

# Coordinator-General's Report

## Central Queensland Gas Pipeline

Report evaluating the Environmental Impact Statement,  
pursuant to Section 35 of the *State Development and  
Public Works Organisation Act 1971* (Qld)

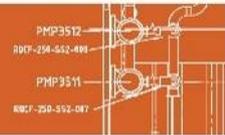
October 2007

# Central Queensland Gas Pipeline

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# Coordinator-General's Report - Synopsis

Enertrade, a Government Owned Corporation, is proposing to build, own and operate approximately 450km of high pressure gas transmission pipeline in Central Queensland from Moranbah to Gladstone. Enertrade is an active participant in Australia's competitive energy market (electricity and gas) specifically targeting large industrial customers with diverse energy needs. Enertrade has the rights to the generation output from several privately owned power stations, owns one power station and two gas pipelines.

Enertrade has experience in delivery of gas pipelines in Queensland. In the period 2003 to 2004, Enertrade developed and constructed the 400 km North Queensland Gas Pipeline (NQGP).

Enertrade plans to build on this success by undertaking development and construction of the proposed 450km pipeline that will provide an alternative gas supply into Gladstone, promote further development of the resources of the Bowen Basin and link Townsville to the State and national gas transmission grid via Enertrade's existing NQGP between Moranbah and Townsville.

The Project encompasses construction of approximately 450km of 300-450mm diameter steel pipeline along a generally 30m wide easement and a future upgrade to the existing Enertrade compressor station at Moranbah. The proposed pipeline will run from the compressor station at Moranbah generally south to south-east to Gladstone through the local government areas of Belyando, Broadsound, Duaringa, Fitzroy and Calliope Shires and the Gladstone City Council.

Construction will be undertaken over approximately a 12 month period and capital investment will be in the order of \$A220-400 million depending upon the final pipe size selected. The pipeline will be initially configured to deliver 20 Petajoules (PJ) per annum but could be expanded through further gas compression to approximately 50 PJ per annum.

An Initial Advice Statement was lodged with the Coordinator-General on 30 November 2004 and the project was declared to be a "significant project for which an EIS is required", pursuant to s.26(1)(a) of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act), on 16 December 2004. The proposal was declared a 'controlled action' under the *Commonwealth Government Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) on 12 April 2005. The controlling provisions under Part 3, Division 1 of the Act are s.18 and 18A (Listed threatened species and communities).

The EIS was advertised in the Courier Mail, the Rockhampton Morning Bulletin, and the Gladstone Observer on 7 October 2006, and in the Emerald Central Queensland News on 6 October 2006, inviting submissions from the public until CoB on Monday, 20 November 2006.

A Supplement to the EIS (SEIS) was prepared, to address matters raised in submissions on the EIS, and forwarded on 6 August 2007 to agencies and those who made submissions.

This Report has been prepared pursuant to s.35 of the SDPWO Act to evaluate the environmental effects of the Project.

In evaluating the environmental effects, I have considered: the EIS, SEIS and detailed Environmental Management Plans (EMPs) prepared by the Proponent; public submissions received on the EIS; comments on the EIS and other advice provided by State and local government authorities (Advisory Agencies); and other relevant information.

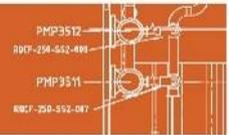
Having regard to the above, I consider that the EIS for the Central Queensland Gas Pipeline Project has adequately addressed the environmental and other impacts of the project, and generally meets the requirements of the Queensland Government for impact assessment in accordance with the provisions of Part 4 of the SDPWO Act.

With the exception of the Gladstone low pressure lateral pipeline, I recommend that the project can proceed as described in the EIS and that the potential adverse impacts associated with the project can be adequately addressed through the following measures:

- implementation of the project generally in accordance with the arrangements described in the EIS, and the Management Commitments nominated therein;
- finalisation and implementation of appropriate Environmental Management Plans as drafted in the EIS; and
- attachment of conditions from this report (pursuant to s.47C of SDPWO Act) as conditions for development approvals under the *Environmental Protection Act 1994* and (pursuant to s.49B of SDPWO Act) and conditions for a proposed pipeline licence under the *Petroleum and Gas (Production and Safety) Act 2004*, as listed in Appendix 1 and Appendix 2.

I find that there is insufficient information for me to conclude that the pipeline and route for the low pressure lateral past the Gladstone City Gate Station is acceptable. I will therefore state my refusal of approval for the low pressure lateral pipeline through Gladstone City beyond the Gladstone City Gate Station.

.....  
**Colin Jensen**  
**Coordinator-General**  
**Date: October 2007**



# 1.0 Introduction

This Report has been prepared pursuant to s.35 of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act) and provides an evaluation of the Environmental Impact Statement (EIS) process for the Central Queensland Gas Pipeline Project (“the Project”). The EIS was conducted by Enertrade.

An Initial Advice Statement was lodged with the Coordinator-General on 30 November 2004 and the project was declared to be a “significant project for which an EIS is required”, pursuant to s.26(1)(a) of the SDPWO Act, on 16 December 2004. The proposal was declared a ‘controlled action’ under the *Commonwealth Government Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) on 12 April 2005.

The objective of this Coordinator-General’s Report is to summarise the key issues associated with the potential impacts of the project on the physical, social and economic environments at the local, regional, state and national levels. It is not intended to record all the matters which were identified and subsequently settled. Instead, it concentrates on the substantive issues identified during the EIS process.

This report represents the end of the State impact assessment process. It presents:

- an evaluation of the project, based on information contained in the EIS and SEIS, submissions made on the EIS, and information and advice from Advisory Agencies and other parties; and
- states conditions under which the project may proceed.

## 2.0 Project description

### 2.1 The Proponent

The Proponent for the Central Queensland Gas Pipeline (CQGP) is Enertrade, a Government Owned Corporation. Enertrade is an active participant in Australia's competitive energy market (electricity and gas) specifically targeting large industrial customers with diverse energy needs. Enertrade has the rights to the generation output from several privately owned power stations, owns one power station and two gas pipelines.

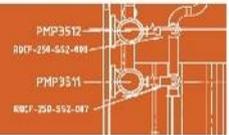
The pipeline will be owned and operated by Enertrade. Enertrade has experience in delivery of gas pipelines in Queensland. In the period 2003 to 2004, Enertrade developed and constructed the 400 km North Queensland Gas Pipeline (NQGP). Enertrade plans to build on this success by undertaking development and construction of the proposed 450 km pipeline that will eventually connect the NQGP to the State and eventually the national transmission network.

### 2.2 The Project

Enertrade is proposing to build, own and operate approximately 450km of high pressure gas transmission pipeline in Central Queensland from Moranbah to Gladstone. The Project encompasses construction of approximately 450km of 300-450mm diameter steel pipeline along a generally 30m wide easement and a future upgrade to the existing Enertrade compressor station at Moranbah. The proposed pipeline will run from the compressor station at Moranbah generally south to south-east to Gladstone through the local government areas of Belyando, Broadsound, Daringa, Fitzroy and Calliope Shires and the Gladstone City Council.

The area lies through the Brigalow Belt Bioregion and is predominantly grazing and agricultural land with rural living allotments and horticulture around the Gladstone region. The existing compressor station is located within the CH4 Petroleum Lease (PL) 191 in the shire of Belyando. The original site selection for the compressor station took into account mitigation of noise impacts on residential areas, 24 hour access, avoidance of mining conflicts, availability of suitable land, protection of watercourses and sensitive environments, and flood protection. The existing site has sufficient land space to accommodate future compression requirements including at least four additional compressor units and duplication of dehydration facilities with minimal additional land clearing.

Construction will be undertaken over approximately a 12 month period and capital investment will be in the order of \$A220-400 million depending upon the final pipe size selected. It will be initially configured to deliver 20 Petajoules (PJ) per annum but could be expanded through further gas compression to approximately 50 PJ per annum.



## 2.3 Project rationale

This Project will provide an alternative gas supply into Gladstone, promote further development of the resources of the Bowen Basin and link Townsville to the State and national gas transmission grid via Enertrade's existing NQGP between Moranbah and Townsville.

The Queensland Government is committed to encouraging the increased use of gas within the State and to promoting creative options for expanding gas utilisation. The Queensland Government's Cleaner Energy Strategy 2000 outlines the Government's commitment to developing competitive gas and electricity markets to deliver lower energy prices and greater choice to customers. In addition the supply of competitively priced gas and electricity to provincial cities, such as Gladstone and Townsville, is seen by the Queensland Government as an important element of its regional development strategy and fundamental to the Government's efforts in attracting industry and promoting value adding to the State's abundant natural resources.

The construction of the project will enable alternative sources of gas to the industrial centre of Gladstone as well as into Townsville. The CQGP will diversify the State's energy mix, promote competition in the Central Queensland industrial region, and ensure competitive energy pricing to encourage further major project development in the region. The pipeline will also provide a strategic link for gas supply between the North Bowen Basin and Gladstone and provides scope for future interconnection to southeast Queensland markets such as Brisbane.

The proposed pipeline would provide the catalyst for further development of coal seam gas reserves in the Bowen basin. It would source gas from the existing Moranbah coal seam gas field which is currently the subject of intensive drilling to increase certified reserves, and the pipeline route is designed to be close to potential coal seam gas resources currently being appraised between Moranbah and Dysart.

## 3.0 Impact Assessment Process

### 3.1 Significant Project Declaration & Controlled Action

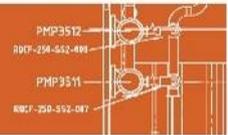
An Initial Advice Statement (IAS) was lodged with the Coordinator-General on 30 November 2004 and the project was declared to be a “significant project for which an EIS is required”, pursuant to s.26 of the SDPWO Act, on 16 December 2004.

The project was referred to the Australian Government under the EPBC Act on 30 March 2005 (Department of Environment and Water Resources reference number EPBC 2005/2059). The proposal was determined to be a ‘controlled action’ under the EPBC Act on 12 April 2005. The controlling provisions under Part 3, Division 1 of the Act are s.18 and 18A (Listed threatened species and communities).

### 3.2 Review and refinement of the EIS Terms of Reference

An IAS was released for public information and Draft Terms of Reference (ToR) were advertised for public comment on 21 May 2005 in the Gladstone Observer, the Rockhampton Morning Bulletin, and the Courier Mail. Comments were accepted until close of business (CoB) on 20 June 2005. A final ToR was issued to the Proponent on 18 July 2005. Comments on the ToR were received from:

- Department of Main Roads;
- Department of Natural Resources and Mines;
- Department of Primary Industries and Fisheries;
- Department of Housing;
- Environmental Protection Agency;
- Queensland Health;
- Department of Transport;
- Dept of Emergency Services;
- Dept of Aboriginal and Torres Strait Islander Policy;
- Dept of Employment and Training;
- Department of the Premier and Cabinet;
- Queensland Treasury;
- Powerlink;
- Gladstone City Council;
- Calliope Shire Council;
- Fitzroy Shire Council;
- Belyando Shire Council;
- Broadsound Shire Council; and
- Department of Environment and Water Resources.



### 3.3 Public review of the EIS

The EIS was advertised in the Courier Mail, the Rockhampton Morning Bulletin, and the Gladstone Observer on 7 October 2006, and in the Emerald Central Queensland News on 6 October 2006, inviting submissions from the public until CoB on Monday, 20 November 2006. The EIS was available for purchase as hard copy for \$150 and free of charge as a CD copy from the Proponent.

The EIS was displayed at:

- Gladstone and Rockhampton State Development Centres; and
- Environmental Protection Agency Customer Service Centre, Brisbane.

The following Advisory Agencies and other stakeholders were approached formally to conduct an evaluation of the EIS:

- Department of Aboriginal and Torres Strait Islander Policy;
- Department of Communities;
- Department of Emergency Services;
- Department of Education and Training;
- Department of Mines and Energy;
- Department of Industrial Relations;
- Department of Housing;
- Department of Local Government, Planning, Sport and Recreation;
- Department of Main Roads;
- Department of Natural Resources and Water;
- Department of Primary Industries and Fisheries;
- Department of the Premier and Cabinet;
- Department of State Development, Rockhampton and Gladstone;
- Department of Transport;
- Environmental Protection Agency;
- Queensland Treasury, Office of Government Owned Corporations;
- Queensland Health;
- Queensland Rail;
- Belyando Shire Council;
- Broadsound Shire Council;
- Gladstone City Council;
- Calliope Shire Council;
- Fitzroy Shire Council;
- Industry Capability Network (Qld);
- Fitzroy Basin Association;
- Powerlink Queensland; and
- Department of Environment and Water Resources.

Copies were sent to the following libraries:

- State Library of Queensland;
- National Library of Australia; and
- Premier's and Cabinet Library.

Following the public review of the EIS a total of 19 submissions were received from:

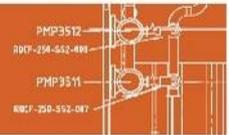
- Belyando Shire Council;
- Fitzroy Shire Council;
- Calliope Shire Council;
- Gladstone City Council;
- Department of Communities;
- Department of Main Roads;
- Department of Natural Resources and Water;
- Environmental Protection Agency;
- Department of Mines and Energy;
- Department of Primary Industries and Fisheries;
- Department of Education and Training;
- Department of Housing;
- Anglo Coal;
- Bowen Central Coal;
- New Hope Coal;
- Tony McCray;
- Charles and Catherine O'Neill;
- Bronwyn McDonald;
- Peter Young Surveys; and
- Payne Butler and Lang on behalf of Peter and Estelle Bambling.

The substantive issues raised in submissions included the following subjects:

- Workforce accommodation and housing;
- Construction camps;
- Route selection;
- Road impacts – local and Main Roads;
- Soils and erosion including acid sulfate soils;
- Interactions with coal resources;
- Hydrotest water source and disposal;
- Watercourse and wetlands disturbance;
- Air emissions from compressor station;
- Environmental Management Plan development;
- Interaction with State Forests and Nature Refuges; and
- Safety and risk.

Submissions were forwarded to Enertrade. Following discussions with Enertrade and its technical consultants, it was determined that preparation of a Supplement to the EIS was necessary.

The Supplement to the EIS was forwarded on 6 August 2007 to agencies and those who made submissions.



The following agencies and others made comment or provided advice, which has been subsequently noted by Enertrade, discussed in this report, and has resulted in certain issues included as conditions in this Report:

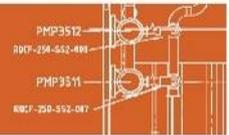
- Department of Main Roads;
- Department of Natural Resources and Water (NRW);
- Department of Primary Industries and Fisheries (DPIF);
- Broadsound Shire Council;
- Gladstone City Council;
- Department of Minerals and Energy;
- New Hope Coal Resources;
- Anglo Coal;
- Bowen Basin Coal;
- Queensland Health; and
- Environmental Protection Agency (EPA).

The principal substantive issues raised in submissions are discussed individually in section 8 of this Report.

## 4.0 Approvals for the Project

The following are the major areas of approval and permits that will be required for the Project:

<b>Legislation</b>	<b>Subject</b>	<b>Concurrence Agency or approval entity</b>
Petroleum And Gas (Production and Safety) Act	Survey Licence Pipeline Licence	Department of Mines and Energy
Environmental Protection Act	Environmental Authorities for construction and operation of gas pipeline: ERA 21C and ERA 21E	EPA
Environment Protection and Biodiversity Conservation Act (Cwth)	Approval under Part 9 for an action affecting a matter of national environmental significance	Minister for the Environment and Heritage
Coastal Protection and Management Act	Permit for works in tidal areas	EPA
Nature Conservation Act	Authority to move disturb destroy protected plants	EPA
Transport Infrastructure Act	Permit to work on State owned Roads and Railways; Approval for temporary or permanent access to state roads	Department of Main Roads / Queensland Rail
Water Act	Permit to draw water from river, creek stream or groundwater	Department of Natural Resources and Water
Fisheries Act	Permit to construct waterway barriers; permit for disturbance to marine plants	Department of Primary Industries and Fisheries
Fire and Rescue Authority Act	Permit to light fires	Department of Emergency Services
Food Act	Campsite food preparation areas – Food Safety Standards	Local Government
Other	Campsite waste disposal	Local Government
Other	Campsite road access	Local Government
Other	Local road impact assessment	Local Government



The Coordinator-General has the role under the SDPWO Act of reviewing the EIS and recommending to agencies which will consider approvals required for the project (except the Australian Minister for the Environment and Heritage), whether:

- The approval should be given or refused; and
- Conditions to be imposed on the approval.

