

Attachment C

Revised EIS Appendices 3 & 4

Appendix 3:

Draft Management Plans

*Construction Environmental Management Plan
(380-PP-G-008) - amended*

*Construction Weed Management Plan
(380-PP-G-034) amended*

*Preconstruction Weed Management Plan
(080-PP-G-003) new*

*Environmental and Cultural Management Plan
(090-OP-O-003) – Operations - new*

*Weed Management Plan
(090-OP-N-002) – Operations - new*



CENTRAL QUEENSLAND GAS PIPELINE PROJECT PLAN

Construction Environmental Management Plan

Document No.: 380-PP-G-008					
Rev	Date	Description	Prepared	Checked	Approved
A	25 Jan 2005	First Draft	W. Mathieson	P. Maloney	G. Hogarth
B	20 Sept 2006	Draft for EIS issue	W. Mathieson	P. Maloney	G. Hogarth
C	18 July 2007	Issued for Supplementary report	W. Mathieson	P. Maloney	P. Maloney

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APPENDICES

Appendix A Environment Health and Safety Statement

Appendix B List of Associated Documents

1.0 PURPOSE & SCOPE

This Construction Environmental Management Plan (CEMP) has been prepared to cover all activities, up to and including construction, associated with the Central Queensland Gas Pipeline (CQGP) and associated facilities. The CEMP has been developed in accordance with the Australian Pipeline Industry (APIA) Code of Environmental Practice to ensure that the CQGP Project is constructed in accordance with industry best practice and that commitments from the Environmental Impact Statement (EIS) are implemented.

The purpose of the CEMP is to ensure that appropriate environmental protection and impact minimisation techniques are implemented for the Project.

The CEMP provides a framework for control of Project impacts.

Note: The CEMP has been prepared by Enertrade as part of the Environmental Approvals process for the CQGP. This document therefore constitutes a binding part of the environmental approval for the construction of the pipeline. The roles and responsibilities documented in this CEMP are based on typical construction roles but will be subject to change on appointment of a construction contractor. Such changes will be carried out to reflect the structure in use by the given construction contractor but the intent of this CEMP must be implemented.

Construction of the low pressure pipeline from the Gladstone City Gate to the southern industrial area of Gladstone requires confirmation of the route and environmental requirements with both the Environment Protection Agency (EPA) and the Department of Natural Resources and Water (DNRW) prior to construction of this section.

2.0 ABBREVIATIONS

ADWG	Australian Drinking Water Guidelines
AHD	Australian Height Datum
APIA	Australian Pipeline Industry Association
ASS	Acid Sulphate Soils
CEMP	Construction Environmental Management Plan
CEP	Construction Execution Plan
CHMP	Cultural Heritage Management Plan
CoGR	Coordinator-General's Report
CQGP	Central Queensland Gas Pipeline
DEWR	Department of Environment and Water Resources (Cth)
DPI&F	Department of Primary Industries and Fisheries
DME	Department of Mines and Energy
DMR	Department of Main Roads
DNRW	Department of Natural Resources and Water
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
GIS	Geographic Information System

ITP	Inspection and Test Plan
JHA	Job Hazard Analysis
PPL	Petroleum Pipeline Licence
ROW	Right-of-Way
SAP	Significant Area Plans
SMP	Safety Management Plan
WMP	Weed Management Plan

3.0 RESPONSIBILITIES

All staff are responsible for the environmental performance of their activities and for complying with the General Environmental Duty as set out in Section 319(1) of the *Environment Protection Act 1994* which states:

‘a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to minimise the harm’

This section sets out the specific environmental responsibilities of key Project positions.

3.1 Project Manager

The Project Manager CQGP Project is ultimately responsible for the standard of management, including environmental management. To assist in fulfilling this responsibility, the Project Manager CQGP Project is supported by a series of specialised personnel. It is the responsibility of the Project Manager to ensure that the Project is adequately resourced to enable all personnel to carry out their duties in an environmentally responsible manner and that the environmental obligations set out in this CEMP can be implemented.

3.2 Construction Manager

The Construction Manager is responsible for all construction activities including planning, procedure’s approvals, execution of works and implementation of this CEMP.

3.3 Construction Superintendent/s

The pipeline Construction Superintendent/s will direct work in a manner that complies with all relevant environmental procedures, adheres to all legislative requirements and ensures that all environmental objectives associated with the Project are achieved. This includes implementation of this CEMP as well as development and implementation of procedures, Construction Execution Plans (CEP) and Job Hazard Analysis (JHAs). The Construction Superintendent/s have “stop task” and “stop work” authority.

3.4 Engineering Manager

The Engineering Manager is responsible for generating the design drawings and specifications consistent with the CEMP and AS2885.

3.5 Environment Manager

The Environment Manager is responsible for monitoring and reporting the implementation of the CEMP, Cultural Heritage Management Plan (CHMP) and Complaints Register. The Environment Manager is also responsible for setting up environmental compliance audits and monitoring programs.

3.6 Manager Safety Risk and Compliance

The Manager Safety Risk and Compliance is responsible for maintaining the Compliance Register and for ensuring that all compliance audit findings, including environmental compliance, are closed out.

4.0 PROJECT OVERVIEW

The Central Queensland Gas Pipeline (Moranbah to Gladstone) will supply natural gas from the Bowen Basin to Gladstone (Figure 1: Route Map).

The pipeline will be constructed using high tensile steel and will be approximately 440 kilometres in length. Generally, a cleared Right-of-Way (ROW), up to 30 metres wide, will be required to install the buried pipeline. Work areas, located at strategic intervals along the ROW (particularly adjacent to riparian areas), may be up to 50m x 50m immediately adjacent to the ROW. Work areas will not be created in Bluegrass or remnant Brigalow.

The pipeline will commence at the existing Moranbah Compressor Station. Main-line valves and off-take points will be located at appropriate positions along the pipeline and delivery facilities will be provided at Gladstone. Design, construction and operation of the pipeline will be in accordance with AS2885 and AS4564 which will ensure that the appropriate protection measures will be included in more vulnerable locations (e.g. urban areas, schools).

Construction activities will include clearing the ROW of vegetation, which will generally be stockpiled for salvage and respreading during restoration. The ROW will then be graded and topsoil will be stockpiled for respreading. The entire easement and all work areas will be rehabilitated following pipeline installations.

5.0 PROPONENT'S COMMITMENT TO THE ENVIRONMENT

The Proponent is committed to pursuing industry best practice in environmental performance. This is demonstrated through the Environmental, Health Safety and Management System and Environmental Health and Safety Statement (Appendix A).

6.0 ASSOCIATED DOCUMENTS

This CEMP should be used in relation with a number of other documents. These are set out in Appendix B.

Figure 1: Route Map

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7.0 CONTROL MEASURES

Control measures have been developed to ensure that the objectives of this CEMP are achieved. The control measures have been documented in this CEMP (see Sections 10.0, 11.0, 12.0 and 13.0) and, where appropriate, will be included in the Construction Specifications and Alignment Drawings. Relevant references have been made in this CEMP to additional applicable documentation.

The environmental control measures and associated documentation will be dynamic. They will be periodically reviewed and amended as required to ensure that adverse impacts to the environment are minimised.

8.0 TRAINING

All Managers are responsible for ensuring that personnel under their control have the requisite competencies, skills and training to carry out their assigned tasks and for identifying additional training and competency requirements. Managers are responsible for ensuring training records are maintained. Training activities may include Inductions, Job Hazard Analysis, Construction Execution Plans (CEP) and Toolbox Talks.

8.1 Induction

All staff will complete a comprehensive Project induction. The induction will include safety, access, environmental and cultural heritage requirements and standards. Environmental inductions will cover, as a minimum, erosion risk and management, fuel and chemical (including fertilizers) handling and storage procedures, waste management and weed hygiene and control procedures.

All supervisors and managers will have specific training on the use and implementation of the CEMP and CHMP.

It is the responsibility of the Project Manager (or delegate) to ensure records of training are maintained. During construction works it is the responsibility of the Construction Manager to maintain construction workforce training records.

8.2 Job Hazard Analysis

A JHA is a tool that is used to help personnel identify, analyze and manage the hazards associated with the work they are to undertake. It formalizes the process of hazard identification and management that most people follow when working. The JHA requires personnel to examine the task they are about to undertake and:

- To break the job into separate, defined steps;
- For each of these job steps identify the potential hazards (safety and environmental) that could occur; and
- For each potential hazard list the method to be followed to prevent, or minimise, the hazard causing an injury, loss, damage or environmental incident.

8.3 Construction Execution Plan

CEPs convert construction specifications (see Appendix B) to a task or method specific approach. They will be generated as appropriate for each activity. From these CEPs the project Job Hazard Analysis (JHA) and Inspection and Test Plan (ITP) will be developed.

8.4 Toolbox Talks

Toolbox Talks are interactive meetings to review issues associated with up coming work activities including cultural heritage, environmental, and safety aspects. They are typically held weekly and discussions include highlighting and discussing relevant environmental issues as required. Records are maintained for all Toolbox Talk Agendas, attendance and outcomes. Sessions include discussion of strategies to be implemented as identified in Job Hazard Analysis (see Section 8.2).

9.0 REPORTING AND AUDITING

During the construction phase of the Project Crew Supervisors will be required to submit daily activity reports. These daily reports will include sections to confirm compliance with the relevant section(s) of the CEMP. The Environment Manager will arrange regular (1 per work cycle) internal reviews of the implementation of the CEMP.

All reports, reviews and audits will be kept on the central filing system and made available to the Regulatory Authorities as required. Audit results will be used to review management practices and if necessary the CEMP will be updated.

In addition to the monitoring and reporting requirements documented in the relevant sections of the CEMP, the following regime will be implemented:

9.1 Audits

Audits provide lead indicators for potential incidents and provide important information for corrective action and review of procedures. External audits will be conducted at the frequencies set out in Table 9-1.

Table 9-1: Audit Schedule

No	AUDIT	TIMING *
1	CEMP Compliance	Within 6 weeks of commencement of construction
2	CEMP Compliance and review of corrective actions from Audit 2	4 th month of construction
3	Construction completion and review of corrective actions Audit 2	Within 6 weeks of completion of construction

As per the Operations EMP post-construction, audits will be conducted half yearly for the first 18 months to evaluate revegetation, erosion and soil stability, weed control, watercourse alteration prevention and success of bed and bank reprofiling.

Issues identified during audits will be recorded and corrective action implemented.

9.2 Incident Reporting and Non-Conformance

Incident reporting (lag indicators) will be implemented to record any safety or environmental non-conformances or incidents. These will be recorded on an incident report form and forwarded to the Manager Safety Risk and Compliance who will ensure that the Construction Manager and other relevant discipline Managers are notified as appropriate. The Construction Manager is responsible for notifying the Project Manager. The Manager Safety Risk and Compliance is responsible for notifying the appropriate government agency (e.g. DME or EPA), where relevant. Incidents will be investigated and followed up and, where relevant, corrective actions nominated. Depending upon the nature of the incident (safety or environmental) the Safety Risk and Compliance or Environment Managers are responsible for ensuring closeout of all incidents.

9.3 Reporting

Section 320 of the *Environment Protection Act 1994* requires that any person who becomes aware of an event that may or has caused environmental harm, report the event/incident to their employer. Details of the nature and circumstances of the event must be provided. Any such incidents must be immediately reported through the Incident Reporting system (see Section 9.2).

9.4 Complaints Register

The Environment Manager will maintain a Complaints Register in accordance with the Complaints Management Procedure and shall record in this all complaints from Land Owners, Local Authorities and the general public in relation to physical Project activities. The Environment Manager shall review each complaint upon receipt and review the Complaints Register on a monthly basis. Corrective actions and other recommendations shall be closed out with the Construction Manager and where applicable modifications to practices and procedures shall be made.

10.0 ENVIRONMENTAL CONTROL MEASURES - CONSTRUCTION ACTIVITIES

10.1 Alignment, Access and Worksite Selection	
Management Policy	<i>To utilise, to the extent practicable, existing cleared areas and access tracks so as to minimise the impact on vegetation and minimise potential for weed invasion.</i>
Performance Objective	<ul style="list-style-type: none"> • Avoid significant cultural and historic heritage sites. • Select pipeline route in consultation with Traditional Owners and Ecologists. • Utilise existing access roads and tracks as far as practicable. • Select access and pipeline routes that minimise disruption to landholders and third parties. • No access or worksites in identified areas of significant vegetation or habitat (refer alignment sheets).
Management Strategy	<ul style="list-style-type: none"> • Base route alignment, and location of campsites, storage and additional work areas and new access tracks, to the extent practicable, on the following criteria: <ul style="list-style-type: none"> – Avoiding unduly steep or rugged terrain; – Avoiding areas of potential ground movement; – Avoiding large and connected forested patches as far as practical; – Avoiding/minimising impacts on sensitive vegetation, erosion prone soils and watercourse crossings (refer constraints mapping); – Locating crossings of ephemeral watercourses where water is present at ‘run’ or ‘riffle’ sections if practical; – Avoiding significant natural, Aboriginal or historic heritage sites in accordance with the CHMP; – Avoiding environmentally sensitive areas (e.g. bluegrass, remnant Brigalow, identified Black Ironbox and Cycas megacarpa areas, wetlands of national significance, Byellee Wetlands and identified habitat areas for Yakka Skink, Brigalow Soaly-foot, Coloured Delma, Dunmall’s Snake and Bridle Nail-tailed Wallaby (as detailed in Section 13.5)) (refer constraints mapping); – Avoiding habitat trees of the Eastern (Greater) Long-eared Bat. – Suitably distant from residences (including construction campsites) to avoid noise impacts and other disturbance; – Minimising impact to public use areas in Gladstone (e.g. Botanic gardens, Meteor Sports Club); – Avoiding/minimising impacts to State Forests (e.g. Mt Stowe, Mt Maurice). • Include Cultural Heritage clearances, in accordance with CHMP, in site selection. • Use existing roads and tracks where practicable. • Select all new access tracks, and any diversions, against the above criteria and Performance Objectives. All new access tracks to be individually approved by the Environment Manager. • Use only designated access tracks (this applies to all construction vehicles, including personnel vehicles). • All vehicles and personnel to remain on the ROW, unless at designated work areas. • Maintain access tracks and the ROW to minimise the potential for bulldust generation. • No clearing of land in reserves, wetlands, state forests, good quality agricultural land or identified habitat areas (as above) for camp sites, access tracks or work areas. • Provide property access for landholders at all times. • Reduce impacts to landholders by the use of temporary infrastructure (e.g. installation of gates and cattle grids to allow access to pipeline easement, and temporary fencing to control livestock). • Provide temporary gates where fences are breached during construction. • Reinstate all fences and gates post construction. • Rehabilitate access tracks at the completion of construction in accordance with landholder requirements. • Weed management in accordance with the Construction Weed Management Plan (CWMP 380-PP-G-034).
Performance Indicators	<ul style="list-style-type: none"> • No new access routes in areas where existing tracks accessible within 0.5km. • No clearing of Bluegrass, Brigalow, remnant vegetation or protected species for access tracks or work areas. • No clearing of SEVT for any purpose.

10.1 Alignment, Access and Worksite Selection

	<ul style="list-style-type: none"> • No more than 2 access complaints per cycle from land owners, authorities and public. • All complaints responded to within 24 hours and mitigation measures initiated within 48 hours (mitigation may include agreement on how situation is to be addressed). • Documented evidence that all access routes and work areas, where earthworks are required before use, have received cultural heritage clearance.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. • Regular audits and reviews in accordance with Section 9.1. • Recommendations and corrective actions from audits shall be implemented. • Non-Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required. • Landholder complaints will be recorded and closed out by the Project (see Section 9.4).
Responsible Person	<ul style="list-style-type: none"> • Environment Manager – day to day implementation and over view • Construction Manager – overall implementation and adequate resorting
Associated Documentation	<ul style="list-style-type: none"> • Construction Weed Management Plan (380-PP-G-Q34) • Approved construction access maps • Alignment drawings

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10.2 Campsites Offices and Site Management	
Management Policy	<i>To minimise the impact on the environment from campsites and office sites providing workspace, accommodation and provisions for construction teams</i>
Performance Objective	<ul style="list-style-type: none"> • No clearing of remnant vegetation or protected species to create campsites. • All sewerage facilities in compliance with EPA requirements. • Functional waste minimisation, segregation and recycling systems operational at all worksites and disposal of wastes to licensed disposal facilities. • Ensure activities do not encourage vermin or mosquito breeding. • Reinstatement of site to equivalent surrounding conditions following Project use.
Management Strategy	<ul style="list-style-type: none"> • Locate campsites based on the criteria in Section 10.1 and in agreement with landholders and Local Government authorities. • Any construction campsite facilities installed at Moranbah compressor station will meet Belyando Shire Council standards for installation. • Ensure campsites conform to relevant codes and standards. • No clearing of remnant vegetation or protected species (e.g. Bluegrass, remnant Brigalow or SEVT) will be carried out for campsites. • Campsites will not be located in reserves, wetlands or state forests. • Campsite accommodation will be of a standard to ensure dust ingress is minimised. • Dust control measures (e.g. watering) will be used as required at campsites. • Campsites will be cleared and graded in accordance with the requirements of Section Error! Reference source not found.. • A vehicle and equipment washdown station will be provided at the campsite. Washdown stations will conform to the requirements of the CWEMP. • Potable water, to Council and Australian Drinking Water Guidelines (ADWG), will be trucked in by a contractor or raw water treated on-site. • If raw water is treated on-site this will be done in accordance with the relevant Australian Standards (e.g. NHMRC Australian Drinking Water Guidelines 2004) to ensure that the water quality conforms to the ADWG. • If water for potable use is treated on-site at any location the Rockhampton Population Health Unit Environmental Health Services will be notified. • Selection of water supply sources to the Project will ensure that community water supplies along the pipeline route are not compromised. • Effluent will be treated and managed in accordance with the requirements of the EPA. Refer also to Section 11.6. • All other wastes will be disposed of to a licensed waste disposal site appropriate to the nature of the waste material. Refer also to Section 11.6. • Limit the potential for mosquito breeding by removing and disposing of any items of equipment or debris, which may hold water, and are no longer required for construction. • Conduct periodic inspection of any areas of standing water to ensure no mosquito breeding occurring. • Carry out mosquito control measures (e.g. <i>No Mozzie</i> blocks in standing water, or spraying of the area) if required. • Reinstated and revegetated campsites, following use, in accordance with pipeline easement reinstatement practices and requirements.
Performance Indicators	<ul style="list-style-type: none"> • No clearing of remnant vegetation or protected species for campsites. • Documented evidence that campsites have received cultural heritage clearance. • Effluent characteristics conform to EPA Environmental Authority (EA) requirements before discharge to land. • Waste transport docket on file for all waste removal. • No mosquito breeding on-site.

10.2 Campsites Offices and Site Management

Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • During construction all workplaces, offices and campsites and the entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention to areas such as waste management, vermin and mosquito breeding and general housekeeping. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Weekly site check by camp manager. • Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Camp Manager- day to day management
Associated Documentation	<ul style="list-style-type: none"> • Environmental Authority • Weed Management Plan – access routes (380-PP-G-034) • Approved construction access maps • Alignment drawings

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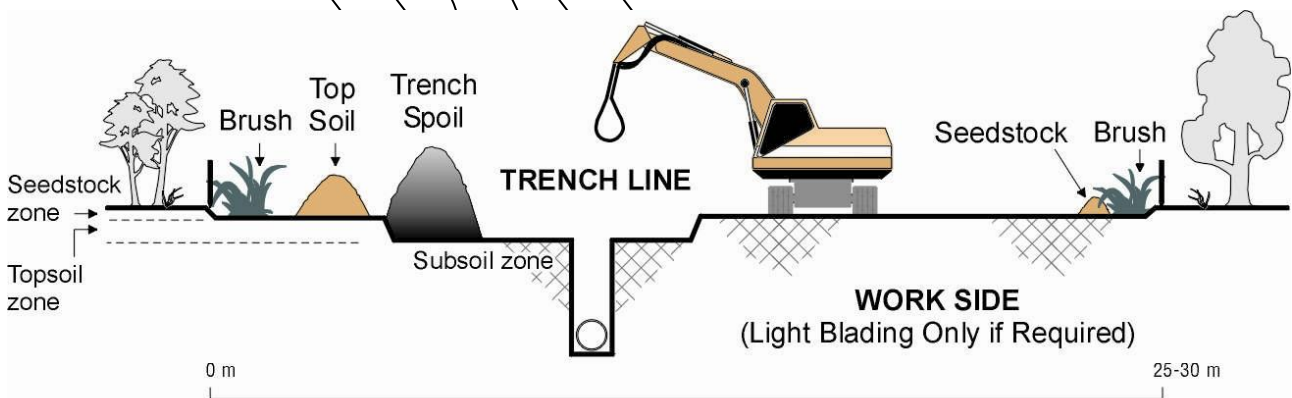
10.3 Clearing & Grading	
Management Policy	<i>To optimise the use of vegetation cleared on the line during maintenance and operations, and to minimise the impact of site clearing and disturbance to vegetation communities, encouragement of regeneration of vegetation in cleared areas.</i>
Performance Objective	<ul style="list-style-type: none"> • Minimise disturbance to native flora and fauna. • Minimise the potential for the spread of weeds. • Minimise soil (particularly topsoil) degradation and loss. • Minimise dust generation. • Minimise sedimentation and associated impacts on water quality. • Minimise impacts on sites of cultural and historic heritage significance. • Minimise impacts on visual amenity. • Minimise disruption to landholders and third parties. • Optimise rehabilitation success.
Management Strategy	<ul style="list-style-type: none"> • Conduct assessment of potential for contaminated soils on route (e.g. risk assessment of potential for contamination, targeted search of EPA Contaminated Sites Register, discussions with landholders) before construction activities commence. • Log any identified potentially contaminated sites in GIS database. • Show all clearing boundaries clearly on project drawings. Where the ROW is to be reduced (e.g. in Bluegrass areas) this will be recorded on alignment sheets, referenced in SAPs and physically marked on the ground. • Minimise clearing in riparian vegetation or wetlands to the minimum required to safely construct the pipeline and meet other environmental requirements (e.g. erosion control, spoil storage). • Clearly mark the required width of grading on the Alignment Drawings and flag in the field where a change in the width is required. • Clearing width not to exceed 30m in identified Bluegrass or remnant Brigalow ecosystems. • Total avoidance of semi evergreen vine thicket. • Minimise clearing width in identified Bridled Naitail Wallaby, Yakka Skink, Brigalow Scaly-foot, Collared Delma and Dunmall's Snake Areas (as detailed in Section 13.5). • No clearing of remnant vegetation or protected species for camp sites or access tracks. • Obtain permits prior to clearing where protected species are to be cleared (e.g. Black Ironbox- <i>Eucalyptus raveretiana</i>). • Identify and protect hollow-bearing trees wherever possible (e.g. large mature trees). • Clearly mark individual trees to be retained or preserved on the ROW in the field, prior to the commencement of clearing activities. • Utilise monitors as required, in accordance with the approved CHMP, for clearing and grading activities. • Blade clearing of trees to retain the root mass wherever practicable. • Grade topsoil from the ROW, as shown in Figure 2 (see also Section 11.3). • Stockpile (not burn)¹ cleared vegetation for respreading during rehabilitation. • No pushing of cleared vegetation or soil up against trunks of trees. • No storing of cleared vegetation and soil against fencelines • Stockpile cleared vegetation and soil outside of watercourses above the floodline. • Maintain access for landholders at all times. • Breach stockpiles in appropriate locations (coinciding with designated access roads or tracks, fencelines etc) to allow vehicular, stock and wildlife access. • No vehicular movement over stockpiled soil. • Use containment devices (e.g. silt fences), where appropriate, to preserve stockpiled soils. • Maintain soil and surface stability at all times (e.g. temporary erosion control berms, drains and sediment barriers shall be installed as necessary and maintained until final construction clean-up is completed). Refer also to Section 11.3.

¹ This depends on the volume and nature of weed species present. In areas of dense woody weed infestations (e.g. Rubber Vine) burning of material may be preferable to reduce the risk of further weed infestation.

10.3 Clearing & Grading

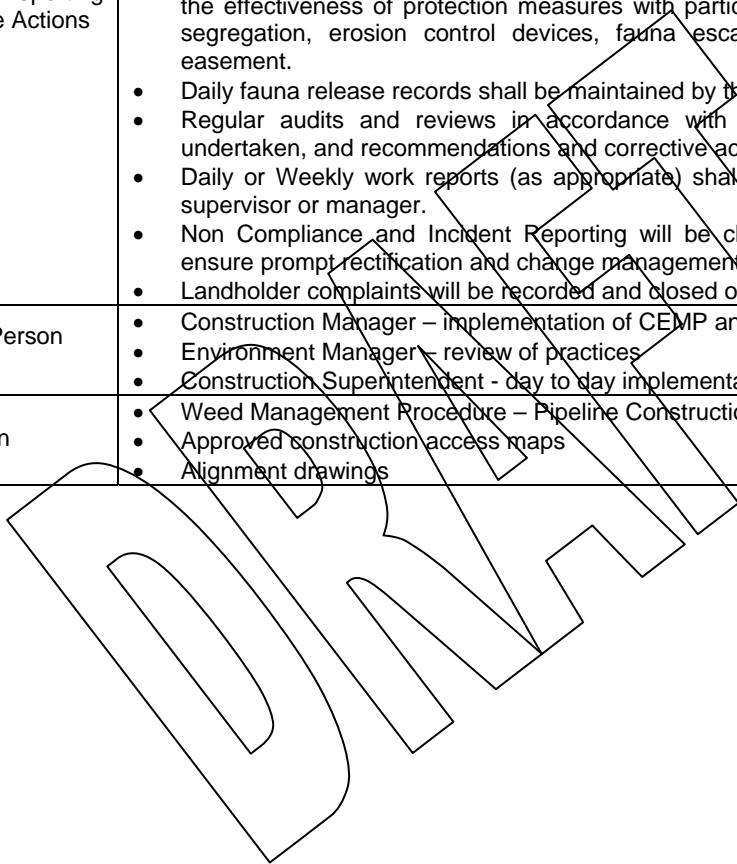
	<ul style="list-style-type: none"> • Use water trucks (particularly in hot and windy conditions) on the ROW and, where necessary, access roads to reduce dust generation. • Restrict vehicle speeds on unsealed roads.
Performance Indicators	<ul style="list-style-type: none"> • No unplanned or unapproved damage to flora and fauna. • No clearing of Bluegrass, remnant Brigalow or SEVT for work areas. • Clearing width not exceed 30m in identified Bluegrass or Brigalow ecosystems. • Total avoidance of semi evergreen vine thicket. • Minimise clearing width in identified Bridled Nailtail Wallaby, Yakka Skink, Brigalow Scaly-foot, Collared Delma and Dunmall's Snake Areas (as detailed in Section 13.5). • Documented evidence of Cultural Heritage monitoring of clearing and grading. • Installation and maintenance of erosion control and soil containment devices. • Soils and vegetation stored to allow for restoration of disturbed areas to equivalent to surrounding area after construction. • No more than 2 complaints per cycle from land owners, authorities and public. • All complaints responded to within 24 hours and mitigation measures initiated within 48 hours (mitigation may include agreement on how situation is to be addressed).
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • During construction the entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention to areas such as clearing widths, topsoil and vegetation storage and erosion and sediment control measures. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. • Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required. • Landholder complaints will be recorded and closed out by the Project (see Section 9.4).
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Weed Management Plan • Weed Management Procedure – Pipeline Construction • Approved construction access maps • Alignment drawings

Figure 2: ROW Clearing



10.4 Trenching	
Management Policy	<i>To protect topsoil quality, maintain land productivity and limit the disruption to landholders and their improvements, domestic stock and native fauna from trenching.</i>
Performance Objective	<ul style="list-style-type: none"> • No mixing or burial of topsoil. • Limit impacts to sites of cultural and historic heritage significance. • Limit disruption to landholders and third parties. • Limit impacts on livestock and native fauna. • No long term impact on Good Quality Agricultural Land. • No accidental breakage of third party buried services.
Management Strategy	<ul style="list-style-type: none"> • No trenching in marine plant areas in proximity to the Port Curtis Wetland (refer constraints mapping). • Accurately define the location of the existing Third Party infrastructure in the ROW on the alignment sheets and then mark physically on the ground prior to trenching activities. • Identify and avoid known contaminated land areas. Superintendents will be advised of potential contamination issues and management measures during inductions. • Where a previously unidentified contaminated area (e.g. dip, waste pit) is uncovered during trenching the following actions will be initiated: <ul style="list-style-type: none"> – Cessation of trenching at the location. – Relocation and recommencement of trenching 50m ahead. – Advise Managers Construction and Environment and Land Access. – Have site assessed in accordance with the EPA Guideline for the Assessment and Management of Contaminated Land in Queensland, Initiate appropriate remedial action based on the assessment. This may include deviating around the site. – Contaminated material will not be removed from the work area without the approval of the EPA. • Stockpile trench spoil (sub soils) separately to topsoil and vegetation. • Assess route for potential or actual Acid Sulphate Soil (PASS/ASS) prior to trenching. If PASS or ASS identified handle soils in accordance with Section 11.2. • Stockpile spoil outside watercourses, and/or behind containment structures so as to prevent siltation of any land or surface water or blockage of any existing drainage channels. • Provide gaps and spaces in the topsoil, subsoil and vegetation stockpiles for fauna movement. • Where trench requires dewatering ensure water is discharged well away from watercourses onto geofabric (or similar) into a stable area. • Reduce distance between gaps and spaces on approaches to stream crossings. • Utilise trench plugs at appropriate intervals to minimise erosion and allow access across the ROW (refer Section 11.3). • Leave pipeline trenches open for the minimum time practicable, usually between 2 and 8 weeks. • The trench will not be left open for extended periods on slopes leading to drainage lines. • Install ramps in the trench to allow the easy egress of fauna from the trench at a minimum of 500m intervals (see also Section 11.1). • Use of a qualified fauna handler in areas of open trench to survey, record and remove trapped animals (see also Section 11.1). • Reinstate temporary sediment and erosion control devices. • Bore all major road and rail crossings. • Depth of pipe under road crossings will be a minimum of 1.2m below the bottom of the table drains. • Under the following roads pipe will be at a minimum of 1.2m under the full width of the road reserve: <ul style="list-style-type: none"> – Peak Downs Highway; – Capricorn Highway; – Burnett Highway; – Bruce Highway; – Gladstone-Mt Larcom Road; – Dawson Highway; – Gladstone - Benaraby Road.

