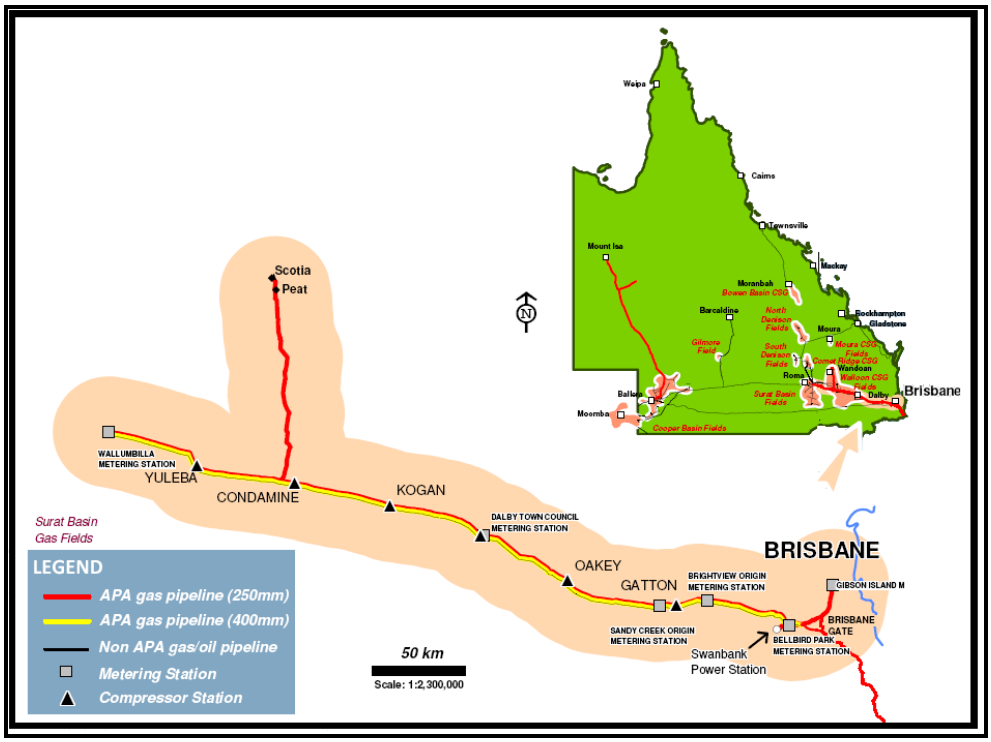
APT Petroleum Pipelines Limited

Asset Management Plan

Covering the period
12 April 2012 – 30 June 2017

Attachment 4.1

Asset Management Plan Queensland



2012-2017

Revision History

Version	Date	Description (Details of Change)	Prepared	Approved
Final	Oct 11	Final approved	D COX	G CALLAR

Executive Summary

This Asset Management Plan (AMP) covers the Planning period from 1 April 2012 to 30 June 2017 for the group of Roma to Brisbane Pipeline assets. This plan will be reviewed and reissued on a five-yearly basis.

These pipeline assets are generally in good condition, however the tape wrap coating system on the DN250 Wallumbilla to Bellbird Park (Roma to Brisbane Mainline) Pipeline is failing, particularly close to Wallumbilla. This is early indicator of more widespread deterioration of the coating which, despite cathodic protection is allowing corrosion to occur. The impact has been identified by in-line inspection across the pipeline and will involve increasing mitigation efforts going forward.

In early January 2011 a significant flood event occurred in Queensland which flooded several stations along the pipeline, caused some land-slip and wash away events and generally restricted access for maintenance. The management of Stay in Business Capital works on the Queensland assets was not significantly compromised; however some site refurbishment has been necessary and is ongoing.

Table 1 –Five year budget summary ($,000's)

Asset	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	Totals
DN250 Wallumbilla to Bellbird Pk (Mainline)	1,401	635	1,054	410	1,076	**4,576**
DN400 Wallumbilla to Ellengrove (Looping)	570	740	320	637	445	**2,712**
Metropolitan Section Asset System	485	897	1,085	395	175	**3,037**
Peat Lateral	15	55	65	15	15	**165**
Conforming Capital Summary	1,425	2,025	725	2,000	1,200	**7,375**
Totals	**3,896**	**4,352**	**3,249**	**3,457**	**2,911**	**17,865**

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Conforming Capex Business Cases

Inline Inspections (Pigging) Program
Compressor (Turbine) Overhaul Program
Unit Control Panel Upgrade
DN250 Coating Refurbishment
Redbank Station Upgrade
Toowoomba Station Upgrade
Vehicle Mitigation
Excavation program
Swanbank Isolation Valve
Digital Data Service Replacement
Collingwood to Ellengrove Pig Trap Modifications
Geotechnical Mitigation Toowoomba
Geotechnical Mitigation – Redbank & Swanbank
Design Life Review
Hazardous Area Rectification Program
Fuel gas piping modifications
Vehicle & plant replacement program

1 Introduction

1.1 Scope

This version of the Asset Management Plan (AMP) has been prepared for the Access Arrangement and covers the Planning period from 1 July 2012 to 30 June 2017.

The AMP is a strategic document that records the asset condition and recommended work programs. The document forms the justification of operating and capital budgets for a fixed period and provides a 5-year forecast.

The purpose of the AMP is:

i. To provide a comprehensive understanding of the current management approach relating to the assets, their condition and utilisation.

ii. To provide a platform for approval of work programs by providing discussion of the options available and recommendations.

iii. To identify specific issues affecting the assets and the proposed remediation for budget consideration.

iv. Measure Key Performance Indicators (KPI's).

1.2 Asset management methodology

This AMP provides details of the current and proposed processes in place for the effective management and operation of the assets. The purpose of this plan is:

i. To provide a basis for the long-term operation of the APA assets while meeting technical, safety, environmental and commercial obligations; and,

ii. To communicate and justify need for major maintenance and capital works.

1.3 Assumptions and limitations

For asset management and budget purposes, this document excludes the following Queensland (QLD) items:

i. Kogan North Central Gas Processing Facility (& DN400 Wallumbilla to Ellengrove Pipeline connection);

ii. Braemar (delivery) and Windibri (receipt) connections;

iii. Future expansion of the group of assets; and,

iv. Qld section of the Moomba to Wilton Pipeline.

Note: The capacity assessment considers all of the actual receipt and delivery points including Kogan North CGPF, Braemar and Windibri.

The AMP will identify and incorporate approved growth projects. It does not, however, consider potential projects or projects currently in planning stages such as FEED studies as these are often speculative in nature until underwritten by a customer or an additional long term contract. Their nature allows these projects to be considered self-funding and will not be considered in this document.

2 Asset overview

For the purpose of planning, the APA Group operates and maintains the Roma to Brisbane Pipeline as four interconnected but separate pipelines assets. These sections are detailed as:

i. DN250 Wallumbilla to Bellbird Park (Roma to Brisbane Mainline);

ii. DN400 Wallumbilla to Ellengrove Pipeline (Roma to Brisbane Looping);

iii. Metropolitan Section Asset System; and,

iv. Peat Lateral.

2.1 Asset condition and age

Table 2 - Asset Condition and Age

Pipeline	Roma Brisbane Mainline	Roma Brisbane Looping	Peat Lateral	Metropolitan Section			
				Metropolitan Mainline	Gibson Island Lateral	Swanbank Lateral	Lytton Lateral
Pipeline Licence	2	2	74	2	2	2	2
Start	Wallumbilla MS	Wallumbilla MS	Scotia MS	Bellbird Park MS	SEA MLV	Redbank Stn (RBP)	SEA MLV
End	Bellbird Park Meter Station	Ellengrove Meter Station	Condamine MLV MP63.3 (RBP)	SEA Main Line Valve	Gibson Island Meter Station	Swanbank Station	Caltex Meter Station
Commissioned	1969	1988 – 2003	2000	1969	1969	2001	2010
Length (km)	400	400	111	40	2	5	5.4
Diameter (mm)	DN250	DN400	DN250	DN300	DN200	DN400	DN200
Wall Thickness (mm)	4.78, 5.16, 6.35	6.4, 6.6, 7.7, 7.9, 9.5	4.7, 5.7	5.16	4.78	9.5	8.18
Material	API 5L – X46	API5L – X60, X70 (stage 5), X80 (MP237-244.3)	API5L – X60	API 5L – X42	API 5L – X42	API5L – X70	API5L – X52
MAOP (kPag)	7,136	8 (Pipeline MAOP is 9,600 except for MP0.0 to MP33.4 which is 9,400)	10,200	4,612 (Bellbird Park to Mt Gravatt), 4,200 (Mt Gravatt to SEA MLV)	4,200	9,600	9,600
Pipeline Condition	Recent intelligent pigging indicated numerous anomalies, most of them being metal-loss corrosion defects.	Generally good condition	Excellent condition	Reasonable condition	Reasonable condition	Generally good condition	Excellent condition

2.2 Common Resources

In Queensland, whilst the pipelines are separately licensed and commercially separated they do share the same operational resources inside APA Group. These generally relate to the operation and maintenance aspects.

2.3 SCADA and Communications

The four pipelines are remotely monitored by the Pipeline Control Centre based at the Upper Mount Gravatt office. A disaster recovery server has been installed in the APA Offices at Dandenong, Victoria. This server will ensure continued operations in the event of a disaster should the UMG server be damaged or destroyed. No costs are on-charged directly to the asset.

At field stations transmitters monitor a variety of operational parameters; such as pressure, temperature and metering data which is then transferred as analogue/digital

signals to an on-site RTU that communicates back to the Upper Mount Gravatt SCADA. Electrical equipment has a lifespan of 10-15 years and therefore funding will be required to replace these systems as they age.

The current SCADA licence is Queensland specific and upon its expiry SCADA will be upgraded to the APA National SCADA Framework. Funding has been allocated in the capital budget though with a nominal value of $60k for hardware upgrading and $50k for software of the Honeywell system as the change over date hasn't been established and in the meanwhile the system must remain fully operational and updated.

2.4 Vehicles

Vehicles are purchased for remote site locations specific to the assets needs. These vehicle costs are allocated directly to the asset and are considered a "tool of trade". (See Conforming Capital for more detail, APPL12-AA-17-O).

Vehicle maintenance is managed by the person assigned a work vehicle. In accordance with APA Motor Vehicle Policy maintenance includes;

i. Ensuring the vehicle is fit for purpose and in good working order; and
ii. Ensuring the vehicle is regularly serviced.

Passenger vehicles are generally replaced every 5 years.

2.5 Tools

A large and varied collection of tools and equipment is utilised in the maintenance and upkeep of the pipeline systems. Tools and equipment are purchased and replaced on an as needed basis.

2.6 Heavy Plant

Heavy plant is maintained and operated in APA at designated base locations. Including; bobcats, trucks, forklifts, box trailer and, excavators. To maintain the safety of personnel the heavy equipment and plant is replaced every ten years. (See Conforming Capital APPL12-AA-17-O for more detail).

2.7 Land

All pipelines are licensed pursuant to the Queensland Petroleum and Gas (Production and Safety) Act and Regulation 2004.

It is a requirement of the Queensland Petroleum and Gas Act that the Licensee must obtain agreement to access all land traversed by the pipeline. These land access agreements generally take the form of easements on private land and licences, permits or leases in other areas such as State land, roads, railways etc.

2.8 Third Party

Dial Before You Dig enquiries (DBYD) and encroachments are referred through to the Lands Department under management procedure MTG 6-07, Pipeline Awareness Program and MTG 6-12, Guidelines for Encroachment. Under MTG 6-12 all impacts on the pipelines are assessed by Engineering and advised via the Conditional Assessment of Proposal Form ["CAP"] to ensure minimal impact to the asset. Where necessary, mitigation is undertaken to ensure safety of the public.

Once registered on title, an easement is binding with enforceable rights of access against current and subsequent owners of the land and third parties.

Furthermore it is a requirement of AS 2885, the standard under which high pressure gas pipelines are designed and operated, that the use of the land and any change to that use is understood and designed for. An ongoing pipeline awareness program has been

implemented to ensure that landowners and other 3rd parties with the potential to damage the pipeline are regularly reminded and educated regarding the gas pipeline.

2.9 Vehicle Mitigation

Safety Management Studies are carried out routinely for the assets and identify locations where operational risks are not as low as required. The protection of above ground facilities from out-of-control motor vehicles are generally considered in these processes and some site locations on the pipelines were deemed worthy of detailed consideration.

ARUP Risk Consulting was engaged to review the pipeline and identified eight sites which needed to be upgraded. Work commenced on those sites in 2010/11 and continues in 2011/12. Vehicle mitigation however is an ongoing threat, resulting from road usage changes and road realignments, therefore a maintenance level of funding has been proposed to enable any further situations to be addressed as they become relevant. (See Conforming Capital for more details, APPL12-AA-07-O)

3 Compliance

3.1 Legislation

The RBP is managed to comply with the following regulatory and legislative requirements;

i. Petroleum and Gas (Production and Safety) Act and Regulation 2004; and,
ii. Petroleum Regulation 1966, (QLD) as amended.

3.2 Codes and Standards

AS2885 (Sections 1 to 5) is a mandatory standard for the design, construction, operation and maintenance of transmission pipelines in Queensland under the Petroleum and Gas (Production and Safety) Regulation 2004 and amendments.

The frameworks to be met include compliance with:

i. AS2885.3 Pipelines - Gas and Liquid Petroleum;
ii. Qld Petroleum and Gas (Production and Safety) Act; and
iii. The National Third Party Access Code for Natural Gas Pipeline Systems ('the Code').

3.3 Licences

Section 2.1 Table 2 highlights the licences covered by this AMP.

3.4 Reporting

Regulatory Operations Reports are scheduled for submission in accordance with the Queensland Policy MGT 2-04 Reporting Register, located on the local server at N:\APA Documents\Management\.

Other recently added reports not yet noted in MGT 2-04 are documented in Table 3. The National Pollutant Reporting is issued to the environmental government body based on tripped parameters. Table 3 does not show Condamine and Yuleba compressor Stations because they do not trip the parameters for reporting.

Table 3 – NPI reporting timetable

Description	Asset	Due Date
National Pollutant Reporting (NPI) Note - Each station is assessed and reported only once emission parameters have been tripped.	Kogan CS Oakey CS Dalby CS Gatton CS	30 September yearly

3.5 Management of technical regulatory changes

APA receives updates from SAI Global on all changes to standards including technical regulations.

APA also receives email alerts on legislative changes; these are managed through the Operations and Technical Services Engineer. All changes are communicated to relevant business units and a hard copy is printed annually, stored in the library at Upper Mount Gravatt and online on a local server.

AS2885.3 is currently in the process of being updated and will be issued late 2011 early 2012. If amendments have been made that impact the operational requirements APA will adopt them and implement the changes.

3.6 Environmental plan

An Environmental Management Plan has been prepared in accordance with the Australia Pipeline Industry Association (APIA) Code of Environmental Practice. It incorporates current licence requirements and the ongoing management of environmental issues for the operation and maintenance of the pipelines

3.7 Stations (general)

There are several different categories of 'station' on pipelines including; valve, scraper, compressor and metering plants.

There are no long-term integrity issues for these sites. The sites don't present a hazard to the general public and the likely failure mode would be a minor leak that could be identified and corrected during maintenance. Fencing restricts entry of the public and operation of the equipment is restricted by padlocks and chains.

3.8 Easements (general)

All pipeline equipment is installed on a formal easement to ensure its long term protection. Where additional anode beds are installed as part of the CP system, these require new easements to be negotiated.

All activities in the vicinity of the easement are controlled, including construction and development activities. These activities are managed in according to document MGT 6-12 Guidelines For Encroachment. GIS and DBYD systems are also used to which assist with the management of third party activities near or on the easement.

3.9 Emergency plan

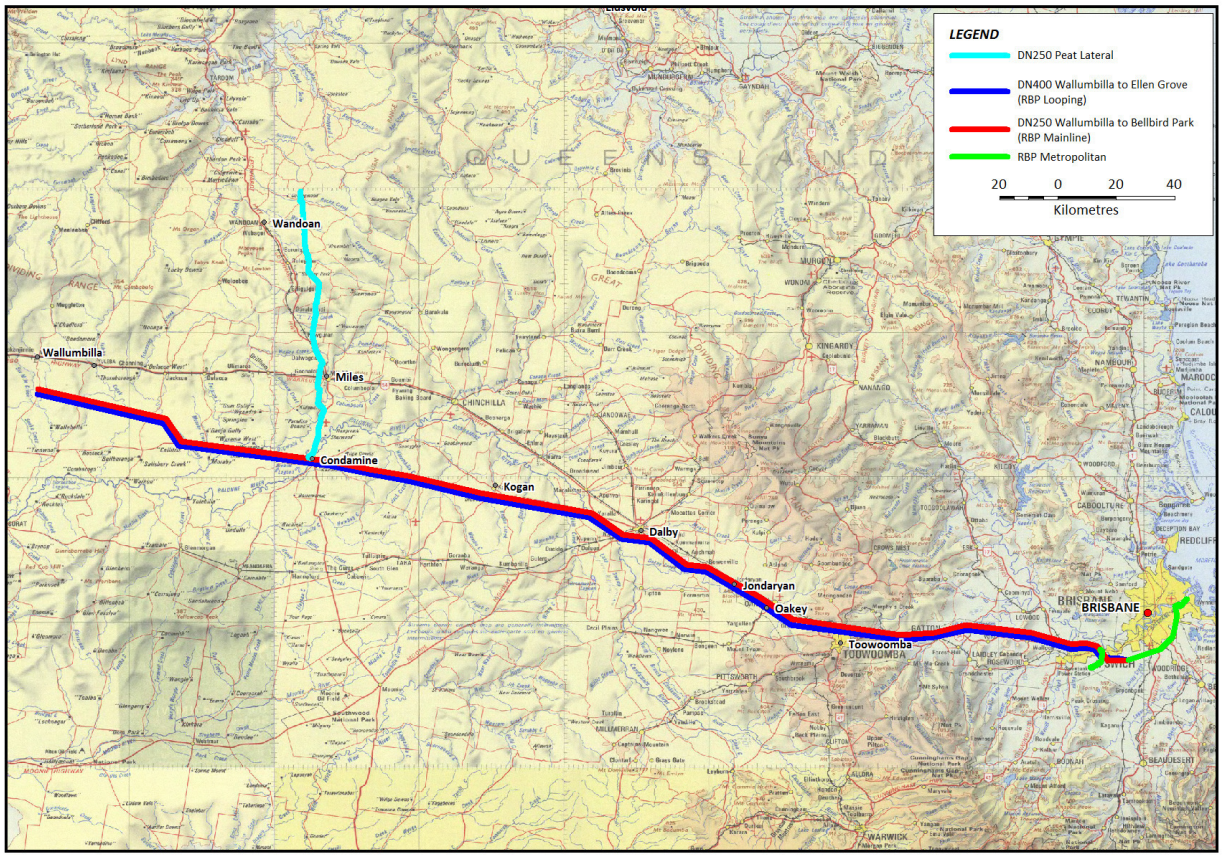
The Queensland Emergency Response Plan has been prepared in accordance with the provisions and requirements of AS2885.3, Queensland Legislation, Australian Legislation where applicable and the Queensland Petroleum and Gas Act (Production and Safety) and Regulations. It covers all licensed facilities owned and operated by the APA Group in Queensland.

4 Demand and supply integrity

4.1 Supply Configuration

The schematics of the RBP pipelines are shown in Figure 1 below.

Figure 1 – Roma to Brisbane Pipeline System



4.2 Supply Components

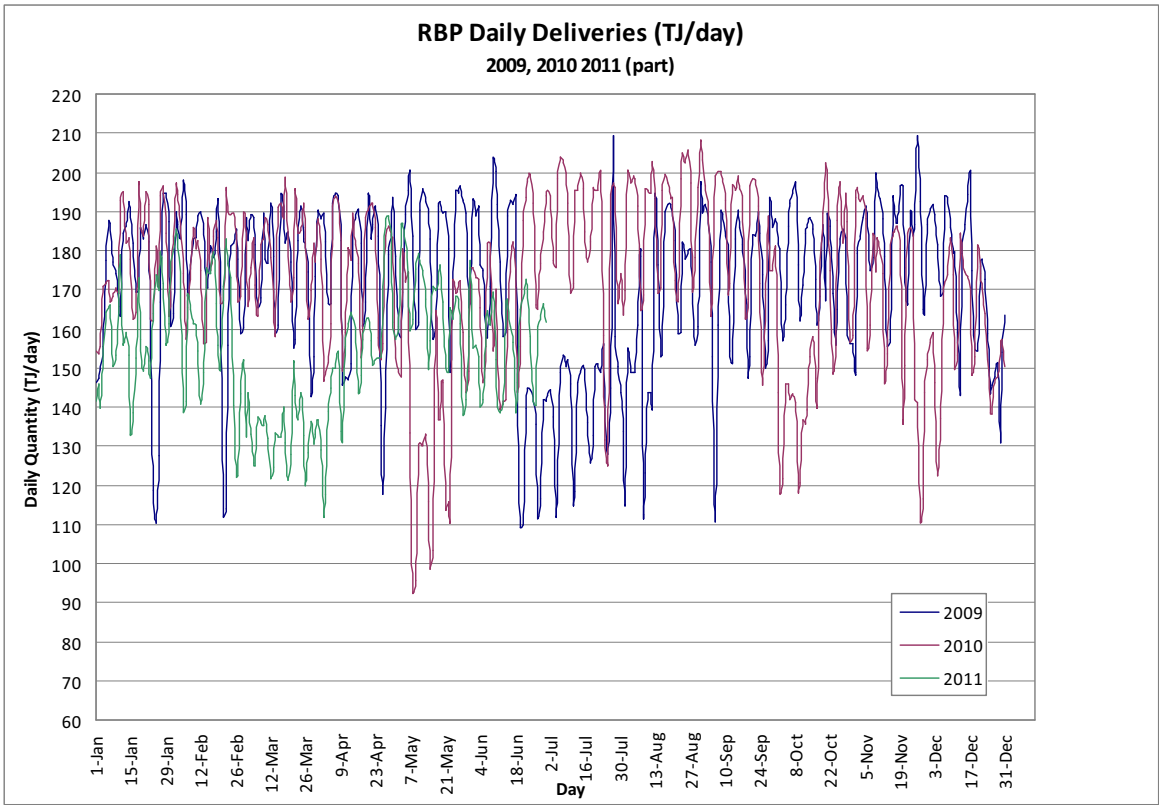
Table 4 – RBP Supply Components

Description	Lic No	MAOP (kPa)	Dia & Length (mm /km)	Comp or Regulator	Receipt Points	Terminal Points
DN250 Wallumbilla to Bellbird Pk	2	7,136	250 /397	Solar Saturn compressors at Yuleba, Kogan and Oakey	Wallumbilla Arubial	Bellbird Park Gate Station
DN400 Wallumbilla to Ellengrove	2	9,600	400 / 404	Solar Saturn compressors at Condamine, Dalby and Gatton.	Wallumbilla Arubial Kogan North Windibri Argyle	Swanbank Meter Station
Metropolitan Section	2	4,612	300 / 22	Bellbird Park regulator & Ellengrove regulator.	Bellbird Pk Ellengrove	Mt Gravatt Main line Valve
		4,200	300 / 17	Mt Gravatt regulator	Flowthrough	SEA Main Line Valve
		4,200	200 / 2	None	SEA MLV	Gibson Island Meter Station
	2	9600	200 / 5.4	None	SEA MLV	Caltex Meter Station
Peat Lateral	74	10,200	250/111	Arubial regulators	Scotia Woodroyd	Arubial Meter Station

4.3 Demands

The following chart demonstrates forecast demand for the RBP group of pipelines for 2012-2022 against past years.

Figure 2 – RBP Daily Deliveries



4.4 Capacity Statement – Supply Reliability

Table 5 – Capacity Supply Reliability

Description	Next 12 months	Forecast 2013	Forecast 2014 - ongoing
DN250 Wallumbilla to Bellbird Pk	Fully Utilised New GTA with redistribution of existing contractual loads.	Fully Utilised. Capacity development subject to negotiations of new contracts	Capacity expansion subject to negotiations of new contracts
DN400 Wallumbilla to Ellengrove	Fully Utilised	Fully Utilised Capacity development subject to negotiations of new contracts FEED stage of Additional compression at Dalby. MAOP Upgrade RBP DN400 Wallumbilla to Ellengrove	Capacity expansion subject to negotiations of new contracts
Metropolitan Section	Fully Utilised	Fully Utilised Capacity development subject to negotiations of new contracts Initial 6km looping of RBP Metro Pipeline: Prestons Rd to Murarrie	Capacity expansion subject to negotiations of new contracts
Peat Lateral	Fully Utilised	Fully Utilised	Capacity expansion subject to negotiations of new contracts

5 Lifecycle and technical operating

5.1.1 DN250 Wallumbilla to Bellbird Park (Roma to Brisbane Mainline)

5.1.1.1 Pipeline, Coating and Cathodic Protection

The DN250 Wallumbilla to Bellbird Park Pipeline has a protective coating of a single layer polyethylene tape wrap with 25% overlap applied over wire brushed pipe.

The pipeline is cathodically protected with an impressed current system. An annual survey determines the effectiveness of the cathodic protection and identifies areas where the protection system isn't performing adequately and where upgrades are necessary. As the ongoing budgetary requirements can't be determine in advance, budget provisions have been made for the next five years based on the expectation of CP upgrades.

Metal loss in-line inspection (ILI) was carried out in 2007 followed by various excavation programs and assessments to verify the condition and make repairs. The results of the ILI (APPL12-AA-01-O) and excavation program identified the coating to be in average to poor condition, with some areas suffering coating disbondment with shielding of the cathodic protection. The assessment of the pipeline coating condition, included evidence of a larger number of defects reported in the first 5km of the pipeline near Wallumbilla. An annual excavation program has been implemented on an ongoing basis to further assess the condition and undertake critical repairs as required (See Conforming Capital for more detail, APPL12-AA-08-O).

The first 10km of the pipeline exhibits particularly high current demand indicating that the coating condition has deteriorated faster in that area. A large number of Transformer Rectifier units have been installed and are operating at a high current output to combat

the condition, however it is felt that the impact of the poor coating condition can no longer be mitigated effectively with additional and higher powered units. This deteriorating coating is intended to be remedied more effectively by the implementation of a coating refurbishment plan (See Conforming Capital for more detail, APPL12-AA-04-F).

5.1.1.2 Stress Corrosion Cracking (SCC)

There have been no confirmed reports of SCC on the pipeline and as such SCC is not considered a high risk. With limited SCC studies undertaken though this does not imply that SCC is not a risk for the pipeline, particularly considering the older DN 250 line pipe had a brushed style coating preparation. APA continues to mitigate and manage this risk through routine planned inspections. Standard operational procedures require that whenever the pipeline is exposed the steel is inspected for SCC.

5.1.1.3 Rotating

Turbine overhauls are required at periods of generally between 30,000 and 50,000 operating hours, where turbine blades and wear parts such as seals and shafts are reworked or replaced (See Conforming Capital for more detail, APPL12-AA-02-O).

The turbines drive Solar C168 and C160 centrifugal compressors. Major maintenance on these units is conducted at 4000 operating hours. Seal oil test, vibration monitoring and internal inspections are conducted to monitor the wear of both suction and discharge capsules.

The compressors on the pipeline have relay logic control systems from the 1980's. Whilst this remains reliable and functional technology, it is unsupported and some spares in are now only available from an electronics supplier in USA. There is no likelihood of these compressor stations being redundant in the near future therefore it is proposed to upgrade these facilities to the current standard being offered by Solar with new units(See Conforming Capital for more detail, APPL12-AA-03-F).

5.1.1.4 Stations

Toowoomba station was identified in 2010 to be non-compliant with current standards and interim mitigation was implemented. To complete the rectification additional replacement works have been proposed (See Conforming Capital for more detail, APPL12-AA-06-F).

The mainline valves on the DN250 pipeline have become difficult to open/close and there are concerns regarding their capability to be gas tight under full differential pressure conditions. The supply conditions on the pipeline make it difficult to assess individual valves, however in due course they will be assessed and where necessary maintenance carried out on the seals. If seal replacement is insufficient complete valve replacement will be required (See Conforming Capital for more detail, APPL12-AA-18-F).

5.1.1.5 Easement

At Toowoomba the pipeline runs down the escarpment crossing two railway lines in a steel sleeve. The easement was being monitored for movement with particular emphasis on the known gradual movement of the steel sleeve. During the recent floods the easement suffered significant damage fro APPL12-AA-17-O m a major slip of the escarpment which resulting in a pipeline failure. It is anticipated that further work will be required on the escarpment in the years ahead and a contingency has therefore been allocated over the next 10 years including the Access Arrangement period. (See Conforming Capital for more detail, APPL12-AA-12-O)

At Midden Ranges, another earth slip caused damage to the pipeline by realigning a section over approx 100 metres and creating new bends in the pipe at each end. It is thought that the damage may have been created in the January floods but hadn't been detected.. At October 2011 work was continuing to fully investigate the situation and make suitable repairs to enable a pressure restriction to be lifted.

DN400 Wallumbilla to Ellengrove (Roma to Brisbane Looping)

5.1.1.6 Pipeline and Coating

The DN400 Wallumbilla to Ellengrove Pipeline has been externally coated with mill-applied extruded HDPE. Further upstream the sections of coating are an older polymer and are more prone to splitting. The coating is considered to be in good condition; however the joint coatings (heat shrink sleeves) have been failing due to disbonding. This coating has undergone gradual replacement over the years and the impact of its degrading condition is continually managed by cathodic protection and is monitored by In Line Inspections (ILI) (See Conforming Capital for more detail, APPL12-AA-01-O). An annual excavation program (See Conforming Capital for more detail, APPL12-AA-08-O) has been implemented to follow-up the reports and assess the pipeline condition carrying out repairs as required.

The Pipeline is cathodically protected with an impressed current system. An annual survey determines the effectiveness of the cathodic protection and identifies areas where the protection system isn't performing adequately and where upgrades are necessary. As the ongoing budgetary requirements can't be determine in advance, budget provisions have been made for the next five years based on the expectation of CP upgrades.

5.1.1.7 Stress Corrosion Cracking (SCC)

There have been no confirmed reports of SCC on the DN400 Pipeline and as such SCC is not considered a high risk. APA continues to mitigate and manage this risk through routine planned inspections. Standard operational procedures require that whenever the pipeline is exposed the steel is inspected for SCC.

5.1.1.8 Rotating

Turbine overhauls are required at periods of generally between 30,000 and 50,000 operating hours, where turbine blades and wear parts such as seals and shafts are reworked or replaced (See Conforming Capital for more detail, APPL12-AA-02-O).

The turbines drive Solar C168 and C160 centrifugal compressors. Major maintenance on these units is conducted at 4000 operating hours. Seal oil test, vibration monitoring and internal inspections are conducted to monitor the wear of both suction and discharge capsules.

A new C50 compressor is currently under construction at Dalby which will remove the reliance on the existing compressors.

5.1.2 Metropolitan Section asset system

5.1.2.1 Pipeline and Coating

The pipeline has been coated with dual layer polyethylene tape wrap.

Pig launchers were added to the DN200 section and the pipeline bends inspected to ensure that it could be inspected. ILI was though delayed from FY10 to FY11 due to high flows and end user requirements for inspection only during an Incitec planned shut-down in February 2011.

Previous DCVG surveys had indicated that the coating was in good condition and the recent ILI inspection didn't identify any defects of significance that would impact safe operations going forward.

The Collingwood-Ellengrove lateral is cathodically protected using a sacrificial anode system. The lateral is divided into isolated sections, separated by underground Monolithic Insulation Joints, to help mitigate Alternating Current (AC) induction from parallel high voltage power lines. The system is satisfactorily protected and no major upgrade/refurbishment is required.

The metropolitan sections and the Swanbank lateral are cathodically protected with an impressed current system. A six monthly survey is conducted on the metropolitan section to determine the effectiveness of the cathodic protection system and to identify areas where the protection system isn't performing adequately and where upgrades are necessary. As the ongoing budgetary requirements can't be determine in advance, budget provisions have been made for the next five years based on the expectation of CP upgrades.

5.1.2.2 Stress Corrosion Cracking (SCC)

There have been no confirmed reports of SCC on the Metropolitan pipeline section and as such SCC is not considered a high risk to the pipeline. APA continues to mitigate and manage this risk through routine planned inspections. Standard operational procedures require that whenever the pipeline is exposed the steel is inspected for SCC.

5.1.2.3 Rotating

There are no compressors or other rotating plant on the Metropolitan Pipeline system.

5.1.2.4 Stations

Redbank station was in 2010 identified non-compliant with current standards and interim mitigation was implemented. To complete the rectification additional replacement works have been proposed (See Conforming Capital for more detail, APPL12-AA-05-F).

The potential for an isolated incident involving minor damage near Swanbank to disrupt the gas supply to the city of Brisbane is a cause for concern. This is very undesirable and it is proposed to install a new isolation located near Collingwood to allow the sections to operate independently of each other during an emergency. The exact location would be determined from a study of the supply system to ensure that the position is optimised for this and other related operational conditions. (See Conforming Capital for more detail, APPL12-AA-09-F).

5.1.2.5 Easement

The Redbank station and the Swanbank Lateral were installed in areas with known underground mining activities (See Conforming Capital for more detail APPL12-AA-13-F). These areas have a strong potential for ground subsidence as the mines are fully developed as well as a potential for sub-surface fires associated with abandoned underground coal mines. Over the years several surveys have been completed, but the data and measurement processes have never been thoroughly assessed and long term asset management processes applied. It is anticipated that these areas of the pipeline system will provide considerable challenge going forward.

5.1.3 Peat Lateral

5.1.3.1 Pipeline and Coating

The Peat Lateral protective coating is mill-applied extruded high-density polyethylene (HDPE) with dual layer polyethylene tape used as the joint coating. The coating is in excellent condition, as shown by recent DCVG assessment and the results of the ILI (See Conforming Capital APPL12-AA-01-O) reflect the above assessment of the pipeline coating condition.

The Peat lateral has electrically isolated cathodic protection systems. An annual CP survey determines the integrity of the current cathodic protection (CP) system. The current integrity management plan details the CP upgrades and refurbishment for the RBP, this proposed plan potentially includes, upgrading CP test points and upgrading a TR unit at MP to solar.

The Peat Lateral system is cathodically protected using a sacrificial anode system. The whole pipeline system (including the 10km Scotia lateral) is electrically bonded in the one CP system. The pipeline system is currently satisfactorily protected and no major upgrade/refurbishment is anticipated.

5.1.3.2 Stress Corrosion Cracking (SCC)

There have been no confirmed reports of SCC on the Peat Lateral pipeline and as such SCC is not considered a high risk to the pipeline. APA continues to mitigate and manage this risk through routine planned inspections and standard operational procedures require that whenever the pipeline is exposed, the steel is inspected for SCC.

5.1.3.3 Rotating

There are no compressors or other rotating plant on the Peat Lateral.

5.1.3.4 Stations

During the flood event of 2011 Arubial station was inundated with water and required significant refurbishment of the equipment and facilities. A further flood of that magnitude may reoccur in the future, however there is very little that can be done to better protect the equipment at this location.