In this case it applies to the following approvals:

- Pipeline Licence; and
- Environmental Authority.

The Coordinator-General's Report does not make recommendations on the Permits as shown above, but may make recommendations and conditions which ensure that the Proponent provides sufficient information and applies for permits at the appropriate time.

Under a Bilateral Agreement with the Australian Government, the Coordinator-General's Report will be used by the Australian Government Minister for the Environment and Heritage to make an assessment of the controlled actions for the purposes of the EPBC Act.

## 5.0 Key findings of the EIS

### ***Natural Environment***

No flora or fauna species of threatened conservation status are likely to be adversely affected by the Project. Approximately 24 hectares of National and State “endangered” regional ecosystems are affected by the corridor (1.7% of the corridor). Other communities such as Semi-evergreen Vine Thicket have been avoided by the corridor. Smaller occurrences of state and national vulnerable or endangered regional ecosystems of black ironbox and *cycas megacarpa* may be affected and Significant Area Plans within the EMP have been instituted to mitigate impacts. Fauna habitat for about 15 protected species exists near or on the corridor, but the home range of these species is wide and so the impacts will be slight. Mitigation measures for flora and fauna impacts that were adopted successfully on the North Queensland Gas Pipeline will be utilised. This includes trench protection for wildlife and an accredited fauna handler for fauna rescue and research. Weed management programs and rehabilitation of the corridor using native species will be a feature of the reinstatement program.

### ***Matters of National Environmental Significance***

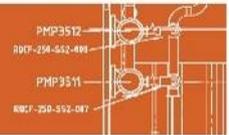
The vegetation to be cleared for the pipeline corridor encompasses approximately 24 hectares of Australian endangered ecological communities of Bluegrass and Brigalow. However these communities are widely represented in the region, and the impact of the corridor will not affect the status of these communities.

### ***Water Resources***

The proposed corridor traverses a number of major watercourses including the Fitzroy, Calliope and Mackenzie Rivers and Raglan Creek. Numerous ephemeral watercourses will also be crossed. Groundwater is generally well below the depth of burial of the pipeline, but seasonal factors may bring groundwater within the trench depth in a few parts of the route. Crossing of watercourses will be managed by careful selection of locations, where bank stability and watercourse impacts will be minimised. Large rivers will be crossed by Horizontal Directional Drilling under the stream bed.

### ***Cultural Heritage***

Historic and Indigenous cultural heritage considerations have been taken into account in the planning of the corridor. Cultural Heritage Management Plans complying with the *Aboriginal Cultural Heritage Act 2003* have been negotiated with indigenous parties under Indigenous Land Use Agreements. This applies to the whole route and encompass cultural heritage surveys and monitoring by traditional owners during construction.



## ***Air Quality***

The major potential air quality impact during construction may be dust generation, but because the route is largely distant from habitation, the most affected population will be the workforce. Dust suppression methods will be employed to minimise nuisance and ensure workforce health and safety.

There will be no initial change to operational air emissions from the existing compressor station at Moranbah, as there will be no expansion to the station initially. Nevertheless, modelling for future possible expansions indicates that additional compressor units will still yield air quality well within criteria from the Environmental Protection Policy (Air).

## ***Workforce Accommodation***

Construction would involve up to 250 persons at peak time. Crews would work cycles of typically 26 days on and 9 days off, on a fly in-fly out basis. While on site they will be accommodated at self-contained construction camps and moved by bus to the worksite. Location of camps will be discussed with local authorities, but be placed away from populated areas at several positions along the route following the pipeline progress. The approximate period of field construction is 8 months.

## 6.0 Key management strategies of the EIS

### 6.1 Environmental Management Plans

The Project has developed a suite of Construction and Operations Environmental Management Plans (EMPs) to guide its development, implementation and operation.

#### **CONSTRUCTION**

##### **Construction Environmental Management Plan:**

This consists of three sections:

*Environmental Management Plans* for:

- Air;
- Water;
- Noise and Vibration;
- Waste;
- Land – Erosion Management;
- Land – Flora and Fauna;
- Nature Conservation Areas; and
- Community.

*Construction Management Plans* for:

- Alignment, Access and Worksite Selection;
- Campsite Offices and Site Management;
- Clearing and Grading;
- Trenching;
- Pipe Stringing, Bending and Welding;
- Pipelaying and Backfilling;
- Hydrotesting;
- Clean Up and Rehabilitation;
- Handling and Disposal of Dangerous Goods;
- Biting Insects Management;
- Fire Management; and
- Safety and Emergency Management.

*Significant Area Plans* for:

- Brigalow;
- Bluegrass;
- Black Ironbox;
- Cycas Megacarpa;
- Protected Species Habitat Areas;
- Horizontal Directional Drilling Crossings;
- Acid Sulphate Soil; and
- Blasting.

**Construction Weed Management Plan**

**Pre-Construction Weed Management Plan**

**Road Use Management Plan**

**Cultural Heritage Management Plans (Series involving individual indigenous land areas)**

**OPERATION**

**Environmental and Cultural Management Plan dealing with:**

- Soil and Sediment
- Noise;
- Air;
- Stormwater;
- Flora and Fauna;
- Heritage
- Access and Security;
- Hazardous Materials;
- Waste;
- Mosquito Management;
- Safety and Emergency Management;
- No net loss Area (NQGP);
- Dismantling of Above Ground Facilities;
- Hardstand Demolition; and
- Rehabilitation.

**Weed Management Plan**

## 6.2 Management commitments

Enertrade has provided in the EIS and Supplement to the EIS a set (154 items) of Management Commitments that are intended to deliver on both the project design proposals and the impact mitigation strategies contained in the EIS. They cover the subjects in the following table:

Commitment Group	Subject
1	Project Development Principles
2	Ecological and Project Objectives
3	Project Construction Practices
4	Environmental Management Practices

To a large extent these Management Commitments are implemented by inclusion in the detailed management strategies of relevant sections of the above series of Environmental Management Plans – both for Construction and Operations. As shown above these cover the project management areas of environmental, construction, special area, weed management, road use, cultural heritage, and operational management.

The Proponent intends that these Environmental Management Plans are a formal part of the Project Plan for implementation of the pipeline project by itself and its contractor. Each of these plans details objectives, management activities, and performance criteria which will guide both planning, day-to-day management and monitoring of the project.

In this respect I believe that implementation of these EMPs will serve to implement the Management Commitments made in the EIS and Supplement.

Therefore I nominate the following Condition:

#### **Condition 1**

**The Proponent and/or its contractor shall finalise the Environmental Management Plans (Construction and Operations) to the satisfaction of EPA prior to commencement of construction of the pipeline and include the Plans in the Project Plan for the Central Queensland Gas Pipeline during implementation.**

**EPA is the agency responsible for this condition.**

## 7.0 Matters of National Environmental Significance

### 7.1 Project assessment and approvals

The CQGP has been declared a significant project by the Coordinator-General, and the former Minister of the Environment and Heritage determined that the Project is a controlled action under the EPBC Act. As a consequence, the proposal will require approval by the Minister for the Environment and Water Resources as well as the State Minister.

To build and operate the gas pipeline, Enertrade will require a pipeline licence under the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act) from the Minister for Mines and Energy, and an Environmental Authority for Environmentally Relevant Activities (ERAs) construction (ERA 21(c)) and operation (ERA 21(e)) from the delegate of the Queensland Minister for Environment under the *Environmental Protection Act 1994* (EP Act). All aspects of development for an activity authorised under the P&G Act (other than an activity relating to the construction and operation of an oil refinery) are exempt from assessment against a planning scheme as stated in Schedule 9, Table 5 of the *Integrated Planning Act 1997*.

A body of Australian, State and Local Government representatives and appropriate authorities were invited to participate as Advisory Agencies for the EIS process and provide comment on the draft TOR. The EIS was made available for public and advisory agency review and comment. The Department of Infrastructure and Planning coordinated the consultation process between Enertrade, the advisory agencies and the public. The Department of Infrastructure and Planning collated and reviewed all comments received on the EIS.

The Coordinator-General has evaluated the impacts of the project in accordance with the SDPWO Act and has recommended, from the State's point of view, that the project can proceed subject to certain conditions.

### 7.2 Natural resource impacts

#### 7.2.1 Land use

Avoidance rather than impact mitigation has been the general principle applied in selecting the pipeline route. In other words, Enertrade aims to avoid as many areas of potential impact (e.g. mining tenements, residential areas and remnant vegetation) as practicable during the planning and detailed design phase of this Project.

The existing land uses through which the proposed pipeline will pass are predominantly rural with large areas of land previously cleared for grazing and cropping. The remainder of the route encompasses land areas that contain patches of regrowth (mostly Brigalow), remnant forest, grassland vegetation, wetlands, major

rivers, mountainous areas and some Good Quality Agricultural Land (GQAL). Other land uses in the area include mining leases, powerline easements, road and rail reserves, industrial areas and stock routes. Cropping areas are generally restricted to floodplains and are primarily used for cotton, sorghum, grains and cattle fodder (e.g. leucaena).

The proposed pipeline will not impose any long-term restrictions on the surface use of land tenures identified along the route. Existing and prospective coal and mineral mining areas and extractive industries have, as far as practicable, been avoided. Where landholders may be affected, consultation and negotiation has occurred (and will be ongoing) so as to minimise any adverse effects as a result of the construction or operation of the pipeline. Agreements for easements (right to use) have been negotiated for the corridor with individual land holders. Indigenous Land Use Agreements have been negotiated with traditional landowners covering cultural heritage management and native title rights.

### 7.2.2 Soils

The soils occurring along the proposed easement have been previously mapped and classified as part of various soil surveys and land resource studies. Studies conducted for the EIS involved a comprehensive review and synthesis of this information supplemented by field investigations that were focussed on areas of potential erosion risk.

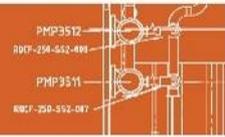
Alkaline and Neutral Duplex soils (Solodised Solonetz and Solodic Soils or Sodosols) are the most significant soil type in relation to erosion. Sodid (i.e. sodium rich) soils are widespread (42%) occurring at intervals throughout the entire length of the proposed pipeline. Such soil types are prone to dispersion and gully erosion if inappropriately managed. Offsetting this to some extent is the fact that most areas with this soil type are very low sloping (often <2% slope) and are thus not susceptible to sheet erosion. There are also sections of the route with dark / grey cracking clay soils that may have significant shrink / swell characteristics. This will be taken into consideration during engineering design.

Mitigation measures to reduce impacts on soils will include, as necessary, the installation of erosion control banks, drains and sediment collection devices. These measures, along with others as set out in the Construction EMP should ensure that the risk of a significant and on-going soil erosion problem is low.

Rehabilitation will include:

- Re-establishing drainage patterns;
- Installation of erosion control mechanisms; and
- River bank stabilisation.

The presence of Acid Sulphate Soils is regarded as a potential issue for the Calliope River area and at the terminal of the low pressure pipeline within Gladstone. Further soil evaluation will be carried out during detailed design and specific Acid Sulphate Soil Management Plans will be developed.



The route traverses some Good Quality Agricultural Land (GQAL) as defined by the Department of Primary Industries and Fisheries (DPI&F). However the likelihood of adversely impacting this land and affecting farming practices is considered to be low as previously discussed under the heading Land Use.

### 7.2.3 Water Resources

The proposed pipeline route traverses a number of major watercourses including the Fitzroy, Calliope and Mackenzie Rivers and Raglan Creek. Numerous ephemeral watercourses will also be crossed including Grosvenor, Twelve Mile and Parker Creeks.

Data from Department of Natural Resources and Water (DNRW) indicates that water quality is generally fresh (low salinity), above the tidal reaches, with slightly alkaline pH. Nutrient enrichment is a major issue in all of the rivers in the Fitzroy Basin and has been identified as a threat to downstream systems and the Great Barrier Reef (FBA, 2004). In general the downstream end of the catchments (the Fitzroy Estuary) is regarded as being in good condition but with high turbidity (Coastal CRC, 2005). Monitoring of erosion control measures, rehabilitation and water quality during the construction and post construction phases will be carried out as described in the Construction EMP.

Streams in the area vary greatly in their degree of stream bank erosion depending on location and surrounding land use. There are substantial deposits of unconsolidated material (mainly sands) in the beds of the major streams and such deposits can become mobile during significant flood events. Data derived from the DNRW database indicates that groundwater levels throughout the area traversed by the proposed pipeline are predominantly at least 10m below surface level, well below pipeline construction depths. The water table is shallower in proximity to the pipeline from KP270 onwards (up to two metres below the surface in the area near KP330). Depending on the season, there is potential for the groundwater to be intersected by the pipeline trench, whereby dewatering will need to be considered.

The main potential impact on the water environment is elevated turbidity levels in watercourses due to direct disturbance and dislodgement of material at watercourse crossings during construction and due to erosion during the life of the pipeline. Route selection has taken into account stream bank stability and height and minimising impact on riparian vegetation. Implementation of soil erosion control strategies will mitigate water quality impacts.

### 7.2.4 Terrestrial Flora and Fauna

The proposed pipeline route traverses a generally degraded landscape in which much of the native vegetation has been cleared or modified for agriculture and those areas that retain mature vegetation, are of significance to fauna. Investigations into the vegetation characteristics of lands within and in proximity to the proposed pipeline route have included reviews and interpretation of Australian and Queensland databases combined with field surveys. Because of their greater habitat diversity, riparian vegetation and the larger patches of forest communities within or in proximity to the corridor are of particular value.

To provide an indication of the local significance of the potential loss of endangered communities, the area of these communities within a 10km buffer of the pipeline alignment was calculated and compared against the areas to be cleared. This showed that the impact on flora in these communities represents 0.17% for Brigalow and 0.57% for Bluegrass which is not considered a significant adverse impact on these communities. Several of the fauna species however could utilise habitats within or in proximity to the corridor, but these species potentially occupy large home ranges and would not be significantly affected as a result of the proposed development.

Such surveys were focussed in areas identified as likely to contain communities and / or species that have been afforded special protection under the *Vegetation Management Act 1999* (VMA), *Nature Conservation Act 1992* (NCA) and the EPBC Act. These Acts have had significant implications for route selection. An overriding objective in the selection of the preferred route has been to avoid as many threatened communities and species as possible.

The pipeline corridor also contains suitable habitat types for an additional 46 protected flora species. Whilst the field survey results do not absolutely preclude the potential presence of these other significant species (as not all areas to be cleared were searched), the 24 days of targeted survey work indicated that additional protected flora species are unlikely to occur along the alignment. Further given the successful implementation of the mitigation measures identified, it is considered that the proposed gas pipeline would not result in a significant adverse impact on any fauna species afforded additional protection under Australian or State legislation. As such, faunal issues do not represent a critical constraint to this Project.

## 7.2.5 Cultural Heritage

In regard to Indigenous Cultural Heritage, Enertrade has negotiated with the Traditional Owners and has reached arrangements to implement Cultural Heritage Management Plans (CHMP) for the entire pipeline route. The CHMP's comply with the *Aboriginal Cultural Heritage Act 2003* (ACHA).