10.4 Trenching	
	<ul style="list-style-type: none"> • Manage open cut crossing of roads and tracks in consultation with landholders and third parties. Installation of bypass tracks or detours will be undertaken as required.
Performance Indicators	<ul style="list-style-type: none"> • Subsoil segregated from topsoil and vegetation. • No subsoil at surface on completion of back filling. • Ramps and fauna exit points installed and maintained. • Access for landholders and third parties maintained (complaints based). • Temporary sediment and erosion control devices installed and functioning correctly. • No more than 2 dust related or access related complaints per cycle from land owners, authorities and public. • All complaints responded to within 24 hours and mitigation measures initiated within 48 hours (mitigation may include agreement on how situation is to be addressed).
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • During construction the entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention to areas such as soils segregation, erosion control devices, fauna escape ramps and access across the easement. • Daily fauna release records shall be maintained by the qualified fauna handler. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. • Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required. • Landholder complaints will be recorded and closed out by the Project (see Section 9.4).
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Weed Management Procedure – Pipeline Construction • Approved construction access maps • Alignment drawings



10.5 Pipe Stringing, Bending and Welding

Management Policy	<i>To carry out pipe stringing, bending and welding in a safe and responsible manner with minimal interference to the landowner or risk to the environment.</i>
Performance Objective	<ul style="list-style-type: none"> • Limit disruption to landholders and third parties. • No bushfires as a result of construction activities. • No waste left lying on ROW at the end of each day.
Management Strategy	<ul style="list-style-type: none"> • Pipe will be strung leaving gaps for access across the line of pipe. Gaps will be left at access roads or tracks, boundary fences, in line with gaps in stockpiled vegetation/soil, and for stock crossing as determined in consultation with relevant landholders. • Dust and noise impacts related to pipe transport traffic will be minimised by scheduling of deliveries to daylight hours. • All pipe delivery packaging (e.g. ropes, straps) will be removed from the ROW daily and disposed of appropriately. • All welding, welding procedures, welder qualifications, the use of welding consumables, and the removal of weld defects will conform to relevant Australian Standards. • The following precautions will be taken to minimise the possibility of fire due to welding activities (refer to Section 12.3): <ul style="list-style-type: none"> – The actual strip of land along the pipeline easement over which welding will take place will be cleared of combustible vegetation and therefore reduce the risk of fire. – Stockpiled vegetation will be separated from welding activity. – Water trucks (also used for dust suppression) will be available for use as fire trucks in the event of fire. – Fire extinguishers and a water tank will be available to the welding crew. • ‘Night caps’ or other appropriate devices will be placed over the open pipe string ends to prevent the ingress of dust, wildlife or other objects into welded pipes. • All welding waste will be managed appropriately and removed from the ROW on a daily basis.
Performance Indicators	<ul style="list-style-type: none"> • No uncontrolled fires as a result of Project activities. • No more than 2 dust or noise associated complaints per cycle from land owners, authorities and public. • All complaints responded to within 24 hours and mitigation measures initiated within 48 hours (mitigation may include agreement on how situation is to be addressed). • Debris absent from ROW.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • During construction the entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention debris control and availability of fire fighting equipment and crew preparedness. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. • Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required. • Landholder complaints will be recorded and closed out by the Project (see Section 9.4).
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Weed Management Procedure – Pipeline Construction • Approved construction access maps • Alignment drawings

10.6 Pipelaying and Backfilling	
Management Policy	<i>To install the pipeline to minimise the likelihood of erosion or subsidence, and to preserve topsoil for rehabilitation.</i>
Performance Objective	<ul style="list-style-type: none"> • No mixing or burial of topsoil. • Minimise impacts to water, livestock and wildlife. • Limit disruption to landholders and third parties access. • Reinstate any temporary deviations to landholder tracks and reinstate any third party services.
Management Strategy	<ul style="list-style-type: none"> • Appropriate means such as trench blocks (i.e. trench/sack breakers) and compaction of backfilled soils will be used to prevent erosion along the backfilled trench (refer also Section 11.3). • Pipelaying crews will prepare for identified third party crossings and will have materials and equipment available. • Measures, including pipeline markers and landholder liaison, will be used to alert third parties to the presence of the buried pipeline. Markers will be installed with appropriate regard to land use and sight distance. • Topsoil will not be used as padding material. • Avoid the use of riverine quarry material for backfilling. Where this cannot be achieved either: <ul style="list-style-type: none"> – Source from an established supplier or – Apply for the appropriate permit. • Dredged spoil must only be used for rehabilitation of dredged and associated work areas (refer to Section 11.2). • Topsoil will only be reinstated after the excavated spoil has been backfilled and compacted. • Compaction of the work areas and ROW is to be relieved prior to spreading topsoil. • Erosion berms will be constructed on slopes to divert rainfall runoff away from the ROW.
Performance Indicators	<ul style="list-style-type: none"> • No inversion of subsoil and topsoil. • Temporary sediment and erosion control devices installed and functioning correctly. • No more than 2 complaints per cycle from land owners, authorities and public. • All complaints responded to within 24 hours and mitigation measures initiated within 48 hours (mitigation may include agreement on how situation is to be addressed).
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • During construction the entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention to areas such as soils management and trench compaction. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. • Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required. • Landholder complaints will be recorded and closed out by the Project (see Section 9.4).
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Weed Management Procedure – Pipeline Construction • Approved construction access maps • Alignment drawings

10.7 Hydrotesting	
Management Policy	<i>To protect the quality of local land and water resources during the pipeline hydrotesting.</i>
Performance Objective	<ul style="list-style-type: none"> • Minimise water use. • Ensure no detrimental impacts on soils, land use or surrounding water quality
Management Strategy	<ul style="list-style-type: none"> • The source of hydrostatic test water shall be approved in advance by the Manager Environment and Land Access. • Relevant permits to draw water from State Resources shall be obtained. • Pipe sections crossing water bodies (HDD crossings particularly) shall be tested prior to installation. • Inspection of all pipeline section welds, or hydrotesting of pipeline sections before installation under waterbodies, will be performed in accordance with construction specifications/procedures. • The Manager Environment and Land Access will check and approve detailed hydrostatic test water discharge procedures. • Beneficial reuse options for disposal of hydrotest water will be investigated where practical taking into account the quality of the source water and use of additives (i.e. oxygen scavengers, biocides). • Biocides, where required, shall be selected to be biodegradable. • Where biocides are added ensure that discharge water is aerated. • Prior to discharge of hydrotest water, the Manager Environment and Land Access shall be consulted about requirements for water quality testing. Where the water source and water quality is known, and no chemicals have been added, water quality testing may not be required. • No discharge of hydrotest water directly to a watercourse. • Discharge hydrotest water to land through a settling and filtration structure in such a way as to prevent runoff into any watercourse or drainage lines, flooding, or erosion (e.g. against a splash plate or other dispersive device in order to aerate, slow and disperse the flow). • The Manager Environment and Land Access shall consult with the relevant district office of EPA prior to the discharge of hydrotest waters. • Discharge of hydrotest water shall be in compliance with all regulatory and landholder requirements and shall not cause environmental harm.
Performance Indicators	<ul style="list-style-type: none"> • No existing water sources depleted to provide hydrotesting water. • No adverse impacts on soil or surface water as the result of discharging hydrotest water. • No high level of turbidity (visible plume for > 5m) in watercourse. • No erosion at site of hydrotest water discharge. • Water Quality release limits conform with Environmental Authority (if discharged to waters).
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Inspection of hydro test water source for adequacy of supply and correct permitting. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Inspection of discharge points for soil erosion, surface water sedimentation runoff into drainage areas. • Water quality monitoring up and downstream of any discharge to waters from hydrotesting, in accordance with Environmental Authority.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Hydrotest Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Environmental Authority • Weed Management Procedure – Pipeline Construction • Approved construction access maps • Alignment drawings

10.8 Clean Up and Rehabilitation	
Management Policy	<i>To restore land to surrounding condition and restore land use as far as practicable compatible with pipeline operation.</i>
Performance Objective	<ul style="list-style-type: none"> Revegetation to at least surrounding groundcover condition. Reinstatement of drainage patterns to as close to the surrounding terrain as practicable. No new weed, vermin or pathogen invasion as a result of construction activities. Wildlife habitats reestablished as far as practicable. Site cleaned up to the satisfaction of the landholder.
Management Strategy	<ul style="list-style-type: none"> Rehabilitation of disturbed areas will be undertaken progressively as works are staged and new areas are disturbed. Compaction relief will be undertaken where required by scarifying soils along the contours. Grade out any wheel ruts and ensure erosion control measures installed (see Section 11.3) The pipeline construction area will be re-profiled to original or stable contours, re-establishing surface drainage lines and other land features. Stockpiled topsoil and seed stock will be respread on graded surfaces in an even layer to assist natural regeneration. Minor surface roughness will be encouraged when spreading topsoil to trap water and seed. Restore drainage lines as appropriate (e.g. surface layer of cobbles and coarse gravel extending 2 metres up the bank from the toe and across the creek bed). Close temporary access roads and rehabilitate to condition compatible with the surrounding land use and/or in accordance with landowner requirements. Reseed with a suitable pasture mix incorporating native groundcover species if present in the area. Where newly created access routes are to be retained, but are not public access, disguise the entry (e.g. by dog-legging, brush spreading) from public locations (e.g. adjacent to a public road). Remove windrows and, where practicable based on soil management practices, contour scarify to relieve compaction and develop a suitable seedbed. Consult landholder to confirm use seed species mix. Remove flagging used to identify clearing boundaries and sensitive features. Remove disused silt fences. Native vegetation will be respread over the ROW (not burnt) to assist in the distribution of seed stock and provide shelter for fauna. Distribution of vegetation will be controlled to ensure that any erosion or subsidence that may occur will not be hidden from view during subsequent monitoring inspections. When resspreading on slopes tree trunks should be along the line of the contour. Cleared vegetation, not respread across the ROW, may be removed and disposed of in consultation with the appropriate landholder. Erosion and sediment control measures will be installed where necessary. Existing soil erosion measures will be reinstated to a condition at least equal to the pre-existing state. Refer also to Section 11.3. All materials from barriers, dams and/or temporary watercourse crossings will be removed and the area reinstated to match the pre-existing bed and bank profile. Above ground infrastructure (e.g. valves, pigging stations) shall be fenced to discourage third party, stock and wildlife entry. Fences or other barriers shall be installed where appropriate and where approved by the landholder to minimise unauthorised easement access. Permanent pipeline warning signs shall be erected along the easement in accordance with AS2885, including either side of road crossings and at fence line crossings. All waste materials and equipment will be removed from the pipeline construction area once backfilling and tie-ins are completed (refer to Section 11.6). Any contaminated material will only be removed from the work area with the approval of the EPA. Subsoil displaced by the pipe, and not utilised, may be stockpiled in locations approved by the landholder for use during operations. Imported topsoil, of an appropriate quality and weed free, may be required for easement repairs, and will only be used with landholder approval.

10.8 Clean Up and Rehabilitation	
	<ul style="list-style-type: none"> • Where disturbed areas are to be re-planted or re-seeded, preference will be given to the use of local provenance native species. • Where native grasses are cleared they will be replaced by native species only. • Where non-native grasses already exist, non-native and non-invasive grass seed stock may be used where approved by the landholders to provide surface stability and return the ROW to original use. • Where surface stability requirements dictate, a sterile seed mix, applied at appropriate rates, will be applied to enable quick cover and stability whilst providing for native grasses to establish. • Groundcover seed mixtures will be formulated for the conditions of the area and existing pasture composition. • Where applied, seed will be evenly dispersed over the entire disturbed area. • Seeding will take place as soon as practicable during clean up. • Fertilisers and soil supplements will be used only as necessary, and shall be minimised to reduce the risk of increasing nutrient levels in watercourses.
Performance Indicators	<ul style="list-style-type: none"> • No new weed species introduced as a result of Project activities. • No additional outbreaks of existing weed species as a result of Project activities. • Revegetation reestablished similar to surrounding condition: <ul style="list-style-type: none"> • 40% cover after 6 months • 60% cover after 12 months • 80% cover after 18 months. • Drainage patterns reinstated to match existing landform.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Regular inspections will be undertaken during the pipeline construction period. • The following activities to be included in the Operations EMP: <ul style="list-style-type: none"> - Until regrowth is established, significant (e.g. riparian zones) areas and any seeded areas will be monitored regularly to ensure growth and if necessary appropriate reapplication of seed will be carried out. - The success of restoration will be assessed by comparing the % cover and species diversity on the ROW with that of adjoining land. - Where the specified % cover has not been achieved, and reseeded is necessary (e.g. where potential establishment is not likely to be awaiting suitable seasonal conditions), reseeded will be carried out. - Monitoring will also include an assessment of the effectiveness of weed control measures. - Any sites not displaying stability (after 12 months) and natural revegetation (after 24 months) will undergo rehabilitation using a method approved by the relevant authority (e.g. for road reserves, contact DMR Townsville with coordination by the EPA). - The process of monitoring and rehabilitation will only conclude when the site becomes stable.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	

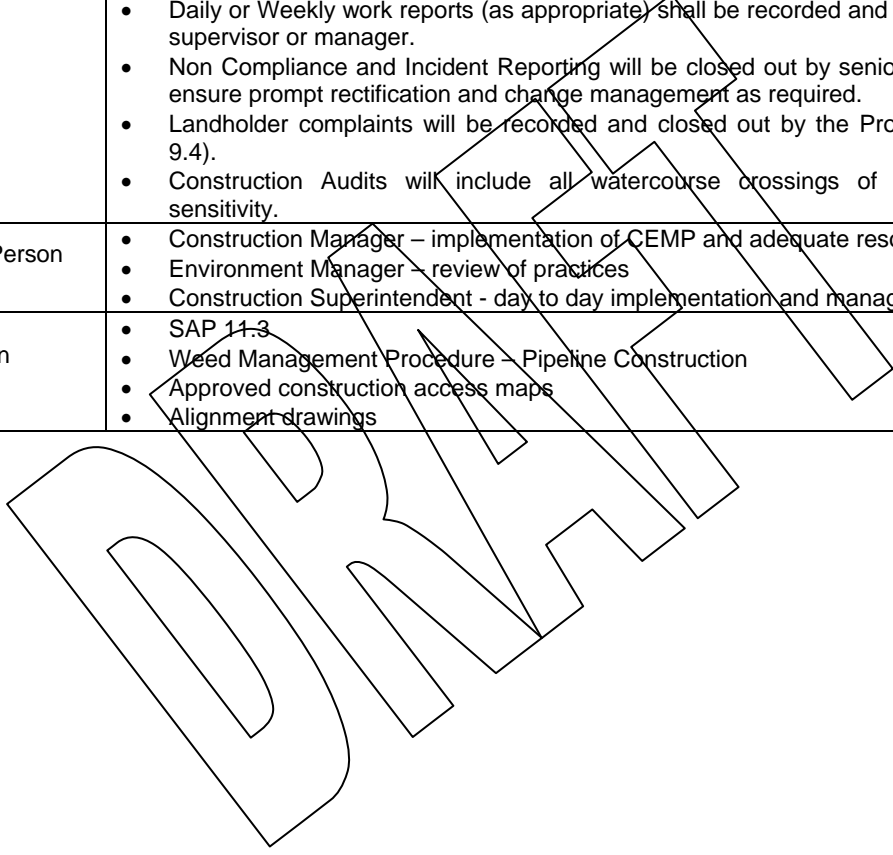
11.0 ENVIRONMENTAL CONTROL MEASURES – ENVIRONMENTAL ASPECTS

11.1 Flora and Fauna Protection	
Management Policy	<i>To minimise the effect on vegetation and habitat and to promote natural regeneration on the ROW.</i>
Performance Objective	<ul style="list-style-type: none"> • Minimise impacts to all native vegetation. • Where practicable, avoid disturbance to endangered, vulnerable and rare flora and fauna species. • Minimise habitat fragmentation.
Management Strategy	<ul style="list-style-type: none"> • Flag individual significant plant species (including habitat trees) which are located within the easement and that must be avoided during construction. • Avoiding areas of remnant Brigalow and Bluegrass where practicable. • Avoid all SEVT areas • Construction of physical barriers around significant vegetation areas in order to restrict access and avoid disturbance. • Seed areas where natural regeneration is not successful with native groundcover species (or in existing pasture areas with dominant pasture species)'. Respread cleared native vegetation and felled timber over the ROW. • Provision of breaks in trenchat fence lines and drainage lines to facilitate wildlife crossing. • Strict no weapons and no pets policy. • Ensuring installation of fauna escape ramps or ladders in all open trench areas throughout the pipeline length. • Use of qualified fauna handler in areas of open trench to survey, record and removed trapped fauna. • Supply data from ecological surveys to Department of Environment and Water Resources (DEWR) and the ERA. • Notify DEWR of any important population of Commonwealth protected species located in association with the route and agree strategy. • Ensure no permanent barrier to fish movement at any stage of the Project.
Performance Indicators	<ul style="list-style-type: none"> • Clearing width not to exceed 30m in identified Bluegrass ecosystems. • Clearing width not to exceed 30m in identified remnant Brigalow ecosystems. • Total avoidance of semi evergreen vine thicket. • Minimise clearing width in identified Bridled Nailtail Wallaby, Yakka Skink, Brigalow Scaly-foot, Collared Delma and Dunmall's Snake Areas (as detailed in Section 13.5). • Restoration of disturbed areas to equivalent to surrounding area after construction. • If observed, retain large nesting structures (eg. White-bellied Sea Eagle). • No removal of protected species without relevant permit.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • During construction the entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention to management of flora and fauna protection. • Daily report on fauna releases by qualified fauna handler. • Ongoing monitoring will be undertaken to assess the success and integrity of construction and rehabilitation measures, ensure appropriate follow-up rehabilitation measures are implemented to assess the effectiveness of the weed control programs • Regular audits and reviews in accordance with Section 9.1of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. • Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Weed Management Procedure – Pipeline Construction • Approved construction access maps • Alignment drawings.

11.2 Watercourse Management	
Management Policy	<i>To avoid degrading water quality and to minimise the impact and degradation to ecosystems in watercourses.</i>
Performance Objective	<ul style="list-style-type: none"> • Limit impacts on riparian, aquatic and water dependent flora and fauna. • Limit erosion, sedimentation and acidification impacts. • Maintain natural water quality and water flow regimes. • Limit impacts on cultural and heritage sites. • Limit impact on Black Ironbox trees and seedlings. • Rehabilitate area to create long-term site stability. • Prevent the spread of noxious weeds.
Management Strategy	<ul style="list-style-type: none"> • The crossings will typically be at right angles to the direction of water flow. This will minimise scour potential. This will include vehicular and maintenance tracks. • Calliope River crossing must be agreed with the DPI&F prior to construction works commencing at this location. • Crossings will, where practicable, be undertaken in no or low flow conditions, and rehabilitation completed prior to the wet season. • Where damming of the river flow is required a Waterway Barrier Works (WWBW) approval will be obtained under the <i>Fisheries Act 1994</i>. • Trench breakers will be installed in trenches close to flowing streams, or in times of potential inundation, to limit the potential for stream flow into the trench. • Vehicle crossings will be appropriately constructed (e.g. include rock and flume(s) to cater for existing or expected flow conditions). • Watercourse banks will be reinstated as near as possible to their former profile, stabilised and revegetated as necessary to prevent scouring. • Watercourses will be stabilised (e.g. rock gabion, jute matting) as required. • Drainage shall be reinstated. • Crossings will be completed promptly. • The disturbance corridor for the bed and bank of watercourses will be the narrowest practicable for safe construction. However, a wider ROW and work area will be required for watercourses with deep and steep banks, to install the pipeline at the required depth, and enable restoration of the area to as close to the original contour as practicable. • Where practicable, large trees, particularly hollow-bearing trees and those in the riparian zone, will be retained. Root stock will, wherever practicable, be retained for stabilisation of the banks. • Keep riparian vegetation clearing to the minimum practical for safe construction of the pipeline and taking into consideration other environmental constraints (e.g. soil and brush stockpiling for rehabilitation). • Sediment fences will be installed between the creek and the construction area where possible. • The Construction Supervisor will be vigilant of flood warnings and, where necessary, remedial action will be taken in accordance with the Construction Emergency Response Plan. • Between KP277 and KP325, those management strategies identified for Black Ironbox in SAP 11.3 are to be implemented. • All materials from barriers, dams and/or temporary crossings of watercourses will be removed during reinstatement (refer Section 10.8).
Performance Indicators	<ul style="list-style-type: none"> • Watercourse banks effectively reinstated to prevent scouring. • Watercourse flows and channel crossings not altered. • Erosion and sediment control techniques implemented onsite where necessary. • For wet crossings water quality characteristics measured to be within the limits of the Environmental Authority. • Records of all actions and controls.

11.2 Watercourse Management

Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • During construction the entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention to management of watercourse environments. • Water quality will be monitored upstream and downstream of the construction area where a discharge occurs in accordance with condition ## of the Environmental Authority ## (visual observation, turbidity, dissolved oxygen, pH and suspended solids). This includes discharges from storm water runoff and dredging. • Water quality monitoring of discharges from any acid sulfate soil stockpiles in accordance with condition ## of the Environmental Authority ##. • Records will be maintained of all releases to waters, the location, frequency of discharge and monitoring results (##). • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. • Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required. • Landholder complaints will be recorded and closed out by the Project (see Section 9.4). • Construction Audits will include all watercourse crossings of medium to high sensitivity.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • SAP 11.3 • Weed Management Procedure – Pipeline Construction • Approved construction access maps • Alignment drawings



11.3 Erosion Management	
Management Policy	<i>To provide effective erosion and sediment control practices to mitigate the potential effects of construction on local creeks, land use and the general environment and to provide for permanent erosion control measures.</i>
Performance Objective	<ul style="list-style-type: none"> • Limit soil erosion. • Limit modification to drainage patterns. • Prevent as far as practical, increased scolding immediately upslope of the pipeline in low lying areas near Raglan and Marmor • Prevent as far as practical, sediment transport to adjacent creeks. • Develop a stable, vegetated easement.
Management Strategy	<ul style="list-style-type: none"> • Time construction to occur predominantly in the dry season. • Complete rehabilitation prior to the wet season. • Minimise the quantity and duration of soil exposure. • Protect topsoil, root and seed stock by: <ul style="list-style-type: none"> – Topsoil – separation; stockpiling (outside any drainage line); grading away from watercourses; respreading last; scarification; and brush spreading to protect the topsoil. – Root – use of graders rather than bulldozers to avoid ripping out the root system; route selection to avoid areas of side slope, thus minimising root stock clearance. – Seed – separation and stockpiling of topsoil to preserve seed stock; brush spreading to protect the topsoil and provide additional seed stock; no burning of native vegetation. • Minimise the potential for bulldust creation, in susceptible soils, by: <ul style="list-style-type: none"> – Watering a drive strip immediately after grading to enable compaction and a firm crust to form. – Limiting vehicle movements to the watered strip ahead of pipe delivery. – Reducing vehicle speed – Regular on-going watering – Use of additive (e.g. Dustmag) to bind soil if necessary. • In the event that bulldust occurs: <ul style="list-style-type: none"> – Implement a detour around the affected area. – Create additional temporary workspace. – Water to repair the area – Rehabilitate as best as possible – Wait for natural rainfall to reset the surface then scarify and seed. • Identify low lying areas near Marmor and Raglan where there is a risk of rising water tables could cause scolding immediately upslope of the pipeline and plant salt-tolerant species (eg. <i>Casuarina glauca</i>) in these locations. • Minimise work during wet weather as it has limited production benefit and consequential rehabilitation costs. • Protect critical areas during and after construction by reducing the velocity of water and redirecting runoff. • Install and maintain temporary erosion and sediment control measures (e.g. contour banks, temporary or permanent earth banks, silt fences) during construction, particularly around the toe of topsoil stockpiles at creek crossings, and between watercourses and the construction area. • Install diversion banks at the crest of the stream approach slope to divert sheet flow away from backfilled trenches. • Recontour landforms to their original condition as soon as practicable including any erosion controls established prior to construction. • Replace topsoil and seed stock to facilitate revegetation as soon as practicable following grading. • Install and maintain permanent erosion control structures (e.g. berms, contour banks, turn off drains) as required. • Ensuring ROW and access roads have properly constructed turn-off drains. • Revegetate the easement as soon as practical after completion of backfilling (see also Section 10.8). • Avoid vehicle movement on restored easement until vegetation reestablished.

11.3 Erosion Management	
	<ul style="list-style-type: none"> Inspect the ROW and maintain erosion and sediment controls as necessary during and after construction until stabilisation is achieved.
Performance Indicators	<ul style="list-style-type: none"> No evidence of uncontrolled erosion following high rainfall. No evidence of sedimentation in watercourses. Watercourse restored consistent with “natural processes”. No evidence of increased scolding immediately upslope of the pipeline in low lying areas near Raglan and Marmor; Erosion controlled and limited to that consistent with “natural processes” such that pipeline cover is maintained and land capacity is not reduced.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> During construction the entire length of the easement will be regularly inspected to assess the effectiveness of erosion protection measures with particular attention to sensitive locations. Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. Daily or Weekly work reports (as appropriate) shall be recorded and reviewed by each supervisor or manager. Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required.
Responsible Person	<ul style="list-style-type: none"> Construction Manager – implementation of CEMP and adequate resourcing Environment Manager – review of practices Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> Weed Management Procedure – Pipeline Construction

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11.4 Noise and Vibrations	
Management Policy	<i>To construct the Pipeline in a manner to minimise the impact of construction related noise and vibrations on surrounding residences and industry.</i>
Performance Objective	<ul style="list-style-type: none"> • No noise related complaints from landholders.
Management Strategy	<ul style="list-style-type: none"> • Blasting carried out in accordance with current practice standards with particular reference to Standard AS2187 (refer also Section 13.8). • Provide adequate community notice of any scheduled, atypical noise events. • Ensure campsites, offices and stockpile sites are located a sufficient distance from residences to limit noise impacts. • Vehicle movements and access locations will be managed to avoid adverse noise impacts. • Equipment will be fitted with noise control devices. • Liaise with community to advise on likely timing and duration of noisy activities. • Schedule noise events for appropriate times.
Performance Indicators	<ul style="list-style-type: none"> • No more than 2 complaints per cycle from land owners, authorities and public. • All complaints responded to within 24 hours and mitigation measures initiated within 48 hours (mitigation may include agreement on how situation is to be addressed). Evidence of repair and replace faulty equipment as soon as possible. • Evidence of consultation and planning for atypical noise events.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Landholder complaints relating to noise and vibration will be recorded and closed out by the Project (see Section 9.4). • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	

11.5 Air Emissions	
Management Policy	<i>To complete the installation of the pipeline in a manner to maintain ambient air quality of the local area.</i>
Performance Objective	<ul style="list-style-type: none"> To receive zero complaints from local landholders regarding air quality.
Management Strategy	<ul style="list-style-type: none"> Vehicles and machinery shall be fitted with appropriate exhaust systems and devices. Such devices will be maintained in good working order. Watering of construction sites and access roads will be carried out on an as required basis to minimise the potential for environmental nuisance due to dust. Watering frequency will be increased during periods of high risk (e.g. high winds). Reduce the potential for generation of bulldust through management and control e.g. watering, mulching cleared vegetation to provide a stable surface. Provide community notification and consultation of scheduled construction activity likely to generate dust. Avoid smoke generation by a strict no burning policy. Implement fire control procedures in welding operations.
Performance Indicators	<ul style="list-style-type: none"> No more than 2 dust related complaints per cycle from land owners, authorities and public. All complaints responded to within 24 hours and mitigation measures initiated within 48 hours (mitigation may include agreement on how situation is to be addressed).
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> Visual observations of dust emissions particularly during windy/dry periods. Water construction sites and access roads on an as required basis (e.g. persistent dust emissions). Visual observance of defective exhausts. Repair exhausts system of appropriate construction vehicle by contractor. Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. Non Compliance and Incident Reporting will be closed out by senior management to ensure prompt rectification and change management as required. Landholder complaints will be recorded and closed out by the Project (see Section 9.4).
Responsible Person	<ul style="list-style-type: none"> Construction Manager – implementation of CEMP and adequate resourcing Environment Manager – review of practices Construction Superintendent - day to day implementation and management
Associated Documentation	

11.6 Waste Management	
Management Policy	<i>To minimise waste generation and maximise reuse and recycling of construction waste products. Development and implementation of a waste minimisation and management strategy.</i>
Performance Objective	<ul style="list-style-type: none"> • No evidence of litter or refuse generated from construction related activities following post-phase clean-up program. • No contaminated land generated from construction related activities following post-phase clean-up program
Management Strategy	<ul style="list-style-type: none"> • Develop strategies for specific waste streams prior to construction commencing. • Wastes will be removed daily from the ROW and placed in the appropriate locations for later disposal. • Stockpile and salvaging reusable and recyclable wastes, such as timber skids, pallets, drums and scrap metals. • Store and manage hazardous wastes in accordance with relevant legislation and industry standards in banded areas away from watercourses. • Collect and remove (via a contractor licenced to transport such wastes) waste oil, solvents and other toxic materials from site for recycling, reuse or disposal at facility licenced to accept such wastes. • Waste oil and chemical storage areas must be suitably banded in accordance with EPA requirements. • Dispose of sewage and sillage from worksites via septic systems, mobile chemical treatment systems or disposal to municipal sewerage treatment plants. • Sewage effluent absorption beds and/or irrigation fields will be selected and designed to ensure that: <ul style="list-style-type: none"> – sensitive areas are avoided – soil erosion and soil structure damage is avoided, – there is no surface ponding or runoff of effluent, – percolation of effluent (for irrigation) beyond the plant zone is minimized, – the receiving environment has the capacity to assimilate the contaminants, – the quality of groundwater is not adversely affected. • Areas where treated sewage effluent is discharged to absorption beds or irrigation will be clearly marked with warning notices of the purpose of the area and not to use or drink the effluent. • Effluent treatment systems will be designed to include alternate measures for effluent storage and/or disposal, where conditions prevent the absorption of treated effluent to land (e.g. rain events). This may include wet weather storage or disposal off-site. • There will be no discharges of treated effluent from wet weather storage to any waters or stormwater drains. • Disposal of vehicle washdown water in accordance with the Weed Management Plan. • Collection of chemical wastes (e.g. spent pipeline x-ray film developer chemicals) in 200 litre drums (or similar sealed container), appropriately labeled, for safe transport to an approved chemical waste depot or collection by a liquid waste treatment service. • All bonding material and dunnage from transport vehicles and unloading areas is to be collected and transported off the easement to designated disposal areas. The Construction Superintendent will advise designated disposal areas for each section of the easement. • Rehabilitation of any contaminated land caused by the Project in accordance with the requirements of the <i>Draft Guidelines – for the Assessment and Management of Contaminated Land in Queensland, Department of Environment, May 1998</i>. • Collect and transport general refuse to local Shire Council approved disposal sites. • Collect, where practicable taking into account health and hygiene issues, all food wastes for disposal off-site. • Food wastes will be kept covered or buried to prevent the introduction or attraction of vermin and flies. • No on-site disposal of waste without local government and/or EPA approval. • Refuse containers will be located at each worksite. • Where practical, wastes will be segregated and reused/recycled (e.g. scrap metal). • All personnel shall be instructed in project waste management practices as a

11.6 Waste Management

	<p>component of the environmental induction process.</p> <ul style="list-style-type: none"> • Clean and waste efficient construction site. • No litter detected off-site. • No litter left onsite after construction/maintenance. • Record of regulated waste disposal. • Effluent quality characteristics conform to the terms of the Environmental Authority.
Performance Indicators	<ul style="list-style-type: none"> • Housekeeping checks to ensure waste is being stored correctly and no litter occurring. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Review of old campsite area after relocation. • Weekly and monthly monitoring of quality characteristics of treated effluent discharged to land in accordance with conditions of the Environmental Authority
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management in work areas • Camp Manager – day to day implementation and management at campsites
Responsible Person	<ul style="list-style-type: none"> • Waste Management Procedure
Associated Documentation	

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12.0 ENVIRONMENTAL CONTROL MEASURES - OTHER

12.1 Handling and Disposal of Dangerous Goods	
Management Policy	<i>To ensure that storage and handling of dangerous goods onsite does not cause environmental harm or harm to persons.</i>
Performance Objective	<ul style="list-style-type: none"> To minimise potential for land contamination.
Management Strategy	<ul style="list-style-type: none"> An Emergency Response Plan in place and employees inducted in its application. Dangerous goods will be stored, handled, separated and signed as required by the Flammable and Combustible Liquids Regulations and AS1940. Hazardous goods will, where appropriate (e.g. outside locations) be stored in banded areas away from watercourses (i.e. ~50m away from the top of bank). Explosives will be stored in magazines constructed and located as prescribed in AS2187. Transportation of dangerous goods will be in accordance with the Regulations and with AS1678, AS2809 and AS2931. A qualified person will be appointed as Site Safety Adviser and will have onsite a set of the relevant MSDS for hazardous and dangerous materials. Waste dangerous goods which cannot be recycled, with the exception of explosives waste, will be transported to a designated disposal site as approved by Local Government. Explosives waste material will be disposed of in accordance with the relevant regulation and accepted practice (e.g. waste paper wrapping material may be burnt at a Project accommodation campsite). Spills of dangerous goods will be rendered harmless and collected for treatment and disposal at a designated site, including cleaning materials, absorbents and contaminated soils. Absorbent and containment material (e.g. absorbent matting) will be available where hazardous materials used and stored and personnel trained in correct use. Protective clothing, appropriate to the materials in use, will be provided Relevant Local Government permits will be held and conditions of permits met.
Performance Indicators	<ul style="list-style-type: none"> No permanent land contamination as a result of Project activities. All hazardous waste transported back to the Project campsite at the end of each shift. All hazardous waste disposed of from the Project campsite to appropriately licenced waste disposal premises.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> Regular inspection to ensure that chemical storage facilities continue to meet Australian Standards. Review of records of any spill with Manager Environment and Land Access and Site Safety Adviser and ensure appropriate remedial action has been implemented. Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. Audits shall include inspection of hazardous goods storage sites and records for same.
Responsible Person	<ul style="list-style-type: none"> Construction Manager – implementation of CEMP and adequate resourcing Environment Manager – review of practices Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> Waste Management Procedures Chemical Management

12.2 Biting Insects Management	
Management Policy	<i>To minimize breeding opportunities for biting insects and to protect personnel from biting insects.</i>
Performance Objective	<ul style="list-style-type: none"> • To prevent the introduction of new mosquito species to the site. • To prevent the spread of existing mosquito species to and from the site. • To prevent the creation of habitat suitable for breeding. • To ensure no diseases are brought onto site and contracted from site. • To minimize the occurrence of mosquitoes on the site. • To minimize the impacts of biting insects on personnel. • To provide adequate protection for and information to personnel regarding mosquito borne diseases.
Management Strategy	<ul style="list-style-type: none"> • Where required, Bifenthrin barrier treatments around personnel areas such as campsites will be implemented to reduce adult biting midge numbers. • Appropriate screening of accommodation and personnel areas (e.g. mess, ablutions) will be implemented as required. • The workforce will be notified if there is a mosquito or biting midge problem and individuals will take appropriate personal protection, such as appropriate clothing and insect repellent. • Preventing the creation of areas and structures in which water could be retained for more than 5 days (i.e. potential mosquito breeding habitat). • Stormwater drains will be constructed in a manner that does not lead to the creation of new mosquito breeding sites. • Bunded areas will be managed to prevent mosquito breeding. • Sewerage systems and wastewater disposal will be operated to ensure mosquito breeding areas are not created. • Reinstated sites will be re-contoured to the original surface profiles to prevent ponding. • Access roads will be fitted with culverts where necessary, in order to prevent water ponding upstream, and thus prevent mosquito breeding. • All containers and vessels capable of holding water for mosquito larvae will be inspected, drained, and treated as required. • All materials taken on or off-site will be inspected for pooled water; drained, and treated with chlorine as required.
Performance Indicators	<ul style="list-style-type: none"> • No ponding of water. • Containers do not hold water for more than 5 days. • Materials inspected regularly, and treated if required. • Personal Protection Equipment (PPE) adequate to prevent exposure. • Mosquito numbers managed. • Minimal impacts from biting insects on the construction workforce.
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> • During construction, the entire length of the construction corridor and associated access areas, especially campsites, will be regularly inspected to assess the effectiveness of Biting Insect Management practices. • Regular audits, in accordance with Section 9.1 of this CEMP, will be undertaken, and recommendations and corrective actions shall be implemented. • Regular audits in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented. • Non Compliance and Incident Reporting will be reported to, and regulated by, senior management to ensure prompt rectification and change management as required. • Landholder complaints will be recorded and appropriately acted upon by the Environment Manager (see Section 9.4).
Responsible Person/s	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Campsites, offices and site management (Section 10.2)

12.3 Fire Management	
Management Policy	<i>To minimise the potential for vegetation to catch fire from construction activities.</i>
Performance Objective	<ul style="list-style-type: none"> • No unpermitted fires along the ROW. • No buildup of flammable material during construction near hot work areas.
Management Strategy	<ul style="list-style-type: none"> • Open fires will as a general² rule be banned on the Project. Fires include open barbecues, billy fires, brush burning and rubbish burning. • Unnecessary buildup of flammable material in working areas will be prevented, with vegetation and other flammable material being stockpiled well clear of hot work activities. • Burning of timber/vegetation stockpiles is to be avoided (brush spreading is preferred). If burning should be required² permits shall be obtained from the fire department prior to carrying out any such activity. • Vehicle and machinery exhaust systems shall be inspected regularly for leaks and accumulated vegetation debris. Fuel systems shall also be inspected for leaks. • Water trucks (also used for dust suppression) will be available for use as fire trucks in the event of fire. • All vehicles will be equipped with portable fire extinguishers. • Fire extinguishers and a water tank will be available to the welding crew. • Precautions will be taken to minimise the risk of fire during welding (refer to Section 10.5). • Emergency Response Plan shall include details on local contacts for fire fighting assistance. • Manager Construction shall ensure all relevant bylaws with regard to Fire Management are adhered to.
Performance Indicators	<ul style="list-style-type: none"> • No uncontrolled fires along the ROW. • No buildup of flammable material near hot work areas. • No fires without the relevant permits or approval.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Inspection of work areas for flammable material. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • Construction Superintendent – day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Safety Management Plan • Emergency Response Plan • Field Welding • Safety Requirements for Welding, Cutting and Grinding
KP and Alignment Sheet References	

² This depends on the volume and nature of weed species present. In areas of dense woody weed infestations (e.g. Rubber Vine) burning of material may be necessary to reduce the risk of further weed infestation. Approval must be gained from the local fire authorities prior to any burning.