Appendix A – Summary of Minor Stay in Business Capital 5Y plan

Summary of Minor Stay in Business Capital 5Y plan (AUD 000's)

Asset	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	Totals
DN250 Wallumbilla to Bellbird Pk (Mainline)	1,401	635	1,054	410	1,076	4,576
DN400 Wallumbilla to Ellengrove (Looping)	570	740	320	637	445	2,712
Metropolitan Section Asset System	485	897	1,085	395	175	3,037
Peat Lateral	15	55	65	15	15	165
Conforming Capital Summary	1,425	2,025	725	2,000	1,200	7,375
Totals	**3,896**	**4,352**	**3,249**	**3,457**	**2,911**	**17,865**

Appendix B –Minor Stay in Business Capital 5Y plan

DN250 Wallumbilla to Bellbird Park (Roma to Brisbane Mainline)

DN250

RISK ASSESSMENT Issue Impact	Current Controls	Likelihood	Consequence	Untreated Risk Rate	Remedial Risk Action	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17
Pipeline & Coating					Pipeline & Coating					
Reduced corrosion protection leads to pipe damage necessitating repair	Monitored by pigging, some protection from adjacent units	OCCASIONAL Expected but low frequency	MINOR Immedaite risks less than $500k	LOW	DN250 CP Upgrade	85	85	85	85	85
Stations					Stations					
Loss of telemetry to site	None	OCCASIONAL	MINOR Customer complaints loss of control	LOW	DN250 RTU Replacement			50		50
Destroy compression control equipment and building	None	REMOTE Not anticipated	SEVERE Potential for Regulatory concern	LOW	Fire Suppression Sys at Compressor housing	100	100		100	
Non-conformance to Hazardous Area Standards.	None	OCCASIONAL May occur	SEVERE Potential for Regulatory concern	INTERMEDIATE	Hazardous Area Rectification program	100	100	100	100	100
Vehicles crash through installations	Site fencing only, minimal protection	UNLIKELY Unlikely to occur at this time but possible	SEVERE Short term interruption, restriction of supply, hospitalisation	INTERMEDIATE	Vehicle Mitigation	100				
Low reliability and increasing costs	None	FREQUENT More than once per year	MINOR Some press and lack of servicing capability	LOW	Site Vehicles Field & Heavy Plant	541		394		541
Potential for landslip and settlement leading to failure	None	OCCASIONAL Has occurred previously	SEVERE Short term interruption, restriction of supply	INTERMEDIATE	Geotechnical Mitigation - Toowoomba	250				
Outlet Temperature cooler months at Twba leads to frost heave and brittle failure	None	UNLIKELY Unlikely to occur at this time but possible	SEVERE Short term interruption, restriction of supply	INTERMEDIATE	Heater Mods - Twba					150
Inability to shut down pipeline in an emergency. Inability to reopen valve.	Some maintenance	OCCASIONAL May occur	SEVERE Short term interruption, restriction of supply	INTERMEDIATE	Mainline Valve Upgrade			300		
No remote control and CP units. Leading to potential loss of pipeline protection during failure.	Physical inspections	UNLIKELY Unlikely to occur at this time but possible	MINOR excavation and repair required	LOW	Telemetry with interupter capability		160			
Obsolete and unsupported (Loss of data for extended periods) equipment extended delays in after failure events.	None	OCCASIONAL May occur	MINOR loss of data for periods	LOW	Flow Computer Replacement Program		60		100	
Poor metering accuracy, high maintenance requirement	None	OCCASIONAL May occur	MINOR loss of data for periods	LOW	Orifice meter upgrade program		55			
Rotating					Rotating					
Failure from worn components	Overhaul at appropriate intervals	OCCASIONAL Every two years	MINOR restriction of supply	LOW	Compressor Overhauls	100		100		100
Easements					Easements					
Site removal No legal right to remain	Good relationship with landowner	UNLIKELY Not anticipated but possible	MINOR less than $500k	LOW	Acquisition of new easement for existing anode beds	75	75	25	25	50
Outdated drawings leading to impact with live pipelines and loss of control	BAU processes	UNLIKELY Not anticipated but possible	MINOR restriction of supply	LOW	Review and Update GIS and P&IDs	50				
						1,401	635	1,054	410	1,076

DN400 Wallumbilla to Ellengrove (Roma to Brisbane Looping)

DN400

Issue Impact	Current Controls	Likelihood	Consequence	Untreated Risk Rate	Remedial Risk Action	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17
Pipeline & Coating					Pipeline & Coating					
Reduced corrosion protection leads to pipe damage necessitating repair	Monitored by pigging, some protection from adjacent units	OCCASIONAL Expected but low frequency	MINOR Immedaite risks less than $500k	LOW	DN400 CP Upgrade	25	25	25	25	25
Stations					Stations					
Loss of telemetry to site	None	OCCASIONAL	MINOR Customer complaints loss of control	LOW	DN400 RTU Replacement	50	50		50	
Destroy compression control equipment and building	None	REMOTE Not anticipated	SEVERE Potential for Regulatory concern	LOW	Fire Suppression Sys at Compressor housing	100		100		100
Non-conformance to Hazardous Area Standards.	None	OCCASIONAL May occur	SEVERE Potential for Regulatory concern	INTERMEDIATE	Hazardous Area Rectification program	100	100	100	100	100
Vehicles crash through installations	Site fencing only, minimal protection	UNLIKELY Unlikely to occur at this time but possible	SEVERE Short term interruption, restriction of supply, hospitalisation	INTERMEDIATE	Vehicle Mitigation		100			
Changed Electrical Standards require upgrading of wiring and equipment	None	OCCASIONAL May occur	SEVERE Potential for Regulatory concern	INTERMEDIATE	Electrical Hazard Reduction				50	
Obsolete and unsupported (Loss of data for extended periods) equipment extended delays in after failure events.	None	OCCASIONAL May occur	MINOR loss of data for periods	LOW	Flow Computer Replacement Program	100				100
Low reliability and increasing costs	None	FREQUENT More than once per year	Minor Some press and lack of servicing capability	LOW	Site Vehicles Field & Heavy Plant		220		217	
Reduced effectiveness of crews	Other crews and hire	FREQUENT will impact performance	TRIVIAL	LOW	DN400 Minor Tooling and Equipment	50	50	50	50	50
Rotating					Rotating					
Failure from worn components	Overhaul at appropriate intervals	OCCASIONAL Every two years	MINOR restriction of supply	LOW	Compressor Overhauls		100		100	
Easements					Easements					
Site removal No legal right to remain	Good relationship with landowner	UNLIKELY Not anticipated but possible	MINOR less than $500k	LOW	Acquisition of new easement for existing anode beds	75	75	25	25	50
Outdated drawings leading to impact with live pipelines and loss of control	BAU processes	UNLIKELY Not anticipated but possible	MINOR restriction of supply	LOW	Review and Update GIS and P&IDs	50				
Insufficent physical pipeline protection allowing 3rd party damage and/or rupture. Breach of AS 2885	Pipeline signage, 3rd party liaison, wall thickness and depth	UNLIKELY Not anticipated but possible	MAJOR National publicity, Regulatory explanation, fatalities possible	HIGH	Slabbing Contingency	20	20	20	20	20
						570	740	320	637	445

Metropolitan Section Pipeline

METROPOLITAN SECTION PIPELINE

Issue Impact	Current Controls	Likelihood	Consequence	Untreated Risk Rate	Remedial Risk Action	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17
Pipeline & Coating					Pipeline & Coating					
Reduced corrosion protection leads to pipe damage necessitating repair	Monitored by pigging, some protection from adjacent units	OCCASIONAL Expected but low frequency	MINOR Immedaite risks less than $500k	LOW	Metro CP Upgrade	25	25	25	25	25
Stations					Stations					
Non-conformance to Hazardous Area Standards.	None	OCCASIONAL May occur	SEVERE Potential for Regulatory concern	INTERMEDIATE	Hazardous Area Rectification program	50	50	50	50	50
Vehicles crash through installations	Site fencing only, minimal protection	UNLIKELY Unlikely to occur at this time but possible	SEVERE Short term interruption, restriction of supply, hospitalisation	INTERMEDIATE	Vehicle Mitigation	100	100	100		
Reduced effectiveness of crews	Other crews and hire	FREQUENT will impact performance	TRIVIAL	LOW	DN400 Minor Tooling and Equipment	40	40	40	40	40
Low reliability and increasing costs	None	FREQUENT More than once per year	Minor Some press and lack of servicing capability	LOW	Site Vehicles Field & Heavy Plant		217		220	
Escalation of a Swanbank emergency impacts the Brisbane City gas supply	Awareness of situation	UNLIKELY Unlikely to occur but possible	MAJOR Prolonged interruption due to domestic customer disruption and relight	HIGH	Swanbank Isolation Valve		50	450		
Potential for subsidence leading to failure	None	OCCASIONAL Has occurred previously	SEVERE Short term interruption, restriction of supply	INTERMEDIATE	Geotechnical Mitigation – Redbank and Swanbank Lateral	50	300	300		
Obsolete and unsupported (Loss of data for extended periods) equipment extended delays in after failure events.	None	OCCASIONAL May occur	MINOR loss of data for periods	LOW	Flow Computer Replacement Program			60		
Loose visibility of pipline and can not control plant appropriately. Leading to a loss of supply to Brisbane	Employees man critical sites	UNLIKELY Unlikely to occur but possible	MINOR short term interuption	LOW	Upgrade Servers A&B SCADA hardware & Software upgrade	110				
Poor metering accuracy, high maintenance requirement.	None	OCCASIONAL May occur	MINOR loss of data for periods	LOW	Orifice meter upgrade program		55			
Rotating					Rotating					
No items					No items	0				
Easements					Easements					
Insufficent physical pipeline protection allowing 3rd party damage and/or gas leak/fire. Breach of AS 2885	Pipeline signage, 3rd party liaison, wall thickness and depth	UNLIKELY Not anticipated but possible	SEVERE Local publicity, Regulatory explanation, injuries possible	INTERMEDIATE	Slabbing Contingency	60	60	60	60	60
Outdated drawings leading to impact with live pipelines and loss of control	BAU processes	UNLIKELY Not anticipated but possible	MINOR restriction of supply	LOW	Review and Update GIS and P&IDs	50				
						485	897	1,085	395	175

Peat Lateral

PEAT LATERAL

Issue Impact	Current Controls	Likelihood	Consequence	Untreated Risk Rate	Remedial Risk Action	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17
Pipeline & Coating					Pipeline & Coating					
Reduced corrosion protection leads to pipe damage necessitating repair	Monitored by pigging, some protection from adjacent units	OCCASIONAL Expected but low frequency	MINOR Immedaite risks less than $500k	LOW	Peat CP Upgrade	15	15	15	15	15
Stations					Stations					
Poor metering accuracy, high maintenance requirement	None	OCCASIONAL May occur	MINOR loss of data for periods	LOW	Orifice meter upgrade program					
No remote control and CP units. Leading to potential loss of pipeline protection during failure.	physical inspections	UNLIKELY Unlikely to occur at this time but possible	MINOR excavation and repair required	LOW	Telemetry with interupter capability		40			
Obsolete and unsupported (Loss of data for extended periods) equipment extended delays in after failure events.	None	OCCASIONAL May occur	MINOR loss of data for periods	LOW	Flow Computer Replacement Program			50		
Rotating					Rotating					
No items					No items					
Easements					Easements					
No items					No items					
						15	55	65	15	15

Conforming Capital Summary

MAJOR CONFORMING CAPITAL DOC

Issue Impact	Current Controls	Likelihood	Consequence	Untreated Risk Rate	Remedial Risk Action	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17
Lack of integrity information leading to failure	ILI	OCCASIONAL May occur	MAJOR Prolonged interruption and national press	HIGH	In-line Inspection Program APTPPL					150
Catastrophic failure from time limited components	Major overhaul at appropriate intervals	FREQUENT Expected annually	SEVERE Possible injuries restriction of supply	HIGH	Compressor Turbine Overhaul program	250	250		275	275
Failure of control system causing	Some aftermarket spares	UNLIKELY Unlikely to occur at	SEVERE Short term interruption,	INTERMEDIATE	Unit Control panel Upgrade		1000		1000	
Uncontrollable corrosion leading to failure	Additional CP but expensive and not fully capable	OCCASIONAL May occur	MAJOR Prolonged interruption and national press	HIGH	DN250 Coating refurbishment	500	500	500	500	100
Non-conformance to Standards and pipework corroded.	Warning signs External inspection	OCCASIONAL May occur	SEVERE Short term interruption, restriction of supply	INTERMEDIATE	Redbank Station Upgrade	450	50			
Non-conformance to Standards and pipework corroded.	Warning signs External inspection	OCCASIONAL May occur	SEVERE Short term interruption, restriction of supply	INTERMEDIATE	Toowoomba Station upgrade					450
Non-inspection of anomalies for repair ser	None	OCCASIONAL May occur	MAJOR Prolonged interruption and national press	HIGH	Excavation program	225	225	225	225	225
						1,425	2,025	725	2,000	1,200

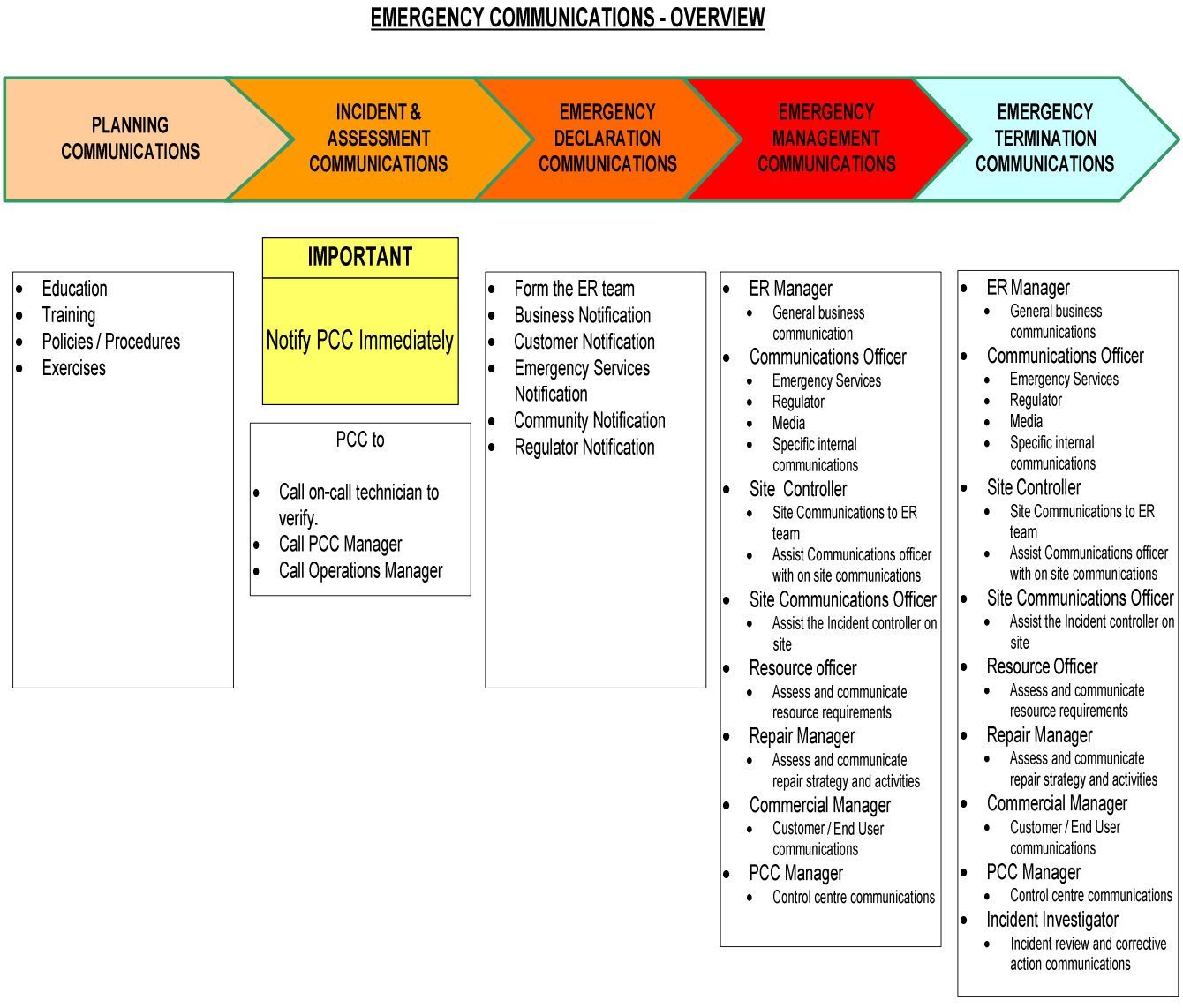
Appendix C – Glossary of terms.

Term	Definition
AA	An Access Arrangement for a covered pipeline
ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator – part of the Australian Competition and Consumer Commission (ACCC)
API	American Petroleum Institute
APT	The Australian Pipeline Trust
Asset Management	The systematic and coordinated activities and practices through which an organisation optimally manages its assets and their associated performance, risks, and expenditures over their lifecycle for the purpose of achieving its organisational strategic plan.
CGP	Carpentaria Gas Pipeline
CLP	Cannington Lateral Pipeline
CP	Cathodic Protection
DCVG	Direct Current Voltage Gradient
Delivery Point	The point of exit from the pipeline at which gas is delivered to or for the account of a user.
EHO	Equivalent Hours of Operation
Enhanced Capacity	Additional capacity that is required to satisfy the needs of a prospective user where that capacity is not available and new or modified or upgraded facilities are necessary.
FEED	Front-End Engineering Design
Gas	The fluid that enters the pipeline at a receipt point subject to certain quality conditions
GHV	Gross Heating Value in MJ/m^3
GIS	Geographical Information System
GJ	Gigajoule
HDPE	High density polyethylene
kPa	Kilo Pascals
Lifecycle	The time interval that commences with the identification of the need for an asset and termination with the decommissioning of the asset or any liabilities thereafter.
MAOP	Maximum allowable operating pressure
MCMS	Mica Creek Meter Station
MPa	MegaPascals
OD	Outside Diameter
OEM	Original Equipment Manufacturer
PLP	Peat Lateral Pipeline
Receipt Point	The point of entry for gas to enter into the pipeline
SCADA	Supervisory Control And Data Acquisition
SCC	Stress Corrosion Cracking
SIB Capital	The stay in business capital expenditure required to sustain the business - does not include capital for growth.
sm^3/h	Standard cubic meters per hour
SMS	Safety Management Study
System Use Gas	Gas of known use such as that for fuel gas to run generation, compression and instrumentation.
TJ	TeraJoule
TR	Transformer / Rectifier Unit (used for Cathodic Protection of the pipelines)

MGT 2-02 **Emergency Communications**	APA Group Rev 07 02 Sep 2008
	Owner: C Tickell Reviewed by: P Kelly Approved by: P Benham

Queensland Emergency Response Communication Plan

Emergency communication to follow the overview below:



Special note:

The Emergency Manager has the delegated authority to secure, contain and effect all necessary repairs to meet licence conditions until close out of the emergency.

MGT 2-03 Emergency - Key Responsibility	APA Group Rev 05 02 Sep 08
	Owner: C Tickell Reviewed by: P Kelly Approved by: P Benham

Key Roles in an Emergency Response Organisation

At the declaration of an emergency, the role of Emergency Manager will be assigned.

The Emergency Operations Group identifies and manages all aspects of the Emergency Response Plan from the initial notification through to the termination of an emergency. It provides local knowledge on the pipelines, associated equipment and records all incident details and maintains communication with Site Controller, customers and clients.

The interaction of the key personnel is shown in the following diagram and detailed in the Queensland Emergency Response Communication Plan.

The Emergency Manager has the delegated authority to secure and contain the emergency and affect repairs necessary to meet all licence safety conditions until close out of the emergency.

All emergency communication is to follow the strict protocol as outlined in the Emergency Response Plan.

Once an emergency has been declared the Emergency Manager allocates staff to fill the required roles. Emergency roles are to have backup personnel designated within 4 hours of the emergency being declared.

The following key roles and responsibilities have been identified as being necessary to effectively manage an emergency.

Emergency Manager is the person designated as having prime responsibility for the coordination of emergency response. Also has the primary communications role between company executives and the media on a state basis.

Emergency Management Group is the group of people in the APA Group who have a defined role within an emergency situation and have the organizational accountabilities for managing an emergency response.

Communications Officer is the conduit and recorder of all communication between the Emergency Management Group and the Site Controller. Regular communication updates from the Emergency Manager will be required to be communicated to these stakeholders. This position is responsible for all communication of the emergency to all relevant stakeholders including Emergency Services as advised by the Emergency Manager, land owners, public enquiries and a secondary communications role with the media.

Commercial Manager is responsible for high level liaison and formal communications with customers and suppliers. This person makes the commercial and contractual decisions e.g. Force majeure.

Site Controller is the person in charge of the site of an emergency. This person has authority to control all company activities and staff on site and liaise with emergency services. This person must be an approved PIO and is accountable directly to the Emergency Manager.

Emergency Pipeline Controller (On duty controller) may be the person responsible for initiating the first steps of a potential emergency response and recording actions and communications regarding the incident. They will need to continue to run the normal day to day operations and contact the normal Shippers, End Users and Emergency Services. They will also have the responsibility to hand over control of the incident to the Emergency Manager. They also maybe required to act as Temporary Communications Officer until the appointment of a Communications Officer. They will also keep updated any Qld APA Group staff not directly involved with the emergency.

Site Communications Officer is the person assisting the Site Controller at the emergency scene during an emergency. This position is responsible for relaying communications to and from the Site Controller and Emergency Manager and for recording communications and actions taken. This position will also keep contact with block valve and blow down crews and direct such activity when asked to do so by the Site Controller.

Pipeline Technicians are responsible for affecting the repair at the site and to man selected sites as required. When on site they will be directed by the Site Controller at all times. They will need to keep the Site Communications Officer informed of their movements (other than on site) at all times.

Repair Manager (Engineering Team) is responsible for all engineering procedures and activities to affect a safe repair. Their role is to advise the Emergency Manager and effect approved repairs on site as directed.

Resource Officer is responsible for managing all logistical arrangements. This position will lead a team of people who will be able to fully resource the emergency response as directed by the Emergency Manager. This will include arranging all logistics, relief staffing and all resources required to sustain a lengthy emergency repair program.

Media: Media statements involving APA Group staff will be made by approved persons within APA Group. Any media statements about APA Group assets will be made by approved APA Group delegate.

Competencies required to fill the above positions shall be stated in Position Descriptions and individual training plans.

The Emergency Response Plan contains checklists and manifests for all emergency roles mentioned above to assist them in their actions.

TABLE 2.2.2 PIPELINES STAFF TASK RESPONSIBILITY

Allocation Priority	1	2	3	4	5	6	7	8	9	10
	PC	EM	SC	CO	RO	SCO	BDC	RM	SO	CSO
Manager Transmission Operations Qld		P		P						
Pipeline Engineering Staff		X	X	X	X		X	P	X	
Electrical Specialist Staff				P		P	X		X	X
Pipeline Technical Staff			X		X	X	P		P	P
Gas Control Staff	P									
Control Room Manager	X			X						
Manager Engineering		X		X				X		
Administration Staff			X		P					
Operations Managers		X	P		X		X	X	X	X

LEGEND:

1. PC Pipeline Controller
2. EM Emergency Manager
3. SC Site Controller
4. CO Communications Officer
5. RO Resource Officer
6. SCO Site Communications Officer
7. BDC Blow Down Crew
8. RM Repair Manager
9. SO Site Operators
10. CSO Meter/Compressor Station Operators

KEY:

Principal person for role	P
Alternative person for role	X

MGT 2-04
Qld Reporting and Licensing Register

APA Group

Rev 5 18 Aug 2010

Created by:	A Tai
Reviewed by:	P Kelly
Approved by:	K Mallitt

Purpose and Scope

This document defines all critical external/internal documents used for monthly reports, KPI statistics and licence due-by dates within Transmission Operations Queensland. It also lists the major pipeline integrity activities.

References

O&MG 3-26 Cathodic Protection Unit Registration

Definitions

wd	Working day
PL 2	Roma to Brisbane Pipeline
PL 41	Carpentaria Gas Pipeline
PL 42	Cannington Lateral Pipeline
PL 50	Mica Creek Meter Station
PL 51	MIM Town Lateral Pipeline
PL 74	Peat Lateral Pipeline
PL 120	Kogan North Central Gas Processing Facility
	Directlink
	Murraylink

Procedure

The following tables identify all Transmission Operations Queensland internal and external reporting functions and deadlines for statutory payments. The intent of this document is to also provide sufficient detail to enable a support colleague to perform the basic reporting functions necessary to maintain business continuity to external bodies and to meet APA Group national and state obligations.

EXTERNAL REPORTS			
Report	**Recipient**	**By When**	**By Whom**
DME Transmission Report 6 Monthly (Jan – Jun, Jul – Dec)	The Director-General Department of Mines and Energy Locked Bag 40 COORPAROO DC Qld 4151 Attention: State Mining Engineer – Andy Kozak	20 January 20 July	Gas Contracts Specialist

EXTERNAL REPORTS			
Report	**Recipient**	**By When**	**By Whom**
DME License Report Annually by due date + 2 months	The Director-General Department of Mines and Energy Locked Bag 40 COORPAROO DC Qld 4151 Attention: State Mining Engineer – Andy Kozak	PL 2: 21 December PL 41: 20 March PL 42: 14 May PL 50: 16 December PL 51: 31 March PL 74: 03 September PL 120: 08 September	Technical Compliance Specialist Manager Transmission Operations Qld to sign off
DME Measurement Scheme Report Annually	The Director-General Department of Mines and Energy Locked Bag 40 COORPAROO DC Qld 4151 Attention: Chief Inspector Petroleum & Gas – Steve Matheson	All – 1September	Metering and Control Systems Manager
DME Executive Safety Report Annually	Petroleum and Gas Inspectorate. Department of Mines and Energy PO Box 15216 City East Q 4002 Attention: Chief Inspector Petroleum & Gas – Steve Matheson	All – 1 September	Technical Compliance Specialist Managing Director/CEO to sign off
Environmental Audit (external) 2 Yearly	Manager Transmission Operations Qld **All Pipelines:** Environmental Protection Agency GPO Box 2771 Brisbane 4001 **PL41:** Queensland Transport GPO Box 1549 Brisbane 4001 Attn: Marelle Zebrovius (Cust.No. 5743)	PL 2: June 2008 PL 41: December 2009 PL 42: December 2005 PL 50: December 2005 PL 51: December 2005 PL 74: June 2008 PL 120: September 2008	Technical Compliance Specialist to arrange
Pipeline License Renewal	The Director-General Department of Mines and Energy Locked Bag 40 COORPAROO DC Qld 4151 Attention: State Mining Engineer – Andy Kozak	PL 2: N/A PL 41: 2038 PL 42: May 2038 PL 50: December 2037 PL 51: March 2038 PL 74: September 2040 PL 120: September 2046	Technical Compliance Specialist

LICENCE RENEWAL and LEASE FEES			
Licence/Lease	**Recipient**	**By When**	**By Whom**
Regulator Audit and Inspection Fee return Annual return for all licences. Fees due 30 days post receipt of invoice.	Petroleum and Gas Inspectorate. Department of Mines and Energy PO Box 15216 City East Q 4002 Attention: Chief Inspector Petroleum & Gas – Steve Matheson	1 September	Technical Compliance Specialist
Environmental Authority Renewal Fee – Level 1 Annual	EPA GPO Box 2771 Brisbane, Qld 4002	PL 120: 21st December $3,000	Contracts Manager
Abrasive Blasting Licence Renewal and Statement Annual	EPA GPO Box 2771 Brisbane, Qld 4002	25th July $650	Manager Transmission Operations Qld (fee) Technical Compliance Specialist (statement)
CP System License Renewal Fee 5 yearly	Electrical Safety Office GPO Box 69 BRISBANE QLD 4001 Attn Reg Neil	Licence anniversary date. (Refer to Appendix.)	CP Engineer
Land Lease MIM, Ballera	Santos	$1,000 annually	APA Group Contracts Manager
Joint Venture MTIC License Corridor Fee Annually	Queensland Transport GPO Box 1549 Brisbane 4001 Attn: Marelle Zebrovius (Cust.No. 5743)		Contracts Manager
Pipeline License Renewal Fee Annual $100 per kilometre of pipeline	Mike Brownless Policy Officer Rents Dept. Of Natural Resources GPO Box 2454 Brisbane 4001	PL 2: 31 December PL 41: 20 March PL 42: 14May PL 50: 16 December PL 51: 31 March PL 74: 3 September PL 120: 8 September	Contracts Manager (PL50 paid by CS Energy)
Apparatus (Radio) Licence Annual	Australian Communications and Media Authority PO Box 78 Belconnen ACT 2616	**MCMS** 1443633: 11th November 1444744: 11th November **Peat Lateral** **1566788 : 21st April**	Systems Engineer

INTERNAL REPORTS/REVIEWS			
Report/Review	**Recipient**	**By When**	**By Whom**
Design Life Review At expiry of existing	Manager Transmission Operations Qld	PL2: 21 December 1997 PL 41: 20 March 2037 PL 42: 14 May 2018 PL 50: 16 December 2037 PL 51: 31 March 2038 PL 74: 03 September 2040 PL 120: September 2031	Engineering & Technical Services Manager
MAOP Review 5 yearly	Manager Transmission Operations Qld	PL 2: April 2012 PL 41: March 2009 PL 42: November 2010 PL 50: June 2011 PL 51: June 2011 PL 74: April 2012 PL 120: September 2011	Engineering & Technical Services Manager
Risk Assessment 5 yearly	Manager Transmission Operations Qld	PL2 April 2008 PL 41 April 2012 PL 42 April 2012 PL 50 April 2012 PL 51 April 2008 PL 74 May 2008 PL 120: September 2011	Engineering & Technical Services Manager
Location Class Review 5 yearly	Manager Transmission Operations Qld	PL2: April 2012 PL 41: April 2012 PL 42: June 2006 PL 50: June 2011 PL 51: June 2011 PL 74: April 2008 PL 120: September 2011	Engineering & Technical Services Manager
Safety and Operating Plan Reviewed at least 2 yearly	Manager Transmission Operations Qld	All – September 2008 Next review June 2010	Technical Compliance Specialist Managing Director/CEO to sign off
Intelligent Pigging Survey (strategic pipelines) Initial 7 years then 10 yearly	Manager Transmission Operations Qld	PL 2 DN250 – 2006/07 DN 400 – 2014/15 DN 300 – 2009/10 Swanbank & Ellengrove DN400 – 2009 /10 PL 41 DN300 – 2013/14	Engineering & Technical Services Manager To arrange
Intelligent Pigging Survey (non-strategic pipelines) Engineering Manager to determine frequencies	Manager Transmission Operations Qld	PL 42 DN150 – 2009/10 PL 51 DN150 – 2009/10 PL 74 DN250 – 2009/10	Engineering & Technical Services Manager To arrange

INTERNAL REPORTS/REVIEWS			
Report/Review	**Recipient**	**By When**	**By Whom**
Coating Defect Assessment Survey Various frequencies - AS2885.3 "On Condition" Not relevant for ultra poor coating, typical 5 year interval initially then expanded as required.	Manager Transmission Operations Qld	**Last Performed:** PL 2: DN200 – March 2007 DN300 - March 2007 Swanbank – 2003/04 Ellengrove - 2002 DN250 – Not Done DN400 - 2003/04 PL 41: 1998 (due 2008) PL 42: 2005 PL 50: N/A PL 51: 2005 PL 74: 2002 (due 2008)	Engineering & Technical Services Manager To arrange (No CDA performed on DN250 due to poor condition of coating)
Asset Management Plan Annually	Transmission Operations Leadership Team	1st March	Transmission Services Group
APA Queensland Gas Contracts Operational Report Provides information regarding contractual issues under the Gas Transportation Agreements (GTAs) in Queensland	Contracts Manager	10th day every month	Gas Contracts Specialist
Pipeline Control Centre Reports For details on reports issued by the control room see latest version of PCC 4-38 Calendar of Events	Various	Various	Operations Manager, CC & GC
Transmission Operations Qld Monthly Report Provides Qld monthly operating details on APA assets	Transmission Operations Leadership Team	7th day every month	Business Support Coordinator
Transmission Operations State Summary	General Manager Queensland	10th day every month	Manager Transmission Operations Qld
Operations Performance Report	APA Group Board of Directors	10th day every month	Manager Transmission Operations Qld
Quarterly Compliance Report	Mr Patrick Walsh Chairperson Essential Services Commission of South Australia GPO Box 2605 ADELAIDE SA 5001	Within 2 months of : 31 March 30 June 30 September 31 December	Technical Compliance Specialist Operations Manager Power Transmission to sign off

INTERNAL REPORTS/REVIEWS			
Report/Review	**Recipient**	**By When**	**By Whom**
Annual Compliance Report	Mr Patrick Walsh Chairperson Essential Services Commission of South Australia GPO Box 2605 ADELAIDE SA 5001	31 August	Technical Compliance Specialist Operations Manager Power Transmission to sign off External Audit and Board Minutes
Annual Compliance Report	Mr Peter Morris Principle Engineer Electrical Office of the Technical Regulator DTEI Energy Division PO Box 1 WALKERVILLE SA 5081	31 August	Technical Compliance Specialist Operations Manager Power Transmission to sign off
Annual Compliance Report	Peter Lansdown Manager, Energy Networks Compliance, Department of Water and Energy GPO BOX 3889, SYDNEY NSW 2001	31 August	Technical Compliance Specialist Operations Manager Power Transmission to sign off External Audit

Appendix

The following tables provide general information only on the CP Units. The latest data is contained in the annual CP audit spreadsheets located in:
N:\Asset Information\Pipeline Integrity\Cathodic Protection\Annual CP Audits\

Table 1 RBP CP Units

MP #	REGISTRATION NO.	RENEWAL DATE	T/R RATING	SITE DESCRIPTION
0	3127	Santos	50V/55A	Santos only, RBP circuit decommissioned.
0.5	3329	17-Nov-10		In property, 0.8km east of AGL Wallumbilla station
0.9	3119	03-Oct-10	25V/25A	In property, 1.6km east of AGL Wallumbilla station
1.9	2519	07-Feb-12	25V/25A	In property, 3km east of AGL Wallumbilla station
3	3328	17-Nov-10		In property, 5km east of AGL Wallumbilla station
4	2522	30-Nov-11	25V/25A	On eastern side of Silver Valley Road
5.9	3118	03-Oct-10	25V/25A	Near AGL mainline valve, in property, 5 km west of Yuleba Surat Road
10.9	3117	03-Oct-10	25V/25A	In Yuleba State Forest, 3km east of Yuleba Surat Road
12.5	3209	10-Jul-12		In Yuleba State Forest, 5.5km east of Yuleba Surat Road
16.4	2523	29-Nov-11	25V/25A	On Moongool property (98WV1726), 12km east of Yuleba Surat Road
19.9	3116	03-Oct-10	25V/25A	In Yuleba State Forest, 17km east of Yuleba Surat Road, 0.5km west of AGL mainline valve
26.9	2517	29-Nov-11	20V/20A	In Yuleba State Forest, 29km east of Yuleba Surat Road
31.4	3115	03-Oct-10	25V/25A	Of forestry road, 9km north off Roma Condamine Road, 10km west of Dulacca South Road
33.4	3125	03-Oct-10		Inside AGL compressor station, east of forestry road, 6km north off Roma Condamine Road, 10km west of Dulacca South Road
36	3114	03-Oct-10	25V/25A	In northern side road reserve of Roma Condamine Road, 8.5 km west of Dulacca South Road
38	2983	30-Aug-09	25V/25A	In northern side road reserve of Roma Condamine Road, 4.5 km west of Dulacca South Road
40.9	3113	03-Oct-10	20V/20A	Near AGL mainline valve compound, in northern side road reserve of Condamine Roma Road, 1 km west of Dulacca South Road
45.7	3112	03-Oct-10	25V/25A	In northern side road reserve of Roma Condamine Road, 2 km east of Dogwood Creek bridge
47.7	3187	01-Aug-11		In northern side road reserve of Roma Condamine Road, 5 km east of Dogwood Creek bridge
49.5	3111	03-Oct-10	25V/25A	In northern side road reserve of Roma Condamine Road, 8 km east of Dogwood Creek bridge
52.5	3110	03-Oct-10	20V/20A	In northern side road reserve of Roma Condamine Road, 3 km east of Dogwood Creek bridge
56.2	3124	03-Oct-10		In northern side road reserve of Roma Condamine Road, 900m east of Arubial Road
57.9	2520	07-Feb-12	25V/25A	In southern side road reserve of Roma Condamine Road, 400m west of South Drillham Road
60.5	3123	03-Oct-10	25V/25A	In southern side road reserve of Roma Condamine Road, 9km west of Condamine
63.5	3128	30-Nov-11	25V/25A	Off Leichhardt Developmental Road, Condamine
67.8	2516	28-Sep-11	20V/20A	In paddock east of Ellerslea Road, 600m east of AGL Compressor station, Condamine
70	2987	30-Aug-09		In property, 4km east of Ellerslea Road
74.05	3109	03-Oct-10	25V/25A	In property, 11km east of Ellerslea Road

MP #	REGISTRATION NO.	RENEWAL DATE	T/R RATING	SITE DESCRIPTION
78.3	3108	03-Oct-10	25V/25A	In property, 17km east of Ellerslea Road
81	3186	01-Aug-11		In property, 22km east of Ellerslea Road
83.3	3126	07-Feb-12	25V/25A	In property, 25km east of Ellerslea Road
86.3	2525	29-Nov-11	25V/25A	Inside AGL valve compound on eastern side of Chinchilla Tara Road, opposite Kenya homestead.
87.5	2985	30-Aug-09	25V/25A	In property, 2.5km east of Chinchilla Tara Road, off Condamine Kogan Road
90.6	3358	05-Dec-11	25V/25A	In property, 5km west of Montrose Road, off Condamine Kogan Road, 12km west of Kogan
93.5	3107	03-Oct-10	25V/25A	On western side of Montrose Road, off Condamine Kogan Road, 12km west of Kogan
96.5	3106	03-Oct-10	25V/25A	In property, 4.5km east of Montrose Road, off Condamine Kogan Road, 12km west of Kogan
100.3	3122	03-Oct-10	30V/40A	Inside AGL compressor station, off Millbank Boundary Road, off Tara Kogan Road, Kogan
102.5	3105	03-Oct-10	25V/25A	On pipeline ROW, Dalby Kogan Road, 6km east of Kogan (access via Healeys Crossing Road)
106	2984	30-Aug-09	25V/25A	Just west of AGL mainline valve compound, 6km east of Tara Kogan Road, off Dalby Kogan Road
109.8	3104	03-Oct-10	25V/25A	On eastern side of Braemar Creek, 4km west of Graham's Road, off Dalby Kogan Road
116.4	3103	03-Oct-10	25V/25A	In southern side road reserve of Dalby Kogan Road, 1km west of Wilkie Creek crossing
119.6	3129	30-Nov-11	25V/25A	North of Warrego highway at Hosier's property, 0.5km west of Ranger's bridge store, of Dalby Kogan Road
122.9	3121	03-Oct-10		Northern road reserve, just west of Back's Road, 4km west of Warrego and Condamine Highway junction
126.1	3102	03-Oct-10	25V/25A	Southern side road reserve, 1.5km east of Warrego and Condamine Highway junction
130	3208	10-Jul-12	40V/40A	In property between Moonie Highway and Warrego Highway, access from Warrego highway approx 2km past Cotton Gin, left at Bon Accord Road
133.4	3101	03-Oct-10	25V/25A	Inside AGL compressor station, off Moonie Highway, 6km west of Dalby post office
135.3	3120	03-Oct-10		At junction of Armstrong Street and Dixon Road, Dalby
136.7	3100	03-Oct-10	25V/25A	At south-east corner of junction of Armstrong Street and Branch Creek Road, Dalby
138.9	3130	30-Nov-11	25V/25A	On southern side of Warrego Highway, 2km east of junction with Cecil Plains Road, east of Dalby
142.5	2988	30-Aug-09		On southern side of Warrego Highway, 1km west of Newton Stephens Road, 11km east of Dalby Post office
147.6	3099	03-Oct-10	25V/25A	Near AGL mainline valve at junction of Warrego Highway and Pauls Road, 9km west of Bowenville
155.7	3098	03-Oct-10	20V/20A	On southern road reserve of Warrego Highway, 8km west of Jondaryan
157.9	3207	10-Jul-12	40V/40A	At junction of Prospect Road and Warrego Highway, 4km west of Jondaryan
162.5	3097	03-Oct-10	25V/25A	Western side of Doctor's Creek, on Warrego Highway, 1km east of Oakey Golf course
167.2	2989	30-Aug-09		Inside AGL compressor station, Kearney Road, at Western end of Oakey Bypass, Oakey
171.9	3131	30-Nov-11	25V/25A	On eastern side of Biddeston Road, off Warrego Highway, near eastern end of Oakey Bypass, Oakey
183.5	3096	03-Oct-10	40V/40A	On northern side of Hermitage Road, near intersection of Nugent Pinch Road, Toowoomba
194	2529	29-Nov-11	25V/25A	In property east of Murphys Creek Road, Postman's Ridge
200.9	3206	10-Jul-12		On western side of Evans Road, off Connors Road, off Sandy Creek Road, via Grantham
206.4	3095	03-Oct-10	25V/25A	In property east of junction of Coles Road and Ewarts Road, on southern side of Gatton Bypass, Gatton
212	3094	05-Oct-10	25V/25A	Western end of pipeline route along Lake Clarendon Way, at junction in road, Lake Clarendon
217	2530	29-Nov-11	25V/25A	On eastern side of Glenore Grove Road, Brightview

MP #	REGISTRATION NO.	RENEWAL DATE	T/R RATING	SITE DESCRIPTION
223	3093	03-Oct-10	25V/25A	Near corner of Prenzlau Road and Bichels Road, Prenzlau
229.5	3092	03-Oct-10	25V/25A	On western side of Claus Road, Haigslea
235.3	3091	03-Oct-10	25V/25A	In property west of Brisbane Valley Branch railway, west of Pine Mountain Road, Muirlea
239.2	3235	01-Jun-09		In property at Sandy Creek, Tivoli
244.3	2531	29-Nov-11	25V/25A	West of pipeline at Moggill Ferry Road, Riverview
256.5	2986	23-Aug-09	25V/10A	In park on northern side of Vied Road, Pallara
269.5	2982	23-Oct-09	25V/10A	In park at southern end of Stanton Road, Tingalpa

Table 2 CGP CP Units

KP #	REGISTRATION NO.	RENEWAL DATE	T/R RATING	SITE DESCRIPTION
73	3242	01-Jun-09	8 A	MLV 2 Windula Creek
73	3243	01-Jun-09	8 A	Windula Creek
127.626	3241	01-Jun-09	8 A	MLV 3 Mt Howitt, near Eromanga
261.667	3240	01-Jun-09	8 A	MLV 5 Morney Tank, near Windorah
391.5	3239	01-Jun-09	8 A	MLV 7 Davenport Downs, near Bedourie
530.87	3238	01-Jun-09	8 A	MLV 9 Springvale, near Boulia
658.158	3237	01-Jun-09	8 A	MLV 11 Noranside, near Dajarra
724	3236	01-Jun-09	8 A	Trekelano Offtake, near Duchess

MGT 6-07
Pipeline Awareness Program

APA Group

Rev 03 10 Oct 2011

Created by:	N Laidlaw
Reviewed by:	M Vine
Approved by:	K Mallitt

Purpose

Preventing external interference is fundamental to a pipeline's safe operation and continuance of gas supply. This document outlines the approach APA Group takes to mitigate third party interference on the Roma to Brisbane Pipeline and lateral's (RBP), Berwyndale to Wallumbilla Pipeline (BWP) and Carpentaria Gas Pipeline and lateral's (CGP) through our Pipeline Awareness Program.

Approach

APA Group has implemented a pro-active Pipeline Awareness Program to inform and educate parties likely to be impacted by the Pipeline. These parties include Land Owners and Occupiers, Emergency Services, Local Councils, State Government bodies, Utility Providers and any other external parties that work in the vicinity of our Pipeline.

APA Group takes a whole of Company approach to Pipeline Awareness by utilizing Employees in different positions from various business units to deliver the Program. By taking this approach the Program can be more effectively and efficiently delivered by matching Employee roles to external parties' role. This means, Field staff presenting to external Field staff, Managers consulting to external Managers etcetera.

Scope

The scope of this document covers the approach taken by APA Group to Pipeline Awareness.

Definitions

WMS	Works Management System
Employee	Person employed by APA Group
Pipeline	APA Group owned high pressure gas pipeline
Program	Pipeline Awareness Program

References

AS 2885 –	2001 Part 3 6.4.1 External Interference Prevention
FM 308 0.1 -	Attendance Sheet

Procedure

The Works Management System (WMS) is used to implement, monitor and control the Program. The WMS is a work scheduling system that allows tasks to be allocated to Employees and tracks the progression and completion of those tasks.

All parties requiring Pipeline Awareness have been identified and a schedule prepared so they can be included in the Program at the required frequency.

Pipeline Awareness consultation visits are entered into the WMS for all applicable Employees as per the schedule. The task is entered with the appropriate information and due dates, and the Employee via

the WMS is notified of their responsibility to carry out the task. The tasks are monitored through the WMS and are only closed when authorized as completed by a Manager.

Pipeline Awareness consultations involve an Employee meeting with the respective party, presenting to them a pipeline awareness presentation DVD which has been tailored to the APA Group business and local assets, discussing the hazards and safety issues when working in the vicinity of a high pressure gas pipeline and answering any questions the party may have relating to the Pipeline, gas or APA Group. The Employee will have the attendees fill out the attendance sheet at the appropriate time during the consultation.

Each Pipeline Awareness consultation will differ slightly due to the nature of the Employee presenting and the knowledge of the third party receiving. Whilst the same clear message about the hazards and risks of working around Pipelines is delivered, it may be tailored slightly for different parties. Below is a set of examples where a presentation might differ due to the nature of the third party.

A. Local Councils

Council's role in the community includes management of local area development and construction and maintenance of local infrastructure (roads, sewer, footpaths etc) both of which can be hazardous to the Pipeline.

Presentations with local councils focus on consultation and referral of future development works, planned maintenance and construction of new infrastructure. The intent is to promote a working relationship with Council's, integrated into their design and planning stages prior to works phase.

B. Major Developers/Contractors

Presentations to these groups are generally field based and targeted specifically at the way in which work is to be conducted near the Pipeline. Emphasis revolves around management of risk, engineering assessment approvals, contact with APA Group field staff, operating within the limits of the Permit to Work, limitation of heavy vehicles/equipment crossing the pipeline etcetera.

C. State & Federal Governments

A number of State and Federal government body's work near or own land near the Pipeline. These departments include, Main Roads, Aviation (Federal Airspace), Queensland Rail, Department of Corrective Services, Australian Army and Department of Environment Resource Management.