The processes and steps followed to achieve this include:

- Identification of cultural heritage parties via Notices and Letters as prescribed by the ACHA;
- Initial meetings and discussions with Traditional Owner groups on agreement and terms for cultural heritage surveys;
- Appointment by Traditional Owners of technical advisor of their choice;
- Detailed cultural heritage field surveys over an approximately 100m wide area, with emphasis on avoidance through line changes wherever practicable; and
- Negotiation of agreement (CHMP) in relation to the management and protection of identified cultural heritage sites during construction by provision of monitoring by Traditional Owners.

Potential impacts on cultural heritage include damage to shallow artefacts, subsurface material and significant vegetation (e.g. scar trees) as a result of clear and grade and trenching activities.

A settlement will be made with the Queensland Heritage Council and the EPA of any management measures required for any historic and cultural heritage. Enertrade's agreed CHMP's provide for participation of Traditional Owners in the monitoring of clear and grade, and trenching works. This approach, following on from the extensive on-ground surveys, will provide strong protection of Cultural Heritage sites.

## 7.3 Description of NES Environmental Values

### 7.3.1 Endangered Ecological Communities

Three potentially endangered ecological communities listed under the EPBC Act occur within the vicinity of the gas pipeline corridor, as noted in Table 1:

- Brigalow Communities – with scattered patches of remnant Brigalow communities occurring along the length of the pipeline corridor;
- Semi-evergreen Vine Thicket Communities – a small number of patches of this community occurring in the vicinity of KP230 and 375- 420; and
- Bluegrass (*Dichanthium spp.*) dominant grassland – primarily in the western section of the proposed alignment (KP0 - 120). The field surveys confirmed that almost the entire Bluegrass community areas traversed by the pipeline are in poor to very poor condition having been subject to heavy cattle grazing over many years. The exceptions are two narrow road reserve crossings (at approximately KP17 and KP80) which are in a more natural but still degraded condition.

The extent and location of these communities was determined during EIS investigations from a review of existing mapping and ground truthing during field studies.

### 7.3.2 Listed threatened flora species

Twenty-two flora species listed under the EPBC Act were identified as having the potential to occur within the vicinity of the proposed pipeline.

The field survey identified two of these species, a cycad (*Cycas megacarpa*) and Black Ironbox (*Eucalyptus raveretiana*) within the investigated corridor (refer Table 1).

The pipeline corridor also contains suitable habitat types for an additional 17 EPBC Act listed flora species. Whilst the field survey results did not preclude the potential presence of these 17 species (as not all areas to be cleared were searched), the 24 days of targeted survey work within preferred habitats of these species suggest that additional protected flora species are unlikely to occur within the pipeline corridor.

**Table 1 Communities and Species of NES potentially located on the alignment**

KP	Community / Species	Status	Location
277 to 325	Black Ironbox ( <i>Eucalyptus raveretiana</i> )	Vulnerable	Various ephemeral watercourses
327 to 388 and 402	A cycad ( <i>Cycas megacarpa</i> )	Endangered	South and west of Stanwell Power Station 6.5 km west of Raglan township
various	Dunmall's snake ( <i>Furina dunmali</i> )		Brigalow woodland on black cracking clays
	Yakka Skink ( <i>Egernia rugosa</i> )		General habitat presence including Brigalow communities
225 to 235	Bridled Nailtail Wallaby ( <i>Onchygalea fraenata</i> )		large remnant Brigalow and mixed acacia and eucalypt forest of high habitat value
320 to 435	Eastern (Greater) Long-eared Bat ( <i>Nyctophilus timoriensis</i> )		dry sclerophyll woodland and forest, particularly towards the Mt Larcom area

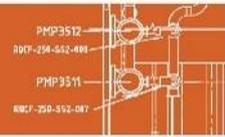
### 7.3.3 Listed threatened fauna species

The review of fauna databases identified 41 species protected under the EPBC Act as having the potential to occur in the vicinity of the pipeline corridor. Of these species 22 were classified as threatened, 13 as migratory and 18 as marine.

Of the identified NES species it was determined, from field survey, examination of Regional Ecosystem (RE) mapping, and consideration of the distribution, habitat occurrence and ecology of these species that four species have the potential to actually be impacted by the proposed pipeline construction (See Table 1).

These species are Dunmall's Snake (*Furina dunmali*), Yakka Skink (*Egernia rugosa*), Bridled Nailtail Wallaby (*Onchygalea fraenata*), and the Eastern (Greater) Long-eared Bat (*Nyctophilus timoriensis*).

Dunmall's Snake prefers Brigalow and other woodland on black cracking clays.



Yakka Skink is more of a habitat generalist, but has also been associated with Brigalow. Both species have been recorded in the vicinity of the pipeline around the Mt Larcom area. The habitat of these two species therefore occurs in the vicinity of the pipeline corridor.

The Bridled Nailtail Wallaby has been recorded near Brigalow and woodland in proximity to KP225 - 235. This area constitutes a large remnant Brigalow and mixed acacia and eucalypt forest of high habitat value. The habitat is highly suitable for the wallaby, with plenty of dense shrubby understorey including regrowth in surrounding areas. An abundance of small wallabies including Black Wallaby (*Wallabia bicolor*) were observed here during the field survey. The remnant forest and woodland is also part of a larger regional biodiversity corridor that links this area to the Taunton Scientific Reserve to the south, which supports a known population of Bridled Nailtail Wallabies.

The Eastern (Greater) Long-eared Bat is found in scattered localities in south-central Queensland extending southward to Victoria. The habitat of this species, dry sclerophyll woodland and forest, occurs in proximity to the proposed pipeline corridor, particularly at the southern end towards the Mt Larcom area. This species is insectivorous and likely to feed around vegetated watercourses where insects are abundant. This bat roosts in tree hollows.

## 7.4 Potential impacts and mitigation measures

### 7.4.1 Impact and mitigation methods for flora

The pipeline route was selected to avoid or, where this was not practicable (e.g. due to mining tenement constraints), to minimise impacts on nationally endangered ecological communities.

All areas of Semi-Evergreen Vine Thicket (SEVT) have been avoided by the alignment.

The potential impacts on the Australian (and Queensland) Government protected Brigalow and Bluegrass Grassland ecological communities as a result of the Project can be grouped into either clearing of vegetation, and/or fragmentation of habitat. Each of these is discussed in more detail below.

### **Clearing of vegetation**

#### *Brigalow Communities*

Whilst pipeline route selection has endeavoured to avoid Australian (and Queensland) government listed Brigalow communities there are a few locations where these cannot be avoided (e.g. due to topographical constraints or mining resource tenements). The aerial and field observations determined that only relatively small sections of Brigalow will need to be crossed and that the impacts associated with clearing and construction of the pipeline through these Brigalow patches will not be significant.

Measures to help mitigate potential impacts on Brigalow communities include:

- Major realignments undertaken early in the planning phase to avoid and reduce areas to be impacted (e.g. large patch of healthy intact Brigalow avoided at KP225 - 235);
- Minor alignment refinements during final surveying;
- Avoiding clearing remnant vegetation for construction camps, vehicle access tracks, truck turning areas and extra workspaces (e.g. near watercourses);
- Marking clearing boundaries in the vicinity of all Brigalow communities during preconstruction line pegging;
- Brigalow and other local tree species will be allowed to re-establish to within 3m either side of the pipeline following construction (and therefore over 24m of the cleared 30m wide easement). Tyned implements will, where practicable, be used following construction to encourage Brigalow root suckering; and
- Implementation of the Weed Management Plan including quarterly monitoring of weed infestations within these communities for a period of two years following construction.

These measures are included in the detailed management strategies of the Construction Environmental Management Plans, in particular in the Land – Flora and Fauna EMP, and the Clearing and Grading construction management plan.

### *Bluegrass Grasslands*

Review of the EPA RE mapping and the field surveys confirmed that almost all of the Bluegrass community areas traversed by the pipeline are in poor to very poor condition having been subjected to heavy cattle grazing over many years. Many of the areas were almost entirely denuded of groundcover and it is likely that the native Bluegrass community occurs only in patches within the larger mapped grassland communities rather than covering the entire mapped polygon. In the grasslands the disturbance width will be limited to 30m (i.e. no extra work areas or truck turning bays in these areas). Combined with rehabilitation activities along the ROW this means that the Bluegrass communities encountered will not be permanently damaged. Topsoil will be stockpiled during construction to maintain the seed stock, and will be respread once the pipeline trench has been filled in (i.e. typically within 4 months of clearing). The area will also be reseeded with native grass seed either from the surrounding area or with commercially available bluegrass seed sourced from the local area.

Monitoring of Bluegrass reestablishment and weed infestation will be conducted according to the Construction EMP – Significant Area Plan – Bluegrass.

As outlined in the Weed Management Plan weed management will be an important component of the construction, operation and maintenance activities for the pipeline.

## Fragmentation of habitat

Habitat fragmentation is a reduction in the continuity of a habitat through disturbance or loss. The alignment of the pipeline corridor was selected to avoid large and connected forested patches wherever possible. This has largely been achieved as is evidenced by the calculated clearing areas.

The corridor clearing results in a weighted average of 0.17% loss of these communities within 10 km of the corridor (See Table 2).

**Table 2 Clearing of Australian Endangered Ecological Communities along the pipeline route**

Australian Community	Area within the pipeline (ha)	Area within 10km of pipeline (ha)	% loss based on 30m corridor cleared
Brigalow Community	17	10,110	0.168
Semi-evergreen Vine Thicket	0	2,630	0
Bluegrass Community	7	1,230	0.57
Total	24	13,970	0.17

### 7.4.2 Impact and mitigation methods for flora

The nationally significant fauna species including: Dunmall’s Snake, Yakka Skink, Bridled Nailtail Wallaby, and the Eastern (Greater) Long Eared Bat, have the potential to be affected by the:

- Clearing of Brigalow and other types of remnant vegetation;
- Removal of habitat trees, and
- Removal of ground debris in the construction of the pipeline.

The primary potential impacts include loss of shelter and food resources, loss of breeding sites, and possibly increased predation for the Wallaby and reptiles as a result of increased ease of access for predators.

During the field survey, high value habitats were identified and the pipeline route adjusted to avoid these whenever possible. However, where impacts are unavoidable, mitigation measures will be adopted that will aim to minimise disturbance to these areas (refer Significant Area Plan (SAP) in Construction EMP). These mitigation measures will include minimising disturbance widths and adopting practices for restoring areas of high habitat values. For example, wherever practical along the entire corridor, suitable ground habitat will be actively provided, (e.g. spreading of cleared timber) therefore reducing the timeframe for decolonisation by reptiles. It is thus unlikely that any significant adverse impact will occur to the two nationally significant reptile species as a result of the proposed works.

In addition a fauna recovery program will be employed continuously along the construction route, to catch, record and release any fauna which enters the open trench during its temporary construction time.

The nationally significant Eastern (Greater) Long-eared Bat partly depends on tree hollows for roosting. The proposed pipeline construction works will aim to avoid all habitat trees. Although some losses may be incurred, these are likely to be minimal in relation to the significantly larger areas of similar habitat within the immediate and wider proximity of the pipeline (refer to the Fauna Technical Paper in the EIS Appendix 7).

## 7.5 Assessment of significance of the impact for Australian endangered ecological communities

The EIS presented an assessment of whether the clearing of the corridor, and its subsequent operation, is significant in its effect on NES ecological communities.

Each criterion is discussed below for assessment of the proposition that, for endangered ecological communities, *'An action has, will have, or is likely to have a significant impact on an endangered ecological community if it does, will, or is likely to:*

### ***Lead to a Long-term Adverse Affect on an Ecological Community***

The potential impacts as a result of the pipeline will be essentially short-term in nature. Clearing will occur, however regeneration following clearing will be encouraged within the easement. In the Bluegrass communities this will permit regeneration over the entire easement. For the operational safety of the pipeline, regeneration of Brigalow over the pipeline itself (a 6m wide strip) cannot occur. Therefore, the direct impact associated with the loss of this community will remain over the long-term. Only limited long-term access for routine monitoring would be required in these communities (approximately once per year).

An estimate of the required clearing of each Australian protected community has been calculated and the results are summarised in Table 2.

The largest area loss, that of Brigalow (approximately 17ha) is not considered to be significant given the widespread nature of Brigalow communities in the local area and the ability of this community (particularly those REs crossed by the pipeline) to regenerate as observed in the wider environment of the pipeline corridor.

### ***Reduce the Extent of a Community***

In relation to nationally endangered ecological communities, approximately 24ha would require clearing (refer Table 2). To provide an indication of the local significance of this potential loss, the area of the impacted REs within a 10km buffer of the pipeline alignment has been calculated (refer Table 2).

As noted above, the long-term reduction in extent will be less, because regeneration of Brigalow will be allowed over much (24m) of the cleared 30m pipeline easement.

Furthermore, Bluegrass will also be reseeded within the entire easement following construction. In fact the observed areas of Bluegrass communities are currently mostly in poor to very poor condition due to heavy grazing.

### ***Fragment an Occurrence of the Community***

Where total avoidance of nationally endangered communities was not possible, the alignment within these areas has been located wherever possible so as not to bisect the patch, but instead to traverse the boundary of the patch. Alternatively, in the case of linear strips of communities, an alignment has been chosen that traverses these strips at the narrowest point and perpendicular to the strip. In addition, where the alignment was required to pass through a large area, existing cleared and disturbed tracks have been located and the alignment has been moved to follow these areas wherever practical (such as through the Brigalow remnant at KP225 – 235 refer to Revision G and Revision I on Figure 2-1 of the EIS).

### ***Adversely Affect Habitat Critical to the Survival of an Ecological Community***

The area estimations shown in Table 4-19 indicate that the proposed works will require clearing of 0.16% of endangered Brigalow communities and 0.57% of endangered Bluegrass communities within a 10km buffer of the pipeline.

Most of the cleared area will return to these communities in the long term (except for a 6m wide strip in the Brigalow communities). These communities are relatively well represented within the local area and, as such, the proposed works are not considered likely to adversely affect habitat critical to the survival of any of these ecological communities.

### ***Water, Nutrients, or Soil Necessary for the Community's Survival***

Briefly, the Project will include the removal of topsoil, which will be stockpiled separately from the subsoil removed for the trench, laying the pipe, and replacing the subsoil and then topsoil. Management measures to minimise adverse short-term impacts of this operation have been identified and will be implemented (refer Construction EMP). The drainage patterns, nutrient loads and soil stability / landform will be reinstated and not impacted in the long term.

Therefore, this Project would not modify or destroy abiotic factors necessary for the community's long-term survival.

### ***Result in Invasive Species that are Harmful to the Endangered Community becoming Established in an Occurrence of the Community***

Invasive species have been identified within the pipeline corridor and Enertrade are committed to the control of such species. Management measures are provided in the Weed Management Plan and these will be implemented over the short and long-term. These measures include the use of vehicle washdown bays, on-site control of declared weeds.

### ***Interfere with the Recovery of an Ecological Community***

No active recovery programs are known from the areas of the proposed pipeline corridor or compressor station. In any event, the proposed works would not interfere with any such programs.

## 7.6 Rehabilitation of Australian endangered ecological communities

### 7.6.1 Brigalow communities

Brigalow and other local tree species will be allowed to re-establish to within 3m either side of the pipeline following construction (and therefore over 24m of the cleared 30m wide easement). Tyned implements will, where practicable, be used following construction to encourage Brigalow root suckering.

It is estimated that the CQGP will require short term removal of approximately 17ha of Brigalow and a longer-term loss of approximately 3.4ha, (being the core 6m of the 30m corridor). I therefore nominate the following condition:

#### Condition 2

**The Proponent is to provide offsets for the permanent loss of Brigalow in accordance with the Queensland Government Policy for Vegetation Management Offsets – 28 September 2007.**

**The Department of Natural Resources and Water is the agency responsible for this condition.**

### 7.6.2 Bluegrass grasslands

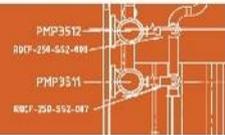
Enertrade will reseed all disturbed Bluegrass areas with Queensland Bluegrass (*Dichanthium sericeum*). The reseeded will use local provenance seeds if these are commercially available. Otherwise, Bluegrass seeds from other parts of Central Queensland will be used.

