

Attachment B

Responses to Submissions

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BELYANDO SHIRE COUNCIL

(BSC1) Project Cost and Time Line (EIS Sect 1.1 and 2.20)

In sections 1.1 and 2.2 of the EIS it was stated that the cost of the Project would vary between \$220million and \$400million. The price variation simply reflects the difference in cost between building a 300mm pipeline and a 450mm pipeline. One of the major contributors to this cost variation is the price of steel which is sold by the tonne. 300mm pipe typically has a wall thickness of ~7mm and weighs ~56tonnes per km whilst 450mm pipe typically has a wall thickness of ~10mm and weighs almost twice that of the 300mm pipe.

The size of the pipe will make very little change to the construction time for the Project. There would be additional work in welding and joint coating in the field however this would be addressed by additional crew members. These additional numbers are already reflected in the potential maximum number of workers quoted in the EIS.

(BSC 2) Accommodation (EIS Sect 3.3.1.2)

Whilst the actual camp sites have not as yet been selected the EIS has nominated the locality along the ROW where the camps will be in proximity to. These are KP70, KP170, KP290 and KP320. The distances are driven by safety factors associated with travel times for the construction workforce. The Proponent is fully aware of the constrained accommodation market and the stand alone camps will be fully self-contained to reduce the potential for any impact upon accommodation in the region. None of the proposed locations are within the Belyando Shire and thus the camps should not directly impact this Shire.

A description of the type of accommodation provided is given in Section 3.3.1.2. It clearly states that as a minimum there will be one ensuite per every two rooms. This is the minimum standard that will be provided and is typical of modern pipeline camp facilities. Past practice was to provide an ablutions block adjacent to a number of sleeping units (e.g. similar to the Grosvenor facilities in Moranbah) however this was thought to be inappropriate.

All permanent staff at Moranbah are housed in residential housing. The Proponent will continue to monitor the accommodation situation and should expansion of the compressor station become necessary will either utilise existing accommodation if it is available or will install temporary facilities at the compressor station site. Any such installation will, as in the past, be carried out in full consultation with the Belyando Shire Council and with the required approvals.

(BSC 3) Roster (EIS Sect 3.3.1.1)

26 days on and 9 days off is common in the pipeline industry which often works 28 days on and 7 off. Pipeline construction is short-term (e.g. total construction time less than 9 months) with a highly mobile work force (i.e. the crews will move along the pipeline). Each crew progresses at ~3-4km per day. Personnel are accommodated in self sufficient camps (single persons no dependents) at locations designed to minimise travel to no more than 1 hour from worksite to camp (i.e. ~70km); thus campsites shift approximately every 2 cycles. Camps are generally located at some distance from communities to minimise impacts to those communities. Pipelining is not a long-term sustainable activity like mining and thus the roster system should not have an adverse impact upon any of the local communities.

(BSC 4) Compressor Station Accommodation (EIS Sect 3.3.2.2)

In the event that the compressor station is enlarged some accommodation in Moranbah would be required. As stated the Proponent, through its on-going involvement with the Moranbah community, is fully aware of the constrained accommodation situation in the town and has already installed accommodation units at its compressor station. These units are used for both visiting staff and contractors if accommodation is unavailable in Moranbah.

(BSC 5) Water Supply and storage (EIS Sect 3.6)

The Project will not generate any long term increase in residences in Moranbah. At the most the facility will require 1 additional person over the existing 6 personnel. As such there should not be any long term impact on water supply or storage at Moranbah as a result of the pipeline. The pipeline is planned to transport gas being developed by others as such there will be no direct economic impact in the Belyando Shire as a result of the pipeline. However the pipeline will provide the opportunity for further development of coal seam methane activities in the region providing the Shire with an alternative industry base.

(BSC 6) Noise and Vibration (EIS Appendix 9)

The Proponent undertook baseline noise studies at Moranbah prior to building the compressor station. A copy of the baseline report was submitted to the EPA as part of the North Queensland Gas Pipeline (NQGP) project. This report, Background Noise Level Study for Proposed Gas Compressor Plant at Moranbah Report No R03144/D532/Rev.0/25.08.03, has also been included in the current EIS in Appendix 9.

The study for this Project (Appendix 9) included undertaking further noise monitoring to assess the impact of both the compressor station and other industrial facilities which have been built in Moranbah since the completion of the NQGP compressor station. These studies have demonstrated that the Proponent is currently meeting its Environmental Authority conditions for noise impacts. Commitment 4-58 states that the Proponent will ensure that the installation of any additional compressors will comply with the existing noise limits imposed within its Environmental Authority.

(BSC 7) Transport and Access Arrangements (EIS Sect 4.8)

Workers will fly in and fly out via the nearest main airport facilities depending upon where construction is occurring (e.g. Mackay, Rockhampton, Gladstone). Charter bus services will be used to transport workers to and from the airport at the start and end of each work cycle. The Proponent places a high priority on worker safety and the use of buses is believed to relieve pressure on workers who may have travelled some distance before reaching Central Queensland or who are tired at the completion of a work cycle. This method was successfully used during the construction of the NQGP.

The operation of any enlarged compressor station will require no more than one additional person on site making a total of approximately 7 full time staff at site. The site is only staffed during normal working hours typically between 7.30am and 4.30pm. In addition the Proponent maintains close liaison with the mines in the area and endeavours to ensure that the compressor station hours do not clash with the shift changes at the mine. The Proponent places a high level of emphasis on safety however in this case we do not see the need for any changes to the site access in the long term.

The typical construction workforce for the compressor station would be 20-40 and again mainly during daylight hours. If additional safety at the site intersection with Goonyella road was deemed necessary this would be implemented e.g. temporary lighting.

(BSC 8) Social Impacts (EIS Sect 3.3.2.1 and 4.6)

The Proponent has a small permanent workforce within Moranbah and as such has a long term interest in the social well being of the Moranbah community. The Proponent recognises the difficulties facing Moranbah, particularly in relation to accommodation and water issues, and has always endeavoured to provide appropriate solutions to its Project needs (e.g. additional temporary accommodation).

As a corporate entity within the Moranbah community the Proponent has actively sponsored a number of social activities particularly in relation to young people and the arts. The Proponent does not however consider that the current proposal for a pipeline to Gladstone with a possible future expansion of the compressor station will create any additional long-term impacts on the Moranbah community. Rather the Proponent believes that by providing a mechanism for the transport of gas it is assisting in creating opportunities for alternative resource development in the region providing greater diversity in the industrial development of the Shire.

(BSC 9) Pipeline Route Sterilisation (EIS Sect 2.3.2)

A number of route options were investigated around Moranbah in an effort to balance the needs of the town, local mining interests and the pipeline. Whilst a route to the west of Moranbah was investigated it was abandoned due to the potential impacts on residential and industrial development in the area. The route to the north and east was selected as the preferred route. The Proponent held discussions with Council in relation to the potential for the road in this area to become a main entry point to Moranbah as a result of future mining operations and this will be taken into consideration during detailed design. Similarly potential residential development on the eastern side of Moranbah has been taken into consideration in route planning and will be taken into consideration during detailed design. As such the Proponent does not believe that the proposed route will constrain development in Moranbah.

A printing error occurred with Figure 4-24 in the EIS resulting in an extra line being shown on the diagram which gave the impression that the pipeline was going to both the east and west of Moranbah. The correct Figure 4-24 will be provided.

CALLIOPE SHIRE COUNCIL

(CSC 1) The Proponent thanks Council for its comments and will ensure that the matters relating to Waste Management, Campsites, Offices and Site management and handling and disposal of Dangerous Goods are taken into account during construction. To ensure that these comments are not lost it is proposed to make the following amendments to the EIS:

Table 1-2: Add *Dangerous Goods Safety Management Act and Regulations 2001* Section 4.9.2 paragraph 4 to read:

Waste disposal during the construction phase of the Project will be carried out in consultation with the relevant Shire Council. Initial contact has been made with each shire and this will be followed up by the construction contractor prior to construction activities commencing in a given shire area. A summary of the

potential waste facilities available in each local government area is given in Table 4-38(b).

(CSC 2) The need for food preparation to conform to the *Food Act 2006* is understood and the Proponent believes this has already covered by the following sections of the EIS:

- 1.6.1 Table 1.2 which lists the relevant legislation including the Food Act and where it would apply;
- 3.3.1.2 page 3-22 "Food preparation is in accordance with legislative requirements ...'
- 3.9 Commitment 3.33 '... liaise with all affected Shire Councils to ensure that ... food preparation is in accordance with legislative requirements.'