12.4 Safety and Emergency Management

Management Policy	To carry out construction of the Central Queensland Gas Pipeline Project in a safe and responsible manner to ensure no long term adverse impacts on health, safety or the environment.
Performance Objectives	<p>No Lost Time Injuries (LTIs)</p> <p>No Fatalities</p> <p>No government notices</p> <p>100% compliance with induction training procedures</p> <p>100% compliance with corrective action procedures</p>
Management Strategies	<p>Implementation of a Safety Management Plan (SMP see Document ###) to the satisfaction of the Department of Emergency Services.</p> <p>Ensure that the SMP establishes the obligations, requirements, processes and systems for managing safety hazards and statutory requirements.</p> <p>Ensure all personnel understand that they are responsible for ensuring the safety of themselves and any other people who may be affected by their actions.</p> <p>Provide safety induction to all personnel and contractors working on the pipeline project; induction to include emergency response measures in the event of cyclones, fire or flooding.</p> <p>Provide personnel with appropriate resources to ensure they can carry out their tasks in a safe manner.</p> <p>Implementation of an Emergency Response Plan (ERP - see Document #### to the satisfaction of the Department of Emergency Services.</p> <p>Ensure that the ERP defines the responsibilities, procedures, systems, method of identifying and assessing emergencies and resources for mitigating potential emergency events including:</p> <ul style="list-style-type: none"> Serious injury/death/medical emergency Significant chemical or fuel spill Fire – not related to a gas leak Bush fire Natural Disaster (e.g. cyclone, flood) Bomb threat Major gas leak Damage to pipeline (no leak) Plant failure Finding unexploded ordinance <p>Minimise damage from spills by shut down or isolation of source of spill or leak.</p> <p>Maintain all equipment, facilities and work areas in a clean and safe condition.</p>
Performance Indicators	<p>Extent of incident (e.g. fatality, injury, major spill)</p> <p>100% compliance with Safety Management Plan systems and procedures</p> <p>100% compliance with training procedures</p> <p>100% Compliance with corrective action procedures</p>
Monitoring, Reporting and Corrective Action	<p>All incidents, including near misses to be reported through the incident reporting system.</p> <p>All incidents to be reviewed by the Manager Safety and Risk.</p> <p>Annual reporting of incidents to the Board.</p> <p>Implementation of change in procedures if required.</p> <p>Regular safety audits and inspections</p>
Responsible Person/s	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Manager Safety Risk and Compliance – review of practices • Construction Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Safety Management Plan • Emergency Response Plan

13.0 SIGNIFICANT AREA PLANS

13.1 Significant Area Plan – Brigalow	
Item / Area of Significance	Brigalow (<i>Acacia harpophylla</i>) communities as listed under the Environment Protection and Biodiversity Conservation Act 1999 and identified in Appendix ## of the Environmental Impact Statement.
Management Policy	<i>Strictly adhere to all agreed restrictions and notifications required where pipeline passes through or adjacent to Brigalow communities.</i>
Management Strategies	<ul style="list-style-type: none"> • The pipeline easement within Brigalow communities will not to be wider than 30m • Clearing boundaries will be clearly marked on design drawings. • Clearing boundaries will be marked in the field (by flagging tape or similar). • No construction camps, access tracks or work areas outside the agreed clearing width will be located within a Brigalow community. • The vegetative waste resulting from clearing within Brigalow communities will be re-spread over 24 of the 30m of the easement following construction (remaining 6m will be kept trafficable for maintenance access).
Performance Indicators	<ul style="list-style-type: none"> • Width of easement does not exceed 30m in Brigalow areas. • No Brigalow cleared for access tracks or work areas. • Following construction, 24 of the 30m easement covered with Brigalow vegetative waste
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • An audit will be conducted following construction to report against clearing widths, re-spreading of vegetative waste over 24m and any additional clearing of Brigalow. • Penalties will be enforced for any clearing outside of these delineated clearing boundaries or failure to re-spread cleared Brigalow. • Monitoring of weed infestations within these communities will occur quarterly for a period of two years following construction and appropriate control measures are to be applied. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices and field marking of areas • Construction Superintendent - day to day implementation and management
Associated Documentation	
KP and Alignment Sheet References	

13.2 Significant Area Plan – Bluegrass	
Item / Area of Significance	Bluegrass (<i>Dichanthium</i> spp.) communities as listed under the Environment Protection and Biodiversity Conservation Act 1999 and identified in Appendix G-4 of the Environmental Impact Statement.
Management Policy	<i>Strictly adhere to all agreed restrictions and notifications required where pipeline passes through or adjacent to Bluegrass communities</i>
Management Strategies	<ul style="list-style-type: none"> • The pipeline easement within Bluegrass communities will not be wider than 20m. • Clearing boundaries will be clearly marked on design drawings • Clearing boundaries will be marked in the field (by flagging tape or similar) • No construction camps or access tracks (other than those required within the above mentioned easement width) will be located within a Bluegrass community. • If available, Bluegrass seed will be collected from those areas impacted by the pipeline and reseeded following construction (such seed may not be available if existing grazing pressures continue). • If local provenance seed cannot be collected, Bluegrass seed (<i>Dichanthium sericeum</i>, <i>D. setosum</i> and <i>D. queenslandicum</i> if available) will be purchased from commercial operators (local provenance seed being preferred) and re-seeding over the easement will occur in those areas mapped as containing Bluegrass communities. • Achieve $\geq 50\%$ strike from seeding, given surrounding conditions permit. • Where $<50\%$ strike from seeding occurs in the first seeding reseed during more favourable conditions. • Construction phase will allow for a maximum of 2 seedings (initial and one follow up). • Operations phase will ensure that on-going maintenance of the pipeline ensures that rehabilitation activities in bluegrass designated areas uses a native grass seed mix containing bluegrass (note that field surveys have failed to identify any significant areas of protected bluegrass species within the pipeline ROW).
Performance Indicators	<ul style="list-style-type: none"> • Width of easement does not exceed 20m in Bluegrass areas. • No Bluegrass cleared for access tracks or work areas. • At least 1 attempt to collect local provenance Bluegrass seed made. • Where local Bluegrass not collected commercially available Bluegrass seed purchased. • Bluegrass seed spread over the easement in disturbed Bluegrass areas. • $\geq 50\%$ cover/abundance achieved from reseeded
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • An audit will be conducted following construction to report against clearing widths and any additional clearing of Bluegrass communities. • Monitoring and reporting of Bluegrass germination success will occur and a second re-seeding of Bluegrass will be completed if germination rates are below 50% • Penalties will be enforced for any clearing outside of these delineated clearing boundaries or failure to re-spread cleared bluegrass. • Monitoring of weed infestations within these communities will occur quarterly for a period of two years following construction and appropriate control measures are to be applied. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices and field marking of areas • Construction Superintendent - day to day implementation and management
Associated Documentation	
KP and Alignment Sheet References	

13.3 Significant Area Plan – Black Ironbox	
Item / Area of Significance	Black Ironbox (<i>Eucalyptus raveretiana</i>) communities identified along creeks from KP277 to KP325.
Management Policy	<i>To minimise the impact on Black Ironbox by strictly adhering to all agreed restrictions and notifications required where the pipeline passes through or adjacent to Black Ironbox.</i>
Management Strategies	<ul style="list-style-type: none"> • A survey has been carried out to locate and identify the Black Ironbox (<i>Eucalyptus raveretiana</i>) trees occurring at watercourses. The data has been entered into the GIS and will be included on the Alignment Sheets. • If Black Ironbox cannot be avoided, HDD, in accordance with SAP 13.6, shall be the preferred method of crossing at these locations. • No more than 2 attempts shall be made to complete a HDD crossing of a watercourse (beyond this number risks to the environment through uncontrolled releases of drilling fluids increase and the construction process is not economically viable). • In the event that HDD fails, the cleared ROW within the Black Ironbox communities (i.e. within 5m of channel) shall not be wider than 25m. • Clearing boundaries shall be clearly marked on design drawings and in the field. • The selected route will ensure that large trees (e.g. 0.9m diameter and 15 to 20m tall) have been avoided. • Have in place a Permit to Take Protected Plants from the Qld EPA for use in the event of failure of the HDD (copy to be provided to the Commonwealth Dept of Environment and Heritage). • Rehabilitation works shall be: <ul style="list-style-type: none"> – Respreading of topsoil, which contains seed stock, over the ROW as per s10.8. – Respreading native vegetation, including the Black Ironbox, over the ROW to assist in the distribution of seed stock as per s10.8. – Regeneration by natural processes in first instance. – 6 monthly review of regeneration process assessing for strike rate – looking for ratio of 5:1 regeneration against removal. – If regeneration rate below 3:1 undertake seed collection from adjacent trees, or trees along the same riparian watercourse, using specialist (e.g. Greening Australia) during next seeding period and spread over regeneration zone. Greening Australia has advises that the seeding period is most likely to be between January and March. – Repeat above step after a further 6 months, and initiate seedling strike program under controlled conditions for later transplanting to site. – If success rate still below expected level after 18 months initiate seedling planting from previous step. • A small quantity of seed from a reputable local stockist, that collects seed in the area, has been purchased for use if weather conditions result in a failure of the existing trees to produce suitable seed stock. This will be a last resort measure. • Seeding and seedling propagation shall be carried out in consultation with a specialist organisation (e.g. Greening Australia). • No construction camps or access tracks (other than those required within the above mentioned easement width) are to be located within mapped Black Ironbox locations.
Performance Indicators	<ul style="list-style-type: none"> • Width of cleared area does not exceed 25m in riparian zone. • All affected areas delineated on design drawings. • Clearing boundaries marked in the field (by flagging tape or similar). • No mature Black Ironbox impacted outside of the immediate crossing area. • Following construction Black Ironbox vegetative waste has been respread across the easement. • 12 months after rehabilitation strike rate of 3:1 seedlings. • 18 months after rehabilitation 3:1 strike rate and 1 metre seedlings.
Monitoring, Reporting	<ul style="list-style-type: none"> • An audit will be conducted following construction to report against clearing widths, re-spreading of vegetative waste over the easement and clearing of Black Ironbox in

13.3 Significant Area Plan – Black Ironbox	
and Corrective Actions	<p>accordance with permit requirements.</p> <ul style="list-style-type: none"> • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices, field marking of areas, obtaining relevant permits • Construction Superintendent - day to day implementation and management
Associated Documentation	Alignment Sheets

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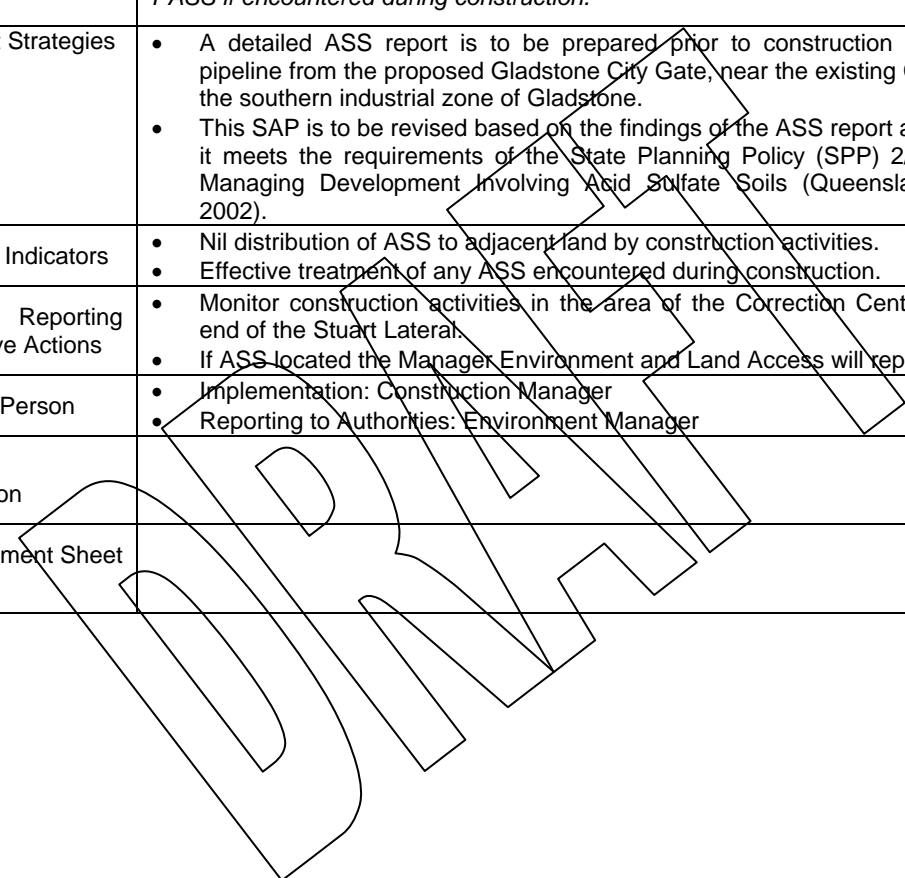
13.4 Significant Area Plan – Cycas Megacarpa	
Item / Area of Significance	<i>Cycas megacarpa</i> communities identified at (insert KPs on finalization of route – refer constraints mapping).
Management Policy	<i>To minimise the impact on Cycas megacarpa by strictly adhering to all agreed restrictions and notifications required where the pipeline passes through or adjacent to Cycas megacarpa.</i>
Management Strategies	<ul style="list-style-type: none"> • A survey has been carried out to locate and identify the Cycas occurring along the route. The data has been entered into the GIS and will be included on the Alignment Sheets. • The cleared ROW within the Cycas areas shall not be wider than 25m. • Clearing boundaries shall be clearly marked on design drawings and in the field. • Have in place a Permit to Take Protected Plants from the Qld EPA (copy to be provided to the Commonwealth Dept of Environment and Heritage). • Rehabilitation works shall be: <ul style="list-style-type: none"> –Respreading of topsoil, which contains seed stock, over the ROW as per s10.8 –Respreading native vegetation over the ROW to assist in the distribution of seed stock as per s10.8. –Where necessary for construction, cutting the stem from the below ground lignotuber which will be left in-situ for the purpose of reshooting in accordance with permit requirements • No construction camps or access tracks (other than those required within the above mentioned easement width) are to be located within a Cycas areas.
Performance Indicators	<ul style="list-style-type: none"> • Width of cleared area does not exceed 25m in Cycas areas. • All affected areas delineated on design drawings. • Clearing boundaries marked in the field (by flagging tape or similar).
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • An audit will be conducted following construction to report against clearing widths, re-spreading of vegetative waste over the easement and clearing of Cycas in accordance with permit requirements. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices, field marking of areas, obtaining relevant permits • Construction Superintendent - day to day implementation and management
Associated Documentation	Alignment Sheets

13.5 Significant Area Plan – Protected Species Habitat Areas	
Item / Area of Significance	Habitat of the Yakka Skink, Brigalow Scaly-foot, Bridle Nail-tailed Wallaby Collared Delma and Dunmall's Snake.
Management Policy	<i>To minimise the impact on protected species habitat by strictly adhering to all agreed restrictions and notifications required where the pipeline passes through or adjacent to such habitat areas.</i>
Management Strategies	<ul style="list-style-type: none"> • A survey has been carried out to locate and identify the potential habitat areas and this will be reviewed prior to construction activities commencing. The data has been entered into the GIS to produce a protected species habitat area coverage and will be included on the Alignment Sheets. • Minimal bare tracks should remain after rehabilitation. • Rehabilitation works shall be: <ul style="list-style-type: none"> –Respreading native vegetation over the ROW to assist in providing ground habitat. –In Yakka Skink habitat areas the vegetation will be left spread out as far as is practical rather than stick raked into piles. –Hollow bearing limbs which have been unavoidably removed will be retained on the ground.
Performance Indicators	<ul style="list-style-type: none"> • Width of cleared area does not exceed 30m in habitat areas. • All affected areas delineated on design drawings. • Clearing boundaries marked in the field (by flagging tape or similar).
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • An audit will be conducted following construction to report against clearing widths, re-spreading of vegetative waste over the easement and clearing of Black Ironbox in accordance with permit requirements. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices and field marking of areas • Construction Superintendent - day to day implementation and management
Associated Documentation	Alignment Sheets

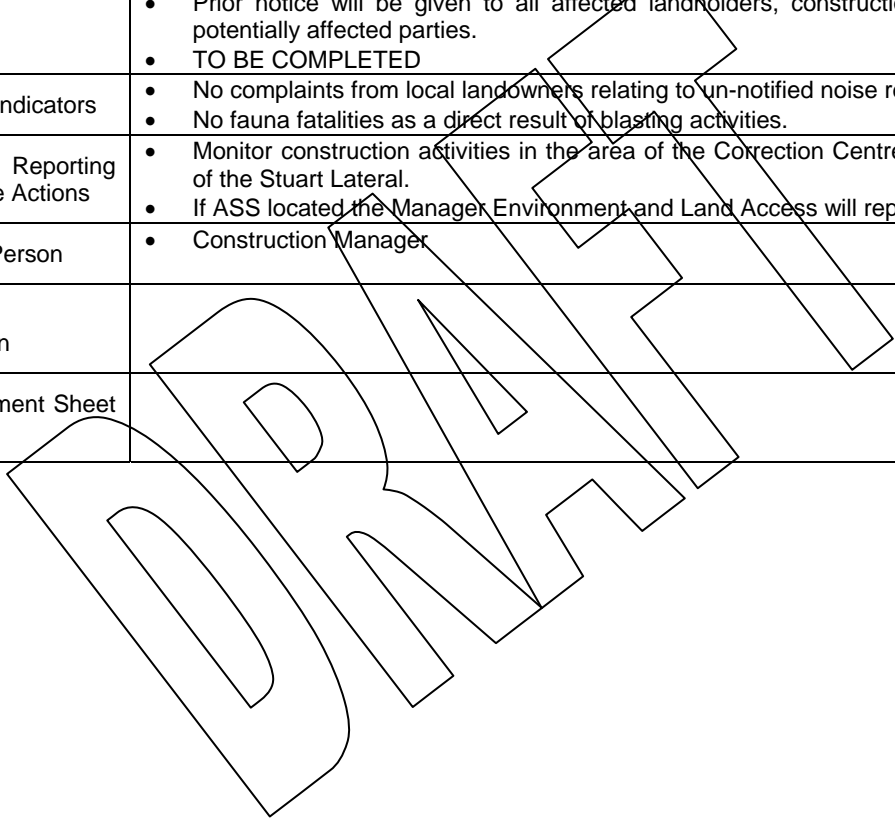
13.6 Significant Area Plan – HDD Crossings

Item / Area of Significance	All HDD crossings. HDD will be employed at the Fitzroy and Calliope River crossings (geotechnical constraints permitting).
Management Policy	<i>To install HDD crossing in an orderly and planned fashion with no adverse impacts</i>
Management Strategies	<ul style="list-style-type: none"> • Conduct geotechnical studies and investigations prior to construction to determine appropriateness of method to crossing. • Preparation of a detailed site plan for each drill prior to mobilisation to site. Drawing to include slope of site. • Vehicle entry is not to be located on the topographical low point of the area. • Topsoil is to be stripped from the main areas of the site (i.e. where equipment will be located and heavy traffic areas), and stockpiled, prior to installation of equipment. • No work to commence on drilling until pre-start checklist is completed and approved by Manager Environment and Land Access and Manager Construction (e.g. Horizontal Directional Drill (HDD) Contractor must have provided a spillage and drilling mud management plan prior to construction commencing). • Avoidance of Brigalow and Bluegrass communities by 50m minimum. • Avoidance of hollow-bearing trees. • Entire HDD site to be enclosed by earthen bund • Bund height shall be maintained at vehicle crossing points to allow for compaction by vehicle crossings. • All cuttings to be stored in skips and disposed of at licensed waste facility (contractor to supply documentary evidence) • Hourly visual inspection of drill route for drill mud break out. • Mud pits to be lined if not naturally able to seal with local material • All work areas to be cleared by Cultural Heritage Monitors prior to work • Approval to be documented for all work areas additional to easement. • All major items of machinery will have drip trays installed beneath for collection of oil drips • All fuel and other Hazardous materials to be stored in accordance with CEMP Section 12.1. • Drill mud spillage or breakout response materials and equipment to be maintained on site and personnel trained in use. • Portable toilet to be located and maintained at the HDD site. • Site to be reinstated and revegetated at conclusion of construction of crossing. • Silt fence to remain until site stable and vegetated.
Performance Indicators	<ul style="list-style-type: none"> • No work until pre-start checklist completed • Site Plan prepared, approved and site constructed to this plan • Bund installed and maintained • Cultural clearance undertaken • Areas additional to easement agreed and documented • Drip trays in place • Fuel and Hazardous materials appropriately stored • Portable toilet in place and maintained.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • All HDD sites will be audited once during installation. • Pre start HDD checklist will be completed and signed by Manager Construction, Manager Environment and Land Access and HDD supervisor prior to commencement of drilling. • Daily work records to be maintained by HDD supervisor and to be reviewed daily by Manager Construction. • Regular audits and reviews in accordance with Section 9.1 of this CEMP will be undertaken, and recommendations and corrective actions shall be implemented.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager – implementation of CEMP and adequate resourcing • Environment Manager – review of practices • HDD Superintendent - day to day implementation and management
Associated Documentation	<ul style="list-style-type: none"> • Detailed HDD drawings • Geotechnical investigations

13.7 Significant Area Plan – Acid Sulphate Soil	
Item / Area of Significance	Acid Sulphate Soils (ASS) – areas where construction goes below the 5mAHD level.
Preamble	ASS typically occurs below 5mAHD. The section of the pipeline route that accommodates the low pressure pipeline (i.e. from the Gladstone City Gate (~KP435) to the terminal) has the potential to encounter ASS.
Management Policy	<i>To restrict the disturbance and distribution of ASS and to effectively mitigate and treat PASS if encountered during construction.</i>
Management Strategies	<ul style="list-style-type: none"> A detailed ASS report is to be prepared prior to construction of the section of pipeline from the proposed Gladstone City Gate, near the existing Comalco Plant, to the southern industrial zone of Gladstone. This SAP is to be revised based on the findings of the ASS report and to ensure that it meets the requirements of the State Planning Policy (SPP) 2/02 Planning and Managing Development Involving Acid Sulphate Soils (Queensland Government, 2002).
Performance Indicators	<ul style="list-style-type: none"> Nil distribution of ASS to adjacent land by construction activities. Effective treatment of any ASS encountered during construction.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> Monitor construction activities in the area of the Correction Centre through to the end of the Stuart Lateral. If ASS located the Manager Environment and Land Access will report to DNRW.
Responsible Person	<ul style="list-style-type: none"> Implementation: Construction Manager Reporting to Authorities: Environment Manager
Associated Documentation	
KP and Alignment Sheet References	



13.8 Significant Area Plan – Blasting	
Item / Area of Significance	Rock areas that cannot be trenching with rock saws.
Preamble	Should blasting be required to clear a trench through rock areas blasting procedures will be implemented. This SAP will be completed by the construction contractor prior to any blasting activities occurring.
Management Policy	<i>To minimize the disturbance to the environment and prevent fauna fatalities as a direct result of blasting activities during construction.</i>
Management Strategies	<ul style="list-style-type: none"> • Should blasting be required a Blasting Operation Procedure will be prepared • Prior notice will be given to all affected landholders, construction crews and other potentially affected parties. • TO BE COMPLETED
Performance Indicators	<ul style="list-style-type: none"> • No complaints from local landowners relating to un-notified noise relating to blasting. • No fauna fatalities as a direct result of blasting activities.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Monitor construction activities in the area of the Correction Centre through to the end of the Stuart Lateral. • If ASS located the Manager Environment and Land Access will report to DNRW.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager
Associated Documentation	
KP and Alignment Sheet References	



APPENDIX A

ENVIRONMENT HEALTH AND SAFETY STATEMENT

Replace with relevant documentation on appointment of a new Proponent

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HEALTH, SAFETY AND ENVIRONMENT (HS&E) STATEMENT

Our Commitment

Enertrade is committed to providing a safe work environment for all staff, contractors and members of the public impacted by our operations. As an integrated energy company Enertrade recognises its environmental obligations to ensure the impacts of our operations are effectively assessed and managed.

Effective management of Occupational Health, Safety and Environment risks is an integral part of Enertrade's continuing success in the energy industry. This commitment is an individual and shared responsibility of management, employees and contractors throughout the organisation.

Our Actions

To achieve this commitment Enertrade will continue to:

- Define organisational wide HS&E objectives
- Implement risk management strategies to ensure HS&E hazards are identified, assessed, controlled and reviewed
- As a minimum, comply with all applicable HS&E laws, regulations and standards
- Communicate, consult and involve employees and contractors in the development and implementation of HS&E practice
- Establish best practice management systems for Health, Safety and Environment
- Periodically assess resource use and waste treatment measures throughout all activities to ensure operational sustainability
- Implement a program of continuous improvement for HS&E risks
- Promote and support management and employees accountability for HS&E performance
- Report on HS&E performance of all business units
- Allocate appropriate resources and personnel to meet HS&E requirements
- Ensure management, employees and contractors are aware of their HS&E roles and responsibilities
- Utilise OH&S and Environmental indicators in the selection and performance monitoring of contractors and business partners.

Our Objectives

- To ensure employees, management and contractors act in a safe and environmentally conscientious manner
- To aspire for a zero incident/injury workplace
- To enhance business position by integrating HS&E practices into all operations
- To continue to be recognised as a responsible environmental organisation by all stakeholders
- To maintain a safety first culture throughout all operations.



Michael Cavell
CHIEF EXECUTIVE OFFICER

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APPENDIX B
LIST OF ASSOCIATED DOCUMENTS

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Environmental Impact Statement

An EIS has been prepared and submitted for public consultation under the *State Development and Public Works Organisation Act 1977*.

Coordinator Generals Evaluation Report

This CEMP will be updated to comply with any conditions imposed under the CoG Evaluation Report.

Significant Area Plans (SAPs)

In areas of special requirements over and above the standard methods set out in this CEMP Significant Area Plans (SAPs) will be developed (Section 13.0). These SAPs will contain specific information relating to the location including, as appropriate, timeframes, clearing widths, specialist equipment and personnel requirements. The locations will be clearly delineated on the alignment sheets by start and end kilometre points. Where any conflict exists between the general requirements of this CEMP and a SAP the SAP shall prevail.

Weed Management Plan

The Weed Management Plans (WMP) has been prepared in recognition of the importance of this issue to landholders and State and Local Governments in the region.

Cultural Heritage Management Agreement

A Cultural Heritage Management Plan (CHMP) will be developed and implemented in consultation with the Native Title/Traditional Owner groups with interests in the lands traversed by the pipeline. Requirements for construction monitoring of Clear and Grade and Trenching will be a key component of the CHMP.

Stakeholder Communication Plan

A Stakeholder Communication Plan has been created for the Project setting out the methodologies for ensuring all key stakeholders and landowner/holders issues are addressed throughout the life of the Project. The Plan forms an integral part of the Project.

Road Use Management Plan

The Road Use Management Plan will be completed (draft created for EIS), in consultation with Queensland Transport and the Department of Main Roads (DMR), prior to construction commencing. The plan will address how pipe and equipment will be transported (e.g. road or rail) and how route issues will be managed (e.g. impacts on road pavement life, capacity of bridges etc to handle required load). A survey of pre-existing road conditions for segments of the proposed haulage routes, where significant road impacts may be expected, will be carried out just prior to any construction activities commencing.

Compensation measures for impacts to roads where increased pavement loading will exceed 5% of the existing Average Annual Daily Traffic or Equivalent Standard Axle

loading, as provided for in the DMR “Guidelines for Assessment of Road Impacts of Development Proposals, 2000” will be agreed with DMR.

The Plan will set out the mitigation measures to address any identified road impacts associated with the CQGP Project

Traffic management measures, including management of signage, vehicle movements through built up areas and the management of traffic during road crossings will be included.

Training Plan

A Training Plan has been developed for the Project. This plan outlines the commitment to the principles of the Government’s 10% Training Policy.

Construction Specifications

Construction Specifications are standard pipeline documents, which have engineering and environmental information integrated into them. Therefore this CEMP forms part of the Construction Specifications ensuring that environmental management is an integral part of the development and is equally as important as the engineering design specifications.

Alignment Drawings

Alignment Drawings define the alignment of the pipeline and are used as a graphical “key” to supporting documentation such as Construction Specifications and Technical Drawings.

The Alignment Drawings include areas with special requirements and engineering information, such as pipe wall thickness and depth of cover. The *Environmental* section of the Alignment Drawings for this project will make reference to the relevant SAPs and Cultural Heritage areas.

Engineering Drawings

Engineering drawings will be prepared prior to construction and will reference standards and relevant procedures as applicable.

Hazard and Risk Registers

Hazard and Risk registers provide a summary of the hazards and risks identified in association with the pipeline and the mitigation measures to be implemented.

Emergency Response Plan (ERP)

The Enertrade ERP details the procedures and responsibilities in the event of an emergency situation (e.g. onset of cyclone or bushfire situation). This document will be reviewed to ensure its appropriateness for CQGP activities (e.g. contact details for emergency services in the Central Queensland regions).

Safety Management Plan (SMP)

The SMP is a specifically developed document for the management of safety as required by legislation and Enertrade

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CENTRAL QUEENSLAND GAS PIPELINE PROJECT PLAN

Construction Weed Management Plan

380-PP-G-034

Document No.: 380-PP-G-034					
Rev	Date	Description	Prepared	Checked	Approved
A	25 Jan 2005	First Draft	W. Mathieson	P. Maloney	G. Hogarth
B	20 Sept 2006	Draft for EIS issue	W. Mathieson	P. Maloney	G. Hogarth
C	18 July 2007	Issued for Supplementary report	W. Mathieson	P. Maloney	P. Maloney

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1.0 PURPOSE AND SCOPE

The control of weed species is imperative in the construction process to protect unaffected areas and it is Enertrade's objective, as far as is reasonably practicable, to carry out its activities to minimise the spread of any weed species. This Construction Weed Management Plan (CWMP) documents the procedures and performance standards to be implemented by the construction contractor to ensure the Project meets this objective. As this document is for use by field personnel common names for plants have been used throughout.

This CWMP is an integral part of the Management Plans for the CQGP and should be read in conjunction with the Construction Environmental Management Plan (CEMP). The purpose of this CWMP is to ensure that appropriate weed management techniques are implemented during construction for all activities from clear and grade onwards. Pre clear and grade activities are covered by the Project Group Weed Management Plan (080-PP-G-003), which also sets out the pre-control and monitoring requirements in relation to weed management.

The CWMP will be used by Auditors to determine the performance requirements relating to weed management and to enable each of these requirements to be checked and reviewed in an orderly manner.

All Project controls and responsibilities relating to weed management will be in accordance with the Construction EMP.