Each authority by its location and function is consulted at management level of the presence of the Pipeline and their responsibilities for consultation should any works are required nearby.

D. Utilities

Major utilities and services are often located in the same corridors to minimize the disturbance within a community. However, due to their close proximity, unless meaningful interaction between services occurs they can become a threat unto themselves. For this reason it is vital that all utilities are aware of each other's presence and subsequent conditions/limitations that apply, particularly when services are abutting parallel or crossing the Pipeline.

Utility providers are regularly excavating to install and repair their assets thus regularly use the Dial Before You Dig service (DBYD). APA Group is a part of the DBYD Users Group which represents the majority of utilities within Queensland, and networking with these representatives further enhances Pipeline Awareness.

E. Emergency Services

Potentially emergency service groups will be interacting with APA Group staff when abnormal pipeline operating conditions have occurred. A working partnership has been established with each of the services, to ensure a coordinated and predictable approach is taken to mitigate any uncontrolled events for any given emergency.

Items addressed include:

- The role each service plays during an emergency.
- Protocol
- Communication links
- Emergency Plan
- APA Group's option to maintain supply
- Services handling of pipeline equipment
- Emergency response practical exercises.

F. Documentation and Filing

Attendance sign off sheets (FM 380 0.1) is used for all Pipeline Awareness consultations.

Filing of these documents should be made in the central filing system under PO 711b.

GUIDELINES FOR ENCROACHMENT

GUIDELINES FOR ENCROACHMENT

Authored by:	**Reviewed by:**	**Approved by:**	**Rev:** 2
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GUIDELINES FOR ENCROACHMENT

PURPOSE

The purpose of this document is to provide further information to assist with the completion of the Conditional Assessment of Proposal ("CAP") for encroachments ensuring that manage external interference with the pipelines is managed. External interference is deemed to be the highest risk and APT Management Services is required to ensure risk mitigation practices are adopted and adhered to, in order to adequately protect the pipelines in operation.

INTRODUCTION

The Australian Pipelines Trust (**APT**) is the owner of the Roma to Brisbane (**RBP**) natural gas pipeline under Pipeline Licence No 2, the Scotia/Woodroyd to RBP Pipeline under Pipeline Licence 74, and the Kogan North Central Gas Processing Facility under Pipeline Licence 120.

APT Pipelines (Qld) Pty Ltd is a wholly owned subsidiary of APT, and is the owner of the Cannington Lateral Pipeline under Pipeline Licence No 42.

Roverton Pty Ltd (**Roverton)** is also a wholly owned subsidiary of APT, and was appointed by the State of Queensland to build, own and operate the Ballera to Mt Isa (**CGP**) natural gas pipeline in the MTIC under Gas Pipeline Licence No 41. Roverton also owns the Mica Creek Meter Station and Mount Isa Mines Lateral Pipeline under Pipeline Licences No 50 & 51.

APT has appointed APT Management Services Pty Ltd (APTMS) as Pipeline Operator. The Pipelines are operated and licensed under the terms of and in accordance with the provisions of the *Petroleum & Gas (Production & Safety) Act* 2004, the *Petroleum Act* 1923 and the *Petroleum & Other Legislation Amendment Act* 2004, which are administered by the Queensland Government's Department of Natural Resources & Mines (**DNRM**). Licences are granted subject to conditions.

Construction activity and developments need to be evaluated, controlled and monitored within pipeline easements. Activity within the area through which the pipeline runs (the Pipeline area), as specified in the relevant Pipeline Licence, is monitored by APTMS to ensure the integrity of the pipeline against external damage. The abovementioned Acts together with AS2885 also give APTMS various rights and powers, whether an easement is in existence or not.

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DEFINITIONS

In these Guidelines, except to the extent that the context indicates a contrary intention:

"APT" means Australian Pipeline Trust ARSN 091 678 778:
APT Petroleum Pipelines Limited ACN 009 737 393;
Roverton Pty Ltd ACN 011 071 917;
APT Pipelines (Qld) Pty Ltd ACN 080 382 387; and
APT Petroleum Pipelines Holdings Pty Limited ACN 009 738 489.

APA Group may in some instances be included within the definition of APT for liability and insurance coverage purposes.

"APT Management Services Pty Ltd"
is authorised to act for APT, APT Petroleum Pipelines Limited, APT Petroleum Pipelines Holdings Pty Limited, and Roverton and APT Pipelines (Qld) Pty Ltd.

"Easement" means an easement or right of way over any land for any high pressure gas pipeline and includes any licence granted to APT under the Miscellaneous Transport Infrastructure Corridor ["MTIC"].

Within any easement granted to APT, APTMS and its contractors has, with or without vehicles, plant and equipment of any description, the full and exclusive right and liberty:

- to enter upon and remain, pass and repass on and over the Servient Tenement for Pipeline Purposes;
- to carry out activities on the Servient Tenement for Pipeline Purposes;
- to use those parts of the Grantor's land immediately adjacent to either side of the Servient Tenement which are reasonably required by the Grantee in connection with Pipeline Purposes;

For the purposes of obtaining access to and from the Servient Tenement:

- to go, pass and repass over the land adjoining the Servient Tenement which is owned by, or which is held by the Grantor to the nearest dedicated road or to any other point on the land owned or held by the Grantor which the Grantee considers necessary or convenient in order to obtain access to the Servient Tenement.

"Grantee" the company granted the easement (generally APT).

"Grantor" the registered proprietor of the land granting the easement.

"Guidelines" *The Guidelines for Encroachment and all other work activities in the vicinity of the high pressure natural gas pipelines in Queensland.*

"Petroleum" any naturally occurring hydrocarbon or mixture of hydrocarbons in a gaseous or liquid state whether occurring with or in conjunction with other substances or not, and includes any product or by-product of those hydrocarbons or other substances.

"Pipeline" one or more systems of pipes, each of which may be used for the transportation or conveyance of natural gas and other gaseous hydrocarbons, and all ancillary surface and sub-surface works and associated facilities and equipment including, without limitation, pumps and compressors, valves, meters, fittings, facilities for cathodic protection,

communication and power systems and any other works, facilities and equipment necessary or useful for the transportation of natural gas and other gaseous hydrocarbons by pipeline.

"Pipeline Purposes"

to lay down, construct, use, maintain, upgrade, duplicate and remove the Pipeline and all equipment, fittings and appurtenances as may be useful or convenient in connection with the Pipeline, in through under and across the Easement Area, for the transportation and storage of any products or by-products or any other substance which may be transported by pipeline.

"Prohibited Activities"

(a) To excavate, directional drill, install, erect or permit to be excavated, drilled, installed or erected on or under the Servient Tenement any pit, well, foundation, pavement or other structure or installation.
(b) To alter or disturb or permit to be altered or disturbed (other than by the process of nature) the present grades and contours of the Servient Tenement.
(c) To plant or allow to be planted any foliage (including trees or shrubs) on the Servient Tenement, without the prior written consent of the Grantee.

"Servient Tenement" the land described in the easement.

COMPLIANCE WITH AS2885

It is a condition of the Pipeline Licence that APT (as licence holder) construct, maintain and operate the pipeline in accordance with Australian Standard AS2885 (Pipelines - Gas and Liquid Petroleum).

AS2885 contains procedural and physical measures for protection of the pipeline.

AS2885.3 in paragraph 1.6.27 defines the respective protection measures this way:

- *"Procedural – measures for protection of a pipeline to minimise the occurrence of activities by third parties, which could damage a pipeline.*

- *Physical – measures for protection of a pipeline that prevent external interference from causing sufficient damage to a pipeline to cause penetration of the pipe wall, rupture the pipeline or reduce the pressure strength of the pipeline to below the maximum allowable operating pressure."*

AS2885 imposes obligations on APT with respect to building activities taking place on the pipeline and within the Pipeline Area.

In addition, Section 422(1) of the *Petroleum and Gas (Production and Safety) Act 2004* states that "*The holder of a pipeline licence must, after the pipeline has been constructed, operate it in a way that ensures its continuing capacity to safely and reliably transport petroleum, fuel gas or other substance prescribed under section 402 for which it is licensed."*

APTMS shall then ensure integrity of the pipeline asset by adhering to all references and terms in the Australian Standard (AS2885) Pipelines – Gas and Liquid Petroleum, which applies to the operations and maintenance of the pipelines.

PURPOSE OF AS2885

The purpose of the code is to ensure that development does not compromise the safe operation and maintenance of high pressure gas pipelines, and to minimise the risk to any nearby development.

To ensure the integrity of the pipeline and the safety of the public and the environment, it is critical that identified groups such as land use planners, developers, property and service designers, landowners and operators, construction organisations, excavators, drillers and borers and the general public take into account the presence of the pipeline in their intended activities.

AS2885.3 (2001) sections 4 and 6 (risk assessment), shall be used in accordance with the requirements of AS2885.1 to assess:

- Reconfiguration of lots within 250m of the DN250 and DN300 pipelines and 400m from the DN400 pipeline; and

- Material changes of use within the vicinity of any APTMS-managed pipeline for any of the following:

  - Civic Centre activities;
  - Child care facilities;
  - Community facilities;
  - Education purposes;
  - Health care purposes;
  - Indoor sport and recreation;
  - Industry;
  - Multi-unit dwellings;
  - Short term accommodation;
  - Excavation or filling within 15m of the pipeline or its easement;
  - Building work within 15m of the pipeline or its easement;
  - Operational work within 15m of the pipeline;
  - Developments that have other types of constraints or other infrastructure placements which are likely to pose a risk to the integrity of the pipeline;
  - Developments where an impact assessment raises the possibility of posing a risk to the integrity of the pipeline.

SECTION 1:
GUIDELINES FOR DEVELOPMENT NEAR NATURAL GAS TRANSMISSION PIPELINES

1.1 APPROVALS

No permission or approvals for work shall be inferred, or actual work permitted for any development, construction or work activity above or around the Gas Pipelines, or within 15 metres in any radial direction of the pipeline or easement, whichever is greater, without APTMS's written approval which may be given after the CAP has been submitted together with the appropriate supporting information. *(Refer to section 1.9.13 - Blasting Activity for instances where activity at a distance of 500m of greater from the pipeline requires APTMS approval).*

The only form of approval that will be binding is specific written approval of plans by APTMS and specifications submitted by the Developer for the proposed works. That approval will be subject to the conditions implied and determined, and under the direct supervision of APTMS personnel.

The entity or contractor to perform the work must have a permit issued and approved by APTMS before any work can commence.

1.2 PROCESS FOR APPROVALS

1.2.1 Applicant Requirements

For any excavation activities, easement or corridor works in the vicinity of the pipeline/s the applicant shall:

- complete a pothole survey of the pipeline/s or easement **(under full supervision of APTMS personnel).** This may include taking surveyed levels of the pipeline/s depths profile. This will determine an accurate location and depth of the pipeline/s for design purposes. APTMS's preferred method of pipeline depthing is vacuum excavation;

- submit preliminary layout of the proposed works for comment **(as required by APTMS);**

- submit construction plans and a completed Conditional Assessment of Proposal form ["CAP"] **(mandatory);**

- complete a Safety Management Study **(as or if required by APTMS).**

It is the responsibility of the developer to communicate the requirements of this document to all contractors and subcontractors who work on the development. APTMS will present Gas Awareness presentations on request to all contractors and subcontractors, who work on the development,

1.2.2 Safety Management Study

The Safety Management Study shall be completed in accordance with AS2885.1 "Pipelines - Gas and Liquid Petroleum - Design and Construction".

The Safety Management Study shall:

- Involve a review of the location classification of the section, noting the requirement for special provisions in high consequence areas – as additional measures may be required, regardless of wether the location class has been modified.

- Include all entities creating, sustaining or posing a threat to the future occupants of the proposed subdivision, or other development as proposed. This includes high pressure gas pipelines, high voltage transmission lines, and other relevant services;
- be completed by a recognised and accredited consultant approved by APTMS; and
- Recommend actions to be completed by the Developer to ensure risks are reduced and ALARP (As Low as Reasonably Practical) criteria is met in accordance with AS2885.1. These actions may include the requirement for pipeline protection or minimum setback distances; and
- Appropriately document environmental risks and describe the Applicant's method for mitigating these risks; and
- Be validated by an appropriately constituted workshop in accordance with AS2885.1.

Plans (of not less than 1:500 scale), details and specifications of all work proposed which is adjacent to, on or near the pipeline or easement are to be submitted to APTMS for written approval at least four (4) weeks prior to when the work is proposed to commence. It is a condition of the approval that should the works not proceed within 6 months of APTMS written approval being given, a new application is to be submitted.

1.2.3 APTMS Response to Application

- APTMS will assess the application. If approved, APTMS will send a Conditional Approval of Design Letter ["CAD"].
- If the application is refused, the Applicant will be notified of the non-compliance condition/s.
- APTMS has the right to revoke approval or change conditions if site conditions vary significantly from information provided or if changes are made to the development plans. Such amendments are to be notified to APTMS.

1.2.4 Works

- The applicant must provide to APTMS 48 hours' notice of the intended work. The Applicant must have a Conditional Approval of Design Letter prior to any site works commencing.
- An APTMS technician must attend onsite and issue a Permit onsite before any works can commence.

1.3 PROVISION OF APPROVALS

No approval for any work to proceed above or around the APT natural gas pipeline, or within its easements or licence area, shall be expressed or implied. The entity or Contractor to perform the work must have **written approval** (CAD) and/or a permit issued and approved by APTMS before the works can commence.

1.3.1 Conditions of Application

The following conditions apply to applications for Access, Entry, Works or Activity on Easements or near APTMS operated High Pressure Gas Pipelines.

1.3.2 Limited Approval

The Applicant may be granted:

- conditional right of entry to APT's easement for the purpose of carrying out the works approved by APTMS and for no other purpose; and
- a conditional approval to carry out the works approved by APTMS near the high pressure gas pipelines.

The limits or boundaries of this right of entry are as notified by APTMS from time to time.

The Applicant must, at their own cost and using their own resources:

- obtain all relevant information to conform with APTMS's requirements contained in this document or any other relevant APTMS document, such as the conditional assessment of proposal;

- conduct all necessary searches of public registers of land to ascertain the correct:
  - Real Property Description of the land the subject of the application;
  - Identities of the registered land owners;
  - Terms and conditions of any relevant easement or lease;

- consult with the registered owner of the subject land about the existence of, and terms of any unregistered leases, licences, or other interests in the subject land;

- comply with all relevant laws, Acts and regulations including, without limitation:
  - *Aboriginal Cultural Heritage Act 2003;*
  - *Land Act 1994;*
  - *Native Title Act 1993;*
  - *Native Title (Queensland) Act 1993;*
  - *Vegetation Management Act 1999;*
  - *Nature Conservation Act 1992;*
  - *Petroleum and Gas (Production & Safety) Act 2004;*
  - *Petroleum and Gas (Production & Safety) Regulations 2004;*

- if requested by APTMS, provide:
  - copies of any documents;
  - details of information obtained by the Applicant pursuant to these obligations.

1.3.3 Further Conditions

The carrying out of works near the high pressure gas pipeline/s and entry to APT's easement is conditional upon the following terms:

1.3.3- 1. Land Owner's Permission

The Applicant must obtain and hereby confirms that they have the prior written permission of the Landowner to enter, remain and carry out the applicant's works on the land.

If the works are to occur in an APT Easement, the Applicant must comply strictly with the terms of the Easement.

If the works are to occur near the high pressure gas pipeline/s, but in an area which is not subject to an easement in favour of APT such as a State controlled road, a local government controlled road, a railway reserve or any other land owned by a government or public agency which is not freehold land ("*other land*"), the Applicant must comply with the requirements of the owner or agency responsible for the land.

1.3.3- 2. Conditional Assessment

In carrying out the works, the Applicant must complete, sign and comply with APTMS's Conditional Assessment of Proposal (CAP) form.

1.3.3- 3. Full Indemnity of APT and its Servants by the Applicant:

For the purposes of this clause, APT includes the operator APTMS, the MTIC, Roverton Pty Ltd and APT Pipelines (Qld) Pty Ltd.

1.3.4 Indemnity by Applicant in respect of Damage to Persons and Property

The Applicant shall indemnify APT against –

(a) loss of or damage to property of APT, including existing property in or upon the Easement or any other land where the Applicant's work is being carried out;

(b) claims by any person against APT in respect of personal injury or death or loss of or damage to any property, arising out of, or as a consequence of, the carrying out by the Applicant of the work in the Easement or any other land.

The Applicant's liability to indemnify APT shall be reduced proportionally to the extent that the act or omission of APT or employees or agents of APT may have contributed to the loss, damage, death or injury.

1.3.4- 1 Public Liability Insurance

Before the Applicant commences work, the Applicant shall take out a Public Liability Policy of insurance in the joint names of APT and the Applicant. This shall cover APT and the Applicant in relation to the work in the Easement or in any other land for their respective rights and interests and covers their liabilities to third parties. The policy must also cover the Applicant's liability to APT and APT's liability to the Applicant for loss of or damage to property and the death of or injury to any person (other than liability which is required by law to be insured under a Workers Compensation Policy of insurance).

The Public Liability Policy of insurance shall include a cross-liability clause in which the insurer agrees to waive all rights of subrogation or action against any of the persons comprising the insured and for the purpose of which the insurer accepts the term 'insured' as applying to each of the persons comprising the insured as if a separate policy of insurance had been issued to each of them (subject always to the overall sum insured not being increased thereby).

The Public Liability Policy of insurance shall be for an amount in respect of any one occurrence not less than $10,000,000.00 unless otherwise specified by APT, shall be effected with an insurance company and in terms both approved in writing by APT which approvals shall not be unreasonably withheld. The policy shall be maintained until the expiration of all limitations of actions applicable to any event or incident, which arises out of or in connection with the works.

1.3.4- 2 Warranty by Applicant

The Applicant warrants that it has made its own enquires and satisfied itself about all legal requirements, the requirements of any governmental authority, all local conditions and all matters or things relevant to the works.

The Applicant must confirm its agreement to these conditions by signing and dating and delivering APTMS's Conditional Assessment of Proposal (*CAP*) form.

Submission for Approval
Plans of the proposed work must be lodged with:

Lands Manager
APT Management Services Pty Ltd
PO Box 6569
Upper Mt Gravatt Qld 4122

1.4 PROHIBITION OF BUILDINGS NEAR THE PIPELINE

APTMS complies with AS2885 to ensure that buildings or structures are constructed a safe distance from the pipeline, as determined by the pipeline design and the risk assessment. Any parties intending to construct or erect a building or structure within the Pipeline Area must first consult with and obtain the approval of APT or

its nominee (APTMS - the operating authority), and where an easement exists, the approval of the authority administering the easement.

> ***AS 2885.3-2001 s6.4.3 Prohibition of Buildings Near the Pipeline***
> *The operating authority should have systems in place to ensure that no building or structure shall be allowed within a safe distance from the pipeline, as determined by the pipeline design and the risk assessment. Any parties intending to construct or erect a building or structure within this zone should first consult with, and obtain the approval of, the operating authority and, where an easement exists, the approval of the authority administering the easement.*

1.5 PERFORMANCE CRITERIA

The safe operation of all APTMS operated high pressure gas pipelines in Queensland must not be compromised by the proposal, and life and property must not be put at risk by the use of land on or near the pipelines.

Note: Compliance can be demonstrated by a qualitative risk assessment in accordance with AS2885, and the concurrence of APT.

1.6 INFRASTRUCTURE & BUILDING DEVELOPMENT

Development Adjacent to or, in Proximity to a Gas Pipeline
When a rezoning, consent, subdivisional or building application involving lands or buildings situated in the vicinity of a gas pipeline is proposed, the following shall be considered:

- Whether the proposed development would prejudice public safety and the integrity of the pipeline;
- Any requirements or recommendations of the DNRM pertaining to such an application; and
- Compliance with AS2885 – A Qualitative Risk Assessment of the proposal and recommendations endorsed shall be completed by APTMS if deemed required upon application, which may involve re-classification of the location. The design criteria for high consequence areas (as defined by AS2885.1) must be satisfied.

In particular, areas to be assessed (and to be incorporated in the safety management study) are those within a nominated measurement radius of the pipeline, as defined by APTMS in accordance with AS2885.1.

1.7 SPECIAL REQUIREMENTS IN RELATION TO SUBDIVISION OF LAND & THE OPENING OF ROAD

Subdivision of Land Over or in Proximity to High Pressure Gas Pipeline

Pipeline Classification
The pipeline shall have satisfactory depths of cover as per design specifications throughout relevant local government areas to meet pipeline classification criteria in AS2885.1. If the depth of cover is altered by development or construction works, additional protective measures shall be required and will be installed at the developer's cost.

Where the subject land or any part of the subject land is located within the vicinity of the gas pipeline easement, the design of the development or work activity shall have regard to the preservation of safety standards associated with the pipeline. Without limiting the discretion of Council, consideration in the design of subdivision shall be given to:

- Locating parks in such a manner that the high pressure gas pipeline is suitably buffered from existing or proposed buildings or land uses involving concentrations of people;
- Locating roads adjacent and parallel to the high pressure gas pipeline easements in such a manner as to assist in separating the easements from allotments on which buildings may be constructed;
- Locating individual allotments such that allotments are not directly affected by pipeline easements;
- Vehicular access to the pipeline easement is maintained for operational and maintenance requirements.
- Installation of additional protective measures, as may be required by AS2885.1 for that location classification.

1.8 AS2885 CLASSIFICATION OF LOCATIONS

Locations for pipelines shall be classified for managing possible risks to the integrity of the pipelines, the public, property and the environment, by the following classes: AS 2885

- **Class R1 - rural**
- Land that is unused, undeveloped or is used for rural activities such as grazing, agriculture and horticulture. Rural applies where the population is distributed in isolated dwellings. R1 – Rural includes areas of land with public infrastructure serving the rural use; roads, railways, canals, utility easements. **Class R2 - rural residential**
- Land that is occupied by single residence blocks typically in the range 1 ha to 5 ha or is defined in a local land planning instrument as rural residential or its equivalent. Land used for other purposes but with similar population density shall be assigned R2 – Rural Residential.
- **Class T1 - residential**
- Land that is developed for community living, where multiple dwellings exist in proximity to each other and dwellings are served by common public utilities. This includes areas of land with public infrastructure serving the residential use; roads, railways, recreation areas, camping grounds/caravan parks, suburban parks, small strip shopping centres. May include isolated higher density areas provided they are not more than 10% of the land use. Land used for other purposes but with similar population density shall be assigned T1 – Residential.
- **Class T2 - high density**
  Land that is developed for high-density community use, where multi-storey development predominates or where large numbers of people congregate in the normal use of the area. Includes areas of public infrastructure serving the high density use; roads, railways, major sporting and cultural facilities and land use areas of major commercial developments; cities, town centres, shopping malls, hotels and motels.

It should be noted that for rural and rural residential areas, as required by AS2885.1, consideration shall be given to whether a higher location class may be necessary at any location where a large number of people may be present for a limited period.

The latest edition of AS2885.1 also requires consideration for where there may be a secondary location classification occurring within the above primary location class areas (usually of lesser length than the primary location class). Additional requirements may be present for these secondary class (or sub-class) locations, as defined by AS2885.1. These sub-classes are S (Sensitive Use); CIC (Common Infrastructure Corridor); I (Industrial); HI (Heavy Industrial); and W (Submerged). The secondary class descriptions and requirements are defined in detail in AS2885.1 and shall be considered as part of any encroachment safety assessment.

1.9 WORK INSTRUCTIONS

Specifications

All relevant specifications, including the types of backfill to be used and distances to be maintained around the pipelines shall be determined by APTMS in accordance with this document and AS2885: Pipelines - Gas and Liquid Petroleum.

If any entity by not complying with these specifications damages, destroys or interferes with the pipeline, they will have committed an offence under the *Petroleum Act 1923 (s. 144).*

1.9.1 Roadway Crossings

The minimum cover required for the pipeline under roadways (from top of pipeline to road surface) and under table drains is 1200mm. This is a requirement of AS 2885, where burial is to be used as a physical protective measure. This cover requirement may be increased by APTMS as a result of the external interference protection requirements of AS2885.1 or if the roadway is to be used by vehicles in excess of the standard road load conditions.

Wherever possible roadways must cross the pipeline at right angles. Generally APTMS will not accept the road surface to be run and on top of the pipeline. Where a road runs parallel to the pipeline there must be a minimum of 1500mm from the back of the kerb to the centreline of the pipeline. Where the roadway is proposed parallel to the pipeline and the above requirement cannot be met, then additional protection will be required.

Where a new road is to cross a pipeline, a review of the pipeline condition will be undertaken. APTMS has the right to undertake remedial works on the pipeline at the expense of the developer or landowner where the construction of the road would inhibit access by APTMS to the pipeline. Immediately after the pipe is wrapped it is to be backfilled as per APTMS specifications.

Application must be made to APTMS to use vibrating rollers or equipment within the pipeline easement, but will be subject to site assessment prior to use and close monitoring by APTMS personnel. Vibrating rollers greater than 15 tonnes, or any sized rollers requiring to work closer to the pipeline are subject to APTMS approval, on submission of adequate roller loading details. The maximum particle velocity allowed directly above the pipeline is 10mm/sec.

If the minimum cover requirement of 1200 mm, as specified by APTMS, cannot be achieved, then an acceptable alternative or additional protection for the pipeline may be required. APTMS must be consulted and then approve all methods used to provide this additional protection. Methods used include but are not limited to protective concrete slabs and box culverts. See Attachments 6 and 7 – Minor Road Crossings.
APTMS may specify additional protective measures under a roadway, as a result of the safety management study (where conducted), such as the requirement for slabs under table drains.

1.9.2 Pipe, Main or Cable Crossing (Up to 415V – Excludes High Voltage Cables)

The minimum separation distance defined for a service crossing above or below the pipeline is subject to the surrounding soil having good compaction and load bearing characteristics (non-swamp areas). Separation distance is measured from the outside of the pipeline to the outside of the service. Refer to drawings in Attachments 1-8.

Any pipe, main or cable crossing above the pipeline shall have a minimum separation distance equal to half the diameter of the service plus 300mm. (eg. if a sewer is 150mm diameter then separation distance is 75mm + 300mm = 375mm minimum). The maximum diameter of any service crossing above the pipeline is 600mm. Services of larger diameter shall be subject to further design considerations.

Any pipe, main or cable less than 600mm in diameter crossing below the pipeline shall have a minimum separation distance of 600mm. Services of larger diameter shall be subject to further design considerations.

Where the service crosses the pipeline, the backfill shall be re-compacted in such a manner to ensure the specified separation distance is not affected due to sag of the upper service pipe.

All trenching across or adjacent to the pipeline, greater than 1.5m deep must be battered or shored in accordance with the statutory requirements. All services crossing the pipeline should be designed to withstand superimposed vehicle loads from pipeline maintenance activity.

Horizontal separation distance between the APTMS pipeline and any new service shall be in all cases a minimum distance of two (2) metres. New services shall be installed on or beyond the pipeline easement boundary where possible.

The APTMS pipeline must be protected with warning tape and/or yellow "Vinidex" planking (supplied by APTMS) anywhere that a service crosses over or under it. For major crossings or subdivisions, APTMS will charge the developer or landowner for the warning tape and Vinidex planking at cost. Refer Attachment 1 for basic crossing details.

Any telephone or medium voltage (240V/415V) underground electrical cable crossing the pipeline shall be installed in a concrete encased conduit, as shown in Attachments 2 and 3.

Fluidised or Flowable Thermal Backfill (FTB) is not to be used within close proximity of the pipeline. APTMS will designate an 'exclusion zone' wherein FTB cannot be instated, in the assessment of cable installation proposals. As a general principle FTB will **not** be allowed within a distance of 1 metre below and 4 metres either side of the pipeline, and not above the pipeline.

1.9.3 Major Telecommunications Crossings

Major telecommunications connections (estate connections, main suburban links etc) crossing the pipeline require special consideration and the design of such crossings must be approved by APTMS. These crossing shall be installed in concrete encased conduit for protection against excavation damage. See Attachment 3 for details.

Fluidised or Flowable Thermal Backfill (FTB) is not to be used within close proximity of the pipeline. APTMS will designate an 'exclusion zone' wherein FTB cannot be instated, in the assessment of cable installation proposals. As a general principle FTB will **not** be allowed within a distance of 1 metre below and 4 metres either side of the pipeline, and not above the pipeline.

1.9.4 High Voltage Cables – (Over 415V)

The design of high voltage cable crossings shall be subject to specific approval by APTMS. Extra High Voltage (larger than 33kV) crossings may be subject to more stringent assessment methods.

The separation distance between these services and the APTMS pipeline is dependent on the current carrying capacity of the cable, but as a general rule must be a minimum of 1metre. This applies for crossing both above and below the APTMS pipeline.

Exact determination of the required separation distance depends on normal and maximum fault currents, and the surrounding soil resistivity. This information is required as a minimum when submitting the design. Information concerning the location of earth mat systems and jointing pits is also required.

APTMS may conduct calculations in order to determine A/C induction effects and Earth Potential rise. Additional mitigation measures may be required as a result for electrical hazards or effects on the pipeline coating and/or cathodic protection system.

The crossing shall also be designed to prevent excavation damage, and the design must approved by APTMS.

Fluidised or Flowable Thermal Backfill (FTB) is not to be used within close proximity of the pipeline. APTMS will designate an 'exclusion zone' wherein FTB cannot be instated, in the assessment of cable installation proposals.

As a general principle FTB will **not** be allowed within a distance of 1 metre below and 4 metres either side of the pipeline, and not above the pipeline.

Refer to section 1.9.8 for specifications regarding cathodic protection.

1.9.5 Interference and Earthing of Structures

Metallic foreign underground structures can be effected by the pipeline cathodic protection system and visa-versa from stray currents that may be emitted by the foreign structure via earthing systems or its own cathodic protection. If a new metallic underground structure is installed within the vicinity of the pipeline, interference testing will be required to be performed on both the pipeline and the foreign structure upon commissioning as per AS4853 (2000) (Electrical Hazards on Metallic Pipelines). This testing will confirm if mitigation techniques will have to be applied to control any observed interference on the pipeline or the foreign structure. The Electrical Safety Act 1994 and Regulation also apply.

1.9.6 Other Petroleum or Hazardous Chemical Services

The design of other petroleum products or hazardous chemical pipeline crossings shall be subject to specific approval by APTMS.

The criteria will be in accordance with Section 3.3.2.8; however the services will be required to be protected against excavation damage and have a minimum of 600mm clearance. See Attachment 5 for details.

1.9.7 Directionally Bored Crossings

For all directionally bored (tunnel bored) crossings of the APTMS pipeline, the pipeline shall be exposed and the crossing done under the supervision of APTMS personnel.

The bore hole shall be positioned such that it is no closer than one (1) metre from the horizontal plane at nearest point of the pipeline, across the entire easement. For example, if the bottom of the pipeline is 1500mm below the ground surface, then the borehole must be 2500mm below the ground surface, across the entire easement. The APTMS supervisor shall locate the boundaries of the easement.

If the borehole is to run parallel to the APTMS pipeline, it shall be no closer than two (2) metres in the horizontal direction, at its nearest point.

For such activities a risk assessment shall be undertaken, to ensure the risks to the pipeline are reduced and to determine if additional mitigation measures are required. Prior to conducting the risk assessment, information required from the Developer shall include the work procedures for such crossings, showing the nominated machine specifications and method for the works, in order to determine such information as the energy release rate for a pilot drill bit hole size penetration.

1.9.8 Cathodic Protection

Any interference to the APTMS cathodic protection system and the likelihood of thermal damage to the pipeline coating shall be considered.

For services crossing the pipeline easement which are cathodically protected, the developer shall dissipate heat to the surrounding soil or have associated earthing structures. The method of mitigating any detrimental or interference effects to the pipeline shall be submitted for approval.

For underground power cables and associated earthing structures installed parallel to the pipelines, the method of mitigation of any detrimental or interference effects and the required service separation shall be submitted for approval. Rectification or prevention of any identified interference shall be at the cost of the Developer.

1.9.9 Excavation

All excavations within fifteen (15) metres in any radial direction of the pipeline shall be carried out under strict supervision and direction of APTMS personnel.

The entity performing the excavation shall inform APTMS of their intended works no less than forty-eight (48) hours before the excavation is to commence and comply with all current legislation or standards governing the work place.

The nominated excavator size (or equivalent for other equipment) shall be submitted to APTMS as part of the development application. Should the excavator size (and tooth type) be significant, a specific risk assessment may be required and additional protective measures implemented as applicable.

1.9.10 Equipment Crossings and Loading

Tracked or tyred equipment weighing in excess of ten thousand kilograms (10,000 kg) (fully loaded condition) shall not cross the pipeline without prior approval of APTMS. In areas where cover over the pipeline may have been reduced, APTMS may specify stricter limitations, subject to a vehicle loading assessment. The approval for equipment crossings may require the provision of pipeline protection through the construction of earthen ramps or use load bearing steel plates. See Attachment 8 for ramp details.

The information to be submitted for an approval is to include the vehicle type, tare and gross weights, wheel base dimensions, axle loadings, tyre pressures and tyre or track contact area.

Where soil conditions exhibit poor compaction and load bearing characteristics (swamp areas), equipment shall not be allowed to cross the pipeline without the construction of an APTMS approved pipeline protection structure, irrespective of the vehicle mass.

Earthmoving equipment shall not run parallel to the pipeline within a distance equal to the pipeline depth, in all cases being a minimum of one (1) metre measured from the nearest extremity of the pipeline to the nearest extremity of the equipment. Equipment shall only cross the pipeline at right angles.

Recently excavated backfill constitutes unsuitable conditions for vehicular loading. Where vehicle loadings will be imposed, the backfill shall be compacted in such a manner to obtain the original soil compaction characteristics so that the area is able to adequately support the required vehicle loads.

1.9.11 Provisions for High Consequence Areas

APTMS may specify additional protective measures in locations where special provisions are necessary to limit the consequence of pipeline failure on the community or the environment, as required by AS2885.1 Clause 4.7. These high consequence areas generally require the code “no rupture” criteria to be met and also limit the maximum discharge rate possible.

Where the Location Classification (including sub-classes) is changed as a result of the development, a safety assessment shall be undertaken, as required by clause 4.7.4 of AS2885.1, and additional measures implemented until it is demonstrated that the risk from a loss of containment involving rupture is ALARP (As Low as Reasonably Practicable) – in accordance with the AS2885.1 criteria.

1.9.12 Warning Barriers

Suitable warning signage, barriers with beacons and protection against vehicular ingress shall be erected around any unattended excavation, which exposes the pipeline.

1.9.13 Cranes

No cranes, excavators or backhoes shall be permitted to carry or suspend materials over or across the pipeline where it is exposed.

1.9.14 Blasting

Blasting is strictly not allowed under any circumstances within five hundred (500) metres of the pipeline without prior approval of APTMS and the DNRM.

The information submitted for approval is to include the distance from the pipeline, depth of blast, shot size (kg), shot sequence and delay, and shot strength (referenced to Anzite Blue).

1.9.15 Poles

Poles shall preferably be located outside the pipeline easement boundary, and in all cases the minimum separation distance shall be the greater of, the depth of pole below natural surface level plus one (1) metre. The minimum wire clearance at any point of the easement shall be ten (10) metres from ground.

Pole installation in the easement vicinity shall be strictly conducted under the supervision of APTMS personnel. Boring equipment specifications shall be submitted to APTMS for review and, if deemed required a safety assessment shall undertaken for the activity and additional measures implemented as required.

Any pipe, main or cable running parallel to the pipeline and all power poles, posts etc shall not encroach on the pipeline easement.

1.9.16 Structures

Any structure close to the easement must be supported such that excavation, at least two (2) metres deep, along the adjacent edge of the easement, does not affect the integrity of the structure or its foundations.

1.9.17 Costs

Costs incurred for major works requiring APTMS supervision or work shall be borne by the entity performing the work, and shall be charged to the entity at the standard APTMS Employee Fee.

1.9.18 Easement Transfer on Plans when subdividing

The Form 18 Consent for the registration of new Survey Plans must be lodged with:

Lands Manager
APT Management Services Pty Ltd
PO Box 6569
Upper Mt Gravatt Qld 4122

Upon confirmation that all consents to the Survey Plan have been granted and APTMS has been satisfied that APT's interest in the easement will be protected, arrangements will be made for the execution of the Consent (Form 18) by APT's attorneys and duly returned.

SECTION 2:
GUIDELINES FOR SERVICE CROSSINGS & CONSTRUCTION ACTIVITY NEAR NATURAL GAS TRANSANSMISSION PIPELINES

2.0 GENERAL REQUIREMENTS

APTMS must be notified of any type of installation or construction proposed to cross or encroach upon any of the high pressure gas pipelines or easements which it operates, and such work will be subject to a Risk Analysis by the pipeline authority and APTMS. This is to ensure that potential risks are mitigated and protection methods are met and adhered to.

Where third party works are to be conducted in the proximity of a pipeline so that the integrity of the pipeline is potentially under threat, the site shall be inspected, and where determined necessary, a work plan shall be specified and approved as per AS 2885.3 (2001), 6.5.1(b).

The following pipeline conditions shall be considered when planning such encroachments over the pipelines or the pipeline easement.

2.1 ROAD CONSTRUCTION

- Cover over the pipeline area to protect against machinery crossing must be maintained at 1200mm or as otherwise specified by APTMS. Natural soil or roadbase materials must be stabilised and firm.
- During construction of roadways, construction machinery or vehicles are not permitted to park or stand over the pipeline. All non-road registered vehicles used for construction of the road works, and likely to cross the high pressure gas pipeline shall require prior approval by APTMS.
- A coating assessment survey, at the Developer's cost, shall be required to determine pipeline-coating conditions. If found unsatisfactory, excavation and refurbishment of the pipeline will be performed by APTMS at the Developer's cost.
- All road crossings must be at right angles to the pipeline where practical.
- Additional measures may be required, subject to the results of the risk assessment.

2.2 SERVICE CROSSINGS

Service crossings will be acceptable if in compliance with this document and APTMS conditions (CAD letter and onsite instruction). The pipelines locations and depths shall be established and surveyed to determine correct separation distances prior to the commencement of works.

2.3 SERVICES AND THE PIPELINE

All power and lighting poles should be located in a position such that the minimum distance from the pipeline is equal to the depth of the pole plus one (1) metre. All other services parallel to the pipeline should be located a minimum distance of one (1) metre from the pipeline, subject to the conditions in Section 1.

2.4 PIPELINE & EASEMENT WORKS CONDITIONS AND CONCERNS

APTMS cannot take any liabilities for inaccurate information as to pipeline locations and depth measurements that may affect overall planning & design. A formal field survey by the developer under supervision from APTMS may be necessary to determine pipeline alignment and position. Confirmation must be received in writing from APTMS providing consent to commence works.

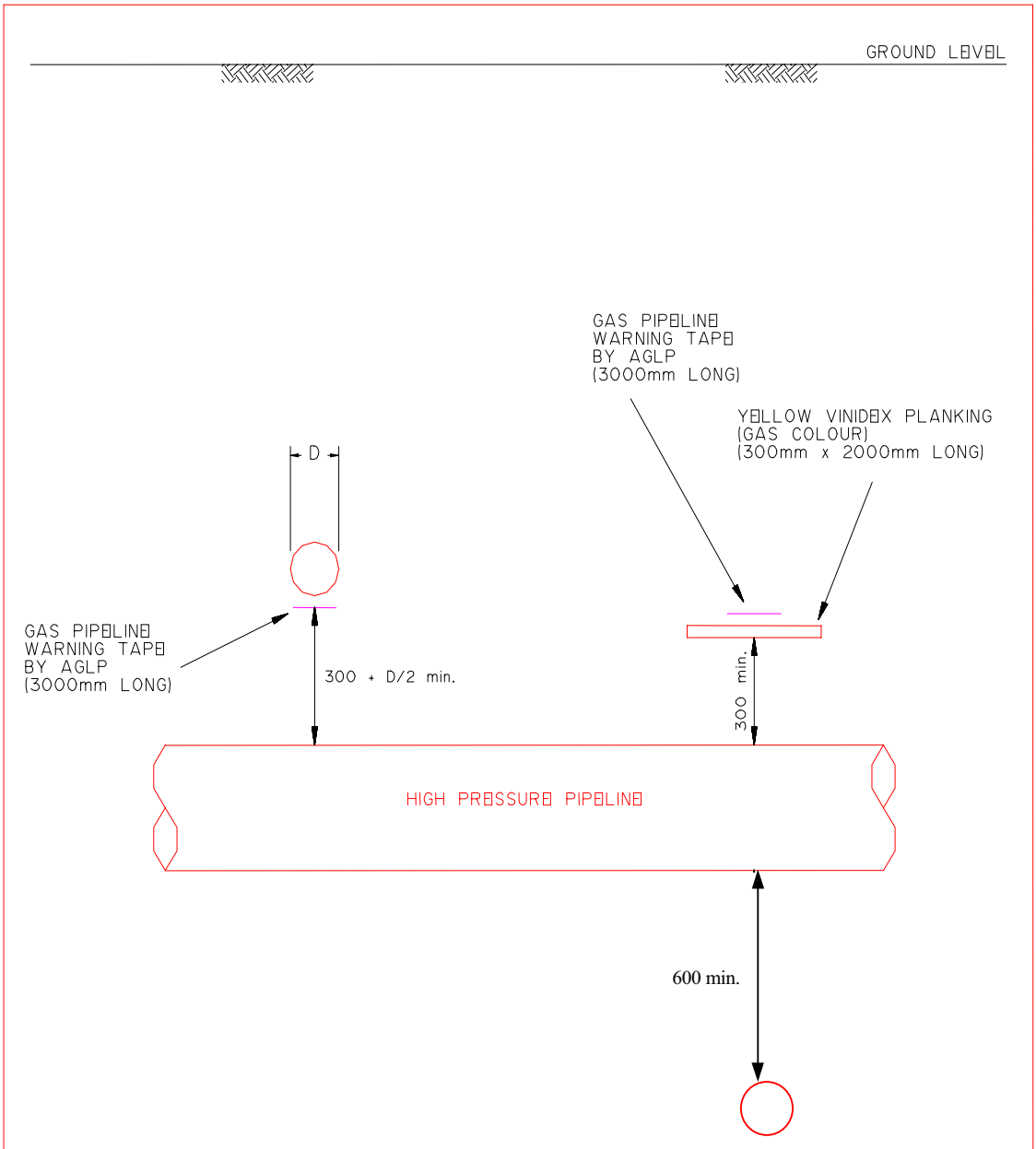
All approvals for works involving extinguishment or amendment to existing easements or easement agreements associated with the designated roads, parklands, forestry, or waterways are subject to further appraisal and approval from DNRM and APTMS legal representatives.