FITZROY SHIRE COUNCIL

(FSC 1) Gavial-Gracemere Road (EIS Sect 4.10.1 and 4.13)

The Proponent duly notes both Council's and DMR's requirement to not use Gavial-Gracemere Road. Section 4.10.1 and Section 4.13 will be updated to include a commitment to not use this route.

(FSC 2) Council Roads (EIS Sect 4.10.2.2)

The routes for movement of all construction plant and equipment will not be finalised until a construction contractor and transport contractor are appointed. The construction contractor will contact Council prior to construction commencing and undertake a road survey and agree the existing condition of all roads. All roads will be left in at least as good a condition as at the commencement of construction. If Council requires a full analysis of the roads in accordance with the DMR process Council will need to provide the Proponent with the relevant data relating to its roads. This will need to include current traffic counts, pavement condition, life of pavement and maintenance costs.

Amend Section 4.10.2.2 Road Pavement Integrity, last sentence in paragraph 4 (p4-98) to read:

Any damage that can be proven as being caused by hauling pipes on gazetted roads will be made good by agreement with the DMR or the local government authority as appropriate.

(FSC 3) Commitments 4.68 and 4.69 (EIS Sect 4.13)

Commitment 4-66 states that over size, over mass loads will be transported in accordance with the DMR publication 'Guidelines for Excess Dimensions'. It is the Proponent's understanding that this applies to all routes not just State roads. If Council has an alternative Guideline or Standard that it wishes to use, and which does not conflict with State statutory requirements, Council should provide this to the Proponent and it will be considered.

Whilst Commitment 4-69 relates solely to inventorying the road, Commitment 4-68 commits to remediating any damage. As such Commitment 4-69, which refers to relevant authorities (this includes Councils) does not require amendment.

Commitment 4-68 will be amended to include Councils as well as DMR.

(FSC 4) Weeds (Supplementary Attachment C)

Construction Weed Management Plan

A copy of the Pre-construction Weed Management Plan which applies to all preconstruction activities associated with a Project will be added to Appendix 3 (refer Attachment C of the Supplementary Report).

Section 8.1 of the Weed Management Plan did state that actions should be taken after high or seasonal rainfall. The example for timing (e.g. March-April) was indicative only. This section has been revised to reflect the changed circumstances relating to Enertrade and to ensure that the construction contractor undertakes a rigorous precontrol program for all access routes.

The Proponent fully agrees with Council's comment that weed management should comply with the *Land Protection Act* and to this end the Proponent undertakes regular weed spraying programs on its pipeline easements. However it needs to be recognised that these are only easements and they only represent a 30m corridor through a property. Land use rights remain with the landowner and the Proponent cannot achieve a completely weed free environment on a 30m corridor within a property that is not being appropriately managed by the land holder. However the Proponent will continue to work with all its landowners and DNRW to try and achieve full compliance with the legislation. Performance criteria for Section 8.4 of the Construction Weed Management Plan have been modified to read:

- Presence of weeds and pathogens on the easement will be consistent with the *Land Protection Act* as far as practicable taking into account the condition of the adjacent land.

The performance objective within Section 8.5 of the Construction Weed Management Plan has been amended to read:

- No spread, as a result of the CQGP Project, of Parthenium, Giant Rats Tail, Mother of Millions or Harrisa Cactus onto properties free of these species.

(FSC 5) Commitment 4-37 (EIS Sect 4.13)

Commitment 4-37 refers to any work carried out by the Proponent throughout the life of the Project and thus applies to both construction and operations activities. The wording of this commitment will be revised to more clearly state this commitment.

GLADSTONE CITY COUNCIL

(GCC 1) Kirkwood Road (EIS Sect 2.3.2.2)

The Proponent duly recognises that Council has plans for future urban development adjacent to Kirkwood Road as identified in the Kirkwood Road Structure Plan. This is discussed in the EIS under Section 2.3.2.2 Constraints. The proposed route option has endeavoured to avoid the development area by using the powerline easement and a portion of the State Forest reserve. The Proponent will seek approval from Council and the EPA on the most appropriate pipeline route in the Kirkwood Road area as and when the low pressure lateral is required.

Add to Section 2.4 Commitments:

The Proponent will seek approval from Council and the EPA on the most appropriate pipeline route in the Kirkwood Road area as and when the low pressure lateral is required.

(GCC 2) Byelle Wetland (EIS Sect 2.3.3 and 2.4)

The Proponent confirms that the route is now outside the Byellee wetlands. The Proponent originally considered a route through this area but once advised by GCC that the area was under consideration for declaration as a wetlands the route was relocated. Revision I as shown in the EIS does not impact upon the wetlands.

Add to Section 2.4 Commitments:

The pipeline route will not impact upon the Byellee wetland.

(GCC 3) Toondoon Botanic Gardens (EIS Sect 2.3.2.2 and 2.4)

The Proponent commits that the pipeline construction will not impact on the landscaped area of the Botanic Gardens that impinges upon the powerline easement.

Add to Section 2.4 Commitments:

The pipeline route will not impact on the landscaped area of the Botanic Gardens that impinges upon the powerline easement

(GCC 4) Meteors Sports Ground (EIS Sect 2.3.3 and 2.4)

The Proponent will ensure that all areas of the pipeline are designed to provide the maximum level of safety in accordance with AS2885, this will include areas such as the Meteor Sports Club.

Add to Section 2.4 Commitments:

The Proponent will ensure no long term negative impact on the social amenity of the Meteor sports field.

(GCC 5) Council Road Reserve (EIS Sect 4.10.2.1 and 4.13)

As discussed in Section 4.10.2.1, under Traffic Congestion (page 4-97 of the EIS), the Proponent and its construction contractor will negotiate with the relevant road authority in relation to the most appropriate management measures to be implemented for construction in a given area. This will include consultation with the GCC in relation to the design of the pipeline crossings of roads in the Kirkwood Road area.

Add to Section 4.13 Commitments:

The pipeline crossings of roads or occupation of the road reserve will be negotiated with the relevant road authority during design. Pipeline laid within road reserves shall allow for future road construction. Only a 5m wide permit to Occupy over the actual pipeline will be applied for.

DEPARTMENT OF COMMUNITIES

(DoC 1) The Proponent notes the Departments comments in relation to the potential positive impacts associated with the Project and the temporary nature of the construction period.

(DoC 2) In respect to the Department's recommendation for contact with the Woorabinda Shire Council the Proponent operates a totally inclusive approach to working with all the communities along its pipeline routes and provides work opportunities to all community members on a merit basis. In particular the Proponent has always had an inclusive approach in its dealing with Traditional Owners. Whilst the Woorabinda community is not within the direct area of the pipeline, being as identified by the Department, over 50km from the route, the Proponent has made considerable contribution to this community through the conduct of its indigenous consultation process. The Proponent has undertaken cultural heritage and ILUA negotiations with the Barada Barna Kabalbara Yetimarla #4 People (BBKY#4), Southern Barada and Kabalbara People (SBK), Kangoulu-Ghungalu People, Jetimarala People, Darumbal People, and Port Curtis Coral Coast People (PCCC). A number of these agreements include cultural and employment initiatives. A good cross section of the members of these groups reside in Woorabinda and therefore the Proponent believes that it has provided excellent opportunities to this community.

It must be remembered that pipeline construction is a short-term activity with many highly specialised skill requirements. As such pipeline construction does not offer many, if any, opportunities for basic training but rather offers those people with established skills the opportunity to further enhance those skills.

DEPARTMENT OF EMERGENCY SERVICES

(DES 1) The Proponent has duly noted the list of contacts provided by DES and will ensure that these contacts are incorporated into the relevant emergency response procedures for the Project. SES and RFS personnel will be included in the Project contacts directory.

(DES 2) The Proponent and the gas pipeline industry in general has a high level of commitment to both the safety of its own personnel and to the wider community. Construction of a pipeline in residential areas and particularly in proximity to school areas, is treated in the same way as other construction activities which pose a safety risk to the public (e.g. the work area is clearly signposted, traffic controllers are deployed and temporary fencing utilised as appropriate). During the NQGP project the pipeline was constructed in close proximity to the primary school at Woodstock and Project personnel conducted presentations at the school to advise the pupils of the activity that would occur and the dangers attached to the work area. The Proponent and its construction contractor will undertake similar tasks in association with the communities along the CQGP.