Reference: Project Group Weed Management Plan (080-PP-G-003).
Construction Environmental Management Plan (380-PP-G-008).

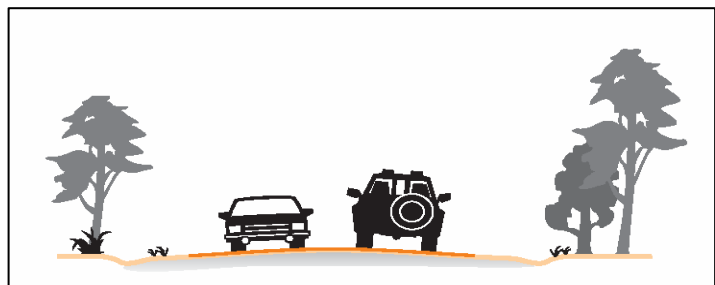
Note: The CWMP has been prepared by Enertrade as part of the Environmental Approvals process for the CQGP. This document therefore constitutes a binding part of the environmental approval for the construction of the pipeline. The roles and responsibilities documented in this CWMP are based on typical construction roles but will be subject to change on appointment of a construction contractor. Such changes will be carried out to reflect the structure in use by the given construction contractor but the intent of this CWMP must be implemented.

2.0 DEFINITIONS

2.1 Definitions

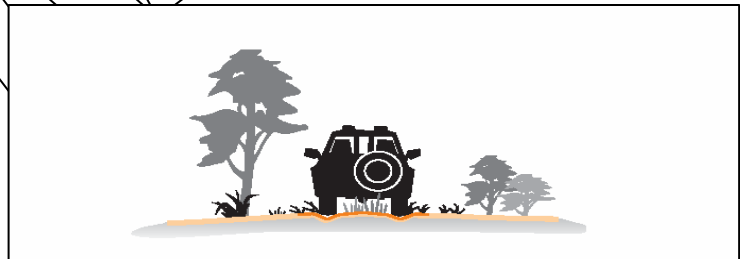
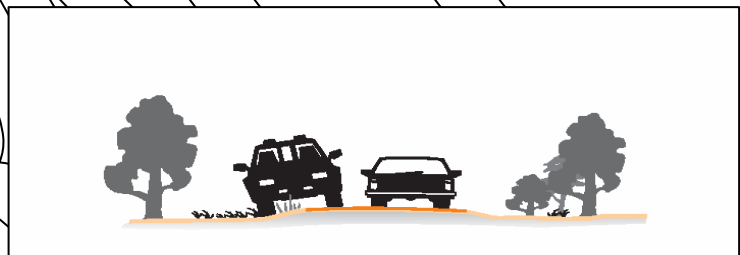
Access Routes:

Clean: All travel on sealed roads i.e. no contact with roadside vegetation.



Washdown

Travel off road or **repeatedly** come into contact with roadside vegetation (e.g. off bitumen to overtake)



Clean Equipment / Plant / Vehicle

Indicates that as far as can be ascertained there is no soil or organic matter present on or in equipment/plant/vehicle. This includes all areas as set out in the guideline in Appendix 2.

Weed Officer

An approved contractor or employee of Enertrade who has undergone accredited training in weed identification and vehicle/equipment inspection. Typically this will include: Lands Officers, Plant Superintendent, Construction Superintendents/Supervisors; Lead Surveyor and vehicle hire personnel (light vehicles).

2.2 Abbreviations

CEMP	Construction Environmental Management Plan
CWMP	Construction Weed Management Plan
CQGP	Central Queensland Gas Pipeline
GIS	Global Information System
GPS	Global Positioning System
NQGP	North Queensland Gas Pipeline
ROW	Right of Way

3.0 BACKGROUND

This CWMP builds on work carried out under the Project Group Weed Management Plan which was prepared based on the North Queensland Gas Pipeline (NQGP) WMP. The NQGP CWMP was prepared in consultation with various State government agencies and representatives of the Local Government areas traversed by the pipeline route. Information relating to the weed species that are of concern in the CQGP Project Area has been sourced from the various Shire Councils that the CQGP traverses and flora studies conducted. Mapping for this phase of the Project has been based on advice gained from the HLA EIS flora studies.

It has been established through field surveys that the major weed risks to the Project are from Parthenium, Giant Rats Tail, Mother of Millions and Harrisa Cactus (HLA Flora Technical Report 2005).

Surveys identified a number of other weeds of concern however it was determined that the likely spread of these species by construction equipment was significantly less than for Parthenium, Giant Rats Tail, Mother of Millions and Harrisa Cactus and would be manageable through good vehicle, plant and equipment hygiene.

Weed management during construction shall be achieved through strict hygiene controls and clearing of the ROW and work areas prior to the arrival of other work crews (refer Section 8.0).

Weed affected areas have been mapped based on field surveys. Construction access routes to be used for the project have been identified on the maps, recorded on the GIS and will be signposted in the field. Prior to the commencement of construction a weed survey will be conducted so that weed mapping for the Project can be updated to reflect conditions at the time of construction. An extensive weed spraying program will be undertaken on access areas prior to the commencement of construction.

The direction of construction has been determined as predominantly north west to south east with areas of Harrisa Cactus on the northern end of the pipeline, Mother of Millions in the central section and varying intensities of Parthenium along the whole alignment.

Weed management controls are therefore principally targeted at prevention of *Harrisa Cactus*, *Giant Rats Tail* and *Mother of millions* transfer to unaffected areas and *Parthenium* transfer from heavier to lighter or more controlled areas.

The areas along the alignment from approximately KP145 to the Fitzroy River crossing (KP278), and east of the Stanwell Power Station (KP322-440), have only minor occurrences of *Parthenium* (*Parthenium hysterophorus*) (as opposed to substantial infestations between KP0-145 and KP278-322). Therefore, vehicle wash down is necessary when moving between these areas.

4.0 RESPONSIBILITIES

4.1 **Construction Manager**

The Construction Manager is responsible for ensuring that all pre-construction surveys and spraying programs are implemented and that sufficient resources and facilities are made available to ensure the correct implementation of this plan.

4.2 **Superintendents**

The Construction Superintendents are responsible for ensuring that this plan is being complied with. Compliance will be verified through spot checks and Daily Checklists.

4.3 **Weed Officer¹**

A Weed Officer will ensure that vehicles entering the Project Area have been cleaned in accordance with this CWMP (refer Attachment 5 – Washdown Flowcharts); that vehicle operators are aware of travel routes for their activity and conduct spot checks to verify vehicles are clean (Attachment 3 - Vehicle/Plant/Equipment Spot Check Log 380-PP-G-034 FORM 1 and Attachment 5 – Washdown Flowcharts).

Weed Officers are to report any anomalies in weed mapping to the Environment Manager or nominee.

4.4 **Vehicle Operator**

A Vehicle Operator is responsible for ensuring that their vehicle has been cleaned down, in accordance with the checklist (refer Attachment 2 – Washdown Guideline and Attachment 5 – Washdown Flowcharts) prior to entry to the Project Area. Vehicle Operators are to ensure that all activities are carried out in conformance with the CWMP and this Procedure.

4.5 **Environment Manager**

The Environment Manager is responsible for the maintenance of the CWMP and related mapping and for organising periodic reviews of the

¹ Note: Weed Officer is a duty under taken by various personnel (see definitions) not a specific position.

procedures. The Environment Manager will arrange for suitable training for Weed Officers and Vehicle Operators on an as required basis, and arrange monthly reviews of the Compliance Checklists.

4.6 All Personnel

All personnel are responsible for ensuring that they comply with the requirements of this CWMP, particularly the requirements for vehicle and clothing to be maintained in a weed free condition.

5.0 TRAINING

Training will be divided into two categories:

- Weed Officers: Will receive nationally accredited training (2 day course) for inspection of vehicles and equipment under Certification in Conservation and Land Management. The course will include weed identification and washdown procedures.
- Vehicle Operators: Will undergo induction training in the identification of key weed species of concern, vehicle washdown procedures, use of the vehicle certification procedure, use of weed washdown kit and route access.

6.0 MONITORING & QA

This CWMP will be managed by:

- Weed Officers making random checks of vehicles and equipment in the field.
- Management review (office based) of washdown log, based on known field activities and outcomes (daily logs).
- Seasonal monitoring of declared plant and other weed species as set out in the Pre-construction Weed Management Plan (Document No. 080-PP-G-003);
- Controls/inspections fully tracked and recorded on GIS using GPS coordinates.

Monitoring of the pipeline ROW for weed infestation will be an on going commitment for operations. This will include monitoring on a six monthly basis for the first 18 months and then annual checks as part of the general ROW review.

7.0 RECORDS

Records shall be maintained for:

- Weed Surveys (Consultant Reports).
- All weed spraying (GIS).
- All breaches and problems (GIS, complaints register or incident register).
- Infestation areas, access routes, washdown locations (GIS).

8.0 WEED MANAGEMENT

8.1 Identification	
Policy	<i>To identify weed species of concern in the Project Area to enable the planning of effective management strategies.</i>
Performance Objectives	<ul style="list-style-type: none"> All weed infested areas associated with the Project Area identified and logged, using GPS, by accredited Project personnel at no more than 3 months prior to the commencement of construction.
Management Strategy	<ul style="list-style-type: none"> Undertake weed surveys of the Project Area by accredited Project personnel prior to the commencement of construction. Issue key personnel with GPS data loggers. Provide training to relevant personnel (see Section 5.0) Liaise with Local Shire personnel and other parties (e.g. Dept of Main Roads) for existing weed data sets. Maintain a weed identification layer on the Project GIS.
Performance Indicators	<ul style="list-style-type: none"> Accuracy and currency (i.e. not more than 3 months prior to commencement of construction) of weed data on GIS.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> Survey of ROW prior to commencement of construction. Review of rehabilitated areas after heavy rainfall for evidence of declared weed growth (during construction period; post construction activities to be carried out in accordance with operations WMP which will be revised to incorporate the need for 6 monthly monitoring for a period of 18 months. Monitoring periods to be scheduled to cover high growth risk periods, e.g. after heavy rainfall). Data to be forwarded to GIS coordinator for inclusion in data sets. Where weed infestation identified initiate appropriate remedial action (e.g. notify weed contractor to carry out control program).
Responsible Person	<ul style="list-style-type: none"> Environment Manager.
Associated Documentation	<ul style="list-style-type: none"> Alignment sheets Maps

8.2 Planning	
Policy	<i>Plan and document access control and washdown to minimise the spread of weed through Project vehicle movements.</i>
Performance Objectives	<ul style="list-style-type: none"> • Ensure washdown procedures and facility locations provided to address identified weed infestations (Section 8.1) • Ensure effective access control reflecting the most recent weed identification survey (Section 8.1)
Management Strategy	<ul style="list-style-type: none"> • Review weed survey (Section 8.1) and identify levels of infestation. • Map weed infestations (GIS). • Limit vehicle movement through weed infested areas. • Develop/revise access control map. • Review/revise and nominate appropriate washdown facilities and locations. • Identify and construct/resource any additional washdown facilities as required. • Include washdown facilities on mapping. • Conduct pre-spraying of weed affected access routes (this may be done in conjunction with local Council spraying programs)
Performance Indicators	<ul style="list-style-type: none"> • All approved weed washdown facilities marked on the maps. • All approved access routes identified on the maps. • Most recent weed survey reviewed and washdown facilities and access routes revised appropriately. • Adequate washdown facilities provided.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 6.0 of this CWMP.
Responsible Person	<ul style="list-style-type: none"> • Environment Manager.
Associated Documentation	<ul style="list-style-type: none"> • Weed Maps – access control

8.3 Access Control	
Policy	<i>To control access in accordance with planning (Section 8.2) outcomes to minimise the spread of weeds.</i>
Performance Objective	<ul style="list-style-type: none"> Provide clear mapping. Provide clear procedures. Provide appropriate weed identification and washdown procedure training (Section 5.0). No usage of prohibited access routes. Compliance with washdown requirements (Section 8.4)
Management Strategy	<ul style="list-style-type: none"> Vehicles/plant and equipment are to be cleaned down in accordance with Section 8.4. Access routes shall be clearly identified on maps and with signs in the field. ONLY the identified access routes shall be used. Points for clear and grade clean down shall be identified (marked on alignment sheets and in the field) at locations where infestation levels change. Boundary fence lines shall be marked on alignment sheets and in the field and crews shall limit soil transfer across these lines. All vehicles, plant and equipment to strictly adhere to the approved roads, tracks, ROW and work areas to minimise contact with vegetation. Vehicles travelling off the ROW or approved access roads may be subject to re washdown (see Section 8.4). Strict access and hygiene controls will be applied during the pipeline construction phase of the Project. Vehicles, plant and/or equipment entering and leaving the Project Area shall be washed down as identified in Attachment 1 – Weed Control Map. Each vehicle shall maintain a washdown log (refer Attachment 4 – Washdown Log 380-PP-G-034 Form 2)
Performance Indicators	<ul style="list-style-type: none"> Washdown logs correspond to known vehicle movements (Project related tasks). Weed mapping and washdown locations up to date.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> In accordance with Section 6.0 of this CWMP.
Responsible Person	<ul style="list-style-type: none"> Construction Manager.
Associated Documentation	<ul style="list-style-type: none"> Construction Environmental Management Plan (380-PP-G-008)

8.4 Washdown	
Policy	<i>To prevent the spread of weeds and pathogens</i>
Performance Objective	<ul style="list-style-type: none"> Vehicles, plant and equipment clean of organic material at identified change points (see Attachment 1 – Weed Control Map). Vehicles, plant and equipment pass spot checks by Weed Officers (refer Attachment 5 – Washdown Flowcharts).
Management Strategy	<p>General:</p> <ul style="list-style-type: none"> All vehicles (including pipe delivery trucks, plant and equipment) are to be certified clean prior to entry to ROW. Certification includes certificate issued by 4WD Hire, certificate issued by a recognised washdown facility (e.g. Council washdown) or signature of Weed Officer on Washdown Log (see Attachment 4 – Washdown Log 380-PP-G-034 Form 2 and Attachment 5 – Washdown Flowcharts). Sticker to be attached to all vehicles. All pipeline vehicles, plant and equipment must display a certification sticker appropriate to the location. ONLY Weed Officers and trained personnel (e.g. hire car personnel who have undertaken nationally accredited washdown training in accordance with Section 5.0 of this CWMP) can issue stickers. Miscellaneous temporary/short term vehicles (e.g. service vehicles) issued with inverted sticker with 'date valid to' to be written on the sticker. Re-establish vehicle cleanliness at the identified point (refer alignment sheets). Vehicles/plant and equipment failing inspection must be washed down and re-inspected. Register to be maintained for all washdown (see Attachment 4 – Washdown Log 380-PP-G-034 Form 2 and Attachment 5 – Washdown Flowcharts). Use only approved washdown facilities (Attachment 1 – Weed Control Map). Wash down facilities constructed for the Project will conform with Queensland Guideline for the construction of Vehicle and Machinery Washdown Facilities, including the requirement for seed trapping capability. Keep all vehicles, plant and equipment visually clean (as practicable) at all times. Ensure no plant debris adhering to clothing (check trouser pockets and cuffs, and socks). Pipeline skids and sawdust bags shall be visually inspected prior to movement from one zone to another. No organic matter shall be transferred across zones (e.g. skids washed down) <p>Clear & Grade Crew:</p> <ul style="list-style-type: none"> All high risk topsoil and/or vegetation matter to be stripped by the clear and grade crew from the ROW, all work areas and access tracks (where vehicles, plant and equipment will travel and have the capacity to pick up and transport seed) and the areas clearly marked in the field. Clear and grade crews to re-establish cleanliness of vehicles, plant and equipment at the identified points of weed infestation change (refer alignment

8.4 Washdown

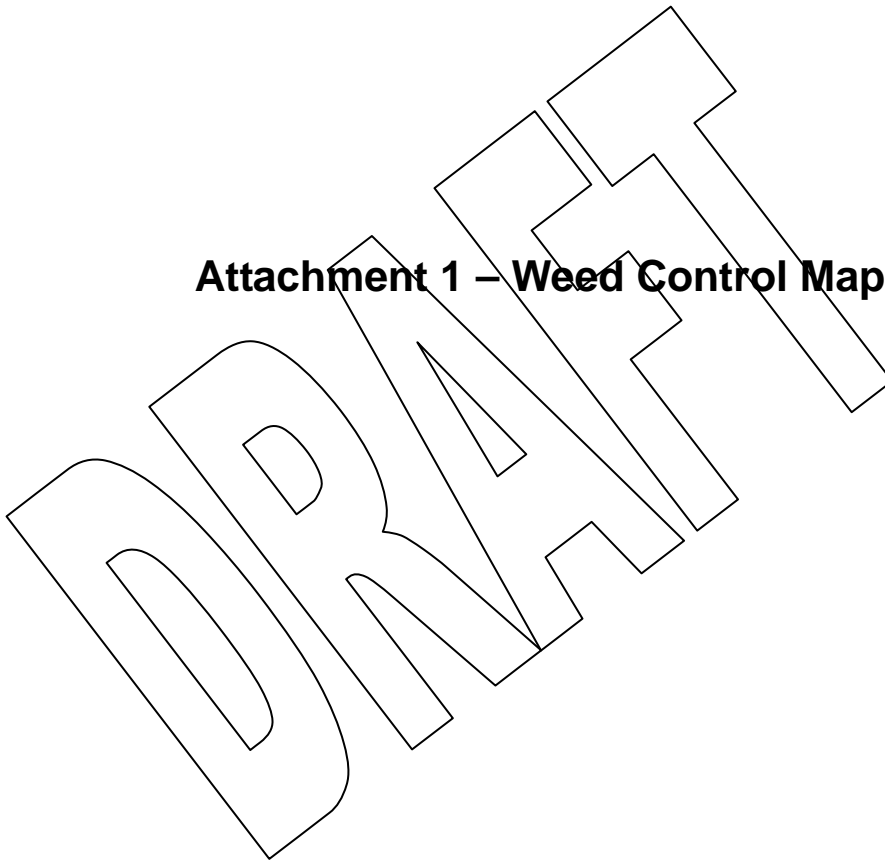
	<p>sheets and Attachment 5 – Washdown Flowcharts). Clean down to be recorded by Crew Supervisor on Daily Checklist for Clear and Grade (<i>form number to be inserted</i>) and Washdown Log (see Attachment 4 – Washdown Log 380-PP-G-034 Form 2) submitted to Project Engineer.</p> <ul style="list-style-type: none"> • Keep all vehicles, plant and equipment visually clean (as practicable) at all times. <p>Reinstatement/Rehabilitation Crew:</p> <ul style="list-style-type: none"> • In areas of heavy weed infestation where respreading of vegetation is not appropriate approval should be gained from the local fire authority to burn any weed debris. • Rehabilitation crews to re-establish cleanliness of vehicles, plant and equipment at the identified points of weed infestation change (refer alignment sheets). Clean down to be recorded by Crew Supervisor on Daily Checklist for Rehabilitation. • Keep all vehicles, plant and equipment visually clean (as practicable) at all times.
Performance Indicators	<ul style="list-style-type: none"> • Presence of weeds and pathogens on the easement consistent with the <i>Land Protection Act</i> as far as practicable taking into account the condition of the adjacent land. • No new outbreak of weeds reported on ROW.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 6.0 of this CWMP.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager.
Associated Documentation	<ul style="list-style-type: none"> • Pre-Construction Weed Management Plan (080-PP-G-003) • Construction Environmental Management Plan (380-PP-G-008)

8.5 Compliance Checks

Policy	<i>To ensure system being applied and Project objective of minimising weed spread is being effectively managed.</i>
Performance Objective	<ul style="list-style-type: none"> • No spread, as a result of the CQGP Project, of Parthenium, Giant Rats Tail, Mother of Millions or Harrisia Cactus onto properties free of these species. • Vehicles adhering to travel requirements of ROW and approved travel routes only. • Vehicles / plant / equipment being maintained in a weedseed free condition.
Management Strategy	<ul style="list-style-type: none"> • Spot-checks of vehicles, plant and equipment, which is expected to predominantly remain within the ROW and associated work areas, shall be randomly carried out by Weed Officers (Attachment 3 - Vehicle/Plant/Equipment Spot Check Log 380-PP-G-034 FORM 1 and Attachment 5 – Washdown Flowcharts) • 40 items of vehicle, plant or equipment shall be checked per work cycle. • Environmental personnel and Lands Officers shall continually check/review for use of unauthorised access routes by Project vehicles. • Confirmed use of unauthorised access routes shall generate an incident report. • All completed checklists shall be lodged with the Project Engineer for inclusion into the document control system. • Checklists and complaints registers shall be reviewed regularly for items representing non-compliance with the CWMP. • Vehicles, plant and equipment failing spot checks shall be sent for wash down at the nearest facility.
Performance Indicators	<ul style="list-style-type: none"> • Washdown logs correspond to Daily Reports (Project related tasks). • Spot check forms completed and vehicles found to be in appropriate state of cleanliness. • Weed mapping and washdown locations up to date. • No evidence of the spread, as a result of the CQGP Project, of Parthenium, Giant Rats Tail, Mother of Millions or Harrisia Cactus onto properties free of these species.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 6.0 of this CWMP.
Responsible Person	<ul style="list-style-type: none"> • Construction Manager.
Associated Documentation	<ul style="list-style-type: none"> • Construction Environmental Management Plan (380-PP-G-008).

8.6 Weed Control Program			
Policy	<i>To ensure effective control of outbreaks of weed infestation on the ROW.</i>		
Performance Objective	<ul style="list-style-type: none"> • Weed presence on ROW less than surrounding area. • Regulated weeds removed or minimised in accordance with regulatory requirements. 		
Management Strategy	<ul style="list-style-type: none"> • To knock back, reduce and control weed infestation. <p>Spray Regime:</p> <ul style="list-style-type: none"> • Weed infested areas identified in the Weed Survey (Section 3.0) shall be pre-treated by a specialist contractor prior to pipeline construction activities commencing. • Initial spray treatment commenced at least one month prior to construction if practicable. • Specialist contractor shall provide on going control during construction. <p>Seeding</p> <ul style="list-style-type: none"> • Carry out extensive and generous seeding during rehabilitation to provide competition to weed species. • Seed mix will comprise either: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Mix 1 (areas of Native Grasses):</p> <ul style="list-style-type: none"> Curly Mitchell Grass Kangaroo Grass Love Grass Brigalow Grass Queensland Blue Grass Cotton panic Grass </td> <td style="width: 50%; vertical-align: top;"> <p>Mix 2 (areas of Improved Pasture):</p> <ul style="list-style-type: none"> Creeping Blue Grass Rhodes Grass Butterfly Pea Buffel Grass Jap Millet Queensland Blue Grass Sirato Premier Digit Grass </td> </tr> </table> 	<p>Mix 1 (areas of Native Grasses):</p> <ul style="list-style-type: none"> Curly Mitchell Grass Kangaroo Grass Love Grass Brigalow Grass Queensland Blue Grass Cotton panic Grass 	<p>Mix 2 (areas of Improved Pasture):</p> <ul style="list-style-type: none"> Creeping Blue Grass Rhodes Grass Butterfly Pea Buffel Grass Jap Millet Queensland Blue Grass Sirato Premier Digit Grass
<p>Mix 1 (areas of Native Grasses):</p> <ul style="list-style-type: none"> Curly Mitchell Grass Kangaroo Grass Love Grass Brigalow Grass Queensland Blue Grass Cotton panic Grass 	<p>Mix 2 (areas of Improved Pasture):</p> <ul style="list-style-type: none"> Creeping Blue Grass Rhodes Grass Butterfly Pea Buffel Grass Jap Millet Queensland Blue Grass Sirato Premier Digit Grass 		
Performance Indicators	<ul style="list-style-type: none"> • Weed presence on ROW less than surrounding area. • Regulated weeds removed or minimised in accordance with regulatory requirements. 		
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 6.0 of this CWMP. 		
Responsible Person	<ul style="list-style-type: none"> • Environment Manager. 		
Associated Documentation	<ul style="list-style-type: none"> • Construction Environmental Management Plan (380-PP-G-008). 		

Attachment 1 – Weed Control Map



DRAFT

Attachment 2 – Washdown Guideline

DRAFT

**Use suitable high pressure washdown hose or pressure cleaner
Drive through car wash is NOT sufficient**

<input type="checkbox"/> Wash under bonnet	<input type="checkbox"/> Use wire hook to remove grass etc from between radiator and condenser
<input type="checkbox"/> Around vents in front of windscreen	<input type="checkbox"/> Wash radiator and air conditioning condenser
<input type="checkbox"/> Around grille and headlamps	<input type="checkbox"/> Wash under side steps and brush rails
<input type="checkbox"/> In and around all openings in chassis	<input type="checkbox"/> Wash inside chassis rails or any open spaces
<input type="checkbox"/> Under mudguards and inside wheel arches	<input type="checkbox"/> Wash around differential, gearbox and engine
<input type="checkbox"/> Both sides of mudflaps	<input type="checkbox"/> Wash inside and outside of wheels
<input type="checkbox"/> Around brake drums and discs	<input type="checkbox"/> Remove loose floor mats and wash
<input type="checkbox"/> Around all steering linkages and suspension parts	<input type="checkbox"/> Brush and wash fixed floor mats
<input type="checkbox"/> Under Bumper bars and bullbars including rear bumper bar	<input type="checkbox"/> Brush down trouser legs (check inside any cuffs) – ensure all seeds removed
<input type="checkbox"/> Remove spare wheel from under and wash around area	<input type="checkbox"/> Remove boots/shoes/socks and shake out thoroughly ensuring all seeds removed
<input type="checkbox"/> Wash out sump guard	<input type="checkbox"/> Check under boots and clean to remove plant material and soil
<input type="checkbox"/> Around and above muffler and exhaust system	<input type="checkbox"/> Clean any tools and equipment used in the field – ensure free of soil and plant material
<input type="checkbox"/> Wash out protector guard under fuel tanks (front and rear tanks)	

**Attachment 3 - Vehicle/Plant/Equipment Spot Check Log 380-
PP-G-034 FORM 1**

DRAFT



**CENTRAL QUEENSLAND GAS PIPELINE
PROJECT PLAN**

Construction Weed Management Plan
Vehicle/Plant/Equipment Spot Check Log 380-PP-G-034 FORM 1

DATE OF CHECK	VEHICLE/PLANT	REGO or ID	CREW	STICKER IN PLACE Y/N	COMMENT (E.G. OK OR SENT FOR WASHDOWN)

I _____ certify that I carried out spot checks on the above vehicles.
(PRINT NAME)

Signed: _____ Date: _____

NOTE: A MINIMUM OF 40 (shared, the number will depend on the number of trained and authorised Weed Officers) VEHICLES/PLANT/EQUIPMENT PER CYCLE TO BE COMPLETED – THIS IS A RANDOM CHECK IN WHICH ALL VEHICLES MAY BE DONE IN A SINGLE DAY OR SPREAD OUT ACROSS THE CYCLE.

COMPLETED FORM TO BE SUBMITTED TO PROJECT ENGINEER FOR ENTRY INTO DOCUMENT CONTROL SYSTEM

Attachment 4 – Washdown Log 380-PP-G-034 Form 2

DRAFT



**CENTRAL QUEENSLAND GAS PIPELINE
PROJECT PLAN**

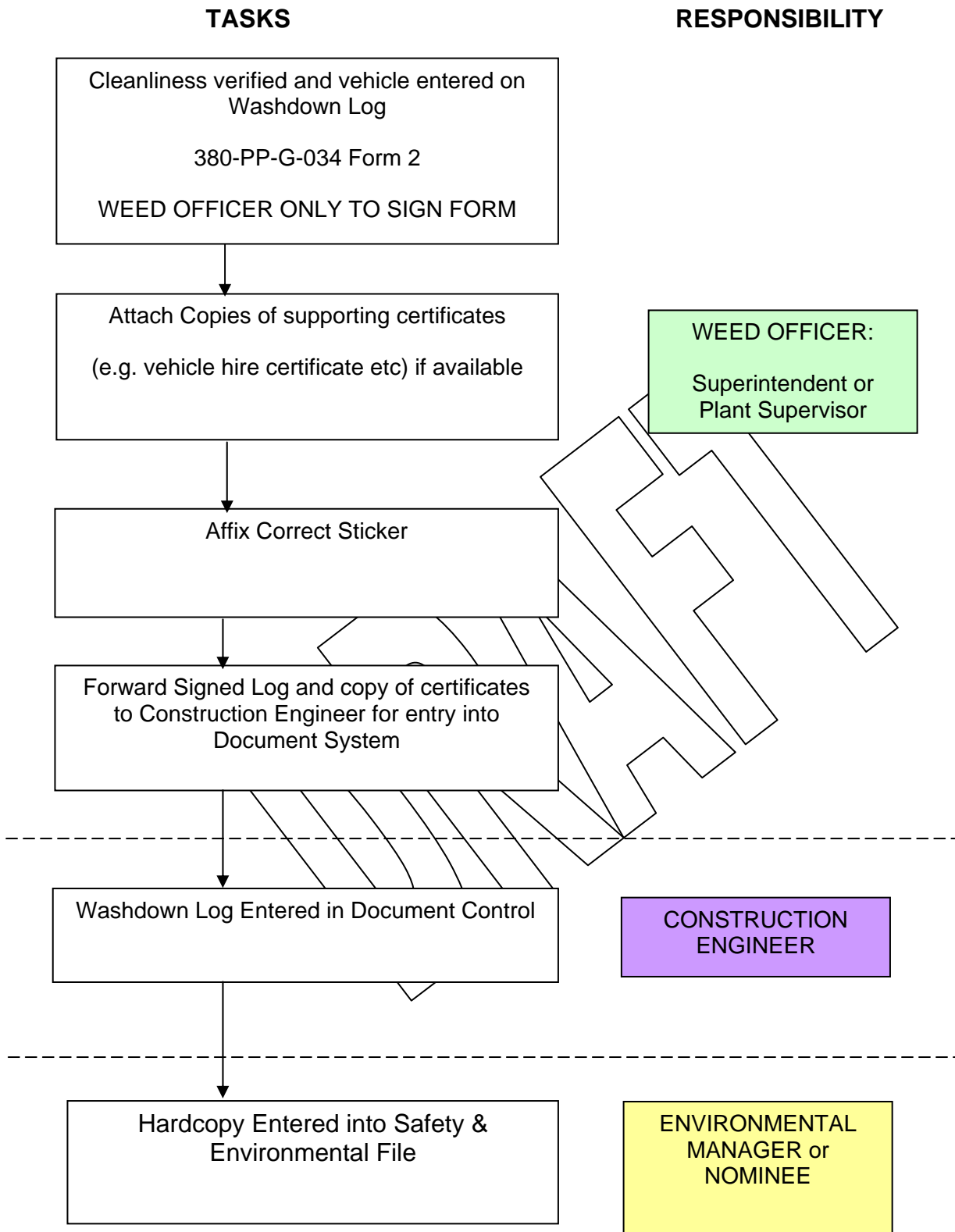
Construction Weed Management Plan
Weed Washdown Log - 380-PP-G-034 Form 2 Rev 1

Date	VEHICLE/PLANT	Rego No or ID	Crew	Sticker Affixed	SUPPLIER OF VEHICLE / PLANT/ EQUIPMENT (e.g. 4WDH; Nationwide, Thiess, Nacap)	NAME OF WEED OFFICER (PRINT AND SIGN)