### 7.6.3 Listed threatened species

Provided that crossings of watercourses occur at appropriate locations which provide adequate distances between individual Black Ironbox trees it is likely that almost all Black Ironbox will be able to be avoided.

*Cycas megacarpa* plants in the vicinity of Stanwell Power Station and 6.5km west of Raglan township could potentially be affected. It is difficult to avoid all the plants in these locations as the pipeline is already minimising ecological disturbance within a topographically constrained landscape (i.e. steep undulating) and near Raglan by following the edge of an existing cleared power easement.

Individual *Cycas megacarpa* plants were observed in considerable numbers in the vicinity of the locations noted above and many of these individuals will not require clearing as a result of the Project. Whilst the actual numbers of plants to be removed and their abundance at each location have not as yet been determined, detailed ecological surveys of these areas will be carried out prior to construction commencing. Data gathered from the ecological surveys will be provided to DEW and to the EPA prior to construction. The data will also be included in the



application for a permit to clear individuals of the plant species under the *Nature Conservation Act 1992*.

Mitigation measures to reduce the potential impacts on *Cycas megacarpa* and Black Ironbox include:

- Minor alignment refinements that avoid or reduce the numbers of *Cycas megacarpa* and Black Ironbox impacted have been, and will be, investigated and adopted where possible during final surveying. An experienced botanist / ecologist will assist where any alignment refinements are proposed into Environmental Constraints Areas;
- Where plants of these species must be removed a permit will be sought from the EPA and notification will be given to DEW (refer SAP) in the Construction EMP). This notification will include information on the number of protected plants to be removed and the numbers known to occur in the immediate vicinity of the pipeline; and
- Reduction of the pipeline easement to 25m in width where this enables avoidance of any *Cycas megacarpa* and Black Ironbox plants.

## 7.7 Findings and Conclusions

- 1 Three ecological communities of interest are associated with the route, and one (semi-evergreen vine thicket) has been able to be avoided by route selection;
- 2 The extent of Brigalow clearing is only 0.17% of the Brigalow community inventory within 10km of the corridor, and will, after clearing for construction, be allowed to revegetate the corridor except for a small core path;
- 3 The extent of Bluegrass grasslands clearing is only 0.57% of such grasslands recorded within 10km of the corridor. Bluegrass will be reseeded across the corridor in these areas;
- 4 The Construction Management Plans incorporate detailed management strategies and performance indicators to deal with management of these impacts and rehabilitation of communities where planned;
- 5 These measures will satisfy all of the NES assessment criteria to ensure that the project will not have a significant impact on an endangered ecological community;
- 6 Of the listed threatened species related to the corridor region, only two species of flora and four species of fauna are considered to be impacted specifically;
- 7 The habitats of listed threatened fauna will not be threatened by the corridor clearing, being only a small percentage of surrounding habitat, and the EMP contains a continuous fauna management program to deal with the temporary impact of the open trench;
- 8 Specific EMP Significant Area Plans have been created to deal with both Black Ironbox and cycad management during construction. Ironbox trees present at



creek crossings will largely be avoided, and cycad plants not able to be avoided will be removed under authorisation and supervision;

- 9 The Operational EMP and the Construction EMP, containing Environmental Management Plans, Construction Management Plans and Significant Area Plans, will be implemented as conditions of the Environmental Authority imposed by EPA, and the Pipeline Licence, granted by the Department of Mines and Energy; and
- 10 These planning and management measures are expected to ensure that the pipeline project construction and operation will not cause significant impact on relevant matters of national environmental significance.

## 8.0 Management of specific issues

The following issues were raised by stakeholders in submissions, and were addressed by Enertrade in the separate Supplement to the EIS. For each issue I present my own conclusions.

### 8.1 Construction Camp Sites and Infrastructure

**Agency Position** (*Belyando Shire, Department of Housing, EPA, Broadsound Shire, Calliope Shire*)

Belyando Shire Council sought more definition on the construction camp location, and water supply sources. It is concerned that the pipeline might exacerbate the current long term and cumulative impacts on the Moranbah community in relation to accommodation and infrastructure requirements from the high level of mining and related activity in and near the town. The Department of Housing indicated that there are current housing pressures in the region, and that the Department supported the Proponent's accommodation strategy as a way of ensuring no additional pressure on housing markets. Broadsound Shire Council sought assurances that campsites, if not assessable by local authorities under planning schemes, would be subject to effective management under Environmental Management Plans. Calliope Shire Council indicated that food preparation in camps had to meet certain Food Act standards. EPA sought more definition on water supply and sewerage effluent treatment arrangements for the construction camps.

#### **Enertrade Position**

The expected position of the first construction camp is about 70 kilometres from Moranbah, and the Proponent is fully aware of the need to ensure self contained camps to avoid any social and infrastructure impact on the region. A new project commitment will be added to the Report to reflect this position. Furthermore the Proponent will consult with the relevant local authority, and landowners as to specific locations for such sites. At Moranbah, Enertrade expects that only 1 additional person might be added to the permanent workforce for operations, thereby providing negligible influence on social and infrastructure impacts of the town. Water supply for camps will be supplied by contractors supplying water from authorised sources, and treated if necessary to Australian Drinking Water Standards, oversighted by reference to the Rockhampton Population Health Unit of Environmental Health Services Queensland. Disposal of wastewater at campsites will be specified by Construction Environmental Management Plans in accordance with EPA Environmental Authority conditions for discharge.

#### **Coordinator-General's Conclusion**

Since pipeline development and activities are authorised under the terms of the Petroleum and Gas (Production and Safety) Act 2004, they are recognised by the Integrated Planning Act 1997 (under Schedule 9, Table 5) as development exempt from assessment against a local authority planning scheme. However, I note that the Proponent has committed in the draft EMP to consult with the relevant local

authority as to locations of temporary construction camps, and that their indicative location has been specified in the EIS and Supplement as adjacent to KP's 70, 170, 290, and 320. As noted above, the first of these locations is some distance from Moranbah. Because of the fly in-fly out workforce policy, and the short term nature of the pipeline workcycle program, I believe that social and infrastructure impacts on Moranbah will be minimal. This would also apply to other centres near to the pipeline route, and in particular to Gladstone / Calliope which is at the terminus of the pipeline. The last camp location at KP320 is near Stanwell, and is approximately 100km from the Gladstone-Calliope area. Final closeout on the pipeline at the Gladstone terminal point, will be undertaken with a small crew rather than the full construction camp workforce.

Water supply to construction camps enroute may require transport of water from distant supply sources which can supply the quantity required, although this will be for a short workcycle period rather than long term. The Environmental Management Plan commits to achieving the quality of water for drinking and domestic use. However, the specific sources are not known at present and therefore in recognition of current water security issues, I believe it is useful for me to require that only authorised sources are used, to ensure that priority of supply is considered in allocating water for this temporary use.

Wastewater management at construction camps will be governed by the environmental authority for the pipeline imposed by EPA under the terms of its regulation of the Environmentally Relevant Activity ERA 21C – Petroleum activity, the construction of a new petroleum product transmission pipeline. This contains a specific condition dealing with sewage treatment and disposal for temporary camps, and is included in the proposed conditions presented in this Report in Appendix 2.

I nominate the following condition in relation to water supply:

### **Condition 3**

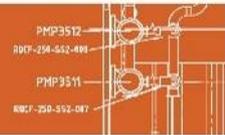
**The Proponent shall ensure that, in accordance with commitments in the Construction Environmental Management Plan, its contractors and suppliers source water for the construction camps only from authorised sources of water.**

**The Department of Natural Resources and Water is the agency responsible for this condition.**

## **8.2 Waste disposal**

### ***Agency Position (Calliope Shire, EPA)***

Calliope Shire Council indicated the need for waste disposal from construction sites and camps to be undertaken with reference to local authority waste disposal facilities.



EPA indicated that storage and disposal of hydrotest water from the pipeline during construction needs to be carefully managed, considering the range of potential impacts of this operation. These impacts include those from additives to the water, the physical discharge conditions, and the use of storage dams and earthworks for initial collection and supply of water.

### ***Enertrade Position***

Construction camp waste disposal is included as a commitment in the Environmental Management Plan, which specifies that disposal of domestic solid wastes will be undertaken through acceptance at an authorised local authority waste disposal site. Prior arrangements with the local authority for such acceptance will be made during the consultation which will precede selection of a campsite in the relevant local authority's area. The Supplementary EIS presents a listing of the location, capacity and nature of the local authority waste disposal facilities adjacent to the route of the pipeline. This indicates that appropriate facilities will be available for the temporary construction period.

Likewise the management of hydrotest water for the pipeline is covered comprehensively by a separate section of the Construction Environmental Management Plan, outlining the objectives, management strategies, performance indicators and monitoring actions for the activity. The key environmental management strategy will be that there will be no discharge of hydrotest water directly to a watercourse. After considering and utilising water reuse options, any discharge will be land based, and incorporate dispersal arrangements to prevent erosion and promote aeration. These arrangements follow guidance from a recent (2005) CSIRO report on quality of hydrotest water and its potential impact on the environment. The report indicated that impacts were dependent on initial water quality, the nature of additives, discharge arrangements, and the receiving environment. With regard to additives, Enertrade plans to generally include only oxygen scavengers, and does not intend to use biocides. Disposal of water will follow recommendations of the CSIRO report, which specify that both additives can be neutralised by appropriate aeration practices on discharge.

### ***Coordinator-General's Conclusion***

Both issues emphasise the key role of the Environmental Management Plans in acceptable management of impacts from these activities. This is reinforced by conditions in the Environmental Authority covering the above matters:

- hydrotest water (condition C2);
- erosion (condition C1);
- sedimentation (condition C1); and
- waste management (conditions E1 – E3).

Consequently I am satisfied that these management arrangements should enable potential impacts to be mitigated acceptably.

## 8.3 Water Crossings

### **Agency Position** (DNRW, EPA, DPIF)

EPA noted that the route of the pipeline, between the Gladstone “City Gate” in the Gladstone State Development Area and the proposed eastern terminus of the pipeline in the city of Gladstone, crosses the Port Curtis Wetland area including the Calliope River. This also interested the Department of Primary Industries and Fisheries whose concerns related to possible marine plants disturbance during the crossing of the Calliope River and the requirement for appropriate permits if such disturbance was unavoidable. Permits are also required for any waterway barrier works in other rivers and creeks, whereby waterway crossings may create water flow disturbance. A crossing technique preferred by agencies is Horizontal Directional Drilling.

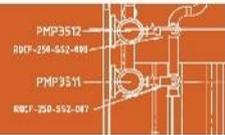
Other impacts on the banks of creek crossings were highlighted by EPA as requiring management. Where Horizontal Directional Drilling techniques are used EPA indicated that management practices should include dealing with the potential toxicity of drilling mud.

### **Enertrade Position**

Enertrade recognises the environmental values of the Port Curtis Wetland, and indicates that the currently proposed crossing point of the Port Curtis Wetland was identified by ecologists on the basis that it is the narrowest extent of marine plants (saltmarsh and mangrove communities) within the vicinity. It is proposed that the Calliope River and the adjoining communities will not be trenched but will be Horizontal Directionally Drilled (HDD) in order to avoid impacts. Nevertheless in planning the river crossing Enertrade will consult with DPIF to prepare for any permit applications if required. These arrangements are contained in Project Commitments made in the EIS, and translated into management strategies in the EMP – both in the Significant Area Plan for Horizontal Directional Drilling, and the Construction Management Plan for Trenching.

Other significant river crossings to be undertaken by HDD are the Mackenzie and the Fitzroy Rivers. Possible escape of drilling mud will be minimised by careful geotechnical investigation prior to drilling to ensure that geological fractures are avoided. Standard drilling practices include additives with the drilling mud to readily seal fractures should they unexpectedly occur. The drilling mud is largely a natural bentonite which is not expected to cause long term impacts.

Crossing of rivers and banks are covered by management strategies contained in the EMP – in the Water Environmental Management section and in the Construction Management Plan for Trenching.



### ***Coordinator-General's Conclusion***

The Proponent has recognised the significance of water crossings, both in minimising impacts by specific EMP management strategies, and in obtaining permits for management of impacts if required. These commitments are reinforced by the presence in the Environmental Authority of a proposed condition requiring the Proponent to engage in protection of riverine areas (Condition F5).

I am satisfied that these measures will address the potential for impacts at water crossings.

## **8.4 Nature Conservation**

### ***Agency Position (EPA)***

Because the proposed route traverses a road reserve within the Rainbow Mountain Nature Refuge in the Stanwell area, EPA sought confirmation of the reason for choosing this location in preference to alternatives. In addition the impacts on environmental values from construction of the pipeline in this location need to be addressed post construction.

### ***Enertrade Position***

The reason for selection of this route is a combination of technical issues. The major issue concerns the presence of high soil resistivity over about 25 km of the original route planned in the Powerlink high voltage transmission corridor approaching Stanwell power station from the east. In this area, if the pipeline was installed in the vicinity of the transmission line it would have induced voltages in the pipeline which would be potentially fatal to pipeline maintenance personnel, or which would have caused unacceptable interference to the pipeline cathodic protection system. The latter issue could cause accelerated corrosion on the pipeline which, if undetected, could result in a pipeline rupture. It is clear that this is a localised soil quality issue, as revealed by test and calculation presented in the Supplement to the EIS. Elsewhere on the pipeline route the use of powerline corridors is not problematic because soil conditions are more benign.

In the same vicinity the topography makes it impossible to choose a route a short distance away from the powerline corridor. An unmade road reserve further south was located on cadastral mapping, largely within the Rainbow Mountain Nature Refuge and the Stanwell Power Station Nature Refuge (the road reserve is under the control of the Fitzroy Shire Council. The Refuge is largely freehold or leasehold land) but it avoids the effects of the power corridor and is acceptable topographically. The route currently proposed is 80% within the road reserve but for the remaining distance it follows an existing cleared track which avoids dense vegetation and watercourses. The proposed pipeline will follow this cleared route to minimise disturbance.

The proposed alignment transects mostly eucalypt woodland with open grassy understorey and some patches of shrubs in side gullies. Occasional hollow bearing trees are near to the alignment, but most will be avoided. The endangered cycad *Cycas megacarpa* occurs in the vicinity, and it is expected from field investigations that at least 3 individual plants will need to be disturbed/removed during construction activities. Rock mound habitats for a range of reptiles and lizards are present but are scattered and are able to be avoided. Enertrade accepts the desire of EPA for a post construction audit of this area, and seeks to be involved in nomination of the relevant scope and area of such audit prior to its commencement.

As an alternative to the route through the Nature Refuge areas, Enertrade is aware of proposals by the Department of Infrastructure and Planning to create an infrastructure corridor from Stanwell to the Gladstone State Development Area (The Stanwell - Gladstone Infrastructure Corridor - SGIC). This corridor was delineated after the main route selection and field investigation was completed for the gas pipeline, and hence was not studied for this EIS. It also traverses a considerably longer distance between the two points. However, Enertrade would commit to maintain an interest in this option and would consider use of all or part of this corridor if it is available at the time construction is required and can be demonstrated to be commercially and technically viable for gas transmission pipeline installation.

### ***Coordinator-General's Conclusion***

The Supplement to the EIS presents extensive technical reports on the issue of electrical interference between the powerline and the gas pipeline considering soil resistivity in the Stanwell power corridor. I accept that this is an unacceptable risk factor for operational and maintenance safety and has led to the selection of an alternative route.

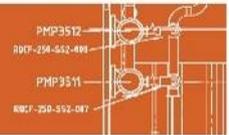
The selection of the road reserve through the Nature Refuge has the advantages of:

- utilising an already designated tenure and corridor;
- potentially avoiding areas of conservation value because of prior use as a track; and
- following a route likely to have minimum topography constraints.