DEPARTMENT OF LOCAL GOVERNMENT, PLANNING, SPORTS AND RECREATION

No outstanding issues identified by the Department.

DEPARTMENT OF EDUCATION, TRAINING & THE ARTS

(EIS Sect 4.6.2.7 and 4.13)

(DETA 1) As set out in Section 4.6.2.7 of the EIS, the Proponent acknowledges its obligation to comply with the State Government Building and Construction Contracts Structured Training Policy (10% Training Policy) in respect of the CQGP project.

(DETA 2) As acknowledged by the Proponent and the Department full compliance with the 10% Training Policy may not be possible due to the nature of the project. Factors that may affect the level of compliance for the CQGP project include:

- On-site construction activities will be limited to a relatively short duration (in the order of seven to nine months); and
- Many construction activities are highly specialised and industry specific.

These constraints affected the Proponent's level of compliance with the 10% Training Policy on the NQGP project. However, a comprehensive employment and skilling strategy was developed by the project management team in collaboration with the staff from the Department of Employment and Training. This strategy was successfully implemented during the construction of the NQGP. It is the Proponent's intention to follow the same approach in respect of the construction of the CQGP.

(DETA 3) The Proponent also acknowledges that it needs to be conscious that 'the Queensland labour market remains tight due to a number of factors including the competing demands for skilled workers'. This potential labour shortage was identified as a significant risk to the CQGP project very early in the project planning process and much effort has been, and will continue to be, made to develop risk mitigation plans to limit the impact of this risk on the project.

Add to Section 4.13 Commitments:

The Proponent will meet with officers of DETA in advance of the tendering stage to discuss the 10% Training Policy and determine opportunities to collaboratively develop an employment and skilling strategy.

DEPARTMENT OF HOUSING

(EIS Sect 3.3.12 and 4.13)

(DoH 1) The Proponent notes the Departments' support for the proposed Accommodation Strategy of constructing workers camps at various locations along the pipeline route due to the constrained housing market in the area.

Add to Section 4.13 a new commitment:

The Proponent and construction contractor will ensure through the use of dedicated camp facilities that no further pressure is placed on the housing market in the Bowen Basin region.

DEPARTMENT OF MAIN ROADS

(DMR 1) Chapter 1 - Introduction

Section 1.6

Sub-section 1.6.1

Table 1-2 will be amended to include the *Transport Planning and Coordination Act 1994*, *Transport Operations (Road Use Management) Act 1995* and *Transport Infrastructure (SCR) Regulation 2006*.

(DMR 2) Chapter 3 – Description of the Project

Section 3.1 – Gas Pipeline

Request for larger scale mapping of key points along the route (e.g. Peak Downs Highway)

To enable an accurate analysis of the potential impacts of the proposal the Proponent has provided to DMR a shape file of the pipeline route to allow DMR to overlay the route on its own mapping system. Detailed maps of the Peak Downs Highway crossing and the Fitzroy Development Road area, along with all other State controlled road crossings, will be provided to DMR with the applications for AWEs prior to construction commencing.

Add to Section 3.9 Commitments:

The Proponent's construction contractor will, in accordance with legislative requirements, apply to DMR for AWEs for all works within road easements prior to construction

(DMR 3) Sub-section 3.1.6 - Access

Request for more precise details of the location of temporary accesses and typical details of standard or access construction proposed.

Temporary access points will be located at a number of locations along the route but this will not be finalised until such time as a construction contractor is appointed. The construction contractor will liaise directly with DMR in relation to such access points and the relevant safety requirements. It should be noted that any temporary access point is likely to be in use for only a short period as the work is linear and therefore access points will be used on a rolling schedule.

Add to Section 3.9 Commitments:

The Proponent and its appointed construction contractor will ensure that all temporary access meets the requirements of the *Main Roads - Road Planning and Design Manual* and meets safety criteria for use during the construction period.

(DMR 4) Sub-section 3.1.7 – Easement Widths

Request for more precise details (including maps) on the proposed easement location adjacent to the Fitzroy Development Road reserve and the proposed separation distance from road infrastructure.

As for DMR 3 this will not be finalised until such time as a construction contractor is appointed. Details will be provided to DMR with the applications for AWEs prior to construction commencing.

Commitment as for DMR 2.

Chapter 4 – Environmental Values & Management of Impacts

Section 4.1 Land

Sub-section 4.1.1 Land Use and Infrastructure

(DMR 5) Recommendation 1:

That the following conditions be required:

- *Each crossing of State-controlled road network be by under-boring, avoiding bridges and pile structures*
- *Pipe to be a minimum of 1.2m below the bottom of the adjacent table drains*
- *Depth of pipe under the following roads shall be maintained for the full width of the road reserve:*
 - *Peak Downs Highway*
 - *Capricorn Highway*
 - *Burnett Highway*
 - *Bruce Highway*
 - *Gladstone – Mr Larcom Road*
 - *Dawson Highway*
 - *Gladstone – Benaraby Road*
- *Proponent to make application to the respective DMR district a minimum of 15 business days prior to commencement of construction of the crossing. Application to include engineering plans showing all roads, drainage and services assets for a minimum distance of 50 metres either side of the proposed pipeline crossing location.*

The Proponent has already committed to under bore all sealed road crossings (Commitment 4-8).

As discussed in DMR 2 detailed drawings will be provided to DMR at the time of the AWE applications. The Proponent will liaise with DMR in relation to the location of the pipeline within any road easement.

Add the following Commitments to Section 4.13:

The depth of pipe under road crossings will be a minimum of 1.2m below the bottom of the table drains. This depth will be maintained under the full width of the road reserve of the following roads:

- Peak Downs Highway
- Capricorn Highway
- Burnett Highway
- Bruce Highway
- Gladstone - Mt Larcom Road
- Dawson Highway
- Gladstone - Benaraby Road

(DMR 6) Recommendation 2

Prior to finalisation of the pipeline route, the proponent shall submit any proposal for co-locating the route within 300m of the existing State-controlled road centreline to Main Roads for review and resolution of any conflicts with future road improvements/re-alignment works.

The construction contractor will submit to DMR, at least 15 business days prior to undertaking any construction works within a State-controlled road reserve, any proposal for co-locating the route within 300m of the existing State-controlled road centreline for review and resolution of any conflicts.

Section 4.10 Traffic, Transport & Access Arrangements

Sub-section 4.10.1.1 Pipeline – Access

(DMR 7) Recommendation 3

Requirements in relation to type of intersection to be constructed where direct access is required to State controlled roads from (a) construction camps (b) right-of-way.

Access to construction camps and the right-of way will be temporary measures. Construction camps are typically in place for approximately 2 work cycles (i.e. ~7-8 weeks); access to the ROW for pipe delivery is a rolling activity with progress at the rate of 3-4km per day thus an individual access point is unlikely to be in use for more than 1-2 weeks for heavy vehicles. As such the construction of formal intersections is not normally warranted. The construction contractor would contact DMR and arrange for a DMR officer to inspect all the proposed intersection sites to agree the measures to be implemented, typically signage, and to ensure that the locations selected have adequate visibility. This process was successfully implemented on the NQGP. For instance on the Bowen Development Road the DMR officer advised that the ROW crossing point was not a safe entry /exit point for vehicle movements and arrangements were made with the landowner to utilise a property access point further along the road.

Add to Section 4.13 Commitments:

The construction contractor will contact DMR and arrange for a DMR officer to inspect all the proposed intersection sites to agree the measures to be implemented, typically signage, and to ensure that the locations selected have adequate visibility.

Sub-section 4.10.1.2 Compressor Station

(DMR 8) Recommendation 4

Requirement to improve the safety and efficiency of the peak Downs Highway intersection with the Moranbah Access Road

The camp facilities for Moranbah will on average accommodate no more than 40 personnel. At the peak the workforce may reach 60 personnel but this would be for a very short period.

No assessment of the impact on the Peak Downs Highway/Moranbah Access Road intersection has been carried out at this stage as it is not known if or when the upgrade to the compressor station may be carried out.

The number of pipe trucks estimated is the maximum likely to be brought along the Peak Downs Highway and the majority of these trips will turn to the south not north into Moranbah.

The Proponent takes due recognition of DMR's concerns in relation to the Peak Downs Highway/Moranbah Access Road intersection. However, as the Proponent has already successfully carried out the safe transport of similar units through this intersection the Proponent does not recognise that a short term impact warrants the Proponent bearing the full cost of upgrading an intersection which DMR admits is substandard. The Proponent is willing to undertake an appropriate level of analysis of the intersection impacts prior to any upgrade of the compressor station and to liaise further with DMR at this time.