SECTION 3:
WORK INSTRUCTION DIAGRAMS

Attachments 1 to 8:

1) **MLP-Z-P-051** **Service Crossing Detail Requirements**
2) **MLP-Z-P-050** **Cable/Conduit Crossing Detail Requirements**
3) **MLP-Z-S-094** **Typical Major Telecommunications Crossing Detail**
4) **No longer in use**
5) **MLP-Z-S-096** **Typical Petroleum or HAZCHEM Crossing Detail**
6) **MLP-Z-S-038** **Protective Slab Structure Minor Road Crossing**
7) **MLP-Z-S-072** **Easement or Road Reserve Design Details**
8) **MLP-Z-S-046** **Earth Ramp Protection for Machinery Crossing**

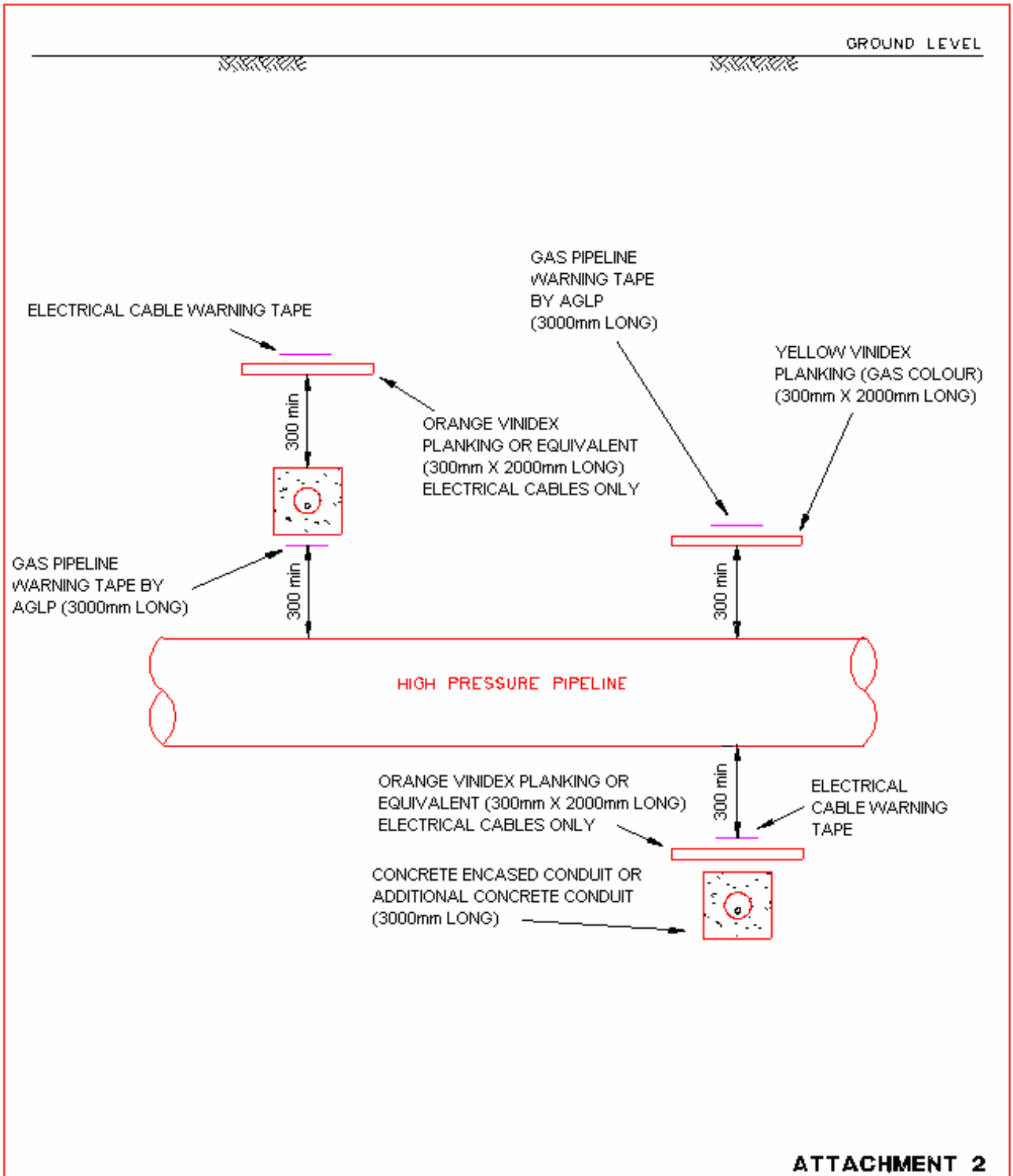
ATTACHMENT 1



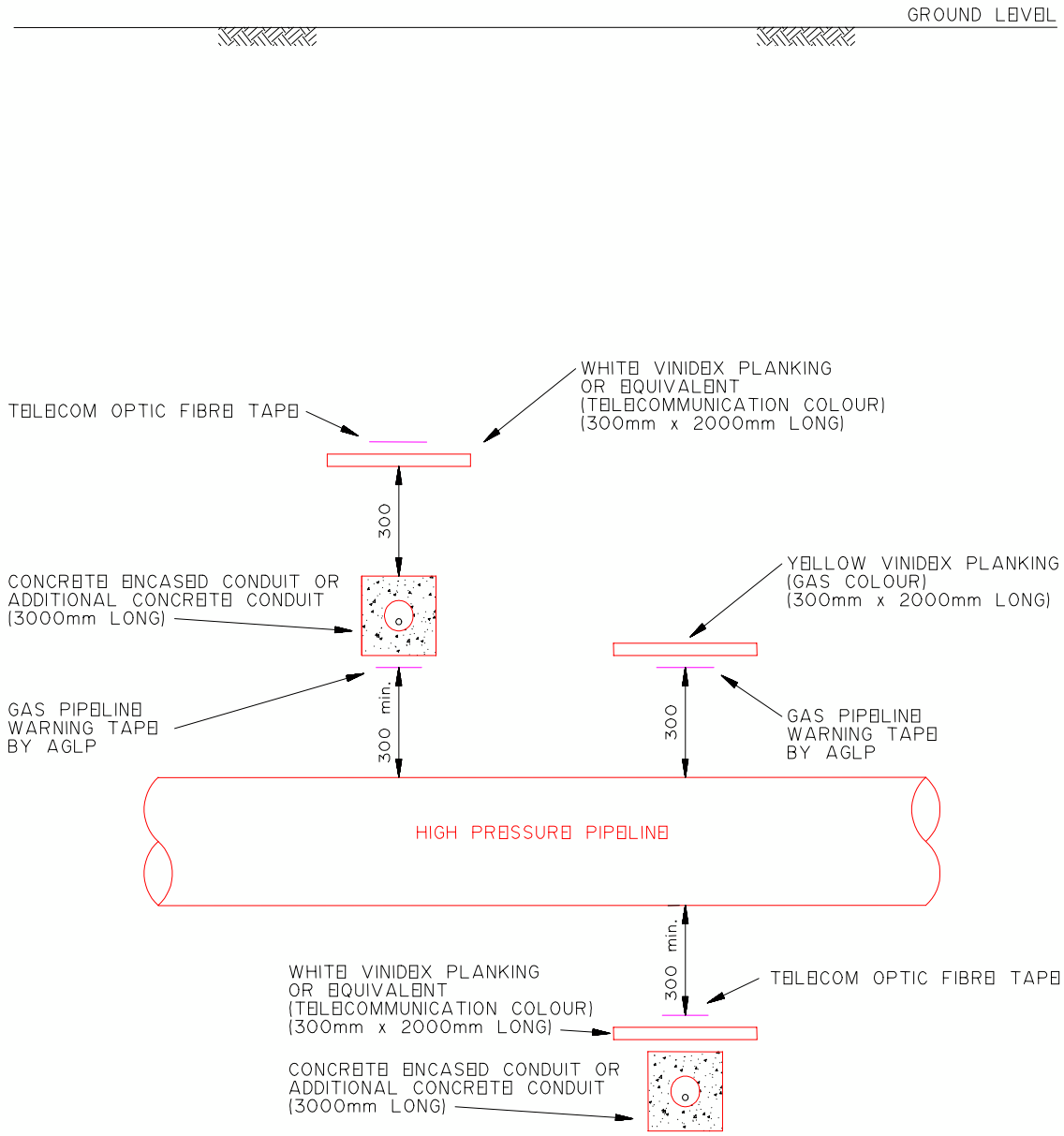
ATTACHMENT 1

APA Group	ENGINEER : D.M.A.		
	DRAWN BY : M.D.S.	SERVICE CROSSING DETAIL REQUIREMENTS	
	DATE : 25-8-94		
	CHECKED :		
	SCALE : NTS	DRAWING No. : MLP-Z-P-051	REV. No. : B

ATTACHMENT 2



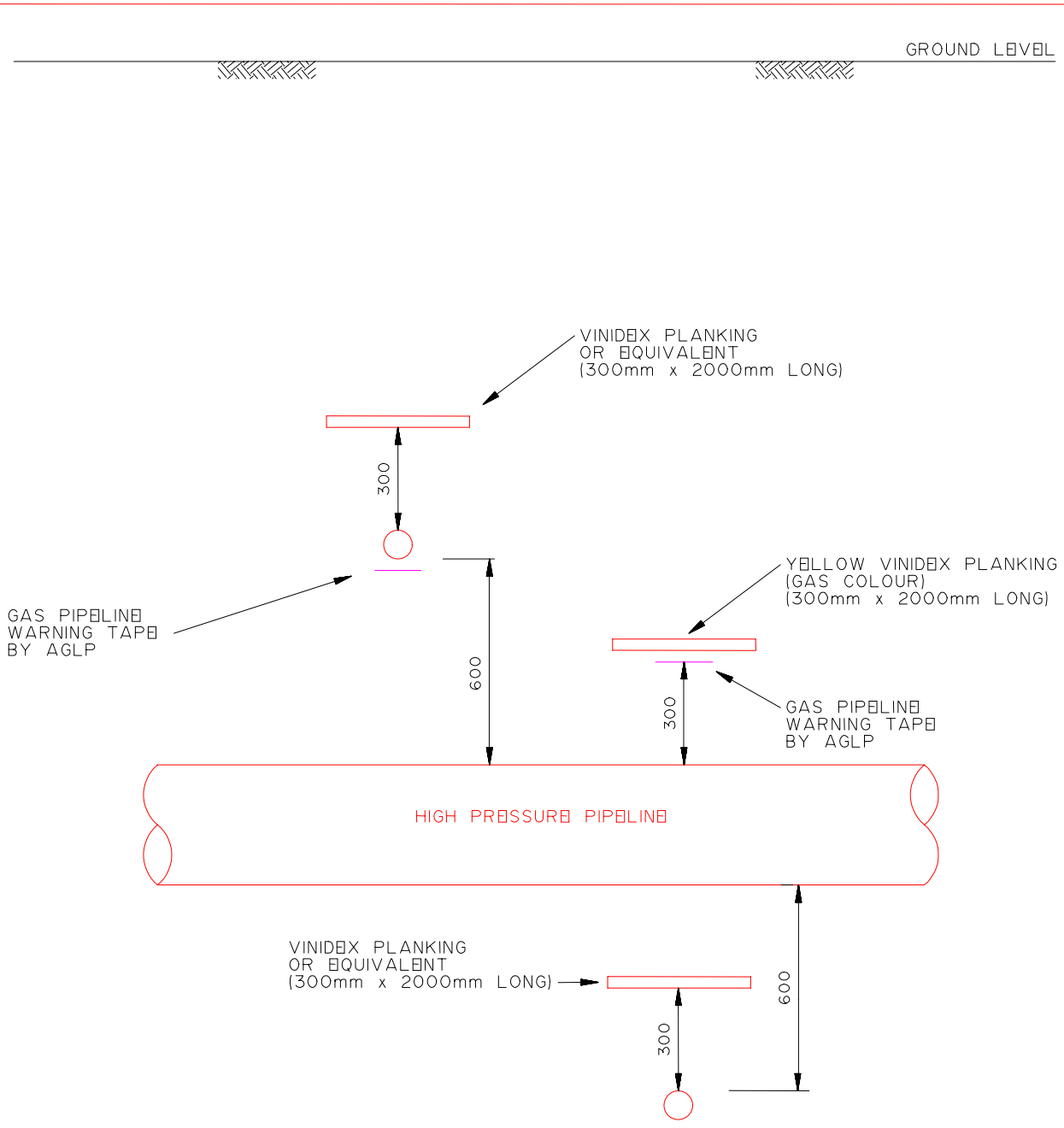
ATTACHMENT 3



ATTACHMENT 3

APA Group	ENGINEER : D.M.A.		
	DRAWN BY : M.D.S.	TYPICAL TELECOM OPTIC FIBRE CROSSING DETAIL	
	DATE : 25-8-94		
	CHECKED :		
	SCALE : NTS	DRAWING No. : MLP-Z-S-094	REV. No. : B

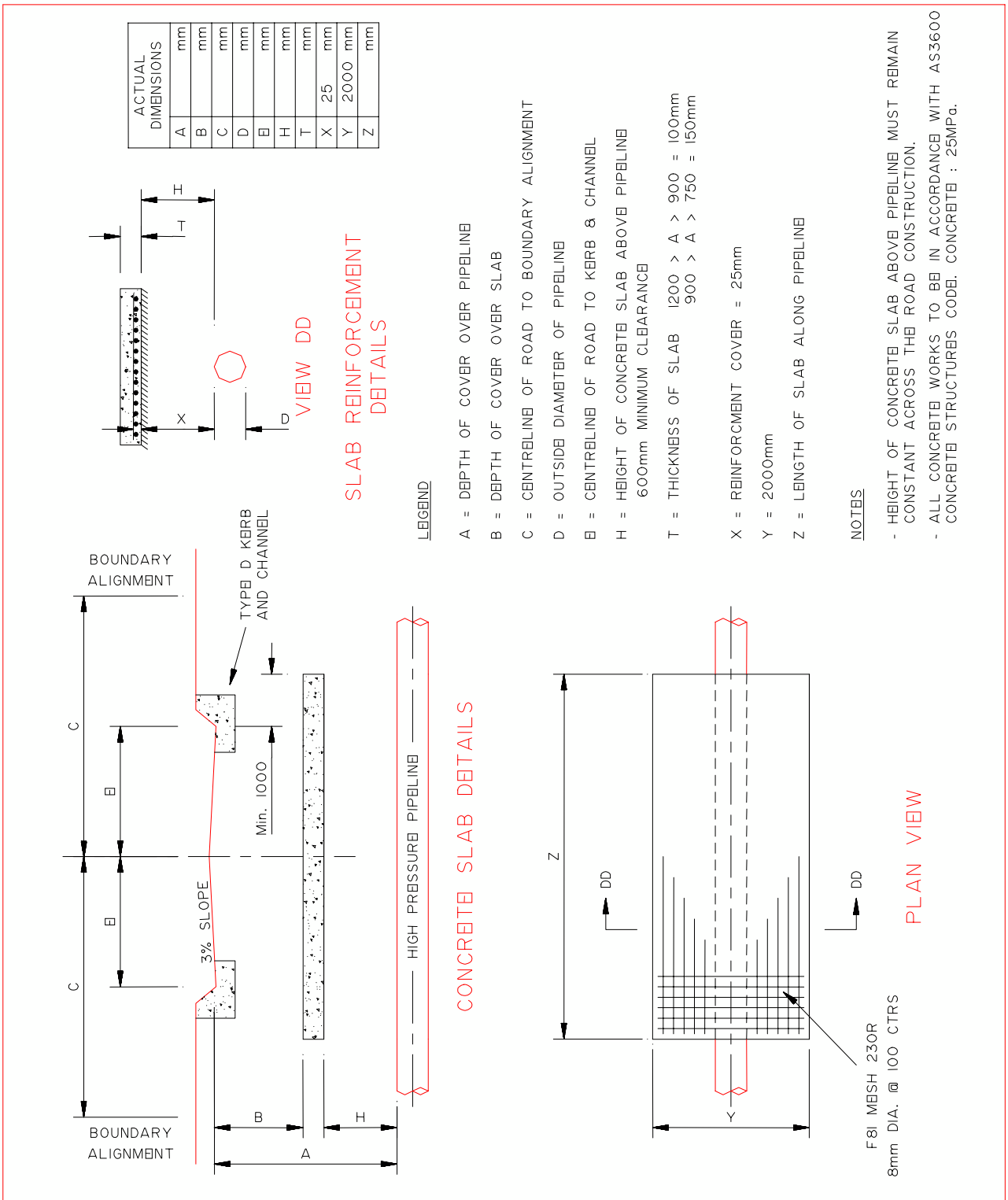
ATTACHMENT 5



ATTACHMENT 5

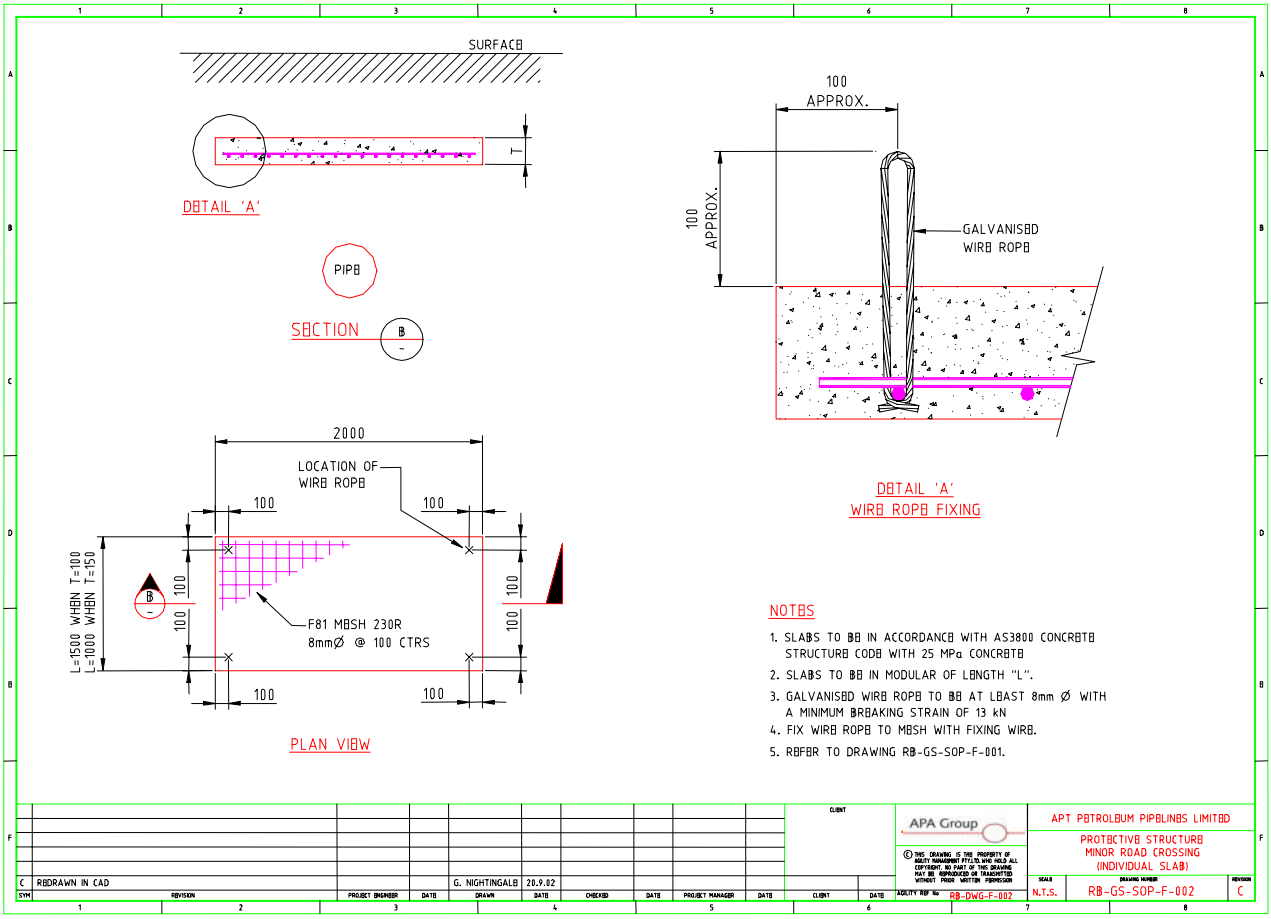
APA Group	ENGINEER : D.M.A.		
	DRAWN BY : M.D.S.	TYPICAL PETROLEUM OR HAZCHEM CROSSING DETAIL	
	DATE : 25-8-94		
	CHECKED :		
	SCALE : NTS	DRAWING No. : MLP-Z-S-096	REV. No. : B

ATTACHMENT 6

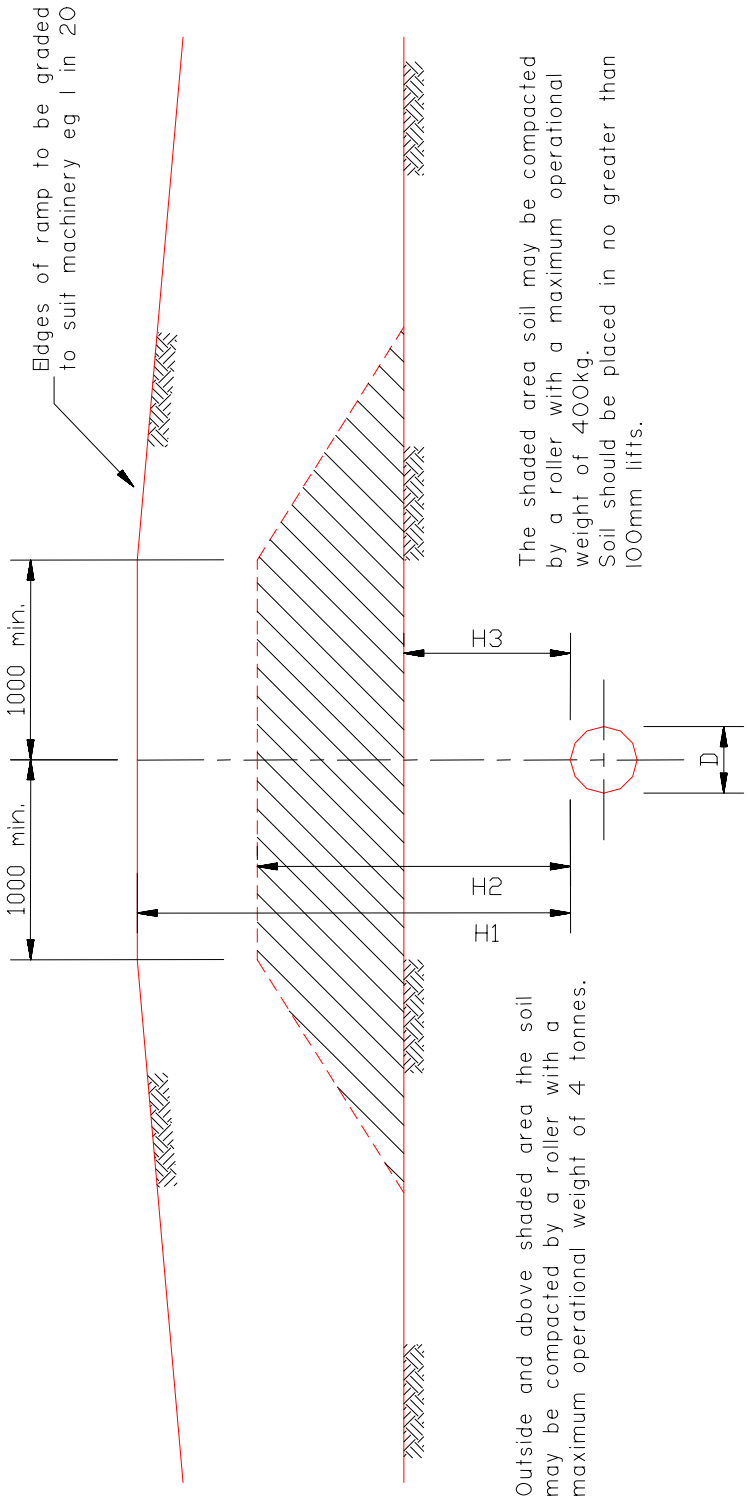


APA Group	ENGINEER : D.M.A.	
	DRAWN BY : M.D.S.	PROTECTIVE STRUCTURE MINOR ROAD CROSSING
	DATE : 25-8-94	
	CHECKED :	
	SCALE : NTS	DRAWING No. : MLP-Z-S-038 REV. No. : B

ATTACHMENT 7



Attachment 8



Embankment to be constructed of material with a CBR rating of 15% or better compacted to a minimum of 95% of its maximum dry density as specified by "AS1289 Section E2.1" (modified compaction).

NOTE

Ramp is to extend to the full working width of the construction (Lengthways along pipeline). No machinery is to cross the pipeline at any location other than the ramp, under any circumstances without approval of Moonie Pipeline Company.

ACTUAL DIMENSIONS		
D		mm
H1		mm
H2		mm
H3		mm

LEGEND

D = Outside diameter of pipeline
H1 = Completed ramp height
H2 = Compacted soil height
H3 = Depth of cover

APA Group	ENGINEER : D.M.A.		
	DRAWN BY : M.D.S.	EARTH RAMP PROTECTION FOR MACHINERY CROSSING	
	DATE : 25-8-94		
	CHECKED :		
	SCALE : NTS	DRAWING No. : MLP-Z-S-046	REV. No. : B

SECTION 4:
CONDITIONAL ASSESSMENT OF PROPOSAL ["CAP"]

1. PARTY SUBMITTING PROPOSAL/DESIGN FOR ASSESSMENT ["Applicant"]

Name: _____ Authorised person: _____

Address: _____

Telephone: _____ Facsimile: _____ Email: _____

Date submitted: _____

2. SPECIFIC DETAILS OF PROPOSED WORKS NEAR THE PIPELINE

2.1 Site Location: _____

2.1.1 Applicant must also specify whether the proposed works are in:

(a) APT's Easement over private freehold, or State leasehold, land; or in

(b) Government owned land such as a road, rail or water reserve or other tenure.

2.2 Description of Proposed Works: _____

Applicant must attach additional pages, plans, drawings, if insufficient space.

3. APPLICANT'S ACKNOWLEDGEMENTS

The Applicant acknowledges and agrees:

3.1 the Pipeline Owner and Licensee is APT Petroleum Pipelines Ltd ["APT"], Roverton Pty Ltd or APT Pipelines (Qld) Pty Ltd;
APT Management Services Pty Ltd ("APTMS") is a duly authorised agent of, and acts for and on behalf of the Licensee, APT, and can make decisions for APT;

3.2 APT is obliged by law to assess and confirm that proposed works in its easement or near the high pressure gas pipelines comply with AS2885;

3.3 APT, acting through APTMS, will only permit to proceed those works which comply with AS2885 and the APA Group Guidelines for Encroachment ["GFE"] and the conditions listed herein;

3.4 the purpose of this document is a conditional assessment of proposed designs or works for compliance with APA Group Guidelines for Encroachment;

3.5 that it has made its own enquiries and has satisfied itself about all legal requirements, all local conditions and all matters or things relevant to the proposed works;

3.6 that any works which are:

3.6.1 not permitted under:

(a) AS2885;

(b) *Petroleum and Gas (Production & Safety) Act* 2004 any other statute or law; or

(c) the Easement conditions,

3.6.2 illegal, a nuisance or dangerous to people or property

will not be permitted;

3.7 the decision of APTMS about the Applicant's works is final and binding.

4. CONDITIONS

The Applicant must, at the Applicant's cost, comply, and by signing this Form agrees to comply, with the following conditions:

4.1.1 APTMS's *Guidelines for Encroachment including the warranties and indemnity contained therein*

4.1.2 AS2885

4.1.3 CAD Letter

4.1.4 APTMS's Pipeline Opening/ Excavation Permit

4.1.5 *Petroleum & Gas (Production & Safety) Act* 2004 and other applicable legislation

4.1.6 The *Environmental Protection Act* 1994

4.1.7 The *Workplace Health & Safety Act* 1995

4.2 the Applicant must obtain and hereby confirms that it has the prior written permission of the Landowner to enter, remain and carry out the proposed works, on the land and that it will reinstate the land;

4.2.1 this obligation applies in respect of freehold land, leasehold land and government land and reserves;

4.3 if the works are to occur in an APT Easement, the Applicant must comply strictly with the terms of the Easement;

4.4 APTMS's staff shall locate and advise the depth of the pipeline before any of the Applicant's work or activity can start;

4.5 APTMS staff will supervise any of the Applicant's works and have the power to order the:

4.5.1 stop or suspension, demolition or removal;

4.5.2 relocation, reconstruction or modification;

4.5.3 re-performance;

of any of the Applicant's works near the pipeline and the reinstatement of any land in APT's Easement or on any other land affected by the works.

5. In making an assessment for compliance with AS2885 and the APTMS GFE, APTMS does not warrant, represent or imply, that any works submitted for assessment are:

5.1 suitable for their intended purpose, free of defect, flaw or error;
5.2 compliant with any law; or
5.3 requirements of any landowner.

6. Insurance details

6.1 Name of Insurer _____

6.2 Policy Number _____

6.3 Policy Amount _____

6.4 Expiry Date of Policy _____

7. Meaning of words and interpretation:

7.1 "*CAP*" means a conditional assessment of a proposal.

7.2 "*CAD*" means a Conditional Approval & Design letter, from APTMS to the Applicant containing the CAP decision.
7.3 "AS 2885" means the Australian Standard for Pipelines – Gas and Liquid Petroleum.
7.4 Means APTMS's Instructions for Work and includes the:
7.4.1.1 Protection of High Pressure Pipelines, and
7.4.1.2 Standard Operating Procedures.
7.5 **Work(s)** means the Applicant's proposed design, layout works, activities and any maintenance, operation, or repair or replacement of the works.
7.6 A reference to an Act includes regulations and other instruments under it, and amendments or replacements of any of them.

8. Signature and acceptance by applicants authorised person:

I accept and confirm I have authority to accept all the conditions in this document, and that the decision of APTMS is final and binding on the Applicant.

SIGNATURE _____ DATE _____

FOR APTMS USE ONLY

9. DECISION AFTER ASSESSMENT BY APTMS:

9.1 APTMS has considered the Applicant's proposed works and decided they are:
9.1.1 Not permitted; ☐
9.1.2 Permitted subject to:
a. the conditions in Clause 4 above ☐
b. the following additional conditions _____ ☐

_____

_____

APTMS Representative:

Name: _____ E-mail: _____

Telephone: _____ Facsimile: _____

Signature: _____ Date: _____

Assessment No: _____

***Petroleum Act* 1923**

Interference with pipeline or petroleum activities - Section 144.
A person who destroys, damages, interferes with or operates any pipeline or refinery or part thereof or anything on the site where the search for or recovery of petroleum is carried on commits an offence against this Act, unless the person does so under the authority of the owner of the pipeline, refinery or, as the case may be, thing.
Maximum penalty – 200 penalty units.

O&MG 1-00
Site First Response
Emergency Procedures

APA Group

Rev 04 02/09/08

Owner:	C Tickell
Reviewer:	P Kelly
Approver:	P Benham

Purpose and scope

To set out what the first APA Group representative (the temporary site or the Site Controller) attending an emergency site is required to do.

The temporary site controller is required to establish communications with Pipeline Control Centre. In addition, they are to secure the site by identifying and maintaining a safety zone around the incident site. This should be sufficient to ensure the safety of all persons in the vicinity of the incident.

Safety

The safety of personnel and property is of paramount importance and should not be compromised in any circumstances.

See also O&MG 1-32 Safety in Emergencies for further information.

Actions

The Temporary Site Controller or the Site Controller is required to follow the Site Action List FM 003. This lists the actions to be completed and requests that an Event Log FM 175 be started.

An Initial Emergency Assessment form FM001is also completed by the Temporary Site Controller, on which the details of the situation upon arrival are to be recorded. This information is to be reported to Pipeline Control Centre as soon as possible.

These steps are to be done even if the event does not become an Emergency.

In the Event that an Emergency is declared, the event log is continued and handed over, with the Initial Emergency Assessment and the Site Action List FM003 to the appointed Site Controller on their arrival to site.

APA Group Personnel on site

All personnel entering the emergency site will report to and follow the directions of the appointed Site Controller.

The appointed Site Communications officer will record the movement of all personnel.

If the Emergency is in a Remote area, the Travel Check in process is to be followed as normal.

Precautions

The area around the site of a pipeline failure can be extremely dangerous, particularly if escaping gas has not ignited. All personnel at the emergency site shall strictly observe the following precautions

1. The site shall be approached from upwind. The safe distance of approach will depend on the circumstances of each incident.
2. Use atmospheric monitoring constantly within the emergency site.

3. No source of ignition shall be brought into or remain in any area where gas concentration consistently exceeds 10% of the LEL ie. 1% gas to air ratio. Sources of ignition naked lights, cigarettes, mobile phones, cameras, and pagers.
4. High concentrations of gas dilute the oxygen available in the air for breathing. No one shall enter or remain in an area where the gas concentration consistently exceeds 100% LEL, or approximately 5% gas to air ratio, unless they are wearing suitable breathing apparatus. Staff using such equipment must hold a current confined space competency certification.
5. Full protective attire shall be worn at all times. This includes safety boots, hard hats, overalls, eye protection, balaclava and ear muffs when necessary. Clothing shall completely cover arms and legs. **No exposed skin is to be visible**.

NO ONE SHALL APPROACH A GAS LEAK UNLESS IT IS ABSOLUTELY NECESSARY TO DO SO
Employ Site Control "SKILLS"

Liaison with Emergency Services

1. Should any Police or Fire and Rescue personnel be on site when the staff member arrives, he/she will report to them. The Temporary Site Controller or Site Controller shall liaise with the Emergency Services, providing technical and general advice about natural gas and explosion hazards as required. Material Safety Data Sheet Information will be made available to the Emergency Services.
2. The Police may declare a "state of emergency" where there is an emergency that has caused, or threatens to cause, significant personnel injury or property damage. In this case the Police will take full control and authority for the situation, and APA Group will act as an advisory body to the Police directly or through the Department of Natural Resources and Mines.
3. The Police would respond to the situation after taking advice from the Fire Brigade, Gas Examiner (DME), APA Group and other authorities. In past experience, in which fires and gas have been involved, the Fire Brigade have taken and acted on advice from the Gas Examiner.

Securing the Site

All necessary safety barriers and warning signs (as soon as they are available) are erected to define the emergency area. Safety barriers, signs, etc. should be erected a reasonable distance from the emergency site so as to minimise the risk of gas presence on the safe side of the barriers. The site is to be secured manually until safety barriers are in place. No one is to penetrate the barriers with out permission from the Site Controller.

1. All ignition sources (including live power lines) must be removed from the emergency area, or only used in conjunction with constant monitoring of the atmosphere of the work site.
2. A site control and communications area is established preferably within sight of an obvious entry to the emergency site so that the public cannot wander directly into the repair site area.
3. When emergency equipment arrives, store it far enough away to avoid any sudden fire explosion impact.
4. If the emergency site is remote for access purposes, ensure adequate signage is used for APA Group personnel to find the emergency site.
6. Control the traffic by restricting or re-routing.
7. Assist emergency repair crews to gain access to the site.
5. Seek assistance of the Fire Brigade to wet down the escaping gas to reduce likelihood of ignition. May also be necessary to play fine water spray around emergency crews.

It is important to keep water out of trench or excavation so as not to hamper work of repair crews and create other hazards.

If escaping gas is burning in the open do not attempt to extinguish it unless it is ESSENTIAL for safety reasons.

Handling the Public

Ensure the public is kept well clear of the work site or hazardous area. Erect safety barriers, signs, etc. to keep them clear of the work site. Be polite but firm. It is an offence for any one to penetrate a safety barrier without permission to do so.

Direct all property owners etc. that have been affected to the Emergency Manager.

The APA Group pipeline easement allows for:

- its operators, agents and contractors to gain access directly along easement or over adjoining property to the nearest road with all plant, vehicles and equipment
- the use of adjoining property as is reasonable in connection with construction repair and replacement of the pipeline
- Compensation by APA Group to the property owner if the above rights are exercised.

Site Control (SKILLS)

SAFETY FIRST

Assist people to a safe distance.

Establish control over any area where there may be product release/

Establish number and nature of injuries.

Secure the area.

KEEP OUT

All sources of ignition vehicles, radios, telephones, cigarettes, naked flames, electronic and electrical equipment, switches, cameras, tape recorders.

INFORM The Pipeline Control Centre of:

Type of incident, nearest pipeline marker, road, pipeline access road.

Damage and details of injuries.

Potential hazards, eg. stored chemicals

Provide regular updates

Ground conditions

Most convenient access for heavy vehicles

LIAISON

With emergency services

Handle the media with respect (do not be rude). Senior Person should diplomatically refer questions to Liaison Manager.

LOG EVERYTHING

People, actions and events.
Nature of incident
Evidence of explosion, if any.
Evidence of injury, if any.
Evacuation, Equipment, External Services

STAY ON SITE

Until relieved

O&MG 1-32
Safety in Emergencies

APA Group

Rev 03 02 Sep-08

Owner: C Tickell
Reviewer: P Kelly
Approver: P Benham

Purpose and Scope

To provide guidance on clothing and equipment to be utilised during an emergency situation.

Clothing

The clothing worn by the personnel engaged in emergency repairs should minimise the skin area exposed to radiation.

Hi Visibility clothing is required at night time and all work around cranes, in trench and near roads or as JHA / risk assessment determines it is necessary.

HI-VIS vest and or shirts shall be part of the personal issue to all Gas Transmission Employees.
Clothing containing synthetic material or wool can produce static electricity and hence another means of ignition in an explosive area.

Any personnel in any explosive or hazardous area shall wear only clothing containing 100% cotton.

That includes compressor and sales stations as well as the emergency site or a programmed repair site.

The required safety equipment is:

- Full length overalls or long sleeve shirt and trousers (cotton)
- Helmet
- Balaclava
- Gloves
- Safety Glasses
- Earmuffs
- Safety Boots

It is worthwhile to keep an emergency bag or box packed with the required safety equipment that can be readily accessible in an emergency.

Noise protection is essential, as the emission of gas from a damaged high-pressure pipeline will create sound levels harmful to the human ear.

Emergency Vehicle

The emergency vehicle should be parked reasonably close to the excavation site, but sufficiently out of the hazardous area and away from a source of radiant heat.

Emergency Lighting

In general, lights should be strategically positioned to provide general lighting over the excavation area as well as for the working area between the emergency truck and the site.

Smaller easily portable EP lights will be used at the edge of the trench to provide localised lighting.

Hired portable lighting equipment may be used where appropriate under permit and gas testing as required.

Non-Sparking Tools

Although not as efficient, they must be used if an explosive atmosphere is present. The working environment must be continually monitored for the presence of an explosive atmosphere if unsafe equipment has to be used and work must be stopped if 10% LEL level or higher has been reached.

Gas Detection Equipment

This equipment must be used continually when working in an environment with leaking gas. The portable gas detection equipment used by APA Group can distinguish between a reading on the lower side of the lower explosive level and a reading on the high side of the higher explosive level. The operator must be trained in the operation of this equipment.

These gas detectors can read up to 100% LEL then switch to percent volume of methane. Some of these detectors also have oxygen sensors, which can be used during hot work, purging and confined space entry.

Fans

Mancooler fans - to blow gaseous atmosphere away in a safe direction.