Nevertheless, entry and disturbance in this location will have some impact, although a mitigating factor is that it will be during a temporary construction period only and is not intended for a permanent thoroughfare.

The EMP – Land - Flora and Fauna indicates specific Management Strategies to govern construction in the Nature Refuge. This sets the following specific actions:

- the pipeline right of way (ROW) will be constructed within the existing thoroughfare;
- clearing will not exceed 30 metres wide;
- no clearing of access tracks through the Nature Refuge;
- no clearing of extra works areas; and
- no campsites set up.



Beyond this, all other provisions of the EMP affecting environmental management of the construction process will apply equally to the work in this area.

EPA has sought a post construction audit of the Refuge areas by EPA biodiversity and operational officers. I accept that this should be undertaken. However, I am concerned that the scope of such an audit should be related to the potential for impacts by the pipeline construction and operational factors only and for this reason I believe that I should identify some preliminary scoping of these matters.

The impacts outlined in the EIS and Supplement to the EIS on flora and fauna generally are impacts on native vegetation, disturbance to endangered vulnerable and rare flora and fauna species, and habitat fragmentation. EMP provisions indicate its objectives in protecting these values, by the environmental protection controls of strictly confining clearing to the 30 metre corridor, managing impacts on fauna during construction, and through rehabilitation. I believe that the aims of an audit of these Refuge areas should therefore be to principally review the outcomes of these proposed protection strategies. It should not be aimed at re-conducting an EIS on the whole area.

Enertrade in the Environmental Management Plan – Land – Flora and Fauna, has specified that its Monitoring and Reporting Actions shall include a request for an audit of the Rainbow Mountain Nature Refuge by the Biodiversity section of EPA. In order to highlight this proposal I propose to specify a condition on this subject. I also take this opportunity to identify some scoping of the matters that this audit should address.

#### **Condition 4**

**Within 3 months of the completion of construction of the pipeline through the Rainbow Mountain Nature Refuge and the Stanwell Power Station Nature Refuge areas the Proponent will request an audit by the EPA generally of the following protection measures of the EMP in respect of the route in the Refuge areas:**

- **management of disturbance to sensitive flora species on the corridor and access tracks, if any, and their close proximity;**
- **records of fauna species dealt with under the fauna handling arrangements during construction; and**
- **restoration activities on the corridor and for any flora specimens moved.**

**The audit shall be carried out by the EPA within 6 months of the request.**

I shall revert to the issue of the Stanwell-Gladstone Infrastructure Corridor in a subsequent section.

## 8.5 Coal resource interaction

### ***Agency Position (DME)***

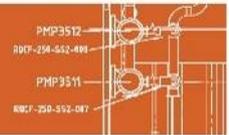
As well as the DME, this subject was raised by a number of parties with either coal resource and/or exploration interests adjacent to and south of the town of Moranbah. Because of commercial-in-confidence considerations I am unable to outline specific matters concerning each of these parties in this public report. However, I have examined each interest and the following discussion analyses the issues generally and seeks to examine the various options that might be employed to manage the interactions.

The coal seams mined in this part of the Bowen Basin occur in two productive coal measure sequences – the Moranbah Coal Measures and the Rangal Coal Measures. Saleable coal mined from seams in the Moranbah Coal Measures principally consists of highly sought after prime hard coking coal used in steel making.

In the vicinity of the towns of Moranbah and Dysart, seams within the Moranbah Coal Measures are mined by open-cut methods at Goonyella, Peak Downs, Saraji and Norwich Park mines and by underground mining methods at the North Goonyella, Broadmeadow and Moranbah North mines. These seams dip (slope down) and hence deepen to the east. At depths where open-cut mining is no longer commercially viable, these coal seams could only be developed by underground mining methods. Whether or not mining ever occurs, will depend upon many factors that includes geological factors such as the extent, continuity and quality of the coal seams, mining conditions, constraints and limitations on mining and other commercial factors.

The second productive group of coal seams are referred to as the Rangal Coal Measures. These are higher in the stratigraphic sequence than the Moranbah Coal Measures and at the present time are mainly being mined in this part of the Bowen Basin using open-cut mining methods. These mines are located to the east of those mines developed on the Moranbah Coal Measures referred to above and include the new mines at Isaac Plains, Millennium and Poitrel. The coal seams to be developed at the Vermont coal project to north-east of the town of Dysart are also within these coal measures.

DME indicated that the proposed route of the pipeline generally between the towns of Moranbah and Dysart (that is for the first 80 kilometres of the route), overlies known but as yet undeveloped, coal resources and/or coal occurrences in seams in the Moranbah and Rangal Coal Measures which have the potential to be developed in the medium to longer term. All of these areas are currently subject to either exploration permits for coal (referred to as EPCs) or mineral development licences (referred to as MDLs) held by a number of different companies.



In the area adjacent to, and for some distance south of, the town of Moranbah, the proposed route overlies an identified coal resource referred to as the Moranbah South deposit. The proposed route lies to the east of the Peak Downs and Saraji coal mines operated by the BHP Billiton Billiton Mitsubishi Alliance which produce coking coal from seams in the Moranbah Coal Measures. The proposed route is also located to the east of a number of more recent coal mining leases where coal seams of the overlying Rangal Coal Measures either are being mined or are planned to be mined in the near future – this route is termed the proposed “eastern” route.

In respect of the area between Moranbah and Dysart under discussion, the DME submission (and others made by the various exploration and mining tenement holders south of the town of Moranbah), did not raise issues regarding the impact of the proposed pipeline on identified resources of shallow coal, where open cut mining might occur. Accordingly, based on the information available at the present time, there are no issues to be dealt with regarding the potential impacts of future open-cut mining on the proposed pipeline.

The main issue of concern for DME is the potential for the pipeline (along its currently proposed route) to constrain the development of the deeper coal seams in the Moranbah Coal Measures that may be mined in the future using underground mining methods. This is because of the fact that in order to extract as much of the coal resource as possible, underground mining methods typically used in the Australian coal mining industry at the present time, will often cause subsidence of the land surface. The amount of vertical subsidence at the surface depends upon a number of factors that includes the depth to the coal seam, as well as the height and width of the void in the coal seam once the coal is extracted by the mining process. Therefore the existence of the pipeline has the potential to significantly add to the cost of extracting coal resources under the pipeline, to the extent that mining of coal in the area of the pipeline may not be commercially viable— either through the costs associated with the relocation of a section or sections of the pipeline or by virtue of the costs of any remedial works necessary to ensure the integrity of the pipeline was maintained pre and post mining.

DME outlined that, in view of the heightened level of coal exploration activity within the Bowen Basin at the present time, in the interests of time, it would look to the pipeline Proponent to consult all exploration/resource tenure holders to determine where they have identified coal resources. For those areas where coal resources had been identified and quantified to at least an “Indicated” Status (as defined by the 2004 Joint Ore Reporting Code), the Proponent should have agreements in place which would allow mining to occur in the future without any undue commercial burden placed on the tenure holder by virtue of the pipeline or its associated infrastructure.

Hence DME has indicated its desire for the proposed pipeline not to impinge on identified resources of coal or known occurrences of prospective coal seams that have potential to be developed in the future.

DME has suggested this could be achieved by:

- either (preferably) avoiding potential future interactions by relocating the pipeline away from identified coal resources or prospective coal seams (alternate routes suggested as below); or
- to construct the pipeline in such a way that the impacts can be satisfactorily managed.

As an alternative to this “eastern” route, over potentially developable coal resources, DME suggested two alternative routes – either located about one to two kilometres further to the east, that would place it over an inferred zone of major faulting but to the west of the subcrop of the Rangal Coal Measures or to the west of the subcrop of the Moranbah Coal Measures (covered by the Peak Downs and Saraji mining leases) with the pipeline crossing the Moranbah Coal Measures at a point where either faulting, coking or other quality parameters render the coal seams unmineable – one such point would be near the town of Dysart.

### ***Enertrade Position***

Enertrade, in planning the route, took into account the following considerations:

- The source of gas for the pipeline is coal seam methane obtained from the coal seams being mined and about to be mined in the region;
- The benefit to both the pipeline holder, and coal resource holders would be to have a pipeline as close as possible to the majority of the current and prospective coal mines, as this would minimise the distance and infrastructure necessary to connect mines with the pipeline for sale and transport of the methane;
- For these reasons the route selection process was directed at the “eastern” route as described above;
- Route selection aimed at avoiding Mining Lease tenures as this would generally be incompatible with a pipeline route; for a similar reason MDL tenures were to be avoided where possible, as this is normally the forerunner of a Mining Lease; and
- Exploration Permit for Coal tenure holders were approached to determine the extent of their resource delineation. Where possible route selection was agreed with certain holders to locate the route in areas of low prospectivity or uncertainty of resource. At the same time surface conditions of topography and environmental significance also guided route selection.

The result was a route which avoided known mining operations, and took account of the potential for coal resource development as known at the time. In certain specific MDL areas mining plans are well advanced, and it was possible to reach agreements with coal resource holders on the mechanism of dealing with a potential or built pipeline, either by repositioning or managing the impacts,

In one case a small deviation to the route was undertaken to minimise the overlap with a proposed mine plan.

In other cases conceptual mining plans have only recently been developed, and there is insufficient finality about the resource delineation to be certain of the most effective route selection approach to take at this time. There are a number of alternatives, each of which has cost implications for both parties.

Matters to consider in such cases are:

- Whether to move the pipeline route away from overlaying the conceptual mine plan, either initially or ;
- Whether, if the pipeline remains where it is and mining takes place beneath it, the resulting subsidence will affect the integrity of the pipeline when it is in operation; and
- Whether a subsequent mine plan might be available after more resource delineation, which can provide a route to avoid subsiding the pipeline.

In this region a major deviation to the pipeline route to avoid a particular resource tenure entirely cannot be undertaken without impacting other resource tenements. At the same time the deviation has to continue to avoid environmental and land constraints, although this is expected to be feasible, based on the level of environmental assessment that has been done within the present route alignment.

***Legislative Provisions - The Statutory processes for granting of a mining lease and a pipeline licence***

Mining Lease

Mining Leases are granted by Governor in Council under section 234 of the *Mineral Resources Act 1989*, based upon advice from the Minister following consideration under section 271. The Minister is informed by a recommendation of a tribunal under section 269, following a hearing on the application under section 268. Objections can be made under section 260, to any application submitted under section 245 and advertised by public notice under section 252.

Section 260 allows an objection to the mining lease application:

*(1) An entity may, on or before the last objection day for the application, lodge with the mining registrar an objection in writing in the approved form.*

.....

*(3) An objection..... shall state the grounds of objection and the facts and circumstances relied upon by the objector in support of these grounds.*

*(4) Each objector ..... shall serve upon the applicant ..... a copy of the objection lodged by the objector.*

This allows a Pipeline Licence Holder - or a Pipeline Licence applicant – to provide input to and make comment on the Mining Lease assessment by way of lodging an objection. They are required to submit the grounds of objection, which would be available to the mining lease applicant.

Under section 268 a tribunal is obliged to consider these objections, and any other material, in assessing the merits of the ML application:

*(1) .....the tribunal shall hear the application and any objections thereto and all other matters pursuant to this part are to be heard, considered or determined by the tribunal in respect of that application at the one hearing of the tribunal.*

*(2) ....the tribunal shall take such evidence, shall hear such persons and inform itself in such manner as it considers appropriate in order to determine the relative merits of the application, objections and other matters.....*

Consequently the tribunal can make a full assessment prior to a recommendation being put before the Minister.

### Pipeline Licence

Pipeline Licences are issued by the Minister under section 410 of the *Petroleum and Gas (Production and Safety) Act 2004*. The Minister must consider the criteria under section 415 which includes a requirement to consider possible impacts on mining interests. Applications are advertised by public notice under section 411.

The granting of a Pipeline Licence brings together three elements:

- Holding of pipeline land by licensee – either by ownership, rights to an easement, or owners or Minister’s permission to access land;
- Environmental Authority for the pipeline on proposed pipeline land; and
- Petroleum Pipeline Licence application.

Any mining interests may be considered during the Pipeline Licence process in three ways:

#### 1. Section 400 connects mining and pipeline land interests:

*If land in the area of the pipeline licence is also in the area of a mining lease and the mining lease was granted before the licence, an authorised activity for the licence may be carried out on the land only if-*  
*(a) the mining lease holder has agreed in writing to the carrying out of the activity.*

#### 2. Section 409 requires the application to include:

*(e) If the area of the licence is, or is included in, the area of another ..... mining interest – identify possible impacts of authorised activities under the licence on ..... mining under the mining interest.*

Section 415 sets the criteria for decisions to include the same element:

*The matters that must be considered .....include each of the following-*  
*(d) If the area of the licence is, or is included in, the area of another ..... mining interest – possible impacts of authorised activities under the licence on ..... mining under the mining interest.*

3. Section 411 requires notice and consideration of submissions:

*The Minister must not grant the applicant a pipeline licence unless-*  
*(a) a notice .....has been gazetted stating-*

*.....*

*(v) a period of at least 30 business days during which anyone may lodge submissions.....; and*

*(b) the Minister has considered any submissions lodged..... .*

Hence if an ML exists, the competing interest will be announced under item 1 (as well as under item 2). If there is no ML, and there is a mining interest in the land, it will be covered by the applicants submission under item 2. Additionally there is an opportunity for lodgement of submissions by mineral interests under item 3.

These pieces of information will then be available to the Minister in assessing the Pipeline Licence application. As stated above, the Minister must consider under section 415 possible impacts on other petroleum and mining interests in the same land, and consider under section 411 any submissions lodged.

### ***Coordinator-General's Conclusion***

The outcomes of consultation between Enertrade and holders of coal resource interests over pipeline route selection have depended largely on the stage of resource development and the existence of other land and environmental constraints.

Where mine plans are finalised Enertrade has developed understandings leading to agreements with the resource holder of how to deal with the future impact of mining either by managing the pipeline in the ground as mining progresses, or agreeing with mining operations to relocate parts of the pipe as and when needed.

This may not be possible where there are three sets of factors affecting decision making:

- firstly where there is only preliminary mine planning, due to lack of finalisation of resource delineation;
- secondly where there is a degree of environmental and land constraints affecting free choice of surface route; and
- thirdly where there are resource and infrastructure constraints on adjacent tenures.

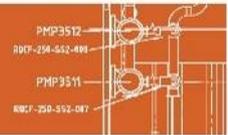
In such circumstances it is not possible for me to delineate a final precise route for the gas pipeline through this region at this stage of the project. Nor is it necessary for me to adjudicate on a final route.

What I can conclude is that:

- I support the principle of Enertrade locating the pipeline close to coal resources so that coal seam methane from mines can be close to a gas transmission pipeline;
- I support the principle of the pipeline being located so as to minimise or eliminate its impact on potentially viable coal resources;
- There are technical and administrative solutions to pipeline design and management which can protect the integrity of pipelines from mine subsidence; in other words pipelines and mines can coexist;
- For this pipeline, the environmental and land constraints along and adjacent to the route are established in the EIS, and in this particular section of the route there is indication that such constraints will not absolutely prevent an alternative route being chosen if required;
- The issue of a Pipeline Licence does not preclude the adjustment of the pipeline route in the field as a result of some constraint, provided it continues to conform with its licence and environmental authority conditions;
- I support the principle of allowing coal resource holders and the gas pipeline Proponent to negotiate efficient and economic solutions to the resource interaction, at the time when the amount of information available to both parties is sufficient to do so;
- It would be equitable to require that the parties who will be undertaking project design at the time to negotiate and resolve an effective solution and choice of options which would be mutually satisfactory; and
- For pipeline licence applications and mining lease applications there are statutory processes during which petroleum and mining interests can and must be taken into account by the decision-making process and which can allow for potential interaction of the interests to be resolved.