Appendix 3 Road Use Management Plan (Volume 1)

(DMR 9) Recommendation 5

Requirement to update and finalise the Road Use Management Plan in consultation with the Rockhampton office of DMR

Upon appointment of a construction contractor the Road Impact Assessment and Road Use Management Plan will be revised and finalised. These documents will be submitted to DMR for review.

Appendix 10 Road Impact Assessment (Volume 2)

(DMR 10) Recommendation 6 (A)

Amend tables and figures to reflect restriction of heavy vehicles on the Gavial-Gracemere Road from the Burnett Highway to Capricorn Highway

Submit amended pavement impact assessment to the District Director

Submit any required payment for the agreed contributions to mitigating impacts to the Central District office of DMR prior to commencement of the haulage of material and components for the project.

Add to Commitments 4.13:

Upon appointment of a construction contractor the Road Impact Assessment and Road Use Management Plan will be revised and finalised. These documents will be submitted to DMR for review and agreement on any contribution payments.

The Gavial-Gracemere Road will not be used as a heavy transport route by the Project (Commitment added to Section 4.13).

(DMR 11) Recommendation 6 (B)

During operation of the project inform the Rockhampton office of DMR of any proposed changes to the existing haulage routes, haulage volumes, vehicle impacts etc which may require variation of the road impact assessment report and conditions.

There will be no haulage associated with the operation of the CQGP. Haulage will be a one off activity, conducted over a short period of time, associated with the installation of the pipeline. There may be a very minor requirement for haulage of pipe during operations if a section of pipe needed to be replaced for any reason, however this is unlikely and would not involve any major vehicle movements.

DEPARTMENT OF NATURAL RESOURCES AND WATER, LANDSCAPES AND COMMUNITY SERVICES, CENTRAL WEST REGION AND DEPARTMENT OF MINES AND ENERGY

(DME 1) Resource Sterilisation (EIS Sect 2.3.2.2 and 4.1.1.1)

The Proponent is pursuing the co-location of pipelines within mining lease areas with the Department of Mines and Energy to seek resolution of the issues raised.

The Proponent has consulted widely with the potentially affected mining tenements in the area. The *Mineral Resources Act 1989* only requires a Proponent to reach agreement

with MDL holders. There is no requirement to reach agreement with an Exploration Permit holder and the Proponent disputes the Departments right to impose this impost on a development. However, the Proponent would be willing to work cooperatively with any organisation which in the future is granted an ML over a portion of the pipeline route to undertake pipeline relocation or strengthening works. This would be undertaken on the strict understanding that all works and costs associated with such works will be at the sole cost of the ML holder and that the Pipeline Licence holder must only take such steps (i.e. to relocate / strengthen) if it can satisfy itself and the Pipeline Licence regulator that the works can be undertaken safely, without a reduction in the operability of the pipeline and in accordance with the requirements of the *Petroleum (Gas Production and Safety) Act* and other relevant legislation and applicable standards.

(DME 2) Hazard and Risk (EIS Sect 4.12)

The Proponent is happy to include the Chief Inspector, Petroleum and Gas of the Department of Mines and Energy in all future Hazard and Risk reviews during the design phase of the pipeline.

The omission of the *Workplace Health and Safety Act 1995* was an oversight. This Act will be added to Table 1-2

Amend the last paragraph of the preamble to Section 4.12 to read:

The FSMP relates to both the *Workplace Health and Safety Act 1995* and the *Petroleum & Gas (Production & Safety) Act 2004*. Using these documents ensures the FSMP is specific to the petroleum industry, and also meets current, and future, industry-wide management system principles and practices. This approach is also in line with the general objective of achieving best practice results for the Project.

(DNRW 1) Land Tenure (EIS Sect 4.1.1.1)

A full listing of the potentially affected lots will be provided to the Department. For confidentiality reasons this information will not be provided in the Supplement but rather directly to the Department.

Soil Types (EIS Sect 4.13)

(DNRW 2) Missing Reference (EIS Sect 7.0)

The requested reference (for NRM 1993) was provided in the Soil Technical Paper (Appendix 5) but overlooked in the main EIS references.

Add to Chapter 7:

DNRM, 1993 Queensland Dominant Soils 1:7 500 000 Digital Vector data, NRM Indooroopilly, Brisbane

(DNRW 3) Land System Mapping (EIS Sect 4.1.3.1)

The following response has been provided by HLA Envirosiences (HLA) in response to the queries relating to the soils data provided. HLA provided the expert specialists that undertook the various environmental studies for the EIS.

The land system mapping which was used for the EIS assessment is detailed in Sections 3 and 4.3 of Appendix 5 and referenced within that Appendix. The summary information in the main body of the EIS did not include all of this information for reasons of brevity. As

suggested in the DNRW submission, land system mapping by Storey et. al. (1967) and Speck et. al. (1968) were used up to approximately Mount Larcom and for the remainder of the route 1:250 000 scale mapping by NRM (1995) (refer Section 4.1.3.1 of EIS) (Note mapping referenced as NRM 1995 was previously DPI data). DNRW (1993) mapping (Queensland Dominant Soils 1:7 500 000 Digital vector data) was used to cross check these principal map sources and conflicts, where they occurred, were noted.

Whilst use of the finer scale mapping for the local areas around Middlemount, Gogango and Gracemere may have provided more detail in these areas, it is HLA's belief that the broader scale mapping available for the entire alignment was adequate for the purposes of informing the EIS and guiding pipeline construction activities. It is also noted that the desktop assessment was supplemented by in-field soil sampling and analysis along the alignment, (which included 40 sample sites, as well as numerous observations, as detailed in Section 3 of Appendix 5. HLA liaised closely with DNRW's Data Coordinator and was most appreciative of the support provided in sourcing the soils data which was made available and used for the EIS, which HLA understands involved approximately two days effort on the Department's part.

(DNRW 4) Dominant Soils Map (EIS Sect 4.1.3.1)

Whilst it is recognised that the Dominant Soils map presented in Figure 4-6 could possibly be developed to a finer scale in some sections and that the Soil Orders used could be further subdivided, HLA believes that the scale and soil groups used were adequate for the purposes of informing the EIS and for guiding the management of potential impacts during the proposed pipeline construction activities. All data is available on the Project GIS data base thus enabling Project personnel to obtain finer scale mapping as and when required.

(DNRW 5) Acid Sulphate Soils (EIS Sect 4.1.3.1)

Add to Section 4.1.3.2 Acid Sulphate Soils and 4.13 Commitments:

A detailed ASS report will be prepared prior to construction of the section of pipeline from the proposed Gladstone City Gate, near the existing Comalco Plant, to the southern industrial zone of Gladstone.

Water Resources (EIS Sect 3.1.9.14)

(DNRW 6) Impacts on Creek Crossings (EIS Sect 3.1.9.14)

Section 3.1.9.14 Watercourse Crossings provides information in relation to the methods for carrying out watercourse crossings. Paragraph two discusses minimising environmental disturbance at a watercourse crossing.

Add to dot point listing on factors taken into account in selecting an appropriate watercourse crossing method:

- Minimising impacts to the crossing.

As stated in paragraph three of Section 3.1.9.14 appropriate approvals will be applied for.

Add:

Riverine Protection Permit to the example given.

Application for a Riverine Protection Permit will be made once a construction contractor has been appointed.

(DNRW 7) Quarry Material (EIS Sect 3.1.9.5)

Add to Section 3.1.9.5 paragraph 1:

Riverine quarry material will not be used by the Project, unless sourced through a licensed provider.

Add to Section 3.9 Commitments:

Riverine quarry material will not be used by the Project, unless sourced through a licensed provider.

(DNRW 8) Gates (EIS Sect 3.1.9.4)

Gates will be installed at all fence lines during construction. The permanency of these gates is dependent upon access arrangements and landowner consent. Permanent gates will be left wherever practical. Where this is not practicable alternative operations access arrangements will be made with the relevant landowner.

(DNRW 9) Fitzroy Basin Water Resource Plan (EIS Sect 3.6.2.1)

DNRW advice on authorisation of take of water in accordance with the requirements of the FBWRP is noted. Once a construction contractor is appointed the water requirements for the project will be refined and application made to the relevant parties for any required take of water.