Attachment 5 – Washdown Flowcharts

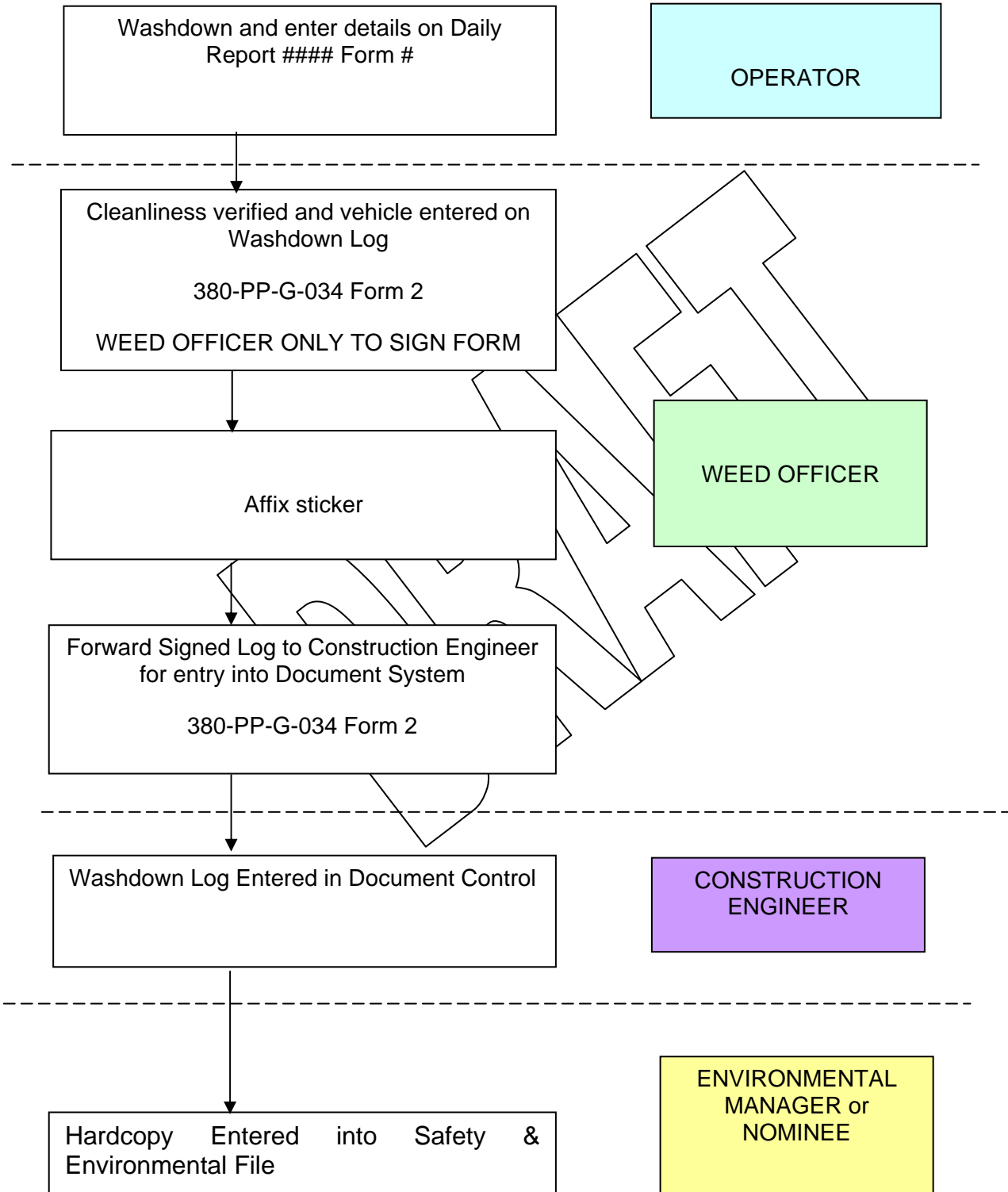
DRAFT

FLOWCHART 1: NEW VEHICLE / PLANT / EQUIPMENT ARRIVES AT SITE



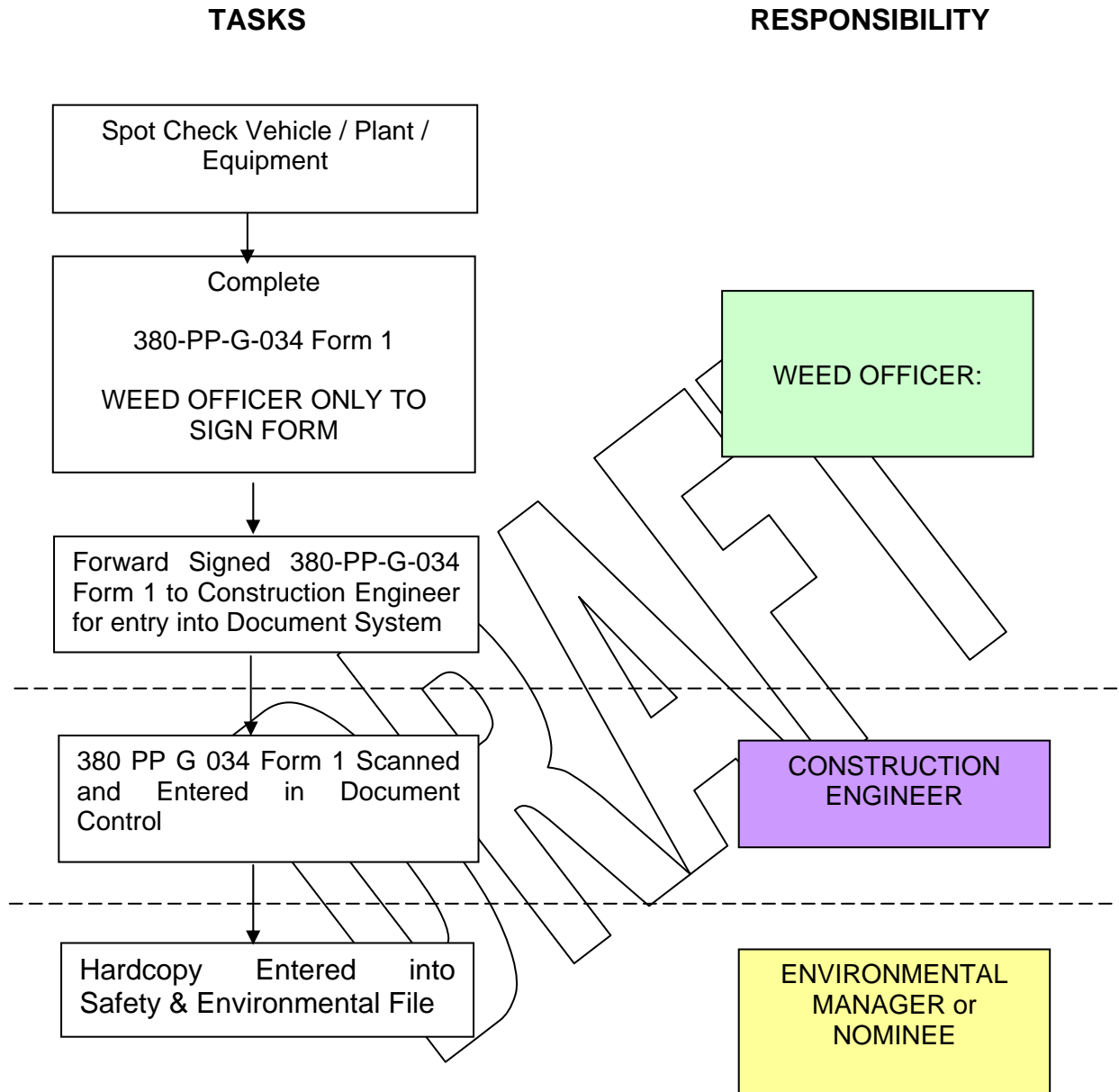
FLOWCHART 2: TRANSFER FROM ZONE TO ZONE

TASKS RESPONSIBILITY



FLOWCHART 3: VEHICLE SPOT CHECKS

From Time to time Vehicles / Plant/ Equipment are required to be spot checked (40 items per cycle).



VEHICLES FAILING SPOT CHECK MUST UNDERTAKE A WASHDOWN AND PROCEED THROUGH SIMILAR STEPS TO THOSE SETOUT IN FLOWCHART 2: TRANSFER FROM ZONE TO ZONE



PROJECT GROUP PLAN

Weed Management

080-PP-G-003

		<i>WEM</i>	<i>PBM</i>	<i>PBM</i>	
0		WEM	PBM	PBM	Mar 2005
Rev	Description	Originator	Reviewed	Approved	Date

Document Concurrence Record		
Group/Section	Signature	Date

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1.0 PURPOSE & SCOPE

The purpose of this Weed Management Plan (WMP) is to ensure that:

- Appropriate weed management techniques are implemented for all activities associated with the development of a project; and
- Records are kept that show 'we assessed, we planned, we implemented' sufficient to ensure that Projects are not held responsible for general weed spread.

The WMP provides an overarching guideline for the control of all tasks that have the potential to spread weed seed and covers all activities undertaken prior to land clearing for construction of a project. From time to time procedures may also be prepared to address any unique issues relating to a given project or activity.

This WMP is an integral part of the environmental management system for projects and should be read in conjunction with any relevant Environmental Management Plan (EMP).

The WMP is regularly updated to reflect on-going weed management requirements.

2.0 ABBREVIATIONS & DEFINITIONS

2.1 Abbreviations

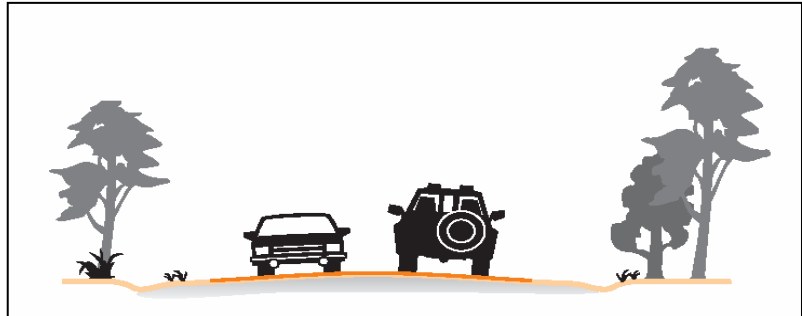
EMP	Environmental Management Plan
GIS	Global Information System
GPS	Global Positioning System
WMP	Weed Management Plan
ROW	Right of Way

2.2 Definitions

Access Routes:

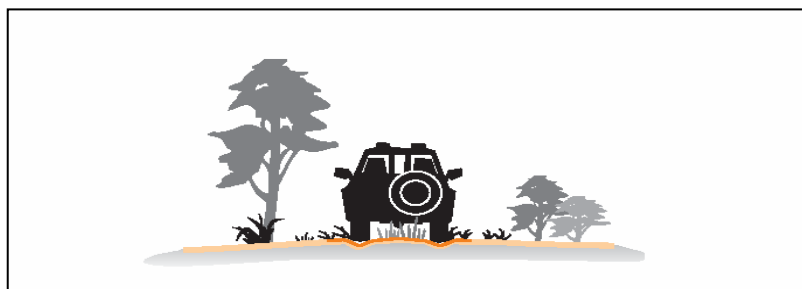
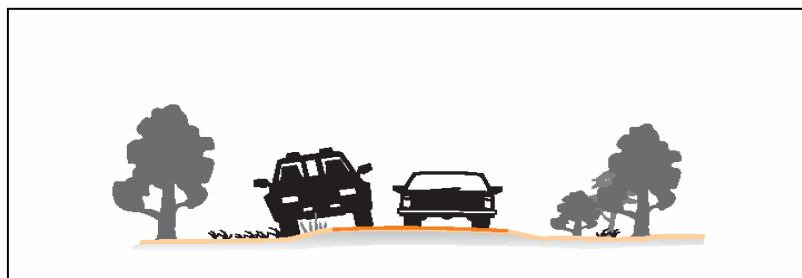
Clean:

All travel on sealed roads i.e. no contact with roadside vegetation.



Washdown

Travel off road or **repeatedly** come into contact with roadside vegetation (e.g. off bitumen to overtake)



Clean Equipment / Plant / Vehicle

Indicates that as far as can be ascertained there is no soil or organic matter present on or in equipment/plant/vehicle. This includes all areas as set out in the guideline in Appendix 2.

Declared Pest Species

A plant belonging to a class of plants declared under the *Land Protection (Pest and Stock Route Management) Act 2003*. Such plants have special control requirements under law.

Project Area

The Project Area encompasses the entire area likely to be affected by the Project including public roads, project easements, construction area or Right-of-Way (ROW), extra work areas, private access tracks approved for Project use by landowners, and campsites.

Vehicle Operator	Person in charge of the vehicle (e.g. nominated driver/operator of vehicle/plant/equipment).
Washdown Facility	Approved facility and location for the cleaning of vehicles, plant, and equipment as documented on Project Map(s). All commercial carwash facilities with washdown bays and high pressure hoses are approved facilities ¹ .
Weed	Plants that have the ability to spread rapidly and produce unwanted economic, environmental or social impacts.

3.0 RESPONSIBILITIES

3.1 Project Managers/Superintendents

The Project Managers / Superintendents are responsible for ensuring that this plan is being complied with. Compliance will be verified through vehicle washdown logs (APPENDIX 1 – Washdown Log).

3.2 Lands Officer

Lands Officers, or other Level 1 weed washdown trained personnel, will undertake random spot checks of vehicles entering the Project Area to ensure that they have been cleaned in accordance with the WMP and that vehicle operators are aware of travel routes for their activity.

Lands officers are to report any anomalies in weed mapping to the Manager Environment and Land Access.

3.3 Vehicle Operator

A Vehicle Operator is responsible for ensuring that their vehicle has been cleaned down, in accordance with the checklist (APPENDIX 2 – Washdown) prior to entry to a Project Area. Vehicle Operators are to ensure that all activities are carried out in conformance with this WMP and any relevant Procedures.

3.4 Manager Environment and Land Access

The Manager Environment and Land Access is responsible for the maintenance of the WMP and related mapping and for organising periodic reviews of the procedures. The Manager Environment and Land Access will arrange for suitable training for Lands Officers and Vehicle Operators on an as required basis, and arrange regular reviews of washdown logs.

¹ Drive through car wash facilities are not approved facilities.

4.0 TRAINING

Training will be divided into two categories:

- Level 1: Nationally accredited training (2 day course) for inspection of vehicles and equipment. The course will include weed identification and washdown procedures. Typically Lands Officers and long-term field personnel (e.g. surveyors) will undergo Level 1 training.
- Level 2: Induction training in vehicle washdown procedures, use of weed washdown kit and route access. All Vehicle Operators will undergo Level 2 training.

5.0 MONITORING & QA

This WMP will be managed by:

- Random checks of vehicles and equipment in the field by Lands Officer or other Level 1 weed washdown trained personnel.
- Management review (office based) of washdown logs, based on known field activities and outcomes.
- Seasonal monitoring of a project area for weed species (Table 5-1);
- Controls/inspections fully tracked and recorded on GIS using GPS coordinates.

Table 5-1: Monitoring Program

Timing	Procedure
Initial Survey	Lands Officers working in the field will note, for inclusion into the GIS database, species and location of any weeds present.
Environmental impact studies for the Project	Survey of weed infestations by ecologists during any environmental studies. Again this data will be entered into the GIS database.
Prior to Construction	Inspect and record weed infestations. Undertake weed control on ROW and relevant access tracks.

6.0 WEED MANAGEMENT

6.1 Identification	
Policy	<i>To identify weed species of concern in a Project Area to enable the planning of effective management strategies.</i>
Performance Objectives	<ul style="list-style-type: none"> • All weed infested areas associated with a Project Area identified and logged, using GPS.
Management Strategy	<ul style="list-style-type: none"> • Undertake regular weed surveys of a Project Area by approved Enertrade employee or contractor. • Issue key personnel with GPS data loggers for recording weed species and locations. • Provide Training to relevant personnel (see Section 4.0) • Target inspection times for periods of high weed growth risk (e.g. after high or seasonal rainfall periods). • Liaise with Local Shire personnel and other parties (e.g. Dept of Main Roads) for existing weed data sets. • Maintain a weed identification layer on the Project GIS.
Performance Indicators	<ul style="list-style-type: none"> • Currency of weed data on GIS. • Correlation of data set dates with dates of major rainfall events.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Survey of weed prone areas to be conducted after high or seasonal rainfall events (e.g. March – April). • Data to be forwarded to GIS coordinator for inclusion in data sets. • Prior to mobilisation for the construction phase of a Project initiate appropriate control actions (see Section 6.5) for identified weed infestation areas in which vehicles/plant/equipment etc will be moving.
Responsible Person	<ul style="list-style-type: none"> • Manager Environment and Land Access.

6.2 Planning	
Policy	<i>Plan and document access control and washdown to minimise the spread of weed through Project vehicle movements.</i>
Performance Objectives	<ul style="list-style-type: none"> • Ensure washdown procedures and facility locations are provided to address identified weed infestations (Section 6.4) • Ensure effective access control reflecting the most recent weed identification survey (Section 6.1)
Management Strategy	<ul style="list-style-type: none"> • Review any weed survey data (Section 6.1) and assess levels of infestation. • Map weed infestations (GIS). • Develop/revise access control map. • Review/revise and nominate appropriate washdown facilities and locations and include on map (Refer to Project specific maps). • Identify and construct/resource any additional washdown facilities as required. • Limit vehicle movement through weed infested areas. • Where access through weed infested areas is unavoidable initiate a pre-control program if practicable (Section 6.5).
Performance Indicators	<ul style="list-style-type: none"> • All approved weed washdown facilities marked on the maps. • All approved access routes identified on the maps. • Most recent weed survey reviewed and washdown facilities and access routes revised appropriately. • Adequate washdown facilities provided.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 5.0 of this WMP.
Responsible Person	<ul style="list-style-type: none"> • Manager Environment and Land Access.

6.3 Access Control	
Policy	<i>To control access in accordance with planning (Section 6.2) outcomes to minimise the spread of weeds.</i>
Performance Objective	<ul style="list-style-type: none"> • Provide clear mapping. • Provide clear procedures. • Provide appropriate weed identification and washdown procedure training (Section 4.0). • No useage of prohibited access routes. • Compliance with washdown requirements (Section 6.4)
Management Strategy	<ul style="list-style-type: none"> • Vehicles/plant and equipment are to be cleaned down in accordance with Section 6.4. • Vehicles/plant and equipment are to travel on approved access routes only (Refer to Project specific maps). • Note that all sealed roads are considered clean unless noted otherwise (refer to Project specific maps). • Limit driving on unsealed shoulder of roads – emergency use only. • All activites are to be planned so that, as far as practicable, vehicles travel from weed free areas into weed affected areas.
Performance Indicators	<ul style="list-style-type: none"> • Washdown logs correspond to known vehicle movements (Project related tasks). • Weed mapping and washdown locations up to date.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 5.0 of this WMP.
Responsible Person	<ul style="list-style-type: none"> • Manager Environment and Land Access.

6.4 Washdown	
Policy	<i>To prevent the spread of weeds and pathogens</i>
Performance Objective	<ul style="list-style-type: none"> • Vehicles, plant and equipment clean of organic material at identified change points (Refer to Project specific maps). • Vehicles, plant and equipment pass inspection by Level 1 weed washdown trained personnel.
Management Strategy	<ul style="list-style-type: none"> • All vehicles/equipment/plant (including delivery trucks, survey helicopters that will put down within the Project Area, and hand tools) inspected in accordance with the requirements set out in APPENDIX 2 – Washdown • Ensure no plant debris adhering to clothing (check trouser pockets and cuffs, and socks). • Keep all vehicles, plant and equipment visually clean (as practicable) at all times. • Vehicles/plant and equipment failing inspection must be washed down and re inspected. • Use only those washdown facilities identified (refer to Project specific maps). • Log to be completed for all washdown (APPENDIX 1 – Washdown Log3) and a copy sent to the Brisbane Office. • Any washdown facilities specifically constructed for a Project will conform with <i>Queensland Guideline for the construction of Vehicle and Machinery Washdown Facilities</i> (www.nrm.qld.gov.au).
Performance Indicators	<ul style="list-style-type: none"> • Presence of weeds and pathogens on Project land is consistent with adjacent land. • No complaints from stakeholders in relation to new outbreak of weeds as a result of Project activities.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 5.0 of this WMP.
Responsible Person	<ul style="list-style-type: none"> • Manager Environment and Land Access.

6.5 Weed Control	
Policy	<i>Implement pre-control measures prior to mobilisation for the construction phase of a Project where access through weed infestation is unavoidable and the potential exists for carriage of seed to clean areas.</i>
Performance Objective	<ul style="list-style-type: none"> • Ensure appropriate pre-control regime implemented. • Control measures are recorded. • No contamination of watercourses by herbicides. • The most appropriate and approved herbicides used.
Management Strategy	<ul style="list-style-type: none"> • Carry out control measures for significant infestations prior to construction activities commencing. Note that treatment should be carried out before the plants can set seed. • Use established contractors with proven track record in weed control management and knowledge of herbicide application rates. • Contractors to be proficient in the use of GPS. • To use approved low toxicity, non-residual, herbicides for weed control. Recommended management measures, herbicides and application rates are available in the NRM Fact sheets (www.nrm.qld.gov.au). • No Atrazine will be used for weed control unless at the request of a specific landholder. • Monitor significant infestations and Project specific washdown areas after treatment. • Use repeat spraying programs when required – repeat spraying may be required even within one growing season to prevent further seed production. • No herbicide or chemical usage shall be undertaken within 10 metres of a water body. • Use mechanical/hand removal of weeds within 10 metres of a water body. • Where mechanical/hand removal is utilised weed debris shall be placed in sturdy plastic bags, sealed and disposed of to municipal landfill sites. • No boom spraying and widespread application of herbicide in sensitive environments (i.e. areas covered by a Significant Area Plan (SAP) in the EMP). • All weed control machinery shall be subject to the wash down requirements (Section 6.4).
Performance Indicators	<ul style="list-style-type: none"> • Contractor selection record. • Contractor records of treatment (locations (GPS co-ords), herbicide, quantity etc. • Herbicides used are in accordance with NRM recommendations.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Weed surveys – results to Manager Environment and Land Access • Repeat spraying as required.
Responsible Person	<ul style="list-style-type: none"> • Manager Environment and Land Access.

APPENDIX 1 – WASHDOWN LOG



PROJECT AREA: _____

Date	Vehicle/Plant	Rego No or ID	Name of Driver (Please Print)	Washdown Location	Signature

Submit Form monthly to Brisbane Office, Project Group Environmental Coordinator

APPENDIX 2 – WASHDOWN GUIDELINE

**Use suitable high pressure washdown hose or pressure cleaner
Drive through car wash is NOT sufficient**

<input type="checkbox"/> Wash under bonnet	<input type="checkbox"/> Use wire hook to remove grass etc from between radiator and condenser
<input type="checkbox"/> Around vents in front of windscreen	<input type="checkbox"/> Wash radiator and air conditioning condenser
<input type="checkbox"/> Around grille and headlamps	<input type="checkbox"/> Wash under side steps and brush rails
<input type="checkbox"/> In and around all openings in chassis	<input type="checkbox"/> Wash inside chassis rails or any open spaces
<input type="checkbox"/> Under mudguards and inside wheel arches	<input type="checkbox"/> Wash around differential, gearbox and engine
<input type="checkbox"/> Both sides of mudflaps	<input type="checkbox"/> Wash inside and outside of wheels
<input type="checkbox"/> Around brake drums and discs	<input type="checkbox"/> Remove loose floor mats and wash
<input type="checkbox"/> Around all steering linkages and suspension parts	<input type="checkbox"/> Brush and wash fixed floor mats
<input type="checkbox"/> Under Bumper bars and bullbars including rear bumper bar	<input type="checkbox"/> Brush down trouser legs (check inside any cuffs) – ensure all seeds removed
<input type="checkbox"/> Remove spare wheel from under and wash around area	<input type="checkbox"/> Remove boots/shoes/socks and shake out thoroughly ensuring all seeds removed
<input type="checkbox"/> Wash out sump guard	<input type="checkbox"/> Check under boots and clean to remove plant material and soil
<input type="checkbox"/> Around and above muffler and exhaust system	<input type="checkbox"/> Clean any tools and equipment used in the field – ensure free of soil and plant material
<input type="checkbox"/> Wash out protector guard under fuel tanks (front and rear tanks)	



PIPELINE OPERATIONS

Environmental and Cultural Management Plan

090-OP-O-003

6	Revisions to weed monitoring regime and EA	WEM	PB		24/7/2007
5	Environmental and Cultural Management Plan	PB	DJW	DJW	5/7/05
4	Integrated Cultural Management and Environmental Management	JJT	PB	DJW	30/03/05
3	Document Number Updated	WM	DJW	MW	15/03/04
2	Issued for Use (Govt approved)	WM	DJW	MW	10 Sept 2003
1	Revised to generic plan	WM	DJW	MW	
0	Issued for Use	WM	PBM	GHH	
Rev	Description	Originator	Reviewed	Approved	Date

Document Concurrence Record		
Group/Section	Signature	Date

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This ECMP is a dynamic document and will be reviewed annually to ensure that all issues have been appropriately addressed. The document will be reviewed and distributed to the Department of Natural Resources and Mines and the Environmental Protection Agency as appropriate for their input.

Note: this plan may not be substantially changed without the approval of the EPA.

1. PURPOSE & SCOPE

This Environmental and Cultural Management Plan (ECMP) has been prepared to cover all gas pipeline operations carried out by Enertrade and addresses issues relating to the operation of Pipelines and associated above ground facilities (e.g. Compressor Station, mainline valves (MLV)). This ECMP has been developed in accordance with the Australian Pipeline Industry (APIA) Code of Environmental Practice to ensure that Enertrade's pipelines are operated in accordance with industry best practice.

Items in this ECMP that relate to a specific license condition (e.g. Integrated Authority for the NQGP) have the relevant reference indicated in brackets (e.g. NQGP IA F2).

This ECMP is an integral component of the Integrated Environmental Management System (IEMS) required under the Integrated Authority #150,220, issued in relation to PPL89.

The ECMP provides a framework for control of Pipeline Operations impacts.

For activities requiring construction type tasks (e.g. clearing, grading, welding) the Construction EMP should be consulted.

2. INTENT

This ECMP seeks to set performance standards that Pipeline Operations are to achieve in its implementation, and has been developed for use by a wide range of Pipeline Operations personnel.

The ECMP intentionally avoids being too prescriptive in regard to how performance is to be achieved, rather it details the available management strategies which will be used by Pipeline Operations.

The ECMP will be used by **Managers** to assist in the planning and resourcing of functions and to allow for assessment of required skills, competencies and training in relation to environmental management.

The ECMP will be used by **Field Superintendents** to assist in the selection of workforce and equipment and to identify specific training, competencies and resources in relation to environmental management of pipelines.

The ECMP will be used by **Operators** to allow them to clearly understand specific environmental requirements for particular tasks and or at specific locations.

The ECMP will be used for preparation of **Quality Assurance / Reports**, by enabling the development of recording requirements for daily activities, location based activities and specific function activities by Pipeline Operations personnel, to be able to demonstrate compliance with the ECMP.

The ECMP will be used by **Auditors** to easily understand the performance requirements of Pipeline Operations generally, and for the individual functions of the operations activities, and to enable each of these requirements to be checked and reviewed in an orderly manner.

3. DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

Integrated Authority	Integrated Authority 150,220 issued to Queensland Power Trading Corporation trading as Enertrade in relation to Petroleum Pipeline Licence (PPL) 89
IEMS	The IEMS details how an applicant proposes to manage environmental impacts caused by carrying out Environmentally Relevant Activities (ERAs).
Toolbox Meeting	An interactive meeting to review issues associated with up coming work activities including cultural heritage, environmental, and safety aspects.

3.2 Abbreviations

CBGP	Cheepie – Barcaldine Gas Pipeline
CHMP	Cultural Heritage Management Plan
CoG	Coordinator General
DMR	Department of Main Roads
DNRM	Department of Natural Resources and Mines
EIS	Environmental Impact Statement
ECMP	Environmental and Cultural Management Plan
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
IA	Integrated Authority
JHA	Job Hazard Analysis
LMS	Land Management System
NQGP	North Queensland Gas Pipeline
ROW	Right-of-Way
SAP	Special Area Plans
SMP	Safety Management Plan
WAB	Work Activity Briefings
WMP	Weed Management Plan
WMS	Work Method Statement

4. RESPONSIBILITIES

The structure for the environmental and cultural management of Pipeline Operations is provided in Figure 4-1. All staff are responsible for the environmental performance of their activities and for complying with the General Environmental Duty as outlined in the *Environment Protection Act 1994*. Section 319(1) of the *Environment Protection Act 1994* states that ‘**a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to minimise the harm**’. Specific environmental responsibilities are detailed in this section.

4.1 General Manager Operations

The General Manager Trading and Operations is ultimately responsible for the standard of management, including environmental management. To assist in fulfilling this responsibility, the General Manager is supported by a series of specialised personnel.

4.2 Manager Pipeline Operations

The Manager Pipeline Operations will direct all operations activities in a manner that complies with all relevant environmental procedures, adheres to all legislative requirements and ensures that all environmental objectives associated with the ECMP are achieved. This includes implementation of the procedures, development of appropriate WMS and completion of the JHAs.

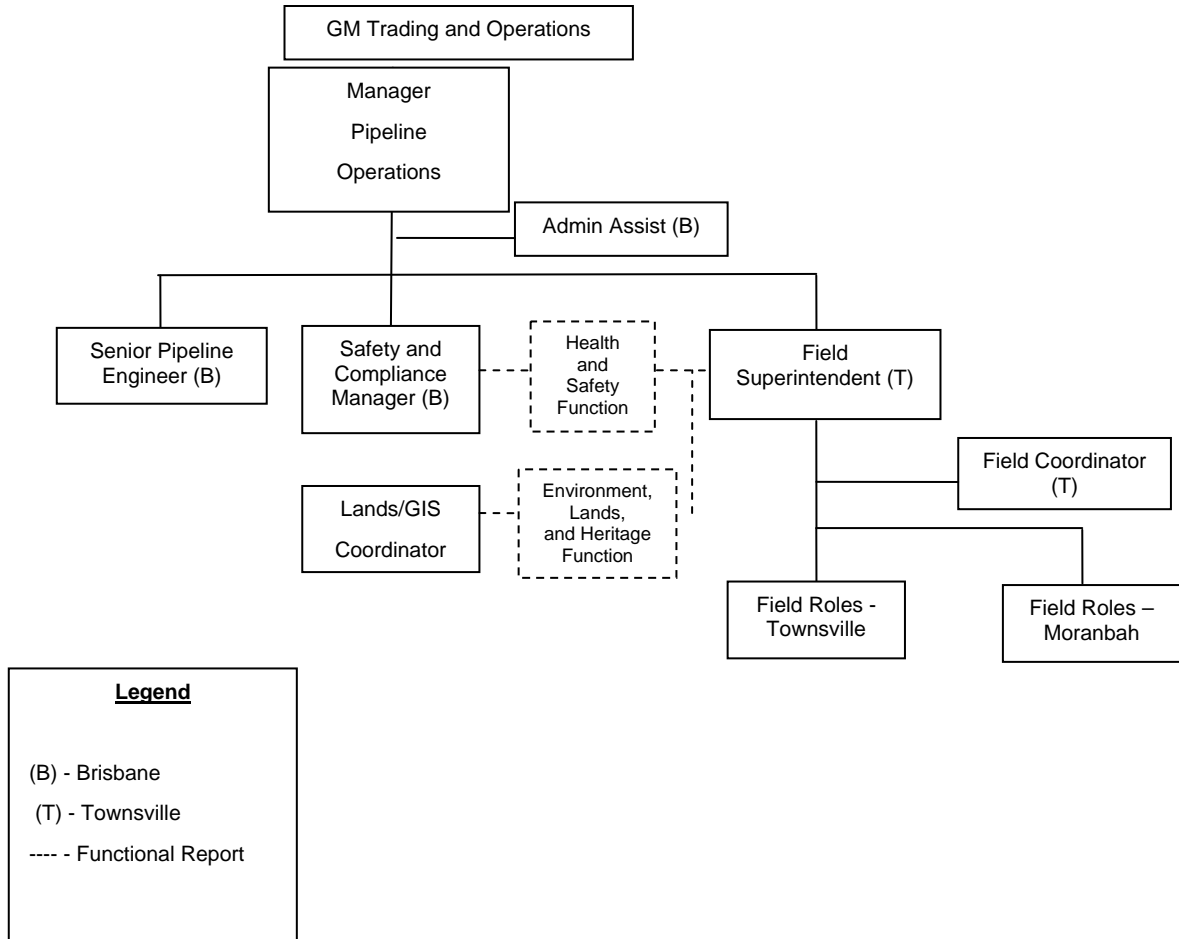
4.3 Lands/GIS Coordinator

The Lands/GIS Coordinator is responsible for monitoring and reporting the implementation of the ECMP and for the continual measurement of the environmental performance of personnel and equipment. The Lands/GIS Coordinator will also be responsible for the implementation Issues Register.

4.4 Safety and Compliance Manager

The Safety and Compliance Manager is responsible for maintaining the Compliance Register and for setting up compliance audits and monitoring programs. Enertrade will conduct a compliance audit against the requirements of this ECMP, the operations procedures, relevant legislation, license and permit conditions and industry standards. Refer to Section 9.1 for details of the audit program.

Figure 4-1: Operations Structure



5. ENERTRADE'S COMMITMENT TO THE ENVIRONMENT

Enertrade is committed to pursuing industry best practice in environmental performance. This is demonstrated through the Enertrade Health Safety and Environmental Management System and Environmental Health Safety Commitment Statement (Figure 5-1).

Figure 5-1: Environmental, Health and Safety Commitment Statement



Enertrade

HEALTH, SAFETY AND ENVIRONMENT (HS&E) STATEMENT

Our Commitment

Enertrade is committed to providing a safe work environment for all staff, contractors and members of the public impacted by our operations. As an integrated energy company Enertrade recognises its environmental obligations to ensure the impacts of our operations are effectively assessed and managed.

Effective management of Occupational Health, Safety and Environment risks is an integral part of Enertrade's continuing success in the energy industry. This commitment is an individual and shared responsibility of management, employees and contractors throughout the organisation.

Our Actions

To achieve this commitment Enertrade will continue to:

- Define organisational wide HS&E objectives
- Implement risk management strategies to ensure HS&E hazards are identified, assessed, controlled and reviewed
- As a minimum, comply with all applicable HS&E laws, regulations and standards
- Communicate, consult and involve employees and contractors in the development and implementation of HS&E practice
- Establish best practice management systems for Health, Safety and Environment
- Periodically assess resource use and waste treatment measures throughout all activities to ensure operational sustainability
- Implement a program of continuous improvement for HS&E risks
- Promote and support management and employees accountability for HS&E performance
- Report on HS&E performance of all business units
- Allocate appropriate resources and personnel to meet HS&E requirements
- Ensure management, employees and contractors are aware of their HS&E roles and responsibilities
- Utilise OH&S and Environmental indicators in the selection and performance monitoring of contractors and business partners.