NOTE: These fans are not intrinsically safe and should be kept out of Hazardous Areas when being used

Safety Equipment - Who is Responsible:-

a) For its Use

Each APA Group employee is responsible for ensuring that they use **ALL** the necessary safety equipment prior to attempting any job associated with an emergency. Consequently they should ensure that they have the personal issue of clothing, boots, ear muffs, safety glasses etc within easy reach.

The company will provide the means of protection.

Its your life - you protect it!

b) For its Maintenance

Each APA Group employee is required to keep their personal issue of equipment in a clean and operational condition.

Specialised safety equipment maintenance will be designated to particular personnel, but as a general rule any lack of maintenance, or repairs required should be reported to the Operations Manager.

APA Group

TRANSMISSION OPERATIONS QLD

EMERGENCY RESPONSE PLAN
POL 1 - 07

Emergency Phone Number
1800 017 000

Rev	Issue	Owner	Reviewer	Approver	Date
7	APA	C. Tickell	P. Kelly	P. Benham	06/06/08
8	APA	C. Tickell	P. Kelly	P. Benham	27/08/08
9	APA	P. Kelly	D. Hutton	K. Mallitt	28/12/10

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1. Overview

The Emergency Response Plan for the APA Group is designed to provide an efficient, safe, effective and co-ordinated operational plan to deal with an emergency and to maintain and restore normal business operations as quickly and safely as possible.

It is the responsibility of each of the Operations Managers to ensure that staff under their control are conversant with the emergency response requirements and competent in carrying out emergency procedures using emergency equipment.

All incidents and situations with the potential to develop into an emergency shall be reported to Pipeline Control Centre in the first instance.

An emergency is defined as: Any incident or occurrence, not forming part of the normal operations and maintenance of the pipeline and its facilities, which causes or has the potential to cause a reduction or cessation of gas supply to one or more delivery points and/or has potential to cause significant harm to persons, property, or the environment.

2. Emergency Response Plan Documentation

2.1. Plan contents

The Emergency Response plan consists of the following documents:

- POL 1-07 Emergency Response Plan. (this policy document)
- Emergency Contacts. – All contact phone numbers.
- MGT 2-02 Emergency Communications.
- MGT 2-03 Emergency - Key Responsibilities.
- O&MG 1-32 Safety in Emergencies.
- O&MG 1-00 Site First Response Emergency Procedures.
- Forms:
    - FM 001 Initial Emergency Assessment.
    - FM 002 PCC Action List. (Pipeline Control Centre)
    - FM 003 Site Action List.
    - FM 004 Emergency Manager Action List.
    - FM 005 Site Controller Action List.
    - FM 006 Communications Officer Action List.
    - FM 007 Resource Officer Action list.
    - FM 008 Engineering Action List.
    - FM 009 Initial Incoming Call Log.
    - FM 175 Event Log.
    - FM 393 Planned Inspection Check List. Brisbane.
    - FM 394 Planned Inspection Check List. Dalby.
    - FM 395 Planned Inspection Check List. CGP.
    - FM 398 Planned Inspection Check List. Pipe CGP.
    - FM 399 Planned Inspection Check List. Pipe RBP.

All documents are available from the Qld shared drive and all staff are provided with an initial hard copy in the form of a field Emergency Response manual.

Hard copy manuals for specific ER roles are available in the ER Management Room (Conference Room 3) at Upper Mount Gravatt.

The processes and accountabilities outlined in the Emergency Response Plan shall be used in emergency situations.

2.2. Document Control Responsibilities

Document Owner:
The owner shall update or change the documents linked to Emergency Response through the Integrated Management System (IMS). A review of the manual is undertaken after an event, whenever suggestions for improvements are made and otherwise at periods not exceeding 2 years or in conjunction with Safety and Operating Plan (SAOP).

Document Reviewer:
The Reviewer shall be another subject matter expert and is responsible for the checking the accuracy and consistency of the information of the document.

Document Approver:
The Manager Transmission Operations Queensland will ensure that all aspects policy are met and is responsible for the contents of this plan.

Uncontrolled Copies:
All printed copies of this manual are uncontrolled and distribution to controlled copy holders will be controlled by the ER Coordinator.

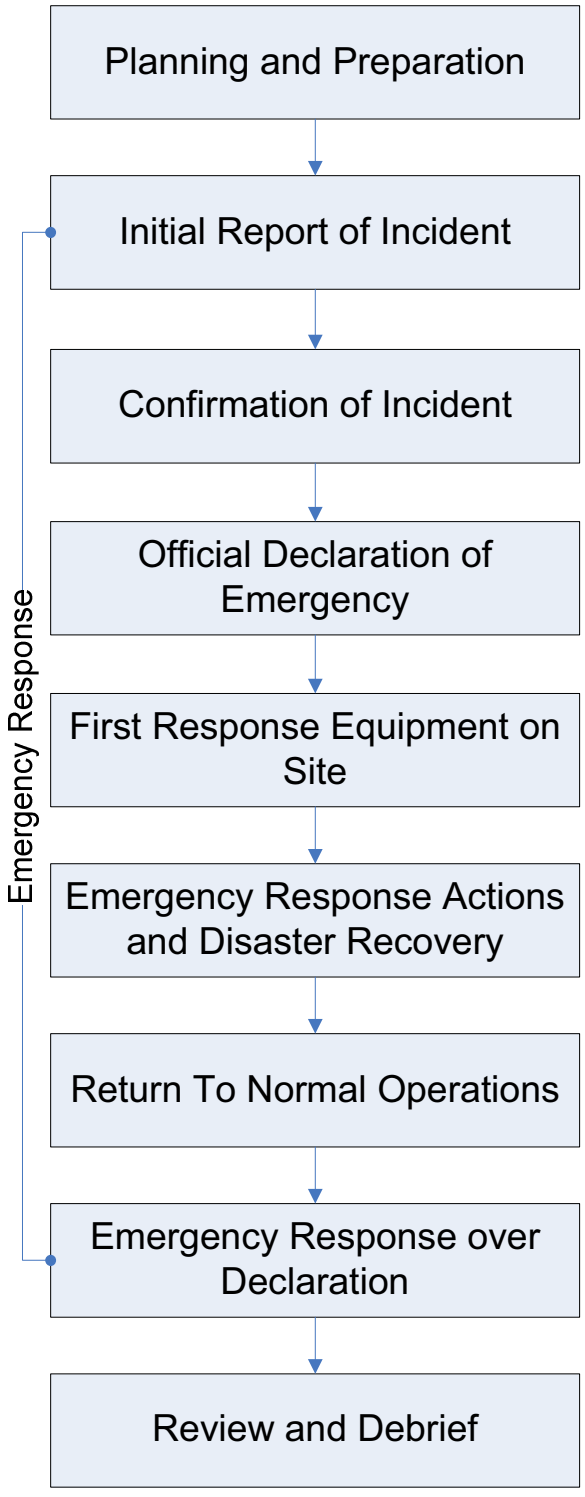
3. Purpose of Emergency Response Plan

The Emergency Response plan:

- Is designed to provide a framework for the management of emergencies for transmission assets in Queensland.
- Defines the emergency organisation to be established for different levels of emergency and defines the roles, responsibilities and participants in the emergency response organisation.
- Provides guidelines for response to various types of emergency situations which may arise.
- Contains lists of the resources and equipment to be used in the emergency response and initial repairs.
- Provides a basis for training requirements for emergency response preparedness.

4. Incidents and Emergencies

Incidents and emergencies shall generally be dealt with in accordance with the following flow chart.
Actions and responsibilities may vary through these stages.



5. Emergency Categories

There are several broad categories of emergencies that can occur and the response procedure will vary depending on the circumstances.

5.1. Types of Emergencies

This Emergency Response Plan is designed to provide a framework to respond to and manage the following types of emergencies.

Number	Description
1	Serious Personal Injury (includes vehicles)
2	Missing Personnel (Refer Travel Policy)
3	Fire/Explosion
4	Major Leak
5	Minor Leak or Damage –No leak
6	Equipment Malfunction
7	Reported Hit
8	Environmental Incident – (serious)
9	Bomb Threat/Terrorist Action
10	Causing Property Damage

These codes are used on the emergency forms to assist with defining actions associated with each type of emergency. It is possible that more than one type is applicable, for example, there may by a case where both 1 and 3 are ticked on the initial assessment report.

5.2. Emergency Levels

The gas industry including the APA Group has adopted 5 levels of emergency response. The incremental response to incidents depends on the seriousness of the incident, the level of resources and expertise required to combat the incident. In summary, the emergency levels are:

Level 1 Site Asset-Based Incident.

E.g. day to day minor issue such as failure of a compressor unit.

Level 2 Emergency Response Team.

E.g. minor localised leakage on a pipeline valve.

Level 3 Emergency Management Team.

E.g. puncture of a pipeline that has no impact on a distribution network or major customer.

Level 4 Multiple Distribution / Transmission Teams.

E.g. puncture of a pipeline that also has impact on a distribution network.

Level 5 System Integrity, System-Wide Threat or Resource Conflict Resolution.

E.g. material damage or disruptions to the transmission system or material damage to a distribution pipeline that impact on the operation of the transmission system or market

Note Level 5 powers are invoked by the Minister under the Petroleum and Gas Act

Refer to Section 11 for further explanation of the types of emergencies.

6. Emergency Response Actions

The following sections provide an outline of the actions to be completed during the stages of an emergency.

6.1. Initial Report of an Unconfirmed Incident

The initial report or detection of an unconfirmed incident may at any time be reported by the public, another utility operator, detected on SCADA, during site inspection or normal operations.

The initial report of a pipeline event may include reports of a strike on the pipeline by third parties, reports of a leak, a customer complaint of loss of delivery pressure, alarm of equipment status, pressure or other abnormal events.

Other reports of incidents may include vehicle accidents, missing personnel or serious personal injury.

All reports and events/incidents are to be directed to the Pipeline Control Centre.

The duty Pipeline Controller calls the “on call” field operator to go to the site of the reported incident (except in the case where a company employee reports the incident from site) for confirmation of the incident. This person then becomes the Temporary Site Controller.

The duty Pipeline Controller then informs the Operations Manager of a report of an unconfirmed incident.

The duty Pipeline Controller starts the Pipeline Control Centre’s Emergency Events Logger located on the Qld shared drive. The duty Pipeline Controller shall then assess the situation with report details from the Temporary Site Controller to determine if this is a pipeline incident and monitor any changing conditions on the pipeline that may affect transportation services. i.e. gas supply to customers.

The Temporary Site Controller secures the site if it is safe to do so, commence the form FM 175 Events Log and completes the form FM 001Initial Emergency Assessment. Refer to form FM 003 Site Action for details of what to do if first to site. The Temporary Site Controller reports back to the duty Pipeline Controller as soon as possible with all relevant details about the site and the nature of the reported incident. See O&MG 1-00 Site First Response Emergency Procedure and form FM 003 Site Action List.

6.2. Official Declaration of an Emergency

An emergency can be declared at any time by the Manager Transmission Operations Queensland or the delegated representative in response to an incident or event that is consistent with the emergency classifications in this plan.

An emergency should be declared where there is reasonable evidence to suggest that an emergency event is occurring or imminent. These could include:

Number	Description
1	Serious Personal Injury (includes vehicles)
2	Missing Personnel (Refer Travel Policy)
3	Fire/Explosion
4	Major Leak

5	Minor Leak or Damage -No leak
6	Equipment Malfunction
7	Reported Hit
8	Environmental Incident - (serious)
9	Bomb Threat/Terrorist Action
10	Causing Property Damage

The Manager Transmission Operations Queensland or the delegated representative shall consider the confirmation report from the Temporary Site Controller in the decision to declare an emergency.

The Declaration of an Emergency requires:

The appointment of the Emergency Manager and the formation of an Emergency Response Team may consist of:

- Emergency Manager.
- Communications Officer.
- Site Controller.
- Site Communications Officer.
- Resource Officer.
- Repair Manager.
- Commercial Manager.
- **Operations Manager, Control Centre & Gas Contracts.**

Emergency Declaration Communication

The appointment of this team is then responsible for:

- Business notification.
- Customer notification.
- Emergency Services notification.
- Community notification.
- Regulatory notification.

6.3. Initial Actions on Site

When the Site Controller arrives on site, the Temporary Site Controller hands over control, provides a briefing and hands over all notes made regarding the emergency. (Events Log FM175 and Site Action List FM 003)

The Site Controller defines the emergency area and prevents public and media access. Actions are taken to eliminate all ignition sources from this area, where safe to do so. Refer O&MG 1-00 Site First Response Emergency Procedure for details.

6.4. Emergency Repair Actions

Once the emergency has been declared, full details of the site conditions and nature of the emergency has been determined, emergency repair actions shall be considered to return the pipeline to normal service.

When an emergency is declared, the incumbent Emergency Manager then forms an Emergency Operations Team and nominates a team member to take the first response equipment to the site of the emergency. See MGT 2-03 Emergency Key Responsibilities. Following the Emergency Manager Action Plan FM 004.

The Emergency Manager shall consult with competent technical and engineering staff to determine if pipeline pressure reduction is necessary and determine the most suitable pipeline repair method. The decision of repair methodology shall consider, but not be limited to, the following aspects:

- Emergency site conditions and access.
- Public safety and safety of the repair crew.
- The type of pipeline damage including the location of defect on pipe.
- Surface condition of pipe (pitting etc.) and the potential of defect to propagate.
- Requirements of the Police or the Department of Mines and Energy.
- Decision on whether to excavate on a pressurised leaking pipeline.
- Security of supply – ie. the repair technique chosen will be biased towards having least impact on customers, availability of repair equipment or consumables.
- Consideration of AC Induction and other environmental issues.

Crews mobilising to all sites shall attend site fully equipped for their nominated duties including their personal protective equipment (PPE).

Operations Managers are responsible for ensuring that the listed emergency resources are available at all times and are kept in good working order.

Throughout the duration of this process, the duty Pipeline Controller will continue to log the movement of vehicles, personnel and equipment despatched. On arrival at any site, all personnel shall notify the Site Communications Officer (when established) of their arrival and intentions so all activity and communication on site can be logged. Non-staff personnel arriving at a site shall be directed to the Site Communications Officer.

No action shall be taken at any site except at the direction or with the approval of the Site Controller. The Site Controller acts as a permit issuing officer (P.I.O) on the site and must ensure that the Permit Procedures are followed whilst carrying out the repairs. This may be delegated to another competent trained P.I.O by the Site Controller if required. The Site Controller will be identified by wearing a red hardhat (located in the 1st response equipment) labelled “Site Controller”.

6.5. Evacuations

The safety of APA Group personnel and the public shall be evaluated and if necessary evacuations shall be carried out as safely as possible. External assistance including emergency services may be required in this operation and it is important that prior communications are made with public authorities.

Ensure all APA Group personnel are accounted for. If there is believed to be APA Group personnel unaccounted for, a search and rescue should be considered if conditions are safe to allow such an operation. If not, emergency services assistance shall be sought.

6.6. Official Declaration of Emergency Over

The Emergency Manager will declare the incident over when normal operation is resumed or the incident terminated when all is under control and a risk assessment has been carried out to achieve a risk level As Low As Reasonably Practical (ALARP). It could be months before normal operations are resumed after e.g. a plant explosion.

A note to ensure that all staff are advised of Emergency Over shall be issued by the Emergency Manager.

6.7. Review and Debrief

A debriefing of all personnel involved in the emergency will be carried out as soon as practicable after the cessation of the emergency and will be used to prepare a report on the incident.

6.7.1. Internal Reports

Immediately after the emergency, the Emergency Manager or Manager Transmission Operations Queensland will arrange for an investigation and written report to be completed. The report shall include a detailed review of the sequence of events, communications and actions taken immediately prior to, during and after the emergency situation. All available computer records, logs, photographs etc will be examined carefully and retained to aid in completion of the incident investigation. The report will include a review of emergency procedures and any recommend changes, including any recommendations from the government departments involved in the emergency. Where required, the report shall be sent to relevant government departments.

7. Training Preparedness

All personnel are required to undergo emergency response training according to their individual training plans.

Emergency response training for all personnel commences with a generic "Emergency Response Training" module that must be completed within twelve months of commencing work. Thereafter, all personnel must complete emergency response refresher training annually. The training required will depend on the designated role of the employee and will be set out as per their individual training plan developed by their leader.

The regular use of simulated exercises is a key resource for emergency training.
Areas addressed through this type of training are:

- Individual response to the emergency, their reporting techniques, review of personal protective equipment, condition and evacuation techniques.
- Supervisory actions through controlling and monitoring the emergency situation, handling issues that arise from the emergency and implementing control procedures.
- Team response through controlling and handling repair and isolating procedures.
- Control centre actions and response through communications and supply notifications.
- All clear and reinstatement procedures.

8. Communications

See MGT 2-02 Emergency Communications Plan for how all communications are to be directed.

Where possible mobile/satellite phones should be used for communications during an emergency.

For mobile and satellite phone numbers, refer to APA Group Contacts List.

Emergencies may involve the presence of the media on site.

In general staff will refer all media inquiries to the Manager Transmission Operations Queensland or appointed delegate.

Ensure the media is kept well clear of the working hazardous environment – use barriers, signs, etc. Be polite but firm. Be careful not to make passing comments to the media that may be incorrectly interpreted. It may be difficult to prevent media from entering a particular area without offering an explanation of some kind. However, anything said must be factual; do not offer opinions or conjectures.

For any media enquiries, advise that the Manager Transmission Operations Queensland or appointed delegate will make a statement and answer their questions.

Staff receiving telephone inquiries by the media should generally refer all contact to the Manager Transmission Operations Queensland. It is important that all inquiries are followed up and not fobbed off.

When there are many calls being directed to the APA Group Emergency Number, it is important for the phone operators to answer all calls if possible so as to avoid diverting callers to mobile phones that may be required for emergency communications.

The operators should state “APA Group is aware of the situation and is attending to it. Thank you.” for all general callers reporting the Emergency. This is to avoid tying up the phone lines unnecessarily.

The appointed APA Group Corporate Media Relations company is “Cato Counsel”. The appointed contact person is Matthew Horan. If there are any media issues that require immediate attention and there is no time to contact the Media Relations company, refer the issue to the Manager Transmission Operations Queensland.

The contact details for media liaison are:
Matthew Horan
Tel (02) 9212 4666
Mobile 0403 934 958.
Email: matthew@catocounsel.com.au

9. Public Relations / Authorities and Public Utilities

Higher level of emergencies, in particular those affecting property or personnel may attract the attention of government departments, the media and the public in general. These parties may be on site, requesting a variety of information. Although each situation will be different the following guidelines are applicable to the emergency policy.

9.1. Government – Department of Employment, Economic Development and Innovation

DEEDI shall be informed as soon as is practicable in the event of any emergency causing death or severe disablement to personnel, major property damage or major damage to the gas pipeline, including any risk to the security of supply.

All offsite enquiries shall be directed to the Manager Transmission Operations Queensland and all onsite enquiries shall be directed to the Site Controller.

APA Groups Compliance Officer shall upon closure of an incident review the Petroleum and Gas Act, other appropriate legislation and advise the company of its obligations under the act.

9.2. Chief Gas Examiner

If the domestic gas supply security is threatened or likely to be threatened, the Emergency Controller or Manager Transmission Operation Queensland shall contact the Chief Inspector as soon as is practicable to advise capacity and supply restrictions details.

9.3. Notification of Other Parties in an Emergency

Where required, Emergency Services shall be notified immediately by the duty Pipeline Controller. In the event of a high level emergency, emergency services may assume control of the emergency area and delegate responsibilities where appropriate.

9.4. Notification of Shippers and End Users

The Pipeline Control Centre will advise and keep customers updated on the emergency progress through the Commercial Group.

10. References

10.1. Statutory & Commercial Requirements – Queensland

The following statutory requirements are applicable to the APA Group in emergency situations.

- The Petroleum and Gas (Production and Safety) Act 2004 and Petroleum and Gas (Production and Safety) Regulations 2004.
- AS2885 - 3 - 2001 requires that an Emergency Plan and Procedures be established.
- The Work-safe Australia Standard "Control of Major Hazard Facilities": NOHSC: 1014 1996, NOHSC: 2016 1996 requires that a major hazard facility has emergency planning.
- Queensland Workplace Health & Safety Act and Regulations.
- Commercial requirements for an Emergency Plan are placed with APT Asset Management Plan and Safety & Operating Plans (SAOP).

11. Emergency Classifications

Emergency situations can be either one or a combination of the following the Emergency Categories as outlined in Section 5 of this policy. A combination of procedures may be necessary to address these emergency classifications.

11.1. Serious Personal Injury

In the event of serious personal injury or death, call 000 to request help. APA Group with the assistance of the Police and or Emergency Services will manage the injured and advise the next of kin.

If a serious personal injury or death has occurred, the incident site must not be tampered with. All evidence must be left in its original state to enable the incident investigation team to carry out their work. The only exception is if action must be taken to prevent a hazard or an existing hazard escalating.

11.2. Overdue Check-in or Missing Personnel

If an APA Group employee or contractor fails to check in at a nominated time, the Pipeline Control Centre shall refer to PCC 5-04 Travel Check-In Operational Requirements and then advise the PCC Manager and the Operations Managers. If missing personnel are not located within 1 hour of the nominated check-in time, an emergency response to find that employee or contractor will be required. The Manager Transmission Operations Queensland shall make the decision to extend the search for the missing personnel and advise Emergency Services if further assistance is required.

11.3. Emergencies Threatening Gas supply

11.3.1. Fire or Explosion

This type of emergency involves a fire or explosion either from a leak in the gas line or compressor stations, from other combustible material within the facility compound, or from a third party fire in close proximity of the pipeline.

No attempt should be made to extinguish a gas fire. Isolate the source of gas to the flame and let the fire self-extinguish. Secure the site and contact Emergency Services and the Police for assistance.

11.3.2. Major Leak

A major leak is any leak which is identifiable by sight or sound. Report all major leaks to the Pipeline Control Centre, make the area secure and remain on site until help arrives.

If a major leak occurs in a residential or built up area, contact Emergency services and the Police.

Manager Transmission Operations Queensland and the duty Pipeline Controller are required to determine the category of leak as follows:

- Sustainable Leak.
- Non Sustainable Leak.

11.3.2.1. Minor Leak or Damage - No Leak

Note: A minor leak that can be sustained and repaired {temporarily} under normal operating conditions does not constitute an emergency.

In general, minor leaks of this type can be sustained but cannot be repaired without depressurisation. Minor leaks include any leak which is detected by secondary means such as:

- Gas detection equipment.
- Sound.
- Vegetation discolouration.
- Odour.

In the event of a minor leak that has not ignited, secure the site and advise Pipeline Control Centre. Exclude all sources of ignition and remain on site until help arrives.

<u>No Leak; Damage Sustained to Pipeline.</u>

This type of damage is generally caused by equipment striking the pipe. It can also be caused by explosion, earth slides, heavy vehicles traversing the pipeline etc. This includes damage occurring to above ground installations due to vehicle, machinery or equipment striking the pipe work or due to storm damage.

Depending on the damage sustained a temporary or a permanent repair may be required – an engineering assessment is required to determine the appropriate method of repair.

In the event of any pipe strike, shut down any operating machinery immediately if safe to do so, evacuate the area and report to the Pipeline Control Centre. Secure the area and await further instructions from the Pipeline Control Centre. In most cases, the pressure in the pipeline in that area will have to be reduced before a closer inspection can be carried out to assess the extent of the damage.

11.4. Equipment Malfunction

11.4.1. Pipeline

Any situation which causes flow cessation in pipeline operation (e.g. regulator malfunction, compressor shutdown, pig stuck, block valve close, etc.).

For this type of emergency, notify Pipeline Control Centre as soon as it is safe to do so.

11.5. Reported Hit

This type of event may be reported by an external party who has hit or damaged the pipeline. This category of emergency may be used in conjunction with the following types of emergencies as stated in section 5.1: 3, 4, 5, 6 or 9.

For response actions in the event of a reported hit, see 'No Leak: Damaged Sustained to Pipe' above.

11.6. Environmental Incident.

This includes any serious incidents, which are potentially damaging to the environment (e.g. spills or leakage of chemicals, hydrocarbons or hazardous materials including odorant).

In the event of environmental incidents, notify the Pipeline Control Centre. Minor spills may be cleaned up according to the relevant Material Safety Data Sheet. Major spills may require additional resources.

Note that gas leaks, minor or major are also environmental incidents.

11.7. Bomb Threat

Any reported bomb threat or terrorist activity reported is treated as an emergency until otherwise determined. This may result in National Security Alerts, declared by the relevant authorities. If a bomb threat is targeted at APA Group in Upper Mt Gravatt office, the office will be evacuated immediately and alternate premises will be used to command the emergency response.

All bomb threat calls should be recorded using the "Bomb Threat Call Checklist". Report all calls to the Police.

11.8. Emergencies Involving Damage to Property

This type of emergency includes any event that is threatening or likely to threaten public property. It may cause damage by escaping gas, potential fire or explosion.

Remedy the situation if safe to do and contact the Pipeline Control Centre to report the situation.

12. Definitions and Abbreviations

Nil

Attachment A: Incitec Special Requirements

All APA Group personnel must comply with Incitec rules when an alarm sounds (siren) at the station. When an alarm sounds this means that there is an **ammonia release.** All personnel on site must either go back to their vehicles and leave the site or stay indoors and turn off the air conditioning units until further notification from Incitec.

In the event that any incident or any emergency occurs, APA Group personnel must contact Pipeline Control Centre immediately an advise them of the event. In addition to this, contact Incitec's Control Room on 3867 9900 and advises them of the event. Request assistance if required. Incitec may dispatch their Emergency Response Team to control the emergency event.

Attachment B: Third party site specific requirements

Comply with relevant company procedures pertaining to each site.

APA Group

Roma to Brisbane Pipeline

Environmental Management Plan

March 2009

Doc No. POL1-14

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1 Introduction

1.1 Background

The APA Group (APA) owns 100% of the Roma to Brisbane Pipeline (RBP) in Queensland. The RBP transports natural gas from Wallumbilla to the Brisbane metropolitan area and consist of two parallel pipelines and a number of laterals and looping pipelines that have been added to increase the capacity of the original pipeline system.

The original DN 250 pipeline was commissioned in 1969, running approximately 396.8 km from Wallumbilla to Bellbird Park (See Figure 1). The RBP has been upgraded with various looping exercises to increase the overall capacity of the total pipeline to match the Brisbane gas market growth. The pipeline is regulated under the *Petroleum and Gas (Production and Safety) Act and Regulation 2004*, under the instrument of Pipeline Licence (PL) number 2.

Looping upgrades, lateral pipelines and extensions to the existing pipeline have since occurred in 1998, 1990, 1998, 2000 and 2002, included:

- A DN400 mm pipeline running from Wallumbilla to Swanbank Power Station which is approximately 405.5 km long. In 1988, this pipeline was laid in parallel with the original pipeline.
- The Wallumbilla to Bellbird Park pipeline was extended to Gibson Island. This section is approximately 40.2 km long and consists of 37.6 km of DN300 mm pipeline and 2.6 km of DN200mm pipeline.
- The DN250 Peat Lateral Gas Pipeline was commissioned in 2001 and supplies natural gas from the Woodroyd Coal Seam Methane Field Treatment Plant, east of Wandoan, to the DN250 RBP, near Condamine (a distance of approximately 110.7km);
- A 10.7km extension of the DN250 Peat Lateral known as the Scotia extension was also constructed as part of Stage 5 looping. The pipeline runs from the Scotia Coal Seam Methane Field to the Woodroyd Coal Seam Methane Field;
- The Swanbank Lateral pipeline forms part of the RBP DN400 pipeline and was commissioned in 2002. The pipeline required the construction of approximately 8.75km of new pipeline to deliver natural gas from the Redbank Meter Station into the Swanbank Power Station.
- A DN400mm pipeline was constructed from the Collingwood Park Inlet Station to Ellengrove Gate Station and is approximately 9.5km long. It was commissioned in 2002.

The Peat lateral and Scotia Extension are operated in accordance with AS2885.3: 2001. The pipeline is regulated under the *Petroleum and Gas (Production and Safety) Act* and Regulation 2004, under the instrument of Pipeline Licence (PL) number 74. APT Management Services Pty Ltd (APT) undertakes the operation and maintenance of the RBP on behalf of APA.

The major components of the RBP can be seen on

Figure 1 with the relevant pipeline licence information provided in Section 4.4. A detailed description of the RBP assets, facilities, route and processes can be found in Section 2.

This Environmental Management Plan (EMP) has been prepared in accordance with the Australia Pipeline Industry Association (APIA) Code of Environmental Practice and reflects licence requirements and ongoing management of environmental issues for the operation and maintenance of the RBP.

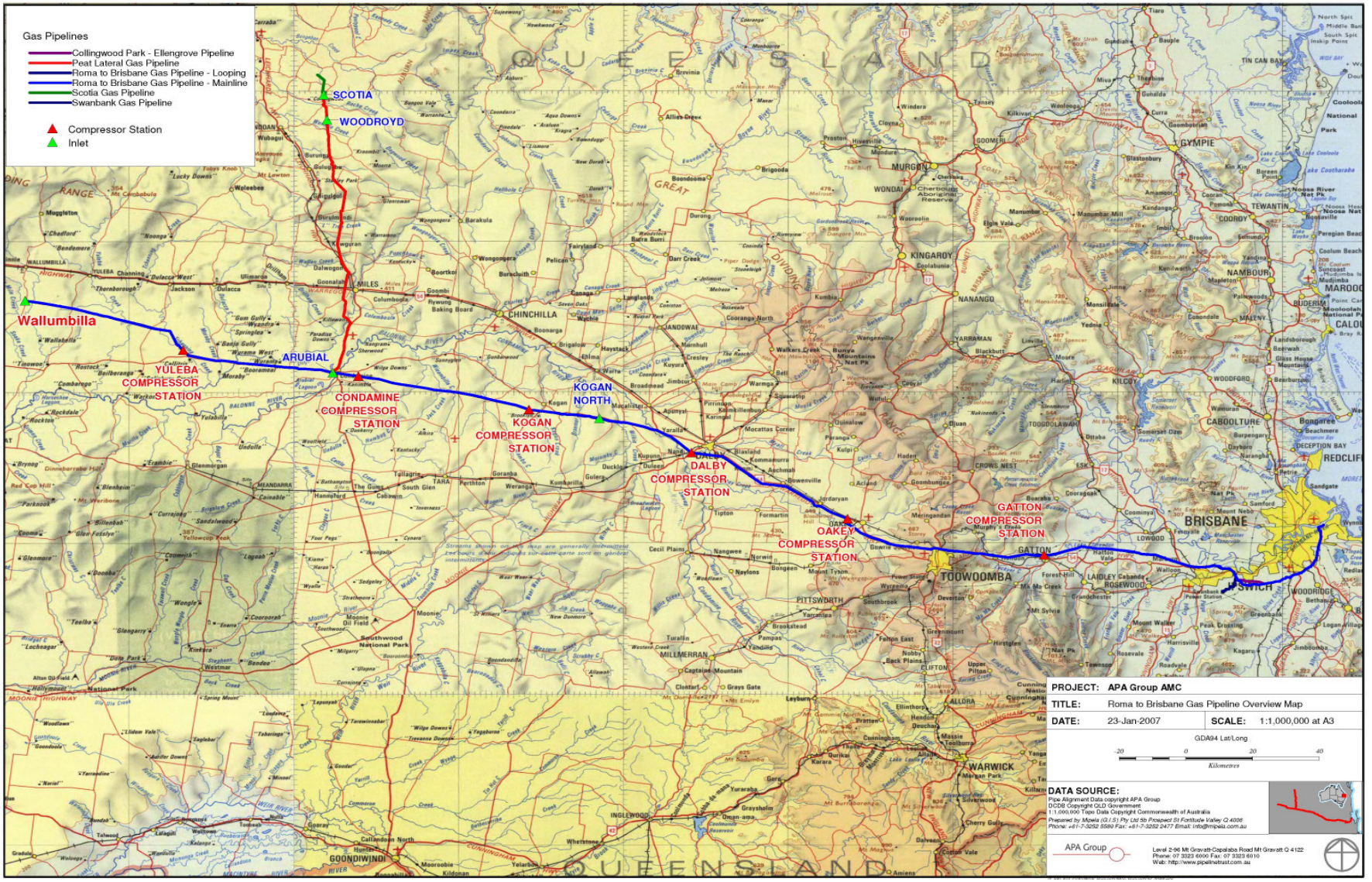

Figure 1: Major Components of the Roma to Brisbane Pipeline

1.2 Purpose and Structure of this EMP

The purpose of this Environmental Management Plan (EMP) is to outline a strategy to manage the potential environmental impacts that may occur as a result of operational and maintenance activities on the RBP. The key objectives are to ensure that:

- The delivery of natural gas from Wallumbilla to Brisbane including along all laterals is undertaken in a safe, efficient and environmentally responsible manner.
- All operational aspects are conducted in a manner that minimises adverse impacts to the physical, biological, cultural and social environment.
- All employees and contractors are aware of their environmental responsibilities, have the training to fulfil such responsibilities and are proactive in their approach to environmental management.
- There is compliance with appropriate legislative and licence requirements for the RBP including the Peat and Swanbank Laterals.

This EMP has been prepared in accordance with the objectives and provisions of the Australian Pipeline Industry Association Code of Environmental Practice (APIA Code). The document has also been structured in accordance with:

- The APA Group Health, Safety and Environment Policy
- AS/NZS ISO 14001
- QLD Environmental Protection Agency (EPA) Guidelines for Preparing EMPs

The pipeline licences (PL2 and PL74) also require that the pipelines be managed in accordance with the Australian Petroleum Exploration Association (APEA) Code of Environmental Practice – Onshore. Whilst APA recognises this requirement it should be noted that the code was written in January 1991. The APEA has since changed its name to the Australian Petroleum Production and Exploration Association (APPEA) which produced its own Code of Environmental Practice in 1996. The Australian Pipeline Industry Association (APIA), in consultation with APPEA, produced a Code of Environmental Practice for Onshore Pipelines in 2000. This Code of Environmental Practice is referred to by AS 2885.3 Pipelines – Gas and Liquid Petroleum, which is the standard by which all pipelines are required, by their respective licences, to be operated in accordance with. APA believes that this Code of Practice represents industry best practice and has designed this EMP to be in accordance with this Code.

The general structure of the EMP includes:

- A description of the main components of the RBP including an outline of the route and location of each component. This section also has a brief description of the environmental resources found along the RBP (**Section 2**)
- A description of APA's environmental management framework including objectives, systems, roles and responsibilities and control procedures, including emergency response procedures (**Section 3**)
- A brief overview of the key legislative requirements applicable to the RBP including licence requirements from the various Pipeline Licences (**Section 4**)
- The environmental management strategies that are to be employed throughout operations to minimise and mitigate against environmental impacts (**Section 5**)
- A description of the monitoring, measurement and evaluation processes including incident reporting and notification (**Section 6**)
- A contact directory and abbreviations (**Section 7** and **8** respectively).

2 Description of the Pipeline

The original DN250 Roma-Brisbane Natural Gas Pipeline is a 396.8km buried steel pipeline designed to operate at a Maximum Allowable Pressure (MAOP) of 7,136 kPa. A second pipeline was laid in parallel to provide additional capacity and was a DN400 diameter steel looping pipeline (approx. 405.5 km long) designed to operate at a (MAOP) of 8000 kPa. The DN400 RBP was generally constructed within the existing 15 m easement, which contained the operating DN250 RBP. There is a nominal 8 m horizontal separation between the two pipelines but separation is as small as 3 m in particular areas.

The Peat Lateral Pipeline is a 110.7 km long buried steel pipeline designed to operate at a Maximum Allowable Pressure (MAOP) of 10,200 kPag. The pipeline transports natural gas from the Woodroyd Coal Seam Methane Field Treatment Plant near Wandoan in South Queensland to the Arubial pressure reduction station at the Main Line Valve at RBP MP63.3. This section of the Peat Lateral was commissioned in 2001. The Peat Lateral runs in 30 metre wide easements or in road and rail reserves. The lateral has a nominal free flow capacity of approximately 74 TJ/day.

Specific details relating to pipeline sections lengths, outside diameters, wall thicknesses, pipe specifications and maximum allowable operating pressure are presented in the Safety and Operating Plans (SaOPs) for the RBP and Peat Lateral. A general overview of the associated facilities and equipment is presented below.

At varying intervals along the RBP pipeline, above ground facilities including 57 line valves and 6 compressor stations have been installed. These are strategically located to shut down and de-pressurise the pipeline in the event of emergency. Remotely operable line valves, associated with the Peat Lateral, are located at Scotia, Woodroyd and Arubial.

The RBP and Peat Lateral are operated to ensure that the pressure is kept at or below MAOP at all times. Each of the pipeline receipt points have an automatic Emergency Shut Down (ESD) valve that will close if the pressure at that point exceeds the MAOP by more than 5%.

Due to increased demand six compressor stations, with scraper facilities, were progressively commissioned between 1981 and 1986. Each compressor station consists of a single turbine driven compressor unit with the shaft horsepower of each gas turbine unit not exceeding 1185kW at ISO conditions. The DN250 and DN400 pipelines have three compressor stations each along their lengths, located at Yuleba, Kogan and Oakey for the DN250 pipeline and Condamine, Dalby and Gatton for the DN400 pipeline (see Figure 1).

Scraper stations (pigging facilities) are located at regular intervals on the RBP as well as at the start and end of the Peat Lateral pipeline to facilitate in-line inspection.

The pipelines have aerial markers, pipeline markers, warning signs, CP test points, CP temporary anodes, and either CP permanent magnesium anode beds or transformer rectifier (TR) stations, all in accordance with AS2885.

The pipelines are buried for their entire length except at valve and scraper stations. Provision of a minimum depth of cover ranges from 750 mm in rural areas, 900 mm in road reserves, 1200 mm in roadways, 1200 mm from Collingwood Drive to Ellengrove 1200 mm, 2000 mm at rail crossings and 1800 mm at watercourse/road crossings.

The locations of all above ground facilities, including compressor stations, valve stations and scraper stations for the RBP and the Peat Lateral are displayed Table 1 and Table 2 respectively.

Table 1 RBP Above-Ground Facilities

KP (from Miles)	Site Name	Pipeline	Site Type			Telemetered
MP 0	Wallumbilla	Inlet		Meter Station	Inlet	T
		DN250	Main Line Valve	Scraper Station		
		DN400	Main Line Valve	Scraper Station		
MP 6	Tamarang	DN250	Main Line Valve			
MP 14	Bendermere	DN400	Main Line Valve			
MP 20	Mongool	DN250	Main Line Valve			
MP33.4	Yuleba	DN250	Main Line Valve		Compressor Station	T
		DN400	Main Line Valve	Scraper Station		
MP40	Moraby Ck	DN250	Main Line Valve			
MP54	Condamine River	DN400	Main Line Valve			
MP63	Arubial (Peat Lateral Connection)	Inlet		Meter Station		T
		DN250	Main Line Valve			
MP67.4	Condamine	DN250	Main Line Valve	Scraper Station		T
		DN400	Main Line Valve		Compressor Station	
MP86	Kenya Blockvalve	DN250	Main Line Valve			
MP100	Kogan	DN250	Main Line Valve		Compressor Station	T
		DN400	Main Line Valve	Scraper Station		
MP106	Kogan Blockvalve	DN250	Main Line Valve			
MP117	Wilkie Ck	DN250	Main Line Valve			
MP133	Dalby	DN250	Main Line Valve	Scraper Station		T
		DN400	Main Line Valve		Compressor Station	
MP134	Dalby Town Council	Off-take		Meter Station		

KP (from Miles)	Site Name	Pipeline	Site Type			Telemetered
MP147	Bowenville	DN250	Main Line Valve			
MP152.8	Norwin Rd	DN400	Main Line Valve			
MP167	Oakey	DN250	Main Line Valve		Compressor Station	T
		DN400	Main Line Valve	Scraper Station		
MP167	Oakey Energex/ Oakey Power	Off-take			Off-take	T
MP178	Gowrie View	DN400	Main Line Valve			
MP185	Toowoomba	Off-take		Meter Station	Off-take	T
MP189	Wittcott	DN250	Main Line Valve			
		DN400	Main Line Valve			
MP201	Sandy Ck	DN250	Main Line Valve			T
		Off-take		Meter Station	Off-take	
MP207	Gatton	DN250	Main Line Valve		Scraper Station	T
		DN400	Main Line Valve		Compressor Station	
MP217	Brightview	DN250	Main Line Valve			T
		DN400	Main Line Valve			
		Off-take		Meter Station	Off-take	
MP237	Brassall	DN250	Main Line Valve			
		DN400	Main Line Valve			
MP244.3	Riverview	DN250		Meter Station		T
MP245.6	Redbank	DN400	Main Line Valve			T
		Off-take		Meter Station	Off-take	
MP251.1	Swanbank	DN400	Main Line Valve	Scraper Station		T
		Off-take		Meter Station	Off-take	
MP246.2	Collingwood Drive	DN250	Main Line Valve			

KP (from Miles)	Site Name	Pipeline	Site Type			Telemetered
MP252.3	Ellengrove Gate station	DN400		Main Line Valve		T
MP252.3	Ellengrove Energex Off-take	Off-take		Meter Station	Off-take	
MP248	Bellbird Park (City Gate)	DN 250	Main Line Valve	Scraper Station		T
		DN300	Main Line Valve			
MP255.5	Ritchie Rd	DN300		Main Line Valve		
MP263.5	Mt Gravatt	DN300		Main Line Valve		T
MP274	Southern Electrical Authority (SEA)	DN200	Main Line Valve			T
		DN300	Main Line Valve			
MP274	Murarrie	DN200	Main Line Valve			T
		Off-take		Meter Station	Off-take	
MP275	Gibson Island	Off-take		Meter Station	Off-take	T

Table 2 Peat Lateral and Scotia Extension Above-ground Facilities

KP (Scotia-Woodroyd-Arubial)	Site Name	Pipeline	Site Type			Telemetered
KP 0	Scotia	DN250		Scraper Station		
		Off-take		Meter Station	Off-take	
KP 10.7	Woodroyd	Off-take		Meter Station	Off-take	
KP 0	Woodroyd	DN250	Inlet Meter Station	Scraper Station		
KP 51.96	L-Tree Creek	DN250	Main Line Valve	Pressure reducing station		
KP 110.685	Arubial			Scraper Station		

The pipeline is operated from a control room located at the Brisbane Control Centre in Mt Gravatt. In accordance with AS 2885.3 the control room has been provided with an uninterruptible power supply that has sufficient capacity to ensure continuous operation through a reasonable power outage. The Brisbane Control Centre uses reliable technology and has an appropriate 24 hour a day security system.