Amend Section 3.6.2.1 by adding to the end of first paragraph:
(e.g. authorisation under the Fitzroy Basin Water Resource Plan)

Environmental Management Plan (EIS Appendix 3)

(DNRW 10) Element 10.10 – Erosion Management

Element 10.10 has been modified to include the words (outside any drainage line) under management strategies for topsoil.

Topsoil stockpiles will not be analysed unless ASS is suspected. Pipeline construction is a very rapid process with soils being stockpiled in windrows alongside the trench. Soil will be respread within a matter of months from disturbance with subsoil material being returned first and then topsoil (i.e. subsoils will all be buried). Where plant growth does not regenerate naturally within 6-18 months then measures will be implemented to assist vegetation establishment (e.g. fertilisation).

It is not practical or normally warranted to undertake chemical testing of over 400km of soil samples.

Similarly it is not normally practical to fence the ROW post construction. Whilst landowners will be encouraged to keep stock off the ROW for the first 12 months fencing is not normally an appropriate option and the Proponent has no legal rights to enforce fencing.

(DNRW 11) Element 11.07 – Acid Sulphate Soils

The preamble and Detailed Requirements of this section have been amended to reflect the potential to encounter ASS and to carry out a detailed ASS report prior to construction of the section of pipeline from the proposed Gladstone City Gate, near the existing Comalco Plant, to the southern industrial zone of Gladstone. Based on this report the Element 10.17 will be further amended by the construction contractor to ensure the strategy meets the requirements of SPP2/02.

DEPARTMENT OF PRIMARY INDUSTRIES AND FISHERIES

(DPI&F 1) Waterway Crossings (EIS Sect 3.1.9.14)

It is anticipated that most watercourses that are to be open cut (i.e. trenched through) will be dry at the time of crossing. Watercourses with high flows of water (e.g. Mackenzie, Fitzroy and Calliope) are expected to be horizontal directional drilled (HDD) with no direct impact to water flows. Should any form of waterway barrier crossing be required an application will be made to the Department. However, pipeline projects are exempt under IPA and no development application under this Act will be made - unless it is in relation to a campsite. The CEMP has been amended to include the need for the relevant permits should these be required.

(DPI&F 2) Possible Marine Plants Disturbance at the Calliope River Crossing (EIS Sect 4.4.2.2)

The Proponent notes the Department's comments in relation to the need for permits for the clearing of marine plants.

Add to dot point list on page 4-60 in Section 4.4.2.2 and Section 4.13 Commitments:

The Proponent and/or its construction contractor will hold talks directly with the DPI&F prior to construction of any crossing of the Calliope River and will apply for all required permits.

ENVIRONMENT PROTECTION AGENCY

(EPA 1) 1.6.1 Relevant Legislation and Policy Requirements

The need for a permit has been added to Table 1-2.

The Proponent would not normally apply for this permit but would ensure that appropriately permitted personnel were employed on the Project.

3.1.4 Highest Astronomical Tide Line

(EPA 2) Issue 1: Disturbance to wetlands and waterways

Potential impacts to wetland areas would only occur on that section of the pipeline route which is to be installed between the proposed Gladstone City Gate, adjacent to the existing Comalco facilities, and the terminus in the southern industrial area of Gladstone, adjacent to QAL (i.e. the low pressure lateral). As stated in the EIS and during discussions with all of the government agencies involved in the assessment of the Project, the Proponent is not certain when construction of this section of the pipeline route will occur. The Proponent is aware that other projects are also under consideration in this

area and these may have an impact on the final location of the pipeline route. The Proponent will seek approval from the EPA on finalisation of this section of the route once there is a need for a pipeline connection in this area. The aim of the route finalisation will be to ensure no adverse impacts on any wetlands of national significance or on any sensitive/threatened ecosystems located downstream of any such crossings. Refer also to response on Section 3.1.5 Impacts to Wetlands.

Amend Section 3.1.4 and add to Section 3.9 Commitments:

Potential impacts to wetland areas would only occur on that section of the pipeline route which is proposed between the Gladstone City Gate, adjacent to the existing Comalco facilities, and the terminus in the southern industrial area of Gladstone, adjacent to QAL (i.e. the low pressure lateral). As discussed this section of the route is subject to market requirements and is not proposed for immediate construction. The Proponent and construction contractor will seek approval from DNRW and the EPA for the final route of the low pressure lateral once there is a demand for a pipeline connection in this area. The aim will be to ensure that the final route has no long term adverse impacts on any wetlands of national significance or on any sensitive/threatened ecosystems located downstream of any such crossings (also refer Section 3.15).

The Proponent and construction contractor will ensure that the final route has no adverse impacts on any wetlands of national significance or on any sensitive/threatened ecosystems located downstream of any such crossings.

3.3.1.2 Accommodation

(EPA 3) Issue 1: Effluent Treatment

Insert after "A typical camp layout is provided in Figure 3-10." (page 3-22)

Campsite effluent is typically handled through an on-site package treatment plant with the following features:

- Sized to adequately treat municipal wastewater produced by up to double the number of expected personnel (e.g. 450 equivalent persons);
- Biological activated sludge system (with return activated sludge);
- Chlorine dosing at two disinfection points, effluent clarified prior to entering the chlorine contact tank and again prior to sand filtration;
- Sand filtration of final effluent;
- Capable of producing Class A level effluent; and
- Discharge of treated effluent to ground in a fenced and signed area.

The problem commonly encountered with these systems is the twice daily shock loading which occurs each morning and evening coinciding with the start/end of the working day. This shock loading can upset the operation of the system, particularly the capacity to destroy E.coli. Other characteristics (e.g. BOD, DO, TSS), whilst well managed by transportable systems, are also difficult to control to standard treatment parameters under the daily shock loading levels.

To minimise the shock loading effect it is desirable to separate the grey water stream (i.e. shower, handbasin, laundry) and discharge this directly to ground. Disposal points for discharge of both grey water and treated black water are selected to ensure:

- No discharge directly to any watercourse or aquifer;
- Away from areas used by humans;
- Fenced to prevent livestock entry; and
- Signed to advise that effluent is being disposed.

Campsites are a short term facility, located away from watercourse, and as such should not have any long term impacts in relation to contamination of waters or land. The key criteria for control should be E Coli as this effects human health. All other elements (e.g. BOD, DO, TSS) should biologically adjust during the irrigation process.

Effluent discharge from the system is monitored daily and when Ecoli levels are too high discharge is halted. If necessary the system is pumped out by a licensed contractor and the effluent disposed of to a nearby Council facility. The Proponent is aware that the Belyando sewage treatment facilities are at their limits and no sewage will be discharged to this Council's facilities from campsites used to construct the pipeline.

Septic facilities capable of handling up to 60 personnel were installed at Moranbah for the compressor station construction. If required these facilities would be reactivated/reinstalled at the time of any future compressor station upgrade.

3.1.3 Pipe Burial Criteria

(EPA 4) Issue 1: Clarification of pipeline depth

All pipelines in Australia are required to be designed and constructed in accordance with AS2885. This standard requires a minimum cover in non-rock areas of 750mm. The Proponent has adopted 900mm cover as its typical minimum cover wherever practicable.

Amend the wording on page ES-9 to read:

'... typically buried with a depth of cover of at least 900mm.' Add footnote: AS2885 requires a minimum cover of 750mm.

3.1.5 Preferred Route and 4.3.1.1 Surface Water Downstream Environments and Description of Environmental Values Habitats

(EPA 5) Issue 1: Impacts on Wetlands

The information used by the ecological experts to conclude that the pipeline route has been chosen so as to not impact any areas of ecological significance was interspersed throughout Section 4 of the EIS. Section 2.3.2.1 (particularly Paragraph 5) identifies some of the data but for brevity this section did not reference all environmental data which was used to guide route selection.

Amend Paragraph 5 of Section 2.3.2.1 to include:

The study area was referenced against existing environmental data including:

- Regional Ecosystem Mapping (EPA);
- Flora and fauna database searches (EPA, (Herbreccs, Wildnet), Queensland Museum and EPBC databases);
- Biodiversity Planning Assessment (EPA);
- EPBC Act guidelines;

- Ramsar listings;
- Directory of Important Wetlands in Queensland (Blackman et. al., 1999);
- Watercourses (DNRW);
- Topography and slope data (DNRW);
- Acid sulfate soils reporting and mapping (Ross, 2004);
- Good Quality Agricultural Land mapping (DRMW); and
- Existing land use.

Results of these preliminary assessments identified a number of ecologically sensitive areas, including ecological communities and flora and fauna species protected under both Queensland and Australian legislation, important wetlands, large watercourses, steep terrain and potential acid sulfate soil areas, which occur in the study area.