Our Objectives

- To ensure employees, management and contractors act in a safe and environmentally conscientious manner
- To aspire for a zero incident/injury workplace
- To enhance business position by integrating HS&E practices into all operations
- To continue to be recognised as a responsible environmental organisation by all stakeholders
- To maintain a safety first culture throughout all operations.

Michael Caveil
Michael Caveil
CHIEF EXECUTIVE OFFICER

transport / generation / trading / **increasingenergy**

6. ASSOCIATED DOCUMENTS

6.1 Feasibility, Design and Construction Specific Documentation

Environmental Impact Statement and Coordinator General's Report

An EIS is prepared for major pipeline and submitted for public consultation, typically under the *State Development and Public Works Organisation Act 1977*. An Evaluation Report by the appropriate authority (e.g. Coordinator General Department of State Development) is then issued in relation to the specific pipeline.

The Evaluation Report contains specific requirements to be met by the respective pipeline. These commitments typically relate to construction activities and are set out in the respective Construction EMP

180-PP-G-008 Construction Environmental Management Plan

A Construction EMP is prepared for the initial Project construction phase of a pipeline and should continue to be used during operations for dealing with construction style activities (e.g. clearing, grading, creating new access track).

180-PP-G-003 Weed Management Plan

A Weed Management Plan (WMP) is specifically prepared for the management and control of weeds during the construction and commissioning of the pipeline. The WMP is prepared in recognition of the importance of this issue to landholders, the State, and Local Governments in the region. The WMP is updated to cover operations activities associated with a given pipeline.

Special Area Plans (SAPs)

In areas of special requirements over and above the standard methods set out in this ECMP, Special Area Plans (SAPs) will be developed. These SAPs will contain specific information relating to the location including, as appropriate, timeframes, clearing widths, specialist equipment and personnel requirements. The locations will be clearly delineated by start and end kilometer points. Where any conflict exists between the requirements of an ECMP and a SAP the SAP shall prevail. All SAPs shall be clearly identified on the Alignment Drawings and on the GIS database.

180-PP-G-014 Cultural Heritage Management Plan (CHMP)

All relevant areas of the Cultural Heritage Management Plan have been incorporated into the Environmental and Cultural Management Plan

Engineering Drawings

Engineering drawings reference standards and relevant procedures as applicable.

Line List

The Line List is a standard pipeline document that is used to advise operations personnel of landowner and other stakeholder requirements for matters such as access,

stock management, pasture protection, soil conservation, notification details, buried services and fencing requirements. This data is stored on the GIS database.

Hazard and Risk Registers

Hazard and Risk registers provide a summary of the locations of hazards and risks identified in association with a pipeline and the related mitigation measures to be implemented.

6.2 Operations and General Documentation

Alignment Drawings

As-built Alignment Drawings define the alignment of the pipeline and are used as a graphical “key” to supporting documentation such as Technical Drawings.

The Alignment Drawings include areas with special requirements, engineering information, such as pipe wall thickness and depth of cover. The *Environmental* section of the Alignment Drawings will make reference to the relevant SAPs. This data is stored on the GIS database.

Detailed Procedures

A number of specific procedures and plans have been developed. Each procedure shall ensure the requirements and intent of this ECMP are incorporated. Similarly procedures shall be developed to reflect the specific requirements of the following Plans and Job Hazard Analysis (JHA):

- Emergency Response Plan (ERP) 090-OP-O-010– the plan specifically developed for the management of emergencies e.g. onset of cyclone or bushfire situation. The plan will be tested by simulated responses at appropriate intervals.
- Safety and Operating Plan (S&OP) 090-0-002– the SMP specifically developed for management of safety as required by legislation and Enertrade.
- Authority to Work, Work Activity Briefings (WAB), and Job Hazard Analysis (JHA) – 090-OP-O-005, 090-PR-S-002 - the specific analysis of safety and environmental aspects of each activity as identified in the specifications, work method statements and by all the workforce associated with the task.

7. CONTROL MEASURES

Control measures have been developed to ensure that the objectives set out in Section 12 and 13 are achieved. The control measures have been documented in this ECMP, and where appropriate in the Line List and Alignment Drawings. Relevant references have been made in this ECMP to additional applicable documentation (see Section 6).

The environmental control measures and associated documentation will be dynamic. They will be periodically reviewed and amended as required to ensure that adverse environmental impacts are minimised and practices are updated as needed.

8. TRAINING

All Managers are responsible for ensuring that personnel under their control have the requisite competencies, skills and training to carry out the assigned tasks and for identifying additional training and competency requirements. Managers are responsible for ensuring training records are maintained.

Contractors and new operational personnel, regardless of company position or work duties shall be required to attend training to induct them in operational, health, safety, environmental and cultural heritage issues, prior to work commencement.

8.1 Induction

All staff will complete a comprehensive induction. The induction will include safety, access review of environmental and cultural heritage requirements and standards. All personnel from supervisors to managers will have an additional detailed training session on the use and implementation of the ECMP.

It is the responsibility of the Manager Pipeline Operations to ensure records of training are maintained.

8.2 Toolbox Meetings

The Field Superintendent may hold periodic toolbox meetings with staff to discuss issues associated with the scheduled work. This will include highlighting and discussing relevant environmental issues as required. The sessions will include discussion of strategies to be implemented as identified in Job Hazard Analysis (see below).

8.3 Job Hazard Analysis

A JHA is a proven tool that is to be used in helping personnel identify, analyse and manage the hazards that exist in the work they undertake. It formalises the process of hazard identification and management that must be followed when working.

The JHA requires personnel to examine the task they are about to undertake and:

- Break the job into separate, defined steps.
- For each step identify the potential hazards that could occur with that job step.
- For each potential hazard list the method to be followed to prevent the hazard causing an injury, loss, damage or environmental incident.
- Reduce the risk to as low as reasonably practical (ALARP).

9. MONITORING REPORTING AND AUDITING

The Manager Pipeline Operations, or nominated delegate, shall undertake pipeline and facility inspections on at least an annual basis; inspections shall be more frequent in

built-up areas (e.g. Townsville)¹. The Manager Pipeline Operations shall complete and maintain inspection and non-compliance reports and submit them to the Safety and Compliance Manager for review and action.

Aerial surveys will be undertaken as required but not less than annually.

During operations there will be regular review of the pipeline ROW and staff will be required to demonstrate that the pertinent requirements of the Environmental and Cultural Management Plan is being adhered to.

All reports, reviews and audits will be maintained by the Safety and Compliance Manager and are to be made available to the Lands/GIS Coordinator and to the Regulatory Authorities as required.

This ECMP will be reviewed annually by the Manager Pipeline Operations and updated as required in line with Regulatory requirements and technical changes that may occur from time to time.

In addition to the monitoring requirements documented in the relevant sections of the ECMP, the following regime will be implemented:

9.1 Audits and Reviews

Audits provide lead indicators for potential incidents and provide important information for corrective action and review of procedures. Post-construction, audits will be conducted half yearly for two years to evaluate revegetation, erosion and soil stability, weed control, watercourse alteration prevention and success of bed and bank reprofiling.

Issues identified during audits will be recorded and corrective action implemented.

Table 9-1: Audit Schedule

AUDIT/INSPECTION	TIMING
Post Construction audit	Within 3 months of commissioning
Monitoring and remediation of weed infestations within certain communities (Brigalow, Bluegrass, and Black Ironbox)	Six monthly for a period of 18 months following construction. Thereafter at peak growth periods (e.g. after heavy rainfall, early spring)
Internal Environmental Compliance Review	Six monthly
Internal Environmental Audit including field inspection and environmental performance	Annually
Third Party Audit	Biennially
Energy Audit	Biennially

¹ Note: Staff will be trained to identify and report environmental and safety issues whilst carrying out other regular tasks associated with the pipeline.

9.2 Incident Reporting and non Conformance

Incident reporting (lag indicators) will be implemented to record any safety or environmental non-conformances or incidents. These shall be recorded on an incident report form (See Safety Management Plan) and forwarded to the Safety and Compliance Manager. The Safety and Compliance Manager is responsible for notifying the Manager Pipeline Operations and, where relevant, the appropriate government agency (e.g. DNRM or EPA).

9.3 Reporting

Section 320 of the *Environment Protection Act 1994* requires that any person who becomes aware of an event that has the potential to cause or has caused environmental harm, report the event/incident to their employer. Details of the nature and circumstances of the event must be provided. Any such incidents must be immediately reported to the Safety and Compliance Manager and recorded on an Incident Report form. The Safety and Compliance Manager will ensure that, where relevant, the appropriate external agencies are notified within the appropriate timeframe.

The Manager Pipeline Operations will be notified of all reports and necessary actions.

9.4 Issues Register

Lands/GIS Coordinator shall maintain an Issues Register (Attachment A) and shall record all issues from Land Owners, Local Authorities and the general public in relation to operation and maintenance of the pipeline and compressor station. The Manager Pipeline Operations shall review the register on a monthly basis. Corrective actions and other recommendations shall be closed out with the Manager Pipeline Operations and where applicable modifications to practices and procedures shall be made. Include all incidents in annual return.

10. COMMUNICATION AND CONSULTATION

During the operation of the pipeline(s) and associated facilities, consultation with relevant regulatory authorities shall continue.

The Manager Pipeline Operations, or nominated delegate, will liaise with landholders and other relevant stakeholders during operations to ensure they are kept informed of planned operational works requiring land access. The contacts shall be recorded in the Land Management System (LMS).

Communication and consultation shall be detailed in the Pipeline Awareness Manual.

Regular public awareness forums will be a part of the on going consultation process.

11. STATE & LOCAL GOVERNMENT LAWS

11.1 Legal Compliance

A Regulatory Compliance Register shall be maintained by the Safety and Compliance Manager. The Regulatory Compliance Register documents all legislation relevant to the operation of the various facilities.

11.2 Licenses & Permits

Licenses and permits to be maintained by Enertrade are:

- Pipeline Licence #15 under the *Petroleum Act 1923* (CBGP).
- Pipeline Licence #89 under the *Petroleum Act 1923* (NQGP).
- Integrated Authority #150,220 under the *Environmental Protection Act 1994* for Environmentally Relevant Activities (ERAs) (NQGP):

11(a) Crude oil or petroleum product storing - Storing crude oil or a petroleum product in tanks or containers having a combined total storage capacity of 10 000 l or more but less than 500 000 l

13(a) Fuel gas refining or processing – Refining or processing of fuel gas in works having a design production capacity at standard temperature and pressure of less than 200 000 000 cubic metres per year.

17 Fuel burning - Any process involving the use of fuel burning equipment (including, for example, a standby power generator) that is capable of burning (whether alone or in total) 500 kg or more of fuel per hour

20(c) Extracting rock or other material - Extracting rock (other than rock mined in block or slab form for building purposes), sand (other than foundry sand), clay (other than clay used for its ceramic properties, kaolin or bentonite), gravel, loam or other material from a pit or quarry using plant or equipment having a design capacity of 100 000 to or more per year.

21(c) Mining Activity – Exploring or mining minerals under a prospecting petroleum permit, authority to prospect, petroleum lease or pipeline license granted under the *Petroleum Act 1923*.

75(b)(i) Waste disposal - Operating a facility for disposing of regulated waste (other than limited regulated waste) whether alone or in combination with any waste mentioned in paragraph (a), if the facility is designed to receive waste at the rate of less than 50 000 t per year (Evaporation Pond).

12. OPERATIONS MANAGEMENT

12.1 Soil and Sediment	
Operational Activities	Operational activities that have potential to adversely impact upon soil include: <ul style="list-style-type: none"> • Excavation works during scheduled maintenance or emergency response (i.e. repair of damaged pipeline). • Patrols and inspections of the ROW (vehicle use). • Vegetation control activities (control of weed species & ROW clearing leading to exposed soil). • Management of stormwater runoff and soil protection measures at facilities.
Policy	<ul style="list-style-type: none"> • <i>To provide effective erosion and sediment control measures to mitigate any effects of ongoing operations on local waterways, land use and the general environment.</i>
Performance Objectives	<ul style="list-style-type: none"> • To minimise potential for soil erosion. • To prevent as far as practical, sediment transport to local waterways and adjacent land/properties. • Ensure effective management of stormwater run-off. • Presence/absence or change in vegetation cover associated with the pipeline or pipeline facilities.
Management Strategies	<ul style="list-style-type: none"> • Install, maintain and monitor erosion and sediment control devices (e.g. berms, silt fences, jute matting) so that ground is stable and vegetation cover is maintained. • Ensure that runoff control devices (e.g. whoaboys) are maintained to prevent erosion. • Carry out tie-ins and digups in conformity with the provisions of the ECMP. • Gravel permanent access roads to above ground facilities. • Ensure ground stabilisation, either by vegetation cover or compaction, to all unsealed areas within the boundary fence at above ground facilities (see Section 12.5 fauna habitat). • Install sediment fencing around active erosion adjacent to watercourses as needed to keep areas stable. • Monitor and maintain above ground facilities storm water run off control devices (e.g. spoon drains, diffusers, berms).
Performance Indicators	Visible evidence, such as sighting of: <ul style="list-style-type: none"> • Significant erosion during operations (i.e. significantly above that of adjacent lands). • Significant erosion following excavation or extreme rainfall. • Significant changes to ground level, drainage patterns etc. which may indicate soil erosion and sedimentation. • Damage or failure of erosion/sediment control devices. • Collapse/ subsidence of banks at nearby watercourse crossings. • Subsidence or exposure of pipeline.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Visual assessment of presence and effectiveness of erosion, sediment and runoff control structures during periodic inspections. • Inspection of watercourse crossings after major rainfall events. • Re-instate or repair defective erosion, sediment, and runoff control devices. • Review stormwater management techniques as required. • Install additional erosion, sediment or runoff control measures where necessary. • Utilise latest techniques as they become known.
Responsible Person/s	<ul style="list-style-type: none"> • Lands/GIS Coordinator.

12.2 Noise	
Operational Activities	Operational activities that have potential to create noise nuisance include: <i>Compressor Station</i> <ul style="list-style-type: none"> • Operation of compressors. • Power generation. • Gas venting from pressurised equipment. <i>Pipeline</i> <ul style="list-style-type: none"> • Gas venting from pressurised pipeline. • Pressure reduction facilities at pipeline terminal points, Townsville. • Vehicles and machinery operation along the ROW and access tracks.
Management Policy	<i>To operate the pipeline(s) in a manner to minimise noise nuisance to surrounding residences and rural landholders.</i>
Performance Objectives	<ul style="list-style-type: none"> • To comply with the <i>Environmental Protection (Noise) Policy 1997 (Qld)</i>. • To comply with AS2107 "<i>Acoustics – Recommended design sound levels and reverberation times for building interiors</i>". • To ensure the noise level from the compressor station meets Integrated Authority conditions (NQQP IA D3). • To provide adequate community consultation of any scheduled noise events, such as venting.
Management Strategies	<i>Compressor Station</i> <ul style="list-style-type: none"> • Fit compressor engines with low speed cooler fans, hospital grade muffler and air intake silencer. • Conduct normal operational activities from Monday to Saturday, during the hours of 6.30am–6.30pm except in emergencies or where system operational constraints dictate different hours. • Implement noise monitoring and ensure that all noise complaints are recorded and addressed. <i>Pipeline</i> <ul style="list-style-type: none"> • Notify adjacent landholders of timing and duration prior to any maintenance activities creating excess noise being conducted along the ROW. • Ensure noise attenuation devices are maintained. • Schedule, where possible, unavoidable loud noise activities (e.g. planned venting, pipeline blowdown) at times to minimise noise nuisance to surrounding landholders. • Notify, where practicable, Landholders in advance of unavoidable loud noise activities. • Notify local residents, landholders and affected industries of any planned venting.
Performance Indicators	<ul style="list-style-type: none"> • Number of noise related complaints received from residents and landholders during operation. • Evidence of repair and replacement of faulty equipment as soon as possible. • Evidence of consultation and planning for atypical noise events (e.g. pipeline blowdown).
Monitoring Reporting and Corrective Action	<ul style="list-style-type: none"> • Landholder complaints relating to noise will be recorded and addressed. • Regular reviews, recommendations and corrective actions shall be implemented. • Noise surveys at relevant nearest local residences will be undertaken upon request of the administering authority (NQQP IA D3).
Responsible Person/s	<ul style="list-style-type: none"> • Safety and Compliance Manager

12.3 Air	
Operational Activities	<p>Operational activities that will, or may, release emissions to air include:</p> <p><i>Compressor Station</i></p> <ul style="list-style-type: none"> • Operation of gas compressors (combustion products – nitrogen oxides, carbon monoxide). • Operation of TEG regenerator. • Gas venting. • On-site power generation (combustion products namely nitrous oxides). <p><i>Pipeline</i></p> <ul style="list-style-type: none"> • Maintenance activities requiring purging (release of natural gas). • Vehicle and machinery operation (exhaust and dust). • Accidental and fugitive releases of gas from pipeline or facilities (leaks, emergencies).
Management Policy	<p><i>To operate the pipeline and associated facilities in a manner to maintain ambient air quality of the local area.</i></p>
Performance Objectives	<ul style="list-style-type: none"> • To meet EIS commitments for emissions . • To minimise emissions to atmosphere. • To minimise emissions of greenhouse gas. • To maintain acceptable limits of vehicular and machinery operating emissions. • To reduce fugitive emission generation at the pipeline and compressor station. • To reduce greenhouse gas emissions during operational activities.
Management Strategies	<p><i>General</i></p> <ul style="list-style-type: none"> • Ensure, through training and induction, that all personnel are aware of greenhouse gases, their role in global warming, potential sources of emission and management strategies to reduce emissions. <p><i>Compressor Station</i></p> <ul style="list-style-type: none"> • Design and install quality equipment. • Use suitable materials, gaskets and sealing. • Design stack heights and discharge velocities to maximise atmospheric dispersion of pollutants and ensure that ambient air levels under the most adverse weather conditions meet all statutory requirements. • Inspect all valves and fittings on a regular basis. • Monitor air emissions to ensure conformity with EIS findings. <p><i>Pipeline</i></p> <ul style="list-style-type: none"> • Minimise maintenance activities requiring purging of gas and conducted under favorable meteorological conditions (to facilitate rapid atmospheric dispersion). • Undertake leakage detection surveys at flanges at regular intervals to detect fugitive gas emissions. • Repair any detected leaks as a high priority. • Ensure vehicles and machinery exhaust systems are maintained. Such devices shall be maintained in good working order. • Water sites and access roads for large excavation, construction or clearing works, as required (see also Construction ECMP). • Venting, for commissioning or emergency situations, will be at appropriately located valves.
Performance Indicators	<p><i>Compressor Station (NQGPs only)</i></p> <ul style="list-style-type: none"> • Receipt of air quality related complaints from neighboring residential areas. • Visual observance by facility inspectors/ personnel of defective exhausts. • Emissions not to exceed: <ul style="list-style-type: none"> NOx 7.5 kg/hr CO 26.6 kg/hr Unburnt hydrocarbons 66 kg/hr

12.3 Air	
	<p><i>Pipeline</i></p> <ul style="list-style-type: none"> • Visible evidence of vegetation discoloration. • Visual observations of dust emissions during windy/dry periods.
Monitoring Reporting and Corrective Action	<ul style="list-style-type: none"> • Gas will be metered prior to entering the pipeline using proven metering systems. • Monitoring of compressor station air emissions through manual sample points within 6 months of commissioning and every 2 years after that (NQGP only). • Leak detection surveys at flanges will be undertaken. • Monitoring of pipeline pressure. • Landholder complaints will be recorded and actioned. • Estimate and record volume of any gas vented. • Non compliance and incident reporting will be actioned by Operations Management to ensure prompt rectification and, if required, initiation of changes to system.
Responsible Person/s	<ul style="list-style-type: none"> • Safety and Compliance Manager

12.4 Stormwater	
Operational Activities	Operational activities that have potential to impact on stormwater runoff include: <ul style="list-style-type: none"> Operation of above ground gas processing and pipeline facilities. Excavation and earth works. Use of heavy machinery and vehicles on ROW. Vegetation control activities.
Management Policy	<i>To provide effective stormwater runoff control practices to mitigate the potential effects of ongoing operations on local waterways, land use and the general environment.</i>
Performance Objectives	<ul style="list-style-type: none"> Stormwater segregated from other wastewater streams at compressor station. Stormwater directed to stable ground. Minimise potential for sedimentation of watercourses as a result of stormwater runoff. Stormwater controls effective in minimising land erosion within the ROW and above ground facilities and surrounds.
Management Strategies	<p><i>Compressor Station</i></p> <ul style="list-style-type: none"> Drain stormwater falling outside bunded areas away from process areas and systems for managing contaminated stormwater (e.g. evaporation pond and interceptor pit into natural drainage points around the site (NQGP IA F5). Grade and slope site to ensure stormwater drains away from process equipment. Fit bunded areas with drains normally closed so that stormwater can be drained to the on site evaporation pond. Direct bunded drains into an interceptor pit then into the stormwater drain to the evaporation pond. Design & operation of Evaporation Pond to AS2885 and to ensure a freeboard of not less than 0.5m is maintained at all times (NQGP IA F4) Remove unnecessary water traps to prevent mosquito breeding areas (see Section 12.10). Maintenance and cleaning of vehicles will be completed at off site facilities where possible. If completed on site, activities will be completed at locations where the potential for the release of contaminants to waters or stormwater systems is minimized. <p><i>Pipeline</i></p> <ul style="list-style-type: none"> Ensure runoff is distributed to the greatest extent possible, particularly in critical areas (e.g. adjacent to watercourses, highly erosive soils) by the use of turn-off drains, contour banks etc. Ensure ground stabilisation, either by vegetation cover or compaction, to all unsealed areas within the boundary fence at above ground facilities (see Section 12.5 fauna habitat). Monitor and maintain above ground facilities stormwater runoff control devices (e.g. spoon drains, diffusers, berms).
Performance Indicators	Visible evidence, such as sighting of: <ul style="list-style-type: none"> Significant erosion following high rainfall. Damage or failure of stormwater control devices or systems. Collapse/ subsidence of banks at nearby watercourse crossings or notable increases in flow levels or flooding associated with local waterways. Subsidence or exposure of pipeline.
Monitoring Reporting and Corrective Action	<ul style="list-style-type: none"> Visual assessment of presence and effectiveness of runoff control structures during periodic inspections. Visual assessment of evaporation pond levels and available freeboard.
Responsible Person/s	<ul style="list-style-type: none"> Lands/GIS Coordinator.

12.5 Flora and Fauna	
Operational Activities	<p>Operational activities that require management of vegetation include:</p> <ul style="list-style-type: none"> Vegetation control (clearing of large vegetation within three meters either side of the pipeline). Control of weeds on the ROW and at pipeline facilities (refer to the Weed Management Plan). Vehicle operation on ROW (potential to spread weeds and disease). Maintenance of rehabilitation works (maintain re-established vegetation on ROW). Access to ROW (e.g. damage to pest fencing). Use of hazardous chemicals along ROW (agricultural chemicals). Importation of soil for earthworks (potential to import weed seed and vegetation diseases such as dieback).
Management Policy	<p><i>To minimise operational impacts on vegetation and habitat, with special regard to any protected species that may be encountered, and to promote natural regeneration on the ROW.</i></p>
Performance Objectives	<ul style="list-style-type: none"> Minimal disturbance to native vegetation. No outbreak of new pest species/ diseases. No spread of existing pest species into previously clean areas as a result of pipeline activities. Successful establishment and ongoing success of native grass species planted along ROW post-construction. Successful rehabilitation of vegetation enabling fauna movement to continue unimpeded. No complaints from landholders of damage to pest control measures or fencing on their properties.
Management Strategies	<ul style="list-style-type: none"> Inspect condition of revegetation on ROW during regular surveys and patrols. Implement and maintain weed management strategy (see Weed Management Plan). Restrict clearing of vegetation to large vegetation regrowth occurring within the 6-meter wide ROW area. Stockpile topsoil where excavation is to be undertaken, to maintain grass seed stock, and re-spread once the pipeline trench has been filled in. Re-establish grasses, where soil is exposed during pipeline excavation works, using varieties native to the area. Protect breeding trees in Black-throated Finch areas. Areas have been identified and marked on Alignment Drawings. Works in these areas are to be in accordance with the relevant SAP (see Construction ECMP, SAP). Maintain records of properties where pest control infrastructure is maintained. Ensure all vermin or dingo fencing is re-established and gates are closed. Use biodegradable chemicals/herbicides, where practicable, for the treatment of weed species. Re-establish the ROW with native grass species to minimise fragmentation and prevent impacts on natural ecosystem functioning and fauna movement. Limit vehicle speed along ROW to reduce dust, and reduce fauna fatalities (e.g. 10 - 15 km/hr where applicable)
Performance Indicators	<ul style="list-style-type: none"> No weed/disease infestations within ROW or facilities. Condition of vegetation on ROW.
Monitoring Reporting and Corrective Action	<ul style="list-style-type: none"> Ongoing monitoring (pipeline and above ground facilities) will be undertaken to assess the success and integrity of revegetation and to ensure appropriate follow-up measures are implemented. Non compliance and incident reporting will be actioned by Operations Management to ensure prompt rectification and, where required, initiated changes to systems. Regular audits and reviews will be undertaken and recommendations and corrective actions shall be implemented. Landholder complaints will be recorded and actioned. NQGP post construction:

12.5 Flora and Fauna

	<ul style="list-style-type: none"> – Black Ironbox: (CEMP) 6 months after rehabilitation strike rate of 3:1 seedlings; 12 months after rehabilitation 3:1 strike rate and 1 metre seedlings. – Bluegrass: (CEMP) 50% cover/abundance achieved from reseeding.
Responsible Person/s	<ul style="list-style-type: none"> • Lands/GIS Coordinator.

12.6 Heritage²	
Operational Activities	Operational activities that have potential to adversely impact upon heritage sites, artefacts or values include: <ul style="list-style-type: none"> Access to ROW, by other than the designated route. Travelling off the approved access routes. Excavation for repairs, crossings, tie-ins. Working outside the easement
Management Policy	<i>To ensure the ongoing operation of the gas pipeline does not adversely affect known heritage sites/existing heritage values of local, regional or national significance and provide appropriate strategies for the identification and management of new heritage discoveries.</i>
Performance Objectives	<ul style="list-style-type: none"> To ensure effective management of known heritage sites that the pipeline traverses. To ensure effective identification and management of new heritage discoveries.
Management Strategies	<ul style="list-style-type: none"> Avoidance of known heritage sites. Staff shall be adequately trained in heritage and cultural issues. Any disturbance to a heritage site must be reported to the Lands/GIS Coordinator. Actions to address site disturbance shall be taken in consultation with relevant regulatory authorities and local community groups prior to works being carried out. Appropriate approvals must be obtained prior to any planned or potential disturbance. Any physical protection measures around known cultural heritage sites shall be adequately maintained. Meet legal requirements in relation to discovery of previously unidentified cultural material, or possible cultural material e.g.: <ul style="list-style-type: none"> Do not disturb the site. The person making the discovery will notify the Lands/GIS Coordinator. Work in the vicinity of the site will cease immediately. Relevant authorities will be contacted and an assessment made about the correct course of action to adopt. Work will not recommence in the affected area until appropriate management strategies have been implemented.
Performance Indicators	<ul style="list-style-type: none"> Identification of cultural artefacts. Complaint/s by traditional landholder, native heritage group or other community representatives.
Monitoring, reporting and Corrective Action	<ul style="list-style-type: none"> Observations to be included in reports from regular pipeline and facility inspections, aerial and ground patrols and operational audits to be undertaken. Incidents and complaints will be documented and reported to Lands/GIS Coordinator and addressed. Existing heritage protection structures to be re-instated or repaired. Implement appropriate management strategies for newly discovered sites of heritage significance.
Responsible Person	<ul style="list-style-type: none"> Lands/GIS Coordinator.

² Note: A Construction Cultural Heritage Management Plan (CHMP) (Doc # 180-PP-G-014) for the NQGP was agreed with all Traditional Owner groups along the ROW. The Operations requirements for cultural heritage (this page), should be referred to for all matters relating to Indigenous Cultural Heritage. If there are any queries or deviations from the basic instructions or matters above, reference should be made back to the Construction CHMP and the Lands/GIS Coordinator should be consulted.

12.7 Access & Security	
Operational Activities	<p>During operation, access to the pipeline ROW is required on a regular basis for:</p> <ul style="list-style-type: none"> • Routine inspections to identify any unacceptable risks to the pipeline (e.g. washouts, third party encroachments). • Access to the Main Line Valves (MLVs). • Monitoring and auditing of environmental conditions. • Performance of maintenance activities. • Construction of facilities or additional infrastructure. • Security of pipeline facilities is required to ensure third party access is restricted.
Management Policy	<p><i>To maintain and provide safe access to the ROW and pipeline facilities for maintenance, inspection and operations with minimal disturbance to property owners, adjacent land uses and the environment.</i></p>
Performance Objectives	<ul style="list-style-type: none"> • Minimise impacts to native flora and fauna. • Minimise impacts to soil and water. • Avoid adverse impacts on cultural and historic heritage sites. • Reduce the likelihood of the spread of weed. • Minimise impacts on visual amenity. • Minimise the number of access tracks and diversions. • Minimise disruption to landholders and third parties. • Manage road and track usage, and achieve satisfactory road and site rehabilitation. • Minimise damage to existing road networks.
Management Strategies	<ul style="list-style-type: none"> • Access ROW only for activities essential to ensuring continued safe pipeline operation and protection of the local environment (the pipeline ROW shall not be used as a general thoroughfare). • Access the pipeline ROW, as far as is practicable, by existing roads/tracks. • Arrange private property access to the pipeline ROW with individual landholders, managers and/or lessees. • Reinstate all fences and gates. • Minimise the width of any access track to the minimum practical to enable safe vehicle movement. • Restrict public access along the pipeline ROW unless that right already exists (e.g. ensure any access track entries are obscured – dog leg start, draw brush wood across start). • Restrict public access to the pipeline ROW by minimising visibility (e.g. dogleg service track entrances or revegetation plantings), or by physical barriers (e.g. gates, fences, log and rock barriers, trenches) and signs. • Control vegetation and soil erosion to ensure continued access and safe navigation by vehicles (<i>NB: permits may be required to clear vegetation</i>) (refer to Section 12.1 and 12.5). • Notify landholder, if possible, at least 24 hours before access is required. Where this is not possible, reach alternative agreements regarding ongoing access. • Limit speed along the ROW as appropriate. • Except for specific purposes (e.g. rehabilitation of topsoil, protection of heritage sites, safety hazard control, restrict access to the ROW or protection of pipeline facilities), the pipeline ROW should not be fenced. • Minimise access to the pipeline ROW to minimise potential weed impacts (see also Weed Management Plan). • Normal operations inspections will be during daylight hours as part of the structured inspection and monitoring program.
Performance Indicators	<ul style="list-style-type: none"> • Implementation of landholder procedures. • Number of complaints received from residents and landholders. • Condition of signage and security fencing. • Condition of ROW environment.

12.7 Access & Security

Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> • Regular audits and reviews in accordance with Section 9.1 of this ECMP will be undertaken, and recommendations and corrective actions shall be implemented. • Inspection reports shall be recorded and reviewed by each supervisor or manager. • Non Compliance and Incident Reporting shall be actioned by Operations Management to ensure prompt rectification and change management as required. • Landholder complaints shall be recorded and actioned.
Responsible Person/s	<ul style="list-style-type: none"> • Field Superintendent.

12.8 Hazardous Materials	
Operational Activities	<p>Operational activities involving hazardous materials that have potential to adversely impact on the water, land and air environments include:</p> <p><i>General</i></p> <ul style="list-style-type: none"> • Storing and handling of hazardous wastes (see also Section 12.9). • Storing, handling and application of agricultural chemicals, such as pesticides (see also Weed Management Plan). <p><i>Compressor Station:</i></p> <ul style="list-style-type: none"> • Storage of fuels, oils/greases and chemicals. • Power generation – use of fuels, lubrication oils, greases, coolants etc. • Use of TriEthylene Glycol.
Management Policy	<p><i>To manage the storage and distribution of hazardous materials and fuels during pipeline operations so as to prevent spillage, and contamination ensuring no adverse affects to the environment.</i></p>
Performance Objectives	<ul style="list-style-type: none"> • Compliance with license requirements for chemical and fuel storage. • Compliance with appropriate Australian Standards and regulations covering the use of the chemicals on site. • All relevant Maintain Material Safety Data Sheets (MSDS) on site. • MSDS Register up to date. • No incidents resulting in surface or ground water contamination. • Effective management of stormwater run-off at above ground facilities to avoid contamination of clean runoff. • No release of contaminated water from ROW, compressor station site, or other above ground facilities. • No spills.
Management Strategies	<p><i>General</i></p> <ul style="list-style-type: none"> • No refueling of vehicles and machinery within 100m of a watercourse; when possible all refueling will be off-site at appropriate facilities. • Provide training for all personnel in handling hazardous materials. • Provide and maintain materials and equipment for responding to hazardous spill incidents. • Fuels, oils & chemicals will be contained within on-site containment systems and stored in accordance with relevant Australian Standards (including AS 1940) and Fire Safety regulations. • MSDSs for each chemical used will be kept in a location that is easily accessible 24 hrs per day. • Maintain inventory of all hazardous materials storage locations and volumes. <p><i>Compressor Station</i></p> <ul style="list-style-type: none"> • Any large oil volume plant will be bunded. • Divert all potentially contaminated water to the oil separator vessel.
Performance Indicators	<ul style="list-style-type: none"> • Number of spill/incident Reports. • Evidence of contaminated soil/water as a result of maintenance activities.
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> • Monitoring of storage, refueling and worksite areas. • Maintain efficiency of any oil separation vessel or evaporation pond. • Regular facility and ROW inspections. • Spill Register (for spills greater than 5 litres). • Incident report to be issued for all spills greater than 5 litres. • All spills of chemicals or hydrocarbons on-site, regardless of amount or nature of the spill, are to be reported to the EPA. EPA will advise if further action is required. • Observations to be included in reports from pipeline and facility inspections, ground patrols and any operational audit undertaken. • Spills to be remediated depending on nature of product (consult with Environmental Officer/EPA):

12.8 Hazardous Materials

	<p><i>Small Hydrocarbon Spill.</i> Apply absorbent material. Rip ground and mix with fertilizer. Turn soil 3 monthly until no evidence of spill.</p> <p><i>Large Hydrocarbon Spill</i> Consult with EPA.</p> <p><i>Chemical Spill</i> Application of appropriate absorbent material. Remove effected soil if required.</p> <ul style="list-style-type: none"> • Repair and replace faulty equipment as soon as possible.
Responsible Person/s	<ul style="list-style-type: none"> • Safety and Compliance Manager.