The main operations and maintenance offices and bases for the RBP are located at Wallumbilla and Brisbane as well as at the Condamine, Dalby and Gatton Compressor Stations. Compressor stations at Yuleba, Kogan and Oakey are also used as maintenance bases. Emergency equipment is stored at Wallumbilla, Dalby and Coopers Plains. The main operations and maintenance offices and bases for the Peat Lateral are located at Wallumbilla and Condamine.

2.1 Process Description

The RBP transports dry natural gas primarily to the domestic and industrial natural gas markets of Brisbane, Ipswich and Toowoomba. Natural gas is transferred into the pipeline by compressors at the Wallumbilla interconnection hub. Gas is also transferred from the Scotia and Woodroyd Coal Seam Methane Field though the Peat Lateral to the Peat Lateral outlet, near the MLV at Arubial.

The compressors (3 on each pipeline) increase the throughput of gas as required. The compressor stations located along the route consist of pig traps to capture and launch pigs through the pipeline for cleaning and inspection purposes.

The Pipeline is available to operate 24 hours per day, 7 days per week. Emergency repair works may also need to be carried out during these hours. However, normal operation and maintenance activities are undertaken during normal business hours wherever possible.

Permanent access roads are provided to all above ground facilities. The RBP and Peat Lateral pipeline route predominantly traverses major roads and agricultural land. Generally existing roads and access tracks are used to access the easement.

A summary of the key design specifications of the RBP is provided in Table 3.

Table 3 RBP Summary

Design Parameter	RBP	Parallel RBP	Peat Lateral	Scotia Extension	Swanbank Lateral
Nominal Bore	DN250	DN400	DN250	DN250	DN400
Length of pipeline (km)	396.8	405.5	110.7	10.7	8.75
Outside diameter	273.1mm	406.4mm	273.1mm	273.1mm	406.4mm
Wall Thickness	4.78-6.35mm	6.4-9.5mm	4.78-5.7mm	4.78-5.7mm	5.7-8.1mm + 9.5mm, 9.8mm
Pipe specification	API 5L X46	API 5L X60	API 5L X60	API 5L X60	API 5L X70,+X60
Maximum Allowable Operating Pressure (kPa)	7,136kPa	8000kPa	10,200 kPa	10,200 kPa	8000kPa
Year Completed	1969	1988	2001	2002	2002
Design Life	30 years		40 years	40 years	

2.2 Existing Environment

Various sections of the RBP easement were surveyed for landforms and vegetation prior to construction of the looping sections. The results of these surveys are detailed in the Initial Advice Statements prepared for the looping of the main pipeline (Document No: VQ0740-TR-D001).

There is currently no evidence of declared plant infestations along the pipeline easement. Environmental weeds that occur should be managed according to Section 5.3 Weed Management.

Cultural Heritage Management Plans (CHMP's) were also required prior to construction of the looping sections of the RBP and the Swanbank and Peat Laterals. As part of this, representatives of University of Queensland Archaeological Services Unit (UQASU), the Traditional Owners and AGL Construction undertook cultural heritage surveys along the pipeline corridor. CHMP's were agreed with the following traditional owners: Barunggum Daylight, Barunggum Warner, Dawson River Jiman, Iman, Jaggera, Jarowair, Mandandanji, Mandandanji Wambo, Turball, Ugurapul, Western Wakka Wakka, Yuggera and Yuggerabul peoples. Any works undertaken with the potential to impact upon these sites must be undertaken in accordance with Section 5.10 of this document. In total 136 Cultural Heritage Sites were identified along the RBP during construction of the looping sections of the pipeline.

The following sections summarise key environmental and heritage aspects identified during these surveys.

2.2.1 Roma to Brisbane Pipeline

The RBP route extends through the Yuleba State Forest, south east of Roma and through the cultivated land of the Darling Downs south east of Dalby. The route traverses down the Toowoomba Range, over the Minden Range and extends eastward through the Bremer River, to the west bank of the Moggill Ferry in the suburb of Riverview, Ipswich. The pipeline route traverses through cleared, undulating terrain dissected by drainage lines and gullies.

The RBP passes through a number of areas considered as 'Endangered' or 'Of Concern' Remnant Ecosystems (refer Table 4).

Table 4 Locations of Significant Vegetation Areas Adjacent to the RBP Easement

Start	Finish	Scientific Name	Protection Status
GMP 6.0	GMP 14.2		Yuleba State Forest
GMP 14.0	GMP 25.3	*Acacia harpophylla* and/or *Casuarina cristata* with *Geijera parviflora* and *Eremophila mithcellii*	"Endangered" Remnant Ecosystem (RE) 11.9.5
GMP 54	GMP 67	*Acacia harpophylla* and/or *Casuarina cristata* with *Geijera parviflora* and *Eremophila mithcellii*	"Endangered" RE 11.4.3
		Eucalyptus tereticornis or *Eucalyptus camaldulensis* fringing woodland	"Of concern" RE 11.3.25
GMP 86.05	GMP 100.5	*Dodonaea macrossanii*	Rare plant
GMP 106.27	GMP 117.6	*Eucalyptus populnea* woodland	"Of concern" RE 11.3.2

		Eucalyptus tereticornis or *Eucalyptus camaldulensis* fringing woodland	"Of concern" RE 11.3.25
GMP 137	GMP 147.24	*Eucalyptus populnea* open woodland	"Of concern" RE 11.3.2
GMP 217.55	GMP 236.97	*Acacia harpophylla* open forest with or without *Casuarina cristata* and vine thicket	"Endangered" RE 12.9/100.6
		Melaleuca tamariscina subsp *irbyana* low open forest or thicket	"Endangered' RE 12.9/10.11
Kruger Parade	Stuart Street	*Narrow leaved Gum , Pink Bloodwood, Swamp Box* and *Coast Banksia* remnant woodland on northern side of easement	"Endangered" RE 12.9/10.12
		Gum Topped Box, Spotted Gum and Pink Bloodwood on southern side of easement	"Endangered" RE 12.9/10.12
Sandy Creek	Cobalt Street	*Gum Topped Box, Pink Bloodwood, Brush Box* and *Forest Red Gum* remnant woodland west of Cobalt Street	"Endangered" RE 12.9/10.12
Cobalt Street	Centenary Highway	*Spotted Gum*, *Broad Leaved Red Ironbark* and *Grey Gum* remnant woodland on southern side of proposed pipeline route	"Endangered" RE 12.9/10.12
Centenary Highway	Browns Plains Road	*Scribbly Gum* and *Pink Bloodwood* remnant woodland along the northern and southern side of easement.	"Endangered" RE 12.9/10.12
Greenbank Training area:		Remnant woodland	Three endangered Regional ecosystems and one of concern Regional Ecosystem
		Plectranthus harbophyllus	Threatened Plant Species

Sources:
Initial Advice Statement for Looping of the Roma to Brisbane Pipeline Stage 4 (Egis Consulting, 1999);
Roma to Brisbane Natural Gas Pipeline CS Energy Project Looping Stage V Initial Advice Statement (Cardno MBK, 2001);
Roma to Brisbane Natural Gas Pipeline Looping Stage VI Initial Advice Statement (Cardno MBK, 2002)

2.2.2 Peat Lateral

The Peat Lateral pipeline route traverses sections of three provinces of the Brigalow Belt biogeographical region: Taroom Downs, Southern Downs, and Barakula. Vegetation along the pipeline route was identified by community and classified by regional ecosystem, conservation status and the presence of protected plants. The results of this investigation are outlined in *Environmental Management Plan AGL Peat Lateral Gas Pipeline Project* (Ecos Consulting (Aust). Pty Ltd, 2000).

The natural vegetation encountered along the route is predominantly eucalypt tall woodland/open woodland and cypress pine (*Callitris* spp.) open forest/woodland. The route for the pipeline moves through farmland adjacent to roads. Subsequently, much of the natural vegetation, which once occurred along the Peat Lateral route, has been cleared to

make way for agricultural pursuits. More than 50% of the proposed route is situated in cleared agricultural or pastoral land, mainly along the northern portion of the route. The remainder of the route passes through areas of natural vegetation, about 17% of which is situated within road reserves.

Protected vegetation under the *Nature Conservation Act 1992* has been identified within a 15 kilometre section of the Peat Lateral Pipeline route.

Along the Peat Lateral Pipeline a total of 22 Cultural Heritage Sites were identified including 6 artefact scatters of varying densities and at least 654 individual artefacts such as a grindstone and four scarred trees. Details of the 654 individual artefacts are contained within the individual UQASU Reports, which were submitted to the EPA.

2.2.3 Swanbank Lateral

The Swanbank Lateral runs in a north-easterly direction from Swanbank Power Station to Redbank Plains, traversing primarily freehold land. The topography of the area is characterised by undulating slopes, with some steep ridges. The primary geological formation of the region is shale, sandstone and conglomerate. There are three small creeks in the area, Six Mile, Goodna and Bundamba Creeks, which feed into the Bremer River.

A large proportion of the pipeline route has previously been disturbed (due to mining and industrial activity in the area) resulting in the area being dominated by regrowth vegetation.

The major vegetation associated with the study area is Open-forest, where eucalyptus trees are the dominant species with a grass or low shrubby understory. There are also some dispersed areas of Woodland, which follows the three creeks in the area. No rare flora species have been recorded within or adjacent to Swanbank Lateral Pipeline corridor

There is a mix of both European and Aboriginal cultural heritage in the area although there are no sites registered on the Queensland Heritage Register along the pipeline route. There are also sites in the region known to be culturally significant to Aboriginal groups, although there are no known significant sites along the pipeline route.

3 Environmental Management Framework

3.1 APA Environmental Management System

The APA Health, Safety & Environment (HSE) Policy governs the development of APA's HSE Management System and is contained in Appendix B. The policy and management system are key tools used to manage APA's environmental responsibilities, issues and risks. The system drives the development and implementation of comprehensive, documented management plans within APA Business Units. The relationships and linkages between this EMP and the APA's environmental management system framework are represented in Figure 2.

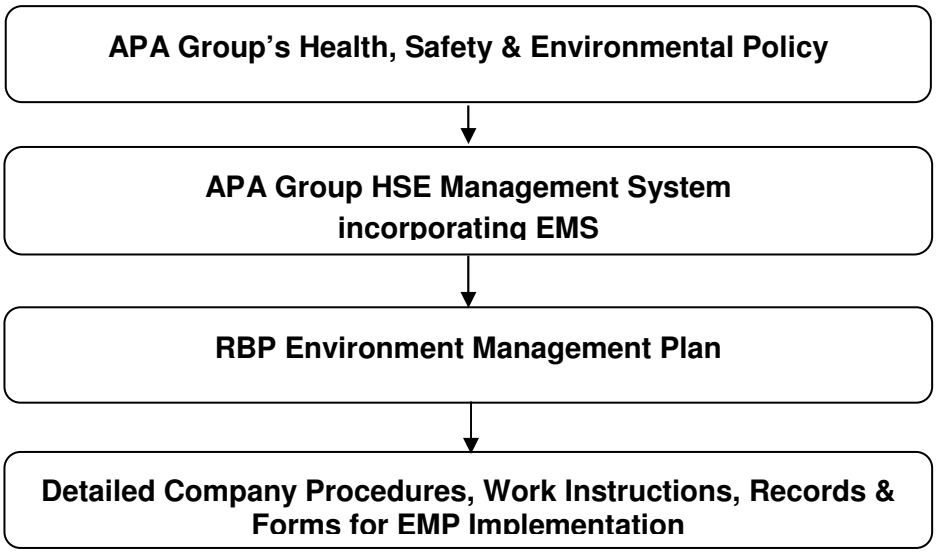

Figure 2: Linkage between RBP EMP and APA HSE Management System

The environmental standards and processes within the HSE Management System are aligned with the international standard AS/NZS ISO14001:2004. The HSE Management System has been established to ensure that environmental issues have been identified and managed throughout each construction and operation project.

Specifically, the HSE Management System Standards are comprised of 15 Standards:

1. Leadership, organisation responsibility & authority
2. Legislation compliance
3. Hazard & risk management
4. Planning, goals & targets
5. Health & hygiene
6. Training, awareness & competence
7. Communication & consultation
8. Incident management
9. Maintenance, Repair and Integrity Control
10. Design, construction & commissioning
11. Contractors, suppliers & visitors
12. Emergency preparedness
13. Community
14. Performance, measurement & reporting
15. Evaluation & Review

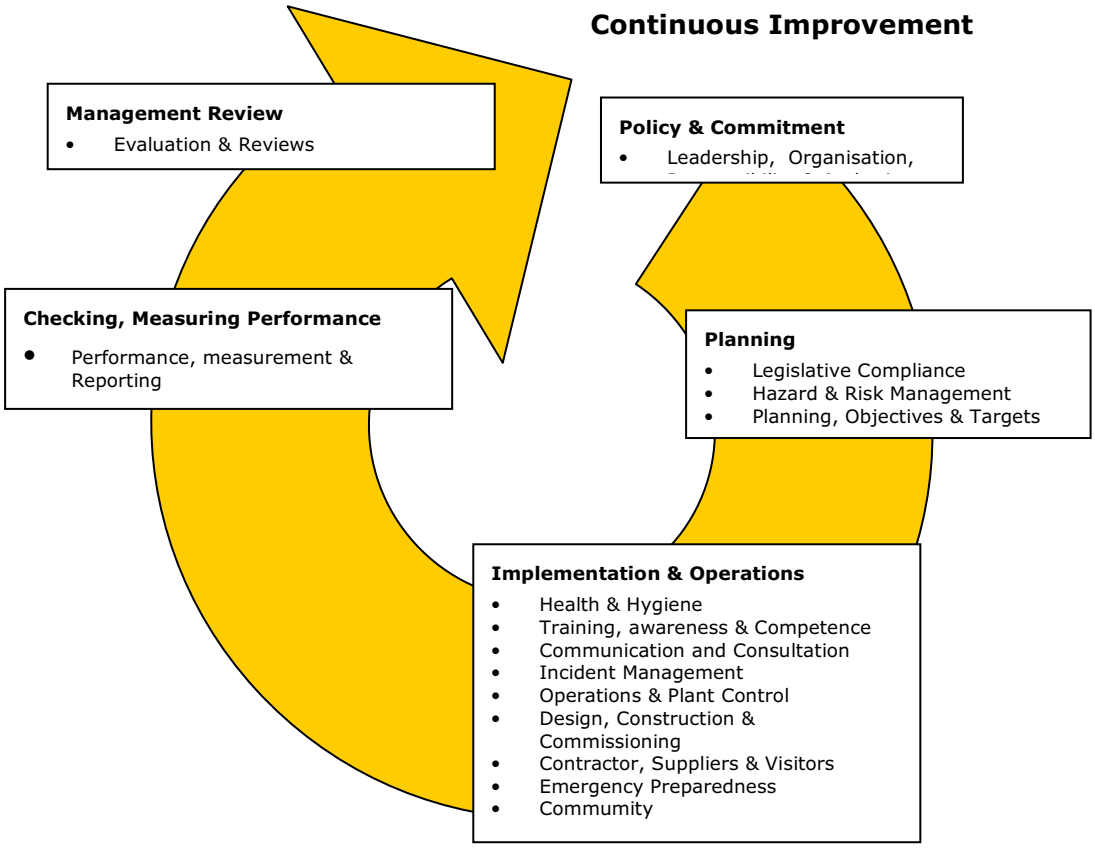

Figure 3: APA Group HSE Environmental Management System Standards

These principles are implemented and managed by a series of corporate and operational documents including: corporate policies, project planning strategies, environmental performance indicators, management plans, procedures and guidelines, and project specific documentation. Key documents and policies relevant to environmental management of the RBP are referred to and summarised below. This OEMP forms part of APA's environmental management framework and is in accordance with APA's values and commitments

In many cases, the detailed information on how site issues will be managed is included in specific APA Group procedures, guidelines and work instruction. These may include, but are not limited to:

- Safety and Operating Plan for all QLD facilities (POL 1-33)
- Queensland Transmission Policy Manual (POL 1-22)
- RBP Right of Way Surveillance (O&M 2-01)
- Excavation of Pipeline with Machinery (O&M 8-01)

- Easement Maintenance Procedure (MGT 6-11)
- Permit to Work Procedure (O&M 1-04)
- Easement Encroachment (MGT 6-06)
- Instructions for Work (MGT 6-02)
- Incident / Near Miss Reporting and Investigation (MGT 1-01)
- Queensland Emergency Response Plan (POL 1-07)
- Integrated Environmental Management System Abrasive Blasting - Integrated Authority No. WT0451 (POL 1-25)
- Abrasive Blast Cleaning (O&MG 3-18)
- Control of Hazardous Substances (MGT 1-21)
- Handling and disposal of asbestos gaskets (O&M 1-16)
- Continuous Improvement Overview (MGT 3-00)
- APA's Incident Notification, Reporting and Investigation Standard (the Standard

3.2 RBP Organisational Structure

The RBP organisational structure is shown in Figure 4. For more detailed information about the organisation structure and key responsibilities, refer to the Safety and Operating Plan for these pipelines (Pipeline Licence No.'s 02 and 74).

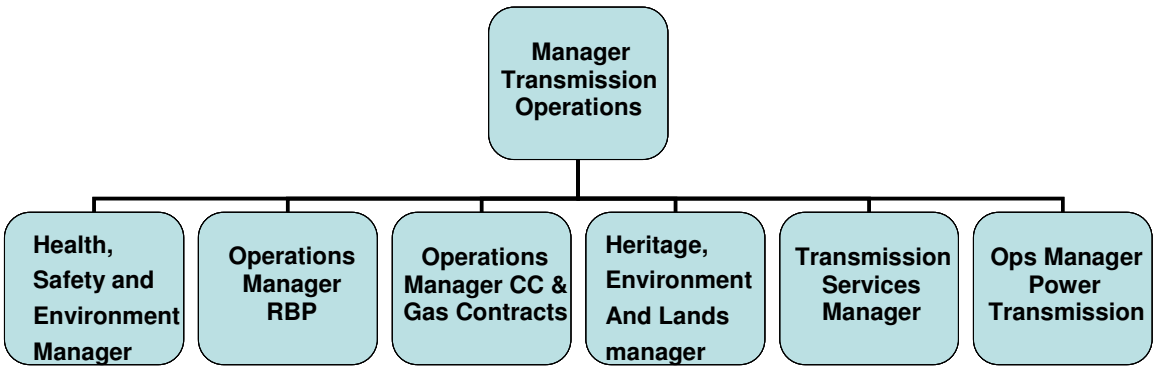

Figure 4: Transmission Qld Organisational Structure

3.3 Environmental Responsibilities

APA is responsible for the environmental management of the ongoing operation of the RBP. However, all personnel and contractors are accountable through conditions of employment or contracts. Each individual is responsible for ensuring that their work complies with the stated procedures and obligations of this EMP and APA's HSE Management System. Specific environmental responsibilities are assigned to particular positions as outlined in Table 5.

Table 5 Environmental Responsibilities for the RBP

Position Title	Environmental Responsibilities

Position Title	Environmental Responsibilities
Operations Manager RBP	▪ Implement the RBP EMP including inspections, work order follow-up actions and sign-offs. ▪ Ensure environmental procedures for maintenance of the ROW are followed and actions are completed as per the Works Program. ▪ Report environmental non-compliances with EMP and legislation to Manager Transmission Operations Qld. ▪ Management and upkeep of the RBP Training and Competency Register for field employees under their control. ▪ Timely training of all RBP employees under their control on environmental matters relating to this EMP. ▪ Ensure environmental incidents are reported to the EPA and input to the Incident Management System (IMS). ▪ Maintain liaison with Fire Authorities/Police and Emergency Services as required. ▪ Participate in Emergency Exercises and environmental risk assessments. ▪ Raise work orders for preventative and corrective maintenance following environmental inspection into RBP Work Order Management System. ▪ Raise work orders for preventative and corrective maintenance on environmental issues from aerial surveillance patrols and ROW inspections into the RBP Work Order Management System. ▪ Report on progress of environmental work orders to Manager Transmission Operations Qld with regard to meeting environmental obligations. ▪ Ensure annual completion of environmental works in the Works Program. ▪ Report significant environmental non-compliances with EMP and legislation to Manager Transmission Operations Qld and Technical Compliance Specialist. ▪ Participate in environmental training and emergency response exercises. ▪ Induct new employees in environmental matters.
Management Review Committee	▪ Ensure HSE Management System standards are maintained across the Company. ▪ Review external environmental audit results and apply to the HSE Management System. ▪ Review significant non-conformances, underlying issues and monitor completion of corrective and preventative actions as they impact on the HSE Management System. ▪ Review compliance to legislation, licences, standards and codes of practice.
Manager Transmission Operations Qld	▪ Implement the Company's Health, Safety & Environment Policy. ▪ Ensure responsibilities are adequately resourced. ▪ Liaise with government agencies regarding environmental issues at a working level. ▪ Reporting non-compliance to regulatory authorities in accordance with legislative requirements.

Position Title	Environmental Responsibilities
Transmission Services Manager	▪ Assist the Operations Manager to develop and integrate the Company's Emergency Response Plan. ▪ Co-ordinate externally provided emergency training and exercises.
Technical Compliance Officer	▪ Identification of all environmental legislative requirements and changes. ▪ Liaison with government regulatory authorities at a senior level regarding proposed updates of the EMP. ▪ Review and update of RBP EMP in accordance with Pipeline Licence conditions and maintaining consistency in environmental practices between transmission pipelines. ▪ Reporting to National Pollutant Inventory. ▪ Maintain Obligations Register. ▪ Review and update of RBP Environmental Aspects & Impacts Register in accordance with the Company's HSE Management System. ▪ Monitor the compliance of operational activities with regulatory requirements. ▪ Carry out and/or coordinate environmental audits including the compliance of operational activities to regulatory requirements with regards to environmental performance. ▪ Maintain a register of Non-conformances and Corrective Action Reports resulting from audits of the EMP by regulating authorities, internal audits and/or from incidents recorded on the RBP. ▪ Ensure EMP incorporates appropriate integrity of technical/engineering issues. ▪ Devise annual works program to meet environmental requirements.
Environmental Compliance Specialist	▪ Liaise with land management groups, community representatives, local state and regulatory authorities on environmental issues (e.g. erosion, weeds) as required; ▪ Identify and maintain currency with relevant industry best practice on environmental management and input appropriate information for the efficient and effective operation of the RBP OEMP ; ▪ Conduct training related to environmental issues to RBP employees; ▪ Collation of environmental data for reporting to Manager HR & HSE; ▪ Develop and maintain operational procedures for compliance with this EMP.

Position Title	Environmental Responsibilities
HSE Advisor	▪ Coordinate and assist Operations Managers in the implementation of the requirements of the EMP. ▪ Manage review and update of the EMP. ▪ Monitor compliance with the EMP and ensure Manager Transmission Operations is informed of non-conformances. ▪ Ensure environmental conditions in the EMP are reflected in the Emergency Response Plan. ▪ Record greenhouse gas emissions and report against National Pollution Inventory (NPI). ▪ Ensure operational input into the HSE Management Systems and specifications including this management plan. ▪ In conjunction with Operations Manager RBP, develop and coordinate a structured inspection and monitoring program. ▪ Maintain Material Safety Data Sheets (MSDS) and Chemical inventory for RBP.
Lands Manager	▪ Liaise with land management groups, community representatives, local state and regulatory authorities on land management issues (e.g. access, surveillance) as required. ▪ Assist in monitoring third party activity on RBP ROW. ▪ Report on, and address as required, existing and emerging Cultural Heritage issues. ▪ Identify and maintain currency with relevant land management industry best practice. ▪ Conduct training related to land issues.
Specialist Environmental Advisers	▪ Specialist environmental advisers shall be employed from time to time to carry out specific tasks such as weed control, environmental audits and noise and air monitoring as determined by consultation between Operations Manager, RBP and the Technical Compliance Specialist.
Pipeline Operators / Technicians	▪ Maintain the Right of Way in accordance with the stated requirements of the RBP EMP and as directed by the delivery Manager RBP. ▪ Undertake Pipeline ROW Patrols regularly in accordance with environmental work orders. ▪ Responsible for ensuring that all works under their control are carried out in accordance with this EMP Conduct Station checks on a regular basis. ▪ Sign off completed environmental work orders in accordance with RBP Work Order Management System. ▪ Liaise and/or undertake awareness programs on environmental matters with landholders, councils, public authorities, emergency services and/or contractors in their designated ROW area of responsibility. ▪ Maintain Material Safety Data Sheets (MSDS) and Chemical inventory for RBP. ▪ Maintain licences under the Agricultural Chemicals Distribution Control Act. ▪ Participate in environmental training and emergency response exercises. ▪ Participate in risk assessment programs in their designated ROW area of responsibility and assist in other ROW areas.

3.4 Training and Induction

Operations personnel, contractors and sub-contractors (regardless of company position or work duties) shall attend HSE inductions and training programs prior to commencing work. Qualified staff will conduct inductions to ensure that all personnel are aware of environmental responsibilities and have obtained a basis to fulfil such responsibilities.

HSE inductions will cover general environmental management issues, including:

- Role of EMP
- Personal responsibilities
- Water quality protection
- Waste management
- Storage and handling of fuels, oils and chemicals
- Spill prevention and response
- Incident / non-conformance reporting procedures

3.5 Risk Management

As part of its HSE Management System, APA has developed risk management guidelines and procedures. This framework identifies techniques for the evaluation of risk and provides a description of risk criteria and metrics to allocate risk ratings. These guidelines provide guidance for employees to assess and identify financial, environmental, community and health & safety hazards. In the context of environmental factors, the risk assessment process evaluates the likelihood that adverse environmental impacts may occur as a result of exposure to one or more stressors (US EPA 1998).

APA's risk methodology was developed in accordance with the principles and guidelines contained in:

- AS/NZS ISO 14001:2004 Environmental Management Systems- Specification with guidance for use
- AS2885.3-2001 Pipelines - Gas and liquid petroleum – Operation and maintenance
- AS/NZS 4360:2004 Risk Management

Environmental risks are assessed by:

- Identifying the environmental aspects, i.e. those activities carried out on the RBP that interact with the environment
- Determining the severity and frequency of each aspect
- Assessing risk according to severity and frequency, thereby identifying 'Significant Aspects'
- Identifying actions or treatments to further mitigate the risk for significant aspects to reduce risks to a level 'as low as reasonably practicable' (ALARP)
- Allocating 'Responsibility' to manage 'Significant Aspects'

Environmental aspects with a risk deemed 'extreme', 'very high' or 'high' have specific programs in place which are monitored at management level or higher to reduce risk. An example of a management-level program would be an EMP or an Environmental Improvement Plan (EIP) which control the implementation of mitigation measures and thus control risk minimisation. Where the risk cannot be reduced to a tolerable level then the

management team must modify the project or operation's objective or obtain written approval from the Manager, Transmission Operations QLD to accept the risk.

3.5.1 Risk Assessment Methodology

APA's risk assessment follows the methodology outlined in Figure 5. The definitions of Consequence, Likelihood and Levels of Risk are found in Appendix C.

Each of the RBP aspects that have the potential to impact on the environment are summarised in Table 8 to Table 22 within Chapter 5. Their risks have also been assessed, taking into account control measures to be implemented and persons responsible for implementation with each impact having a Likelihood, Consequence and overall Risk rating applied.

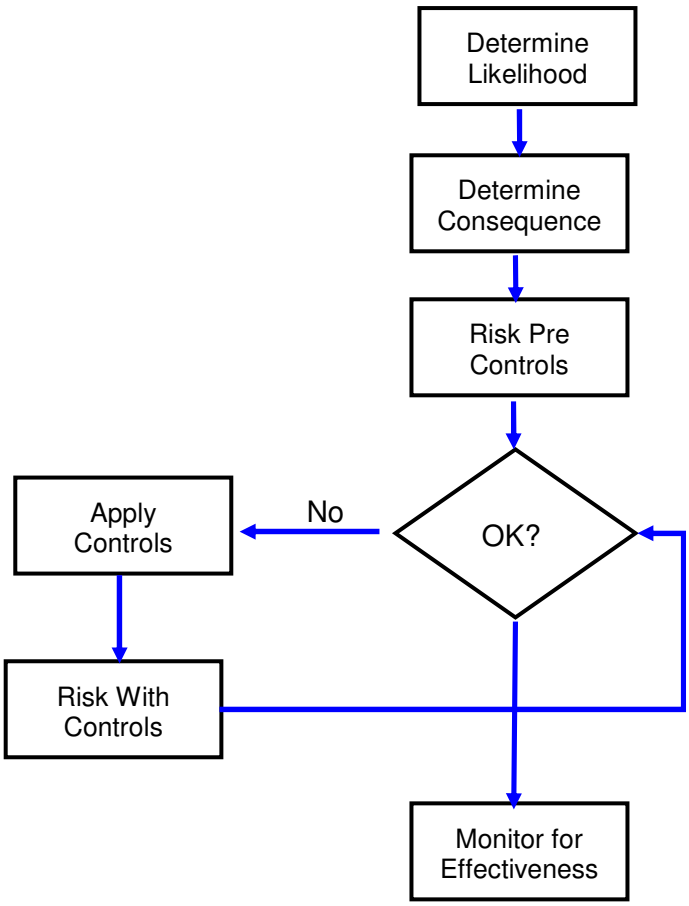

Figure 5: Risk Assessment Flowchart

3.6 Emergency Preparedness and Response

It is recognised that emergencies of the RBP may lead to serious, long term environmental damage. Environmental emergencies may include (but is not limited to):

- Fire/explosion
- Gas leaks from pipeline
- Chemical spills

- Natural events (bushfires, flooding, earth slippage)
- Third party damage.

3.6.1 Emergency Response Plan (POL 1-07)

In meeting the policy objectives described above, the Queensland Transmission business unit of the APA Group, of which RBP is a part, has developed an Emergency Response Plan. (Emergency Response Plan POL 1-07).

The Emergency Response Plan for the APA Group is maintained to provide an efficient, safe, effective co-ordinated operational plan to deal with the emergency and to maintain and restore normal business operations as quickly and safely as possible. It is the responsibility of each of the Operations Managers to ensure that their staff is conversant with the emergency response requirements and to ensure that training sessions are attended.

All incidents and situations with the potential to develop into an emergency shall be reported to Pipeline Control in the first instance. An emergency is defined as: any incident or occurrence, not forming part of the normal operations and maintenance of the pipeline and its facilities, which causes or has the potential to cause a reduction or cessation of gas supply to one or more delivery points and/or has potential to cause significant harm to persons, property, or the environment (refer Table 6).

The Qld Emergency Response Plan comprises the following:

- Provides a framework for the management of emergencies for Transmission assets in Queensland.
- Defines the emergency organisation to be established for different levels of emergency and defines the roles, responsibilities and participants in the emergency response organisation.
- Provides guidelines for response to various types of emergency situations which may arise.
- Contains lists of the resources and equipment to be used in the emergency response and initial repairs.
- Provides a basis for training requirements for emergency response preparedness Contact

This Emergency Response Management Plan is designed to provide a framework to respond to and manage the following types of emergencies**.**

Table 6 Emergency Response Classification

Number	Description
1	Serious Personal Injury (includes vehicles)
2	Missing personnel (Refer Travel Policy)
3	Fire/Explosion
4	Major Leak
5	Minor Leak OR Damage -no leak
6	Equipment Malfunction
7	Reported Hit
8	Environmental incident – (serious)

9	Bomb Threat/Terrorist action
10	Causing Property Damage

These codes are used on the emergency forms to assist with defining actions associated with each type of emergency. It is possible that more than one type is applicable, for example, there may by a case where both 3 and 1 are ticked on the initial assessment report.

3.6.1.1 Training and Simulations

All personnel are required to undergo emergency response training according to their individual training plans.

Emergency response training for all personnel commences with a generic "Emergency Response Training" module that must be completed within twelve months of commencing work. Thereafter, all personnel must complete emergency response refresher training annually. The training required will depend on the designated role of the employee and will be set out as per their individual training plan developed by their leader.

The regular use of simulated exercises is a key resource for emergency training. Areas addressed through this type of training are:

- Individual response to the emergency, their reporting techniques, review of personal protective equipment, condition and evacuation techniques.
- Supervisory actions through controlling and monitoring the emergency situation, handling issues that arise from the emergency and implementing control procedures.
- Team response through controlling and handling repair and isolating procedures.
- Control centre actions and response through communications and supply notifications.
- All clear and reinstatement procedures.

4 Legislative Framework and Requirements

This EMP aims to ensure that all operation and maintenance activities are performed in a manner consistent with applicable legislation, regulations and codes of industry practice. The following sections outline the key Acts and codes relevant to pipeline operations within the Commonwealth (Section 4.1), Queensland (Section 4.2) and Australian Standards and industry codes (Section 4.3) as well as the specific pipeline licence requirements for the RBP.

4.1 Commonwealth Legislation

The relevant Commonwealth legislation includes, but is not limited to the following:

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
- *Australian Heritage Commission Act 1975*
- *Environmental Protection and Biodiversity Conservation Act 1999*
- *Ozone Protection Act 1989*

4.2 State Legislation

The relevant Queensland legislation includes, but is not limited to the following:

- *Aboriginal Cultural Heritage Act 2003*
- *Aboriginal Lands Act 1991*
- *Agricultural and Veterinary Chemicals (Queensland) Act 1994*
- *Agricultural Chemicals Distribution Control Act 1966*
- *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987 (now superseded by the Aboriginal Cultural Heritage Act 2003)*
- *Dangerous Goods Safety Management Act 2001*
- *Environmental Protection (Waste Management) Regulation 2000*
- *Environmental Protection Act 1994*
- *Environmental Protection Policies for Air 1997, Noise 1997, Water 1997 and Waste Management 2000*
- *Fire and Rescue Service Act 1990*
- *Fisheries Act 1994.*
- *Forestry Act 1959*
- *Integrated Planning Act 1997.*
- *Land Act 1994*
- *Land Protection (Pest and Stock Route Management) Act 2003*
- *Native Title (Queensland) Act 1993.*
- *Nature Conservation Act 1992.*
- *Petroleum (Submerged Lands) Act 1982*
- *Petroleum and Gas (Production and Safety) Act 2004*
- *Petroleum and Gas (Production and Safety) Regulation 2004*
- *Plant Protection Act 1989*
- *Queensland Heritage Act 1992*
- *Queensland Workplace Health and Safety Act 1995*
- *Soil Conservation Act 1986*
- *Transport Infrastructure Act 1994*
- *Vegetation Management Act 1999*
- *Water Act 2000*

4.3 Australian Standards and Industry Codes

In addition to legislative requirements, this EMP has also given consideration to relevant Australian and Industry standards, including:

- AS 2885.3 - 2001: Pipelines – Gas and Liquid Petroleum Part 3: Operation and Maintenance
- AS 2885.5 - 2002: Pipelines – Gas and Liquid Petroleum Part 5: Field Pressure Testing
- AS1678 Emergency Procedure Guides
- AS2809 Road Tank Vehicles for Dangerous Goods
- AS2931 Selection and Use of Emergency Procedure Guides for the Transport of Dangerous Goods
- AS 1940 Storage and Handling of Hazardous Substances
- ANZECC/ ARMCANZ. 2000 Australian and New Zealand Guidelines for Fresh and Marine Water Quality
- Australian Code for the Transport of Dangerous Goods by Road and Rail
- Australian Petroleum Exploration Association (APEA) Code of Environmental Practice – Onshore
- Australian Petroleum Production and Exploration Association (APPEA) Code of Environmental Practice, 1996
- Australian Pipeline Industry Association (APIA) Code of Environmental Practice Onshore Pipelines 2005 Rev 1
- National Code of for the Control of Workplace Hazardous Substances [NOHSC: 2007(1994)]
- National Code of Practice for the Labelling of Workplace Substances [NOHSC: 2012(1994)]
- National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC: 2011(1994)]
- National Environment Protection Measures – National Pollutant Inventory

4.4 Licence Requirements

The RBP and Peat Lateral are operated under Pipeline Licence No.2 and No. 74, respectively (refer Table 7). The licences were issued under the Petroleum Act 1923, and Petroleum and Gas (Production and Safety) Act 2004.

The individual licences have sections which refer specifically to requirements for environmental management measures. These requirements have been incorporated into the environmental management strategies outlined in Chapter 5.

Table 7 Roma to Brisbane Pipeline System Licence Information

Pipeline Licence	Asset	Date of Issue	Issued to
PPL 02	• Original DN250 RBP • DN300/DN200 extension to Gibson Island • DN400 RBP looping running parallel to the original DN250 RBP including the section between Collingwood Park and Ellengrove • Swanbank Lateral.	21st December 1967 (currently an open licence)	Previously Associated Pipelines Limited (APL), now APT Petroleum Pipelines Limited.
PPL 74	• Scotia/Woodroyd to Roma-Brisbane Pipeline including the DN250 Peat Lateral and Scotia extension	3rd September 2000	Previously APT Petroleum Pipelines Limited and Interstate Pipelines Pty Ltd now APT Petroleum Pipelines Limited.

5 Environmental Management Strategies

This chapter discusses the potential aspects and impacts posed to the environment by the operation and maintenance of the RBP. Management strategies that will be implemented to reduce potential impacts to an acceptable level of risk are also outlined.

The key activities that may have an impact on the environment are:

- Easement access
- Soil and ground stability
- Vegetation and weed management
- Control of diseases
- Earthworks and land use
- Bushfire prevention
- Air emissions
- Noise emissions
- Heritage – natural and built environments
- Watercourse management
- Management of pipeline facilities
- Waste management
- Pipeline spill prevention
- Fuel and chemical storage
- Decommissioning and restoration

These activities are also represented in the Australian Pipeline Industry Association's Code of Environmental Practice – Onshore Pipelines (Oct 2005). Each of these activities is considered in more detail in the following sections.

The management strategies outlined have also been cross-checked against recommendations made during the 2006 Environmental Audit Report.

5.1 Easement Access

Access to the easement is required for surveillance and maintenance activities that aim to protect the integrity of:

- The pipelines,
- The condition of the local environment, and/or
- Third party property.

Surveillance is the most common activity along the easement. The easement is inspected daily in the metropolitan area, decreasing to fortnightly at the western end of the pipeline. Contracted aircraft and helicopters are utilised to conduct aerial patrols on the Peat Lateral pipeline on a regular basis or after an extreme weather event.

Access to the easement is also required to carry out other preventative, risk specific, and corrective maintenance activities such as erosion control works, vegetation control works, coating defect repairs and cathodic protection monitoring. APA uses existing public roads and farm tracks to carry out these works, where possible. Permanent access is usually maintained to the above ground facilities.

The key environmental impacts resulting from easement access requirements are:

- Disturbance to native vegetation, wildlife and heritage areas
- Damage to agricultural production or other land uses
- Soil compaction, erosion or release of sediment to land and water

Table 8 shows the specific management measures to be implemented to mitigate environmental impacts through easement access activities, as well as the responsibilities for those activities. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Moderate* for impacts related to soils compaction, erosion and release of sediment to land and water. The risk assessment process identified all other impacts as having a *Low* risk.