A constraints mapping layer was established by the ecological experts based on the preliminary desktop assessments and the results of their field survey work (refer Section 4.4.1 - Sensitive Environmental Areas and Figure 4-21). These ecologically sensitive areas include:

- Ecological communities and flora and fauna species protected under Queensland and Australian legislation;
- Important wetlands;
- Large watercourses;
- Steep terrain; and
- Potential acid sulfate soil areas.

Experienced botanists / ecologists have assisted (and will continue to assist) where any alignment refinements are proposed within these constraint areas.

It is noted that Figure 4-21 of the EIS does not currently identify the Calliope River (which is a part of the Port Curtis Wetland) as an Ecological Constraints Area which is in fact an omission to that Figure (amended figure provided). It was always the Proponent's intent that ecological experts would be involved in finalising the alignment and proposed construction methods for this area. It is also proposed to expand the explanation of how the pipeline route was chosen by replacing the first paragraph on page 4-69 with the following words:

Amend Section 4.4.4.1 Habitats, last paragraph (1st paragraph page 4-69)

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 recognised; however, that existing and proposed land use constraints and detailed engineering/construction requirements may require the selected crossing point to be adjusted. The extent and boundaries of the marine plant areas in this vicinity have been logged to facilitate assessment of any realignment requirements. It is proposed that the Calliope River and the adjoining salt marsh and mangrove communities will not be cleared or trenched but will be HDD in order to avoid impacts on this Nationally Important Wetland (refer Commitment 4-23 in Section 4.13 and Appendix 4).

(EPA 6) Issue 2: Justification of Wetland Impacts

It is noted that the Port Curtis Wetland Area extends onto adjacent floodplain areas on each side of the Calliope River as well as at the termination point for the proposed alignment (refer to Figure 4-21 for degraded saltmarshes associated with this area). Clearing and trenching within these buffer areas, all of which are already quite disturbed, will be restricted to outside of marine plant areas. As the proposed HDD will avoid the necessity to clear or trench any marine plant areas within the Port Curtis Wetland, any impact associated with the pipeline construction and operation (subject to successful implementation of the Proponent commitments identified in Section 4.13 and Appendix 4) is likely to be insignificant, particularly in relation to the extensive impacts associated with the existing surrounding land uses. To remove any confusion it is proposed to add the following sentence to Commitment 4-7: No trenching will occur in marine plant areas in proximity to the Port Curtis Wetland.

Replace the 1st paragraph on page 4-35 (within Section 4.3.1.1) with:

The Ramsar site at Shoalwater and Corio Bays is approximately 70km north of the proposed alignment at its closest point. The proposed alignment does not transect any of the catchments which feed directly into this (or any other) Ramsar site. The catchments which are transected by the alignment feed water into the ocean at least 60km to the south of this Ramsar Site.

Delete last sentence before Section 4.3.1.2 (Groundwater) and insert new paragraph:

With the exception of the Port Curtis Wetland, which is transected by the alignment in the vicinity of the Calliope River, each of the Nationally Important Wetlands is some distance downstream of the proposed pipeline route (i.e. Fitzroy River Delta (5km), Fitzroy River Floodplain (15km) and The Narrows (10km)) and not directly transected.

Insert new Section page 4-38 prior to Mitigation Measures:

Ramsar and Nationally Important Wetlands

Due to the separation of catchments transected by the proposed route and the closest Ramsar wetlands (i.e. Shoalwater and Corio Bays) being 70 km to the north, it is very unlikely that the proposal could have any potential impact on any Ramsar wetland.

Whilst it is recognised that there is potential for the proposal to impact on the four Nationally Important Wetlands downstream of (or in the case of the Port Curtis Wetland transected by) the alignment, it is considered that, subject to the following mitigation measures and the Proponent commitments to environmental management (refer Section 4.13 and Appendix 4), these wetlands will not be significantly affected by the Project activities.

3.1.9 Construction, 3.1.9.12 Testing, 3.6.1 Water Demand, 3.6.1.1 Construction, 3.9 Commitments

(EPA 7) Issue 1: Disposal of Hydrotest Water

Insert the following in front of the last paragraph of Section 3.1.9.12:

Disposal of hydrotest water has received much attention from regulatory authorities in recent years and during 2005 the CSIRO Manufacturing and Infrastructure Technology (CMIT) group conducted studies into the quality of hydrotest water (paper available

through the Australian Pipeline Industry Association). The study found that the impact of hydrotest water on the environment was a function of the initial water quality, nature of any additives, the rate of application, the site of application and the robustness of the receiving ecosystem.

The quality of the initial water can affect the rate of metal oxidation during pressurisation and certain bacteria, such as sulphate reducing bacteria (SRB) often found in soil can induce bio-corrosion of the pipe walls. Additives are used as a preventative measure to minimise the risk of corrosion damage to the pipe during hydrostatic testing. The two main additive groups are oxygen scavengers and biocides. The oxygen scavengers reduce the amount of oxygen available within the pipeline thus reducing the potential for corrosion, whilst the biocides prevent the formation and growth of micro-organisms. On occasion these additives may be used in combination. Examples of typical oxygen scavengers and biocides used in the oil and gas industry are given in Tables 1 and 2.

Table 1: Examples of common oxygen scavengers

Active ingredient	Example
Ammonium bisulphite	Baker Petrolite 3-514 OS
Sodium sulfite	Chemtreat 649L
Sodium bisulphite	
Sodium metabisulfite	MAXSO3™ Chemtreat 650 OS
Liquid carbonhydrazide	
Monoethanolamine	Cortron IRU-163

Source: CMIT 2005

Table 2: Examples of biocides used in the oil and gas industry (Chen and Chen 1997, Frayne 2001)

Biocide	Active ingredient	Examples
Glyoxal	Dialdehyde	
Organobromide	DBNPA (2,2 dibromo-3-nitrilopropionamide)	Dow™ Antimicrobial 7287 Antimicrobial 8536
Polymeric biguanide	PHMB	Vantocil® IB
Quaternary phosphonium salt	THPS (tetrakis(hydroxymethyl)phosphonium sulfate)	Tollcide® PS71S Bactron AUK-550
Quaternary ammonium	Alkyldimethylbenzylammonium chloride	Synprolam™ 35DMBQC50 and 80 Barquat® OJ50 and OJ80 Arquad™ B-100
Thiocyanate	MBT	AMA®-410W AMA®-210
Combination package	Biguanide/oxygen scavenger/corrosion inhibitor	

Source: CMIT 2005

The effects of oxygen scavengers and any residual within the test water can be treated through exposure to air (i.e. spraying of the water into the air).

Biocides are rarely used in hydrotesting due to the limited residence time (CMIT 2005), and it is not intended to use biocides for the CQGP. Elimination of suspended particles, scale and cleaning of the pipe by scrubbing and flushing is often sufficient to reduce the potential habitats and bacteria proliferation (CMIT 2005). If it is found necessary to use biocides, due to the quality of the available water and/or the duration that the water is required to be held in the pipe, then treatment and disposal will be in accordance with the recommendations made in the CMIT (2005) report on hydrotests.

3.1.9.14 Watercourse Crossings, Horizontal Directional Drilling and 4.3.2.1 Surface Water Construction Techniques

(EPA 8) Issue 1: Drilling mud toxicity

Add to Section 4.3.2.1 Construction Techniques:

During the drilling of a watercourse crossing there is the potential for the drill bit to intersect a fracture within the riverbed; when this occurs bentonite mud may be released into the watercourse. This event is referred to as a 'frac out'. Bentonite is a natural clay-like substance formed from the deposition of volcanic ash. When it is released into a watercourse through a 'frac out' it will cause increased turbidity until the material is fully dispersed. As an expansive clay bentonite works to reseal the fracture and released material normally settles quite rapidly. To aid the sealing of the fracture, wood or bark chips are often pumped into the drill hole combined with the bentonite; this then seals the fracture.

Where the watercourse is dry it is often preferable to leave the silt bentonite insitu where it will dry out and breakdown into the surrounding area. Where a large spill occurs the material can be excavated and disposed of by burial.

Add to Section 4.3.2.1 Management Measures, paragraph two after the 4th dot point:

- To minimise the potential for a frac out occurring geotechnical investigations are normally carried out prior to drilling to provide a better understanding of the prevailing conditions and the type of drill equipment required. The entry and exit locations are normally set well back from the watercourse to enable the pipe to be located well below the bed of the watercourse thus reducing the potential for break through. As a final resort where a frac out has occurred which cannot be sealed off, the drill will be abandoned and an open cut crossing will need to be undertaken.