I believe there is ample opportunity, both in time and with up to date information, during both pipeline licensing and mining lease approval processes for mining and pipeline interests to engage in an objective and equitable negotiation for the most appropriate, efficient and mutually acceptable solution.

For the above reasons, I have not made any specific conditions or recommendations to be applied to the pipeline licence in relation to the interaction with coal resources. Instead, I make an observation that future interactions of this type are considered to be best dealt with using the existing provisions of the *Mineral Resources Act 1989* (section 252b) and the *Petroleum and Gas (Production & Safety) Act 2004* (sections 400 and 411).



## 8.6 Road System Impacts

### **Agency Position** (*Main Roads, Fitzroy Shire, Broadsound Shire*)

Main Roads recognises that the EIS and Supplement to the EIS has described the range and characteristics of road use and impacts that may be experienced both temporarily and permanently and that the Proponent is willing to consult with Main Roads and Shire Councils in planning and implementing the project. This also recognises that in pipeline projects, details such as pipeline locations in road reserves and transport routes and schedules, can only be finalised when construction contractors are developing the planning and implementation programs.

Nevertheless the principal road and transport management issues for the project can be stated as follows:

- Completion of Road Impact Assessment and Road Management Plans by the Proponent in conjunction with the construction contractor at the time of project implementation;
- Need for approvals and/or consultation for all interactions with the State-controlled Road system in particular:
  - Approval for locating the pipeline in and across State-controlled road reserves; and
  - Access from the State-controlled roads to the pipeline Right of Way and construction camps;
- Closure of temporary access and maintenance of ongoing access arrangements. Specific items for attention during the above processes:
  - Crossing of the Peak Downs Highway near the Isaac River bridge;
  - All crossings of State-controlled roads to be under-bored at levels 1.2 metres below the adjacent table drain to a width to accommodate any proposed widening;
  - Assessment of road impacts around Moranbah associated with compressor station, pipeline activity and temporary campsite; and
  - Impacts associated with commitment not to use the Gavial-Gracemere local road.

Main Roads sought several conditions to address these matters.

Similar matters were highlighted by Fitzroy Shire, which sought and received specific commitment that the pipeline construction would not use the Gavial-Gracemere road. Furthermore both Fitzroy and Broadsound Shire Councils sought acceptance of the proposition that the Proponent would be responsible for remediating local roads where pipeline traffic had caused damage.

## ***Enertrade Position***

Enertrade, in its Supplement to the EIS and Construction Environmental Management Plan, addressed its commitment to producing Road Impact Assessment and Road Management Plans and to ensure consultation with, and applications to, road authorities for all required approvals of works associated with State-controlled road reserves and shire roads. Furthermore Enertrade has committed in the Construction EMP not to use the Gavial-Gracemere local road as requested.

Where access points to roads are temporary, the Proponent, through the Road Management Plan, will ensure its construction contractor will consult with the road authority and meet the requirements of the *Main Roads – Road Planning and Design Manual* and safety criteria for such access to the Right of Way for construction vehicles, and to construction camps for workforce transport and service vehicles. This is to apply whether the roads are State-controlled or local authority administered.

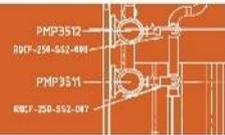
Movement of heavy equipment and pipe transport will be managed by a specialist logistics company who will be responsible for transport approvals and management.

Under the proposed Road Management Plan the possible impact on roads will be monitored by an initial baseline road condition inventory immediately prior to use for construction purposes and followed after construction by reassessment to determine damage caused by pipeline traffic. Remediation or maintenance will be agreed with the Shire and Main Roads as a result of this process.

As regards road impacts around Moranbah, Enertrade has assessed that these will be minimal, due to the following factors:

- The need for the Moranbah Compressor station to be upgraded will not be present at the outset of the project and no further units will be installed initially; hence there will be little or no heavy equipment using Moranbah roads;
- In any case, Enertrade maintains that short term transport of a small number of loads through this intersection would not justify an upgrading proposal from Enertrade;
- Pipe transport along the Peak Downs Highway from Mackay to site will continue on the highway, rather than use the Moranbah road; and
- Construction camp location will be well south of Moranbah and workforce transport will be controlled by the contractor. The duration of work on the pipeline right of way around Moranbah will be relatively short and confined to the first 10-15 kilometres of the route only.

Enertrade has committed to under-bore all sealed roads and to confirm the depth of the pipeline at 1.2 metres below the lowest portion of the road and surrounding drainage.



## ***Coordinator-General's Conclusion***

Enertrade has specified its management arrangements for road impacts in a series of Project Commitments published with its EIS and Supplementary EIS. These will be delivered principally by inclusion in the Road Management Plan and in some cases in certain Construction Management Plans. Hence completion of the Road Management Plan before the time of construction will be necessary to take account of conditions at the time.

I am conscious that it is important to manage road impacts for Shire roads as well as State-controlled roads and the Proponent has made commitments that inspection and remediation arrangements will be made with Shire Councils where necessary as a result of pipeline construction impacts.

Based on the information in the EIS, Supplement to the EIS and draft Road Management Plan and given that initially a compressor plant upgrade is not required and also that a construction camp will not be located in this location, the impacts of road transport in the Moranbah region appear to be insufficient to warrant a requirement for the gas pipeline project to upgrade the Peak Downs Highway - Moranbah Road intersection. Should circumstances be changed at the time of the proposed project construction, the requirement to produce a Road Management Plan at that time will enable the relevant situation to be taken into account.

In order to clarify that the above commitments are to be implemented by the Proponent in a planned manner, I propose that the following conditions regarding road use management be included in the conditions for pipeline approval.

### **Condition 5**

- a. **A Road Impact Assessment (RIA) Report and Road-use Management Plan (RMP) shall be prepared by the Proponent in conjunction with its construction and logistics contractors for transport tasks associated with pipeline construction and workforce transport, in accordance with the DMR *Guidelines for Assessment of Road Impacts of Development* current at the time.**
- b. **The Proponent shall submit the RIA Report and the RMP for approval to DMR within two (2) months of the appointment of the principal construction contractor or construction alliance arrangement, and before commencement of major construction activities in the field or traffic generation affecting roads.**

**The Department of Main Roads is the agency responsible for this condition.**

## **Condition 6**

- a. The Proponent shall enter into a Transport and Traffic Pre-Construction Agreement with DMR to address issues relating to road use, maintenance, traffic management and contributions for infrastructure upgrading works within one (1) month of the production of the RMP, and before commencement of major construction activities or traffic generation.**
- b. If agreement is not reached within one month (1) of production of the RMP, then the Proponent will provide a letter of undertaking to DMR to address any outstanding matters defined in the RMP that have not been agreed.**

**The Department of Main Roads is the agency responsible for this condition.**

## **Condition 7**

- a. The Proponent must ensure that all of its activities in the State-controlled road reserve comply with Main Roads' standards from the Road Planning and Design Manual.**
- b. All crossings of State-controlled and sealed roads shall be underbored at levels 1.2 metres below an adjacent table drain, to a width to accommodate reasonable road widening, but not greater than the road reserve.**

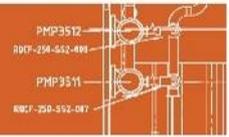
**The Department of Main Roads is the agency responsible for this condition.**

## **Condition 8**

**The Proponent shall ensure that the Construction Contractor:**

- a. carries out an inventory of the condition of roads, including Shire roads, to be used during construction, in consultation with the relevant road authority, prior to commencement of major construction activities or traffic generation;**
- b. remediates any damage that can be established as being caused by construction traffic on Shire roads, in agreement with the relevant road authority; and**
- c. removes any temporary access intersections following completion of the pipeline.**

**The Department of Main Roads is the agency responsible for this condition.**



## 8.7 Gladstone Pipeline Route

**Agency Position** (*Gladstone City Council, Gladstone Pacific Nickel, DNRW, DPIF, EPA*)

The issues of interest to these agencies fall into two categories:

- those concerning the route adjacent to the Calliope River; and
- those concerning the impact of the route through the Gladstone City local authority area.

Near the Calliope River agencies were concerned about acid sulfate soils and impacts on the marine environment by the pipeline crossing the Calliope River and its anabranch.

Agencies indicated that the route through the Gladstone City Council area had not been delineated fully in the Supplement to the EIS and that earlier issues relating to the route proposed in the EIS had not been fully resolved. These issues involved:

- Proximity of the pipeline corridor adjacent to a proposed residential subdivision in Gladstone City, south of Kirkwood Road;
- The proposed location of the corridor in the Mt Maurice State Forest;
- The proposed location of the corridor in an unmade road reserve; and
- Route through Byellee Wetland Toondoon Botanic Gardens and Meteor Sports Ground, all in Gladstone City.

DNRW requested that where acid sulfate soils would be impacted, mitigation measures in accordance with the State Planning Policy SPP 2/02 will be incorporated into the Construction EMP. DPIF highlighted the need for approvals for Waterway Barriers and for disturbance of marine plants. It also expressed a strong preference for directional boring techniques to be employed for waterway and wetland crossing, for example the Calliope River.

Gladstone City Council advised the Coordinator-General that the current EIS assessment should not approve the proposed route through Gladstone City boundaries as they currently exist and that any future proposal should be subject to a separate application.

EPA advised that Coordinator-General that it would not be providing an environmental authority for the pipeline past the Gladstone City Gate location adjacent to Comalco facilities.

Gladstone Pacific Nickel (GPN) indicated that it is currently considering a project on a site in the Gladstone State Development Area, near to the Calliope River anabranch. GPN indicated that the proposed pipeline was currently proposed to cross its site in a Powerlink corridor. GPN sought assurance that, if the Powerlink corridor was relocated (to allow GPN uninterrupted use of its site), that the gas pipeline would also be relocated.

## ***Enertrade Position***

Enertrade provided assurances that it recognised the area around the Calliope River as wetlands and would incorporate acid sulfate soils, marine plant disturbance and underboring of waterways provisions into its Construction and Environmental EMP.

Further, it recognised that the route selected through Gladstone City for the pipeline would be for a “low pressure lateral” class of pipeline beyond the Gladstone City Gate Station, and that it would be subject to further approval conditional on the Proponent and contractor finalising a number of land access and approval issues.

## ***Coordinator-General’s Conclusion***

I note that issues concerning pipeline construction in the wetlands and Calliope River are covered by general provisions for water crossings and acid sulfate soil management in the Construction EMPs.

However, for the low pressure lateral between the City Gate and the end of the pipeline on the east of Gladstone City, a number of critical land use and impact issues have been raised. In particular the proximity of the pipeline corridor adjacent to a proposed residential subdivision south of Kirkwood Road and the proposed location of the corridor in the Mt Maurice State Forest. These issues have not been resolved with the agencies and Council concerned.

Furthermore, I am advised by the Council that it does not wish me to approve the pipeline route in this area and also advised by EPA that it will not provide environmental authority for this lateral pipeline; given the current level of knowledge of the route and impacts.

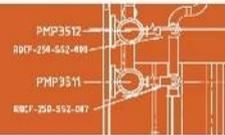
I therefore find that there is insufficient information for me to conclude that the pipeline and route for the low pressure lateral past the Gladstone City Gate Station is acceptable. I will therefore state my refusal of approval for the low pressure lateral pipeline through Gladstone City beyond the Gladstone City Gate Station.

## **8.8 Specific Pipeline Route Variations**

### **8.8.1 Stanwell- Gladstone infrastructure Corridor**

From KP 350 near Midgee Creek, 20 km south of Rockhampton to KP 412 near the town of Mt Larcom the proposed pipeline route follows a path roughly parallel to the proposed Stanwell-Gladstone infrastructure Corridor (SGIC). The path varies between 5 -10 km west of the SGIC, and generally follows Powerlink transmission line easements. The pipeline route in fact joins SGIC near Mt Larcom just as the corridor enters the northwestern boundary of the Gladstone State Development Area.

Enertrade had already selected the pipeline route prior to SGIC route selection and followed somewhat different selection criteria. However, I have sought comment from Enertrade as to whether the use of the SGIC corridor would be of interest. Enertrade’s reply incorporates the following comments:



*“Enertrade would certainly consider the benefits of adopting the proposed corridor for the section of the CQGP between Stanwell Industrial Park and the Gladstone State Development Area.*

*“To better enable Enertrade to accurately assess its position in regard to the proposed corridor more detailed information would be required about the corridor alignment and the proposed arrangements for Enertrade’s occupation of a portion of the corridor.*

*“ It is expected that the corridor approval and development would cover the following items, and that Enertrade and other potential corridor users would not need to individually undertake land and environmental approvals such as:*

- *Land Acquisition of ordinary title*
- *Native Title clearance*
- *Cultural Heritage clearance.....*
- *Environmental approval sufficient to allow Enertrade to obtain ‘Environmental Authority’.....”*

This was reinforced in the commitments contained in the Supplementary EIS indicating that:

*“The Proponent will liaise with the Department of Infrastructure and Planning and if the corridor is available at the time construction is required and is considered technically and commercially viable for gas transmission pipeline installation, the Proponent is prepared to locate within this corridor.*

This being so, I believe that the following condition should be applied to ensure that this commitment is considered when the pipeline project is further pursued:

### **Condition 9**

**The Proponent shall, prior to a decision to commit to construction, consult with the Department of Infrastructure and Planning and consider the use of the Stanwell Gladstone Infrastructure Corridor as a route for the gas pipeline.**

**The Department of Infrastructure and Planning is the agency responsible for this condition.**

### **8.8.2 Pipeline Route through Yarwun Gap**

The proposed pipeline corridor through the Gladstone State Development Area (GSDA) between KP 412 and KP 426 follows an established pipeline easement route sanctioned by GSDA planning. However, after this the easement traverses a route alongside the electric rail line for 5 kilometres. Since pipelines are sensitive to AC interference from rail lines over a distance, Enertrade has selected an alternative route outside of the State Development easement on safety grounds.

Despite this, land constraints require the pipeline route to again approach the rail line and cross it around the KP 430 and KP 431 distance. At this point the route is located at the edge of the rail corridor adjacent to the Mt Stowe State Forest. I am aware that current planning has commenced for rail upgrades that may be required for the Wiggins Island Coal Terminal and associated rail facilities. Since this has the potential for increasing the number of rail tracks in this rail corridor, I sought preliminary advice from Queensland Rail on the rail requirements for this corridor.

Drawings provided by QR indicate that additional rail lines required will not encroach on the proposed pipeline corridor. Whilst these plans are preliminary, there is reason to believe that this section of the pipeline route is feasible at this stage of development of both the pipeline project and planning of the rail project. More detailed approvals of pipeline crossings of the rail corridor can proceed in accordance with the *Transport Infrastructure Act*.

## 8.9 Environmental Authority Conditions

Section 4 of this Report noted that Environmental Authorities for construction and operation of gas pipeline: ERA 21C and ERA 21E are required to be obtained. These authorities are also required pre-conditions to the obtaining of a pipeline licence under the *Petroleum and Gas (Production and Safety) Act 2004*.

Enertrade has already made application for such an Environmental Authority and EPA has assessed that application and provided me with conditions that would be attached to the environmental authority issued under the provisions of Chapter 4A of the *Environment Protection Act 1994*.

These conditions are presented in Appendix 2 of this report.

## 9.0 Conclusions and Recommendations

In evaluating the environmental effects, I have considered: the EIS, SEIS and detailed Environmental Management Plans (EMPs) prepared by the Proponent; public submissions received on the EIS; comments on the EIS and other advice provided by state and local government authorities (Advisory Agencies); and other relevant information.

Having regard to the above, I consider that the EIS for the Central Queensland Gas Pipeline Project has adequately addressed the environmental and other impacts of the project, and generally meets the requirements of the Queensland Government for impact assessment in accordance with the provisions of Part 4 of the *State Development and Public Works Organisation Act 1971*.

