*.

Regulated dam means any dam in the significant or high hazard category as assessed using the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (Version 1.0, 2008)* published by **DERM** on its website under www.derm.qld.gov.au.

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

- (a) areas off the petroleum authority (e.g. roads or tracks which provide access to the petroleum authority);
- (b) areas previously significantly disturbed which have been rehabilitated to the administering authority's satisfaction;
- (c) areas under permanent infrastructure (e.g. roads, bridges, buildings) as agreed by the administering authority and landholder;
- (d) areas that were significantly disturbed prior to the grant of the petroleum authority, unless those areas are re-disturbed by the petroleum authority holder during the course of carrying out the GHG storage exploration activities or were conducted on a petroleum authority that was replaced by the current authority (e.g. through conditional surrender or the transition from an authority to prospect to a GHG exploration permit).

Site means the area within the petroleum authority or authorities to which this environmental authority relates.

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

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

State heritage place means a place entered in the Queensland heritage register under Part 4 of the *Queensland Heritage Act 1992*.

suitably qualified and experienced person in relation to dams means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, or at the relevant time holds a 'deemed registration' within the meaning of the *Mutual Recognition (Queensland) Act 1992*; and has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

- (a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- (b) a total of five years of suitable experience and demonstrated expertise in the geomechanics of dams with particular emphasis on stability, geology and geochemistry, and
- (c) a total of five years of suitable experience and demonstrated expertise each, in three of the following categories:
 - investigation and design of dams.
 - Construction, operation and maintenance of dams.
 - hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology.
 - hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes.
 - hydrogeology with particular reference to seepage, groundwater.
 - solute transport processes and monitoring thereof.
 - dam safety.

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.

Thing means a material object without life or consciousness or some entity, object or creature which is not or cannot be specifically designated or precisely described.

Threatening processes are processes, features and actions that can have a detrimental effect upon the health and viability of an area of vegetation. For example, altered hydrology, land use practices, invasion by pest and weed species, land degradation, edge effects and fragmentation.

Tolerable limits means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values. For example, a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation.

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 300mm in depth from the natural surface.

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

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

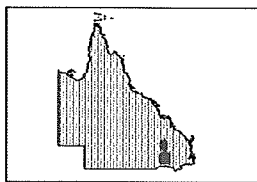
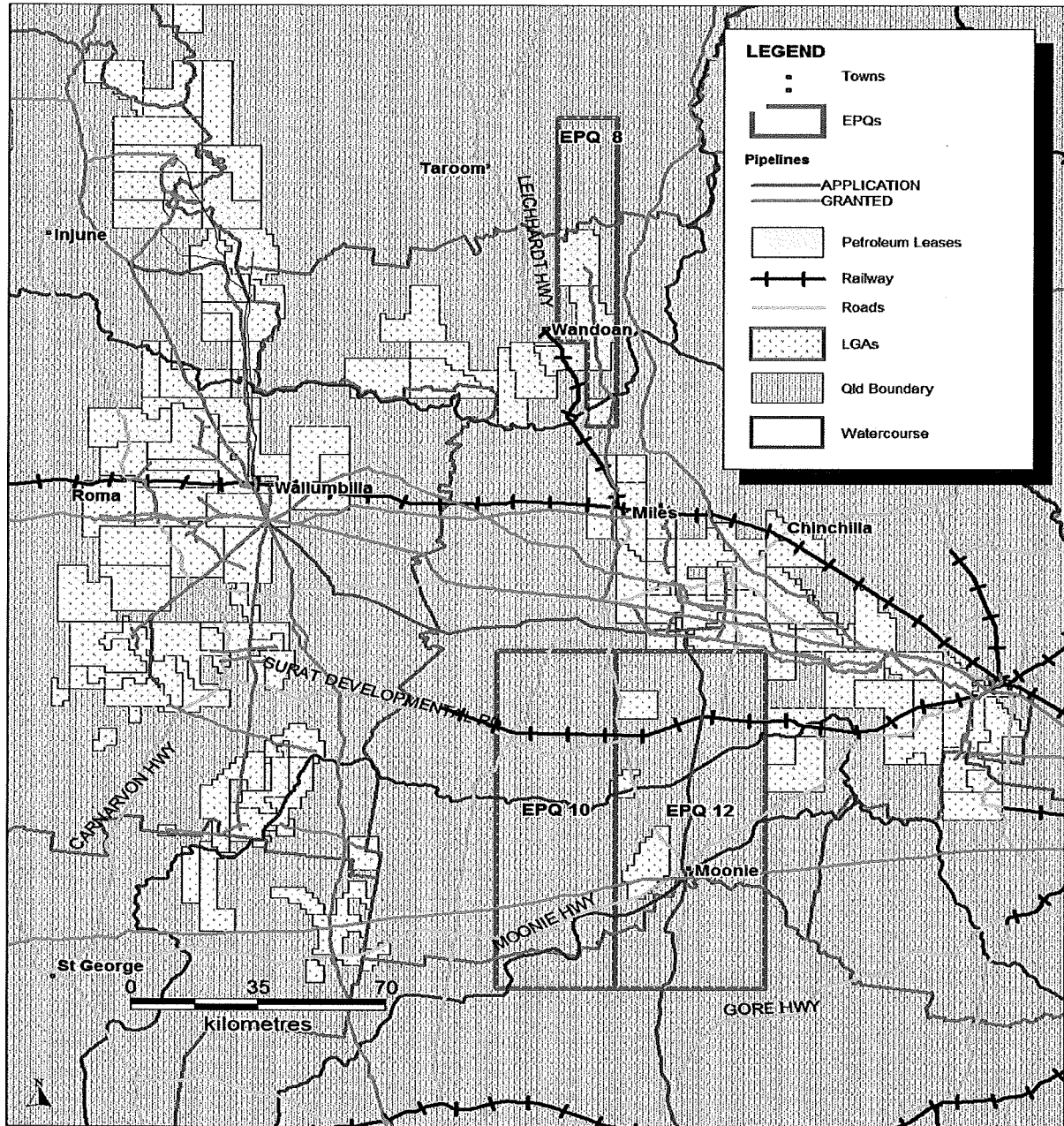
Watercourse is a creek, river or stream