Table 8 Easement Access Management

Related Documents:

Targets and Objectives of Management

- No unapproved disturbance to native flora, fauna or Heritage items to minimize disturbance;
- No complaints relating to access creating impacts on residents, landowners and third parties;
- No complaints relating to soil erosion or sedimentation to minimize impacts on soil and water.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Maintaining permanent access along the easement	8-1 Disturbance to native vegetation, wildlife and heritage areas (*e.g.,* vehicular movement, track clearing and repairs) 8-2 Damage to agricultural production or other land uses 8-3 Temporary disruption to residents, landowners and third parties 8-4 Soil compaction, erosion or release of sediment to land and water	Limit direct physical access for activities essential to ensure the continued safe operation and protection of the local environment.	All	**8-1** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **8-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **8-3** Likelihood – *Possible (3)* Consequence – Important *(1)* Risk – **MODERATE (3)** **8-4** Likelihood – *Rare (1)* Consequence – *Important (1)* Risk – **LOW (1)**
		Do not allow public access along corridor unless that right already exists. Public access shall be controlled by measures such as disguise, physical barriers and signs.	Pipeline Technicians / Operations Manager	
		Develop an Environmental Impact Assessment and EMP for new access tracks.	Operations Manager	
		Use permanent access tracks to access above ground facilities.	All	
		Maintain access tracks to the minimum practicable width.	Pipeline Technicians	
		Manage vegetation and ground stability in accordance with EMP for continued access and safe navigation.	Pipeline Technicians	
		Use existing farm tracks and public roads wherever possible. Obtain landowner permission to utilise private tracks 24 hours before access is required or by ongoing arrangement.	All	
		Erect barrier fencing around any unattended excavations and use appropriate sediment control devices where necessary.	Pipeline Technicians / Project Managers	
		Minimise landowner access restrictions around properties. Consult with landowners regarding restrictions.	Pipeline Technicians / Project Managers	
		Consult landowners regarding timing of activities when activities are undertaken, near to residences. However, unlimited access is required during an emergency.	All	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Maintaining permanent access along the easement	8-1 Disturbance to native vegetation, wildlife and heritage areas (*e.g.,* vehicular movement, track clearing and repairs) 8-2 Damage to agricultural production or other land uses 8-3 Temporary disruption to residents, landowners and third parties 8-4 Soil compaction, erosion or release of sediment to land and water	Restrict vehicle access in sensitive environments such as wetlands, water crossings and areas under rehabilitation/restoration.	All	
		Avoid or limit vehicle access in eroded, unstable areas and areas containing soils with high erosion potential, particularly after excessive rain.	All	
		Avoid or limit vehicle access in areas that have been recently revegetated.	All	
		Manage the spread of weeds by controlling access and in accordance with the EMP.	All	
		Monitor and record access related impacts as part of routine surveillance and record into Incident Management System.	Pipeline Technicians / Operations Manager	
		Minimise potential disruptions to access of adjacent sensitive environments and residences.	Pipeline Technicians / Operations Manager	
		Install, maintain and reinstate property fences and gates to at least pre-existing conditions.	All	
		Consult with relevant utility authorities to identify other potentially affected infrastructure.	Pipeline Technicians / Operations Manager	
		Advise other utility authorities of works adjacent to their easements in the event that access to infrastructure could be interrupted.	Pipeline Technicians / Operations Manager	

5.2 Soil and Ground Stability

The majority of the easement is on flat or undulating land (85%) which limits the likelihood of soil and ground stability issues occurring. However routine surveillance is used to identify and monitor any trench subsidence and erosion issues along the easement. Susceptible areas, such as steep slopes and watercourses are given specific attention during surveillance activities. Previous audits of the pipeline have also recorded areas of erosion along the route which have required remedial action.

The potential development of new soil and ground stability issues during ground surveillance and routine maintenance activities is controlled by limiting access to the pipeline easement. In addition, all routine and non-routine maintenance activities must comply with APA procedures including the APT Excavation of Pipeline with Machinery and Easement Maintenance procedures (O&M 8-01 & MGT 6-11 respectively). Any soil and ground stability issues are also considered within the Job Hazard Analysis for the activity. Surveillance and maintenance activities are identified and monitored by the Works Management System (WMS).

Soil and ground stability issues that do develop are addressed during easement maintenance.

The key environmental impacts to soil and ground stability are:

- Damage to agricultural production or other land uses
- Damage to native vegetation and wildlife habitat
- Soil erosion, sedimentation (land and water) and land subsidence

Table 9 outlines the key management measures that need to be employed to mitigate soil and ground stability impacts, as well as the responsibilities for those activities. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Moderate* for two of the three impacts identified.

Table 9 Soil and Ground Stability Management

Related Documents:

Targets and Objectives of Management Plan

- No significant erosion impacting the easement to minimise the potential for soil erosion;
- Sediment and erosion controls in place and maintained to adequately prevent or control sediment release to land and water;
- No unapproved vegetation clearance or disturbance of cultural and heritage areas to avoid unacceptable damage to native vegetation or wildlife habitats and areas of cultural and heritage significance;
- No landholder / third party complaints relating to restriction or loss of land use to prevent damage to other legitimate land uses;
- No exposure of buried pipeline due to erosion to minimise the risk of the exposure of buried pipelines;
- Any reported subsidence issues repaired as soon as practicable to adequately control subsidence of the pipeline trench.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Soil erosion, sediment release to land and water, subsidence of pipeline trench from: • Excavation works during scheduled maintenance or emergency response. • Patrols and inspections. • Vegetation control activities. • Management of storm water runoff and soil protection measures at facilities.	**9-1** Soil erosion, sediment release to land and water, subsidence of pipeline trench. **9-2** Damage to agricultural production or other land uses). **9-3** Damage to native vegetation and wildlife	Identify and monitor potential soil and ground stability problems during routine surveillance and in accordance with EMP.	Operations Manager / Pipeline Technicians & Surveillance Crew	**9-1** Likelihood – *Possible* (3) Consequence – *Important* (1) Risk – **MODERATE (3)** **9-2** Likelihood – *Unlikely* (2) Consequence – *Important* (1) Risk – **MODERATE (2)** **9-3** Likelihood – *Unlikely* (2) Consequence – *Minor* (0.5) Risk – **LOW (1)**
		Provide suitable controls to protect from erosion and promote ground stability particularly in areas that have been revegetated, rehabilitated or restored.	Pipeline Technicians / Operations Manager / & Project Managers	
		Undertake erosion control, management strategies and remedial action in accordance with appropriate codes and industry practice.	Pipeline Technicians / Operations Manager / & Project Managers	
		Monitor the stability of restored or rehabilitated surfaces during routine surveillance.	Pipeline Technicians / Operations Managers	
		Revegetate areas of poor ground cover, eroded / unstable areas and disturbed areas in accordance with the EMP.	All	
		Limit access to where required to reduce erosion risk and promote ground stability.	All	
		Inspect and maintain all erosion control structures.	Pipeline Technicians / Operations Manager / & Project Managers	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Soil erosion, sediment release to land and water, subsidence of pipeline trench from: • Excavation works during scheduled maintenance or emergency response. • Patrols and inspections. • Vegetation control activities. • Management of storm water runoff and soil protection measures at facilities.		Consider potential soil erosion and ground instability during EIA and Job Hazard Analyses.	Operations Manager / & Project Managers	
		Record any subsidence on Third Party assets within the easement and refer to the Third Party for repair as soon as practicable.	Pipeline Technicians / Operations Manager	
		Maintain water crossings in a stable condition.	Pipeline Technicians / Operations Manager	
		Consult QLD Department of Natural Resources and Mines prior to placing fill in or excavations in any watercourse.	Pipeline Technicians / Surveillance Crew / Operations Manager	
		Consult QLD Department of Natural Resources and Mines prior to inferring with the flow of water.	All	
		Monitor the pipeline corridor for erosion and instability issues associated with unauthorised use of the easement, especially around Brown Plains Road in the Brisbane metropolitan area.	All	
		Report all incidents where erosion and sedimentation have resulted in environmental degradation.	Manager Pipeline Operations	
		Manage water in accordance with EMP to reduce sedimentation in watercourses.	All	
		Review checklist used during surveillance activities with respect to ground stability identification and monitoring.	Pipeline Technicians	

5.3 Vegetation Management

Clearing of trees and tall shrubs is required along the easement so as to comply with the requirements of AS2885.3. This code dictates that there should be a clear line of sight between pipeline marker signs and that the pipeline coating should be protected from damage by roots.

The majority of the RBP easement lies within pastoral lands (70 %) and generally in remote, arid areas with inherently poor vegetation cover. As a result, clearing has minimal impacts upon native vegetation. Even so, clearing of the easement is only undertaken on an as-needed basis, which is highly dependant upon rainfall in particular areas. This enables the existing vegetation along the easement to continue to protect the RBP against the impacts of erosion and weed growth as well as providing habitat for native fauna.

The key environmental impacts to vegetation along the pipeline include:

- The spread of weeds along the easement and the introduction of new weed species to the easement
- Excessive vegetation re-growth
- Competition from weed species leading to displacement of agricultural crops or native flora
- Poor vegetation cover that may lead to erosion or loss of agricultural capacity
- Removal of habitat

Routine ground surveillance identify and monitor vegetation and weed management issues. Areas of poor vegetation cover, excessive vegetation cover and areas of excessive weed growth are targeted during this surveillance.

Table 10 shows the specific management measures to be implemented to identify and monitor any vegetation and weed issues. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Moderate* for impacts resulting from poor vegetation cover leading to erosion and loss of agricultural capacity. All other assessed criteria were recorded as *Low*.

Table 10 Vegetation Management

Related Documents: APIA Code Part A Section 4.1.8 Clean-up and Restoration, Lands Protection Act 2002, Agricultural Chemicals Distribution Control Act and Regulation, APIA, Code of Environmental Practice.

Targets and Objectives of Management Plan

- No evidence of erosion or sedimentation due to a lack of vegetation cover that is inconsistent with the surrounding landscape to promote and maintain stable vegetation cover;
- No unauthorized vegetation clearing (*i.e.,* outside of easement) or disturbance of cultural or heritage areas to minimize impacts to native flora and fauna and areas of cultural and heritage significance;
- All erosion control measures and access tracks maintained to minimize soil erosion and sedimentation;
- No landholder complaints relating to loss of agricultural production;
- No evidence of weeds being of a higher density within the easement than the surrounding landscape to enable prompt identification and control of weeds to eliminate noxious weed species;
- No evidence of new weed species being recorded on the easement to minimize the introduction and spreading of weeds;
- No landholder or third party complaints relating to visual impacts of the pipeline or associated facilities to reduce visual impacts.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Maintaining permanent access along the easement	10-1 Poor vegetation cover that may lead to erosion or loss of agricultural capacity 10-2 Excessive vegetation re-growth especially of weeds 10-3 Removal of key vegetation from habitat areas 10-4 Introduction and competition from weed species leading to displacement of agricultural crops or native flora	Use routine surveillance activities to identify and monitor potential areas of poor or excessive vegetation cover and for the presence of weeds.	All	**10-1** Likelihood – *Unlikely (2)* Consequence – *Important (1)* Risk – **MODERATE (2)** **10-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **10-3** Likelihood – *Unlikely (2)* Consequence – *Important (1)* Moderate – **(2)** **10-4** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Revegetate bare or eroded areas in accordance with appropriate industry standards. Select plant species appropriate to the local area and in consultation with landowners.	Pipeline Technicians / Operations Managers	
		Promote ground stability in revegetated areas in revegetated areas in accordance with EMP.	Pipeline Technicians / Operations Managers	
		Monitor success of revegetation activities during routine surveillance.	All	
		Limit vehicle movements in recently revegetated areas, where possible in accordance with EMP.	All	
		Reseed cropping areas affected by maintenance works, where required by the landholder.	Pipeline Technicians/ Project Manager	
		Maintain minimum ground cover levels (*e.g.,* 150-300mm) to promote soil and ground stability.	Pipeline Technicians	
		Remove regrowth trees within 3m of either side of the pipe centreline at the seedling or sapling stage to ensure the roots do not create a safety risk to the pipeline.	Pipeline Technicians/ Operations Manager	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Maintaining permanent access along the easement	10-1 Poor vegetation cover that may lead to erosion or loss of agricultural capacity 10-2 Excessive vegetation re-growth especially of weeds 10-3 Competition from weed species leading to displacement of agricultural crops or native flora	Trim or slash vegetation along access tracks.	Pipeline Technicians	
		Reduce damage to vegetation outside the easement unless unavoidable and only with landowner consent & approval of regulatory authorities where required.	All	
		Allow native ground covers & shrubs to regenerate and then maintain them by slashing.	Pipeline Technicians	
		Consult with the QLD Department of Natural Resources (DNR) and Mines prior to the destruction of vegetation in a watercourse, lake or spring.	Pipeline Technicians/ Operations Manager	
		EPA Guidelines provide that vegetation within 50 m of a watercourse is protected as buffer zones. However vegetation clearance that ensures bank stability is acceptable.	All	
		Consult the local DNR (Forestry) office in the event of tree removal including regrowth from the Yuleba State Forest.	Operations Manager	
		Develop a weed control program in accordance with the APIA Code of Environmental Practice.	Supplier / Pipeline Technicians / Project Managers	
		Monitor weed growth along the easement during routine surveillance activities. Manage weeds in accordance with relevant regulatory requirements.	Pipeline Technicians / Operations Managers/ Project Managers	
		Train pipeline technicians in weed identification.	Pipeline Technicians / Operations Managers	

5.4 Weed Management

The operation and maintenance activities for the pipeline have the potential to spread environmental weeds into ecosystems that are currently in natural condition. The key environmental impacts relating from weed infestation include:

- Competition from weed species and displacement of agricultural crops or native flora
- Reduced primary industry productivity and produce quality
- Impacts to sensitive environments adjacent to weed infected areas
- Loss of visual amenity

Weeds have the potential to adversely alter ecosystem function, reduce primary industry productivity and profitability, and seriously limit the long-term sustainability of agricultural and natural resources. This potential is controlled by limiting access to the pipeline easement as described in Section 5.1. Of particular significance to landholders will be the potential to introduce and spread declared and other agricultural weeds. Introduction and spread of declared weeds can render land less productive and in some cases have serious health impacts on livestock (and on people in the case of Parthenium).

Routine aerial and vehicle surveillance identify and monitor vegetation and weed management issues. Areas of poor vegetation cover, excessive vegetation cover and areas of excessive weed growth are targeted during this surveillance. The 2006 audit of the pipeline route observed environmental weeds at various locations along the ROW, primarily along the Ipswich to Withcott sections of the line.

Site specific management measures need to be implemented to identify and monitor any vegetation and weed issues. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Moderate* for impacts to primary industry productivity. The other impacts assessed had a risk rating of *Low*.

Table 11 Weed Management

Related Documents: APIA Code Part A Section 5.1.4 Weed Management, Lands Protection Act 2002, Agricultural Chemicals Distribution Control Act and Regulation, APIA, Code of Environmental Practice.

Targets and Objectives of Management

- To avoid impacts to primary industries;
- No evidence of weeds being of a higher density within the easement than the surrounding landscape to enable prompt identification and control of weeds to eliminate noxious weed species;
- No evidence of new weed species being recorded on the easement to minimize the introduction and spreading of weeds;
- No landholder or third party complaints relating to visual impacts of the pipeline or associated facilities to reduce visual impacts.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Maintaining permanent access along the easement	11-1 Reduced primary industry productivity and produce quality 11-2 Excessive vegetation re-growth especially of weeds 11-3 Introduction and competition from weed species leading to displacement of agricultural crops or native flora	Use routine surveillance activities to identify and monitor potential areas of poor or excessive vegetation cover and for the presence of weeds.	All	**11-1** Likelihood – *Unlikely (2)* Consequence – *Important (1)* Risk – **MODERATE (2)** **11-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **11-3** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Limit vehicle movements in recently revegetated areas, where possible in accordance with EMP.	Pipeline Technicians / Operations Managers	
		Wash all vehicles including excavating machinery prior to arrival on site and get a pipeline technician to inspect prior to unloading.	Pipeline Technicians / Operations Managers	
		Undertake machinery wash downs in accordance with guidelines under the Lands Protection Act 2002.	All	
		Consult with landowners to determine if machines used in slashing are to be washed down prior to use on their property. Record consultation activities.	All	
		Wash slashing equipment before moving from a known weed infestation area to a weed free area. Record inspections and washdowns.	Pipeline Technicians/ Project Manager	
		Monitor weed growth along the easement during routine surveillance activities. Manage weeds in accordance with relevant regulatory requirements.	Pipeline Technicians	
		Train pipeline technicians in weed identification.	Pipeline Technicians/ Operations Manager	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Maintaining permanent access along the easement		Supervise maintenance contractors and ensure they are aware of obligations and responsibilities in regards to weed management.	Pipeline Technicians	
		Use trained technicians holding a commercial operator's licence to spray weed control chemicals.	All	
		Only Conduct spraying near watercourses after consultation with an Environmental Engineer.	Pipeline Technicians	
		Obtain a permit to use pesticide chemicals in accordance with the Agricultural Chemicals Distribution Control Act and Regulation.	Pipeline Technicians/ Operations Manager	
		Develop a weed control program in accordance with the APIA Code of Environmental Practice and add to the Works Management System	Operation Manager	
		Avoid importing soil, where practicable. Obtain landholder approval if imported soil is required, if necessary. Soil should be free of weeds.	Operations Manager	
		Clean demountable buildings used on the easement prior to removal from site.	Supplier / Pipeline Technicians / Project Managers	

5.5 Control of Diseases and Pests

Plant and animal diseases have the potential to cause serious environmental, economic and social problems. In particular, the spread of disease along the RBP corridor could potentially impact on commercial crop and stock production in the region.

Currently there are no reported areas affected by agricultural diseases along the RBP easement. With appropriate management strategies, the possible spread of diseases and pests can continue to be minimised.

Diseases and pests may be present in soil, manure and organic matter attached to vehicles and machinery. Subsequently, diseases and pests may be transported between properties as a result of pipeline operations. In general, communication with, and notification from, landowners with respect to any potential diseases on their properties will be relied upon. Such diseases might include (but not be limited to) Equine Influenza, footrot, Ovine Johne's Disease, foot and mouth disease, Newcastle Disease and Asparagus Stem Blight.

Equine Influenza (EI) has been detected in horses in Queensland and New South Wales. EI is a highly contagious viral disease that affects all horse species. People are not affected by Equine Influenza. However, if people come into contact with infected horses they can carry the disease and pass it onto other horses. Several properties in Brisbane's western suburbs have previously been identified as having infected horses with those properties being quarantined by the DPI. Further information about the Equine Influenza is available on the DPI website **http://www.dpi.qld.gov.au**

Pests such as fire ants have recently been discovered in Southern Queensland, particularly in the Ipswich area. Fire ants are notifiable under section 12 of the *Plant Protection Act 1989* and the *Plant Protection Regulation 2002 (Qld)* (Chapter 3, Part 2). Accordingly, there is a legal obligation to inform the Department of Primary Industries (DPI) of suspected Fire Ant infestations within or adjacent to the pipeline easement. All reports of possible fire ant infestations should be made to the DPI Call Centre on 13 25 23.

Fire ants can spread through high risk materials such as soil, mulch, baled hay and earthmoving machinery and equipment. APA has an approved *Fire Ant Risk Management Plan* which outlines all controls and mitigation needed to reduce the risk of Fire Ant spread along the RBP (ARMP No: 1860) All operational activities must comply with this plan.

Table 12 outlines the specific management measures to be implemented to control the spread of pests and diseases. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Moderate* for all three of the identified impacts.

Table 12 Control of Pests and Diseases

Related Documents: APIA Code; Approved Fire Ant Risk Management Plan (ARMP No: 1860); DPI Fact Sheets.

Targets and Objectives of Management

- No landholder or third party complaints regarding possible transmission of disease to minimize the spread of disease
- No landholder or third party complaints regarding possible transmission of disease to prevent the introduction of disease to new areas.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Spread of pests and diseases by maintaining permanent access along the easement	12-1 Reduction in agricultural productivity and livestock health. 12-2 Damage to native flora and fauna, possibly leading to death. 12-3 Loss of biodiversity and poor regeneration.	Leave gates as they were found to prevent the possible integration of separated herds / flocks.	All	**11-1** Likelihood – *Unlikely (2)* Consequence – *Important (1)* Risk – **MODERATE (2)** **11-2** Likelihood – *Unlikely (2)* Consequence – *Important (1)* Risk – **MODERATE (2)** **11-3** Likelihood – *Unlikely (2)* Consequence – *Important (1)* Risk – **MODERATE (2)**
		Include potential disease issues, controls and the need for notification by landholders in routine liaison and communication with landholders.	Lands Manager	
		Consult with landholders of properties involving intensive farming (i.e. poultry farming, piggeries) with regards to disease control and access requirements. Specific property controls shall be complied with at all times.	Lands Manager	
		Consult with landholders with regards to agricultural diseases prior to all projects on their land.	All	
		Ensure excavation equipment received on-site for pipeline works is received free of soil and organic matter. Inspect all equipment prior to offloading. Record inspections.	Operations Manager/ Project Manager	
		Wash down all equipment with high pressure sterilised water prior to departure from site, in the event of works in a disease area.	Operations Manager/ Project Manager	
		Include all vehicle and equipment wash downs in a project register.	Operations Manager/ Project Manager	
		Avoid importing soil where practicable. If required, imported soil must be from disease-free areas and approved by the landholder.	Operations Manager	
		Contact QLD Agriculture in regards to regular identification/notification of disease/pest areas along the RBP and Peat Lateral.	All	
		Comply with the Company's *Fire Ant Risk Management Plan* at all times.	Environmental Engineer	
		Avoid touching horses, horse equipment, bedding, and manure.	All	
		Where possible schedule works in non-quarantined horse properties last and then wash down at nearest washbay	All	

5.6 Earthworks and Land-use

Earthworks along the easements are required from time to time. Excavations may be undertaken to inspect the pipelines, pipeline repair and coating issues and to replace or repair cathodic protection (CP) system components. Excavation may also be required for general easement repairs and track maintenance. In most cases excavations occur within the pipeline easements.

In general, the pipelines are protected physically against corrosion by internal and external coatings and electrically against corrosion by the installed CP systems limiting the needs for pipeline integrity digs and repairs. Coating repairs are more common and are undertaken as required, based on results from in-line pipeline inspection (pigging) results and other coating surveys.

In some cases third parties may also excavate along the easements. This is usually associated with installation and maintenance of other services, utilities and other pipelines, either in parallel of perpendicular to the easements (crossings). Such activities are performed under strict supervision by representatives of APA.

Earthworks are controlled by the following procedures:

- MGT 6-01 Guidelines for Work
- MGT 6-02 Instructions for Work
- O&M 8-01 Excavation of Pipeline with Machinery
- MGT 6-06 Easement Encroachment
- MGT 6-11 Easement Maintenance Procedure

The key issues associated with earthworks that may also affect land use are:

- Soil erosion and sediment release
- Interruption to natural surface and groundwater flows
- Disturbance to native vegetation and wildlife
- Temporary disruption to residents, landowners and third parties
- Introduction of weed species

Table 13 outlines the key management measures to be used to mitigate the potential issues resulting from earthworks along the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Moderate* for impacts related to the spread of weeds and soil erosion. The risk assessment process identified all other impacts as having a *Low* risk.

Table 13 Earthworks and Land Use Management

Related Documents: MGT 6-02 Guidelines for Work, O&M 8-01 Excavation of Pipeline with Machinery, MGT 6-06 Easement Encroachment, MGT 6-11 Easement Maintenance; Section 4.1 of the APIA Code (Part A); Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites" (Institute of Engineers, 1996), Local Council Erosion and Sediment Control guidelines.

Targets and Objectives of Management

- No reports of erosion or flow disruption at new earthworks to minimize impacts of erosion, sedimentation and disruption of environmental flows;
- No unapproved disturbance of vegetation outside of the easement or of cultural or heritage areas to minimize disturbance to native flora and fauna; and cultural or heritage areas;
- No landholder or third party complaints relating to new earthworks to minimize disruption to residents, landowners and third parties;
- No landholder or third party complaints relating to new earthworks to minimize disruption to agricultural production or other land uses;
- Effectively manage disruption to existing land use rights and practices as a result of Company activities to minimise disruption to existing land use rights and practices;
- Effectively manage all potential disturbances to residents, landowners and third parties;
- Engage in appropriate consultation with all landowners with regards to Company activities.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Earthworks for maintenance activities or for the installation of new infrastructure.	13-1 Soil erosion and sediment release 13-2 Interruption to natural surface and groundwater flows 13-3 Disturbance to native vegetation and wildlife 13-4 Temporary disruption to residents, landowners and third parties; and 13-5 Introduction of weed species.	Develop and implement a Construction Environmental Management Plan in accordance with the APIA Code for all non-routine excavation activities.	Operations Managers / Project Managers	**13-1** Likelihood – *Possible (3)* Consequence – *Important (1)* Risk – **MODERATE (3)**
		Minimise the footprint of disturbance of all excavations.	All	
		Inspect all excavation equipment for soil and organic matter prior to unloading at site.	Supplier / Pipeline Technicians / Project Managers	**13-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Perform all excavations along the pipeline using an open permit under the PTW system and supervised by an accredited Excavation Permit Officer.	Pipeline Technicians / Operations Manager / Project Manager	**13-3** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Remove and separately stockpile topsoil and substrate during excavations. Replace soils in the reverse order to aid in re-establishing ground cover during restoration and rehabilitation works.	All	**13-4** Likelihood – Unlikely *(2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Undertake erosion control and management strategies and remedial action for ground instability in accordance with appropriate industry standards.	All	
		Return disturbed surfaces as a result of excavations as close as possible to pre-work and natural conditions.	Pipeline Technicians	**13-5** Likelihood – *Possible (3)* Consequence – *Important (1)* Risk – **MODERATE (3)**

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Earthworks for maintenance activities or for the installation of new infrastructure.		Rehabilitate all disturbed surfaces at the completion of excavation activities to promote soil and ground stability.	All	
		Consult the QLD Department of Natural Resources and Mines prior to excavating or placing fill in a watercourse, lake or spring (clauses 50 & 51 QLD *Water Regulation 2002*).	Pipeline Technicians / Operations Managers /	
		Consult the QLD Department of Natural Resources prior to excavations which may interfere with the water flows along the easements (clauses 50 & 51 QLD *Water Regulation 2002*).	Project Managers	
		Avoid disturbing native vegetation during excavation activities wherever practicable.	Pipeline Technicians /Operations Managers / Project Managers	
		Place adequate barricading around excavations to prevent the ingress of persons and animals.	Pipeline Technicians / Project Managers	
		Leave excavations battered or place ramps into the excavation, when unattended to prevent the entrapment of animals.	Pipeline Technicians / Project Managers	
		Notify landowners and potentially affected parties prior to the commencement of all excavation work or other disruptive activities.	Pipeline Technicians / Project Managers	
		Schedule works to prevent disruptions to surrounding residents, except in emergency situations.	Pipeline Technicians / Project Managers	
		Use clean fill when additional soil is required during excavation activities. Fill material should be in character with soil of the surrounding area.	Pipeline Technicians / Project Managers	
		Follow EMP measures with respect to weeds and diseases when importing fill material.	Pipeline Technicians / Project Managers	
		Assess for Acid Sulphate Soils prior to excavations in coastal areas underneath an elevation of 5m above sea level. Develop and implement appropriate management measures in accordance with the *Queensland Acid Sulphate Soil Technical Manual* .	Pipeline Technicians / Project Managers	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Earthworks for maintenance activities or for the installation of new infrastructure.		Erect barrier fencing around unattended excavations to prevent ingress of humans and animals.	Pipeline Technicians / Project Managers	
		Consider developing a Complaints Handling policy or procedure. This document should include personnel responsibilities, actions, reporting requirements and appropriate response time frames.	Resource Manager	
		Avoid excavating soils at GMP 152 as the property formerly operated as a petrol station. Conduct investigations as to the contamination and remediation status of the site if excavation or soil disturbance is necessary. Develop and implement specific controls to safe guard the environmental and personnel.	Pipeline Technicians / Operations Managers / Project Managers	

5.7 Bushfire Protection

The risk of creating a bushfire as a result of operation and maintenance of the pipeline is considered low. Ignition can only occur whilst personnel and machinery are physically accessing the easement. Access to the easement is minimised by the methods discussed in Section 5.1.

Bushfires may also occur to due hot work carried out on the pipeline (for example welding and grinding). From time to time sections of the pipeline or associated equipment may be vented or flared.

The key environmental issues associated with bushfires are:

- Injuries to public or personnel
- Damage to or loss of flora, fauna and habitat
- Damage to agricultural production
- Damage to, or loss of, third party infrastructure

Table 14 outlines the key management measures to mitigate potential bushfires during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 14 Bushfire Management

Related Documents: AS 1940 – The Storage and Handling of Flammable and Combustible Liquids, Qld Rural Fire Service's website (www.ruralfire.qld.gov.au)

Targets and Objectives of Management

- Evidence that control measures have been implemented to minimize bushfire risk;
- No reports of injury to public or personnel due to bushfire caused by the Company to protect the public and personnel;
- No reports of damage or loss due to bushfire caused by the Company to protect property and minimize damage or loss;
- No bushfires started as a result of pipeline operations maintenance to prevent the spread of bushfire in the event of ignition;
- Response to fire situation in accordance with Incident Management Strategy to provide adequate response in the event of ignition.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Fire resulting from operation or maintenance of the pipeline	14-1 Injury to public or personnel 14-2 Damage to, or loss of, flora and fauna 14-3 Damage to agricultural production 14-4 Damage to, or loss of, third party infrastructure	Undertake any slashing, welding, grinding or cutting works under a permit to work.	Operations Managers / Permit Issuing Officer	**14-1** Likelihood – *Rare (0.5)* Consequence – *Serious (1.5)* Risk – **LOW (1)** **14-2** Likelihood – *Rare (0.5)* Consequence – *Important (1)* Risk – **LOW (1)** **14-3** Likelihood – *Rare (0.5)* Consequence – *Important (1)* Risk – **LOW (1)**
		Check the status of total fire bans prior to any works involving potential ignition sources. Contact either the local Fire Warden or the local Rural Fire Service. Such works during these periods shall not proceed except under proper authority.	All	
		Conduct operations during the bushfire season (generally 1st October to 31st March. Note: the season can be extended when necessary), in accordance with regulatory requirements and local fire authorities.	All	
		Fit machinery or other equipment used along the easements during the bushfire season with spark arrestors where appropriate. If not fitted, the machine or equipment must carry a minimum of 1X 20L knapsack and 1X 9L fire extinguisher (foam).	All	
		Carry a minimum of 1X 20L water spray knapsack and 1X 9L fire extinguisher (foam) when slashing.	All	
		Clear or wet down a 3 m area around any cutting or welding work. Carry a minimum of 1X 20L water spray knapsack and 1X 9L fire extinguisher (foam).	All	
		Use an observer to monitor welding or cutting works.	All	
		Maintain cleared gravel areas around all aboveground facilities.	Pipeline Technicians / Operations Manager	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Fire resulting from operation or maintenance of the pipeline		Maintain firebreaks on the easements around any above ground facilities.	Pipeline Technicians / Operations Manager	
		Firebreaks outside the easement are subject to landholder and fire authority approval. Consult the Environmental Engineer prior to installing new firebreaks off the easement.	Pipeline Technicians	
		Use equipment that complies with relevant fire safety standards to ensure that explosion or ignition of gas or other substances does not occur.	All	
		Preferentially use diesel vehicles over petrol as they have no hot catalytic converters that can contact flammable vegetation.	All	
		Regularly inspect the undersides of the vehicles to remove any built up flammable materials.	All	
		Store flammable or combustible chemicals at major facilities only and in accordance with AS 1940 – The Storage and Handling of Flammable and Combustible Liquids.	All	
		Park machinery and vehicles not in use in areas of low fire risk (e.g. not over shrubs, tall grass or cleared vegetation residue).	All	
		Store and maintain fire fighting equipment at all operational sites and storage locations for flammable fuels in accordance with regulatory requirements.	Pipeline Technicians / Operations Managers / Project Managers	
		Adequately train pipeline technicians in regard to fire prevention and safety, personnel responsibilities and basic fire suppression	Operations Manager	

5.8 Air Emissions

Potentially adverse effects on air quality created along the easement are associated with dust and gas emissions from leaks, controlled purging and venting activities and vehicle movements. Aerial surveillance is used where possible to minimise dust being created by vehicles driving along the corridor. The following strategies are employed to reduce adverse effects on air quality.

The potential for leaks due to corrosion is very limited as the pipelines are protected against corrosion by internal and external coatings and electrically by CP systems. The pipeline is also constantly monitored for the presence of leaks by telemetered valve sites. If a leak is detected the valves are shut down manually. Above ground facilities are leak surveyed annually as part of routine maintenance. Due to the high pressure contained within the pipelines and associated facilities, any leaks would be easily detectable by ear over a very wide area.

Activities such as purging and flaring only occur on an as-needed basis (i.e. infrequently) and, as such, are considered to have a minimal impact on air quality. Approximately 75 kg of unburnt natural gas is released to the atmosphere each time a compressor is started. There are 6 compressors on the RBP. Compressors are operated on an as needed basis to maintain line pack and operating pressure. As gas demand is generally are during the winter months, compressor starts are more frequent during winter. A very minor quantity (i.e. less than 1kg) of gas is released to the atmosphere at each actuator valve when the valve actuates.

Major venting (between two MLV's) is estimated to occur once in every 5 years. When major venting is necessary, an individual Risk Assessment or Job Hazard Analysis will be undertaken which identifies environmental issues, including air quality. Venting of above ground pipe work (scraper stations and compressor stations) occurs annually.

Dust issues may result from time to time due to land-based surveillance activities or from excavations. Dust issues are generally addressed in project specific EMPs and JHAs. Utilisation of aerial patrols as the predominant form of surveillance in some areas minimises the likelihood of dust issues. Subsequently dust impacts are considered very minor.

The key issues associated with air emissions are:

- Release of air pollutants
- Greenhouse gas emissions
- Odour emissions
- Temporary reduction in amenity associated with dust
- Impacts to flora and fauna

Table 15 outlines the key management measures to mitigate air emissions during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Moderate* for impacts related to the spread of weeds and soil erosion. The risk assessment process identified all other impacts as having a *Low* risk.

Table 15 Air Emissions Management

Related Documents: Part A Section 4.1.6 of the APIA Code.

Targets and Objectives of Management

- Purging or venting activities carried out on an only as needed basis to minimize atmospheric and greenhouse emissions, the creation of safety hazards, and disturbance to the community.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Adverse effects on air quality from: • Purging and flaring during maintenance activities, • Accidental or fugitive gas release • Dust and exhaust along the easement from vehicle and machinery operation	15-1 Release of air pollutants 15-2 Greenhouse gas emissions 15-3 Odour emissions 15-4 Temporary reduction in amenity associated with dust 15-5 Impacts to flora and fauna	Conduct purging, venting and compressor starts only as needed. Undertake major venting between two mainline valves and complete an individual Risk Assessment or Job Hazard Analysis.	All	**15-1** Likelihood – *Possible (3)* Consequence – *Minor (0.5)* Risk – **LOW (1.5)** **15-2** Likelihood – *Possible (3)* Consequence – *Minor (0.5)* Risk – **LOW (1.5)** **15-3** Likelihood – *Possible (3)* Consequence – *Minor (0.5)* Risk – **LOW (1.5)** **15-4** Likelihood – *Possible (3)* Consequence – *Minor (0.5)* Risk – **LOW (1.5)** **15-5** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Favour flaring over venting wherever technically feasible (excluding emergency situations) for pipelines and associated facilities and equipment.	Operations Managers / Resource Managers	
		Conduct planned releases under favourable meteorological conditions to facilitate rapid atmospheric dispersion, where practicable.	All	
		Advise adjacent residents and local authorities of pending major venting operations.	Operations Managers/ Project Manager	
		Direct pipeline operators to proceed slowly to minimise the amount of dust generated, especially passed residential areas.	All	
		Conduct annual checks to detect gas leaks from above ground facilities. Fit rupture detection equipment to the pipeline to detect significant leaks.	Operations Manager	
		Remediate areas prone to bulldust, where necessary by stripping the topsoil and watering the subsoil to provide a firm base.	Pipeline Technicians / Operations Managers	
		Cover soil that is to be stockpiled for more than one week with hessian or other suitable material.	Pipeline Technicians / Operations Managers / Project Managers	
		Seed soil that is to be stockpiled for periods of longer than three months with sterile grass.	Pipeline Technicians / Operations Managers / Project Managers	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Adverse effects on air quality from: • Purging and flaring during maintenance activities, • Accidental or fugitive gas release • Dust and exhaust along the easement from vehicle and machinery operation		Manage dust problems in accordance with the APIA Code.	Pipeline Technicians / Operations Manager	
		Work shall cease temporarily during projects if dust impacts become unacceptable and can not be adequately controlled.	Project Manager	
		Compressors starts shall be limited to an as needed only basis to reduce air emissions.	Qld Control Centre Manager	
		Vehicles shall be regularly maintained to ensure that emissions are minimised.	All	
		An assessment shall be made to determine if the emissions from the compressor stations must be reported to the National Pollution Inventory.	Environmental Engineer	
		Consideration shall be given to becoming a member of and reporting greenhouse gas emissions as part of the Australian Greenhouse Gas Challenge.	Resource Manager	
		Particulate air emissions from abrasive blasting shall be managed in accordance with Agility document *Integrated Environmental Management System Abrasive Blasting*.	Operations Managers / Project Managers	
		Large uncontrolled releases of gas shall be considered as environmental incidents and reported in accordance with Section 7.3 of this Document.	All	
		The Pipelines shall be operated and maintained in accordance with AS2885 to minimise the risk of pipeline failure.	Resource Manager	

5.9 Noise Emissions

Due to the remote and sparsely populated areas through which the pipelines traverse, there is generally minimal potential for noise impacts resulting from the operation of the pipeline. However, the potential for noise impacts does increase in areas with proximity to residential and urban areas.

Noise emissions resulting from the operation and maintenance of the RBP have been minimised by:

- Using aerial surveillance which, although can have a noise impact, is a very brief disturbance as the aircraft passes over.
- Operating noisy facilities such as compressor stations on an on-demand basis.

Other operational facilities such as MLV's and scraper stations typically do not generate excessive noise levels under normal operating circumstances. Unusual flow conditions may result in elevated noise levels at these facilities.

The six compressor stations on the RBP are generally operated only as necessary to maintain the minimum pipeline outlet pressures as stated in the Gas Transportation Agreements (GTAs). In general, more compressor stations are online towards Friday each week as the line pack in the pipeline is depleted to maintain the minimum pressure at Swanbank. The number of compressors on line is then reduced across the weekend and through the early part of the week. The Swanbank power station operates for approximately 14 hours each week day (Monday to Friday), and consumes gas at a relatively high rate whilst it is in operation. The compressor stations are normally brought on line early, in anticipation of the high draw of the power station on the pipeline.

Non-routine corrective and preventative maintenance activities such as flaring, purging or pigging have a greater potential to create elevated noise levels. However, these activities occur very infrequently and only on an as-needed basis (typically 5-10 yearly).

The key issues associated with noise emissions are:

- Disturbance to local residents and other land users
- Disturbance to stock and wildlife

Table 16 outlines the key management measures to mitigate noise emissions during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 16 Noise Management

Related Documents:

Targets and Objectives of Management

- No complaints from landholders or third parties relating to noise issues during normal operations to minimize operational noise impacts on adjacent residents and other land users;
- No complaints from landholders or third parties relating to noise impacts on stock or wildlife during normal operations to minimize operational noise impacts on wildlife and livestock.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Operation of stationary and non – stationary equipment *e.g.,* generators, water pumps and air compressors	16-1 Disturbance to local residents and other land users 16-1 Disturbance to stock and wildlife	Locate equipment at appropriate distances from residents, sensitive stock or other sensitive environments, where possible.	All	**16-1** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **16-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Fit and maintain noise abatement devices on noise generating equipment, where required.	All	
		Select noise generating equipment with consideration of noise emissions and proximity to residents.	All	
		Schedule noisy non-routine maintenance activities for periods that are less likely to result in noise nuisance. Record consultations with potentially affected parties.	All	
		Inform local residents of potential noise prior to the commencement of non-routine activities, where necessary. Record consultation.	All	
		Investigate and close out complaints. Record the complaint and actions taken on a complaints register.	All	
		Undertake aerial surveillance activities to reduce disturbance of livestock.	Surveillance Crew	
		Conduct noise monitoring as needed.	Operations Manager/ Project Manager	
		Comply with regulatory requirements and guidelines regarding noise control.	Operations Manager/ Project Manager	

5.10 Heritage- Natural and Built Environment

The greatest risk to the heritage of the natural and built environment is the disturbance or destruction of identified sites. Routine maintenance activities are unlikely to disturb heritage areas, as any surface sites within the easement would have been disturbed during the clean and grade operations undertaken across the entire width of the easement during pipeline construction.

Non-routine maintenance activities, such as installing new cathodic protection beds, have a higher likelihood of creating damage to heritage areas. Accordingly, if works are required outside the easement or works are being undertaken in an area not previously surveyed, an archaeological assessment may be required, depending on the nature of surface disturbance at the proposed location. Excavation work outside of the easement is infrequent and is subject to the Permit to Work Procedure (O&M 1-04).

Pipeline personnel are aware that they may uncover areas of unknown burial sites or buried artefacts within the easement. If, during the process of a maintenance activity involving excavation, artefacts, bones or other evidence of a burial site are found, excavation is to stop and DNRW and traditional owners notified.

The location of known cultural heritage material shall be considered prior to maintenance operations and appropriate site-specific management strategies developed and implemented.