With the exception of the Gladstone low pressure lateral pipeline, I recommend that the project can proceed as described in the EIS and that the potential adverse impacts associated with the project can be adequately addressed through the following measures:

- implementation of the project generally in accordance with the arrangements described in the EIS, and the Management Commitments nominated therein;
- finalisation and implementation of appropriate Environmental Management Plans as drafted in the EIS; and
- attachment of recommended requirements from this report (pursuant to s.47C of *SDPWO Act*) as conditions for development approvals under the *Environmental Protection Act 1994* and (pursuant to s.49B of *SDPWO Act*) as conditions for a proposed pipeline licence under the *Petroleum and Gas (Production and Safety) Act 2004*, and listed in Appendix 1 and Appendix 2.

I find that there is insufficient information for me to conclude that the pipeline and route for the low pressure lateral past the Gladstone City Gate Station is acceptable. I will therefore state my refusal of approval for the low pressure lateral pipeline through Gladstone City beyond the Gladstone City Gate Station.

Copies of this report will be given to the:

- CEO of Enertrade, pursuant to s.35(5)(a) of the *SDPWO Act*;
- Minister for Environment, pursuant to s.47C (2) of the *SDPWO Act*;
- Minister for Mines and Energy in accordance with s.49B(2) of the *SDPWO Act* and as Shareholding Minister for Enertrade
- The Treasurer of Queensland as Shareholding Minister for Enertrade.

A copy of this report will be made publicly available on the Coordinator-General's website, currently accessible at: [www.infrastructure.qld.gov.au/eis](http://www.infrastructure.qld.gov.au/eis).

# Appendix 1

## Conditions of the Coordinator-General

### Condition 1

The Proponent and/or its contractor shall finalise the Environmental Management Plans (Construction and Operations) to the satisfaction of EPA prior to commencement of construction of the pipeline and include the Plans in the Project Plan for the Central Queensland Gas Pipeline during implementation.

EPA is the agency responsible for this condition.

### Condition 2

The Proponent is to provide offsets for the permanent loss of Brigalow in accordance with the Queensland Government Policy for Vegetation Management Offsets – 28 September 2007.

The Department of Natural Resources and Water is the agency responsible for this condition.

### Condition 3

The Proponent shall ensure that, in accordance with commitments in the Construction Environmental Management Plan, its contractors and suppliers source water for the construction camps only from authorised sources of water.

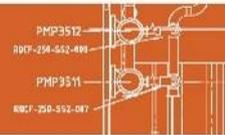
The Department of Natural Resources and Water is the agency responsible for this condition.

### Condition 4

Within 3 months of the completion of construction of the pipeline through the Rainbow Mountain Nature Refuge and the Stanwell Power Station Nature Refuge areas the Proponent will request an audit by the EPA generally of the following protection measures of the EMP in respect of the route in the Refuge areas:

- management of disturbance to sensitive flora species on the corridor and access tracks, if any, and their close proximity;
- records of fauna species dealt with under the fauna handling arrangements during construction; and
- restoration activities on the corridor and for any flora specimens moved.

The audit shall be carried out by the EPA within 6 months of the request.



### Condition 5

- a. A Road Impact Assessment (RIA) Report and Road-use Management Plan (RMP) shall be prepared by the Proponent in conjunction with its construction and logistics contractors for transport tasks associated with pipeline construction and workforce transport, in accordance with the DMR *Guidelines for Assessment of Road Impacts of Development* current at the time.
- b. The Proponent shall submit the RIA Report and the RMP for approval to DMR within two (2) months of the appointment of the principal construction contractor or construction alliance arrangement, and before commencement of major construction activities in the field or traffic generation affecting roads.

The Department of Main Roads is the agency responsible for this condition.

### Condition 6

- a. The Proponent shall enter into a Transport and Traffic Pre-Construction Agreement with DMR to address issues relating to road use, maintenance, traffic management and contributions for infrastructure upgrading works within one (1) month of the production of the RMP, and before commencement of major construction activities or traffic generation.
- b. If agreement is not reached within one month (1) of production of the RMP, then the Proponent will provide a letter of undertaking to DMR to address any outstanding matters defined in the RMP that have not been agreed.

The Department of Main Roads is the agency responsible for this condition.

### Condition 7

- a. The Proponent must ensure that all of its activities in the State-controlled road reserve comply with Main Roads standards' from the Road Planning and Design Manual.
- b. All crossings of State-controlled and sealed roads shall be underbored at levels 1.2 metres below an adjacent table drain, to a width to accommodate reasonable road widening, but not greater than the road reserve.

The Department of Main Roads is the agency responsible for this condition.

### Condition 8

The Proponent shall ensure that the Construction Contractor:

- a. carries out an inventory of the condition of roads, including Shire roads, to be used during construction, in consultation with the relevant road authority, prior to commencement of major construction activities or traffic generation;
- b. remediates any damage that can be established as being caused by construction traffic on Shire roads, in agreement with the relevant road authority; and

- c. removes any temporary access intersections following completion of the pipeline.

The Department of Main Roads is the agency responsible for this condition.

### **Condition 9**

The Proponent shall, prior to a decision to commit to construction, consult with the Department of Infrastructure and Planning and consider the use of the Stanwell Gladstone Infrastructure Corridor as a route for the gas pipeline.

The Department of Infrastructure and Planning is the agency responsible for this condition.

END OF CONDITIONS APPENDIX 1

# Appendix 2

## Conditions for environmental authority

Under the provisions of the Environmental Protection Act 1994, this environmental authority (petroleum activities) is issued to:

Queensland Power Trading Company trading as Enertrade  
 Level 10  
 10 Creek Street  
 Brisbane 4000

in respect of carrying out the following level 1 environmentally relevant activities (ERA) of Schedule 1 of the *Environmental Protection Regulation 1998*:

21C	Petroleum activity - The construction of a new transmission pipeline under a pipeline licence issued under any of the petroleum legislation.
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on the relevant petroleum authorities identified below:

Type of petroleum authority	Petroleum authority number	Project / Location description
Pipeline Licence	PPL121	Central Queensland Gas Pipeline (Moranbah to Gladstone)

### Schedule A - General

#### Authorisation

(A1) The Environmental Authority only approves the construction of the pipeline PPL121 from Moranbah to Gladstone City Gates as specified in Figure 1.1 of the *Central Queensland Central Gas Pipeline Environmental Impact Statement 2006*.

#### Pipeline Route

(A2) The gas pipeline route must be constructed as specified in the Maps R1138 G to R1148 G as attached in Appendix A.

#### Pipeline Activities

(A3) The holder of the environmental authority must undertake petroleum activities in accordance with the following sections of AS2885 Gas and Liquid Petroleum 2007:

- a. 3 – pipeline integrity management;
- b. 6 – threat mitigation; and
- c. 7 – safety and environment

### *Financial Assurance*

- (A4) The holder of the environmental authority must:
- a. Calculate a financial assurance in accordance with the Schedule of Rehabilitation Costs in the EPA guideline “Financial assurance for petroleum activities”; and
  - b. Maintain the financial assurance until the administering authority is satisfied that no claim is likely to be made on the assurance.

### *Maintenance of Measures, Plant and Equipment*

- (A5) The holder of the environmental authority must ensure that:
- a. all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; and
  - b. such measures, plant and equipment are maintained in a proper condition; and
  - c. such measures, plant and equipment are operated in a proper manner.

### *Monitoring*

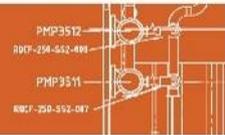
- (A6) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
- (A7) Where monitoring is a requirement of this environmental authority, ensure that a suitably qualified and experienced person(s) conducts all monitoring.

### *Storage of hazardous substances*

- (A8) The holder of the environmental authority must ensure that storage facilities for all hazardous, flammable and combustible liquids:
- a. are within an on-site containment system;
  - b. are controlled in a manner that prevents material or serious environmental harm;
  - c. are maintained in accordance with Section 2.3 for minor storages and Section 5.8 for storages above 10 000 L of AS 1940:2004 Storage and Handling of Flammable and Combustible Liquids; and
  - d. are equipped with measures, appropriate to the risks to the surrounding environment, to minimise the risk of spills and ensure early detection of spills.

### *Notification of Emergencies, Incidents and Exceptions*

- (A9) All reasonable actions are to be taken to minimise environmental harm, or the risk thereof, resulting from any emergency, incident or circumstances not in accordance with the conditions of this environmental authority.



- (A10) As soon as practicable after becoming aware of any emergency, incident or information about circumstances which results or may result in environmental harm not in accordance with the conditions of this environmental authority, the administering authority must be notified in writing.
- (A11) Not more than ten (10) days following the initial notification of an emergency, incident or information about circumstances which result or may result in environmental harm, written advice must be provided to the administering authority in relation to:
- proposed actions to prevent a recurrence of the emergency or incident;
  - the outcomes of actions taken at the time to prevent or minimise environmental harm; and
  - proposed actions to respond to the information about circumstances which result or may result in environmental harm.
- (A12) As soon as practicable, but not more than six (6) weeks following the conduct of any environmental monitoring performed in relation to the emergency or incident, which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority, written advice must be provided of the results of any such monitoring performed to the administering authority.

#### *Definitions*

- (A13) Words or phrases used in this environmental authority are defined in Attachment 1 – Definitions. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the Environmental Protection Act 1994, its Regulations and Environmental Protection Policies must be used.
- (A14) The holder of the environmental authority must comply with the relevant control strategies detailed in the Central Queensland Gas Pipeline “Construction Environmental Management Plan (380-PP-G-008)” dated August 2007 (or current version), to manage environmental impacts caused by the undertaking of the environmentally relevant activities authorised under this environmental authority. To the extent of any inconsistency between the conditions of this environmental authority and the environmental management plan, the conditions of the environmental authority prevail.

END OF CONDITIONS FOR SCHEDULE A

### **Schedule B - Air**

#### *Dust nuisance*

- (B1) The holder of this environmental authority (petroleum activity) must ensure that dust or particulate matter or both, resulting from a petroleum activity does not cause an environmental nuisance at any sensitive place or commercial place.

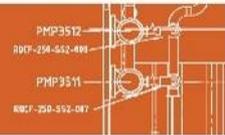
- (B2) When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (B3) If the environmental authority holder can provide evidence through monitoring that the following limits are not being exceeded then the holder is not in breach of (B1):
  - a. Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with AS 3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method of 1991; and
  - b. A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre ( $\mu\text{m}$ ) (PM10) suspended in the atmosphere of 150 micrograms per cubic metre over a 24 hour averaging time, at a sensitive or commercial place downwind of the operational land, when monitored in accordance with:
    - i. Particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet - Gravimetric method, when monitored in accordance with AS 3580.9.6 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM (sub) 10 high volume sampler with size-selective inlet - Gravimetric method of 1990; and
    - ii. Any alternative method of sampling PM10, which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

NOTE: You must propose which monitoring method is appropriate in accordance with condition (B1-3) (a) or (b) or both.

### *Smoke*

- (B5) The holder of the environmental authority must not cause the burning of vegetation or other material resulting from a petroleum activity, unless authorised by an administering authority.

END OF CONDITIONS FOR SCHEDULE B



## Schedule C - Water

### *Erosion sedimentation and water flow*

- (C1) The holder of the environmental authority must prevent or minimise:
- erosion of areas disturbed by petroleum activities;
  - sedimentation of any waters as a result of petroleum activities; and
  - significant alteration to the flow hydrology of any stream, temporarily or permanently.

### *Hydro-test water*

- (C2) Hydro-test water (water used to test pipeline integrity) must not be discharged to waters or land.

### *Sewage treatment*

- (C3) The holder of this environmental authority must ensure that:
- plant and equipment used for sewage treatment or disposal is installed, maintained and operated in a proper and efficient manner by a suitably qualified and experienced person;
  - sewage sludge must be removed off-site and disposed of at an appropriately licensed premise; and
  - irrigation of sewage effluent on land must be in accordance with EPA QLD Water Recycling Guidelines 2005.

### *Annual monitoring report (Sewage treatment)*

- (C4) An annual report must be provided to the administering authority with the annual return. This report shall include but not be limited to:
- a summary of the previous twelve (12) months monitoring results obtained under any monitoring programs required under this authority and, in graphical form showing relevant limits, a comparison of the previous twelve (12) month's monitoring results to both this authority limits and to relevant prior results;
  - an evaluation/explanation of the data from any monitoring programs;
  - a summary of any record of quantities of released required to be kept under this authority;
  - a summary of any record of equipment failures or events recorded for any site under this authority;
  - a summary of the record of equipment failures or events recorded for any site under this authority;
  - an outline of actions taken or proposed to minimise the environmental risk from any deficiency identified by the monitoring or recording programs;
  - the number of domestic tenements newly connected to the sewage treatment works during the previous twelve (12) months;
  - the progressive total number of connections; and
  - a summary of any trade waste agreements entered into or amended during the year, including the nature of the industry.

### *Pond conditions*

- (C5) All ponds used for the storage or treatment of contaminants, sewage or wastes at or on the authorised place must be constructed, installed and maintained:
  - a. so as to minimise the likelihood of any release of effluent through the bed or banks of the pond to any waters (including ground water);
  - b. so that a freeboard of not less than 0.5 metres is maintained at all times, except in emergencies; and
  - c. so as to ensure the stability of the ponds' construction.
- (C6) Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of contaminants or wastes.

### *Land Disposal*

- (C7) The irrigation of effluent must be carried out in a manner such that:
  - a. vegetation is not damaged;
  - b. soil erosion and soil structure damage is avoided;
  - c. there is no surface ponding of effluent;
  - d. percolation of effluent beyond the plant root zone is minimised;
  - e. the capacity of the land to assimilate nitrogen, phosphorus, salts, organic matter as measured by oxygen demand and water is not exceeded; and
  - f. the quality of groundwater is not adversely affected.
- (C8) Notices must be prominently displayed on areas undergoing effluent irrigation, warning the public that the area is irrigated with effluent and not to use or drink the effluent. These notices must be maintained in a visible and legible condition.
- (C9) The daily volume of contaminants released to land must be determined or estimated by an appropriate method, for example a flow meter, and records kept of such determinations and estimates.
- (C10) When conditions prevent the irrigation of treated effluent to land (such as during or following rain events), the contaminants must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent (such as wet weather storage or tanking off site to another treatment plant or sewer). A record must be kept of any removal or discharge off site, including destination, transporter, dates and volumes.
- (C11) Pipelines and fittings associated with the effluent irrigation system must be clearly identified. Lockable valves or removable handles must be fitted to all release pipelines situated in public access areas.
- (C12) Notwithstanding the quality characteristic limits specified in Schedule C Table 1 – Contaminant release limits to land, releases of effluent must not have any properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm.

Schedule C - Table 1 (Contaminant release limits to land)

Quality characteristics	Release Limits		
	Minimum	Median	Maximum
5 Day BOD			20 mg/L
Faecal Coliform (FC)		10 cfu/100mL <sup>2</sup>	
Suspended Solids			30 mg/L
Electrical Conductivity		1600 uS/ cm	
pH	6.5		8.5
Total Nitrogen			27 mg/L
Total Phosphorus as P			10 mg/L
Residual Cl <sub>2</sub>			1 mg/l
Oil and Grease			10 mg/l

(C13) Monitoring must be undertaken and records kept of a monitoring program of contaminant releases to the irrigation area at the monitoring points, frequency, and for the parameters specified in Schedule C - Table 2.

Schedule C - Table 2 (Monitoring program)

Monitoring point	Quality characteristics	Units	Frequency
Prior to discharge from sewage treatment plant	5 Day BOD	mg/L	monthly
Prior to discharge from sewage treatment plant	Faecal Coliform	cfu/100mL <sup>2</sup>	monthly
Prior to discharge from sewage treatment plant	Suspended Solids	Mg/L	monthly
Prior to discharge from sewage treatment plant	Electrical Conductivity	uS/ cm	monthly
Prior to discharge from sewage treatment plant	PH		monthly
Prior to discharge from sewage treatment plant	Total Nitrogen	mg/L	monthly
Prior to discharge from sewage treatment plant	Total Phosphorus as P	mg/L	monthly
Prior to discharge from sewage treatment plant	Residual Cl <sub>2</sub>	mg/L	monthly
Prior to discharge from sewage treatment plant	Oil and Grease	mg/L	monthly

(C14) Conduct and keep records of any monitoring programs of contaminant releases from the treatment plant at the monitoring points, frequency, and for the parameters specified in Schedule C - Table 2.