- (a) in which water flows intermittently or permanently in a visibly defined channel, whether artificial, artificially improved or natural; and
- (b) that has evidence of biological dependence on any water that flows in the creek, river or stream or on the banks or bed.

Wetland means an area shown as a wetland on a 'Map of referable wetlands', a document approved by the chief executive (environment). A map of referable wetlands can be viewed at www.derm.qld.gov.au.

Wild river declaration is 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 [environmental] authority if the activity is to be located within the wild river area.

APPENDIX C – LOCALITY MAP OF EPQ, 8, 10 and 12



EPQ 8, 10 and 12

CTSCo Pty Ltd

Map Produced by
CTSCo Pty Ltd
Date: Jan 2011

APPENDIX D – ENVIRONMENTALLY SENSITIVE AREAS

Category A and Category B environmentally sensitive areas

Category A and Category B environmentally sensitive areas are listed in Section 25 and 26 respectively of the *Environmental Protection Regulation 2008*.

Category C environmentally sensitive areas

LAND AREA CLASSIFICATION	ADMINISTERING LEGISLATION	ADMINISTERING AUTHORITY
Nature Refuges	<i>Nature Conservation Act 1992</i>	Department of Environment and Resource Management
Koala Habitat Area	<i>Nature Conservation (Koala) Conservation Plan 2006</i>	Department of Environment and Resource Management
An area identified as essential habitat by the DERM for a species of wildlife listed as endangered, vulnerable, near threatened or rare under the <i>Nature Conservation Act 1992</i>	<i>Nature Conservation Act 1992</i>	Department of Environment and Resource Management
Declared Catchment Areas	<i>Water Act 2000</i>	Department of Environment and Resource Management and/or Relevant Storage Operator or Board
State Forest or Timber Reserves	<i>Forestry Act 1959</i>	Department of Environment and Resource Management
Resources reserves	<i>Nature Conservation Act 1992</i>	Department of Environment and Resource Management
Any wetland shown on the Map of Referable Wetlands available from DERM's website	<i>Environmental Protection Act 1994</i>	Department of Environment and Resource Management
"Of concern" regional ecosystems identified in the database maintained by DERM called 'Regional ecosystem description database' containing regional ecosystem numbers and descriptions.	<i>Nil</i>	Department of Environment and Resource Management

Important Note: Regional ecosystem classification is determined according to the Queensland Herbarium *Biodiversity Status Classification*. Information on ERE's is maintained by the DERM on the Regional Ecosystem Description Database.