12.9 Waste	
Operational Activities	<p>Operational activities that will generate waste include:</p> <ul style="list-style-type: none"> • Maintenance of plant and equipment (oil changes to generators). • Internal cleaning and inspection of pipeline (pigging). • Welding. • Vehicle maintenance and washdown. • Waste material (e.g. scrap pipe). • General office activities. • Evaporation Pond at Compressor Station.
Management Policy	<i>To effectively manage all waste generated during operation of the pipeline(s) and to dispose of all waste in an appropriate manner.</i>
Performance Objectives	<ul style="list-style-type: none"> • No evidence of litter or refuse generated from maintenance related activities following clean-up programs. • No spills of hazardous waste fluids (e.g. oil).
Management Strategies	<ul style="list-style-type: none"> • Locate refuse containers at aboveground facilities. • Where practical, segregated and reuse/recycle wastes (e.g. scrap metal). • Dispose of all litter and general waste at a local municipal waste station utilising an approved waste contractor. • Instruct all personnel in waste management practices as a component of the induction process. • Transport and dispose of all hazardous wastes (i.e. EPA Regulated Wastes e.g. waste oils, semi-fluid lubricants and ethylene glycol) by a contractor licenced to take such wastes and to a facility licenced to accept such wastes. • Waste fuels, oils & chemicals will be contained within on-site containment systems and stored in accordance with relevant Australian Standards (including AS 1940) and Fire Safety regulations. • Store and handle all oils and chemical wastes (bundling as per regulatory guidelines) in accordance with the relevant Australian Standards and Fire Safety regulations. • Maintain records of all regulated wastes stored, and removed from site. • Provide safety and response training for all personnel. • Provide and maintain materials and equipment for responding to hazardous spill incidents. <p><i>Compressor Station</i></p> <ul style="list-style-type: none"> • Maintain the integrity of the wastewater evaporation pond. • Only process waters from the compressor station containing salts and hydrocarbons and contaminated water from the interceptor pit to be discharged to the evaporation pond. • On-site sewerage processes will conform to State and Local Government requirements.
Performance Indicators	<ul style="list-style-type: none"> • Evidence of maintenance related waste along ROW. • Evidence of uncontrolled waste (i.e. not in relevant containers) at compressor station and other above ground facilities during inspections. • Litter detected off site. • Litter left on-site after excavation/maintenance. • Number of Waste Spill Reports.
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> • Six monthly operations inspections and regular ROW patrols and surveys. • Waste spill. • Observations to be included in reports from pipeline and facility inspections, ground patrols and any operational audit undertaken. • Enertrade and/or contractor/s to retrieve and dispose of worksite waste within 24 hours of notification. • Report hazardous waste spills to the Lands/GIS Coordinator. • Water quality analysis of the wastewater discharge to the evaporation pond on an annual basis in accordance with NQGP IA F2.
Responsible Person/s	<ul style="list-style-type: none"> • Field Superintendent.



12.10 Mosquito Management Plan

Operational Activities	Operational activities that could possibly generate mosquito breeding sites include: <ul style="list-style-type: none"> • Evaporation pond management at compressor station. • Storage of drums and other equipment in the open. • Bund areas. • Any place where free standing water could accumulate.
Management Policy	To identify all potential breeding sites and, wherever possible, to eliminate breeding sites.
Performance Objectives	<ul style="list-style-type: none"> • Limit concentrations of mosquito larvae in breeding areas. • Prevent the emergence of adult mosquitoes.
Management Strategies	<ul style="list-style-type: none"> • Supervisors will be trained to recognise mosquito breeding activity and in the treatment of breeding sites if breeding is detected. • Any potential breeding sites will be identified and reported. Sites will be listed as permanent (e.g. evaporation pond) or transient (e.g. drums). • Any items of equipment or debris, which may hold water, and are no longer required will be disposed of as soon as possible. • Moving water decreases mosquito production therefore any changes to the on-site pond will ensure that the banks are smooth (without pockets) to prevent the occurrence of stagnant water patches. • Any identified breeding areas will be treated using an approved insecticide in the prescribed manner. The target is the mosquito larvae while they are still concentrated in their breeding pools and before they emerge as adults. • Approved insecticides and application procedures will be in accordance with the requirements of the Environmental Protection Agency, Queensland Health and the relevant Shire Council's Health Department. Two products that could be considered are <i>Bti</i> or <i>Methoprene</i> in granular form. Granular form is easier to apply and less costly than the liquid form due to less wastage. • Rotting vegetation will be removed from any pond areas. • Removal of any items of debris that are providing transient breeding sites.
Performance Indicators	<ul style="list-style-type: none"> • Mosquito monitoring report. • No evidence of mosquito breeding.
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> • Regular inspections of sites will be carried out to identify, and eliminate, any potential mosquito breeding sites such as waste material, unused drums, open waste bins, or ground depressions capable of holding water. • Records of the locations of potential breeding sites, whether permanent or transient, shall be kept up to date with sites being added or deleted as appropriate. • The records will be kept in such a way that should the regular inspector not be available another person could undertake the required inspection tasks. • Records of any sightings of breeding activity and the measures taken to treat the site will be kept.
Responsible Person/s	<ul style="list-style-type: none"> • Field Superintendent.

12.11 Safety and Emergency Management

Management Policy	<i>To carry out operation of the North Queensland Gas Pipeline Project in a safe and responsible manner to ensure no long term adverse impacts on health, safety or the environment.</i>
Performance Objectives	<ul style="list-style-type: none"> • No Lost Time Injuries (LTIs) • No Fatalities • No government notices • 100% compliance with induction training procedures • 100% compliance with correction action procedures
Management Strategies	<ul style="list-style-type: none"> • Implementation of a Safety Management Plan (SMP). • Ensure that the SMP establishes the obligations, requirements, processes and systems for managing safety hazards and statutory requirements. • Ensure all personnel understand that they are responsible for ensuring the safety of themselves and any other people who may be affected by their actions. • Provide safety induction to all personnel and contractors working on the pipeline project. • Provide personnel with appropriate resources to ensure they can carry out their tasks in a safe manner. • Implementation of an Emergency Response Plan (ERP). • Ensure that the ERP defines the responsibilities, procedures, systems, method of identifying and assessing emergencies and resources for mitigating potential emergency events including: <ul style="list-style-type: none"> • Serious injury/death/medical emergency • Significant chemical or fuel spill • Fire – not related to a gas leak • Bush fire • Natural Disaster • Bomb threat • Major gas leak • Damage to pipeline (no leak) • Plant failure • Finding unexploded ordinance • Minimise damage from spills by shut down or isolation of source of spill or leak.
Performance Indicators	<ul style="list-style-type: none"> • Number of incident reports • Extent of incident (e.g. fatality, injury, major spill) • % compliance with Safety Management Plan systems and procedures • % compliance with training procedures • % Compliance with corrective action procedures • Emergency Response exercises
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> • All incidents, including near misses to be reported through the incident reporting system. • All incidents to be reviewed by the Safety and Compliance Manager. • Annual reporting of incidents to the Board. • Implementation of change in procedures if required. • Regular safety audits and inspections
Responsible Person/s	<ul style="list-style-type: none"> • Safety and Compliance Manager

12.12 No Net Loss Area (NQG)	
Policy	<i>No Net Loss of Brigalow. A commitment made prior to construction.</i>
Background	<p><i>As part of the Construction Compliance Commitments a No Nett Loss of Brigalow plan was proposed.</i></p> <p><i>The construction required the clearing of some small areas of Brigalow and Brigalow Regrowth. To cover this loss an area of degraded Brigalow which, with the agreement of the property (Lancewood) owner, could be protected and enhanced via the provision of fencing and a modified grazing regime.</i></p> <p><i>An agreement has been reached between Enertrade and the owners of Lancewood for a 9.4ha isolated portion of a larger paddock. This area occurs on the southern side of the Suttor Development Road approx 8km East of the Row.</i></p> <p><i>The 9.4 ha area is comprised of approximately 6 ha of Brigalow and 3.4 ha of a mosaic of Bluegrass downs and Mountain Coolabah grassy woodland.</i></p> <p><i>The area will be enclosed with a five barb stock proof fence incorporating 3 stock gates. The landowner will monitor the area and allow cattle access at appropriate time.</i></p>
Performance Objectives	<ul style="list-style-type: none"> • Improvement in the ecological health of the 6 ha of Brigalow and the adjoining Bluegrass downs and Mountain Coolabah grassy woodlands.
Management Strategy	<ul style="list-style-type: none"> • Construct a new five –barb stock proof fence along the southern boundary incorporate 3 stock gates into the site perimeter fence • Modify the current grazing regime so that cattle can only access the area for a much reduced period. • Cattle allowed to enter the area (by opening the gates) sometime prior to the Buffel Grass becoming rank and inedible to stock (possibly in March each year depending on seasonal conditions) and when the Buffel has been significantly reduced exclude the cattle. • Maintain a No Net Loss Brigalow identification layer on the GIS.
Performance Indicators	<ul style="list-style-type: none"> • Improvement in the ecological health of the 6 ha of Brigalow and the adjoining Bluegrass downs and Mountain Coolabah grassy woodlands.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Survey of No Net Loss – Brigalow area to be conducted annually for 3 years after setup. • Data to be forwarded to GIS coordinator for inclusion in data sets. • Where no improvement in Brigalow identified initiate appropriate remedial action (e.g. revise the control program or arrange further change to grazing regime with the Landholder).
Responsible Person	<ul style="list-style-type: none"> • Land and GIS Co-ordinator.

13. DECOMMISSIONING PHASE

When required, Enertrade shall decommission any pipeline and associated infrastructure in accordance with the regulatory requirements and accepted environmental best practice of the day (e.g. APIA, AS2885). Prior to abandonment of a pipeline service and the facilities, an investigation into the potential environmental issues and impacts associated with the abandonment shall be undertaken in accordance with AS2885.3.

For the safety of the public and wildlife, all above ground structures, such as compressor stations, scraper stations, valves, meter stations, sales taps, 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. The site shall be assessed in accordance with the appropriate *Guidelines for the Assessment and Management of Contaminated Land in Queensland* in place at the time of decommissioning. Clean up measures shall be implemented as appropriate. If buildings are removed completely, the ground shall be ripped and rehabilitated accordingly.

The removal of below ground structures may cause unnecessary environmental disturbance. It is therefore expected that the pipe shall be left in the ground. The abandoned pipe shall be purged of gas, the pipe filled with an inert substance and the cathodic protection devices shall be left in tact. This will prevent ground subsidence associated with the corrosion of the pipe which may result in surface water diversion, ponding and erosion. Below ground facilities will be cut off and blinded below ground level. All sites shall be rehabilitated following completion of termination.

Decommissioning of the pipeline facilities is expected to be completed in three phases:

- Dismantling and removal of the above ground facilities;
- Destruction and removal of hardstand areas; and
- Restoration and rehabilitation.

13.1 Dismantling of Above Ground Facilities

Policy	<i>To reduce damage to vegetation and to safely dismantle and dispose of the above ground facilities (e.g. compressor station, MLV's, scraper stations).</i>
Performance Objective	<ul style="list-style-type: none"> • Minimal disturbance to vegetation. • Nil injuries sustained during dismantling. • Nil waste to remain onsite. • Return sites to natural state.
Management Strategy	<ul style="list-style-type: none"> • Piping and metering, which are not to be reconditioned and redeployed, shall be removed from site and recycled or disposed of at an approved municipal disposal site. • Waste oil/chemical storage tanks shall be ECMP tied and disposed of in accordance with regulatory requirements. • Hazardous material (e.g. oil) will be segregated for storage, transport and disposal and, where practical shall be reused/recycled. • Disposal of hazardous material shall be to a licensed disposal site by a licensed waste contractor. • Material safety data sheets for all hazardous materials will be readily available on-site. <p><i>Compressor Station</i></p> <ul style="list-style-type: none"> • A site contamination investigation and remediation report of the compressor station, evaporation pond and interceptor pit will be undertaken and submitted to the administering authority (NQQP IA A14). • Any required remediation work will be completed prior to the surrender of the Integrated Authority and premises (NQQP IA A14). • Evaporation pond shall be decommissioned in an appropriate manner e.g: Testing and remediation as per dot point 4 above; When contamination is within acceptable guidelines fill in the pond and interceptor pit and cover with top soil; Revegetate with indigenous species. • Any handling of hazardous material shall be undertaken such that spillage and loss are minimised.
Performance Indicators	<ul style="list-style-type: none"> • Evidence of waste at site post decommissioning. • Safety and injury records. • Contaminated site assessment report for evaporation pond, interceptor pit and compressor station will be submitted to the Administering Authority.
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> • Visual observation of site clearance to ensure all debris removed. • Contractor shall retrieve and dispose of all waste within 3 days of notification (post decommissioning).
Responsible Person	<ul style="list-style-type: none"> • Decommissioning Manager.

13.2 Hardstand Demolition

Policy	<i>To reduce damage to landscape and soil profiles and to safely demolish above ground facilities hardstand areas.</i>
Performance Objective	<ul style="list-style-type: none"> Minimal disturbance to landscape and soil profiles. Nil injuries sustained during above ground facilities removal. Nil waste to remain onsite. Return site to natural state.
Management Strategy	<ul style="list-style-type: none"> Demolished concrete and steel removed from site to an approved municipal disposal site. Excavation to be backfilled and compacted with clean imported soil.
Performance Indicators	<ul style="list-style-type: none"> Evidence of waste at site post decommissioning. Safety and injury records. Level of disturbance to landscape and soil profiles.
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> Visual observations of soil management practices. Visual observations of waste evident on-site post decommissioning. Safety and workplace injury records. Contractor to retrieve and dispose of all waste within 3 days of notification (post-decommissioning).
Responsible Person	<ul style="list-style-type: none"> Decommissioning Manager.

13.3 Rehabilitation

Policy	<i>To safely and successfully rehabilitate the landscape to current land use practices and to minimise the establishment of weeds.</i>
Performance Objective	<ul style="list-style-type: none"> Restoration of land to compatible usage with surrounding areas. Nil new weed infestations. No new erosion of sites or access tracks.
Management Strategy	<ul style="list-style-type: none"> Direct seeding or planting in consultation with landholders. Installation of erosion control measures where required.
Performance Indicators	<ul style="list-style-type: none"> Revegetation reestablished similar to surrounding condition. No new weed infestations. Erosion of easement or facility sites. Drainage patterns reinstated correctly.
Monitoring, Reporting and Corrective Action	<ul style="list-style-type: none"> Six monthly for a two-year period, or until site redeveloped, whichever is the shorter timeframe. Success of restoration will be assessed by comparing the % cover and species diversity on the ROW with that of adjoining gland. Monitoring will also include an assessment of the effectiveness of weed control measures.
Responsible Person	<ul style="list-style-type: none"> Decommissioning Manager.

14. CONTACTS REGISTER

Position Title	Contact Person	Phone Number
Senior Environmental Officer Central Region - Environmental Operations Environmental Operations Division Environmental Protection Agency	Darren Springer	Ph: (07) 4982 4555 Fax: (07) 4982 2568 Mob: 0438 571 727 darren.springer@epa.qld.gov.au

Attachment A


ISSUES REGISTER PROFORMA

Type of Communication:	Phone	Letter	Personal	Other (<i>specify</i>)
Date of Issue:	/ /	Time of Issue:	/ /	

Section 1 – Issue Details

Attach additional sheets or use the back of this form if there is insufficient room

Nature of Issue:			
<i>(Attach copies of any written correspondence)</i>			
Issue Details:			
Name:			
Address:			
<i>No. and Street</i>	<i>Suburb</i>	<i>Town</i>	<i>Post Code</i>
Contact Phone Number:			

Section 2 – Response Details

What corrective action has been taken to prevent immediate recurrence?
What preventive action is proposed/required to prevent recurrence in the future? (if any)
Who is responsible for this action?
When must this action be completed?

Section 3 – Close out by Leader

This action was completed: / /	Signed
Position:	Print Name
Who completed this form?	Contact No.:
Forward completed form to General Manager Trading and Operations	

Section 4 – Sign off by General Manager Operations

I am satisfied that this issue has been appropriately recorded, actioned and closed out:		
Print name:	Signed:	Date: / /

Records to be maintained by the Field Coordinator



Pipeline Operations Weed Management Plan

090-OP-N-002

3	Revised to include CQGP	WEM			24/7/2007
2	Include No Net Loss	PB	GH	DW	03/08/05
1	For Comment	PB	GH	DW	31/3/05
0	Issued For Use	WEM	PB	DW	17/11/04
Rev	Description	Originator	Reviewed	Approved	Date

Document Concurrence Record		
Group/Section	Signature	Date
General Manager		

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Table 5-1:	Monitoring Program	5
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1 PURPOSE AND SCOPE

The purpose of this WMP is to ensure that appropriate weed management techniques and controls are implemented for all activities undertaken on pipeline Right-of-Ways (ROW).

This Weed Management Plan (WMP) is an integral part of the Management Plans for Pipeline Operations and should be read in conjunction with the Operations Environmental and Cultural Management Plan (ECMP).

The WMP provides a guideline for the control of all tasks that have the potential to spread weed seed and management of any weed outbreak.

All Controls and responsibilities relating to weed management will be in accordance with the Operations ECMP.

The WMP is regularly updated to reflect on-going weed management issues.

2 ABBREVIATIONS & DEFINITIONS

2.1 *Abbreviations*

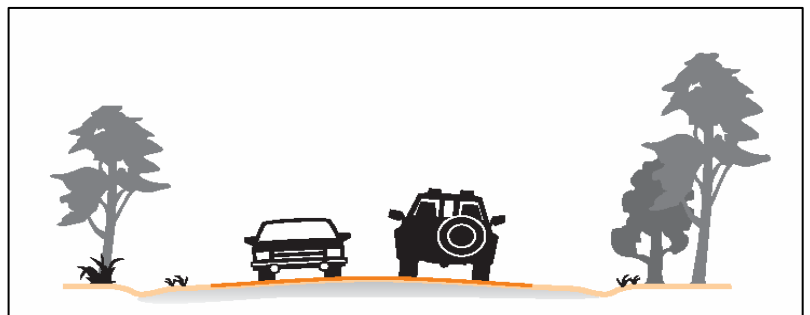
ECMP	Environmental and Cultural Management Plan
CBGP	Cheepie Barcaldine Gas Pipeline
GIS	Global Information System
GPS	Global Positioning System
NQGP	North Queensland Gas Pipeline
WMP	Pipeline Operations Weed Management Plan
ROW	Right-of-Way

2.2 *Definitions*

Access Routes:

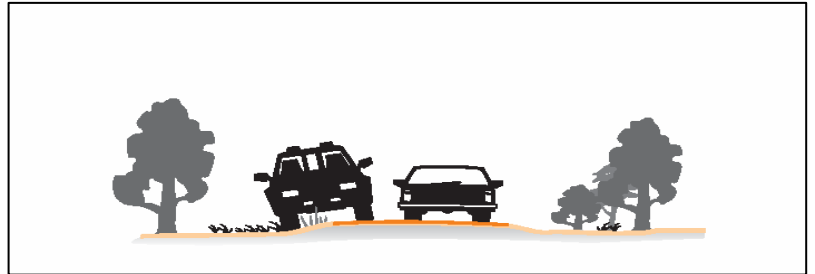
Clean:

All travel on sealed roads i.e. no contact with roadside vegetation.



Washdown

Travel off road or **repeatedly** come into contact with roadside vegetation (e.g. off bitumen to overtake)



Clean Equipment / Plant / Vehicle

Indicates that as far as can be ascertained there is no soil or organic matter present on or in equipment/plant/vehicle. This includes all areas as set out in the guideline in Attachment 2.

Declared Pest Species

A plant belonging to a class of plants declared under the *Land Protection (Pest and Stock Route Management) Act 2003*. Such plants have special control requirements under law.

Vehicle Operator

Person in charge of the vehicle (e.g. nominated driver/operator of vehicle/plant/equipment).

Washdown Facility

Approved facility and location for the cleaning of vehicles, plant, and equipment as documented on approved Map(s). All commercial carwash facilities with washdown bays and high pressure hoses are approved facilities¹.

Weed

Plants that have the ability to spread rapidly and produce unwanted economic, environmental or social impacts.

3 ABOUT THIS DOCUMENT

Weeds are unwanted plants that pose a serious threat to management of the State's ecosystems, and impose high annual costs on agricultural industries. The control of weed species is important and it is Enertrade's objective, as far as is

¹ Drive through car wash facilities are not approved facilities.

reasonably practicable, to carry out its activities to minimise the spread of any weed species. This WMP documents the procedures and performance standards to be implemented to ensure Enertrade meets this objective.

This WMP has been prepared based on discussions held during the Environmental Impact Statement process, with various State government agencies and representatives of the Local Government areas traversed by the pipeline route. Information relating to the weed species that are of concern in the Project Area are set out in Attachment 5. The weed affected areas and approved access routes are shown on the maps in Attachment 1. Note that this document is for use by field personnel and therefore common names for plants have been used through out.

The WMP will be used by Auditors to determine the performance requirements relating to weed management and to enable each of these requirements to be checked and reviewed in an orderly manner.

4 TRAINING

Training will be divided into two categories:

- 4.1 **Level 1:** Nationally accredited training (2 day course) for inspection of vehicles and equipment. The course will include weed identification and washdown procedures. Typically Supervisors and senior field personnel will undergo Level 1 training.
- 4.2 **Level 2:** Induction training in vehicle washdown procedures, use of weed washdown kit and route access. All Vehicle Operators will undergo Level 2 training.

5 MONITORING & COMPLIANCE

Weed infestation areas will be monitored for the life of the pipeline.

This WMP will be managed by:

- Seasonal monitoring of declared plant and other weed species (Table 5-1);
- Controls/inspections fully tracked and recorded on GIS using GPS coordinates.

Table 5-1: Monitoring Program

Timing	Procedure
Six monthly for a period of 18 months following construction	Monitoring and remediation of weed infestations within SAPS (Brigalow, Bluegrass and Black iron Box) this Monitoring to also include random areas of the ROW for other weed outbreaks.
Within 2 weeks of heavy rainfall	Undertake weed control of ROW.
Annually thereafter at key periods (e.g. March-April)	Weed control of easement

6 WEED MANAGEMENT

6.1 Identification	
Policy	<i>To identify weed species of concern along the Right of Ways to enable the planning of effective management strategies.</i>
Performance Objectives	<ul style="list-style-type: none"> All weed infested areas identified to be logged, using GPS.
Management Strategy	<ul style="list-style-type: none"> Undertake regular weed surveys by accredited personnel or contractors. Issue key personnel with GPS data loggers. Provide Training to relevant personnel (see Training Section 4) Target inspection times for periods of high weed growth risk (e.g. after high or seasonal rainfall periods). Maintain a weed identification layer on the GIS.
Performance Indicators	<ul style="list-style-type: none"> Accuracy of weed data on GIS. Correlation of data set dates with dates of major rainfall events.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> Survey of weed prone areas to be conducted after high or seasonal rainfall events (e.g. March – April). Data to be forwarded to GIS coordinator for inclusion in data sets. Where weed infestation identified initiate appropriate remedial action (e.g. notify weed contractor to carry out control program or arrange remediation with the Landholder).
Responsible Person	<ul style="list-style-type: none"> Land and GIS Co-ordinator.

6.2 Planning	
Policy	<i>Plan and document access control and washdown to minimise the spread of weed through Operations vehicle movements.</i>
Performance Objectives	<ul style="list-style-type: none"> • Ensure washdown procedures and facility locations provided to address identified weed infestations (Section 6.5) • Ensure effective access control reflecting the most recent weed identification survey (Section 6.1)
Management Strategy	<ul style="list-style-type: none"> • Map weed infestations (GIS). • Limit vehicle movement through weed infested areas. • Carry out control measures for significant infestations prior to any major activity (e.g. new tie in) commencing. Note that treatment should be carried out before the plants can set seed. • Maintain access control map. • Nominate appropriate washdown facilities and locations and include on map (Maps Attachment 1). • Where access through weed infested areas is unavoidable develop a pre-control program (Section 6.3).
Performance Indicators	<ul style="list-style-type: none"> • All approved weed washdown facilities marked on the maps. • All approved access routes identified on the maps. • Adequate washdown facilities identified and available.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 5 of this WMP.
Responsible Person	<ul style="list-style-type: none"> • Land and GIS Co-ordinator.

6.3 Weed Control	
Policy	<i>Implement control measures where new weed infestation has occurred on the Right Of Way.</i>
Performance Objective	<ul style="list-style-type: none"> • Ensure appropriate control regime implemented. • Control measures are recorded. • No contamination of watercourses by herbicides. • To use the most appropriate and approved herbicides.
Management Strategy	<ul style="list-style-type: none"> • Discuss issue with Land Holder and agree appropriate action. • Use established contractors with proven track record in weed control management and knowledge of herbicide application rates. • Contractors to be proficient in the use of GPS. • Recommended management measures, herbicides and application rates in accordance with NRM Fact sheets (see Attachment 4 and www.nrm.qld.gov.au). • No Atrazine will be used for weed control unless at the request of a specific landholder. • Monitor significant infestations and washdown areas after treatment. • Repeated spraying may be required even within one growing season to prevent further seed production. • No herbicide or chemical usage shall be undertaken within 10 metres of a water body. • Use mechanical/hand removal of weeds within 10 metres of a water body. • Weed debris shall be placed in sealed sturdy plastic bags and disposed of to municipal landfill sites. • All weed control machinery shall be subject to the wash down requirements (Section 6.5). • No boom spraying and widespread application of herbicide in SAP areas (Check GIS as part of Planning)
Performance Indicators	<ul style="list-style-type: none"> • Land Holder satisfied with results. • Contractor selection record. • Contractor records of treatment (locations (GPS co-ords), herbicide, quantity etc. • Herbicides used are in accordance with NRM recommendations.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • Weed surveys – results to Land and GIS Co-ordinator. • Repeat spraying or wicking as required.
Responsible Person	<ul style="list-style-type: none"> • Land and GIS Co-ordinator.

6.4 Access Control	
Policy	<i>To control access in accordance with planning (Section 6.2) outcomes to minimise the spread of weeds.</i>
Performance Objective	<ul style="list-style-type: none"> • Provide clear mapping. • Provide clear procedures. • Provide appropriate weed identification and washdown procedure training • No useage of prohibited access routes. • Compliance with washdown requirements (Section 6.5)
Management Strategy	<ul style="list-style-type: none"> • Vehicles/plant and equipment are to be cleaned down in accordance with Section 6.5. • Vehicles/plant and equipment are to travel on approved access routes only (Attachment 1 Maps). • Limit pulling on to shoulder on major and minor routes – emergency use only. • All activities are to be planned so that, as far as practicable, vehicles travel from weed free areas into weed affected areas. • Vehicles travelling from weed infested access routes must washdown prior to entering properies or clean access routes (see Section 6.5). • All vehicles/plant/equipment to washdown prior to crossing Suttor Creek south to north.
Performance Indicators	<ul style="list-style-type: none"> • Washdown logs correspond to known vehicle movements • Weed mapping and washdown locations up to date.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 5 of this WMP.
Responsible Person	<ul style="list-style-type: none"> • Land and GIS Co-ordinator

6.5 Washdown	
Policy	<i>To prevent the spread of weeds and pathogens</i>
Performance Objective	<ul style="list-style-type: none"> • Vehicles, plant and equipment clean of organic material at identified change points (see Maps Attachment 1). • Vehicles, plant and equipment pass inspection by Weed Officers.
Management Strategy	<ul style="list-style-type: none"> • All vehicles (including helicopters), plant and equipment (including hand tools) inspected (in accordance with the requirements set out in Form 1, Attachment 2) and certified clean by a Weed Officer. • Vehicles/plant and equipment failing inspection must be washed down and re inspected. • Log to be completed for all washdown (Form 2 Attachment 3) and a copy filed on site (Barcaldine, Townsville and Moranbah) • Use only those washdown facilities identified (Attachments 1). • Ensure no plant debris adhering to clothing (check trouser pockets and cuffs, and socks). • All plant/equipment/vehicles travelling off sealed roads are to washdown prior to crossing Suttor Creek and the Burdekin River.
Performance Indicators	<ul style="list-style-type: none"> • Presence of weeds and pathogens on the easement consistent with adjacent land. • No new outbreak of weeds reported on ROW.
Monitoring, Reporting and Corrective Actions	<ul style="list-style-type: none"> • In accordance with Section 5 of this WMP.
Responsible Person	<ul style="list-style-type: none"> • Land and GIS Co-ordinator

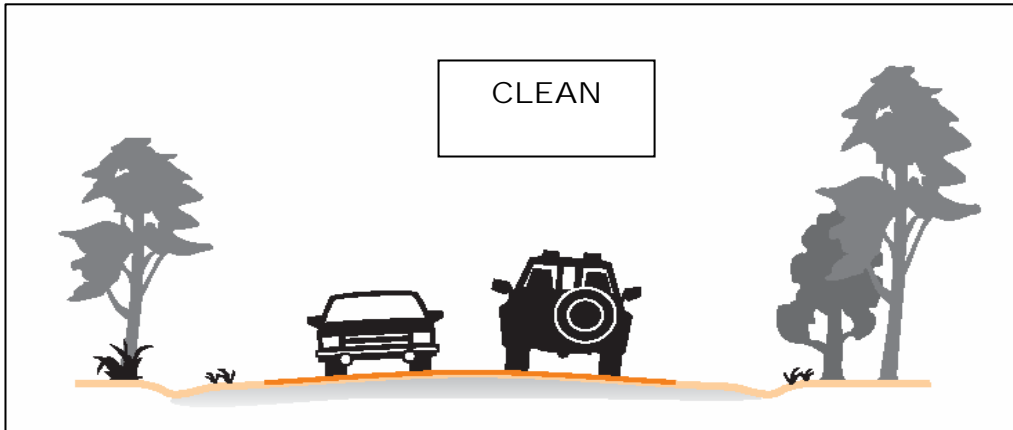
6.6 Weed Hygiene	
Policy	<i>Basic MUST DO's</i>
	<ul style="list-style-type: none"> • Ensure vehicle/plant/equipment clean before entry to any property • Limit vehicle movement through weed infested areas • Limit driving on shoulder of sealed roads • Plan activities to travel from weed free/light weed/controlled weed to heavily weed infested areas • Washdown when travelling from one sector (see map) to another unless you meet the classification for clean (see adjacent) • Washdown at approved stations (see map on reverse) • Washdown with high pressure hose or pressure clean – drive through car wash is NOT sufficient • Ensure no vegetation debris clinging to clothes or inside vehicle • Maintain a vehicle log of all washdowns
Responsible Person	<ul style="list-style-type: none"> • All staff

Attachment 1: Maps

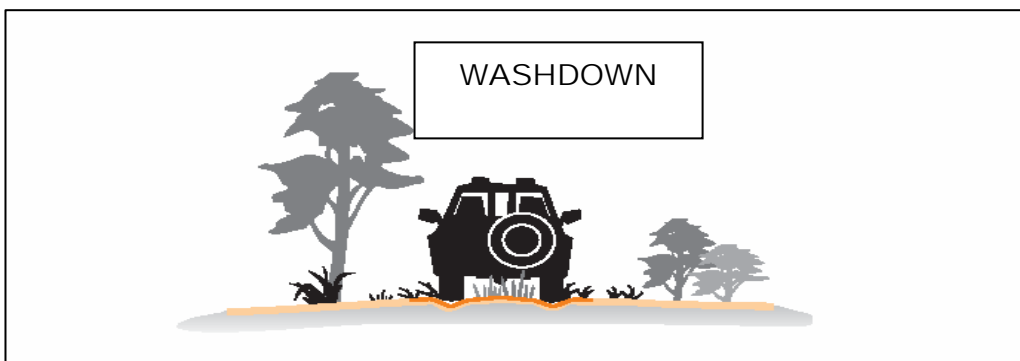
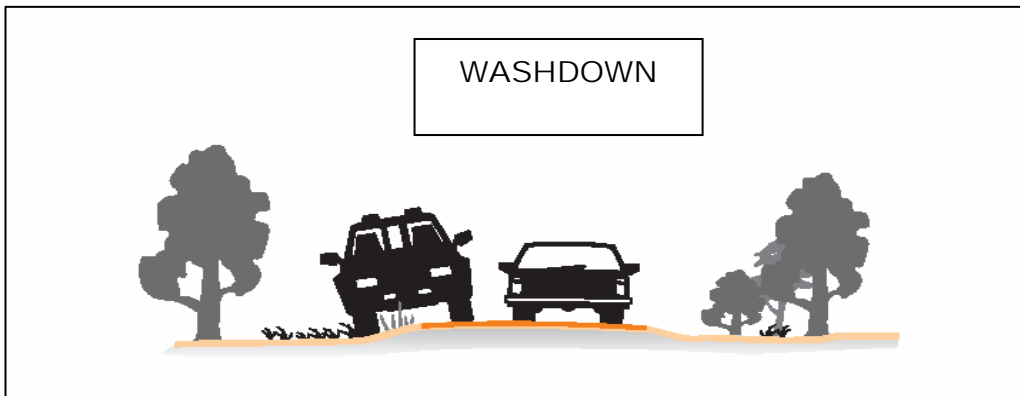
Attachment 2: Washdown Guidelines

DOES YOUR VEHICLE NEED WASH DOWN?