- (C15) The following information must be recorded in relation to all sampling:
- the date on which the sample was taken;
  - the time at which the sample was taken;
  - the monitoring point at which the sample was taken;
  - the measured or estimated daily flow of effluent at the time of sampling; and
  - the results of all monitoring.

- (C16) Effluent must only be dispersed to places that have implemented an Irrigation Management Plan. The Irrigation Management Plan must be submitted to the EPA for approval three months prior to irrigation commencing. The Irrigation Management Plan must address the following:
- efficiency of application;
  - control of sodicity in the soil;
  - minimisation of degradation of soil structure;
  - control of build ups of nutrients and heavy metals in the soil and subsoil from effluent and other sources;
  - preventing impacts on the groundwater resource through infiltration;
  - preventing subterranean flows of effluent to waters;
  - method of application; and
  - health and safety in relation to effluent handling and irrigation.

#### END OF CONDITIONS FOR SCHEDULE C

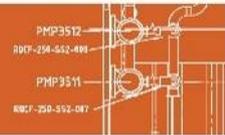
### Schedule D - Noise

- (D1) The holder of the environmental authority must ensure that petroleum activities do not cause environmental nuisance at any sensitive or commercial place.
- (D2) Notwithstanding condition (D1) the holder of the environmental authority must ensure that noise emitted from any aspect of petroleum activities does not exceed the noise levels specified in the tables below at any sensitive place or commercial place.

Time period	Noise level at a <b>sensitive place</b> measured as the Adjusted Maximum Sound Pressure Level $L_{A\ max, adj, T}$
7am– 6 pm	Background noise level plus 5 dB(A)
6pm–10pm	Background noise level plus 5 dB(A)
10pm–7am	Background noise level plus 3 dB(A)
Time period	Noise level at a <b>commercial place</b> measured as the Adjusted Maximum Sound Pressure Level $L_{A\ max, adj, T}$
7am –6 pm	Background noise level plus 10 dB(A)
6pm–10pm	Background noise level plus 10 dB(A)
10pm–7am	Background noise level plus 8 dB(A)

In no case is the background noise level,  $L_{A90, 15\ mins}$  to be less than 25 dB(A). In the event that measured background noise level is less than 25 dB(A), then 25 dB(A) is to be used.

- (D3) The method of measurement and reporting of noise levels must be in accordance with the most recent edition of the Environmental Protection Agency's Noise Measurement Manual.



- (D4) When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (D5) If monitoring in accordance with (D4), indicates Condition (D2) is not being met, then the holder of the environmental authority must:
  - a. address the complaint including the use of appropriate dispute resolution if required; and
  - b. immediately implement noise abatement measures so that noise emissions from the activity do not result in further environmental nuisance.

END OF CONDITIONS FOR SCHEDULE D

## Schedule E - Waste

### *Waste management*

- (E1) The holder of the environmental authority must:
  - a. ensure that petroleum activities do not result in the release or likely release of a contaminant to land or waters that results in material or serious environmental harm, unless the release is explicitly authorised under the EP Act; and
  - b. as soon as practicable, remove and dispose of all regulated waste to a licensed waste disposal facility or recycling facility.
- (E2) All regulated waste removed from the site must be removed by a person who holds a current authority to transport such waste under the provisions of the Environmental Protection Act 1994 and sent to a facility licensed to accept such waste.
- (E3) When regulated waste is removed from within the boundary of the authorised place and transported by the holder of this environmental authority, a record must be kept of the following:
  - a. date of waste transport;
  - b. quantity of waste removed and transported;
  - c. type of waste removed and transported;
  - d. route selected for transport of waste;
  - e. quantity of waste delivered; and
  - f. any incidents (e.g. spillage) that may have occurred on route.

END OF CONDITIONS FOR SCHEDULE E

## Schedule F - Land

### *Land management*

- (F1) The holder of this environmental authority must:
- a. minimise disturbance to land in order to prevent land degradation;
  - b. ensure that for land that is to be significantly disturbed by the petroleum activities that the top layer of the soil profile is removed and
    - iii. stockpiled in a manner that will preserve its biological and chemical properties; and
    - iv. used for rehabilitation purposes in accordance with condition (F6).

### *Preventing contaminant release to land*

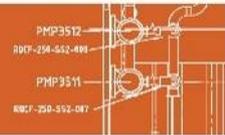
- (F2) The holder of this environmental authority must ensure that contaminants, resulting from a petroleum activity, must not be released to land.

### *Spills and clean up action*

- (F3) Notwithstanding the other conditions of this environmental authority, if a hazardous contaminant is released to waters or land, the holder of the environmental authority must:
- a. take immediate action to stop any further release;
  - b. take immediate action to contain the hazardous contaminant to the affected area, taking particular care to protect environmentally sensitive areas;
  - c. restore or rehabilitate the environment to its condition before the release occurred; and
  - d. take necessary action to prevent a recurrence of the release.

### *Vegetation management*

- (F4) The holder of this environmental authority must:
- a. prevent or minimise disturbance to vegetation by petroleum activities; and
  - b. manage the effects of clearing to prevent the loss of biodiversity, reduction of ecological processes and land degradation.
  - c. consider whether it is feasible to avoid clearing, and where viable alternatives exist, must not clear vegetation:
    - i. in, or within 50 metres of, the high bank of a watercourse;
    - ii. in, or within 50 metres of the static high water mark of, wetlands, lakes or springs;
    - iii. in a way that isolates clumps or dissects corridors of vegetation;
    - iv. on slopes greater than 5%;
    - v. on dispersible soils; and
    - vi. in existing or potential discharge areas.



### *Acid Sulphate Soils*

(F5) The environmental authority holder must:

- a. when clearing in areas with a high probability of acid sulfate soils, comply with an acid sulfate soil environmental management plan prepared in accordance with the State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulfate Soils and the relevant Guideline.
- b. The acid sulphate soil management plan must be submitted to the EPA for approval three months prior to the planned disturbance of acid sulphate soils or potential acid sulphate soils.

### *Protection of Riverine Areas*

(F6) The holder of this environmental authority must:

- a. ensure that there is no significant disturbance in riverine areas containing permanent water, except where necessary for the construction and/or maintenance of roads, tracks and pipelines that are essential for carrying out the authorised petroleum activities and no reasonable alternative location is feasible; and
- b. minimise disturbance of all other riverine areas.
- c. use directional drilling techniques for the establishment of pipelines across riverine areas that support sensitive ecosystems; and
- d. avoid impeding the flow of water in watercourses by establishing bed level crossings or piped culverts.

### *Rehabilitation landform criteria*

(F7) As soon as practicable and within 6 months (or longer period agreed in writing with the administering authority) of the completion of petroleum activities causing significant disturbance to land, the holder of the environmental authority must:

- b. remediate contaminated land (e.g. evaporation ponds containing hazardous waste) in accordance with the requirements of the Environmental Protection Act 1994
- c. reshape all significantly disturbed land to a stable landform similar to that of surrounding undisturbed areas;
- d. ensure that significantly disturbed land is reinstated to the pre-disturbed land suitability class;
- e. on all significantly disturbed land, take all reasonable and practicable measures to:
  - i. re-establish surface drainage lines;
  - ii. reinstate the top layer of the soil profile; and
  - iii. promote establishment of vegetation of the same species and density of cover to that of the surrounding undisturbed areas;
- f. ensure that the maintenance requirements for rehabilitated land are no greater than that required for the land prior to its disturbance by petroleum activities;

- g. ensure that the water quality of any residual water bodies constructed by petroleum activities meets criteria for subsequent uses and does not have the potential to cause environmental harm;

#### *Infrastructure Decommissioning*

- (F8) All infrastructure constructed by or for the environmental authority holder, including water storage structures, must be removed by the holder from the site and site rehabilitated according to condition (F6) prior to the surrender of the petroleum authority, except where the infrastructure is to remain with the written agreement of the administering authority and post-petroleum authority land owner/holder.

NOTE: This is not applicable where the landowner/holder is also the environmental authority holder.

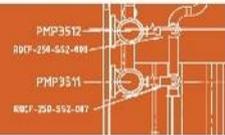
- (F9) Decommission an inactive buried pipeline by in-situ decommissioning (i.e. abandonment in place) consistent with the requirements of AS 2885.

END OF CONDITIONS FOR SCHEDULE F

### **Schedule G - Environmental Sensitive Areas**

- (G1) The holder of the environmental authority must ensure that:
- a. petroleum activities are not conducted within a category A or B environmentally sensitive area; and
  - b. petroleum activities do not cause a significant disturbance within 1km of a category A environmentally sensitive area or within 500m of a category B environmentally sensitive area;
  - c. petroleum activities are not conducted in a category C environmentally sensitive area unless there is a written agreement to enter the area for those activities from the relevant administering authority; and
  - d. staff, contractors or agents carrying out petroleum activities on a petroleum authority are aware of the location of any relevant category A, B or C environmentally sensitive areas within the petroleum authority.
- (G2) Despite condition (G1) the environmental authority holder is permitted to undertake activities within category A, B and C environmental sensitive areas which are conducted in accordance with the documents titled Central Queensland Gas Pipeline Moranbah to Gladstone, Queensland Pipeline Licence PPL 121, Construction Environmental Management Plan dated August 2007 (or current version) and Environmental Impact Statement Central Queensland Gas Pipeline dated October 2006 or more recent versions of these documents.

The subsequent conditions G3 to G10 authorise the environmental disturbance related to the gas pipeline construction and operation.



### *Tracks and Right Of Way (ROW)*

- (G3) Existing access and fence line tracks must be used wherever possible. Any new tracks are to be constructed by linking natural cleared or disturbed areas.
- (G4) Where new vehicle tracks are required they will not be constructed greater than 5m in width.
- (G5) ROW disturbance will not be constructed greater than 30m in width.
- (G6) Track and ROW construction involving blade clearing of established ground cover vegetation and/or clearing of mature trees is to be minimised.

### *Other land disturbance*

- (G7) The environmental authority holder must notify the administering authority 5 business days before construction is to begin in a nature refuge or national park.
- (G8) The administering authority holder must provide a pipeline construction report documenting the disturbance to category A, B and C environmental sensitive areas. The report should be submitted to the EPA every three months until the gas pipeline construction has ceased within category A, B and C environmental sensitive areas. The report should include:
  - a. documentation of environmental values of the category A, B and C environmental sensitive areas prior to disturbance, and be supported by photographs;
  - b. total area of disturbance within the category A, B and C environmental sensitive areas; and
  - c. a 1:25,000 scale map showing the disturbance within the category A, B and C areas.
- (G9) Camps and effluent treatment must not be established within the category A, B and C environmental sensitive areas and 500m buffer of these areas.
- (G10) The environmental authority holder must arrange for a post-construction inspection to be undertaken by representatives of the EPA for areas disturbed within nature refuges and National forests. The post construction inspection must be undertaken no longer than 12 months from the initial disturbance.

END OF CONDITIONS FOR SCHEDULE G

## **Schedule H - Community**

### *Monitoring and complaints*

- (H1) The holder of the environmental authority must:
  - a. develop and implement a monitoring program that will demonstrate compliance with the conditions in this environmental authority;

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

(H2) In consultation with the administering authority, cooperate with and participate in any community environmental liaison committee established in respect of the area where the petroleum activity is undertaken.

#### *Notification*

(H3) The holder of the environmental authority must record and initially notify the administering authority as soon as practicable of any emergency or incident that causes non-compliance with the standard environmental conditions.

END OF CONDITIONS FOR SCHEDULE H

### **Schedule I - Definitions**

Some of the words and phrases used in this licence are defined below.

Where a definition for a term used in this authority is sought and the term is not defined within this authority the definitions provided in the *Environmental Protection Act 1994*, its regulations, and *Environmental Protection Policies* shall be used.

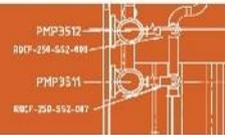
#### *Word Definitions*

**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 Environmental Protection Agency; or
- c. another State Government Department, Authority, Storage Operator, Board or Trust, whose role is to administer provisions under other enacted legislation.

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

**Authorised place** means the place authorised under this approval for the carrying out of the specified environmentally relevant activities.



**Background noise level LA90,15min** means the A-weighted sound pressure level of the residual noise exceeded for 90% of a representative time period of not less than 15 minutes, using time weighting, 'F'.

**Category A, B and C environmental sensitive areas** as defined in Schedule 1A of the Environmental Protection Regulation 1998.

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

**Contaminant** - The *Environmental Protection Act 1994* defines, under Section 11, a contaminant as:

- 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.

**Contaminated Land** – means land contaminated by a hazardous contaminant.

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

**Discharge area** is:

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

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

**Dispersible soils** are soils in which clay material disintegrates into particles less than 2 microns when submerged in distilled water for 12 hours.

**Dwelling** means any of the following structures or vehicles that is principally used as a place for human habitation;

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

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

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

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

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

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

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

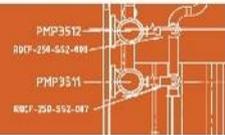
**Groundwater** means subsurface water, generally saturating the soil or rock in which it occurs.

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

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

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

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



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

**Land degradation** includes the following:

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

**Noise** means a sound or vibration of any frequency, whether transmitted through air or any other physical medium.

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

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

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

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

**Pipeline licence** includes a point-to-point pipeline licence or an area pipeline licence (see P&G Act)–

- a. point-to-point pipeline licence, (for a pipeline from a stated point or points to another point or points)
- b. area pipeline licence, (a licence for a stated area).

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

**Regulated waste** – means non-domestic waste mentioned in Schedule 7 of the Environmental Protection Regulation 1988 (whether or not it has been treated or immobilised), and includes: for any element – any chemical compound containing the element; and 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 fail to prevent the contaminant from being deposited, discharged, emitted or disturbed; and
- d. to allow the contaminant to escape; and
- e. to fail to prevent the contaminant from escaping.

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

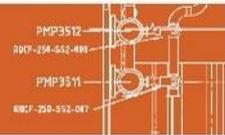
**Sedimentation pond is a bunded or excavated structure used to contain and settle waterborne sediment running off disturbed areas.**

**Sensitive place** means any of the following places –

- a. a dwelling;
- b. a library, childcare centre, kindergarten, school, college, university or other educational institution;
- c. a hospital, surgery or other medical institution;
- d. a protected area or an area identified under a conservation plan as a critical habitat or an area of major interest, under the Nature Conservation Act 1992;
- e. a marine park under the Marine Parks Act 1982; and
- f. a park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment).

**Significantly disturbed land** and **significant disturbance** means land if:

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



Examples of a disturbance to land:

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

However, the following areas are not significantly disturbed:

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

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

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

**Top layer** - The surface layer of a soil profile, which is usually 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 natural surface.

**Watercourse** means a river, creek or stream in which water flows permanently or intermittently in a visibly defined channel (natural, artificial or artificially improved) with:

- a. continuous bed and banks;
- b. an extended period of flow for some months after rain ceases, and
- c. an adequacy of flow that sustains basic ecological processes and maintains biodiversity.

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

**Waterway** - A naturally occurring feature where surface water runoff normally collects, such as a clearly defined swale or gully, but only flows in response to a local rainfall event.

**Wild river areas** may include the following–

- a. high preservation areas;
- b. preservation areas;
- c. floodplain management areas;
- d. subartesian management areas.

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

END OF CONDITIONS FOR SCHEDULE I