3.6.2 Water Supply and Storage and 3.6.2.1 Construction

(EPA 9) Issue 1: Treatment of Raw Water

It is the first preference of the Project to provide potable water directly from a supplier in the region. On-site treatment of raw water would only take place where it was not possible to source water from other suppliers. Treatment would typically be reverse osmosis followed by UV treatment for disinfection. All potable water will be required to meet *NHMRC Australian Drinking Water Guidelines 2004* and if treated on-site the water will undergo daily testing to ensure that it meets regulatory standards.

Effluent from the treatment of raw water would be used for dust suppression. Organic sludge from the processes would be disposed of by drying and then spreading on the land.

Add to Section 3.6.2.1:

On-site treatment of raw water would only take place where it was not possible to source water from other suppliers. Treatment would typically be reverse osmosis followed by UV treatment for disinfection. All potable water will be required to meet *NHMRC Australian Drinking Water Guidelines 2004* and if treated on-site the water will undergo daily testing to ensure that it meets regulatory standards.

Effluent from the treatment of raw water would be used for dust suppression. Organic sludge from the processes would be disposed of by drying and then spreading on the land.

4.1 Water Supply/Storage

(EPA 10) Issue 1: Construction of Storage Dam

The actual section reference and wording relating to dams for hydrotest water given by the EPA in its submission cannot be located however the following information in relation to dams for hydrotest water is provided.

Dams for hydrotest water would only be used when locally available water resources cannot provide an acceptable flow rate for the filling of the pipeline during testing. Such dams would be of the perched turkey nest type (i.e. no capture of overland flow) of 20-25ML capacity. The dams are typically lined with a short term polythene liner. Such dams are typically impractical for landowner needs and are removed at the end of construction.

Amend Section 3.1.9.12 2nd paragraph insert:

Occasionally perched turkeys nest dams (i.e. no capture of overland flow) may be built to hold hydrotest water to ensure acceptable fill flow rates (e.g. where bore water is used). Such dams would typically have a capacity of 20-25ML and be lined with a short term polythene liner. These dams are typically impractical for landowner needs and are removed at the end of construction.

4.1.2.1 Description of Environmental Values Topography and 4.1.3.2 Description of Environmental Values Soil Stability and Erosion Control

(EPA 11) Issue 1: Burial of pipeline through waterway banks (steeply eroded or deeply entrenched)

Construction techniques for watercourse crossings are addressed in Section 3.1.9.14. As stated in this section each watercourse crossing is assessed based on a number of criteria including its width, depth, level of flow, environmental sensitivity and substrate composition. Typically impacts to very steep and highly eroded banks are avoided through the use of Horizontal Directional Drilling. This technique allows the construction activities to stop about 100m short of the river bank thus avoiding direct impacts to the banks. This technique is already proposed for the MacKenzie and Fitzroy Rivers.

The construction contractor will assess each watercourse prior to construction. This is done during the centreline survey when the route is pegged out prior to construction. If the constructor considers that HDD would be preferable to open cut then this method will be initiated. If the level of sensitivity does not warrant HDD then the banks of the crossing will be benched back to provide a safe and stable crossing profile. The excavated

material will be stockpiled outside the watercourse (refer Figure 3.2 on page 3-5 of the EIS). This material will be returned to the banks and bed of the watercourse during rehabilitation of the site. Where necessary stabilising techniques such as spreading of brush; pegging of jute matting, or loose rock fill will be used.

Amend Section 4.1.3.2. paragraph six to add the following dot points:

- Assessment of each watercourse by the construction contractor prior to construction of the crossing;
- Benching of the banks to provide a safe and stable crossing profile (excavated material stockpiled outside of the watercourse refer Figure 3.2);
- Use of stabilising techniques as appropriate (e.g. brush spreading, pegging of just matting or loose rock fill);

4.1.2.1 Description of Environmental Values Acid Sulphate Soils and 4.1.3.2 Potential Impact and Mitigation Measures Acid Sulphate Soils

(EPA 12) Issue 1: Disturbance to ASS

Once the route for the low pressure lateral from the Gladstone City Gate to the southern industrial zone is finalised and prior to any construction activities in this area an ASS assessment will be undertaken. This assessment and the resultant SAP within the CEMP will be forwarded to the EPA before construction of this section of pipeline commences.

Refer also to the response to DNRW 5 and 11.

Add to Section 4.13 Commitments:

A risk assessment will be performed of ASS impacts on surrounding sensitive environments and management plans implemented and agreed with the EPA prior to construction of the low pressure lateral. The assessment will include a map of ASS areas and any sensitive ecological areas.

4.4.1.1 Description of Environmental Values – Matters of State, Regional and Local Biodiversity

(EPA 13) Issue 1: Location of pipeline route within Mt Maurice State Forest

This portion of the route relates to the proposed low pressure lateral from the Gladstone City Gate to the southern industrial estate in Gladstone. The pipeline alignment in this location has been subject to the conflicting land use requirements of the EPA State Forest and the proposed residential subdivision within the Gladstone City Council area. The Proponent has explored a number of options in this area (refer Section 2.3.2.1 and 2.3.2.2 of the EIS and Supplementary Report) and has had previous correspondence and consultation with both the EPA and Gladstone City Council, jointly and separately, on this matter. The current route is located within the northern boundary of the State Forest in an effort to achieve a suitable separation from the 13 residential development blocks which are proposed to back on to the State Forest.

As discussed under EPA 2 the Proponent is aware that other projects are also under consideration in this general area and these may have an impact on the final location of the pipeline route. The Proponent is open to the option of utilising the existing transmission powerline corridor and road easement already within the State Forest and will continue to explore this option with the EPA and the GCC.

(EPA 14) Issue 2: Amended route within Rainbow Mt Nature Refuge

The pipeline route originally discussed with the EPA from KP347 through to KP372 was altered due to the severe electrical induction that would be experienced from the Powerlink high voltage transmission lines (refer EIS Section 2.3.2 Electrical Interference).

A specialist corrosion and AC induction consultant was engaged by the Proponent to review the proposed route and pipeline design and to advise of areas whereby the pipeline and pipeline maintenance personnel would be put at risk through induced voltages from adjacent power or rail lines (refer Attachment D report and supporting independent peer review). In this area if the pipeline was installed in the vicinity of the transmission line it would, due to the extremely high soil resistivity, transmission line fault currents, tripping times of electrical protection equipment and phase sequencing, have induced voltages that would be potentially fatal to maintenance personnel or that would cause interference to the cathodic protection system. Apart from the interference to the cathodic protection system the induced voltages are likely to cause accelerated corrosion on the pipeline which if undetected could result in a pipeline rupture.

The Proponent therefore investigated alternative route options. A paper road reserve was identified and the boundaries confirmed by field survey work. The route was also investigated by a qualified ecologist to determine ecological features and values.

The route that is currently proposed is intended to be wholly contained within the road reserve (i.e. the entire 30 metres with no overhang outside of the road reserve). The Proponent would not be seeking any form of tenure over the nature reserve but rather a right to occupy the road reserve. The route has been selected to minimise disturbance to vegetation and wildlife habitat and recommended realignments identified in the field by EPA personnel have been incorporated into the latest route alignment (Rev J).

The Proponent is aware of proposals to create an infrastructure corridor in the Stanwell Power Station area and is maintaining a dialogue with the Department of Infrastructure on the options to use some, or all, of this corridor. The Proponent remains concerned about electrical interference issues with this corridor and its alignment relative to urban areas, combined with a longer route. However the Proponent will continue to investigate this option. If the corridor is available at the time construction is required and can be demonstrated to be commercially and technically viable (e.g. electrical and urban safety issues) for gas transmission pipeline installation the Proponent is prepared to consider use of all or part of this corridor. Accordingly the Proponent seeks EPA endorsement for the proposed route through the nature reserve in the event that the infrastructure corridor is not available or not considered technically or commercially viable for installation of a gas transmission line.

Commitment: The Proponent will liaise with the Department of Infrastructure in relation to the use of a proposed infrastructure corridor. 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.

4.4.2 Terrestrial Flora and 4.4.2.2. Potential Impacts and Mitigation Measures**(EPA 15) Issue 1: Impacts on State Forest**

The proposed alignment adjacent to the Mt Stowe State Forest has been selected to lie wholly within the existing infrastructure corridor with no infringement into the State Forest.