CLEAN: All travel on sealed roads i.e. no contact with roadside vegetation.



WASHDOWN: Travel off road or **repeatedly** come into contact with roadside vegetation (e.g. off bitumen to overtake)



Washdown Guideline

**Use suitable high pressure washdown hose or pressure cleaner
Drive through washdown is NOT sufficient**

<input type="checkbox"/> Wash under bonnet	<input type="checkbox"/> Use wire hook to remove grass etc from between radiator and condenser
<input type="checkbox"/> Around vents in front of windscreen	<input type="checkbox"/> Wash radiator and air conditioning condenser
<input type="checkbox"/> Around grille and headlamps	<input type="checkbox"/> Wash under side steps and brush rails
<input type="checkbox"/> In and around all openings in chassis	<input type="checkbox"/> Wash inside chassis rails or any open spaces
<input type="checkbox"/> Under mudguards and inside wheel arches	<input type="checkbox"/> Wash around differential, gearbox and engine
<input type="checkbox"/> Both sides of mudflaps	<input type="checkbox"/> Wash inside and outside of wheels
<input type="checkbox"/> Around brake drums and discs	<input type="checkbox"/> Remove loose floor mats and wash
<input type="checkbox"/> Around all steering linkages and suspension parts	<input type="checkbox"/> Brush and wash fixed floor mats
<input type="checkbox"/> Under Bumper bars and bullbars including rear bumper bar	<input type="checkbox"/> Brush down trouser legs (check inside any cuffs) – ensure all seeds removed
<input type="checkbox"/> Remove spare wheel from under and wash around area	<input type="checkbox"/> Remove boots/shoes/socks and shake out thoroughly ensuring all seeds removed
<input type="checkbox"/> Wash out sump guard	<input type="checkbox"/> Check under boots and clean to remove plant material and soil
<input type="checkbox"/> Around and above muffler and exhaust system	<input type="checkbox"/> Clean any tools and equipment used in the field – ensure free of soil and plant material
<input type="checkbox"/> Wash out protector guard under fuel tanks (front and rear tanks)	

Attachment 3: Washdown Log

Attachment 4: NRM Fact Sheets

Insert sheets on parthenium, giant rats tail, belly ache bush siam weed, coffee senna, mother of millions and grader grass

Attachment 5: Weed Species of Concern

LEGEND			
A	Eradicate	C	Contain
B	Reduce	D	Manage

Common Name	Class	Presence	Control Level
<i>BELYANDO SHIRE</i>			
Bellyache bush	2		B
Chinee Apple	2		A
Giant Rat's Tail Grass	2		A
Harrisia cactus	2		D
Mother of Millions	2		C
Noogooro Burr	ND		D
Parkinsonia	2		B
Parthenium weed	2		C
Prickly Acacia	2		B
Rubbervine	2		B
Thorn Apple	ND		D
<i>NEBO SHIRE</i>			
Bellyache bush	2		A
Giant Rat's Tail Grass	2		B,C,D
Giant sensitive plant	2		A
Harrisia cactus	2		B,C,D
Parkinsonia	2		B,C
Parthenium weed	2		C
Prickly Acacia	2		A
Rubbervine	2		A
Sicklepod – Arsenic weed or java bean	2	Present in adjoining Shire	A

Common Name	Category	Presence	Control Level
BURDEKIN SHIRE			
Aleman Grass	ND	Waterways	B
Bellyache bush	2		B
Cabomba	2		B
Chinee Apple	2		B
Cumbungi	ND	Waterways/ lagoons	B
Giant Rat's Tail Grass	2		A
Harrisia cactus	2		A
Lantana	3	Isolated	C
Leucaena	ND	Road reserves	
Parkinsonia	2		B
Parthenium weed	2		A
Prickly Acacia	2		A
Rubbervine	2		B
Salvinia	2	Waterways	B & D
Water Hyacinth	2	Waterways	B
BOWEN SHIRE			
Chinee Apple	2		B
Giant Rat's Tail Grass	2		A
Harrisia cactus	2		D
Hymenachne	2	Isolated	A
Lantana	3		C
Mesquite	2	Isolated	A
Parkinsonia	2		B
Parthenium weed	2		C
Prickly Acacia	2		B
Rubbervine	2		B
Salvinia	P3	Waterways	A
Sicklepod – Arsenic weed or java bean	2	Isolated	A
Water Hyacinth	2	Waterways	A

Common Name	Category	Presence	Control Level
<i>BROADSOUND SHIRE</i>			
African Tulip	3		D
Bellyache Bush	2		A
Captain Cook Bush	3		D
Giant Rats Tail Grass	2		B,C,D
Harrisia cactus	2		B,C,D
Hymenachne	2		B,D
Lantana	3		D
Mother of Millions	2		B,C,D
Parkinsonia	2		B,C,D
Parthenium Weed	2		B,C,D
Prickly Acacia	2		B,C
Rubber Vine	2		B,C
Tobacco Weed	2		B,C,D
<i>DUARINGA SHIRE</i>			
African Love Grass	ND		C
African Tulip Tree	3		D
American Rats Tail	2		B,C
Athel Pine	3		D
Bellyache Bush	2		A
Blue Heliotrope	ND		D
Broad-leaved Pepper Tree	3		D
Camphor Laurel	3		D
Captain Cook Tree	3		D
Cats Claw	3		D
Chinee Apple	2		A
Giant Paramatta Grass	2		B,C
Giant Rats Tail	2		B,C
Harrisia Cactus	2		C,D
Lantana	3		D
Mesquites	2		A
Mother of Millions	2		C
Paramatta Grass	2		B,C
Parkinsonia	2		C,D
Parthenium Weed	2		B,C,D
Prickly Acacia	2		B,C
Rubbervine	2		C,D

Common Name	Category	Presence	Control Level
Salvinia	2		D
Singapore Daisy	3		D
Sisal Hemp	ND		C,D
Sword Pear	ND		C
Thunbergia	2		D
Water Hyacinth	2		D
Water Lettuce	2		D
Yellow Bells	3		D
<i>FITZROY SHIRE</i>			
American rat's tail grass	2		B
Athel pine	2		B
Badhara bush	1		A
Belly-ache bush	2		B
Blue heliotrope	ND		D
Buffel grass	ND		D
Castor oil plant	ND		D
Cats claw vine	3		B,C,D
Chinee apple	2		B
Easter Cassia	ND		D
Giant parramatta grass	2		B
Giant rat's tail grass	2		B
Groundsel bush	2		B
Harrisia cactus	2		B
Hymenachne	2		B
Lantana.	3		B,C,D
Leucaena	ND		D
Lippia	ND		D
Madeira vine	3		B,C,D
Mimosa bush	ND		D
Mimosa pigra	1		A
Mother of Millions	2		B
Noogoora burr	ND		D
Parkinsonia	2		B
Parramatta grass	2		B
Parthenium weed	2		B
Prickly acacia	2		B
Rubbervine	2		B
Saffron Thistle	ND		D

Common Name	Category	Presence	Control Level
Salvinia	2		B
Sisal hemp	ND		D
Sword pear	ND		D
Thornapple	ND		D
Water hyacinth	2		B
Water lettuce	2		B
Yellow Oleander	ND		D
CALLIOPE SHIRE			
Bathurst Burr	ND		D
Bellyache Bush	2		B
Caser Oil Plant	ND		D
Cats Claw Creeper	3		B,C,D
Chinee Apple	2		B
Cook Bush (Yellow Oleander)	ND		D
Creeping Lantana	ND		D
Devil's Fig	ND		D
Giant Rats Tail Grass	2		B
Groundsel Bush	2		B
Honey Mesquite	2		B
Lantana	3		B,C,D
Leucaena	ND		D
Mother of Millions	2		B
Noogoora Burr	Council Policy		
Parkinsonia	2		B
Parthenium Weed	2		B
Prickly Acacia	2		B
Prickly Pear	2		B
Rubber Vine	2		B
Salvinia	2		B
Sicklepod	2		B
Snake Weed	ND		D
Tecoma Stans	3		B,C,D
Thorn Apple	ND		D
Water Hyacinth	2		B
Water Lettuce	2		B
GLADSTONE CITY COUNCIL			
<i>TO Be ADDED</i>			

Appendix 4:
Proponent Commitments

Chapter 1

Number	Section	Commitment	<u>CEMP Sect</u>
1-1	1.3	The Project will operate within the Proponent's EH&SMS.	N/A
1-2	1.4	The Proponent will provide responses to the comments received on the EIS.	N/A
1-3	1.5.2	The Proponent will continue to liaise with local communities / suppliers / contractors regarding employment and economic opportunities.	N/A
1-4	1.6.1	The pipeline will be constructed, operated and decommissioned consistent with <i>AS 2885 Pipelines – gas and liquid petroleum</i> and the <i>APIA Code of Environmental Practice</i> .	N/A
1-5	1.6.2.3	The Proponent will ensure that ongoing rural uses of the adjoining areas to the pipeline are not adversely affected and are able to continue operations.	N/A
1-6	1.6.2.3	The pipeline will be designed and constructed to a standard suitable for any adjoining urban areas.	N/A

Chapter 2

Number	Section	Commitment	<u>CEMP Sect</u>
2-1	2.1.5.4	The Proponent will address the conservation of biodiversity by identifying and mapping the ecological constraints to the pipeline, and aligning the pipeline in a manner that either avoids, or minimises, any impact on these constraints to the extent practicable.	10.1
2-2	2.3.2.1	The Proponent will continue to take into account current and future mining expansion and potential conflicts with other existing infrastructure (e.g. roads, rail lines, powerlines) and residential areas in finalising the pipeline route.	N/A
2-3	2.3.2.2	The pipeline route will not impact upon the Byellee Wetland.	10.1
2-4	2.3.2.2	The pipeline route will not adversely impact on the landscaped area of the Botanic Gardens that impinges upon the powerline easement	10.1
2-5	2.3.2.2	The Proponent will ensure no long term negative impact on the social amenity of the Meteor sports field.	10.1
2-6	2.3.2.2	The Proponent will ensure that all areas of the pipeline are designed to provide the maximum level of safety in accordance with AS2885, this will include areas such as the Meteor Sports Club.	N/A
2-7	2.3.2.2	The pipeline route will not directly impact the Mt Stowe State Forest unless directly requested by the State Government.	10.1

Chapter 3

Number	Section	Commitment	CEMP Sect
3-1	3.0	The pipeline will be built to Australian Standard <i>AS4564 – 2003 Specifications for general purpose natural gas.</i>	4.0
3-2	3.1.1.1	The risk assessment data base will be updated during the design phase.	N/A
3-3	3.1.1.2	The design will include protection measures in more vulnerable locations such as heavier wall pipe, increased depth of burial, installation of concrete slabs, buried marker tape and / or additional signage.	4.0
3-4	3.1.2.5	A cathodic protection system will be installed to provide a secondary form of corrosion protection for the pipeline.	N/A
3-5	3.1.2.6	Pipeline marker signs will be installed in accordance with AS2885.	10.1
3-6	3.1.3	The depth the pipeline is to be buried will be determined based on the requirements of <i>AS2885 Part 1 Design and Construction of Pipelines – Gas and Liquid Petroleum.</i>	N/A
3-7	3.1.3	Design of the river crossings for large rivers will take into consideration the Q100 flood impacts when determining the depth of cover.	N/A
3-8	3.1.6	Access to the ROW shall, where practicable, be via existing roads, tracks and disturbed areas.	10.1
3-9	3.1.6	New access tracks shall avoid environmentally sensitive areas, shall be covered by the Cultural Heritage Management Plan (CHMP) and shall be scheduled to minimise disturbance to landholders.	10.1
3-10	3.1.6	Access tracks shall be rehabilitated in accordance with landowner requirements.	10.8
3-11	3.1.6	All materials from temporary crossings will be removed at the completion of construction and the area reinstated.	10.8 & 11.2
3-12	3.1.9.5	The location of the temporary facilities will be based on the <i>APIA Code of Environmental Practice.</i>	N/A
3-13	3.1.9.6	Root stock will be left in the ground, where practicable, in scrubby areas.	10.3
3-14	3.1.9.6	Vegetation in scrubby areas will be stockpiled for respreading.	10.3
3-15	3.1.9.6	Breaks will be left in stockpiled vegetation to allow continued access to stock, fencelines, tracks, and drainage lines.	10.3
3-16	3.1.9.6	Large mature trees will be preserved where practicable.	10.3 & 11.3

Number	Section	Commitment	<u>CEMP Sect</u>
3-17	3.1.9.6	Topsoil will be removed and stockpiled separately for reuse during rehabilitation.	<u>10.3</u>
3-18	3.1.9.6	Sediment fences will be installed around the toe of the topsoil stockpiles at creek crossings to prevent soil loss.	<u>11.3</u>
3-19	3.1.9.7	Should blasting be required, a Blasting Operation Procedure will be prepared and prior notice will be given to all affected landholders, construction crew and other potentially affected parties.	<u>13.8</u>
3-20	3.1.9.7	Breaks in the trench will be left at fences and drainage lines and to facilitate stock and wildlife crossing and agricultural vehicle movements.	<u>10.3 & 11.1</u>
3-21	3.1.9.8	Dust management will include the use of water trucks and reduction of speed limits.	<u>11.3</u>
3-22	3.1.9.12	Hydrotest water will not be discharged directly to natural water courses.	<u>10.7</u>
3-23	3.1.9.12	Beneficial reuse of hydrotest water will be investigated.	<u>10.7</u>
3-24	3.1.9.12	All other hydrotest water will be disposed of through a settling and filtration structure with erosion control.	<u>10.7</u>
3-25	3.1.9.13	Clean up and rehabilitation measures will be applied to the ROW, access tracks and camp sites in consultation with the relevant landholder / owner.	<u>10.8</u>
3-26	3.1.9.14	Trench water will be discharged well away from the watercourse, onto geofabric (or similar) into a stable area.	<u>11.2</u>
3-27	3.1.9.14	Banks will be reinstated as near as practicable to their original profile.	<u>11.2</u>
3-28	3.1.9.15	Weed infested areas will be identified and mapped.	<u>WMP 8.1</u>
3-29	3.1.9.15	The draft WMP will be finalised on completion of the EIS and prior to construction commencing.	<u>WMP 1.0</u>
3-30	3.1.9.15	All personnel entering the Project area will be required to conform to the WMP.	<u>WMP 4.6</u>
3-31	3.1.9.15	All vehicles and equipment will be required to adhere to the approved access routes and the ROW.	<u>WMP 8.3</u>
3-32	3.1.11	In the event that the pipeline is no longer required it will be decommissioned in accordance with the legislative requirements of the day and the <i>APIA Code of Environmental Practice</i> .	<u>OEMP</u>

Number	Section	Commitment	CEMP Sect
3-33	3.3.1.2	The Project will liaise with all affected Shire Councils to ensure that temporary camps are in an appropriate location, buildings are a suitable standard and food preparation is in accordance with legislative requirements.	OEMP
3-34	3.3.2.2	Any on-site construction camp facilities installed at Moranbah will meet Belyando Shire Council standards for installation.	10.2
3-35	3.4	Gas transported in the pipeline will comply with Australian Standard <i>AS4564 – 2003 Specifications for Pipeline Quality Gas Supply</i> .	N/A
3-36	3.8	Waste will be disposed of via a waste contractor licensed by the EPA to handle the appropriate waste material.	11.6
3-37	3.1.4	The Proponent and construction contractor will seek approval from DNRW and the EPA for the final route of the low pressure lateral once there is a demand for a pipeline connection in this area.	1.0
3-38	3.1.4	The Proponent and construction contractor will ensure that the final route has no adverse impacts on any wetlands of national significance or on any sensitive/threatened ecosystems located downstream of any such crossings.	10.1
3-39	3.1.6	The Proponent and its appointed construction contractor will ensure that all temporary access meets the requirements of the Main Roads - Road Planning and Design Manual and meets safety criteria for use during the construction period.	RUMP
3-40	3.1.7	The Proponent and its appointed construction contractor will, in accordance with legislative requirements, apply to DMR for Ancillary Works and Encroachment's for all works within road easements prior to construction	RUMP
3-41	3.1.9.5	Riverine quarry material will not be used by the Project, unless sourced through a licensed provider.	10.6
3-42	3.6.2	The construction contractor will ensure that the supply of water to the project will not compromise community water supplies along the pipeline route.	10.2
3-43	3.6.2.1	The principal construction contractor for the project will ensure that all potable water meets NHMRC Australian Drinking Water Guidelines 2004. If water is to be treated on-site the Rockhampton Population Health Unit Environmental Health Services will be notified.	10.2

Chapter 4

Number	Section	Commitment	CEMP Sect
4-1	4.1.3.1	The Draft Construction EMP will be finalised and adhered to in all aspects.	1.0
4-2	4.1.1.1	The Proponent will negotiate in good faith with Native Title claimants and Traditional Owner groups to develop ILUAs.	N/A
4-3	4.1.1.1	Enertrade will ensure that the final pipeline route takes into consideration current and future mining, mineral and petroleum needs.	10.1
4-4	4.1.1.1	The pipeline route will avoid residential areas where practicable.	10.1
4-5	4.1.1.2	The proposed pipeline will not impose any long-term restrictions on the current use of identified land tenure along the route.	10.1
4-6	4.1.1.2	Appropriate buffers will be maintained between the pipeline and existing and planned development in accordance with the requirements of AS2885.	N/A
4-7	4.1.1.2	No clearing of vegetation for camp sites, access tracks or work areas will be carried out in reserves, wetlands, state forests, GQAL or in identified habitat areas for the Brigalow Scaly-foot, Collard Delma and Dunmall's Snake, or areas of remnant vegetation.	10.1 & 10.2
	4.4.1.2		
	4.4.3.2	No trenching will occur in marine plant areas in proximity to the Port Curtis Wetland	10.4
4-8	4.10.2	All crossings of sealed roads and railway lines will be bored.	10.4
4-9	4.1.1.2 4.8.2.1	There will be appropriate notification and management of noisy and dusty activities in proximity to residential areas and schools.	11.4 & 11.5
4-10	4.1.1.2 4.10.2.2	Temporary gates and signage, as required, will be installed at locations where the pipeline crosses fence lines or roads.	10.1 & 10.2
4-11	4.3.1.1	Existing access roads will be used where available.	10.1
4-12	4.1.2.2	Topsoil and subsoil will be stockpiled separately, to prevent mixing and retain seedstock, and away from watercourses.	10.3
4-13	4.1.3.2	Erosion control measures, including temporary and permanent erosion control banks, trench breakers, sediment collection devices and respreading timber on slopes, will be used to protect landforms and watercourse.	11.3
4-14	4.1.3.2	Subsoil will be returned to the trench and compacted before any topsoil is respread.	10.6
4-15	4.1.3.2	Excess spoil will be stockpiled for future repair works.	10.8
4-16	4.1.3.2	The presence of ASS in the Calliope River and low lying coastal areas will be determined during detailed design. Where ASS will be impacted during construction the areas will be entered into the Project database and the appropriate mitigation measures will be included into the Draft Construction EMP.	13.7
4-17	4.1.3.2	Contaminated material will only be removed from the work area with the approval of the EPA.	10.4 & 10.8
4-18	4.1.3.2	All Superintendents will be made aware of potential contamination issues through the induction training process.	10.4

Number	Section	Commitment	CEMP Sect
4-19	4.3.2.1	Storage and loading / decanting areas for fuels and chemicals will be bunded and located outside the floodplain of the stream channels (i.e. approximately 50m away from the top bank).	12.1
4-20	4.1.3.1 4.3.2.1 4.4.2.2	Construction will be timed to occur predominantly in the dry season.	11.3
4-21	4.2.1.4	Emergency response plans will include procedures for cyclones, fire and flooding.	12.4
4-22	4.2.1.4	All personnel will be instructed in emergency response measures including for cyclones, fire and flooding.	12.4
4-23	4.1.3.2 4.4.4.1	Horizontal Directional Drill (geotechnical constraints permitting) will be employed at the Fitzroy and Calliope Rivers.	13.6
4-24	4.3.2.1	All barriers and / or dams installed in watercourses during the construction of the pipeline will be removed after construction.	10.8 & 11.2
4-25	4.3.2.1	Sediment fences will be used between the watercourse and the construction area to minimise sediment releases.	11.3
4-26	4.3.2.1	Destruction of mature riparian trees will be avoided, where practicable.	11.2
4-27	4.3.2.1	Creek banks will be regraded to a slope that is no steeper than existing site conditions.	11.2
4-28	4.3.2.1	All construction and maintenance crew inductions will cover: <ul style="list-style-type: none"> • Erosion risk and management; • Fuel and chemical (including fertilisers) handling, storage and use procedures; and • Weed hygiene and control protocols. 	8.1
4-29	4.3.2.1	Water quality upstream and downstream of the construction area on wet crossings will be monitored.	11.2
4-30	4.3.2.1	Watercourses will be monitored post construction to ensure that rehabilitation works and stability of the watercourses is the same if not better than pre-construction.	OEMP
4-31	4.4.3.2	Ephemeral watercourse crossings will be located at 'run' or 'riffle' sections wherever practicable.	10.1
4-32	4.4.1.2	The pipeline route will avoid or, where not practicable minimise impacts on nationally endangered ecological communities.	10.1
4-33	4.4.1.2	No Semi Evergreen Vine Thicket (SEVT) will be cleared.	10.1
4-34	4.4.1.2 4.4.2.2	Clearing boundaries will not exceed 30m in Brigalow, remnant eucalypt communities and Bluegrass communities.	11.1 & 13.1
4-35	4.4.1.2	Clearing boundaries will be reduced to 25m where this enables avoidance of any <i>Cycas megacarpa</i> and Black Ironbox plants and eucalypts.	13.3 & 13.4
4-36	4.4.1.2	All Significant Area Plan (SAP) areas (e.g. Brigalow, Bluegrass, Black Ironbox) will be clearly marked in the field during pre - construction line	13.0

Number	Section	Commitment	CEMP Sect
		pegging.	
4-37	4.1.1.2 4.4.2.2	<p>Strict weed management protocols will be implemented throughout the life of the Project including:</p> <ul style="list-style-type: none"> • Certification of all vehicles, plant and equipment as clean prior to commencement of work; • Hygiene controls (e.g. washdowns); • Washdown bays will have seed trapping capability; • Half yearly monitoring of weed infestations in Significant Area Plan (SAP) areas post-construction; and • Half yearly monitoring of vegetation reestablishment. 	WMP 8.4 “ “ “ OWMP OEMP
4-38	4.4.1.2	Large and connected forested patches will, wherever possible, be avoided.	10.1
4-39	4.4.1.2	Data gathered from the ecological surveys will be provided to the Cth Department of Environment and Water Resources (DEWR) and to the Qld Environmental Protection Agency (EPA) prior to construction.	11.1
4-40	4.4.1.2 4.4.4.2	Where protected plant species (e.g. Black Ironbox, cycads, marine plants) must be removed a permit will be obtained from the relevant authority (e.g. EPA, DPI&F). Affected nationally protected species will be notified to DEWR.	11.1
4-41	4.4.1.2	The proposed pipeline construction works will aim to avoid all Eastern (Greater) Long-eared Bat habitat trees.	10.1
4-42	4.4.2.2	No large scale burning of vegetative wastes will occur.	10.2, 11.3 & 12.3
4-43	4.4.2.2	Prescribed burning will only be undertaken with Fire Authority approval and only when it is not possible to respread the cleared vegetation (e.g. major woody weed infestation).	11.3
4-44	4.4.2.2	Areas containing EPA 'Core habitat for priority taxa' and / or 'Vulnerable or Rare species' will be either avoided or assessed to ensure that the proposed route and activities will have no or minimal adverse affects on these values and species.	10.1
4-45	4.4.3.2	Pets and weapons will be banned from all pipeline construction activities to ensure that no pest species are introduced.	11.1
4-46	4.4.3.2	Food wastes will be kept covered or buried to prevent the introduction or attraction of vermin and flies.	11.6
4-47	4.4.3.2	A mosquito control plan will be included in the Construction EMP.	12.2
4-48	4.4.3.2	Qualified fauna experts will be employed to survey and clear the pipeline trench of native fauna. Fauna experts will handle all injured native fauna.	11.1
4-49	4.4.3.2	Fauna refuge areas will be provided in open trenches.	11.1
4-50	4.4.3.2	Hollow bearing trees will be retained where practicable. Where they are unavoidably removed they will be retained on the ground.	11.1
4-51	4.4.3.2	The presence of White-bellied Sea-eagle nests will be checked for during pegging of pipe centreline.	11.1
4-52	4.5.1.3	A Cultural Heritage Management Plan will be agreed with all Traditional Owner Groups and implemented during construction.	N/A

Number	Section	Commitment	CEMP Sect
4-53	4.9.2	Management of waste will be in accordance with the Waste Management Plan.	11.6
4-54	4.7.2.1	There will be appropriate management of tracks, roads and the pipeline ROW during dry and windy conditions to minimise disturbance.	11.5
4-55	4.7.2.1	Any haul roads will be well maintained.	RUMP
4-56	4.8.2.1	Campsites will be located to ensure noise impacts at nearest residences are at an acceptable level.	11.4
4-57	4.8.2.1	Vehicle movements and access locations will be managed to avoid adverse noise impacts.	11.4
4-58	4.8.2.2	The future installation of additional compression facilities at the Enertrade compressor station Moranbah will be extended to comply with the license noise limits for the complete 24 hour day.	N/A
4-59	4.9.2	All equipment, facilities and work areas will be maintained in a clean and safe condition.	12.4
4-60	4.9.2	Specific waste management strategies will be developed for each waste stream prior to commencement of construction.	11.6
4-61	4.9.2	All incidents that deviate from normal operating conditions will be reported internally and at such times immediate corrective action initiated.	N/A
4-62	4.9.2	Workforce induction will inform site personnel of the required waste management procedures.	8.1
4-63	4.9.2	Hazardous wastes (e.g. solvents, paints and oils) will be stored and managed in accordance with the requirements of relevant legislation and industry standards in bunded areas away from watercourses.	11.6
4-64	4.9.2	Wastes will be removed daily from the ROW. On completion, all wastes will be disposed of to licensed waste disposal facility. No wastes will be buried on-site.	11.6
4-65	4.10.1	Any transport route amendments that increase traffic flows beyond the allowable Annual Average Daily Traffic (AADT) or Equivalent Standard Axle (ESA) requirements will be reviewed with the DMR and relevant local government authorities prior to construction.	RUMP
4-66	4.10.1.2	Transport of any oversize or over mass loads will be in accordance with the <i>Guidelines for Excess Dimensions – Vehicles Carrying Indivisible Articles; Special Purpose Vehicles in Queensland June 2002 and Excess Mass Guidelines</i> .	RUMP
4-67	4.10.1.2	A specialist transport logistics firm will be contracted to manage the heavy equipment movements, and this company will handle all permitting and approvals through DMR.	RUMP
4-68	4.10.2.1	Any damage that can be proven as being caused by hauling pipes on gazetted roads will be made good by the construction contractor in agreement with the DMR or relevant local government authority .	RUMP
4-69	4.10.2.1	An inventory of road conditions in and around the construction area will be carried out, in consultation with the relevant authorities, prior to construction commencing.	RUMP
4-70	4.10.2.2	All road closures and directives of road authorities will be strictly adhered to.	RUMP

Number	Section	Commitment	CEMP Sect
4-71	4.10.2.2	Delivery of Project related equipment will be planned to occur during daylight hours, where practicable.	RUMP
4-72	4.10.2.2	The Road Use Management Plan will be implemented.	RUMP
4-73	4.10.2.2	Warning signs will be installed at road crossings to alert personnel and the public of hazard.	RUMP
4-74	4.10.2.2	Road crossings will be planned to take place outside peak periods to minimise disruption.	RUMP
4-75	4.10.2.2	Open cut roads will be reinstated to the satisfaction of the local authorities.	RUMP
4-76	4.11.1	The use of multi-person vehicles for travel to and from worksites will be encouraged.	RUMP
4-77	4.11.5	The pipeline risk assessment will be carried out in accordance with the current version of AS2885.	N/A
4-78	4.11.7	Areas subject to ground movement will be avoided where possible and if unavoidable the pipeline design will consider additional measures to ensure integrity.	10.1
4-79	4.12	Risk assessment for plant facilities will be performed primarily through the HAZOP (Hazard and Operability Review) process.	N/A
4-80	4.12	The Project will operate under a Field Safety Management Plan (FSMP) to meet the ongoing occupational health and safety (OHS) requirements of the Project.	12.4
4-81	4.10.2.2	Movement of oversize loads will be agreed with DMR or Queensland Transport.	RUMP
4-82	4.12.6	Emergency response plans will be implemented and regularly reviewed for all phases of the Project.	12.4
4-83	4.12.6	Where indicated by the risk assessment, the pipeline will be designed to withstand natural disasters (e.g. flood and cyclone).	N/A
4-84	4.12.6	Contacts will be established with local emergency service providers and an emergency contact list will be maintained.	12.4
4-85	4.1.1	<p>The depth of pipe under road crossings will be a minimum of 1.2m below the bottom of the table drains. This depth will be maintained under the full width of the road reserve of the following roads:</p> <ul style="list-style-type: none"> • Peak Downs Highway • Capricorn Highway • Burnett Highway • Bruce Highway • Gladstone - Mt Larcom Road • Dawson Highway • Gladstone - Benaraby Road 	10.4
4-86	4.1.1	The construction contractor will submit to DMR, at least 15 business days prior to undertaking any construction works within a State-controlled road reserve, any proposal for co-locating the route within 300m of the existing State-controlled road centreline for review and resolution of any conflicts.	RUMP

Number	Section	Commitment	<u>CEMP Sect</u>
4-87	4.1.2.1	A risk assessment will be performed of ASS impacts on surrounding sensitive environments and management plans implemented and agreed with the EPA prior to construction of the low pressure lateral from the City Gate to the southern industrial estate in Gladstone. The assessment will include a map of ASS areas and any sensitive ecological areas.	13.7
4-88	4.4.1.1	The Proponent will liaise with the Department of Infrastructure in relation to the use of a proposed infrastructure corridor. If the corridor is available at the time construction is required and is considered technically and commercially viable for gas transmission pipeline installation the Proponent is prepared to locate within this corridor.	N/A
4-89	4.4.2.2	The Proponent and/or the construction contractor will hold talks directly with the DPI&F prior to construction of any crossing of the Calliope River and will apply for any required permits.	11.2
4-90	4.6.2.5	The Proponent and construction contractor will ensure that the accommodation strategy does not place any further pressure on the housing market in the Bowen Basin region.	N/A
4-91	4.6.2.7	The Proponent will meet with officers of the DETA in advance of the tendering stage to discuss the 10% Training Policy and determine opportunities to collaboratively develop an employment and skilling strategy.	N/A
4-92	4.7	A detailed air analysis taking into account the issues raised in the EPA submissions to the EIS will be carried out as part of the design of any compressor station upgrade and the results submitted to the EPA as part of the license amendment application.	N/A
4-93	4.10.1	Upon appointment of a construction contractor and prior to the commencement of construction the Road Impact Assessment and Road Use Management Plan will be revised and submitted to DMR for review and agreement on contribution payments.	RUMP
4-94	4.10.1	The Gavial-Gracemere Road will not be used as a heavy transport route by the Project.	RUMP
4-95	4.10.1.1	The construction contractor will contact DMR and arrange for a DMR officer to inspect all the proposed intersection sites to agree the measures to be implemented, typically signage, and to ensure that the locations selected have adequate visibility.	RUMP
4-96	4.10.2.2; 4.13	The pipeline crossings of roads or occupation of the road reserve will be negotiated with the relevant road authority during design. Pipeline laid within road reserves shall allow for future road construction. Only a 5m wide permit to Occupy over the actual pipeline will be applied for.	RUMP
4-96	4.10.2.1; 4.13	The pipeline crossings will be designed in consultation with the relevant authority; in particular the Kirkwood Road crossing will be designed and installed in consultation with the GCC.	RUMP