Table 17 outlines the key management measures to mitigate disturbances to cultural heritage during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 17 Heritage Management - Natural and Built Environment

Related Documents: Heritage Consultation Protocol (which reflects the requirements of the Aboriginal Cultural Heritage Act 2003 and the Cultural Duty of Care Guidelines gazetted in April 2004)

Targets and Objectives of Management

- No unapproved disruption of cultural or heritage sites to avoid impacts to sites on or near the pipeline corridor or in the vicinity of associated facilities;
- Inspections carried out and approvals obtained for disturbance of any known site on the easement or for any works carried out off the easement (i.e. new CP installations) to implement an effective consultation program with regulatory authorities and other relevant stakeholders, where required.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Excavation or disturbance of soils for general operations and maintenance activities	17-1 Disturbance or destruction of heritage sites	Review the inventory of aboriginal sites (Appendix D) prior to work along the easement. Develop controls to project adjacent heritage items as appropriate.	Operations Manager / Project Manager	**17-1** Likelihood – *Rare (1)* Consequence – *Minor (1.5)* Risk – **LOW (1.5)**
		Use a heritage consultant to conduct an investigation prior to works if known heritage items will potentially be affected.	Operations Manager	
		Consult relevant authorities and stakeholders when works are to be undertaken in the areas of known cultural heritage.	Pipeline Technicians / Operations Manager	
		Train pipeline technicians and corrosion engineers in heritage issues and management.	Pipeline Technicians / Corrosion Engineer	
		Adequately protect heritage sites on or adjacent to the easement when projects may impact upon them e.g. erect and maintain physical barriers and/or signage.	Operations Manager / Project Manager	
		Monitor works adjacent to or in areas of known heritage.	Pipeline Technicians / Project Manager	
		Survey areas on the easement not previously surveyed or off the easement by a suitably qualified heritage consultant prior to the works being undertaken, if necessary. Develop management measures and obtain permits, if required.	Pipeline Technician / Operations Manager / Project Manager	
		Report any disturbance to heritage sites. Develop response actions in consultation with the Department of Natural Resources and Mines and local Aboriginal Parties where appropriate.	Pipeline Technicians	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Excavation or disturbance of soils for general operations and maintenance activities		Stop excavation if artefacts, bones or other evidence of a burial site are found. Notify the local Aboriginal Party.	All	
		Notify the Department of Natural Resources and Water if undertaking a cultural heritage survey and forward them a copy of the survey findings.	Resource Manager	
		Develop a Heritage Management Procedure for operations.	Environmental Engineer	
		Include known sites of aboriginal significance in GIS.	Manager Pipeline Operations	

5.11 Water Management

Potential water related issues are primarily related to run-off and erosion control. Routine maintenance activities have limited potential to create adverse impacts and the potential for new issues to occur is further limited by using existing tracks to access pipeline facilities wherever practicable. Non-routine maintenance activities and other projects are rarely required within the easement. Potential impacts to water quality associated with such activities are evaluated and addressed prior to commencement of these activities.

Routine surveillance activities monitor the entire pipeline easement for the presence of run-off related issues. Run-off/erosion controls are created during construction or operation of the pipeline in susceptible areas. The condition of these controls is monitored during routine surveillance. Specific attention is given to steep sections, watercourses and drainage lines that cross the easement. Any run-off/erosion issues that are identified are addressed as soon as possible as described in Section 5.2 of this EMP.

The key issues associated with water management are:

- Reduction in water quality as a result of increased sediment loads
- Contamination of surface or groundwater
- Altered drainage patterns and water flow regimes
- Spillage of chemicals or other pollutants

Table 18 outlines the key water management strategies to be employed during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 18: Water Management

Related Documents: Section 206 of the *Water Act 2000,* Section 237 of the *Water Act 2000, Queensland Acid Sulphate Soil Technical Manual.*

Targets and Objectives of Management

- No reports of excessive erosion to control erosion in all operational areas.
- No reports of sedimentation of waterways to minimise the volume of sediment entering the waterways from the pipeline corridor, associated facilities or operational activities.
- No complaints relating to altered flow regimes to manage surface water flows and to minimise potential adverse impacts associated with altered flow regimes.
- No evidence of impacts to such flora and fauna to minimise impacts to riparian, aquatic and water dependant flora and fauna.
- No evidence of contaminated water bodies to prevent contamination of surface water, water courses and groundwater.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Changes to water flow patterns or quality resulting from: • Above ground gas processing and pipeline facilities. • Use of heavy machinery and vehicles. • Vegetation control activities	18-1 Reduction in water quality as a result of increased sediment loads 18-2 Contamination of surface or groundwater 18-3 Altered drainage patterns and water flow regimes 18-4 Spillage of chemicals or other pollutants	Inspect and monitor easement conditions including watercourse banks during routine surveillance.	Surveillance Crew / Pipeline Technicians	**18-1** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **18-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **18-3** Likelihood – *Rare (1)* Consequence – *Important (1)* Risk – **LOW (1)** **18-4** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Manage soil and ground stability issues in accordance with EMP.	Pipeline Technicians	
		Install, inspect and maintain erosion control measures in accordance with EMP, especially after heavy rain.	Pipeline Technicians	
		Obtain a water license from QLD DNRM prior to taking water from a watercourse and using the water on any land.	Pipeline Technicians/ Operations Managers / Project Managers	
		Store, transport and handle fuels, oils and chemicals in accordance with the EMP.	All	
		Minimise the risk of spills (particularly of harmful substances) in accordance with the EMP.	All	
		Divert surface water around storage areas and stockpiles to prevent potential contamination.	Pipeline Technicians / Operations Managers / Project Managers	
Environmental Aspect	**Impact**	**Mitigation**	**Responsibility**	**Residual Risk Rating**

Changes to water flow patterns or quality resulting from: • Above ground gas processing and pipeline facilities. • Use of heavy machinery and vehicles. • Vegetation control activities		Appropriately dispose of waste test water from hydrostatic testing, if required. The Environmental Engineer is to be consulted prior to the works being undertaken.	Operations Manager / Project Manager	
		Store wastes in accordance with EMP.	All	
		Restore drainage patterns and water flow regimes as near as practicable to the original profile, if altered during maintenance activities.	Pipeline Technicians / Operations	
		Manage incidents in accordance with the Company's emergency response plan, the Incident Response Manual and the spill response procedures.	Manager / Project Manager	
		No maintenance or refuelling of vehicles or machinery is to be undertaken with 150m of a watercourse or water body. Use suitable controls to prevent water contamination.	All	
		Install new surface water control structures, with consideration for downstream environments as appropriate. Monitor changes to water flow patterns. Consult an Environmental Engineer for major works.	All	
		Implement appropriate monitoring programs to identify potential impacts to riparian, aquatic and water dependant flora and fauna, as required.	Pipeline Technicians / Operations Manager	
		Assess for Acid Sulphate Soils in coastal areas below an elevation of 5m above sea level, prior to excavation. Develop and implement management measures in accordance with the *Queensland Acid Sulphate Soil Technical Manual*. Consult and Environmental Engineer.	Operations Manager / Project Manager	
		Manage works to protect groundwater quality. E.g. conducting works between Sandy Creek and Cobalt Street during the dry season to reduce impacts of the perched aquifer during excavations.	Operations Manager / Project Manager	

5.12 Pipeline Facilities Management

Pipeline facilities have the potential to create noise emissions, increase traffic and have safety issues, in addition to the specific issues discussed in previous sections of this Chapter. A list of the facilities associated with this pipeline is included in Table 1. In general, above ground facilities associated with pipeline operations include: a compressor station, MLV's, delivery facilities and scraper stations. Activities at these pipeline facilities are mostly routine surveillance and periodic scheduled maintenance activities. Very occasionally other activities are undertaken, such as station modification or emergency work.

The key issues associated with managing pipeline facilities are:

- Safety hazards resulting from increased traffic
- Bushfire and internal fire risk
- Noise disturbance to local residents, other land use and wildlife or stock
- Reduction of visual amenity
- Chemical spills

Compressor stations are inspected daily to monitor the overall condition of the sites and any possible leakage. The compressor stations are located either off major roads in the Brisbane metropolitan area or in sparsely populated areas west of Brisbane. MLVs, scraper stations and delivery facilities are inspected during routine pipeline patrols. General housekeeping, such as vegetation management and painting is generally performed at these times on as needed basis.

All the sites are fenced and securely locked to prevent entry of unauthorised persons. The security of the facilities is monitored during routine surveillance.

The pipeline facilities do not emit excessive levels of noise during normal operations. The compressor stations have been fitted with purpose built noise reduction facilities to minimise the level of noise emitted from the sites. Noise is only generated at main lines valves, scraper stations and delivery facilities when these facilities are being operated. This occurs very infrequently.

The venting of components of pipeline facilities is item required during maintenance activities. Due to the high pressure of the natural gas, this can create large amounts of noise. However, these events occur very infrequently on a scheduled program and are noise impacts are generally very short lived.

Table 19 outlines the key strategies to manage pipeline facilities during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 19 Pipeline Facilities Management

Related Documents:

Targets and Objectives of Management

- Site compounds free from combustible materials or vegetation to minimise the risk of bushfire;
- No complaints relating to noise, odour, visual impact or traffic to minimise the impact of noise, visibility, odour and traffic to the local community.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
General routine and non-routine maintenance activities	19-1 Safety hazards resulting from increased traffic 19-2 Bushfire and internal fire risk 19-3 Noise disturbance to local residents, other land use and wildlife or stock 19-4 Reduction of visual amenity 19-5 Chemical spills	Store fire fighting equipment at major sites (e.g. compressor stations) and inspect every 6 months.	Operations Manager	**19-1** Likelihood – *Rare (1)* Consequence – *Minor (0.5)* Risk – **LOW (0.5)** **19-2** Likelihood – *Rare (1)* Consequence – *Serious (1.5)* Risk – **LOW (1.5)** **19-3** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **19-4** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **19-5** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **19-6** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Check security of facilities (e.g. locked gates and fences) during surveillance patrols.	Pipeline Technicians	
		Monitor all above ground facilities for gas leaks.	Pipeline Technicians	
		Implement bushfire prevention methods in accordance with Bushfire Prevention EMP.	All	
		Fit and maintain major noise-emitting devices with noise reduction equipment or contain them within noise attenuating buildings/structures.	Operations Manager	
		Manage noise emissions in accordance with EMP.	All	
		Keep all facilities in a tidy manner and maintain visual treatments (e.g. painted surfaces) as appropriate.	All	
		Keep all facilities free of vegetation and weeds.	Pipeline Technicians/	
		Consider planting screening shrubs, where necessary.	Pipeline Technicians / Operations Manager	
		Store and handle fuels and chemicals in accordance with EMP.	All	
		Gravel (or similar) surfaces inside all stations to reduce fire risk.	Operations Manager	
Pigging	19-6 Contamination of soil or water	Capture all residuals exiting the pipeline in appropriate drums or other impermeable containment device.	Pipeline Technicians	

5.13 Waste Management

Routine maintenance and surveillance activities along the easement generate few waste materials. Oil and water at compressor stations is pumped into sumps. Waste contractors empty these sumps as required. Impacts to the environment due to the wastes from these activities are very low.

Non-routine corrective and preventative maintenance activities have a greater possibility of generating waste than routine activities. The types of waste produced could include:

- General rubbish
- Human wastes (sewage)
- Putrescible waste

During cleaning and integrity check pigging operations, large volumes or water and waste oils may be generated. The collection, transfer and disposal of such water and waste will be addressed in project-specific EMPs developed for the project.

Major repair activities involving excavation and welding along the easement may generate small amounts of more harmful wastes. Such wastes could include:

- Cleaning fluids
- Radiography fluids
- Waste oils

These activities are rarely required and waste volumes will typically be small (less than 20L of fluids). The risk of impact to the environment from these activities is limited.

The key issues associated with waste management are:

- Contamination of land, soil and water, including ground water
- Health risks to the community and the workforce
- Adverse effects on native vegetation and wildlife
- Reduction of visual amenity.

Table 20 summarises the key strategies to manage waste created during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 20 Waste Management

Related Documents: Australian Dangerous Goods Code; Australian Standard 1940 and Environmental Protection (Waste Management) Regulation 20, *Handling and disposal of asbestos gaskets procedure* (O&M 1-16), *Integrated Environmental Management System Abrasive Blasting*.

Targets and Objectives of Management

- No reports of soil or water contamination due to waste produced during operation to avoid the contamination of soil and water.
- No reports of illness or injury due to waste produced during operation to minimise the potential risks to workers and the public.
- No reports of illness or injury in native flora and fauna due to waste produced during operation to minimise the adverse effect to native vegetation and wildlife.
- Implement recycling and reuse to minimise the amount of waste generated and maximise the efficiency of resource use.
- No complaints relating to the visual effects of waste produced during operation to minimise visual impacts.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Storage and disposal of wastes generated by: • Maintenance of plant and equipment • Internal cleaning and inspection of pipeline (pigging) • General office activities.	20-1 Contamination of land, soil and water, including groundwater 20-2 Health risks to the community and the workforce 20-3 Adverse effects on native wildlife and vegetation 20-4 Reduction of visual amenity	Dispose of sewage in approved septic systems.	Operations Manager / Project Manager	**20-1** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **20-2** Likelihood – *Rare (1)* Consequence – S*erious (1.5)* Risk – **LOW (1.5)** **20-3** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **20-4** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Pump out and collect waste from portable toilet facilities during large maintenance projects by suitably licensed waste contractors.	Operations Manager / Project Manager	
		'Reduce, Reuse, Recycle' in all operations.	All	
		Remove general rubbish after all maintenance activities.	All	
		Provide suitable storage areas for all wastes including soil, water and spills.	Operations Manager / Project Manager	
		Install separate storage areas for recyclable materials at depots and stations where recycling facilities exist in the surrounding area.	Operations Manager / Project Manager	
		Provide safe storage areas for potentially hazardous wastes that are not in the vicinity of drainage lines and watercourses.	All	
		Collect, transport and dispose potentially hazardous wastes in accordance with industry standards and using a suitably licensed waste contractor.	Operations Manager / Project Manager	
		Manage soil contamination in accordance with EPA and legislative requirements. Consult the Environmental Engineer.	All	
		Monitor and remove rubbish (including illegally dumped rubbish) as required.	Surveillance Crew / Pipeline Technicians	

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Storage and disposal of wastes generated by: • Maintenance of plant and equipment • Internal cleaning and inspection of pipeline (pigging) • General office activities.		Handle, store, transport and dispose of encountered asbestos products in accordance industry procedures.	Operations Manager / Project Manager	
		Develop a waste management plan including waste tracking records.	Environmental Engineer	
		Handle, store and dispose of abrasive blasting wastes in accordance with internal procedures.	Operations Manager / Project Manager	

5.14 Pipeline Spill Prevention

The potential for pipeline spills is limited as:

- Spills associated with pipeline rupture are not an issue for gas pipelines.
- Large volumes of liquids are not used during routine maintenance and surveillance of the pipeline. The possibility of a spill occurring during these activities is very limited. Any spill will likely be very minor in nature.
- During major non-routine maintenance activities on-site storage of small volumes of liquids may be required. However, such activities occur very rarely. The potential for adverse environmental impact due to spills can be considered to be very low.
- Larger volumes of liquids (such as water and oils) may be generated during pigging operations, which occur roughly at 5-10 year intervals. The collection and transfer of such wastes would be addressed in project-specific EMPs for each pigging project.

Any fuels or chemical storage facilities along the pipeline corridor shall be managed in accordance with Section 5.15. The key issues associated with pipeline spill prevention are:

- Safety hazards to the workforce and the public
- Contamination of soil and water, including groundwater

Table 21 summarises the key strategies to reduce potential spills during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 21 Pipeline Spill Prevention Management

Related Documents: AS2885, Emergency Response Plan, Safety and Operating Plan, Fuel and Chemical Storage Plan

Targets and Objectives of Management

- No safety hazards due to pipeline spills to avoid unacceptable safety hazards;
- No contamination of soil and water due to pipeline spill to prevent contamination of soil and water;
- No impact (visual evidence) on vegetation communities or fauna to prevent direct and indirect impact to vegetation communities and fauna.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Chemical or fuel spill resulting from operations or maintenance activities.	21-1 Safety hazards to the workforce and the public 21-2 Contamination of soil and water, including groundwater	Operate the pipeline in accordance with Australian Standards.	Resource Manager	**21-1** Likelihood – *Unlikely (2)* Consequence – *Important (0.5)* Risk – **LOW (1)** **21-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Minimise liquids required to be stored onsite.	Operations Manager	
		Develop spill prevention procedures for refuelling vehicles and plant.	Operations Manager	
		Refuel vehicles and plant off easement at suitable refuelling locations, where possible.	All	
		Train pipeline operation and/or maintenance personnel on spill response and recovery procedures. Keep training records.	Operations Manager	
		Keep spill kits on hand and train personnel in their use during all refuelling activities or the handling of any chemicals, fuels, oils and lubricants.	Pipeline Technicians	
		Keep Material Safety Data Sheets (MSDS) in vehicles for chemicals currently in use. Conduct toolbox talks for new chemicals.	All	
		Respond to spills in accordance with relevant spill response procedures and MSDS.	All	
		Store, transport and handle all fuels, oils and chemicals in accordance with Fuel and Chemical Storage EMP.	All	
		Classify, report and investigate spills in accordance with EMP environmental incidents.	All	
		Remove and appropriately dispose of contaminated materials in accordance with EMP.	All	
		Develop Fuel and Chemical Handling and Spill Response procedures for pipeline operations.	Environmental Engineer	

5.15 Fuel and Chemical Storage

Where fuels, oils and chemicals are required for maintenance activities along the easement the personnel performing the works carry them to the site. In general, fuels oils and other chemicals are not stored along the easement.

Permanent storage facilities are located at the Compressor stations and at the Wallumbilla and Brisbane Maintenance Bases. Small amounts of chemicals may be stored at the Compressor stations including weed control chemicals such as Round-up, general cleaning products such as surfactants and solvents and oil and other lubricants. Generally less than 1000 L of oil is stored at stations.

Fuel, oil and chemical storage may be required on-site during larger maintenance activities. In these situations, fuel and chemical storage areas are developed on a project by project basis.

The key issues associated with fuel and chemical storage are:

- Contamination of soil and water including groundwater
- Safety hazards to the workforce and the public
- Air and odour emissions

Table 22 summarises the general storage procedures required for fuels and chemicals during the operation and maintenance of the RBP. A risk assessment of the key impacts was undertaken with the highest level of risk being identified as *Low* for all of the impacts assessed.

Table 22 Fuel and Chemical Storage Management

Related Documents: Material Safety Data Sheets (MSDS), AS1678, AS2809, AS2931, AS1940, Procedure for *Control of Hazardous Substances* (O&M 1-05).

Targets and Objectives of Management

- All fuels and chemicals stored appropriately to prevent contamination of soil and water, to avoid unacceptable safety hazards and to minimize atmospheric emissions.

Environmental Aspect	Impact	Mitigation	Responsibility	Residual Risk Rating
Chemical or fuel spill resulting from operations or maintenance activities or storage	22-1 Safety hazards to the workforce and the public 22-2 Contamination of soil and water, including groundwater 22-3 Air and odour emissions	Store and transport minimum practicable volumes in accordance with all relevant legislation and standards.	All	**22-1** Likelihood – *Unlikely (2)* Consequence – *Important (0.5)* Risk – **LOW (1)** **22-2** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)** **22-3** Likelihood – *Unlikely (2)* Consequence – *Minor (0.5)* Risk – **LOW (1)**
		Comply with all relevant legislation, licences and standards while storing and handling fuels, lubricants and chemicals.	All	
		Store materials away from watercourses, natural drainage paths and built drainage paths in appropriately sized and secure storage containers or facilities.	All	
		Train all relevant personnel in aspects of fuel and chemical storage, including contractors.	Operations Manager	
		Wear appropriate PPE when handling and using chemicals in accordance with MSDS and company procedures.	All	
		Keep spill kits wherever chemicals are stored.	Operations Manager	
		Keep Material Safety Data Sheets (MSDS) with vehicles at all times. Keep copies at all major facilities. Conduct toolbox talks for new chemicals.	Operations Manager	
		Store fuel, oils and chemicals in bunded or purpose built chemical storage cabinets, as appropriate. Secure all storage areas.	Operations Manager	
		Minimise chemical use where practicable.	All	
		Minimise spill risk by handling, transporting and storing fuel, oil and chemicals in accordance with EMP.	All	
		Classify, communicate, report and respond to spills in accordance with EMP environmental incidents.	All	
		Purchase new chemicals in accordance with procedure on *Control of Hazardous Substances* (O&M 1-05)	Manager Pipeline Operations	

5.16 Decommissioning and Restoration

When required, APA shall decommission individual components of the RBP and associated infrastructure in accordance with the licence and regulatory requirements and accepted environmental best practice of the day.

The most likely options are:

- **Moth-balling** - this would involve depressurising the pipeline, capping and filling with an inert gas such as nitrogen. The cathodic protection would be maintained to prevent the pipe corroding. This will prevent ground subsidence associated with the corrosion of the pipe that may result in surface water diversion, ponding and erosion.
- **Abandonment** - this could involve purging the pipe of natural gas, disconnecting it from the manifolds and removing all above ground facilities. The pipe would then be left to corrode in-situ. Removing the pipe from the ground is unlikely to be an environmentally or commercially viable option. A detailed rehabilitation program would be developed and implemented in consultation with landholders and relevant Regulatory Authorities at the time of abandonment.

Prior to either mothballing or abandonment of the pipeline service and the facilities, an investigation into the potential environmental problems associated with either of these options shall be undertaken.

5.16.1 Rehabilitation

The relevant PL's (PL2 and PL74) state that APA, as soon as practicable and within six months (or longer period agreed in writing with the administering authority) of the completion of the pipeline licence that APA will remove all surface equipment associated with the pipeline. After this period, rehabilitation of the areas disturbed by the pipeline must begin.

Subsurface equipment and pipelines will be decommissioned in accordance with AS 2885 or in a manner requested by the licence authority at the time. Any contaminated land will be remediated in accordance with *Environmental Protection Act 1994* requirements

For the safety of the public and wildlife, all above ground structures, such as compressor stations, scraper barrel stations, valves, meter stations, sales taps, control stations and dedicated communication systems, shall be removed. All sites shall be left clean and safe.

Consideration shall be given to alternate use of buildings as circumstances allow, and the sites restored accordingly. If necessary, groundwater or soil testing shall be undertaken to ensure that sites are free of contamination. If contamination is found, the site shall be cleaned using the appropriate reclamation methods. If buildings are removed completely, the ground shall be ripped and rehabilitated accordingly.

As the removal of below ground structures will cause unnecessary environmental impacts, the pipeline shall very likely be left in the ground. Below ground facilities will be cut off and blinded below ground level. All sites shall be rehabilitated following completion of termination.

6 Monitoring, Measurement and Evaluation

Environmental inspection, monitoring and auditing shall be undertaken to assess if operational activities are in compliance with regulatory requirements and the objectives outlined in this EMP and APA HSE Management System. This process aims to minimise environmental and cultural impacts of the operations and maintenance activities associated with the pipeline.

Monitoring, measurement and evaluation of pipeline operations include:

- Environmental inspections including patrols of Right-of-Way (ROW) from the ground and air, inspections of above-ground facilities and specific surveys for cathodic protection and gas leak detection
- Mechanisms and requirements for reporting results of inspections and patrols
- Compliance and systems reviews and audits including mechanisms for corrective actions

6.1 Environmental Inspection and Patrols

Environmental patrols include regular aerial and ground patrols and partial patrols carried out from time to time as pipeline personnel travel along the ROW. Special ground and/or aerial patrols may also be undertaken after heavy storms or earthquakes to check for damage to the pipeline, its facilities, and erosion and sediment control structures, as required.

The type of surveillance and the frequency required for safe pipeline operation has been determined to adequately address the identified risks and implemented control measures, as prescribed in the pipeline's Risk Assessment. Scheduled patrols of the pipeline route are mandatory under pipeline regulations and are a condition of the pipeline licence.

The purpose of the pipeline surveillance is to check for changing conditions on the pipeline easement. The type of surveillance shall be by foot, vehicle or aircraft such that the patroller can clearly identify the pipeline and observe all the surveillance criteria. The route shall be patrolled and inspected whenever it is considered that damage or threats to the integrity of the pipeline may have occurred or may be expected to occur. Corrective action shall be initiated immediately a condition requiring such action is detected.

The pipeline surveillance shall be carried out by the pipeline technician to ensure that the pipeline is free from any identifiable leaks, and to identify any new or changed threats to the pipeline or environment, particularly any un-notified external interference near the pipeline. Meter stations, MLV's and scraper stations will also be inspected on a regular basis and as-required for repairs and maintenance. Gas leak detection surveys will be undertaken every 5 years, or as required by the AS2885 risk assessment or other assessment

Surveillance activities shall be conducted in accordance with the APA Group Safety and Operations Plans (SaOP) and Easement Maintenance (MGT 6-11).

When activities or adverse conditions are found, follow up action shall be required, such as stopping, controlling, monitoring of the anomaly. Reports and records of the changed conditions shall be collated, with an entry reported.

6.2 Environmental Incidents

APA's Incident / Near Miss and Reporting and Investigation Procedure (MGT 1-01) outlines the correct method of reporting incidents and near misses in the workplace. The procedure also defines what constitutes an incident, a near miss or a Class A Near Miss and determines when to carry out an investigation. The procedure applies to all staff and contractors employed by the APA Group.

In the event of an incident or near miss occurring, the Manager Transmission Operations Qld, or his delegated responsibility, shall be informed by the relevant Leader, or nominated responsible person within one (1) hour of the event occurring. The Manager Transmission Operations Qld will determine whether to escalate notification to the appropriate APA General Manager. This process is to be followed in conjunction with current emergency management processes.

Table 23 Incident reporting timeframes

<table>
<tr><th>Incident Type</th><th>Notify Who</th><th>Timing</th><th>Follow-up Investigation and Report</th></tr>
<tr><td rowspan="3">HSE</td><td>Colleague's Leader, HSE Adviser, then</td><td>Immediately</td><td rowspan="3">Formal investigation may be required. All formal investigations to be completed within 10 working days.</td></tr>
<tr><td>Manager Transmission Operations QLD</td><td>Within 1 hour of event occurring</td></tr>
<tr><td>HSE Manager Qld</td><td>Within 10 days</td></tr>
<tr><td rowspan="3">Asset Related</td><td colspan="3">Apply APA's existing Emergency Management processes, and as a minimum:</td></tr>
<tr><td>Colleague's Leader, then</td><td>Immediately</td><td>Interim Report within 24 hours, then</td></tr>
<tr><td>Transmission Manager</td><td>Within 1 hour</td><td>Investigation completed within
10 working days</td></tr>
</table>

All incidents shall be investigated under the guidelines provided within this document. It is important that the investigation results in root cause analysis that may assist in preventing the same of similar incident re-occurring.

The relevant Operations Manager shall determine what level of investigation the incident requires. Incidents that have a low risk and severity rate may not require the level of investigation of an incident with a high risk and severity rate. Where a Formal Investigation has been undertaken, then the investigation report shall be documented on the Incident Report Template (see Appendix D) and may be altered to suit the investigation.

6.2.1 Hazard Alert / System Improvement Form (HASIFs)

APA's Queensland Transmission Group utilises an electronic Integrated Management System (IMS) that enables all personnel to report environmental and other hazards via the Hazard Alert and System Improvement Form (HASIF Reporting MGT 1-02). This system has been devised as a preventative strategy for early control of environmental and safety issues, and will be incorporated into the operation of the RBP. The electronic version is mirrored into a handbook and HASIF booklets are made available to all employees and contractors.

Personnel at all levels enter issues directly into the database, or complete a HASIF and submit it to the Health, Safety, and Environment Quality (HSEQ) Manager for entry into the

database. The database contains HASIF details and the required actions to implement arising from the issue / event. Each employee can monitor the status of any HASIF from entry into the database through to HASIF completion.

6.2.2 Statutory Reporting

In the event of an incident which may be in breach of statute requirements, the Manager Transmission Operations QLD (or delegate), in consultation with the Environmental Manager, is responsible for submitting any Environmental Incident Reports to Statutory Authorities.

The Company will also maintain reports to satisfy the Environmental Authority. Note: For the purposes of this condition, access roads and tracks required for the necessary maintenance of the pipelines are excluded from the area of significant disturbance.

6.3 Compliance and System Reviews and Audits

6.3.1 Environmental Auditing

Environmental audits shall be conducted on a routine basis to ensure continuous improvement and compliance with updated legislation and regulatory requirements, with regards to the effective management of environmental impacts resulting from the operation of the pipeline. Audits will be conducted by a Technical/Environmental Compliance Specialist who is either a suitably qualified internal environmental professional or, if not available internally, a suitably qualified environmental consultant.

Internal auditing procedures are outlined within MGT 3-02 Internal Auditing. The purpose of this document is to define the system used for planning, performing and reporting (internal) integrated management system audits.

An audit of the EMP shall include all components of the EMP, including all associated procedures and work instructions, and shall further take into account the manner in which the activities are completed. An audit shall not need to inspect the entire pipeline easement.

Compliance audits of the EMP are to be completed at a minimum of 2-year intervals. To date, audits of the system have been conducted in 1999, 2001, 2003, 2005 and 2007.

The findings of environmental audits shall be submitted to the Manager Transmission Operations QLD. Copies of the results of the audits will be available to regulatory authorities upon request. (or sent to Queensland Transport and the Department of Minerals, Mines and Natural Resources?).

Any corrective actions resulting from environmental audits will be incorporated into the Company's IMS through 'System Improvement Requests' where priorities and responsibilities are assigned. Improvement Requests (e.g. Corrective Actions Request or Non-conformance Report) are the mechanism in the Company to generate corrective actions towards any non-conformance. The IMS entry must be addressed and closed out by the Manager Transmission Operations QLD or relevant Operations Manager. The records will be contained in the database for historical reference.

6.3.2 EMP Review

This Environmental Management Plan shall be reviewed to ensure that:

- Information and environmental management procedures contained remain current
- All opportunities for improvement are identified

- Any changes to legislation, licence and approval conditions are adhered to.

Reviews shall take the following forms:

- APA Group shall consider the above issues on an ongoing basis
- On completion of the first 12 months of full implementation of this EMP, the first annual review will be undertaken.

The EMP will be reviewed whenever, any of the following occurs:

- A non-conformance is detected in the EMP
- The EMP no longer reflects the actual work practices
- The operational program is amended.

6.3.3 Corrective Action

Corrective and preventative actions are utilised to improve any identified system deficiencies and / or areas of environmental performance requiring improvement. Corrective and preventative actions may be generated as an outcome from work site inspections, incident report / investigations, audits or as a result of community complaints. These actions will be documented by utilising HASIF forms and the Integrated Management System electronic database.

6.3.4 External Communication

Consultation with relevant regulatory authorities shall continue during operation of the RBP. Consultation will ensure that stakeholders are kept informed, and that local knowledge and expertise are utilised appropriately. The respective Operations Manager shall be responsible for coordinating external communications. The Environmental Compliance Specialist is available to provide assistance where necessary.

Local Councils are also contacted at least once a year and are encouraged to contact the Company if any developments are occurring in the vicinity of the pipeline easement.

6.3.5 Complaints Management

APA maintains a comprehensive landowner liaison program that includes:

- An annual mail out of a landowner package with safety, contact details and other relevant information
- Visiting the landowner from time to time on an as needed basis
- Maintaining a landowner database along the pipeline easement

Landowners are encouraged to phone APA if they wish to ask any questions or make any complaints with regard to the condition of the pipeline easement. Records are kept of all landowner contact and of any complaints received.

Once a complaint is received it is the responsibility of the relevant Pipeline Technician and their respective Operation Manager to ensure that the complaint is resolved to the satisfaction of both parties. Records are to be kept of all actions taken by personnel.

A landowner complaints database is maintained so that all complaints can be monitored on-line. The complaints database should record the complainant's details (name, phone no., address, property affected) and actions taken to remedy the situation.

7 Contact Directory

7.1 RBP Management

Position Title	Contact Phone Numbers
Operations Manager, RBP	Phone: (07) 3323 6156 Mobile: 0410 440 793
Lands Manager	Phone: ((07) 3323 6148 Mobile: 0411 879 441
HSE Advisor	Phone: (07) 3323 6128 Mobile: 0418 819 412
Manager Transmission Operations Qld	Phone (07) 3323 6070 Mobile: 0419 792 243
Engineering Manager – Gas Transmission	Phone: (07) 3323 6140 Mobile: 0438 568 939

7.2 APA Group

Position Title	Contact Phone Numbers
APT Control Room - Brisbane	1800 017 000 (24 Hr General Enquiry Number)
Manager HR & HSE (Qld)	Phone: (07) 3323 7634 Mobile: 0413 353 271
Engineering Manager (APA Group)	Phone: (02) 9693 0001 Mobile: 0407 101 802

7.3 Emergency Services

Authorities	Contact Phone Numbers
Emergency	000
Queensland Fire & Rescue Service	000
Air Traffic Control	13 17 57
Queensland Workplace Health & Safety (QWHS)	(07) 3896 3363 (accident notification) or 1300 369 915
Environmental Protection Agency (EPA)	1 300 130 372 (Incident Number)
Electrical Safety Office (ESO)	(07) 3235 4596 or 1300 650 662

7.4 State EPA and Government Departments

Government Departments	Contact Phone Numbers
Department of Emergency Services (DES)	(07) 3247 8821
Department of Mines & Energy (DME) - John Fleming, Chief Inspector, Petroleum & Gas	Phone: 07 32371415 Mobile: 0417 729 512
Department of Primary Industry (DPI)	13 25 23
Animal and Plant Health Service (APHS)	13 25 23
Qld Parks and Wildlife Service	(07) 3227 8185

8 Abbreviations

Throughout this EMP, a number of acronyms and terms have been used which are described in Table 24.

Table 24 Abbreviations

Abbreviation	Description
APT	APT Management Services Pty Ltd - a member of the APA Group
AHD	Australian Height Datum
ALARP	As Low As Reasonably Practicable
ANZECC	Australian New Zealand Environment Conservation Council
APEA	Australian Petroleum Exploration Association (APEA) - it has changed its name to the Australian Petroleum Production and Exploration Association (APPEA)
APHS	Animal and Plant Health Service -Department of Primary Industry (DPI)
APIA	Australian Pipeline Industry Association
APPEA	Australian Petroleum Production and Exploration Association (originally Australian Petroleum Exploration Association)
ARMCANZ	Agriculture Resource Management Council of Australia and New Zealand
AS	Australian Standard
ASS	Acid Sulphate Soils
CEMS	Corridor Environmental Management Strategy
COO	Chief Operating Officer
DME	Department of Mines and Energy
DPI	Department of Primary Industries
EIP	Environmental Improvement Plan
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPI	Environmental Performance Indexes
GASS	Gas Accounts and Service System
GIS	Geographical Information System
HASIF	Hazard Alert and System Improvement Form
HR	Human Resources
HSE	Health, Safety and Environment
IMS	Integrated Management System
ISO	International Standards Organisation
KP	Kilometre Point
MAOP	Maximum Allowable Operating Pressure
MCMS	Mica Creek Meter Station
MTIC	Miscellaneous Transport Infrastructure Corridor
MIM	Mt. Isa Town Lateral
MLV	Main Line Valve
MSDS	Materials Safety Data Sheet

Abbreviation	Description
NOHSC	National Occupational Health & Safety Commission
NZS	New Zealand Standards
OHS	Occupational Health & Safety
PCC	Pipeline Control Centre
PJ/A	petajoules per annum
QPWS	Qld Parks and Wildlife Service
RMT	Risk Management Technologies
ROW	Right of Way
SES	State Emergency Service

Appendix A

Pipeline Route

Insert Appendix

Appendix B

APA Group Health, Safety & Environment Policy

APA Group

Health, Safety and Environment Policy

APA Group is committed to health, safety and protection of the environment.
It is integral to everything that we at APA Group do.
Safety and environmental responsibility is a non-negotiable priority in all our work.
All our employees are empowered and are obliged to protect themselves, other workers and the general public.

Our overall commitment for HSE management is to:

- Provide a safe and healthy workplace for all our people and contractors
- Recognise the consequences of handling hazardous materials and commit to the management and control of the risks that may exist in our business and facilities.
- Protect the community and support community health and environment aspirations
- Protect and maintain the natural environment and its sustained use for future generations
- Comply with all our obligations and commitments

APA Group management systems will ensure that we:

- Make HSE part of the way we do business and part of all business decisions
- *As a minimum*, comply with all applicable legislation and standards and other commitments we make
- Be consistent with relevant international and Australian management system standards
- Provide the support and resources necessary to ensure compliance with this policy
- Use appropriate risk management methodology to identify, assess and control our risks and hazards
- Investigate incidents, system failures and near misses carefully and implement corrective actions to prevent recurrence
- Provide education, training and competency development programs to enable all staff to perform their duties safely and responsibly
- Create a culture that supports compliance, responsibility, leadership and continuous improvement in HSE management
- Establish programs to conserve resources, minimise wastes and pollution, improve processes and protect the environment
- Seek continuous improvement by monitoring performance against periodically reviewed objectives, targets and plans
- Communicate this policy to our people, contractors and other stakeholders.

The Managing Director is accountable to the Board of Directors for ensuring that this policy is implemented and is part of the way we do business at APA Group.

Mick McCormack
Managing Director **July 2007**

Appendix C

APA Group Risk Assessment Methodology

Risk definition and classification

Where possible, the use of quantitative data and risk expressions to measure likelihood and consequence of any identified risks can be applied. In some circumstances this may not be possible nor efficient or effective. Therefore a qualitative approach is acceptable. APA Group's qualitative approach applies the following measures.

Level	Descriptor	Description	Frequency
5	Almost certain	Is expected to occur in most circumstances	At least once per year
4	Likely	Will probably occur in most circumstances	At least once every 3 years
3	Possible	Might occur at some time	At least once every 10 years
2	Unlikely	Could occur at some time	At least once every 25 years
1	Rare	May occur only in exceptional circumstances	Less than once every 25 years

Qualitative Risk Analysis Matrix – Level of Risk

For each component of the activity subject to a risk analysis, the evaluation of likelihood and consequences will apply the matrix below to determine the level of risk as per Standards Australia guidelines - AS/NZS 4360:2004 - Risk Management.

Likelihood	Consequences				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
5 Almost Certain	H	H	E	E	E
4 Likely	M	H	H	E	E
3 Possible	L	M	H	E	E
2 Unlikely	L	L	M	H	E
1 Rare	L	L	M	H	H

Legend:	
E	**Extreme risk** – Immediate action required and risk monitored at Board level
H	**High risk** – Senior Management attention needed and risk monitored
M	**Moderate risk** – Management responsibility must be specified
L	**Low risk** – Manage by routine procedures

Consequence

Level	Descriptor	Example Impacts Descriptions				
		Health & Safety	Financial impact	Environment	Compliance, Legal & Other Requirements	Reputation impact
1	Insignificant	• No significant injury or illness • A 'near miss'	• Less than $10,000	• On-site release immediately contained with no detectable change to the environment • Impact duration of < 1 week • Isolated to a confined area	• No breach of compliance with legal and other requirements	• May result in isolated public comments
2	Minor	• First aid injuries • Medical treatment with return to normal duties • Acute or short term illness with no lost time	• $10,000 - $1 million	• On-site release not contained or off-site release immediately contained with minor change to the environment • Impact duration of < 1 month • Minor impact to a site	• Non-conformance with company requirement or voluntary standards • Voluntary explanation to a regulator necessary	• May result in repeated public complaints
3	Moderate	• Restricted work case • Loss time injury or illness	• $1million - $5 million	• Off-site or ongoing release requiring ongoing management with moderate change to the environment • Impact duration < 1 year • Moderate impact to a local area	• Non-compliance with licence conditions • Formal explanation required • Regulator enquiry • Possible on-the-spot fine for operational practices	• Widespread public complaints or isolated adverse local media
4	Major	• Disabling injury or chronic health ailment • Single fatality	• $5 million - $20 million	• Off-site release not contained requiring management with substantial external assistance and resources causing major damage to the environment • Impact duration < 10 years • Wide area affected	• Serious breach of regulations with penalty notice and fine issues • Regulator or Authority investigation, report required	• Isolated adverse coverage in national media
5	Catastrophic	• Multiple fatalities or disabilities	• Greater than $20 million	• Off-site release not contained requiring management with substantial external assistance and resources causing severe damage to the environment • Impact > 10 years • Wide areas severely affected	• Major breach of regulations • Significant fines and/or litigation	• Extended adverse coverage in national / international media

Appendix D

APA Group Incident Investigation Template

Incident Investigation:

{Name of incident
any references to contracts etc}

{Date}

Author: {Name}

Introduction
An incident investigation of a near miss with …….

The incident investigation was undertaken by {name} at the request of {name} and has resulted in this report. The people interviewed as part of this incident investigation were:

{Name} – {Title}
{Name} – {Title}
{Name} – {Title}
{Name} – {Title}

Description of Incident
……

Immediate Causes
……
……
……
……
Root Causes
……
……
……
Immediate Actions
……
……
……

Long Term Actions

……
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Further Investigations and Actions

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Conclusion