As the EPA is aware this section of the pipeline route lies within an infrastructure corridor which is highly constrained due to the terrain in the area. The Proponent has been actively engaging with the Department of State Development/Infrastructure, including participating in the Connell Hatch SunWater study, in looking at routes within this area. Again electrical interference, particularly from the electric rail line, is an issue for locating the pipeline within the Yarwun Gap.

Detailed electrical and infrastructure co-locations have been carried out for this area and the Proponent investigated a route to try and avoid the area entirely. This route went to the north of Mt Larcom and round Fisherman's Bend. However the route encountered a high degree of difficulty in relation to existing energy resources, the nature of the terrain and environmental and cultural constraints.

As a result of the various studies and investigations it was determined that being located on the outer edge of the infrastructure corridor would provide the most appropriate solution. The Proponent is willing to continue to work with infrastructure planning to ensure that the pipeline is located so as to not unduly constrain further development in the area. Pipeline routes can be highly flexible in their location in order to achieve avoidance of conflicts with other land users. The Proponent is willing to be located on the extremity of a wider corridor, which may impact on the Mt Stowe State Forest, if this would improve the overall development potential for the area and in particular the infrastructure corridor.

Commitment: The pipeline route will not directly impact the Mt Stowe State Forest unless specifically requested by the State Government.

(EPA 16) Issue 2: Biodiversity impacts within Rainbow Mt Nature Refuge

The proposed alignment transects mostly eucalypt woodland with open grassy understorey. Some patches of shrubbery will be transected in side gullies. A number of hollow bearing trees are scattered across the valley floor but most of these will be able to be avoided.

The endangered cycad *Cycas Megacarpa* occurs in this vicinity. Individual plants were surveyed during the ecologist's inspection however a minority of areas (15%) were not closely inspected. It is expected that at least 3 individual plants will need to be disturbed/removed during construction activities.

Rock mounds occur throughout this area, and are potential habitat for a range of reptiles including the Vulnerable lizard Brigalow Scaly-foot (*Paradelma orientalis*) and the Rare Short-necked Worm-skink (*Anomalopus brevicollis*), both of which have been recorded in the Stanwell area. Due to their scattered nature, these rocky areas are able to be avoided.

Generally the impacts in terms of tree removal and habitat disturbance on the proposed alignment (Rev I) are greater than those on the previous alignment (Rev G) due to the additional length plus the presence of cycads. However, with appropriate management measures as are set out in the CEMP no significant or long term impacts are expected.

4.7 Air Environment

(EPA 17) Issue 1: Air quality impacts from the TEG unit

The data requested had not previously been sourced for the plant and was not included in the assessment of the original compressor station installation. Assessment has been

based on considering the original data available for the proposed units and assessing the impact of an additional unit.

At this stage the Proponent will not be undertaking expansion of the compressor station facilities. The Proponent notes the concerns expressed by the EPA and a more detailed analysis taking into account the required data will be carried out as part of the engineering detail when an expansion to the compressor station is deemed necessary. The Proponent will provide the required assessment to the EPA as part of its application for a revision to its ERA at the time of expansion of the compressor station.

Add to Section 4.13 Commitments:

The Proponent will provide a full air quality assessment to the EPA as part of its application for a revision to its ERA at the time of expansion of the compressor station.

(EPA 18) Issue 2: Air quality impacts from the compressors

In relation to the query about NO_x emissions all NO_x was assumed to convert to NO₂. This was considered the most conservative assumption in relation to NO₂ impacts. The Proponent understands from its consultants that other methods of calculation can be used, but for a project such as this assuming 100% conversion to NO₂ is considered appropriate.

As previously stated at this stage the Proponent will not be undertaking expansion of the compressor station facilities. The issues raised by the EPA will be addressed during detailed design at the time that a decision is made in relation to expanding the compressor station. As stated under EPA 17 all such modelling and reports will be provided to the EPA as part of its application for a revision to its ERA at the time of expansion of the compressor station.

Add to Section 4.13 Commitments:

A detailed air analysis taking into account the issues raised in the EPA submissions to the EIS will be carried out as part of the design of any compressor station upgrade and the results submitted to the EPA as part of the license amendment application.

4.8 Noise and Vibration

(EPA 19) Issue 1: Noise Assessment

(EPA 20) Issue 2: Noise mitigation

Again at this stage the Proponent will not be undertaking expansion of the compressor station facilities. Any issues relating to potential noise impacts will be investigated further during the actual design of the compressor station upgrade. The Proponent will ensure that the design meets the commitment given in the EIS (Commitment 4-58) that the facility will meet the existing license conditions for noise impacts within Moranbah.

5,0 Environmental Management Plans

(EPA 21) Issue 1: Purpose of the EMP

The EMP has been prepared based on the commitments given in the EIS. The EMP will be given a final review on completion of the Supplementary Report to ensure that all commitments have been captured.

(EPA 22) Issue 2: Financial Assurances

A calculation of Financial Assurances has been carried out and forwarded to the EPA with the application for an environmental authority in support of the pipeline licence.

QUEENSLAND HEALTH

(QH 1) Executive Summary and Section 1.6.1 (Table 1-2)

Food Act – All references to the Act have been amended to reflect the current Act title.

(QH 2) 3.6.2.1 Water Demand - Construction

Refer to EPA 9.

Add to commitments: The principal construction contractor for the project will ensure that all potable water meets NHMRC Australian Drinking Water Guidelines 2004. If water is to be treated on-site the Rockhampton Population Health Unit Environmental Health Services will be notified.

(QH 3) 4.7.2 Potential Impacts and Mitigation Measures (Air Environment)

The proposed pipeline route has been selected to avoid sensitive receptors as far as practicable. The only school in proximity to the route is a very small one at McKenzie and the pipeline route has been deviated around this school providing almost half a kilometre of clearance. This has been done intentionally to reduce any impacts on the school. The pipeline also passes to the south-west of the school and the prevailing winds in the area are dominantly from the east north-east (i.e. away from the school).

Dust generation should only occur during the construction phase of the project and is typically associated with trenching and traffic movement. To minimise impacts on the school environment dust suppression measures would be implemented around the school area (e.g. watering or if limited water available due to drought conditions mulching of cleared vegetation over the area to act as a barrier to dust).

Due to the transient and intermittent nature of pipeline construction modelling of dust impacts is not considered practical.

Reseeded areas will be monitored on a 3-6 monthly basis (as set out in the EMP) to check the progress of revegetation. If required and practical to do so, the area may be revegetated using turf rather than seed in very sensitive areas such as the school environ.

As discussed under the response to the EPA the Proponent no longer has plans to expand the compressor station at this stage of the Project. However once the need for expansion of the plant is required the necessary air quality assessments will be redone as

part of the detailed design for the plant and all reports will be provided to the EPA as part of the licensing process for the expansion.

(QH 4) 4.8 Noise and Vibration

The Proponent will review the proximity of highly sensitive receptors (such as hospitals) to the pipeline route prior to construction. Where such receptors are likely to be directly affected construction contractor will liaise directly with the organisation to determine what is acceptable and if necessary will deploy a smaller crew to reduce the likelihood of any impacts.

LANDOWNERS AND OTHER INTERESTED PARTIES

The following issues were raised by landowners and other interested parties:

- Impacts to future mining expansion;
- Preference for the pipeline to be located off owners land and within the road reserve of the Fitzroy Development Road which the owner maintains would be acceptable to DMR Mackay;
- Potential to interfere with erosion control banks on the property;
- Interfere with approved easement for a water supply pipe to service station;
- Interfere with management of the property particularly internal roads and gates;
- Impact on a stand of Gum Topped Box on a property;
- Potential to sterilise vineyard development area;
- Impacts to an existing creek which provides a constant water supply to the owners; no reference to this creek in the EIS;
- Resale value of property;
- Proximity to dwelling (500m); and
- Weed management and washdown bays during operation.

The Proponent's response in relation to future mining expansion has been addressed in the EIS and under the response to the Department of Natural Resources and Water/Mines and Energy DME 1.

In relation to all other landowner issues the Proponent will continue to liaise with all landowners in an attempt to reach a mutually agreeable outcome. The results of all negotiations will be documented within the written agreement with the landowner.

The current Proponent's Weed Management Plans have been provided (refer Attachment C of the Supplementary for further information). Implementation of management strategies to at least these standards will be a binding commitment on any Proponent of the pipeline.